Jurisdictions/Municipalities Part D

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
JURISDICTIONS/MUNICIPALITIES PART D		
Comment #910 Barbara J.B. Green, SullivanGreenSeavy LLC for the Board of County Commissioners of Grand County 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303 and Mary Keyes SullivanGreenSeavy LLC 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303	From: mary keyes [mailto: [redacted] Sent: Wednesday, March 17, 2010 2:49 PM To: Franklin, J Scott NWO Cc: Lurline Underbrink Curran; Barbara Green Subject: Moffat DEIS Comments Scott - The accompanying letter and attachment are submitted on behalf of Grand County, and contain the County's comments regarding the Moffat Collection System Project Draft Environmental Impact Statement. Please contact me if you have any problems with this transmittal. - Thank you! - Mary Mary Keyes SullivanGreenSeavy LLC [redacted] direct: 303-763-7362 -177-GrandCountyCommentsMoffatDEIS.pdf -178-ATTACHMENTGrandCountyCommentsMoffatDEISColeyForrestMemo.pdf	***Comment #910-355*** *(ID 2526)**:*** *This letter has been prepared on behalf of our client, Grand County, and contains the County's comments as a consulting agency on the Moffat Collection System Project Draft Environmental Impact Study ("DEIS"). This letter synthesizes comments prepared by County legal and technical staff and consultants. This letter also incorporates by reference all of the comments submitted to the Corps of Engineers ("COE") by Grand County, to-date, during the Moffat Collection System Project ("Moffat Project") EIS process. The County comments pertain only to the assessment of west slope impacts included in the DEIS. Our comments are organized in two sections. The first section contains comments that are of a general nature. The second section contains specific comments organized by page number of the DEIS. If you have any questions, please feel free to contact me or Lurline Underbrink Curran directly at Grand County so that we can arrange a meeting to go through these comments with you in more detail. Please understand that Denver Water and representatives of the west slope are engaged in negotiations to resolve a number of issues related to past and future diversions from the west slope. Grand County reserves the right to modify or withdraw any of its comments if the settlement resolves issues of concern to the County regarding impacts in the Fraser and Upper Colorado River watershed.* **Response #910-355:** The U.S. Army Corps of Engineers (Corps) notes the comment. ***Comment #910-275*** *(ID 2525)**:*** *Grand County submits these General Comments to identify omissions and inaccuracies in the Draft Environmental Impact Statement (Oct. 2009) ("DEIS") for the Moffat Collection System Project ("Moffat*

Comment Information	Comment	Comments and Responses
	Attachments: SULLIVAN GREEN SEAVY LLC Barbara J.B. Green 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303 direct: 303-355-4405 lawgreen@earthlink.net March 17, 2010 VIA EMAIL: j.scott.franklin@usace.army.mil Mr. J. Scott Franklin, P.E. Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 *Re: Moffat Collection System Project Draft Environmental Impact Statement* This letter has been prepared on behalf of our client, Grand County, and contains the **County's comments as a consulting agency on the Moffat Collection System Project** *Draft Environmental Impact Study* **("DEIS"). This letter synthesizes comments prepared by County** legal and technical staff and consultants. This letter also incorporates by reference all of the **comments submitted to the Corps of Engineers ("COE") by Grand County, to**-date, during the **Moffat Collection System Project ("Moffat Project") EIS process.** The County comments pertain only to the assessment of west slope impacts included in the DEIS. Our comments are organized in two sections. The first section contains comments that are of a general nature. The second section contains specific comments organized by page number of the DEIS. If you have any questions, please feel free to contact me or Lurline Underbrink Curran directly at Grand County so that we can arrange a meeting to go through these comments with you in more detail. Please understand that Denver Water and representatives of the west slope are engaged in negotiations to resolve a number of issues related to past and future diversions from the west slope. Grand County reserves the right to modify or withdraw any of its comments if the settlement resolves issues of concern to the County regarding impacts in the Fraser and Upper Colorado River watershed. Sincerely, Barbara J.B. Green SULLIVAN GREEN SEAVY LLC for Board of County Commissioners of Grand County #1463411v2 den	*Project") that are global in scope, and to provide an overview of the comments set forth in Grand County's page-specific comments. Collectively, these comments show that the DEIS does not come close to satisfying NEPA's twin aims of facilitating "informed agency decisionmaking" and "public access to information." See New Mexico ex rel. Richardson v. Bureau of Land Management, 565 F.3d 683, 703, 707 (10th Cir. 2009). Further, the DEIS fails to establish that the U.S. Army Corps of Engineers ("COE") took the "hard look" NEPA mandates to assess the Moffat Project's direct, indirect, and cumulative impacts on the rivers, streams, fish, aquatic habitat, visual resources, and other resources that are vital to Grand County's well being and economic health. Without this hard look and the careful, probing analysis it requires, neither the COE nor the public can know the full range and magnitude of environmental impacts to be triggered by the Moffat Project or the means to mitigate those impacts. Since evidence of this hard look is lacking, the COE may not lawfully approve the Moffat Project at this time, and must prepare a supplemental DEIS for public review and comment before taking any action to approve this damaging, invasive project. Grand County raised many of the comments set forth below in its comments on the Moffat Expansion Project Preliminary Draft Environmental Impact Statement ("PDEIS"). See Letter dated January 24, 2009, from Sullivan Green Seavy LLC to J. Scott Franklin, COE. In some cases, the COE did not modify the PDEIS to incorporate Grand County's comments. In other cases, the COE made minor changes to the PDEIS that did not respond fully to Grand County's comments. Accordingly, much of the discussion below reiterates comments that Grand County previously made on the Moffat Project PDEIS.*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 2 **General Comments** Grand County submits these General Comments to identify omissions and inaccuracies in **the Draft Environmental Impact Statement (Oct. 2009) ("DEIS") for the Moffat Collection System Project ("Moffat Project") that are global in scope, and to provide an overview of the comments set forth in Grand County**'s page-specific comments. Collectively, these comments **show that the DEIS does not come close to satisfying NEPA's twin aims of facilitating "informed agency decisionmaking" and "public access to information."** *See New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 703, 707 (10th Cir. 2009). Further, **the DEIS fails to establish that the U.S. Army Corps of Engineers ("COE") took the "hard look" NEPA mandates to assess the Moffat Project's direct, indirect, and cumulative impacts on** the rivers, streams, fish, aquatic habitat, visual resources, and other resources that are vital to Grand **County's well being and economic health. Without this hard look and the careful, probing** analysis it requires, neither the COE nor the public can know the full range and magnitude of environmental impacts to be triggered by the Moffat Project or the means to mitigate those impacts. Since evidence of this hard look is lacking, the COE may not lawfully approve the Moffat Project at this time, and must prepare a supplemental DEIS for public review and comment before taking any action to approve this damaging, invasive project. Grand County raised many of the comments set forth below in its comments on the Moffat Expansion Project Preliminary Draft Environm**ental Impact Statement ("PDEIS")**. *See* Letter dated January 24, 2009, from Sullivan Green Seavy LLC to J. Scott Franklin, COE. In some cases, the COE did not *modify* **the PDEIS to incorporate Grand County's comments. In** other cases, the COE made minor changes to the PDEIS that did not respond fully to Grand **County's comments. Accordingly, much of the discussion below reiterates comments that Grand** County previously made on the Moffat Project PDEIS. **1. The DEIS Fails to Consider a Reasonable Range of Practical Alternatives as Required by NEPA and the COE Section 404 Guidelines.**[1] **1.1. NEPA and 404 Guideline Requirements.** The consideration of alternatives is **"the heart of the environmental impact statement." 40 C.F.R. §** 1502.14. Agencies must **"[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action.** *Id.* § 1502.14(a). To be a reasonable alternative, it must be non-speculative and bounded by some notion of feasibility. *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1172 (10th Cir. 2002) (citations omitted). The comparison of a full spectrum of alternatives **should provide "a clear basis for choice among options by the decisionmaker and the public." 40** [1] Grand County submitted detailed comments to COE on March 15, 2007 in response to the Moffat Collection System EIS: Alternatives Screening Report. Grand County hereby incorporates by reference the March 15, 2007 letter into these comments in its entirety, as if set forth in full.	**Response #910-275:** Per 40 Code of Federal Regulations (CFR) 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document was not prepared for the Moffat Collection System Project (Moffat Project). However, additional data was collected and analyzed for the following resources in the Final Environmental Impact Statement (FEIS): water quality (Section 5.2), geomorphology (Section 5.3), groundwater (Section 5.4), aquatic biological resources (Section 5.11), wetland and riparian areas (Section 5.8), wildlife (Section 5.9), sensitive species (Section 5.10), air quality (Section 5.13), and socioeconomics (Section 5.19). ***Comment #910-274*** *(ID 2524)**:*** *The DEIS Fails to Consider a Reasonable Range of Practical Alternatives as Required by NEPA and the COE Section 404 Guidelines.[1] FOOTNOTE: [1] Grand County submitted detailed comments to COE on March 15, 2007 in response to the Moffat Collection System EIS: Alternatives Screening Report. Grand County hereby incorporates by reference the March 15, 2007 letter into these comments in its entirety, as if set forth in full. 1.1. NEPA and 404 Guideline Requirements. The consideration of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. Agencies must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action. Id. § 1502.14(a). To be a reasonable alternative, it must be non-speculative and bounded by some notion of feasibility. Utahns for Better Transp. v. U.S. Dep't of Transp., 305 F.3d 1152, 1172 (10th Cir. 2002) (citations omitted). The*

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	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 3 C.F.R. § 1502.14; *see also* 33 C.F.R. pt. 325 app. B ¶ 9.b.(5)(a) (alternatives comparison should **allow a "complete and objective evaluation of the public interest and a fully informed decision regarding the permit application"). "Without substantive, comparative environmental impact** information regarding other possible courses of action, the ability of an EIS to inform agency **deliberation and facilitate public involvement [is] greatly degraded."** *New Mexico ex rel. Richardson*, 565 F.3d at 708. The alternatives analysis must also comply with the Clean **Water Act ("CWA")** Section 404(b)(1) Guidelines, 40 C.F.R. pt. **230 ("404 Guidelines"). Under the 404** Guidelines, **"no discharge of dredged or fill material shall be permitted if there is a practicable alternative to** the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long **as the alternative does not have other significant adverse environmental consequences." 40** C.F.R. § 230.10(a). In accordance with the 404 Guidelines, the alternatives analysis is focused on the least e**nvironmentally damaging practical alternative ("LEDPA"). The COE must make** an independent evaluation of the overall project purpose to adequately evaluate alternatives to determine the LEDPA. The DEIS fails to satisfy the requirements of 40 C.F.R. § 1502.14 or the 404 Guidelines. An overly-narrow purpose and needs statement improperly restricted the alternatives evaluated in the DEIS to those that could provide 18,000 AF/year of new firm yield to the Moffat Treatment Plant. DEIS 1-2. As Grand County already noted in its March 15, 2007 letter regarding the *Alternatives Screening Report* and in its January 24, 2009 comments on the Moffat PDEIS, the screening process used by the COE to evaluate the original, broad range of alternatives resulted in the elimination of the majority of the alternatives, including those most likely to be the least environmentally damaging practical alternatives. These alternatives include, without limitation, non-structural alternatives such as conservation and re-use. In comm**ents on the Moffat PDEIS, EPA agrees that "more sustainable water supply and less damaging practicable alternatives may in fact be available," and that "the preferred alternative is not the least damaging practicable alternative." Letter dated January** 30, 2009, from Larry Svoboda, EPA Region 8, to Scott Franklin, COE (hereinafter cited as EPA Moffat PDEIS Comments) at 3. *See also id.* **at 5 ("EPA does not believe an appropriate analysis regarding the** availability of less damaging practicable alternatives under the 404(b)(1) Guidelines was **completed for this PDEIS.").** **An agency's failure to rigorously study all reasonable alternatives violates NEPA.** *New Mexico ex rel. Richardson*, 565 F.3d at 709-11 (failure to study no-development alternative was arbitrary and capricious and prevented agency from taking a hard look at all reasonable options before it); *Wilderness Society v. Wisely*, 524 F. Supp. 2d 1285, 1311-12 (D. Colo. 2007) (the **Bureau of Land Management ("BLM") violated NEPA where no evidence in the record** supported its assumption that directional drilling was technically and economically infeasible). Because potentially less environmentally damaging practical alternatives were not adequately considered, including conservation and re-use, the DEIS does no**t meet NEPA's or the** 404 **Guidelines' requirements.**	*comparison of a full spectrum of alternatives should provide "a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14; see also 33 C.F.R. pt. 325 app. B ¶ 9.b.(5)(a) (alternatives comparison should allow a "complete and objective evaluation of the public interest and a fully informed decision regarding the permit application"). "Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement [is] greatly degraded." New Mexico ex rel. Richardson, 565 F.3d at 708. The alternatives analysis must also comply with the Clean Water Act ("CWA") Section 404(b)(1) Guidelines, 40 C.F.R. pt. 230 ("404 Guidelines"). Under the 404 Guidelines, "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. § 230.10(a). In accordance with the 404 Guidelines, the alternatives analysis is focused on the least environmentally damaging practical alternative ("LEDPA"). The COE must make an independent evaluation of the overall project purpose to adequately evaluate alternatives to determine the LEDPA. The DEIS fails to satisfy the requirements of 40 C.F.R. § 1502.14 or the 404 Guidelines. An overly-narrow purpose and needs statement improperly restricted the alternatives evaluated in the DEIS to those that could provide 18,000 AF/year of new firm yield to the Moffat Treatment Plant. DEIS 1-2. 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	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 4 Grand County previously raised these concerns in its comments on the Moffat PDEIS. Letter dated January 24, 2009, from Sullivan Green Seavy LLC to Scott Franklin at 2-3. The **COE's response has been unsa**tisfactory. COE has declined to broaden its statement of purpose **and need, and persists in limiting the DEIS's study of alternatives to the same alternatives** analyzed in the Moffat PDEIS. Grand County urges the COE to correct this omission in a supplemental DEIS for the Moffat Project. 1.2 **The DEIS's Statement of Purpose and Need Is Unlawfully Narrow.** The range of reasonable alternatives that must be considered depends, in part, on the statement of purpose and need. *Colorado Envtl. Coalition v. Dombeck*, 185 F.3d 1162, 1174-75 (10th Cir. 1999). Because of the importance of considering a reasonable range of alternatives, agencies **may not define purpose and need "so narrowly that it foreclose[s] a reasonable consideration of alternatives."** *Davis v. Mineta*, 302 F.3d 1104, 1119 (10th Cir. 2002). The COE has adopted an unduly narrow statement of purpose and need in its DEIS. **Denver Water's need for the Moffat Project is based on two "major" issues:** (1) **"Timeliness: Water Supply Shortage in the Near**-Term **Timeframe (Prior to 2030)"; and** (2) **"Location: Need for Water to the Moffat Water Treatment Plant." DEIS** 1-3. The Location issue purportedly **arises due to an imbalance in supplies in Denver Water's raw water collection** systems. *Id.* 1-3, 1-19. To ensure proper system flexibility, supply needs to be more evenly positioned and accessible to each treatment plant. *Id.* 1-**20. Denver Water's stated purpose is to "resolve its need for new firm yield, lack of reliable water supply to the Moffat WTP,** vulnerability **in the system, and lack of the flexibility in its treated water system."** *Id.* 1-21. **These purposes support a far broader "purpose and need statement" than "to develop** 18,000 acre-feet per year of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant . . . ." *Id.* 1-**2. EPA concurs that the COE's statement of purpose and need is inadequate: "We want to clearly reiterate that we do not concur** on the draft purpose and need and continue to believe that the purpose and need statement is too narrowly defined and includes multiple project purposes which should be analyzed separately . . . ." **EPA Moffat PDEIS Comments at 3**. The overly-narrow purpose and need statement has resulted in a set of alternative proposals that are nearly indistinguishable in this critical regard: *in every action alternative evaluated, all or nearly all of the 18,000 AF/year of new firm yield is obtained by diverting water from West Slope rivers and streams that are already seriously depleted.* Under the Proposed Action, Denver Water would divert an additional 13,000 AF of water from the Fraser and Williams Fork Rivers and their tributaries through the Moffat Tunnel each year compared to current conditions. DEIS App. H-7, Table H-7.1. All of the action alternatives considered require delivery of at least 11,888 AF of the new water annually from the West Slope compared to current, average year conditions.[2] *Id.* This result was preordained by the unnecessarily [2] These numbers do not include additional Gumlick Tunnel diversions. If those diversions were added, the figure would be 14,372 AF. DEIS App. H-7, Table H-7.1.	*alternatives, including those most likely to be the least environmentally damaging practical alternatives. These alternatives include, without limitation, non-structural alternatives such as conservation and re-use. In comments on the Moffat PDEIS, EPA agrees that "more sustainable water supply and less damaging practicable alternatives may in fact be available," and that "the preferred alternative is not the least damaging practicable alternative." Letter dated January 30, 2009, from Larry Svoboda, EPA Region 8, to Scott Franklin, COE (hereinafter cited as EPA Moffat PDEIS Comments) at 3. See also id. at 5 ("EPA does not believe an appropriate analysis regarding the availability of less damaging practicable alternatives under the 404(b)(1) Guidelines was completed for this PDEIS."). An agency's failure to rigorously study all reasonable alternatives violates NEPA. New Mexico ex rel. Richardson, 565 F.3d at 709-11 (failure to study no-development alternative was arbitrary and capricious and prevented agency from taking a hard look at all reasonable options before it); Wilderness Society v. Wisely, 524 F. Supp. 2d 1285, 1311-12 (D. Colo. 2007) (the Bureau of Land Management ("BLM") violated NEPA where no evidence in the record supported its assumption that directional drilling was technically and economically infeasible). Because potentially less environmentally damaging practical alternatives were not adequately considered, including conservation and re-use, the DEIS does not meet NEPA's or the 404 Guidelines' requirements. Grand County previously raised these concerns in its comments on the Moffat PDEIS. Letter dated January 24, 2009, from Sullivan Green Seavy LLC to Scott Franklin at 2-3. The COE's response has been unsatisfactory. COE has declined to broaden its statement of purpose and need, and persists in limiting the DEIS's study of alternatives to the same alternatives analyzed in the Moffat PDEIS. Grand County urges the COE to correct this omission in a supplemental DEIS for the Moffat Project.*

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	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 5 narrow purpose and need statement, which required delivery of 18,000 AF of new firm yield directly to the Moffat Collection System. For example, 19 components/water sources were eliminated from consideration merely because they would not supply water to the Moffat Collection System. DEIS 2-9. A broader statement of purpose and need would still allow Denver Water to acquire new firm yield and resolve its system vulnerability and lack of flexibility, but would foster a more diverse range of reasonable alternatives, some of which might be more cost effective than, or environmentally preferable to, those analyzed in the DEIS. For example, Denver Water would **have more options for resolving its current system's shortcomings under a purpose and need statement such as: "Improve the flexibility of Denver Water's treated and raw water systems,** and provide collection, storage and delivery systems sufficient to meet existing and future demand for raw and treated water in the near-**term (prior to 2030)." Under such a statement,** Denver Water could address imbalances between its north and south water supply systems through measures other than supplying raw water directly to the North System. For example, connecting the north and south raw water storage and delivery systems would directly address system flexibility, vulnerability, and redundancy, which are identified as major objectives of the project. DEIS 1-**8 ("Improving the imbalance in available water supplies and storage facilities in** the North and South systems is a major factor **underlying the need for the Moffat Project."); 1**-20 **("to ensure . . . proper system flexibility, supply needs to be more evenly positioned and accessible to each treatment plant"). Creating interconnects between raw and treated water** systems would allow Denver Water to use existing or available water supplies and storage capacity in its South System rather than importing all of the new water from the West Slope. Further, it is likely that projects that connect the North and South systems would be the least environmentally damaging practicable alternatives, because they would minimize damage to the Fraser River aquatic environment. *See* December 24, 2008 letter from Carol Rushin, **Acting Regional Administrator, U.S. Environmental Protection Agency ("EPA")** Region 8, to Colonel David C. Press, Omaha District Commander, COE re Public Notice No. 200380523 **("EPA WGFP Section 404 Comments"); Letter from Sullivan Green Seavy LLC to Scott** Franklin, COE, re Moffat Collection System EIS: Alternative Screening Report (March 15, 2007). By narrowly defining the purpose and need of the Moffat Project, the COE has foreclosed consideration of less environmentally damaging practicable water supply-oriented alternatives that would potentially fulfill the underlying objectives of the project. This violates NEPA and the 404 Guidelines, and should be corrected in a revised draft EIS for the Moffat Project. *See Davis*, 302 F.3d at 1119-20; 33 C.F.R. pt. 325 app. B **¶ 9.b.(4) ("the Corps, will in** all cases, exercise independent judgment in defining the purpose and need for the project from b**oth the applicant's and the public's perspective."); 40 C.F.R. §** 230.10(a). Grand County previously raised these concerns in its comments on the Moffat PDEIS. Letter dated January 24, 2009, from Sullivan Green Seavy LLC to Scott Franklin at 3-4. The **COE's response has been unsatisfactory. COE has declined to broaden its statement of purpose** and need in the DEIS. It has also failed to study a single action alternative not requiring the	**Response #910-274:** Please see the responses to Comment Identifications (IDs) 2523 and 2460. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Corps evaluated compliance with National Environmental Policy Act of 1969, as amended (NEPA) and Clean Water Act (CWA) Section 404 regulations (FEIS Appendix K) and has not yet determined the least environmentally damaging practicable alternative (LEDPA). The Final LEDPA determination will be made as part of the combined Environmental Impact Statement (EIS)/404 Record of Decision (ROD). As stated in the response to Comment ID 2523, the Corps did not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts. Therefore, a Supplemental Draft document would not be prepared for the Moffat Project. Alternatives that were formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14; therefore, almost 50 percent (%) of the alternatives formulated include some component of reuse. These alternatives were configured to meet a portion or the entire new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it

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	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 6 annual transbasin diversion of thousands of acre-**feet of water from Colorado's West Slope.** Grand County urges the COE to correct this omission in a supplemental DEIS for the Moffat Project. **1.3 The COE Should Reassess Its Decision to Eliminate Alternatives from Detailed Consideration Based on Cost Alone.** In Screen 1c, the total potential project development costs were estimated for each of the 34 alternatives that passed the first two screens. DEIS 2-**14. The total costs were then converted to a "dimensionles**s, relative-cost **screen by expressing each estimate in terms of the estimated least cost alternative (a ratio)."** *Id.* 2-15. The least cost alternative, which is the Proposed Action (Alternative 1a), has a projected cost of $4,500/AF and was given a cost index of 1. Moffat Expansion Project EIS Alternatives Screening Report 2-**40 (Dec. 2006) ("Alternatives Screening Report"). The relative cost index of** the other alternatives is simply a multiple of the cost of Alternative 1a: thus, a relative cost index of 5.0 means the alternative has a projected cost five times greater ($22,500) per acre foot than Alternative 1a. *Id.* **Based on the COE's review of other major raw**-water projects costs, a cost **index of 4.0, or $18,000/AF, "falls within the range of other m**ajor raw-water project costs in the **region."** *Id.* The COE does not elaborate on what the full range of project costs was or indicate **the highest project cost being developed in the region. Although $18,000/AF is "within the range" of costs for major water** projects, the COE eliminated all alternatives with a relative cost index greater than 5.0 from further evaluation. DEIS 2-15. Nineteen of the 34 remaining alternatives were eliminated solely on this basis.[3] With the exception of a preliminary screen of storage sites, no analysis was made of environmental costs of the excluded alternatives. Nor was any finding made that any of these alternatives was unreasonable, infeasible, speculative, remote, impractical, or ineffective. The failure to conduct any environmental analysis of the alternatives that passed Screen 1B but had a relative cost index of greater than five violates the 404 Guidelines and NEPA. 40 C.F.R. §§ 230.10(a), 230.12(a)(3)(i). Under the 404 Guidelines, the COE must ensure that the LEDPA has not been eliminated from further consideration. *Id.* The COE cannot reasonably determine the LEDPA was not eliminated from further consideration without the benefit of a comparative environmental analysis of the alternatives discarded solely based on relative cost. Under NEPA, cost, by itself, does not necessarily make an alternative unreasonable, infeasible, remote, speculative, impractical, or ineffective. *See Province of Manitoba v. Norton,* 398 F. Supp. 2d 41, 64-66 (D.D.C. 2005). In *Province of Manitoba*, the district court ruled that **the Bureau of Reclamation failed to take NEPA's hard look when it discarded from consideration** an alternative of full treatment of Missouri River water prior to its approving the proposed transbasin diversion of such water to the Souris River, part of the Hudson Bay Basin. *Id.* at 64-66. The Bureau discarded such alternative from full consideration on the basis of economic reasons including the multi-million dollar increase in the cost of building a new water treatment plant in a remote location at the intake location for the water. The Court rejected such reasoning: **"Without some reasonable attempt to measure [environmental] consequences instead of** [3] The excluded alternatives are 2a.1, 2b, 3a.1, 3b, 4a, 5a, 5b, 6a, 6b, 7a, 7b, 9a, 9b, 10c, 10d, 10e, 12a, 13b, and 14.	back to the Moffat Collection System. The primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat WTP. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 acre-feet per year (AF/yr). Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. ***Comment #910-273*** *(ID 2523)**:*** *The DEIS's Statement of Purpose and Need Is Unlawfully Narrow. The range of reasonable alternatives that must be considered depends, in part, on the statement of purpose and need. Colorado Envtl. Coalition v. Dombeck, 185 F.3d 1162, 1174-75 (10th Cir. 1999). Because of the importance of considering a reasonable range of alternatives, agencies may not define purpose and need "so narrowly that it foreclose[s] a reasonable consideration of alternatives." Davis v. Mineta, 302 F.3d 1104, 1119 (10th Cir. 2002). The COE has*

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	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 7 bypassing the issue out of indifference, fatigue, or through administrative legerdemain, the Court **cannot conclude that [the Bureau] took a hard look at the problem."** *Id.* at 65. The environmental costs of diverting the vast majority of the additional 18,000 AF/year of water from the Upper Colorado Watershed substantially outweigh the monetary costs of several alternatives that the COE rejected on cost grounds alone. Additionally, a thorough analysis of those rejected alternatives will better inform the COE and the public as to available options for avoiding the diversions that Denver Water has proposed. Grand County urges the COE to study the alternatives it has eliminated on cost grounds alone and to incorporate such study into the DEIS. Grand County raised these concerns in its January 24, 2009 letter addressing the Moffat **Project PDEIS. COE responded that its approach is "consistent with the 404(b)(1) Guidelines for screening alternatives," but provided no explanation of how its approach complies with** NEPA and declined to study any of the alternatives it improvidently eliminated on cost grounds **alone. For the reasons discussed above, Grand County disagrees that COE's approach is** consistent with the section 404 Guidelines, and reasserts that such approach violates both the 404 Guidelines and NEPA. **1.4 The Alternatives Analysis Is Unreasonably Limited Because It Exclusively Studies Alternatives Involving the Transbasin Diversion of Water from the Fraser River.** Although **the COE contends that the action alternatives "encompass a broad range of potential water** supplies **and storage sites," they all involve the transbasin diversion of water from the Fraser and** Williams Fork rivers and their tributaries, and result in additional depletions to the Colorado River. DEIS 2-19, 2-**23 ("All of the action alternatives would use wa**ter supplies derived from **the Moffat Collection System (North System)."). The COE fails to study a single action alternative that does not involve such diversions. This restriction unreasonably limits the COE's** analysis to variations on the same theme. For example, Denver Water could increase flexibility in and reliability of its treated water system by increasing treated water conveyance capacity. The DEIS indicates that that treated water shortages would have occurred in water years similar to 1955, 1971, 1973, and 1974, under all of the action alternatives. (DEIS Appendix K-14). This is because the treated water shortages are due to conveyance capacity constraints as opposed to lack of supply. Conveyance capacity upgrades could achieve the stated purpose and need for the project while reducing the amount of water diverted from the west slope. **NEPA mandates unequivocally that the COE "study, develop, and describe appropriate** alternatives to recommended courses of action in any proposal which involves unresolved **conflicts concerning alternative uses of available resources." 42** U.S.C. § 4332(2)(E). This consideration of alternatives is critical to the goals of NEPA: > **The goal of the statute is to ensure "that federal agencies infuse in** project planning a thorough consideration of environmental **values." The consideration of alternatives requirement furthers that goal by guaranteeing that agency decisionmakers "[have]** before [them] and take[] into proper account all possible	*adopted an unduly narrow statement of purpose and need in its DEIS. Denver Water's need for the Moffat Project is based on two "major" issues: (1) "Timeliness: Water Supply Shortage in the Near-Term Timeframe (Prior to 2030)"; and (2) "Location: Need for Water to the Moffat Water Treatment Plant." DEIS 1-3. The Location issue purportedly arises due to an imbalance in supplies in Denver Water's raw water collection systems. Id. 1-3, 1-19. To ensure proper system flexibility, supply needs to be more evenly positioned and accessible to each treatment plant. Id. 1-20. Denver Water's stated purpose is to "resolve its need for new firm yield, lack of reliable water supply to the Moffat WTP, vulnerability in the system, and lack of the flexibility in its treated water system." Id. 1-21. These purposes support a far broader "purpose and need statement" than "to develop 18,000 acre-feet per year of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant . . . ." Id. 1-2. EPA concurs that the COE's statement of purpose and need is inadequate: "We want to clearly reiterate that we do not concur on the draft purpose and need and continue to believe that the purpose and need statement is too narrowly defined and includes multiple project purposes which should be analyzed separately . . ." EPA Moffat PDEIS Comments at 3. The overly-narrow purpose and need statement has resulted in a set of alternative proposals that are nearly indistinguishable in this critical regard: in every action alternative evaluated, all or nearly all of the 18,000 AF/year of new firm yield is obtained by diverting water from West Slope rivers and streams that are already seriously depleted. Under the Proposed Action, Denver Water would divert an additional 13,000 AF of water from the Fraser and Williams Fork Rivers and their tributaries through the Moffat Tunnel each year compared to current conditions. DEIS App. H-7, Table H-7.1. All of the action alternatives considered require delivery of at*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 8 > approaches to a particular project (*including total abandonment of the project*) which would alter the environmental impact and the cost-**benefit balance." NEPA's requirement that alternatives be** studied, developed, and described both guides the substance of environmental decisionmaking and provides evidence that the mandated decisionmaking process has actually taken place. Informed and meaningful consideration of alternatives . . . is thus an integral part of the statutory scheme. *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (emphasis in original) (citations omitted). Here, by brushing aside all alternatives not involving transbasin diversions **from the Upper Colorado Watershed, the COE has ignored NEPA's statutory mandate that it consider "all possible approaches" to Denver Water's Moffat Project. Similarly, Grand County** believes that the COE improperly eliminated from consideration alternatives that would be less damaging to the aquatic environment, in contravention of 40 C.F.R. pt. 230. To correct these errors, the COE must fully evaluate (not just raise and dismiss) a reasonable range of alternatives that does not rely on such transbasin diversions. *See* EPA WGFP Section 404 Comments at 4 **("Less environmentally damaging alternative water supplies potential**ly available to the applicant should focus on water supply methods that are both cost effective and prevent chronically low flows or dewatering from critical water resources supporting both ecological and recreational values . . . ."); **EPA Moffat PDEIS Com**ments at 4 (EPA recommends that COE revise the **Moffat PDEIS "with a broader purpose and need statement and additional alternatives to ensure that less environmentally damaging practicable alternatives are analyzed in the EIS.")**. **1.4.1. Alternatives are variations on a single theme**. The alternatives that were evaluated in the DEIS are really variations on a single theme. Each of the action alternatives will likely cause or contribute to significant degradation of the Upper Colorado River System. In three of the alternatives, 8a, 10a, and 13a, a small portion of the new 18,000 AF of firm yield is sourced from water other than the West Slope. Nonetheless, the environmental consequences of these alternatives to the Fraser and Williams Fork rivers, their tributaries, and the Colorado River are virtually identical to the Proposed Action and Alternative 1c, which source water exclusively from the Upper Colorado River Basin. All of the action alternatives will deplete stream flows in those rivers. The depletions will adversely impact Colorado River fish, recreational boating on the Fraser River, and visual and aesthetic resources on the Fraser, regardless of which action alternative is ultimately implemented. The uniformity of impacts across alternatives calls into question the range of alternatives that was evaluated and underscores the likelihood that the LEDPA was discarded from further consideration during the flawed screening process. Under Alternative 8a, reusable return flows diverted from the South Platte River would **be stored in newly constructed gravel pits along the South Platte. However, "changes in surface** water hydrology would still be similar to the Proposed Action because of the manner in which Denver Water would use their additional supplies at Gross Reservoir and the gravel pits . . . . Reusable water would be pumped back to the Moffat Collection System *infrequently and only as*	*least 11,888 AF of the new water annually from the West Slope compared to current, average year conditions.[2] Id. This result was preordained by the unnecessarily narrow purpose and need statement, which required delivery of 18,000 AF of new firm yield directly to the Moffat Collection System. For example, 19 components/water sources were eliminated from consideration merely because they would not supply water to the Moffat Collection System. DEIS 2-9. FOOTNOTE: [2] These numbers do not include additional Gumlick Tunnel diversions. If those diversions were added, the figure would be 14,372 AF. DEIS App. H-7, Table H-7.1. A broader statement of purpose and need would still allow Denver Water to acquire new firm yield and resolve its system vulnerability and lack of flexibility, but would foster a more diverse range of reasonable alternatives, some of which might be more cost effective than, or environmentally preferable to, those analyzed in the DEIS. For example, Denver Water would have more options for resolving its current system's shortcomings under a purpose and need statement such as: "Improve the flexibility of Denver Water's treated and raw water systems, and provide collection, storage and delivery systems sufficient to meet existing and future demand for raw and treated water in the near-term (prior to 2030)." Under such a statement, Denver Water could address imbalances between its north and south water supply systems through measures other than supplying raw water directly to the North System. For example, connecting the north and south raw water storage and delivery systems would directly address system flexibility, vulnerability, and redundancy, which are identified as major objectives of the project. DEIS 1-8 ("Improving the imbalance in available water supplies and storage facilities in the North and South systems is a major factor underlying the need for the Moffat Project."); 1-20 ("to ensure . . . proper system flexibility, supply needs to be more evenly positioned and accessible to*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 9 *needed* **to supplement Denver Water's Moffat supplies." DEIS** 4-137 (emphasis added). Alternative 8a only reduces diversions of Fraser River water through the Moffat Tunnel by 1.5% compared to the Proposed Action. *Id.* 4-140. Diversions of Fraser River water would increase in 34 years out of the 45-year study period under Alternative 8a, just as they would under the Proposed Action. *Id.* 4-36, 4-140. Not surprisingly, impacts to water quality, floodplain, and **stream morphology and sedimentation for the Fraser River are repeatedly found to be "similar to those described in the Proposed Action."** *Id.* 4-141 to -**142. By "similar," it is apparent the COE** means impacts under the two alternatives will be virtually indistinguishable. This pattern repeats itself with respect to the Williams Fork River, for which diversions through the Gumlick Tunnel in wet years are the same, and differ by only 300 AF per year in average compared to the Proposed Action. *Id.* 4-59, 4-142. Surface water impacts are the same as under the Proposed Action. *Id.* 4-142 to -143. Likewise, decreased flows in the Colorado River and predicted impacts to surface water parameters are nearly identical under Alternative 8a and the Proposed Action. *Id.* 4-73 to 4-79; 4-144 to 4-145. Alternative 10a envisions the same expansion in Gross Reservoir storage capacity as Alternative 8a. *Id.* 4-150. Consequently, there is almost no difference in stream flows between these two alternatives *throughout* the Colorado River Basin. *Id.* Thus, the discussion of surface water impacts associated with Alternative 8a also applies to Alternative 10a. *Id.* Impacts to water quality, **floodplain, and stream morphology and sedimentation are again "similar," if not** identical, to the Proposed Action under Alternative 10a. *Id.* Stream flow depletions in the Fraser River, Williams Fork River and Colorado River under Alternative 13a also are essentially indistinguishable from the Proposed Action. For example, average annual depletions in the Fraser River would only decrease by up to 300 AF/year compared to the Proposed Action. *Id.* 4-153. Throughout the Fraser Basin, the difference in average monthly flow between Alternative 13a and the Proposed Action are less than 4 cfs. *Id.* For the Williams Fork River, the difference in stream flow is less than 5 cfs per month on average, and in the Colorado River below Windy Gap and near Kremmling, less than 30 cfs. *Id.* 4-153 to -154. For all three river systems, impacts to water quality, floodplain, and stream morphology and sedimentation are similar to or the same as under the Proposed Action. *Id.* For those alternatives relying on West Slope water, the impacts to riparian and wetland areas, recreation, visual or aesthetic impacts, groundwater, and special status species are very similar or identical across all Proposed Action alternatives. For example, with respect to riparian habitat along West Slope river segments, the DEIS repeats the same language for every action **alternative: "Flow changes associated with this alternative are essentially the same as those** described for the Proposed Action. Therefore, impacts on riparian vegetation would be the same **as those described for the Proposed Action."** *See* DEIS 4-261, 4-263, 4-265, 4-267, Table 4.20-2. The pattern holds for recreation along the West Slope rivers. For the Proposed Action, the **COE determined, "Overall, the Project would have a major lo**ng-term adverse impact on boating **on the Fraser River."** *Id.* 4-**373. For every action alternative, the COE concludes: "Impacts to**	*each treatment plant"). Creating interconnects between raw and treated water systems would allow Denver Water to use existing or available water supplies and storage capacity in its South System rather than importing all of the new water from the West Slope. Further, it is likely that projects that connect the North and South systems would be the least environmentally damaging practicable alternatives, because they would minimize damage to the Fraser River aquatic environment. See December 24, 2008 letter from Carol Rushin, Acting Regional Administrator, U.S. Environmental Protection Agency ("EPA") Region 8, to Colonel David C. Press, Omaha District Commander, COE re Public Notice No. 200380523 ("EPA WGFP Section 404 Comments"); Letter from Sullivan Green Seavy LLC to Scott Franklin, COE, re Moffat Collection System EIS: Alternative Screening Report (March 15, 2007). By narrowly defining the purpose and need of the Moffat Project, the COE has foreclosed consideration of less environmentally damaging practicable water supply-oriented alternatives that would potentially fulfill the underlying objectives of the project. This violates NEPA and the 404 Guidelines, and should be corrected in a revised draft EIS for the Moffat Project. See Davis, 302 F.3d at 1119-20; 33 C.F.R. pt. 325 app. B ¶ 9.b.(4) ("the Corps, will in all cases, exercise independent judgment in defining the purpose and need for the project from both the applicant's and the public's perspective."); 40 C.F.R. § 230.10(a). Grand County previously raised these concerns in its comments on the Moffat PDEIS. Letter dated January 24, 2009, from Sullivan Green Seavy LLC to Scott Franklin at 3-4. The COE's response has been unsatisfactory. COE has declined to broaden its statement of purpose and need in the DEIS. It has also failed to study a single action alternative not requiring the annual transbasin diversion of thousands of acre-feet of water from Colorado's West Slope. Grand County urges the COE to correct this*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 10 all river segments under Alternative [] would be similar to those described for the Proposed **Action."** *See id.* 4-382, 4-383, 4-384, Table 4.20-2. Similarly, the COE concluded the Proposed Action as well as each of the action alternatives would result in adverse visual or aesthetic impacts on the Fraser River in May, June, and July of average and wet years. *Id.* 4-406, 4-412, 4-414, 4-415, Table 4.20-2. The COE concluded impacts to groundwater along the Fraser River, **Williams Fork River, and Colorado River "would be similar, but less than those described for the Proposed Action" for Alternatives** 8a, 10a, and 13a. DEIS Table 4.20-2; *see also* 4-211, 4-212, 4-**213. However, the COE did not quantify what "less than" means and it is clear from the very** minor stream flow changes that groundwater impacts will be essentially identical under all action alternatives. For special status species, under the Proposed Action, changes in flow in the Fraser, Williams Fork, and Colorado rivers would adversely affect Colorado River fish by causing water depletions in the upper Colorado River System. *Id.* 4-292. As with other resources, the COE concluded that impacts to special status species would be the same as described under the Proposed Action for all of the action alternatives. *Id.* 4-298, 4-301, 4-302, 4-303, Table 4.20-2. **1.5 The COE Did Not Fully Evaluate Cumulative Alternatives.** When evaluating alternatives that would satisfy the purpose and need of the Moffat Project, the COE may not **reject alternatives that individually would not meet Denver Water's asserted need for** 18,000 AF/year if two or more such alternatives, taken together, could meet that requirement. *Davis v. Mineta,* 302 F.3d at 1121-**22 (failure to "consider [Transportation System Management]** and mass transit *together* and/or in conjunction with alternative road expansion as a means of meeting Project goals . . . represents one **of the most egregious shortfalls of the EA"). Here, the** COE did not sufficiently consider available alternatives that could be combined, and which would be less damaging to the aquatic environment than the action alternatives proposed. *See* 40 C.F.R. § 230.10(a). For example, the COE did not study an alternative combining indirect potable reuse (including but not limited to Alternative 6), reuse (including but not limited to Alternative 8), agricultural water rights (including but not limited to Alternative 13), use of short-term agricultural leases, use of junior water rights, or non-potable reuse. The COE should review these and other water supply alternatives that, used in **combination, could meet Denver Water's asserted needs but would be less environm**entally damaging than the Proposed Action alternatives. Use of such water supplies would prevent adverse impacts associated with dewatering of the Fraser River and Upper Colorado River, which support ecological and recreational values in the Colorado River Basin. *See* EPA WGFP Section **404 Comments at 2 ("Despite the screening criteria used in the [WGFP] DEIS to** eliminate alternatives, other reasonable and less damaging practicable alternative may be available to meet current or future demand when used alone *or in combination* with other **alternatives." (emphasis added)).** **1.6 Alternatives with Less Damaging Environmental Consequences to the Upper Colorado Watershed Were Not Fully Evaluated.** The DEIS appears to discard additional reliance on East Slope supplies for limited reasons. For example, the DEIS limits agricultural water supplies on the South Platte to 3,000 AF/year without supporting facts or analysis. *See*	*omission in a supplemental DEIS for the Moffat Project.* **Response #910-273:** Per 40 CFR 1502.9(c)(1), since the Corps would not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document would not be prepared for the Moffat Project. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Board of Water Commissioners' (Denver Water's) supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the issues would jeopardize Denver Water's ability to meet projected demand needs. The alternative screening process (Alternatives Screening Report, Corps 2007) did consider other

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 11 DEIS 2-26. There are significant agricultural supplies within a reasonable distance from the Moffat wastewater treatment plant that would deliver firm yield to meet the stated needs. These may be more costly, but would have significantly less environmental effects to the Colorado **River. Another example may be to use Denver Water's surplus reusab**le effluent to serve the **existing raw water customers from Denver Water's north end system, resulting in more Moffat** water available for potable demands. At a minimum, the COE should consider an alternative that combines the new agricultural supplies with **the effluent/LIRF's, which would easily** generate the firm yield of 18,000 AF/yr. The DEIS appears also to arbitrarily limit options that involve gravel-pit storage downstream of Denver on the South Platte River. The DEIS provides no rationale for the decision to limit gravel pit storage to 5,000 AF. *See* DEIS 2-21, 2-53. The DEIS states that Denver Water is currently developing approximately 27,000 AF of gravel pit storage but does not address why this storage, or additional sites, could not be used to provide the drought-protection sought by this project. DEIS 5-11. In addition, it would seem logical that some combination of either permanent or temporary transfer of agricultural supplies, coupled with additional gravel pit storage, should be considered as a stand-along option to provide the drought-protection water supplies. Finally, indirect potable reuse, THE least environmentally damaging alternative must undergo analysis. Denver Water is obligated under the Blue River Decree to reuse the water diverted from the Blue River and has substantial quantities of reusable water, especially in dry years. Denver Water states that most of its reusable supplies are currently used for, among other things, exchanges. It is our understanding that most of these exchanges occur up the South Platte **to the majority of Denver Water's storage facilities. It may be a viable alternative to meet the needs of stated "system imbalance" to use these reusable supplies for additional yield to Denver Water's north side, rather** than to its south side. 1.7 **The COE's No Action Alternative is Flawed.** The no action alternative **considers the environmental consequences of not undertaking the action or project at all. "In** requiring consideration of a no-action alternative, the Council on Environmental Quality intended that agencies compare the potential impacts of the proposed major federal action to the known impacts of maintaining the status quo." ***Custer County Action Ass'n** v. Garvey,* 256 F.3d 1024, 1040 (10th Cir. 2001) (emphasis **added). In other words, "the current level of activity is used as a benchmark."** *Id.*; *Colorado Off-Highway Vehicle Coalition v. United States Forest Service*, 505 F. Supp. 2d 808, 817 (D. Colo. 2007). **The COE's no action alternative is not based on "maintaining the status quo." It includes** 3,000 acre-feet of firm yield of additional demand for the City of Arvada. DEIS 2-83, 2-90, 2-91. However, such increment in demand will only exist if the Moffat Project is actually built. *Id.* 1-11, 1-14. Since building the Moffat Project is not maintaining the status quo, COE may not include the 3,000 acre-feet of additional demand for Arvada in the no action alternative. By doing so, COE unlawfully inflates the purported system shortage by 20%. **COE's definition of** the no action alternative also does not maintain the status quo **because it includes using Denver Water's strategic water reserve.** *Id.* 2-85. This reserve was not	water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the "long list" passed the initial Screen 1A, as discussed in Draft Environmental Impact Statement (DEIS) Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro Wastewater Reclamation District (MWRD) Plant. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1 (Logistics – Geographic Location), must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: "Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need." This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b–10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 12 included in Denver Water's total system supply "because it is not considered available for meeting the total system demand under normal operating conditions . . . ." *Id.* 1-14; *see id.* 1-10 (30,000 acre-foot safety factor "is intended to address uncertainties and/or unforeseen events"). Since the strategic water reserve was excluded as a source of supply for the action alternatives, it should not be included as a source of supply for the no action alternative. Including such supply in the no action alternative distorts the environmental impact baseline against which the action alternatives are compared. Because COE failed to use the current level of Denver Water activity as a benchmark, its no-action alternative fails to comply with NEPA's implementing regulations. COE's analysis of alternatives is therefore flawed and fails to provide the rigorous analysis NEPA requires. 2. **The Moffat Project and Windy Gap Firming Project Are Cumulative Actions Requiring Analysis in a Single EIS.** Cumulative actions are actions "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). Although section 1508.25(a)(2) uses the word "should," courts have made preparation of a single EIS mandatory in the case of cumulative actions: "Under § 1508.25, two or more agency actions *must* be discussed in the same statement where they are . . . 'cumulative' actions." *Klamath-Siskiyou Wildlands Center v. Bureau of Land Management,* 387 F.3d 989, 998-99 (9th Cir. 2004) (emphasis added). As explained in *Klamath-Siskiyou*, the environmental analysis must be done in a single document "when the record raises 'substantial questions' about whether there will be 'significant environmental impacts' from the collection of anticipated projects." *Id.* at 999. *See Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1215 (9th Cir. 1998) (single EIS required for five timber sales in same watershed). The WGFP and Denver Water's Moffat Project are cumulative actions. The Municipal Subdistrict of the Northern Colorado Water Conservancy District ("Subdistrict") is proposing to develop 26,000 AF/year of firm yield, primarily through additional transbasin diversions at the Windy Gap Project diversion site on the Colorado River, which is downstream of the confluence of the Colorado and Fraser rivers. DEIS 5-15. Because the Colorado-Big Thompson project ("C-BT") already captures nearly all of the available streamflow from the Colorado River system above Windy Gap (except for the minimum bypass flows), the vast majority of the yield to Windy Gap is derived from inflows from the Fraser River. Therefore, both projects divert from essentially the same source. The WGFP is estimated to decrease average annual flows in the Colorado River below Windy Gap by 14% compared to existing conditions.[4] *See* December 19, 2008 letter from Larry Svoboda, Director NEPA Program, to Michael Ryan, Regional Director, [4] Owing to an inflated value for existing diversions, the percent increase in reductions in streamflows over existing conditions is significantly higher than those reported in the WGFP DEIS. Nevertheless, EPA's conclusions pertain to the lower percent increases shown in the DEIS.	various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented. North-South System Interconnect Linking the South System and North System would not address the reliability, vulnerability and flexibility components of the Purpose and Need statement. If Gross Reservoir empties, an interconnect requires the unimpeded operation of Denver Water's South System. Loss of operation of a portion of the South System could exacerbate the water supply reliability problem and possibly cause an interruption of service to customers if water cannot be delivered via the interconnect. Alternatives 4 and 5 evaluated during the screening process incorporated an interconnection between the South and North systems. In addition, portions of Conduit X were included in several alternatives (Alternatives 2, 3, 4, 5, 10c, 10d, 10e, and 11). However, Conduit X in its entirety was not considered in lieu of the South System interconnects included in Alternatives 4 and 5. South System interconnects high in the system from either the North Fork South Platte River at the Roberts Tunnel to the Bear Creek drainage (Alt. 4a) or from Dillon Reservoir to the Clear Creek drainage (Alt. 5) were included in lieu of Conduit X to address the location component of the Purpose and Need statement. New firm yield must be provided to the Moffat Treatment Plant to address reliability, vulnerability, and operational flexibility issues. The lower in the South Platte River system the interconnect is located, the more vulnerable and potentially less reliable Denver Water system is due to unplanned outages, including natural and manmade disasters.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 13 Great Plains Director, Bureau of Reclamation, re Windy Gap Firming Project, Northern Colorado, Draft Environmental Impact **Statement, CEQ #20080333 ("EPA WGFP DEIS Comments") at 2, 10. The Moffat Project Proposed Action would further reduce Colorado River** flows below Windy Gap. DEIS App. H-7, Table H-7.1.[5] Other impacts to the Colorado River will result from changes in the timing of flows below the Williams Fork Reservoir due to changes in the operation of the reservoir. WGFP DEIS 3-46. Combined with the Moffat Project, streamflow in the Colorado River below the Windy Gap diversion will be reduced by about 21% (wet years).[6] EPA WGFP DEIS Comments at 2, 10. Together these impacts are cumulatively significant and should be analyzed in the same EIS. 40 C.F.R. § 1508.25(a)(2). EPA Region 8 **shares Grand County's strong concerns about the cumulative impacts of** the Moffat Project and the WGFP. Commenting on the WGFP DEIS, EPA said: > **This project's impacts to the Colorado River, coupled with other** reasonably foreseeable actions, could be severe, with irreparable harm done. *EPA has objections to the cumulative impacts to the Colorado River.* We believe much more attention should be given to what these projects are doing in total to the Colorado River. EPA WGFP DEIS Comments at 10 (emphasis added);[7] *see also* EPA WGFP Section 404 Comments at 2 (concluding WGFP DEIS did not com**ply with the COE's NEPA implementing** regulations and recommending the COE hold the Section 404 permit in abeyance because, *inter alia, a revised cumulative impacts assessment is required* that adequately evaluates and discloses long-term impacts associated with WGFP, the Moffat Collection System, and C-BT). EPA observed that average annual stream flow in the Colorado River at Hot Sulphur Springs has declined 64% from historical levels, due to diversions from Moffat, C-BT, and Windy Gap diversions. EPA WGFP DEIS Comments at 10. The prospect of removing an additional 21% of the remaining 36% of native flow led EPA to conclude that impacts of the WGFP in combination with past and reasonably foreseeable actions, including the Moffat Project, reach a level of significance that is objectionable. *Id.* at 11; *see also* EPA WGFP Section 404 Comments at 5, 7 (concluding that impacts of WGFP in combination with past and reasonably foreseeable actions, particularly the Moffat Project *are significant and unacceptable* to an aquatic resource of national importance, and calling for *critical attention* to the cumulative impacts of water diversions on the Upper Colorado River). [5] As noted in 1.4.1 above, flow reductions are nearly identical under all of the action alternatives. DEIS App. H-7, Table H-7.1. [6] Once again, the percent increase in reductions over *existing conditions* will be substantially greater than reported in the WGFP DEIS. [7] EPA also suggested that the Federal government consider a single EIS for the WGFP, the Moffat Expansion Project, and other water supply projects in its scoping comments on the WGFP. Letter dated November 4, 2003, from EPA to United States Bureau of Reclamation.	Denver Water's Collection System is vulnerable to natural and manmade disasters and system failures because approximately 90% of available reservoir storage and 80% of available water supplies rely on the unimpeded operation of Denver's South System. Loss of operation of any portion of the South System could require more water from the Moffat Collection System to meet customer's water demands. If an interconnect was located downstream of several of Denver Water's critical South System facilities, including Roberts Tunnel, Dillon, Eleven Mile, Cheesman, Antero, and Strontia Springs reservoirs, Denver Water's system would remain vulnerable to unplanned outages. Loss of operation to these South Platte River facilities could affect the ability to deliver water to a downstream interconnect. In summary, the Purpose and Need of the Project is to add new yield to the Moffat system at the location where it is needed. A connection between the North and the South systems does not meet this Project purpose. Similarly, a South system connection does not help to reduce the imbalance of the system and the vulnerability created by that imbalance. Various alternatives that used the South Platte Basin as a component of an alternative were considered. In addition, these alternatives did not survive the cost screen because of the high cost of delivery to the Moffat Collection System. ***Comment #910-353*** *(ID 2522)**:*** *The COE Should Reassess Its Decision to Eliminate Alternatives from Detailed Consideration Based on Cost Alone. In Screen 1c, the total potential project development costs were estimated for each of the 34 alternatives that passed the first two screens. DEIS 2-14. The total costs were then converted to a "dimensionless, relative-cost screen by expressing each estimate in terms of the estimated least cost*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 14 In comments on the Moffat PDEIS, EPA Region 8 reiterates that the impacts of the **Moffat Project "in c**ombination with past and reasonably foreseeable actions, are likely **significant." EPA Moffat PDEIS Comments at 9. These comments apply expressly to the Colorado River. EPA explains that "further proposed reductions to the existing hydrograph from** additional water diversion (the proposed and future projects) will reduce the resiliency of the aquatic ecosystem and place it at a much higher risk of substantial and irreversible changes to the **aquatic community."** *Id.* Further, EPA warns that the cumulative effects analysis set forth in the **Moffat PDEIS "did not consider the potential for threshold, or tipping point, responses within the Colorado River," and that "[i]ncremental impacts of proposed diversions on top of the already** reduced hydrograph (with altered timing of flows) increases the likelihood for the aquatic ecosystem to approach a tipping point beyond which the ecosystem may exhibit dramatic and **unacceptable changes, potentially including loss of native fish species."** *Id.* at 2. EPA also cautions **that it has "serious concerns with [the] 21% reduction in flows to the Colorado River below Windy Gap diversion point that will also be exacerbated by the Moffat proposed action."** *Id.* **These strong statements undermine the COE's conclusion that "[o]verall,** cumulative effects to both surface and groundwater is considered minor, with the exception of several of the upper tributaries of both the Williams Fork and the Fraser rivers where moderate effects to stream flow could be expected during average to wet ye**ars." DEIS** 5-56. A single EIS analyzing the impacts of both projects is not a mere formality. Without such an EIS, there can be no assurance that the COE and the Bureau of Reclamation, collectively, have taken a hard look at alternatives to the simultaneous operation of the Moffat Project and WGFP, the cumulative environmental impacts of those two projects (with emphasis on the hydrology, water quality, and aquatic resources of the Colorado River), and measures to mitigate those impacts. Here, a single EIS is particularly appropriate, given the complex interrelationships among present and future diversions from the Upper Colorado River Basin. As EPA said in its comments to the COE regarding WGFP: > EPA believes at a minimum, the applicant should provide a cumulative effect analysis that addresses the collective effects of major water diversions (past present and reasonably foreseeable) in the upper Colorado Basin, including C-BT, Moffat and Windy Gap . . . . EPA is willing to work with [Bureau of Reclamation], the Corps and the applicant to identify the appropriate scope and methodology for a cumulative impacts analysis to adequately **determine and disclose the projects' cumulative adverse impacts** for consideration of compliance with the Section 404(b)(1) Guidelines. EPA WGFP Section 404 Comments at 7. EPA repeats this same admonition in its comments on the Moffat PDEIS. EPA Moffat PDEIS Comments at 2. *See also Kleppe v. Sierra Club*, 427 **U.S. 390, 413 (1976) ("Cumulative environmental impacts are, indeed,** what require a **comprehensive impact statement."). Such complexity argues for use of adaptive management,**	*alternative (a ratio)." Id. 2-15. The least cost alternative, which is the Proposed Action (Alternative 1a), has a projected cost of $4,500/AF and was given a cost index of 1. Moffat Expansion Project EIS Alternatives Screening Report 2-40 (Dec. 2006) ("Alternatives Screening Report"). The relative cost index of the other alternatives is simply a multiple of the cost of Alternative 1a: thus, a relative cost index of 5.0 means the alternative has a projected cost five times greater ($22,500) per acre foot than Alternative 1a. Id. Based on the COE's review of other major raw-water projects costs, a cost index of 4.0, or $18,000/AF, "falls within the range of other major raw-water project costs in the region." Id. The COE does not elaborate on what the full range of project costs was or indicate the highest project cost being developed in the region. Although $18,000/AF is "within the range" of costs for major water projects, the COE eliminated all alternatives with a relative cost index greater than 5.0 from further evaluation. DEIS 2-15. Nineteen of the 34 remaining alternatives were eliminated solely on this basis.[3] With the exception of a preliminary screen of storage sites, no analysis was made of environmental costs of the excluded alternatives. Nor was any finding made that any of these alternatives was unreasonable, infeasible, speculative, remote, impractical, or ineffective. FOOTNOTE: [3] The excluded alternatives are 2a.1, 2b, 3a.1, 3b, 4a, 5a, 5b, 6a, 6b, 7a, 7b, 9a, 9b, 10c, 10d, 10e, 12a, 13b, and 14. The failure to conduct any environmental analysis of the alternatives that passed Screen 1B but had a relative cost index of greater than five violates the 404 Guidelines and NEPA. 40 C.F.R. §§ 230.10(a), 230.12(a)(3)(i). Under the 404 Guidelines, the COE must ensure that the LEDPA has not been eliminated from further consideration. Id. The COE cannot reasonably determine the LEDPA was not eliminated from further consideration without the benefit of a comparative environmental analysis of the alternatives discarded*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 15 with development of a stream management plan and monitoring to ensure that the operation of both projects contributes to achieving the management plan's goals. To date, the COE's response to these concerns has been unsatisfactory. COE states its "analysis of cumulative effects of the project on the Colorado River is sufficient in the DEIS and thus additional modeling and analysis is not warranted." *See* COE Response to EPA PDEIS comments (June 16, 2009) at 4. With respect to Grand County's analysis that a single EIS is required for the Moffat Project and the Windy Gap Firming Project, the COE has provided no substantive written response. Grand County therefore requests that the COE address this situation. 2.1 **The DEIS's Cumulative Impact Analysis Is Flawed.** A cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . ." 40 C.F.R. § 1508.7. General statements in an EIS about a project's "possible effects and some risk do not constitute a hard look" at cumulative effects "absent a justification regarding why more definitive information could not be provided." *Klamath-Siskiyou Wildlands Center v. BLM,* 387 F.3d 989, 993 (9th Cir. 2004). The analysis of cumulative impacts "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." *Id.* at 994 (internal quotations and citations omitted). In assessing cumulative effects, the EIS "must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and difference between the projects, are thought to have impacted the environment." *Great Basin Mine Watch v. Hankins,* 456 F.3d 955, 971-72 (9th Cir. 2006). The DEIS fails to provide an adequate analysis of the cumulative effects of the Moffat Project on resources in Grand County. For example, the analysis of cumulative surface water flow impacts for rivers and streams in Grand County is superficial, consists of a few general sentences, and fails to cite specific data to support its broad conclusions. DEIS 5-39 to -40. The same is true for the DEIS's cumulative effects discussion for water quality (*id.* 5-40), aquatic resources (*id.* 5-46 to -47), recreation (*id.* 5-49 to -50), visual resources (*id.* 5-51 to -52), and socioeconomics (*id.* 5-53 to -54). Such "conclusory remarks" on cumulative impacts are insufficient to discharge the COE's obligations, as they "do not equip a decisionmaker to make an informed decision about alternative courses of action or a court to review the [agency's] reasoning." *Province of Manitoba v. Salazar,* No. 02-2057 (RMC), 2010 U.S. Dist. LEXIS 19982, at *27 (D.D.C. Mar. 5, 2010) (Bureau of Reclamation failed to take a hard look at cumulative impacts of transbasin diversion of water from Missouri River basin). EPA Region 8 has recognized that the COE's analysis of cumulative impacts is deficient. In comments on the Moffat PDEIS, it explains "site specific characterization and disclosure of the past diversion impacts to aquatic ecosystems, including perennial streams, associated wetlands, and aquatic habitats, have not been adequately evaluated or disclosed for consideration in the cumulative impact analysis." EPA Moffat PDEIS Comments at 9 (emphasis added). EPA	*solely based on relative cost. Under NEPA, cost, by itself, does not necessarily make an alternative unreasonable, infeasible, remote, speculative, impractical, or ineffective. See Province of Manitoba v. Norton, 398 F. Supp. 2d 41, 64-66 (D.D.C. 2005). In Province of Manitoba, the district court ruled that the Bureau of Reclamation failed to take NEPA's hard look when it discarded from consideration an alternative of full treatment of Missouri River water prior to its approving the proposed transbasin diversion of such water to the Souris River, part of the Hudson Bay Basin. Id. at 64-66. The Bureau discarded such alternative from full consideration on the basis of economic reasons including the multi-million dollar increase in the cost of building a new water treatment plant in a remote location at the intake location for the water. The Court rejected such reasoning: "Without some reasonable attempt to measure [environmental] consequences instead of bypassing the issue out of indifference, fatigue, or through administrative legerdemain, the Court cannot conclude that [the Bureau] took a hard look at the problem." Id. at 65. The environmental costs of diverting the vast majority of the additional 18,000 AF/year of water from the Upper Colorado Watershed substantially outweigh the monetary costs of several alternatives that the COE rejected on cost grounds alone. Additionally, a thorough analysis of those rejected alternatives will better inform the COE and the public as to available options for avoiding the diversions that Denver Water has proposed. Grand County urges the COE to study the alternatives it has eliminated on cost grounds alone and to incorporate such study into the DEIS. Grand County raised these concerns in its January 24, 2009 letter addressing the Moffat Project PDEIS. COE responded that its approach is "consistent with the 404(b)(1) Guidelines for screening alternatives," but provided no explanation of how its approach complies with NEPA and declined to study any of the alternatives it*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 16 therefore advi**ses that "[h]istorical operation of the [Moffat Project] and its impacts to the aquatic** ecosystem in the upper Fraser and Williams Fork River basins need to be fully evaluated and disclosed, including the incremental impacts from the proposed project and other projects in the **basin, as well as potential flow reductions from the proposed Windy Gap Project."** *Id.* Grand **County shares these concerns and adopts EPA's recommendation.** As discussed above in section 2, Grand County also believes that COE has grossly understated the probable cumulative impacts of the Moffat Project in conjunction with other past, present, and reasonably foreseeable future projects. Most importantly, the DEIS fails to take into account the dramatic impacts to the aquatic environment that have occurred because of existing water projects that divert from the upper Colorado River basin. The probable impacts are significant, and the COE fails to acknowledge this basic fact. As EPA underscores, the existing peak flow conditions in the u**pper Colorado River Basin are "very different from historical conditions," due to the cumulative effect of numerous water diversion projects including the** Colorado-**Big Thompson, Moffat, Windy Gap, and Denver Water's water development in the** basin. *Id.* at 2. **Further, COE's "cumulative effects analysis did not consider the potential for threshold, or tipping point, responses within the Colorado River."** *Id.* As explained by EPA, **"[i]ncremental impacts of proposed diversions on top of the already reduced hyd**rograph (with altered timing of flows) increases the likelihood for the aquatic ecosystem to approach a tipping point beyond which the ecosystem may exhibit dramatic and unacceptable changes, potentially **including loss of native fish species."** *Id.* Thus, **EPA "believes that the impacts of [the Moffat Project], in combination with past and reasonable foreseeable actions, are likely significant."** *Id.* at 9. Grand County agrees with **EPA's** conclusions. **In its response to EPA's comments,** and with our explanation, the COE asserted that **"[t]he Corps' analysis of cumulative effects of the project on the Colorado River is sufficient" and that "additional modeling and analysis is not warranted." COE Response to EPA PDEIS** Comments at 4. Grand County disagrees with this response, and urges the COE to correct the errors that both EPA and Grand County have identified. 3. **The DEIS's Description of Existing Conditions Must Be Supplemented.** An understanding of baseline conditions in the Fraser Basin and Upper Colorado Watershed, including but not limited to those that result from ongoing manmade disturbances, is **essential under NEPA. "Without establishing the baseline conditions which exist [before the** proposed action occurs], there is simply no way to determine what effect the proposed [action] . . . **will have on the environment and, consequently, no way to comply with NEPA."** *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). Manmade disturbances in the Fraser Basin are significant. The DEIS reports that the uppermost diversion in the Fraser Basin is the Berthoud Canal, a transmountain structure which diverts an average of approximately 670 AF/year of water to the east side of the divide. DEIS 3-17. Below the Berthoud Canal is De**nver Water's Moffat Collection System, which contains 31** primary diversion points. *Id.* 3-17 to -18. According to the DEIS, nearly 28 miles of open canals,	*improvidently eliminated on cost grounds alone. For the reasons discussed above, Grand County disagrees that COE's approach is consistent with the section 404 Guidelines, and reasserts that such approach violates both the 404 Guidelines and NEPA.* **Response #910-353:** An alternative is considered practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR 230 Subpart B). The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. It is important to emphasize, however, that it is not a particular applicant's financial standing that is the primary consideration for determining practicability, but rather characteristics of the project and what constitutes a reasonable expense for these types of projects that are most relevant to practicability determinations. The Corps conducted a review of the cost-screen threshold, as noted in the comment and referenced in the Alternatives Screening Report (Corps 2007) as Boyle 2005. Five projects were selected for the comparative analysis: Windy Gap Firming Project (WGFP), Northern Integrated Supply Plan, Southern Delivery System, East Cherry Creek Valley Northern Project, and Aurora South Platte Project. The estimated project costs ranged from $9,300/acre-feet (AF) to $23,700/AF. The study concluded that a 4.0 cost threshold of $18,000/AF falls within the range of other project costs, and that a broad range of potential alternatives remained for consideration after applying the Cost Screen, The study and the Corps concluded that it is a reasonable threshold. The remaining alternatives also represent a reasonable cross-section of types of alternatives (i.e., transmountain

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 17 pipes, and siphons collect flows from numerous contributing drainages and direct it to the Moffat Tunnel. *Id.* 3-17. Denver Water reports that in the 20-year period ending in 2005, the Moffat Tunnel alone conveyed an average of 55,800 AF per year of water under the Continental Divide. *Id.* Today, 60,900 AF/year are diverted from the Fraser River Watershed. *Id.* 3-87. Likewise, manmade disturbances in the Upper Colorado Watershed are significant. On average, an estimated 65% of the total water in the Upper Colorado River System is diverted to the east slope – a percentage that will increase to 85% if b**oth the WGFP and Denver Water's Moffat** Expansion Project are implemented. Although both the Fraser Basin and Upper Colorado River Basin already have been severely degraded by human activities, the DEIS does not explain the impacts that have been caused by these activities. For example, as a result of diversions to the east slope, the following impacts have occurred in Grand County in recent years largely due to the combined impacts of C-BT, WGFP, and Moffat Tunnel Collection System operations: • insufficient flows for agricultural irrigators to pump water from the Colorado River; • insufficient flows for Hot Sulphur Springs to pump water for its public water system; • insufficient flows to preserve fishing on the Colorado River, despite the instream flow requirements of the June 23, 1980 Memorandum of Understanding; • high temperatures in the Colorado River above Williams Fork, resulting in fish mortality; • insufficient flows in late summer to maintain commercial fish ponds on some ranches; • reduction in the number of kayaking days; • death of cottonwoods along the river; • spread of whirling disease; • reduced water quality in Grand Lake; • establishment of the didymo (rock snot), a nonnative algae that creates thick mats of moss that attach to rocks creating nuisances; and • increased nutrient loading and other potential impacts from birds (some non-native, such as pelicans) attracted to the Windy Gap Reservoir. Documentation of these existing conditions may be found in a number of technical reports, including Hydrosphere Resource Consultants, Inc., Upper Colorado River Basin Study, Phase II (May 29, 2003); and Coley/Forrest, *Grand County: Its Economy & Water Resources* (July 2007).	diversion, reuse, aquifer storage, and purchase of agricultural water rights). As stated in DEIS Section 2.1.3, the Corps decided upon a cost threshold of 5.0, instead of 4.0, to be more conservative and inclusive to ensure a reasonable range of alternative remained in the EIS analysis. The Corps finds this approach consistent with the Section 404 regulations for screening alternatives. ***Comment #910-354*** *(ID 2521)**:*** *The Alternatives Analysis Is Unreasonably Limited Because It Exclusively Studies Alternatives Involving the Transbasin Diversion of Water from the Fraser River. Although the COE contends that the action alternatives "encompass a broad range of potential water supplies and storage sites," they all involve the transbasin diversion of water from the Fraser and Williams Fork rivers and their tributaries, and result in additional depletions to the Colorado River. DEIS 2-19, 2-23 ("All of the action alternatives would use water supplies derived from the Moffat Collection System (North System)."). The COE fails to study a single action alternative that does not involve such diversions. This restriction unreasonably limits the COE' analysis to variations on the same theme. For example, Denver Water could increase flexibility in and reliability of its treated water system by increasing treated water conveyance capacity. The DEIS indicates that that treated water shortages would have occurred in water years similar to 1955, 1971, 1973, and 1974, under all of the action alternatives. (DEIS Appendix K-14). This is because the treated water shortages are due to conveyance capacity constraints as opposed to lack of supply. Conveyance capacity upgrades could achieve the stated purpose and need for the project while reducing the amount of water diverted from the west slope. NEPA mandates unequivocally that the COE "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 18 Where existing conditions are presented, the information is not up-to-date. For example, water quality and aquatic life sections are based largely on stale information from the Two Forks EIS which has been supplemented to some degree. A considerable amount of more recent data and information has not been considered, indicating that the level of research was less than rigorous and may not be accurate for existing conditions. In addition, much of the discussion about fishery and macroinvertebrate conditions in the Fraser River does not consider that there have been significant habitat improvement projects (Fraser River Enhancement Project, Granby Improvements), a new wastewater treatment plant that alters the return flows but more significantly removes ammonia which was a limiting factor for aquatic life, or provides much consideration to the changing ecology as a result of Whirling Disease. A more detailed description of the current effects of on-going water diversion projects (e.g., conditions before and after the C-**BT project, the Windy Gap project, and Denver Water's** diversions through the Moffat Tunnel) is necessary to understand how these conditions came about as well as how they can be mitigated. See *Lands Council v. U.S. Forest Service*, 395 F.3d **1019, 1028 (9th Cir. 2004) (holding EIS for a timber sale "should have provi**ded adequate data of the time, type, place, and scale of past timber harvests and should have explained in sufficient **detail how different project plans and harvest methods affected the environment.")**. A more detailed description is especially important here because of the complex interactions among the various diversions from Fraser River and Colorado River and their tributaries and the possibility **that implementation of the Moffat Project could be a "tipping point," resulting in** disproportionately greater impacts in the Fraser River and Colorado River basins than otherwise would result if proposed Moffat Project depletions did not occur in an already severely degraded stream system. As EPA explains: > The identification of the effects of past actions is critical to understanding the environmental condition of the area. Knowing whether the resource is healthy, declining, near collapse, or completely devastated is necessary for determining the significance of any added impacts due to the proposed project. The NEPA document should consider how past activities have historically affected and will continue to detrimentally affect the resources of concern. EPA, Consideration of Cumulative Impacts in EPA Review of NEPA Documents, EPA 315-R-99-002/May 1999, § 4.3. **4. The COE's Analysis of Hydrologic Conditions in the Upper Colorado River Watershed Is Flawed.** Some of the most significant impacts to Grand County result from hydrologic changes associated with flow depletions. The analysis of hydrologic changes should be revised to insure that such changes are accurately reported.	*which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). This consideration of alternatives is critical to the goals of NEPA: The goal of the statute is to ensure "that federal agencies infuse in project planning a thorough consideration of environmental values." The consideration of alternatives requirement furthers that goal by guaranteeing that agency decisionmakers "[have] before [them] and take[] into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance." NEPA's requirement that alternatives be studied, developed, and described both guides the substance of environmental decisionmaking and provides evidence that the mandated decisionmaking process has actually taken place. Informed and meaningful consideration of alternatives . . . is thus an integral part of the statutory scheme. Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988) (emphasis in original) (citations omitted). Here, by brushing aside all alternatives not involving transbasin diversions from the Upper Colorado Watershed, the COE has ignored NEPA's statutory mandate that it consider "all possible approaches" to Denver Water's Moffat Project. Similarly, Grand County believes that the COE improperly eliminated from consideration alternatives that would be less damaging to the aquatic environment, in contravention of 40 C.F.R. pt. 230. To correct these errors, the COE must fully evaluate (not just raise and dismiss) a reasonable range of alternatives that does not rely on such transbasin diversions. See EPA WGFP Section 404 Comments at 4 ("Less environmentally damaging alternative water supplies potentially available to the applicant should focus on water supply methods that are both cost effective and prevent chronically low flows or dewatering from critical water resources supporting both ecological and recreational values . .*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 19 **4.1. Actual Impacts and Observed Conditions Should Be Presented in Favor of Modeled Predictions.** The analysis of hydrologic conditions in the DEIS must accurately document changes in magnitude, frequency, duration, timing and rate of change before impacts of flow depletions on the aquatic environment can be understood. (*See* B.D. Richter, J.V. Baumgartner, J. Powell and D.P. **Braun, "***A Method for Assessing Hydrologic Alteration within Ecosystems***," 10** Conservation Biology 4 (1996)). NEPA requires EISs to contain high quality information and accurate scientific analysis. 40 C.F.R. § 1500.1(b). When relevant information is incomplete or unavailable except at an exorbitant cost, the EIS must disclose that the information is incomplete or unavailable and discuss its significance. *Id.* § 1502.22. To the extent, therefore, that information on actual impacts to the Fraser Basin and Upper Colorado River Basin is available or readily obtainable, it should be used in preference to predicted impacts from modeling. As discussed above, an understanding of the actual impacts of the Moffat Project requires a comparison of pre-Moffat Project conditions with *actual* existing conditions. Only then will predictions of future conditions be meaningful. Moreover, it is important to recognize that models have their limitations: > I sometimes think we place too much faith in models -- computer programs, or similar patterns -- rather than walking the ground, looking, seeing, feeling. Models, rather than improving thought, often impose a barrier to thought. We get so wrapped up in our analogue we forget that it is reality we seek to describe. *Utahans for Better Transp.* ***v. U.S. Dep't of Transp.***, 180 F. Supp. 2d 1286, 1290 (D. Utah 2001), *modified on other grounds,* 319 F.3d 1207 (10th Cir. 2003). **4.2 The Model Does Not Accurately Describe Existing Diversions and Therefore Under-Reports the Magnitude of Changes in Diversions That Will Be Caused by the Proposed Action.** The hydrologic model does not use existing levels of diversions in Grand County against which to measure impacts of flow depletions. The *actual* reported average annual diversions through the Moffat Tunnel are around 48,000 AF per year. (See Attachment 1 of this letter). In contrast, the DEIS uses a modeled number for Moffat Tunnel diversions of around 64,000 AF. DEIS, Table H-**7.1. Thus "current" depletions are over**- reported by 16,000 AF on average which gives an inaccurate picture of the existing baseline co**nditions. "Without** establishing the baseline conditions which exist . . ., there is simply no way to determine what effect the proposed [action] will have on the environment and, consequently, no way to comply with NEPA. ***Half Moon Bay Fishermans' Mktg Ass'n*** *v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). The same error occurs for Gumnlick and Roberts Tunnels – higher modeled numbers - **instead of actual diversion were used for "current" conditions.** These errors become especially important when trying to understand the significance of the changes between existing conditions and future conditions. The modeled percentage differences in depletions are much smaller, and hence appear less significant, than if actual	*. .")*; *EPA Moffat PDEIS Comments at 4 (EPA recommends that COE revise the Moffat PDEIS "with a broader purpose and need statement and additional alternatives to ensure that less environmentally damaging practicable alternatives are analyzed in the EIS.").* **Response #910-354:** Please see the response to Comment ID 2520. Treated water conveyance capacity would not meet the Purpose and Need of the Moffat Collections System Project to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. ***Comment #910-332*** *(ID 2520)**:*** *Alternatives are variations on a single theme. The alternatives that were evaluated in the DEIS are really variations on a single theme. Each of the action alternatives will likely cause or contribute to significant degradation of the Upper Colorado River System. In three of the alternatives, 8a, 10a, and 13a, a small portion of the new 18,000 AF of firm yield is sourced from water other than the West Slope. Nonetheless, the environmental consequences of these alternatives to the Fraser and Williams Fork rivers, their tributaries, and the Colorado River are virtually identical to the Proposed Action and Alternative 1c, which source water exclusively from the Upper Colorado River Basin. All of the action alternatives will deplete stream flows in those rivers. The depletions*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 20 diversions are used as the point of comparison. When the actual diversion records exist for the Moffat Collection System, there is no rational basis to rely on a model. **4.3 The Model Study Period Is Inadequate to Evaluate West Slope Impacts.** A model study period of 1947 to 1991 was used. DEIS 1-15, 1-16, 4-10. This period overstates projected stream flows and therefore understates resulting impacts to the Fraser Basin and Upper Colorado River Basin in dry years. Extending the model study period through approximately 2005 to capture drought conditions would result in a more accurate representation of water demands, stream flows, reservoir operations. *See* Hydrosphere Resources Consultants, Inc., Upper Colorado River Basin Study, Phase II 75 (May 29, 2003) (discussing impacts of 2002-2003 drought). As the DEIS itself points out in its discussion of River Segments, the 1975-2004 **period is "relevant because it is representative of** existing demands, facilities, and operations, and **their effects on flows in Colorado's streams." DEIS** 3-16. The DEIS provides no justification for omitting 2002 from its summary of annual changes in flow for the five driest years. We understand that single drought years, such as 2002, may not change the relative magnitude of Denver Water Moffat system diversions compared to other dry years. However, a comparison of the cumulative effects should be made to the lowest and highest flow records available to fully understand the magnitude of potential future effects. Many streamgages in the Fraser Basin, including the Moffat Collection System modeling area, recorded some of the highest streamflows in years just prior to the 2002 drought, and certainly recorded the lowest streamflows ever during this time period which are not included in the DEIS modeling study period. The DEIS c**onsiders the "Top 5" driest years at several locations throughout the basin of** impact for its effects analysis. However, if the model study period included the recent drought years, many of these five years would be replaced, as highlighted on the table below. Any evaluation of effects to streamflow, water operations, water quality, stream morphology, recreation, etc. may be significantly inaccurate without considering this data. Colorado River High/Low Annual Streamflow Comparison 1950 – 2005 1950-2005 / 1954-2005 / 1962-2005 / 1950-2005 Fraser at Winter Park / Colorado blw Baker Gulch / Colorado nr Kremmling / Colorado nr Dotsero Top 5 Wettest Year Total AF / Year Total AF / Year Total AF / Year Total AF 1984 34,081 / 1984 79,294 / 1984 1,772,380 / 1984 3,064,944	*will adversely impact Colorado River fish, recreational boating on the Fraser River, and visual and aesthetic resources on the Fraser, regardless of which action alternative is ultimately implemented. The uniformity of impacts across alternatives calls into question the range of alternatives that was evaluated and underscores the likelihood that the LEDPA was discarded from further consideration during the flawed screening process. Under Alternative 8a, reusable return flows diverted from the South Platte River would be stored in newly constructed gravel pits along the South Platte. However, "changes in surface water hydrology would still be similar to the Proposed Action because of the manner in which Denver Water would use their additional supplies at Gross Reservoir and the gravel pits . . . . Reusable water would be pumped back to the Moffat Collection System infrequently and only as needed to supplement Denver Water's Moffat supplies." DEIS 4-137 (emphasis added). Alternative 8a only reduces diversions of Fraser River water through the Moffat Tunnel by 1.5% compared to the Proposed Action. Id. 4-140. Diversions of Fraser River water would increase in 34 years out of the 45-year study period under Alternative 8a, just as they would under the Proposed Action. Id. 4-36, 4-140. Not surprisingly, impacts to water quality, floodplain, and stream morphology and sedimentation for the Fraser River are repeatedly found to be "similar to those described in the Proposed Action." Id. 4-141 to -142. By "similar," it is apparent the COE means impacts under the two alternatives will be virtually indistinguishable. This pattern repeats itself with respect to the Williams Fork River, for which diversions through the Gumlick Tunnel in wet years are the same, and differ by only 300 AF per year in average compared to the Proposed Action. Id. 4-59, 4-142. Surface water impacts are the same as under the Proposed Action. Id. 4-142 to -143. Likewise, decreased flows in the Colorado River and predicted impacts to surface*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 21 1957 33,045 / 1983 77,719 / 1983 1,321,769 / 1983 2,394,818 1995 32,595 / 1997 77,054 / 1997 1,260,346 / 1997 2,370,025 1983 31,712 / 1995 72,782 / 1962 1,239,785 / 1957 2,338,400 1996 23,256 / 1986 66,978 / 1996 1,141,010 / 1962 2,332,556 Top 5 Driest Year Total AF / Year Total AF / Year Total AF / Year Total AF 1966 5,017 / 1977 25,856 / 1964 418,582 / 1981 850,017 1964 4,706 / 1989 25,712 / 1981 406,927 / 2004 829,383 2002 4,617 / 1981 22,787 / 1963 401,375 / 1954 803,510 1963 4,557 / 1954 20,353 / 2004 373,800 / 1977 766,998 1954 4,011 / 2002 18,063 / 2002 362,861 / 2002 626,028 *The years highlighted in yellow are NOT included in the DEIS modeling for these locations. Further, the record-low streamflows in 2002 and 2003 are likely to result in carry-over effects on regional water operations, water storage, water administration, water quality, recreation and other aspects that should be incorporated into the modeling for the Proposed Action. The dramatic changes in water operations and water supplies in the years following 2002 are an example of why this period needs to be included in the assessment of impacts. For example, the four highest total annual diversions for the Windy Gap Project, which is located downstream of the Moffat Collection System, occurred in the years immediately following 2002; 2003, 2005, 2006 and 2007. This is likely due to significantly increased demand for water to **refill Windy Gap users' reservoirs, coupled with significant storage space available in general** and, in particular, in Lake Granby. 4.4 **Using "Full Use Existing System" As the Baseline Masks the True Impacts to Stream Flows on the West Slope**. The DEIS erroneously uses Full Use Existing System as the baseline. This hypothetical baseline may be appropriate in determining cumulative impacts, but it is meaningless and misleading as an indicator of the individual significance of the impacts of the proposed project. It is not a statement of existing conditions. The Full Use Existing System **scenario reflects operation of Denver Water's existing system in 2016 without** a Moffat Project online. Full Use Existing System also includes new projects, changes in existing projects, increases in demand levels, and administrative changes that are anticipated to occur between now and 2016. Significantly, the proposed WGFP is included in the Full Use Existing System model. DEIS App. H at H1-1, H1-3. By comparing the action alternatives to hydrologic conditions that include diversions that Denver has not yet made and WGFP Colorado River stream flow depletions, the COE has understated the percentage change in stream flows below Windy Gap that would occur under	*water parameters are nearly identical under Alternative 8a and the Proposed Action. Id. 4-73 to 4-79; 4-144 to 4-145. Alternative 10a envisions the same expansion in Gross Reservoir storage capacity as Alternative 8a. Id. 4-150. Consequently, there is almost no difference in stream flows between these two alternatives throughout the Colorado River Basin. Id. Thus, the discussion of surface water impacts associated with Alternative 8a also applies to Alternative 10a. Id. Impacts to water quality, floodplain, and stream morphology and sedimentation are again "similar," if not identical, to the Proposed Action under Alternative 10a. Id. Stream flow depletions in the Fraser River, Williams Fork River and Colorado River under Alternative 13a also are essentially indistinguishable from the Proposed Action. For example, average annual depletions in the Fraser River would only decrease by up to 300 AF/year compared to the Proposed Action. Id. 4-153. Throughout the Fraser Basin, the difference in average monthly flow between Alternative 13a and the Proposed Action are less than 4 cfs. Id. For the Williams Fork River, the difference in stream flow is less than 5 cfs per month on average, and in the Colorado River below Windy Gap and near Kremmling, less than 30 cfs. Id. 4-153 to -154. For all three river systems, impacts to water quality, floodplain, and stream morphology and sedimentation are similar to or the same as under the Proposed Action. Id. For those alternatives relying on West Slope water, the impacts to riparian and wetland areas, recreation, visual or aesthetic impacts, groundwater, and special status species are very similar or identical across all Proposed Action alternatives. For example, with respect to riparian habitat along West Slope river segments, the DEIS repeats the same language for every action alternative: "Flow changes associated with this alternative are essentially the same as those described for the Proposed Action. Therefore,*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 22 each action alternative over *existing conditions*. For example, average annual flows in the Colorado River below Windy Gap under the Proposed Action are predicted to be 126,767 AF, a decline of 7,918 AF, or 6% compared to Full Use Existing System. DEIS App. H, Table H-7.1. However, compared to current conditions, the change in flow is 28,886 AF/year, or 18%. The table below taken from Table H-7.1 shows how the DEIS presents the information compared to the Preferred Alternative 1a (PA) for diversions at the Moffat Tunnel (units in AF): Location | Current Cond Avg Annual Flow | Full Use Existing System Avg Annual Flow | PA Annual Flow | PA Difference | PA Percent Difference Moffat Tunnel | 63,799 | 66,512 | 76,797 | 10,284 | 15% The following table is corrected for actual diversions and corrected to compare the existing conditions to one future condition (2030). It shows a significant increase in diversions (units in AF): Location | Current Cond Avg Annual Flow | PA Avg Annual Flow | PA Difference | PA Percent Difference Moffat Tunnel | 47,705* | 76,797 | 29,092 | 38% * Based on actual diversion records (1936-2006) rather than modeled diversions. **EPA concurs that "To fully disclose the impacts of the no a**ction and action alternatives, it is **important that the DEIS also include a full analysis of the current conditions." EPA Moffat PDEIS Comments at 6. According to EPA, "The current conditions scenario would reflect operations as they were in 2006."** *Id.* **4.5 Average Annual or Monthly Flows Are Not Adequate to Determine Impacts to Aquatic Environment**. The DEIS assesses impacts to environmental resources based on annual and monthly average flows for the Fraser River, Colorado River, and other river segments. *See, e.g.*, DEIS 3-5 (only river segments with expected changes in average annual flow of 10% or greater were studied for impacts to flow-related resources such as aquatic biological resources, riparian and wetlands, etc.); *id.* 4-13 (hydrological data presented in the appendices consists of average monthly values for average, wet, and dry conditions), *id.* 4-22 (methodology for water quality impacts analysis); *id.* 4-25 (impact on wastewater treatment providers); *id.* 4-34 to -39 (stream flow changes in Fraser River under Proposed Action); *id.* 4-292 (impacts to downstream Colorado River Endangered Fish Species); *id.* 4-313 to -325	*impacts on riparian vegetation would be the same as those described for the Proposed Action." See DEIS 4-261, 4-263, 4-265, 4-267, Table 4.20-2. The pattern holds for recreation along the West Slope rivers. For the Proposed Action, the COE determined, "Overall, the Project would have a major long-term adverse impact on boating on the Fraser River." Id. 4-373. For every action alternative, the COE concludes: "Impacts to all river segments under Alternative [] would be similar to those described for the Proposed Action." See id. 4-382, 4-383, 4-384, Table 4.20-2. Similarly, the COE concluded the Proposed Action as well as each of the action alternatives would result in adverse visual or aesthetic impacts on the Fraser River in May, June, and July of average and wet years. Id. 4-406, 4-412, 4-414, 4-415, Table 4.20-2. The COE concluded impacts to groundwater along the Fraser River, Williams Fork River, and Colorado River "would be similar, but less than those described for the Proposed Action" for Alternatives 8a, 10a, and 13a. DEIS Table 4.20-2; see also 4-211, 4-212, 4-213. However, the COE did not quantify what "less than" means and it is clear from the very minor stream flow changes that groundwater impacts will be essentially identical under all action alternatives. For special status species, under the Proposed Action, changes in flow in the Fraser, Williams Fork, and Colorado rivers would adversely affect Colorado River fish by causing water depletions in the upper Colorado River System. Id. 4-292. As with other resources, the COE concluded that impacts to special status species would be the same as described under the Proposed Action for all of the action alternatives. Id. 4-298, 4-301, 4-302, 4-303, Table 4.20-2.* **Response #910-332:** The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 23 (impacts to aquatic biological resources in West Slope river segments); *id.* 4-370 to -377 (impacts to recreation on West Slope river segments); *id.* 3-21, 3-33, 3-38, App. E-3.[8] As Grand County has previously pointed out, what is important is not changes in average annual or monthly flows or water quality (or predicted water quality on a single day), but changes in *daily* flows and *daily* water quality, including temperature. Reporting annual or monthly average flows and ignoring other flow factors can mask significant impacts that may occur on a given day or series of days, creating the false impression that environmental impacts are insignificant, because *on average* they appear to be insignificant. The monthly time-step may be adequate to estimate gross-level changes in yield or reservoir storage, but it is not adequate to address daily fluctuations in river flow, stage, channel width, and other factors that effect the aquatic environment. If information on daily flows and water quality is unavailable or cannot readily be generated, the DEIS should disclose that fact and explain how the absence of such information precludes analysis of short-term impacts, so that members of the public will be better able to understand the limitations of the analysis of hydrologic impacts. The DEIS should also discuss the degree of error in its predictions. Nevertheless, we believe that more detailed information about the hydrologic regime in Grand County is available and should be incorporated into the analysis of environmental consequences of the Moffat Project. **4.6 There Is No Basis to Use the 10% Screening Criterion.** In determining whether a river segment was part of the affected environment for determining impacts, the COE **used a screening "criterion of a 10% average annual flow change." DEIS** 3-4, 3-5, 3-7. There is no basis for this arbitrary criterion. This criterion is particularly inappropriate in the Upper Colorado River Watershed where the vast majority of the native waters already have been diverted and the aquatic environment has been degraded. A change of 1% in streamflows could cause a violation of water quality standards or an impact to fisheries, depending upon existing conditions of a particular stream segment. Moreover, using *average annual* flow changes as a screening tool increases the likelihood that significant impacts of the Proposed Action will be ignored. All affected streams on the West Slope must be analyzed, regardless of the percent change in stream flows. **4.7 The DEIS Fails to Adequately Describe Changes in Dry Years or Winter Flows.** Although the Proposed Action may not divert during winter months, there are several concerns related to the winter time flow issue. The original Moffat and Williams Fork project included earthen ditches that diverted water in the summer months because the canals were full of snow. *See* Attachment 2, excerpts of testimony in CA 657 that decreed the project. Denver has not obtained a decree from the water court to expand the use of that project to divert water in [8] Although the PACSM model uses a daily time-step and average daily hydrographs of streamflow are provided in Appendix H-4 and there is an analysis of daily flow changes in Appendix H-6, this kind of data has not been adequately incorporated into the text of the DEIS or, it seems, considered in the analysis of environmental consequences of the alternatives.	components other than Gross Reservoir. These various water sources and 29 storage components from the "long list" passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the MWRD Plant. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1, Must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: "Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need." This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 24 the winter. C.R.S. § 37-92-103(5); ***Empire Lodge Homeowners' Ass'n** v. Moyer*, 39 P.3d 1139 (Colo. 2001). Instead, and without obtaining any approvals from Grand County, Denver Water **recently has converted the original project to lined canals, installed pipes, and has "winterized"** portions of the system to divert water in the winter. The change to lined and piped canals reduces seepage that has been augmenting the flows of the Fraser River system year round. Winterizing the system reduces the natural stream flows that used to pass downstream. The impacts from these actions must be included as part of the cumulative impacts analysis of the alternatives. 5. **The Methodology the COE Used to Analyze Water Quality Impacts Is Flawed.** **5.1 There Is No Basis to Use the 15% Screening Criterion.** One of the principal criteria that COE used to identify stream segments for which it examined water quality impacts is whether stream flow would increase or decrease by 15% according to Platte and Colorado **Simulation Model ("PACSM") modeling. DEIS** 4-22. The 15% threshold is based on CDPHE **Water Quality Control Division's Antidegradation Significance Det**ermination for New or **Increased Water Quality Impacts Procedural Guidance (Dec. 2001) ("Antidegradation Guidance").** *Id.* The Antidegradation Guidance defines a significant new or increased discharge as one that increases constituent concentration by more than 15%. *Id.* Without articulating any **reasoning or rationale, the COE states, "it is unlikely that a change in streamflow of less than** 15% would result in a change in concentration more than 15% for stream segments with ambient conditions well within water quality standards. Therefore, the 15% flow-change threshold was a criteria used to identify stream segments for evaluation that were not identified by the other **criteria."** *Id.* It is unreasonable to assume a one-to-one correlation between a percentage change in stream flow and concentrations of constituents in the water, yet that is exactly what the COE has done. This plainly is an apples-to-oranges comparison, and is an unreasonable basis upon which to guide the water quality assessment for the EIS. As noted elsewhere in the DEIS, constituent concentrations in a stream are influenced by many factors, such as presence of organic matter, temperature, and rate of mixing, among others. DEIS 4-62 (discussing dissolved **oxygen concentration). The COE's statements that, "This evaluation uses the same criteria of 15% for finding of change or no change" and, "Where the percentage change is greater than 15%, a discussion regarding the potential for change is provided," DEIS** 4-25, blur the distinction between concentration and stream flow. **The COE's application of this methodology, as depicted in Tables** 4.1-5, 4.1-6, and 4.1-7, and in the text at page 4-43, is difficult to follow, as it appears to conflate a 15% change in stream flow with a 15% change in wastewater effluent. The COE should be much clearer about the basis for its water quality analysis, and must provide a scientific rationale for its determination to use change in stream flow as a proxy for changes in actual constituent concentration when assessing water quality impacts of the alternatives. In addition, the application of the 15% screening factor is based on a 15% change in flow between the full-use alternative and the proposed action alternative (DEIS 4-25), not current ambient flow conditions and the various alternatives. Note that in some cases there is greater than 15% flow difference	Alternatives 2a, 2a.1, 2b, 2c, 3a, 3a.1, and 3b involve an expansion of the Williams Fork system and storage in the Clear Creek Basin in lieu of diverting that water back into the Fraser River Basin for re-diversion into the Moffat Tunnel. These alternatives were eliminated in Screen No. 2, which focused on environmental consequences, due to high scores under aquatic habitat, threatened and endangered species, and other habitat values criteria. These high scores would occur even if storage and conveyance in the Clear Creek Basin were replaced entirely with a larger Gross Reservoir expansion, due to environmental consequences associated with the Williams Fork Extension (Alternative 2) and Williams Fork South Extension Project (Alternative 3). ***Comment #910-14** (ID 2519):* *The COE Did Not Fully Evaluate Cumulative Alternatives. When evaluating alternatives that would satisfy the purpose and need of the Moffat Project, the COE may not reject alternatives that individually would not meet Denver Water's asserted need for 18,000 AF/year if two or more such alternatives, taken together, could meet that requirement. Davis v. Mineta, 302 F.3d at 1121-22 (failure to "consider [Transportation System Management] and mass transit together and/or in conjunction with alternative road expansion as a means of meeting Project goals . . . represents one of the most egregious shortfalls of the EA"). Here, the COE did not sufficiently consider available alternatives that could be combined, and which would be less damaging to the aquatic environment than the action alternatives proposed. See 40 C.F.R. § 230.10(a). For example, the COE did not study an alternative combining indirect potable reuse (including but not limited to Alternative 6), reuse (including but not limited to Alternative 8), agricultural water rights (including but not limited to Alternative 13), use of short-term agricultural leases, use of junior water rights, or non-potable reuse. The*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 25 between current conditions and full use which is ignored in this application of the screening criterion. For example the difference for Vasquez Creek is 30% and the difference for Fraser River below St. Louis Creek is 18% (*see* Table H-1.1). One immediate concern with the 15% screening factor is that it does not consider potential water temperature impacts on streams that are already close to, or possibly exceed, state water temperature standards. Based on water temperature information contained in the DEIS, segments of the Fraser, Williams Fork, Colorado and Blue Rivers all experience water temperatures at or near state water temperature standards and *any* additional depletions in these stream reaches will increase the likelihood of state water temperature violations. Another concern with the 15% screening factor is that wastewater treatment plants are mostly affected by **the application of CDPHE's anti**-degradation rule in calculating discharge permit limits. Although the DEIS recognizes that a 15% reduction in assimilative capacity is a consideration in anti-degradation, it fails to evaluate whether the combination of reduced dilution due to upstream diversions of clean water combined with increased wastewater treatment plant flows due to growth in-basin creates a significant impact to the ability to meet discharge permit limits due to loss of assimilative capacity. **5.2 Water Quality Impacts to Wastewater Treatment Facilities Are Not Accurately Described. The DEIS concludes that there is "no impact expected to WWTP discharge permits" for wastewater treatment providers in the Fraser River watershed** because the acute low flow (24-hour lowest flow with a recurrence interval of 3 years) would not be reduced because the Proposed Action does not divert additional water through the Moffat system during dry years or winter low flow periods. DEIS 4-51. Changes in flows evaluated in the DEIS are based on output from the PACSM model. However, PACSM modeling of future conditions assumes reductions in USFS bypass flows under certain drought-related conditions which result in projected stream flows in the Fraser River watershed that are lower at these critical times. DEIS 4-36. This modeling assumption is different than historical operations of the Moffat Collection System because these bypasses have only been reduced once during the period of record used by PACSM. Actual reductions in bypass flows would be included in the statistical analysis used by CDPHE for determining acute low flows, so future conditions as modeled may impact discharge permit conditions for wastewater treatment plants. **5.3. The DEIS Improperly Limits Analysis of Water Quality Impacts in the Fraser River Based on Changes in Proportion of Wastewater Treatment Effluent.** The DEIS limits the evaluation of water quality impacts on the basis of changes in the proportion of wastewater effluent in the Fraser River. An unnecessarily convoluted approach is employed (see Table 4.1-4 and associated text) resulting in the unwarranted conclusion of no water quality impacts. A more straightforward approach would be to ask if the percentage of wastewater in the Fraser River increases by more than 15% which would lead to different conclusions. For example, the DEIS concludes that the Winter Park effluent proportion of the Fraser River will not increase by more than 15% and therefore, the impacts of those flows is dismissed from further analysis. However, the DEIS (Table 4.1-5) states that in May of average years under the	*COE should review these and other water supply alternatives that, used in combination, could meet Denver Water's asserted needs but would be less environmentally damaging than the Proposed Action alternatives. Use of such water supplies would prevent adverse impacts associated with dewatering of the Fraser River and Upper Colorado River, which support ecological and recreational values in the Colorado River Basin. See EPA WGFP Section 404 Comments at 2 ("Despite the screening criteria used in the [WGFP] DEIS to eliminate alternatives, other reasonable and less damaging practicable alternative may be available to meet current or future demand when used alone or in combination with other alternatives." (emphasis added)).* **Response #910-14:** Denver Water currently uses their reusable supplies for exchanges, augmentation, contract deliveries, and their non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. Alternatives that were formulated that include some component of reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated included some component of reuse (Corps 2007). These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 6, 7, and 14 were screened out due to cost (Screen 1C) because they had high relative costs associated with advanced water treatment and residual disposal. Alternative 11 was also screened out because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 26 full-use alternative, the Fraser River will comprise as much as 6.3% Winter Park Water and Sanitation District wastewater by 2030. The Proposed Action is estimated to result in the Fraser River being comprised of 9.7% wastewater effluent. This is an increase in the percentage of wastewater comprising the Fraser River in average May flows of 54%, and certainly is of the magnitude to require further analysis for water quality impacts. **6. Impacts to the Aquatic Habitat Have Not Been Accurately Assessed.** **6.1 The Impact Assessment to Trout Habitat Is Based on Flawed Assumptions.** The DEIS incorrectly concludes that additional flow reductions during runoff and the descending limb of the hydrograph will not impact aquatic habitat in the Fraser and Williams Fork river tributaries because fish populations in the Fraser and Williams Fork tributaries are limited by low habitat availability during the winter months. The DEIS uses summertime habitat suitability curves to assess wintertime habitat availability and likely relies on the flawed assumption that trout utilize the same habitats during the non-winter seasons as they do during the winter. They do not. Winter habitat requirements for trout are very different from habitat requirements during other times of the year. During the winter, trout metabolism slows dramatically in response to cold water temperatures and they seek refuge from stream velocities in order to conserve energy reserves. This conclusion, which is used throughout the report to support a finding of no significant impact, is invalid unless winter habitat suitability curves are used in the IFIM modeling effort. **6.2 The Data Should Be Supplemented.** IFIM and hydrologic data is not available on most of the Fraser and Williams Fork tributaries that are included in the study area so many of the potential impacts were analyzed using professional judgment. Professional judgment is subjective. Additional IFIM data should be collected on each of the affected tributaries to ensure that impacts are quantified and evaluated using the best available data and scientific methods. *See also* Walsh Aquatic Consultants, Inc. review of PDEIS Chapters 4 and 5, dated January 20, 2009, included with this letter as Attachment 3. **7. The DEIS Should Include a Hydrologic Budget for the Upper Colorado River.** The DEIS includes a hydrologic budget for the Fraser Basin, Williams Fork River Sub-Basin, and Blue River Sub-Watershed. DEIS 3-84, 3-87, 3-88, 3-89. No hydrologic budget is included for the Upper Colorado River. *Id.* 3-88. Because the proposed Moffat Project (along with the proposed WGFP) will have severe impacts on the Upper Colorado River, the DEIS should include a hydrologic budget for the Upper Colorado River and incorporate that budget into its analysis. **8. The COE's Analysis of Aquatic Biological Resources Should Be Expanded.** **The DEIS gives abbreviated treatment to its study of "aquatic biological resources" in the Colorado River because "annual flow changes a**nd flow changes in almost all months are not	were not screened out for cost, they would be screened out because there is not sufficient unused reusable effluent supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in these alternatives was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. Alternative 13a consists of a combination of water supplies derived from agricultural water rights transfers and Denver Water's Moffat Collection System. There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights and gravel pit storage to firm that supply are two key limiting factors that affect the amount of water that could potentially be derived from this supply. Generating 3,000 AF/yr of firm yield from agricultural supplies would require that almost 25% of the remaining uncommitted shares in four major ditch systems, which are in the vicinity of available gravel pit storage, be purchased. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the competitive market for agricultural water rights and there is no guarantee there would be an adequate number of willing sellers under these ditch systems. The configuration of Alternative 13a is reasonable, considering the uncertainties regarding the availability and location of agricultural water rights and the complexities of treating the lesser quality water and disposing of the treatment residuals.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 27 **expected to be greater than 10% . . . ." DEIS** 3-219, 3-239. This statement appears inconsistent with Table 3.0-1 (*id.* 3-**7), which includes the Colorado River in the "River Segments Study Areas" precisely because it "would experience a flow increase or decrease of greater than 10% as a result of the Moffat Project, as determined from [PACSM] results." DEIS** 3-7 n.2. But even if average flow changes in the Colorado River were less than 10%, Grand County disagrees with **the COE's decision to provide an abbreviated analysis of "aquatic biological resources" in the Colorado River. The COE's reliance on annual and monthly average flow changes can mask** significant impacts that may occur to aquatic resources in the Colorado River. The COE should, therefore, make a full study of such resources notwithstanding the annual and monthly average flow changes. The importance of a full study is especially compelling given that the DEIS, **itself, reports that "The upper Colorado** River, from the confluence with the Fraser River to Kremmling, offers outstanding fishing opportunities, considered to be among the best in the state . . . [and] the stretch from the confluence with the Fraser River to Troublesome Creek . . . is listed as **a Gold Medal Water stream . . . ."** *Id.* 3-283 (citations omitted). 9. **The Need for the Project is Not Properly Documented.** 9.1 **Denver Water May Not Use the 1999 Arvada Contract to Support Its Need for the Moffat Project. Denver Water's estimate of total** system demand for 2030 includes 3,000 AF/year from the 1999 Arvada Contract. DEIS 1-10. However, Denver Water also reports that such increment in demand will exist only if the Moffat Project is actually built. *Id.* 1-**11 ("Under an intergovernmental agree**ment with the City of Arvada, Denver Water agreed to allow Arvada to purchase a portion of increased firm yield that Denver Water is able to achieve **with the Moffat Project.") Such increment cannot, therefore, be used to calculate Denver Water's projected** system shortfall in 2030 and to justify the need for the project. While Denver Water reports that it will need to supply such water to the City of Arvada if the Moffat Project is built, Denver Water cannot reasonably rely on such commitment to establish a system shortfall in 2030 when such commitment would not exist in the absence of the project. This discrepancy in accounting for the 3,000 AF of water under the contract with the City of Arvada is repeated elsewhere in the DEIS, notably in section 2.10 concerning the No Action **Alternative. For example, the DEIS states, "Hydrologic modeling of the No Action Alternative** is based on the same future water demands as the action alternatives (363,000 AF/year by the year 2030). The demand includes the 3,000 AF **of firm yield for the City of Arvada." DEIS** 2-83. The same discrepancy occurs in the text on page 2-**90 under "Implementation of Alternative," and in Table** 2-24 on the next page, where demand is shown as 363,000 AF/year under the No Action Alternative. It is clear, however, that Denver Water would not be obligated to provide this water to the City of Arvada under the No Action Alternative. *See id.* at 1-11, 2-92, 4-12. By overstating predicted 2030 demand by 3,000 AF/year, the COE has inflated supply shortfall by 20%, from 15,000 AF/year to 18,000. 9.2 **The DEIS May Overstate the Expected Denver Water Demand Levels During Droughts.** The Purpose and Need statement indicates that Denver Water needs an additional 18,000 acre-feet per year of firm yield by the year 2016. However, this was	The Corps relies on administration and enforcement of the State water laws with regards to water rights and defers to the State to resolve water law issues. A Section 404 Permit would not impose conditions on the operation of the Project that are within the jurisdiction of Colorado Water Law. The Corps' analysis for the EIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership will not be a factor in the Corps public interest decision." 33 CFR Part 320.4(g). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR Part 230.10. The Corps may issue a Section 404 Permit even if other Federal, State, or local authorizations have not been obtained before the applicant has applied for a permit. The Corps cannot predict with any certainty the amount of water that may be developed in the future, therefore this component was not included in the cumulative effects analysis for the EIS. ***Comment #910-352*** *(ID 2518)**:*** *Alternatives with Less Damaging Environmental Consequences to the Upper Colorado Watershed Were Not Fully Evaluated. The DEIS appears to discard additional reliance on East Slope supplies for limited reasons. For example, the DEIS limits agricultural water supplies on the South Platte to 3,000 AF/year without supporting facts or analysis. See DEIS 2-26. There are significant agricultural supplies within a reasonable distance from the Moffat wastewater treatment plant that would deliver firm yield to meet the stated needs. These may be more costly, but would have significantly less environmental effects to the Colorado River. Another example may be to use Denver Water's surplus*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 28 **determined by using Denver Water's "unrestricted" demands through any drought period. The** DEIS states that Denver Water expects to be able to reduce its demands in drought periods using water conservation measures, in addition to the institutional conservation measures. If Denver Water genuinely expects to achieve higher levels of water conservation demand reductions in a drought, then this effectively increases its firm-yield. This may dramatically change, or completely eliminate, the need for additional water supplies. This may be the least-environmentally damaging, yet easily achievable, alternative. Even with such drought-planning during drought conditions, which would be expected of most normal water customers, Denver Water would still have the 30,000 AF Strategic Water Reserve. For example, the DEIS (page 2-88) states that Denver Water expects the following demand reductions during a drought (in addition to present and future water conservation programs): Demand Reduction / Volume Saved Unrestricted Demand (2030) — 379,000 Stage 1 — 10% — (37,900) AF/yr Stage 2 — 30% — (113,700) AF/yr Stage 3 — 50% — (189,500) AF/yr It appears that even the Stage 1 drought restrictions are more than enough to meet the projected **"unrestricted" shortfall of 34,000** AF during dry years. **10. The Analysis of Impacts in Grand County to Recreation, Land Use, Visual Resources, Cultural Resources and Socioeconomics Is Incomplete.** **10.1 Affected Environment - Recreation in Grand County.** The DEIS limits the definition of recreation to active sports. Fishing and boating are the only recreation activities discussed. Sections 3.13 and 4.13 of the DEIS do not discuss more passive recreation impacts such as sight-seeing, hiking, and biking. a. Fishing. The DEIS presents fishing information that is primarily anecdotal and found in sporadic locations. The discussion about fishing is understated. Private fishing is particularly understated. No comprehensive baseline standards are offered upon which to measure impacts. No environmental characteristics (water flow, water temperature, water clarity, etc.) are offered to explain the relationship between water diversion projects and fishing. DEIS 3-282 to -**284. The DEIS states that "**[o]nly limited portions of the Fraser River are open **to the public."** *Id.* 3-282. This statement is misleading and questionable. The most visible and highly used segment of the Fraser River for fishing is a two-mile stretch through the Town of Fraser with easy access from US 40. Fishing along this stretch is a significant and growing part	*reusable effluent to serve the existing raw water customers from Denver Water's north end system, resulting in more Moffat water available for potable demands. At a minimum, the COE should consider an alternative that combines the new agricultural supplies with the effluent/LIRF's, which would easily generate the firm yield of 18,000 AF/yr. The DEIS appears also to arbitrarily limit options that involve gravel-pit storage downstream of Denver on the South Platte River. The DEIS provides no rationale for the decision to limit gravel pit storage to 5,000 AF. See DEIS 2-21, 2-53. The DEIS states that Denver Water is currently developing approximately 27,000 AF of gravel pit storage but does not address why this storage, or additional sites, could not be used to provide the drought-protection sought by this project. DEIS 5-11. In addition, it would seem logical that some combination of either permanent or temporary transfer of agricultural supplies, coupled with additional gravel pit storage, should be considered as a stand-along option to provide the drought-protection water supplies.* **Response #910-352:** Alternative 13a consists of a combination of water supplies derived from agricultural water rights transfers and Denver Water's Moffat Collection System. There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights and gravel pit storage to firm that supply are two key limiting factors that affect the amount of water that could potentially be derived from this supply. Generating 3,000 AF/yr of firm yield from agricultural supplies would require that almost 25% of the remaining uncommitted shares in four major ditch systems, which are in the vicinity of available gravel pit storage, be purchased. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 29 **of the Town's summer economy. We suggest verification of the estimate of 5 to 7** anglers on an average day and 10 to 12 **anglers during a weekend day during peak season "at any one time."** This analysis should be about more than the Fraser River, the Williams Fork River and the Colorado River. It should also include the creeks and tributaries that feed into these rivers. **Viewing anglers "at any one time" is not meaningful. Many premier fishing** locations are **relatively hidden from public view; it is not physically possible to count "anglers at any one time" except, maybe by helicopter equipped with infrared devices. Anglers enjoy the Fraser** River, Ranch Creek, Hurd Creek and other locations throughout the extended day. Many, more knowledgeable anglers fish in the early morning and early evening when water temperatures are lower. **The analysis provides essentially one statement regarding private fishing. "Several** private fishing ranches hold property along the banks of the Fraser River and allow river access **for a fee." DEIS** 3-283. While accurate, there are also other ranches and resorts that authorize fishing on Ranch Creek, Hurd Creek and others. Significant among these is one rancher who leases fishing rights to the Rocky Mountain Anglers Club. Also, the Town of Fraser leases fishing rights along portions of the Fraser River. A number of guides privately lease stretches of the Fraser River and nearby creeks. This activity is a significant and growing component of the summer tourist economy in the Upper Fraser Valley that is understated in this section and not acknowledged in the socioeconomic impact analysis. b. Other Recreation - Excluded. There is no discussion of the significance of the Fraser, Williams Fork and Colorado rivers and their tributaries and their riparian areas for the more substantial passive site seeing, hiking and mountain biking activities. The Fraser Valley **claims the title "Mountain Biking Capital of the Nation.** There are ample locations throughout the Upper Fraser River watershed where the presence of flowing water enhances the quality of the recreation experience. The Fraser River, Vasquez Creek, Ranch Creek, St. Louis Creek and its many tributaries are vital parts of the visitor experience in the summer months. **10.2 Affected Environment – Land Use in Grand County.** The DEIS contains absolutely *no reference* to land uses in Grand County. DEIS 3-287 to -292. There are several **significant resorts, such as Devil's** Thumb Ranch, Rendezvous, and the Winter Park Ski Base Area redevelopment that rely on the health as well as the passive beauty of the Fraser River and its tributaries to attract guests, visitors and homebuyers. There is an inextricable relationship between the tributaries, streams and rivers that Denver Water uses for diversion and land uses in Grand County. Also, several ranchers are currently experiencing problems with their irrigation ditch operations due to low flow in both dry and average years. Although agricultural concerns were mentioned in the *Scoping Summary*, there is no mention of this condition in the DEIS. In fact, there is no reference to agriculture land uses. **10.3 Affected Environment – Visual Resources in Grand County.** The DEIS states **that the Fraser, Williams Fork, and Colorado rivers "occur in scenic or visually sensitive** locations. The setting in which the stream is viewed is equally important as the stream flow level	competitive market for agricultural water rights and there is no guarantee there would be an adequate number of willing sellers under these ditch systems. The configuration of Alternative 13a is reasonable, considering the uncertainties regarding the availability and location of agricultural water rights and the complexities of treating the lesser quality water and disposing of the treatment residuals. The amount of gravel pit storage required was determined by modeling the operations of Alternatives 8a and 13a. Storage size is a function of the supply and demand time series. No more than the identified amounts of storage were needed to firm reusable water supplies and regulate for return flow obligations (Alternative 13a). Furthermore, timing and availability of gravel pit storage is uncertain. Five thousand AF represents between 40 and 50 % of the potentially available gravel pits in Adams County, and it would not be prudent to plan on a larger percentage being available when needed. Available gravel pit storage is limited and the market for it is also competitive. The Corps' evaluated gravel pit availability along the South Platte River in a technical memorandum entitled Gravel Pit Storage Opportunities for the Refinement of Revised Alternatives 8a (Use of Reusable Effluent and Enlargement of Gross Reservoir) and 14 (Use of Reusable and Agricultural Water Rights Purchase and Enlargement of Gross Reservoir), December 2006. –Lawn irrigation return flows (LIRF's) were considered when Denver Water calculated its total system supply (FEIS Table 1-1). Recently, in 2012, Denver Water completed the water court process for LIRFs and an additional 1,500 to 2,000 AF/yr of reusable water is now available at an average annual demand of 285,000 AF/yr. However, in order to maximize the yield of LIRFs and Agricultural

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 30 **when determining visual preferences." DEIS** 3-299. This section of the DEIS acknowledges the relationship of the visual experience of rivers in mountain communities dependent on visitation, **but "concludes" with a dismissive statement that river water levels fluctuate and visitors expect** that. *Id*. There is no further discussion of whether the significant reductions in stream flow from **the native condition to current conditions (2006), from current to 2016 "baseline" conditions and from 2016 "baseline" conditions to the Proposed Action might affect visitors.** **10.4 Affected Environment – Cultural Resources**. The analysts mention that they contacted the Grand County Historical Association without a citation of who spoke with whom and when. DEIS 3-301. There is no section in the DEIS whatsoever about cultural resources in Grand County. There is no statement that an investigation was done and no significant cultural resources or historic properties were found. If no cultural resources investigation was done, this would be a serious mistake. Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its **tributaries. This cultural history includes the "Western White House" and President Eisenhower's fishing excursions to the Fraser** River and St. **Louis Creek. The Town of Fraser's** cultural heritage focuses on the Fraser River, its namesake. While the recreation section (3.13) acknowledges that the historic elements of the Colorado River are one of the attributes that makes it eligible for Wild and Scenic River designation, this section provides no information about the historic element. **10.5 Affected Environment – Socioeconomics**. Other sections of the DEIS contain qualitative conclusions about impacts such as major, minor, moderate, adverse, etc. impacts. DEIS 4-400 to -401. In some instances, the analysts provide quantitative descriptors for each adjective, which is good. However, the socioeconomics section does not follow up with any discussion of potential consequences of these effects, when there are direct socioeconomic consequences. It is as if the chapter analysts do not communicate with one another. The socioeconomics section divides the affected environment into primary impact areas and secondary impact areas. A primary im**pact area is defined as "that area in which an** immediate and direct effect from construction or operation may occur, such as an area of **proposed inundation." DEIS** 3-317. The DEIS includes no primary impact area in Grand County even though there are 31 diversion locations in Grand County. At a minimum, the **riparian areas along all rivers and streams that will lose flushing flows should be "primary impact areas" because of the** *absence* of natural inundation. Grand County is one of six counties that is designated a secondary impact area. DEIS 3-326. The analysis provides the same cursory summary for each county with the exception of one free-standing paragraph about the importance of tourism to the local economy. *Id*. 3-330 to -331. In some cases, such as Adams County and Jefferson County, this cursory summation may be adequate. In Grand County, it is not. The impacts on Grand County are profound relative to the size of the County and the fact that this is a permanent diversion of water, 100% consumptive. One example of the relative magnitude of impacts caused by stream depletions in Grand County is the investment that the Town of Fraser has made in the Fraser River. In the last few	Transfers some sort of reservoir is needed to store these flows when they are available for use when needed. This is why Denver Water is constructing 30,000 AF of additional gravel pit storage along the South Platte River. Furthermore, LIRF and Agricultural Transfers are typically located downstream of Denver Water's treatment plants, the ability to exchange these types of water is limited, and pumping facilities and pipelines would need to be constructed. ***Comment #910-264*** *(ID 2517)**:*** *Finally, indirect potable reuse, THE least environmentally damaging alternative must undergo analysis. Denver Water is obligated under the Blue River Decree to reuse the water diverted from the Blue River and has substantial quantities of reusable water, especially in dry years. Denver Water states that most of its reusable supplies are currently used for, among other things, exchanges. It is our understanding that most of these exchanges occur up the South Platte to the majority of Denver Water's storage facilities. It may be a viable alternative to meet the needs of stated "system imbalance" to use these reusable supplies for additional yield to Denver Water's north side, rather than to its south side.* **Response #910-264:** All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 31 years, the Town spearheaded a substantial restoration of the river as it flows through the Town. A major developer dedicated a substantial portion of the river corridor to the Town as part of its annexation. The Town allows public access for fishing on portions of the river and has just begun to lease fishing rights to private guides on other portions. As evidence of its increased emphasis on the Fraser River as a vital part of its summer economy, two fly fishing shops recently located in the Town. To COE, this may seem trivial; to the Town of Fraser, it is vital. The description of the Grand County affected environment in no way addresses the types of socioeconomic issues that were mentioned in the *Scoping Summary*. Quotes from the *Scoping Summary*, pages 3-14 and 3-15 follow. – **"Additional costs to local wastewater treatment** plants (i.e., more extensive treatment and plant upgrades) due to lack of **dilution." "Evaluate economic implications of the Upper** Fraser River valley community spending over $20 million in the past 4 years to construct wastewater treatment plants that may **become out of compliance with the water diversion." The** DEIS repeats these concerns but does not provide any information about the condition. *See* DEIS 3-**331 ("These** wastewater treatment providers are concerned about future operations and future compliance with their NPDES discharge **permits, which depend, in part, on Fraser River flows.")** – **"Disclose current costs of water to existing and prospective** water users in Grand County and changes in costs resulting **from this project." The DEIS does not addre**ss this issue. – **"Effect on power prices or power supply in Grand County." The DEIS states without substantiation that "The factors that** influence power supplies and power prices in Grand County **would not be affected by the Proposed Action." DEIS** 4-432. This disregard for issues carefully summarized in the *Scoping Summary* calls into question the rigor of the affected environment description. **10.6 Environmental Consequences – Recreation.** a. Gold Medal Stream Designation. Chapter 3 of the DEIS appropriately mentions that segments of the Colorado River have Gold Medal Stream designation. DEIS 3-283. Neither this chapter nor the chapters on environmental consequences and cumulative impacts discuss the impact of the 2016 System, the Proposed Action or Action Alternatives on this designation. b. Magnitude of Impacts. **Just like the PDEIS, the DEIS states: "Impacts to** recreation would occur should the Moffat Project *prohibit, or severely reduce* the available and existing recreation opportunities and exper**iences in the Project area." DEIS** 4-367 (emphasis	the East Slope. The MWRD Plant and the Littleton–Englewood (Bi-City) Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). ***Comment #910-42*** *(ID 2516)**:*** *The COE's No Action Alternative is Flawed. The no action alternative considers the environmental consequences of not undertaking the action or project at all. "In requiring consideration of a no-action alternative, the Council on Environmental Quality intended that agencies compare the potential impacts of the proposed major federal action to the known impacts of maintaining the status quo." Custer County Action Ass'n v. Garvey, 256 F.3d 1024, 1040 (10th Cir. 2001) (emphasis added). In other words, "the current level of activity is used as a benchmark." Id.; Colorado Off-Highway Vehicle Coalition v. United States Forest Service, 505 F. Supp. 2d 808, 817 (D. Colo. 2007). The COE's no action alternative is not based on "maintaining the status quo." It includes 3,000 acre-feet of firm yield of additional demand for the City of Arvada. DEIS 2-83, 2-90, 2- 91. However, such increment in demand will only exist if the Moffat Project is actually built. Id. 1-11, 1-14. Since building the Moffat Project is not maintaining the status quo, COE may not include the 3,000 acre-feet of additional*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 32 added). This quote shows that the analysts take the unsubstantiated, biased position from the start that there must be a dire impact on recreation to matter. Unlike Front Range counties, water impacts affect the core and lifeblood of the Grand County economy. This irresponsible remark sets the tone for Section **4.13**. **The definition of "severely reduce" is not described or quantified** in the text. c. Fishing – Existing Conditions and 2016 System. The DEIS does not contain information on the relationship between stream flow, stream temperature, water clarity and the quality of the fishing experience on the Fraser, Williams Fork, or Colorado rivers. It is therefore difficult to know how the DEIS reaches its conclusions about no fishing impact. These conclusions of no impact are unsubstantiated and questionable, given that lower flows, higher water temperatures, and degraded quality conditions due to lack of flushing flows all negatively impact fishing. Fishing already has been compromised due to prior water diversions by Denver Water. **Most of the Cumulative Impacts chapter says "fishing activity is generally not impacted."** DEIS 5-**49**. **However, the last page of the Cumulative Impacts Chapter reports: "Most** streams would experience minor effects to fish and other aquatic resources. Exceptions to this includes some of the upper tributaries of both the Williams Fork and Fraser rivers where *moderate* **impacts to fish could be expected due to lower flows." DEIS** 5-56 (emphasis added). d. Measuring Favorable Stream Flow for Kayaking and Rafting - Current Conditions and 2016 System. The DEIS consistently uses a questionable mathematical methodology for quantifying days where streamflow is at minimum and maximum desired levels for kayaking and rafting. The method is repeated in Tables 4.13-1, 4.13-2, 4.13-3, and 4.13-4. In each instance, tabular data is presented for five sample years which are neither wet nor dry years. The authors examined the 45-year study period and selected five years. – No information is provided that describes how these five years fit into the larger study year context. – There is wide variation in data for each selected year, which are allegedly neither wet nor dry years. All conclusions are based on the *average* of these five years. This approach significantly masks any potential impacts. Table 4.13-3 (DEIS 4-375) is used here as an example. While the change in days extends from – 56 days to + 67 days and the percent change is from –47% to +84%, the only discussion focuses on the average of +0.2 days when flows fall within the desirable range. The standard deviation from the average is so high as to render this analysis meaningless. A better approach would have been to use all years where data is available and address not only averages but also variation, which seems more significant than average figures. e. Kayaking - Proposed Action Fraser River. On the Fraser River, the DEIS reports virtually no difference in days suitable for boating (kayaking) between 2006 and 2016.	*demand for Arvada in the no action alternative. By doing so, COE unlawfully inflates the purported system shortage by 20%. COE's definition of the no action alternative also does not maintain the status quo because it includes using Denver Water's strategic water reserve. Id. 2-85. This reserve was not included in Denver Water's total system supply "because it is not considered available for meeting the total system demand under normal operating conditions . . . ." Id. 1-14; see id. 1-10 (30,000 acre-foot safety factor "is intended to address uncertainties and/or unforeseen events"). Since the strategic water reserve was excluded as a source of supply for the action alternatives, it should not be included as a source of supply for the no action alternative. Including such supply in the no action alternative distorts the environmental impact baseline against which the action alternatives are compared. Because COE failed to use the current level of Denver Water activity as a benchmark, its no-action alternative fails to comply with NEPA's implementing regulations. COE's analysis of alternatives is therefore flawed and fails to provide the rigorous analysis NEPA requires.* **Response #910-42:** Please see the response to Comment ID 2863. The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water demand for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 33 DEIS 4-372. With implementation of the Proposed Action, the DEIS reports a 20% drop in stream flow which triggers a 40% drop in minimum kayaking flows and a 35% drop in optimum kayaking flows. *Id.* This is one of the few places where a recreation impact is acknowledged, as **the DEIS reports "Overall, the Project would have a major, long**-term adverse impact on boating **on the Fraser River."** *Id.* 4-373. However, a later section on Unavoidable Adverse Impacts declares thi**s impact "negligible."** *Id.* 4-389. No mitigation recommendations are suggested. *Id.* Subsequently, in the socioeconomic section of the DEIS, this magnitude of impact is dismissed **because there is purportedly "little boating use overall" on the Fraser Riv**er. *Id.* 4-431. This downplaying of the impact and failure to propose mitigation are arbitrary and inconsistent with **the DEIS's prior conclusion of "major, long-term adverse impact."** *Id.* 4-373. f. Fishing – Proposed Action. For the Fraser River, the DEIS provides no **justification for its statement "[f]low reductions would not necessarily adversely effect [sic] the** quality of the fishing experience. DEIS 4-374. The DEIS reports that between 2006 and 2016, there would be a 2% to 18% reduction in average monthly flows in the summer months during an average year, and a 22% to 42% reduction in flows during dry years. *Id.* 4-406. The DEIS also reports an additional 30% to 40% reduction in average stream flows during summer months between 2016 and the 2030 Proposed Action. *Id.* Flow reductions of this magnitude call into **question, if not undermine, the DEIS's prior conclusions of no impact. There is also an** unsubstantiated remark that reducing flushing flows may be beneficial to fishing because the fish will remain more active. *Id.* 4-374. Our research indicates that the reverse of this statement is more accurate. **For the Williams Fork River, the DEIS reports "[n]o impacts are expected to occur to the quality of the fishing experience" as a result of the Pro**posed Action. *Id.* 4-374. There is no discussion of potential impacts between 2006 and 2016. *Id.* No data is provided to substantiate these statements. **The DEIS reports "[n]o impacts to fishing on the Colorado River are anticipated."** *Id.* 4-377. This remark is questionable since no supporting data is provided, and the Windy Gap Firming Project (presented as part of the 2016 baseline) will lower river flows near the Windy Gap Reservoir. The Executive Summary reiterates conclusions from Chapter 4 of the D**EIS: "Generally,** no negative impacts to fishing would occur, although possibly some improvements to the quality **of fishing."** *Id.* ES-36. These conclusions are again unsubstantiated. g. Recreation Impacts Missed. The DEIS pays the most attention to boating impacts on the Fraser River and then concludes there is not much boating on the Fraser River. The analysis ignores the important economic value of the rivers and the riparian habitat as contributors to the scenic beauty of the natural environment that brings visitors to the area. It also ignores the significant private resorts, lodges and developments that rely on the health of the rivers for fishing as well as the beauty of the rivers to attract site-seeing visitors, hikers and mountain bikers.	***Comment #910-16*** *(ID 2515)**:*** *The Moffat Project and Windy Gap Firming Project Are Cumulative Actions Requiring Analysis in a Single EIS. Cumulative actions are actions "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). Although section 1508.25(a)(2) uses the word "should," courts have made preparation of a single EIS mandatory in the case of cumulative actions: "Under § 1508.25, two or more agency actions must be discussed in the same statement where they are . . . 'cumulative' actions." Klamath-Siskiyou Wildlands Center v. Bureau of Land Management, 387 F.3d 989, 998-99 (9th Cir. 2004) (emphasis added). As explained in Klamath-Siskiyou, the environmental analysis must be done in a single document "when the record raises 'substantial questions' about whether there will be 'significant environmental impacts' from the collection of anticipated projects." Id. at 999. See Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1215 (9th Cir. 1998) (single EIS required for five timber sales in same watershed). The WGFP and Denver Water's Moffat Project are cumulative actions. The Municipal Subdistrict of the Northern Colorado Water Conservancy District ("Subdistrict") is proposing to develop 26,000 AF/year of firm yield, primarily through additional transbasin diversions at the Windy Gap Project diversion site on the Colorado River, which is downstream of the confluence of the Colorado and Fraser rivers. DEIS 5-15. Because the Colorado-Big Thompson project ("C-BT") already captures nearly all of the available streamflow from the Colorado River system above Windy Gap (except for the minimum bypass flows), the vast majority of the yield to Windy Gap is derived from inflows from the Fraser River. Therefore, both projects divert from essentially the same source. The WGFP is estimated to decrease average annual flows in the Colorado River below Windy Gap by 14% compared to existing conditions.[4] See December 19, 2008 letter from*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 34 **10.7 Environmental Consequences – Land Use.** The DEIS includes *no* environmental consequences to Grand County for land use. DEIS 4-391 to -398. Currently, some ranchers who use the river, creeks. and tributaries in the Fraser Valley upstream from Granby have problems with their irrigation ditch operations due to low flows not only during dry years but also during average years. Any exacerbation of this currently tenuous situation will only increase their problems and hamper ranching operations. Ranching is an important component of the economic history and fabric of Grand County. This important consideration was totally ignored in the DEIS. **10.8 Environmental Consequences – Visual Resources.** a. Impacts from the 2016 System. The DEIS uses a study from the Cheoah River in North Carolina to correlate viewer preferences and streamflows. DEIS 4-404. The analysis states that viewers are sensitive to low stream flows which occur in the winter and early spring months and dislike higher flow conditions. The DEIS concludes that the Moffat Project would only have a minor effect on flow levels during periods of low flow (which viewers are sensitive to). *Id.* This information does not square with local reality, visitors in Grand County are not typically viewing streamflow in the winter and early spring months. Throughout the analysis, **the author uses the phrase "within the normal range of seasonal and annual variability" to claim** that most observers would not notice. *Id.* 4-405 to -**406. The DEIS states it would be "dif**ficult for most observers to determine if flow variations are naturally occurring or are attributed to the Moffat Project . . . ." *Id.* 4-405. These statements are unsubstantiated. b. Effect of visual impacts from the Proposed Action. The DEIS acknowledges adverse and noticeable visual impacts in May, June and July. DEIS 4-406 to -407, and ES-39. Nevertheless, the socioeconomic analysis fails to measure the impacts on the local economy. It is visitors, the core of the Upper Fraser Valley economy, that benefit from the visual and aesthetic resources. **10.9 Environmental Consequences – Cultural Resources**. The DEIS reports no environmental consequences to cultural resources in Grand County. This is likely only because there is no discussion of cultural resources in the Affected Environment Chapter (Chapter 3). **10.10 Environmental Consequences – Socioeconomics.** a. Proposed Action. The DEIS concludes that socioeconomic impacts on Grand **County due to the Proposed Action would be "negligible" because, accordi**ng to the DEIS: • no construction activity would occur in Grand County (DEIS 4-431); • boating impacts on the Fraser River are excluded because the volume of boating is minimal and impacts on the Colorado River are favorable (*Id.*); • there are no quantitative conclusions about fishing on the Fraser River and no fishing impacts on the Colorado or Williams Fork Rivers (*Id.*);	*Larry Svoboda, Director NEPA Program, to Michael Ryan, Regional Director, Great Plains Director, Bureau of Reclamation, re Windy Gap Firming Project, Northern Colorado, Draft Environmental Impact Statement, CEQ #20080333 ("EPA WGFP DEIS Comments") at 2, 10. The Moffat Project Proposed Action would further reduce Colorado River flows below Windy Gap. DEIS App. H-7, Table H-7.1.[5] Other impacts to the Colorado River will result from changes in the timing of flows below the Williams Fork Reservoir due to changes in the operation of the reservoir. WGFP DEIS 3-46. Combined with the Moffat Project, streamflow in the Colorado River below the Windy Gap diversion will be reduced by about 21% (wet years).[6] EPA WGFP DEIS Comments at 2, 10. Together these impacts are cumulatively significant and should be analyzed in the same EIS. 40 C.F.R. § 1508.25(a)(2). FOOTNOTES: [4] Owing to an inflated value for existing diversions, the percent increase in reductions in streamflows over existing conditions is significantly higher than those reported in the WGFP DEIS. Nevertheless, EPA's conclusions pertain to the lower percent increases shown in the DEIS. [5] As noted in 1.4.1 above, flow reductions are nearly identical under all of the action alternatives. DEIS App. H-7, Table H-7.1. [6] Once again, the percent increase in reductions over existing conditions will be substantially greater than reported in the WGFP DEIS. EPA Region 8 shares Grand County's strong concerns about the cumulative impacts of the Moffat Project and the WGFP. Commenting on the WGFP DEIS, EPA said: This project's impacts to the Colorado River, coupled with other reasonably foreseeable actions, could be severe, with irreparable harm done. EPA has objections to the cumulative impacts to the Colorado River. We believe much more attention should be given to what these projects are doing in total to the Colorado River. EPA WGFP DEIS Comments at 10 (emphasis added);[7] see also EPA WGFP Section 404 Comments at 2 (concluding WGFP DEIS did not comply with the COE's NEPA implementing*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 35 • **the recreation and aquatic resources analysis suggests "no measurable changes in** overall resident or tourist recreational activity in Grand County would be **expected" (***Id.***)**; • **flow changes would "generally be unnoticeable to most observers" so there would** be no impacts to land-based recreation activity such as hiking and biking (*Id.* 4-432); • impacts to wastewater treatment providers include a shortage of six acre feet for one provider and this shortage will not hinder development (*Id.*). Therefore, no socioeconomic consequences are provided in this section or the executive summary. The DEIS contains insufficient quantitative rigor. The socioeconomic analysis does not attempt to quantify the impacts to fishing, visual resources, and boating that are clearly stated elsewhere in the document. When an impact was reported in qualitative terms, such as **"moderate," there was no attempt to quantify the envir**onmental effect and no follow-up attempt to quantify the socioeconomic implications to the local economy. The U.S. Environmental Protection Agency *Guidelines for Preparing Economic Analyses* published in 2000,[9] and the draft *Guidelines*, prepared in 2008,[10] provide expert guidance on how to treat uncertainty and qualitative findings. The dismissive style of the DEIS is inconsistent with EPA *Guidelines* and suggests that the impact analysis is incomplete. This section should consider socioeconomic impacts which should be described and quantified in prior sections, including land use, visual resources, cultural resources and recreation. The prior sections include no impacts on land use and cultural resources, provide one qualitative remark in the visual resources section, and one impact to boating on the Fraser River in the recreation section. Excluded from prior sections are the following potential impacts mentioned in the Scoping Summary that have socioeconomic consequences, whether or not the consequences can be measured: - impacts on ranching and agricultural properties; - impacts on private resorts, lodges and businesses that rely on the health and scenic beauty of the affected rivers and tributaries; - impacts on visitors who enjoy passive sight-seeing. [9] Environmental Protection Agency, Office of the Administrator, *Guidelines for Preparing Economic Analyses*, EPA 240-R-00-003 (Sept. 2000). [10] National Center for Environmental Economics, *Guidelines for Preparing Economic Analyses- External Review Draft*, Office of Policy Economics and Innovation, U.S. Environmental Protection Agency (Sept. 12, 2008).	*regulations and recommending the COE hold the Section 404 permit in abeyance because, inter alia, a revised cumulative impacts assessment is required that adequately evaluates and discloses long-term impacts associated with WGFP, the Moffat Collection System, and C-BT). EPA observed that average annual stream flow in the Colorado River at Hot Sulphur Springs has declined 64% from historical levels, due to diversions from Moffat, C-BT, and Windy Gap diversions. EPA WGFP DEIS Comments at 10. The prospect of removing an additional 21% of the remaining 36% of native flow led EPA to conclude that impacts of the WGFP in combination with past and reasonably foreseeable actions, including the Moffat Project, reach a level of significance that is objectionable. Id. at 11; see also EPA WGFP Section 404 Comments at 5, 7 (concluding that impacts of WGFP in combination with past and reasonably foreseeable actions, particularly the Moffat Project are significant and unacceptable to an aquatic resource of national importance, and calling for critical attention to the cumulative impacts of water diversions on the Upper Colorado River).* *FOOTNOTE: [7] EPA also suggested that the Federal government consider a single EIS for the WGFP, the Moffat Expansion Project, and other water supply projects in its scoping comments on the WGFP. Letter dated November 4, 2003, from EPA to United States Bureau of Reclamation. In comments on the Moffat PDEIS, EPA Region 8 reiterates that the impacts of the Moffat Project "in combination with past and reasonably foreseeable actions, are likely significant." EPA Moffat PDEIS Comments at 9. These comments apply expressly to the Colorado River. EPA explains that "further proposed reductions to the existing hydrograph from additional water diversion (the proposed and future projects) will reduce the resiliency of the aquatic ecosystem and place it at a much higher risk of substantial and irreversible changes to the aquatic community." Id. Further, EPA warns that the cumulative effects analysis set forth in the Moffat PDEIS "did not consider the potential for*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 36 The socioeconomic baseline (Section 3.17) provided minimal to no information about businesses associated with tourism or recreation. If there were better baseline information, then the analyst might have been able to observe impacts from the Proposed Action and their potential impact on these businesses, whether or not these impacts could be quantified. b. Impacts to Water Providers. Using the PACSM model runs as proof, the DEIS claims that any water shortages experienced by Grand County water providers would occur without the proposed Project (DEIS 4-432, 4-441) but for 6 acre-feet for Grand County #1 Water and Sanitation District. The UPCO Phase II Report, using the PACSM model, concludes that in the Fraser Valley, average annual shortages at build-out may range between 1,060 and 2,300 acre-feet. The Grand County Water and Sanitation District alone may experience shortages of 973 to 1,903 acre-feet. The Moffat Project will exacerbate an already critical condition. The DEIS states that build-out in Grand County occurs prior to 2016 and is therefore in the 2016 **System "baseline" and is not a Project impact. DEIS** 4-432. If a common sense **definition of "baseline" were applied, then the analysis would show that this resource is nearly** exhausted. c. Wastewater Providers. The DEIS excludes analysis of low flow impacts on **wastewater providers between 2006 and 2016 because it is part of the 2016 "baseline"** conditions. DEIS 4-**443 ("The economic impacts of lower flows in the Fraser River under the** Full Use of the Existing System (2016) were not evaluated as part of this EIS since modeled year **2016 flow conditions are expected to occur regardless of the Proposed Action."). The DEIS is** technically avoiding mention of a significant concern about increased environmental requirements and associated costs among wastewater treatment providers including the **Combined Grand County Wastewater Treatment Plant, Devil's Thumb Ranch, and the Tabernash** Meadows Water and Sanitation District. These costs could be triggered by water temperature increases and water flow decreases due in part to Denver Water actions between 2006 and 2016 that are not literally associated with the Moffat Project. At a minimum, the DEIS should clearly state the fragile nature of this anticipated environmental condition, since the health of environmental resources should be part of the DEIS analysis. There are related concerns that State authorities will require dischargers to remove phosphorus from the effluent dominated Fraser River. While these problems are exacerbated by increasing demands of the transmountain diverters, the State only has authority to impose constraints on the dischargers, not the diverters. The DEIS concludes that there are no additional impacts between 2016 and the Proposed Action. DEIS 4-443 to -444. If Denver Water anticipates no problem, then it should agree to an adaptive management measure to fund wastewater treatment plant upgrades triggered by their proposed additional diversion. d. Fiscal Conditions. The DEIS concludes that there is no fiscal impact on Grand County because there is no loss of property tax funding as a result of the Proposed Action. DEIS 4-436, -445. If a revised analysis shows that there may be fewer visitors, then there is a	*threshold, or tipping point, responses within the Colorado River," and that "[i]ncremental impacts of proposed diversions on top of the already reduced hydrograph (with altered timing of flows) increases the likelihood for the aquatic ecosystem to approach a tipping point beyond which the ecosystem may exhibit dramatic and unacceptable changes, potentially including loss of native fish species." Id. at 2. EPA also cautions that it has "serious concerns with [the] 21% reduction in flows to the Colorado River below Windy Gap diversion point that will also be exacerbated by the Moffat proposed action." Id. These strong statements undermine the COE's conclusion that "[o]verall, cumulative effects to both surface and groundwater is considered minor, with the exception of several of the upper tributaries of both the Williams Fork and the Fraser rivers where moderate effects to stream flow could be expected during average to wet years." DEIS 5-56. A single EIS analyzing the impacts of both projects is not a mere formality. Without such an EIS, there can be no assurance that the COE and the Bureau of Reclamation, collectively, have taken a hard look at alternatives to the simultaneous operation of the Moffat Project and WGFP, the cumulative environmental impacts of those two projects (with emphasis on the hydrology, water quality, and aquatic resources of the Colorado River), and measures to mitigate those impacts. Here, a single EIS is particularly appropriate, given the complex interrelationships among present and future diversions from the Upper Colorado River Basin. As EPA said in its comments to the COE regarding WGFP: EPA believes at a minimum, the applicant should provide a cumulative effect analysis that addresses the collective effects of major water diversions (past present and reasonably foreseeable) in the upper Colorado Basin, including C-BT, Moffat and Windy Gap . . . . EPA is willing to work with [Bureau of Reclamation], the Corps and the applicant to identify the appropriate scope and methodology for a cumulative impacts analysis to adequately*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 37 direct fiscal impact on the County and the towns of Winter Park, Fraser, Granby and others. The impact of even small decreases in visitors on these small communities can be devastating. **11. The DEIS Fails to Examine Impacts to the Arapaho National Forest.** Denver Water has 31 points of diversion in the Fraser Valley. All points of diversion are on federal land in the Arapahoe National Forest; some diversions are within the Vasquez Peak Wilderness and the Fraser Experimental Forest, which are also portions of the National Forest. Below these points of diversion, there is less water available to nourish the riparian habitat. There are a number of creeks that dry up 100% due to Denver Water diversions. DEIS 3-23 **("Denver Water, at times, diverts all the stream flow from tributaries** in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversions. This is how Denver Water has operated in the past and plans to operate in the **future."). In Colorado, riparian areas** comprise 3% of the land but 90% of all wildlife rely on **healthy riparian area to live. In addition, Denver Water's proposed diversion regime would** reduce flushing flows, which are essential to support native special of fish and sustain healthy river ecosystems. A major reason why the federal government acquired forest service land in the west was protection of watersheds, as described by long-time USFS employee, Daina Dravneiks Apple in **her article, "Evolution of U.S. Water Policy: Emphasis on the West"** which is accessible via the USFS website. > Maintaining supplies of clean water and protecting watersheds were major reasons why public domain forests and rangelands were reserved by the federal government at the end of the **nineteenth century…The 1897** Organic Administrative Act said these forest reserves were set aside to protect and enhance water supplies, reduce flooding, secure favorable conditions of water flow, protect the forest from fires and depredations, and provide a **continuous supply of timber…So**, it was the headwaters of the western rivers and the cutover and eroded lands in the East that became the National Forest System. The DEIS meticulously narrows the definition of the affected environment to river segments. There appears to be no discussion about the health of the forest, which for reasons unrelated to Denver Water, is already in a compromised environmental situation. In its document, *Consideration of Cumulative Impacts in EPA Review of NEPA Documents, EPA 315-R-99-002 (May 1999)* EPA notes that "knowing whether the resource is healthy, declining, near collapse or completely devastated is necessary for determining the significance of any added impacts due to the proposed project. It is startling to see that no portion of the Arapahoe National **Forest outside of "river segments" is considered a part of the affected environment. There has to be some analysis as to**	*determine and disclose the projects' cumulative adverse impacts for consideration of compliance with the Section 404(b)(1) Guidelines. EPA WGFP Section 404 Comments at 7. EPA repeats this same admonition in its comments on the Moffat PDEIS. EPA Moffat PDEIS Comments at 2. See also Kleppe v. Sierra Club, 427 U.S. 390, 413 (1976) ("Cumulative environmental impacts are, indeed, what require a comprehensive impact statement."). Such complexity argues for use of adaptive management, with development of a stream management plan and monitoring to ensure that the operation of both projects contributes to achieving the management plan's goals. To date, the COE's response to these concerns has been unsatisfactory. COE states its "analysis of cumulative effects of the project on the Colorado River is sufficient in the DEIS and thus additional modeling and analysis is not warranted." See COE Response to EPA PDEIS comments (June 16, 2009) at 4. With respect to Grand County's analysis that a single EIS is required for the Moffat Project and the Windy Gap Firming Project, the COE has provided no substantive written response. Grand County therefore requests that the COE address this situation.* **Response #910-16:** Windy Gap Firming Project The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology,

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 38 whether the essential riparian areas within the National Forest will be further compromised by the 2016 System, the Proposed Action or other action alternatives. Even though the geographic area of the affected environment is extremely limited, some of the largest impacts in the entire DEIS have been found to be located in the upper tributaries of the Fraser and Williams Fork rivers on Arapaho National Forest land. DEIS 5-56. In particular, there is no mention of the extensive research being conducted by the USFS in the Fraser Experimental Forest. One extensive study samples water quality from the St. Louis Creek and uses the results as the national baseline standard of the highest water quality standards in the nation. **12. Wild and Scenic Designation** The DEIS notes that in 2006 the Kremmling and Glenwood Springs Field Offices of the BLM began the eligibility phase of a Wild and Scenic Rivers evaluation as part of their Resource Management Plan revision process. DEIS 3-282. BLM identified three segments of the Colorado River between Windy Gap and the mouth of Gore Canyon that are eligible for inclusion in the National Wild and Scenic Rivers System. *Id.* 3-**284. It is BLM's policy that when a river segment is determined to be eligible "its identified outstandingly remarkable values** shall be afforded adequate protection, subject to valid existing rights, and until the eligibility determination is superseded, management activities and authorized uses shall not be allowed to **adversely affect either eligibility or the tentative classification . . . ." BLM Manual** § 8351.32.C (May 19, 1992); see also *id.* § 8351.52.C. The DEIS fails to analyze what effect the alternatives **would have on BLM's interim management policy and whether the COE should use its own** authorities to protect these segments until the eligibility determination is superseded. **In addition, "[o]nce a river is found eligible, the** respective agency is committed to **evaluate all actions within its control through the filter of the river's potential for designation.** Some specific authorities for protecting river-related values include the Clean Water Act for free flow and water quality, the Endangered Species Act for plant and animal species within a river **corridor, and the Archaeologic[al] Resources Protection Act for cultural resources." Interagency** Wild and Scenic Rivers Coordinating Council, The Wild & Scenic River Study Process 30 (Dec. **1999). The DEIS completely fails to evaluate the Moffat Project "through the filter of the river's potential for designation." Instead, it specifically declines to determine whether any of the** alternatives would affect the suitability of the eligible segments for inclusion in the NWSRS. **The Nationwide Rivers Inventory compiled by the National Park Service ("NPS"),** available at http://www.nps.gov/ncrc/programs/rtca/nri/states/co.html, includes a 23-mile reach of the Colorado River, from State Bridge to the Blue River. (As of March 7, 2010, the NPS webpage had not been updated to include the three segments BLM determined were eligible in **March 2007.) "Each federal agency shall, as part of its normal planning and environmental** review process, take care to avoid or mitigate adverse effects on rivers identified in the **Nationwide Inventory . . . ." Presidential Memorandum for the Heads of Departments and** Agencies from President Jimmy Carter (Aug. 2, 1979). The DEIS fails to do that.	are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson (C-BT) Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. Tipping Point The Corps is not aware of a scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 39 **Further, "[a]gen**cies shall, as part of their normal environmental review process, consult with the Heritage Conservation and Recreation Service [now the NPS] prior to taking actions which could effectively foreclose wild, scenic, or recreational river status on rivers in the Inventory. *Id.*; *see also* CEQ Memorandum for Heads of Agencies, Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, 45 Fed. Reg. 59,189, 59,190 (Sept. **8, 1980) ("CEQ Memorandum"). Such consultation appa**rently did not occur. The **CEQ Memorandum also requires that "[w]hen environmental impact statements are prepared on** proposals that affect Inventory rivers the lead agency should request HCRS and the affected land managing agency to be cooperating agencies as soon as the Notice of Intent to prepare an EIS **has been published." 45 Fed. Reg. at 59,192. It does not appear, however, that the COE** requested either the NPS or BLM to be cooperating agencies. **13. Inadequate Discussion of Mitigation** An EIS must in**clude a discussion of "[m]eans to mitigate adverse environmental** impacts . . . ." **40 C.F.R. §** 1502.16(h). As the Supreme Court recognized, such a discussion is essential to ensure that agencies take a hard look at the environmental consequences of proposed actions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). Furthermore, > omission of a reasonably complete discussion of possible **mitigation measures would undermine the "actionforcing" function** of NEPA. *Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.* *Id.* (emphasis added); *see also Colorado Environmental Coalition*, **185 F.3d at 1173 ("It is not** enough to merely list possible mitigat**ion measures."). "An essential component of a reasonably** complete mitigation discussion is an assessment of whether the proposed mitigation measures **can be effective."** *South Fork Band Council of Western Shoshone of Nevada v. U.S. Dept. of the Interior*, 588 F.3d 718, 727 (9th Cir. 2009). Judged by these requirements, the discussion of mitigation in the DEIS is inadequate. Some of the most significant West Slope impacts from the Moffat Project would result, directly or indirectly from reduced surface water flows. There are a number of obvious mitigation measures the DEIS should have considered, but does not. For example, the DEIS does not consider what would probably be the most effective mitigation measure, adaptive management of the Upper Colorado River. 73 Fed. Reg. at 61,315 (to be codified at 43 C.F.R. § 46.30) **("Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain."), 61,317 (to be codified at 43 C.F.R. § 46.145) ("Bureaus should use adaptive** management, as appropriate, particularly in circumstances where long-term impacts may be **uncertain . . . .")** *See generally*, NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation 44-56 (Sept. 2003).	The direct impact discussion for aquatic resources (DEIS Section 4.9) identifies minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. Combining Moffat/WGFP into a Single EIS It would be inappropriate to combine the EIS documents for the Moffat Project and WGFP since the projects consist of two different applicants with distinct project purposes and two different lead regulatory agencies. The WGFP is included in the cumulative effects analysis for the Moffat Project. Additionally, the Corps and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) have coordinated closely with regards to the cumulative effects and mitigation of both projects on the western slope. Adaptive Management Adaptive Management was considered in the FEIS as part of conceptual mitigation and will be considered if a Section 404 Permit is issued as part of mitigation. ***Comment #910-15*** *(ID 2514)**:*** *The DEIS's Cumulative Impact Analysis Is Flawed. A cumulative impact is defined in NEPA's implementing regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . ." 40 C.F.R. § 1508.7. General statements in an EIS about a project's "possible effects and some risk do not constitute a hard look" at cumulative effects "absent a justification*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 40 Grand County has been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in Grand County. Phase **2 of that study focused among other things on an environmental flow regimen "determined to best maintain the ecological needs of the stream in relation to fisheries."** ***Grand County's*** *Stream Management Plan, Phase 2, Environmental and Water Users Flow Recommendations*, April 2008, ES-**1. ("GCSMP"). The GCSMP has been and is still on the Grand** County website, and has been provided to Denver, the COE and Reclamation. The DEIS needs to include the information from the GCSMP and to include a discussion of potential mitigation measures developed in the GCSMP. Many of the stream reaches that are affected by the action alternatives are included in the GCSMP. The GCSMP would go along way toward an Adaptive Management Plan that could involve all of the major diverters in the Upper Colorado River Watershed. The plan would include qualitative goals, monitoring to identify whether the goals are being met, and specified triggers to require changes in operation. A decision-making process **would be established to adapt operations to achieve the management plan's goals for the benefit** of all parties, when specified. **14. Changes of Water Rights Required.** Changes of water rights are necessary to implement the preferred alternative, including **changes in place of storage. In Colorado a "change of water right" is defined to include change** in place of use, type of use, time of use, point of diversion, place of storage, and direct application to storage. C.R.S. § 37-92-**103(5). Colorado law is clear that "[t]he change of water** right . . . statutes provide that applications for approval of the water use practices they encompass are **mandatory, not discretionary."** ***Empire Lodge Homeowners' Ass'n*** *v. Moyer*, 39 P.3d 1139, (Colo. 2001) (emphasis added). The need for these changes is not discussed or disclosed in the DEIS with the exception of a brief, general reference in a table. DEIS 1-23. **15. The DEIS Does Not Address Potential Climate Change Impacts Adequately.** The COE determined that climate change and global warming are reasonably foreseeable. DEIS 5-35. However, the COE chose not to describe hydrologic changes related to climate **change quantitatively due to the purported lack of an "accepted scientific method" of translating** increases in temperature into incremental changes in stream flow or reservoir levels. *Id.* **Nonetheless, a "simplified analysis" in the PA**CSM that modeled only temperature changes showed firm yield decreased between 7% and 14% with increases in temperature of 2 to 5 degrees Fahrenheit. PDEIS 5-29. Despite this significant reduction in firm yield, the COE carries the analysis of climate change impacts no further, and concludes that improved operational flexibility of the Moffat Collection System will be sufficient to address potential impacts of climate change. DEIS 5-36. **The COE's analysis of potential impacts related to climate change is** insufficient, particularly as it relates to potential decreases to stream flow in the Fraser and Colorado rivers. Even the simplified PACSM analysis indicates climate change could induce meaningful reductions in stream flow. Such decreases would have a significant cumulative effect when	*regarding why more definitive information could not be provided." Klamath-Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 993 (9th Cir. 2004). The analysis of cumulative impacts "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." Id. at 994 (internal quotations and citations omitted). In assessing cumulative effects, the EIS "must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and difference between the projects, are thought to have impacted the environment." Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-72 (9th Cir. 2006). The DEIS fails to provide an adequate analysis of the cumulative effects of the Moffat Project on resources in Grand County. For example, the analysis of cumulative surface water flow impacts for rivers and streams in Grand County is superficial, consists of a few general sentences, and fails to cite specific data to support its broad conclusions. DEIS 5-39 to -40. The same is true for the DEIS's cumulative effects discussion for water quality (id. 5-40), aquatic resources (id. 5-46 to -47), recreation (id. 5-49 to -50), visual resources (id. 5-51 to -52), and socioeconomics (id. 5-53 to -54). Such "conclusory remarks" on cumulative impacts are insufficient to discharge the COE's obligations, as they "do not equip a decisionmaker to make an informed decision about alternative courses of action or a court to review the [agency's] reasoning." Province of Manitoba v. Salazar, No. 02-2057 (RMC), 2010 U.S. Dist. LEXIS 19982, at *27 (D.D.C. Mar. 5, 2010) (Bureau of Reclamation failed to take a hard look at cumulative impacts of transbasin diversion of water from Missouri River basin). EPA Region 8 has recognized that the COE's analysis of cumulative impacts is deficient. In comments on the Moffat PDEIS, it explains "site specific characterization and disclosure of the past diversion impacts to aquatic*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 41 added to the stream flow reductions resulting from the Moffat Project, WGFP, and other foreseeable actions. It is reasonably foreseeable that with projected climate change, minimum stream flows supporting less aquatic habitat and productivity will occur much more often than **under current conditions. EPA's recent comments regarding cumulative impacts to the Colorado** River from the Moffat Project are instructive: > [I]t is reasonably foreseeable that with projected climate change induced drought, minimum stream flows supporting less aquatic habitat and productivity will occur much more often. Climate change, coupled with the reduced hydrograph due to water diversions, will likely cause and contribute to significant adverse impacts to the portions of the upper Colorado River impacted by the project. *EPA Recommendation:* The DEIS should provide a cumulative impact analysis that . . . models the impacts of a scenario where flows could be reduced substantially due to climate change. **EPA Moffat Project PDEIS Comments at 2. To the same effect are EPA's comments regarding** cumulative impacts of climate change on the WGFP: > Climate change, coupled with the reduced hydrograph due to water diversions, will likely cause and contribute to significant adverse impacts to the portions of the upper Colorado River impacted by this [WGFP] project. . . . A broader cumulative impacts analysis is necessary to assess . . . the potential for threshold responses and uncertainty associated with projected climate change. EPA believes at a minimum, the applicant should provide a cumulative effect analysis that . . . also models the impacts of a scenario where flows are reduced substantially due to climate change. EPA WGFP Section 404 Comments at 7. As with the WGFP, the cumulative impacts analysis conducted by the COE for the Moffat Project should model a scenario in which flows in the rivers and streams from which additional diversions would be taken, and their tributaries, are reduced substantially due to climate change. **Specific Comments by Page[11]** [11] Grand County incorporates into its page-specific comments the attached report by Coley/Forrest dated February 26, 2010, which focuses on land use, recreation, visual resources, cultural resources, and socioeconomic considerations plus related matters regarding purpose and need and methodology.	*ecosystems, including perennial streams, associated wetlands, and aquatic habitats, have not been adequately evaluated or disclosed for consideration in the cumulative impact analysis." EPA Moffat PDEIS Comments at 9 (emphasis added). EPA therefore advises that "[h]istorical operation of the [Moffat Project] and its impacts to the aquatic ecosystem in the upper Fraser and Williams Fork river basins need to be fully evaluated and disclosed, including the incremental impacts from the proposed project and other projects in the basin, as well as potential flow reductions from the proposed Windy Gap Project." Id. Grand County shares these concerns and adopts EPA's recommendation. As discussed above in section 2, Grand County also believes that COE has grossly understated the probable cumulative impacts of the Moffat Project in conjunction with other past, present, and reasonably foreseeable future projects. Most importantly, the DEIS fails to take into account the dramatic impacts to the aquatic environment that have occurred because of existing water projects that divert from the upper Colorado River basin. The probable impacts are significant, and the COE fails to acknowledge this basic fact. As EPA underscores, the existing peak flow conditions in the upper Colorado River Basin are "very different from historical conditions," due to the cumulative effect of numerous water diversion projects including the Colorado-Big Thompson, Moffat, Windy Gap, and Denver Water's water development in the basin. Id. at 2. Further, COE's "cumulative effects analysis did not consider the potential for threshold, or tipping point, responses within the Colorado River." Id. As explained by EPA, "[i]ncremental impacts of proposed diversions on top of the already reduced hydrograph (with altered timing of flows) increases the likelihood for the aquatic ecosystem to approach a tipping point beyond which the ecosystem may exhibit dramatic and unacceptable changes, potentially including loss of native fish species." Id. Thus, EPA "believes that*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 42 CHAPTER 1 **Figure 1-2** Comment. Figure 1-2 is misleading in that drainages shown in yellow merely contribute to the Moffat Collection System when in reality there are diversion structures on many of those tributaries. For example, Figure 3.0-2 shows diversions at or near the headwaters of many small tributaries such as Jones Creek, McQuery Creek, and Dribble Creek. **Page 1-8** Comment. The last two sentences indicate that the drought restrictions in 2002/2003 resulted in a 16% decrease in 2000 demands. This would mean that 2000 demands were approximately 257,000 AF/year, whereas Table 1-**1 indicates the "unrestricted" demand in 2002 would have** been 312,500 AF/yr. These appear to be somewhat contradictory, as it is unlikely that Denver **Water's normal demand would increase by nearly 56,000 AF in the intervening two years**. Comment. **The DEIS incorrectly characterizes Denver Water as a "public utility" for service of** water outside the boundaries of the City and County of Denver. Instead Denver has the authority over the provision of water pursuant to C.R.S. § 31-35-402(1) and is not subject to regulation by the Public Utilities Commission. See ***Bd. of County Comm'rs of Arapahoe County v. Denver Bd. of Water Comm'rs***, 718 P.2d 235, 245-246 (Colo. 1986). In fact, the 1993 form of contract provides that if Denver Water is ever placed under the authority of the Public Utilities **Commission, Denver's obligations under the distributor's contract cease. (See for example Ken** Caryl Ranch Contract, par. 5.4, page 12) **Page 1-10** Comment. Table 1-1: The DEIS should provide additional detailed information regarding the determination of the unrestricted demand of 312,000 AF/yr. Comment. Table 1-1: Water conservation savings since 1980 should have become **"institutional." If so, then it is misleading to show the gross demand of 312,000 AF/yr, when it** appears to show an automatic reduction of 27,500 AF/yr for the institutional savings. It may be more straight forward to simply present the post-27,500 AF demands in bold. Comment. Table 1-1: The DEIS fails to disclose individual sources that are combined to achieve the total present system supply of 315,000 AF/yr. Comment. In Table 1-**1, Denver Water's Total System Supply for the year** 2030 should be 345,440 AF/year (not 345,000 AF/year). Revising this estimate would decrease the proposed water shortfall to 33,560 AF/year in 2030 (rather than 34,000 AF/year) and would reduce the proposed new water supply to 17,560 AF/year in 2030 (rather than 18,000 AF/year). While Table 1-**1 reports that it is rounding to the "Nearest 1000," the table does not do so in presenting**	*the impacts of [the Moffat Project], in combination with past and reasonable foreseeable actions, are likely significant." Id. at 9. Grand County agrees with EPA's conclusions. In its response to EPA's comments, and with our explanation, the COE asserted that "[t]he Corps' analysis of cumulative effects of the project on the Colorado River is sufficient" and that "additional modeling and analysis is not warranted." COE Response to EPA PDEIS Comments at 4. Grand County disagrees with this response, and urges the COE to correct the errors that both EPA and Grand County have identified.* **Response #910-15:** Past Actions The Council on Environmental Quality (CEQ) interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the Platte and Colorado Simulation Model (PACSM) to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 43 estimates in the demand section of the table. Since the table does not round to the nearest 1,000 in the demand section, it is inconsistent for it to round to the nearest 1,000 in the supply section. **Page 1-12** Comment. It is overly conservative to model full unrestricted demands through the worst known drought period hydrology, coupled with a 30,000 AF safety factor, when Denver Water has a thorough and comprehensive water conservation program that has proven drought demand-reduction measures. If Denver Water is planning on reducing demands during a drought, then the firm-yield modeling should reflect this (i.e. *not* be unrestricted). There is still the 30,000 AF safety factor to provide additional insurance which is more than the yield of the project itself. Comment. **The DEIS describes Denver's efforts at water conservation in Section 1.4.1.2. This** information should be up-dated. In a recent presentation to the West Slope Joint Water Roundtable Meeting, Colorado Water Conservation Board staff projected future water demands assuming that per capita water use is reduced by 25% in 2030 relative to use in 2000. (Hecox, Eric. November 14, 2008 Presentation to the West Slope Joint Roundtable Meeting). From Table 1-**1 applying Denver Water's 2030 demand of 427,500 AF x 25% = a conservation saving** of 106,875 AF or a revised demand of 320,625 AF. Comparing this revised demand to Denver **Water's 2030 firm yield water supply of 345,000 AF, (without the Moffat Project) Denver would** have a firm yield surplus of 24,375 AF. The DEIS should explain why water conservation at a level of 25% is not one of the least environmentally damaging alternatives. **Page 1-16 [Table 1-3]** Comment. Table 1-3: This table is misleading as South Boulder Creek and Ralston Creek yields should be included in the Moffat system yield. **Page 1-16 [Section 1.4.2.1]** Comment. **"The study period used in PACSM extends 45 ye**ars from 1947 through 1991 and includes a variety of hydrologic conditions with dry years, wet years, and average precipitation **years."** (1) This 45-year period should be extended to include the recent 2002 drought. (2) **The impact of Denver's current diver**sions on native Fraser and Williams Fork tributary flows (pre-1947) are not included in the cumulative impacts section since the study began in 1947 after Denver started diverting.	The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. Tipping Point The Corps is not aware of a scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. The direct impact discussion for aquatic resources (DEIS Section 4.9) identifies minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 44 **CHAPTER 2** **Page 2-11** **Comment**. Table 2-4. Indirect Potable Reuse was screened out in Screen 1C, because of costs, however, the DEIS does not disclose those costs. In issuing any 404 permit, the Corp can only approve of the least environmentally damaging alternative. 40 CFR 230.10(a). The indirect potable reuse option needs to be **included in a meaningful way because of Denver's legal obligation to reuse West Slope water to the maximum extent feasible. "In order to minimize the** amount of water removed from Western Colorado, eastern slope importers should, **to the maximum extent feasible**, reuse and make successive uses **of the foreign water."** *City and County of Denver v. Fulton Irrigating Ditch Co.*, 506 P.2d 144, 148 (Colo. 1972) (emphasis added). **The 1955 Blue River decree in paragraphs (e) and (f) requires Denver to "exercise due diligence, within legal limitations, and subject to economic feasibility," to reuse the Blue River** transmountain return flows. The law in Colorado requires transmountain water to be reused, **subject to "legal limitations." One of the legal limitations on Denver** is the May 1, 1940 **Agreement where Denver agreed with the Consolidated Ditches not to use "any water, irrespective of its source, which shall have been once used though its municipal water system"** and returned to the stream. In return, Denver would not make evaporative releases from specified streambed reservoirs. In *Fulton*, the validity of the 1940 Agreement was upheld. In a companion case, *City and County of Denver v. Consolidated Ditches Co. of Dist. No. 2*, 807 P.2d 23 (Colo. 1991), the 1940 Agreement was construed to apply to only those waters that Denver appropriated prior to May 1, 1940. Under *Consolidated Ditches*, all of the absolute water rights that would apparently be used to supply water for the preferred option through the Moffat Tunnel (except the Cabin-Meadow System, see page 1-6) would **not be available for reuse** because they precede 1940. It is wasteful for Denver to divert more water through the Moffat Tunnel that cannot be reused on the Eastern Slope. Reusable water in a municipal system is extremely valuable, because for indoor municipal use, a small percentage of the water is consumed and the vast majority returns as sewage effluent. In an indirect potable reuse project this water is recycled a number of times to extinction. If an indirect potable reuse project is implemented, Denver would realize increased **firm** yield that would likely supply its projected short term need of 18,000 AF, and correspondingly reduce the capacity of needed storage, which would in turn cause less environmental damage and reduce the overall cost of the project. Indirect potable reuse is generally more acceptable and can achieve drinking water standards by storing the water for a period of time and blending it with other water supplies. Denver could treat its transmountain effluent, pump it into Gross or Ralston Reservoirs or other nearby reservoirs, blend it with its existing supplies, and deliver the water to the Moffat Treatment Plant. An indirect potable reuse project would meet the two primary purposes without the need to divert additional water from the West Slope. The DEIS is flawed for not seriously	additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. ***Comment #910-263*** *(ID 2513)**:*** *The DEIS's Description of Existing Conditions Must Be Supplemented. An understanding of baseline conditions in the Fraser Basin and Upper Colorado Watershed, including but not limited to those that result from ongoing manmade disturbances, is essential under NEPA. "Without establishing the baseline conditions which exist [before the proposed action occurs], there is simply no way to determine what effect the proposed [action] . . . will have on the environment and, consequently, no way to comply with NEPA." Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). Manmade disturbances in the Fraser Basin are significant. The DEIS reports that the uppermost diversion in the Fraser Basin is the Berthoud Canal, a transmountain structure which diverts an average of approximately 670 AF/year of water to the east side of the divide. DEIS 3- 17. Below the Berthoud Canal is Denver Water's Moffat Collection System, which contains 31 primary diversion points. Id. 3-17 to -18. According to the DEIS, nearly 28 miles of open canals, pipes, and siphons collect flows from numerous contributing drainages and direct it to the Moffat Tunnel. Id. 3-17. Denver Water reports that in the 20-year period ending in 2005, the Moffat Tunnel alone conveyed an average of 55,800 AF per year of water under the Continental Divide. Id. Today, 60,900 AF/year are diverted from the Fraser River Watershed. Id. 3-87. Likewise, manmade disturbances in the Upper Colorado Watershed are significant. On average, an estimated 65% of the total*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 45 evaluating indirect potable reuse projects. Table 2-4, lists two indirect potable reuse projects, but both involve a 72,000 AF reservoir. Why such a large reservoir is needed is not explained. These projects were apparently screened out because of costs. Those costs should be revaluated **considering a smaller reservoir and with a serious discussion of Denver's legal obligation to** reuse water diverted **under the Blue River decree and the Corp's legal requirement to issue any** 404 permit for the least environmentally damaging alternative. Potable reuse is already considered to be a practicable water supply option in Colorado. The Parker Water and Sanitat**ion District's Reuter**-Hess project that treats effluent and pumps it to Reuter-**Hess where it is blended with other water. The City of Aurora's Prairie Waters Project** diverts reusable effluent to underground storage where it is detained for a period of time and then pumped to Aurora Reservoir where it is blended with other waters of that City. The DEIS contains no reasons why Denver should not consider an indirect potable reuse project to meet its projected needs. **The DEIS fatally ignores Denver's obligation** to reuse water under the Blue River decree and Colorado law concerning transmountain water rights. Instead, large storage projects are passed through the screening process that would divert more water through the Moffat Tunnel that is not reusable. The **DEIS should take a "hard look" at various indirect potable reuse** projects that could achieve the yield sought, supply the Moffat Treatment Plant, abide by Colorado law applicable to Denver on its reuse of transmountain water, and cause less environmental damage to the aquatic ecosystems on the West Slope. **Page 2-26** **Comment**. Paragraph 1: Why are reusable supplies only used in drought conditions under alternatives 8a and 10a? **Page 2-38** **Comment**. **Gross Reservoir operations.** The DEIS states that Denver Water does not currently utilize the bottom 12,000 AF of the reservoir due to siltation and/or damage to outlet works from releases below this level. This means that approximately 30% of this existing reservoir is not being used. **Comment**. Section 2.3.3 of the PDEIS reported that Denver Water currently diverts 60,000 AF through the Moffat Tunnel on an average annual basis. PDEIS 2-34. While that language has been deleted from Section 2.3.3, Table H-7.1 continues to report a similar, inaccurate number. *See* Table H-7.1 (reporting 63,799 AF average annual flow through Moffat Tunnel). This is misleading. The figure is a modeled number. Denver actually diverts around 47,705 AF on average. (1936-2006) The DEIS must include actual diversions through the Moffat Tunnel, rather than a hypothetical modeled number. This error permeates the entire DEIS and is contrary **to law. "The purposeful inclusion of inaccurate data in the FEIS, however, is a different matter .** . . . Including inaccurate data in the FEIS hinders one of the primary reasons for producing the	*water in the Upper Colorado River System is diverted to the east slope – a percentage that will increase to 85% if both the WGFP and Denver Water's Moffat Expansion Project are implemented. Although both the Fraser Basin and Upper Colorado River Basin already have been severely degraded by human activities, the DEIS does not explain the impacts that have been caused by these activities. For example, as a result of diversions to the east slope, the following impacts have occurred in Grand County in recent years largely due to the combined impacts of C-BT, WGFP, and Moffat Tunnel Collection System operations: • insufficient flows for agricultural irrigators to pump water from the Colorado River; • insufficient flows for Hot Sulphur Springs to pump water for its public water system; • insufficient flows to preserve fishing on the Colorado River, despite the instream flow requirements of the June 23, 1980 Memorandum of Understanding; • high temperatures in the Colorado River above Williams Fork, resulting in fish mortality; • insufficient flows in late summer to maintain commercial fish ponds on some ranches; • reduction in the number of kayaking days; • death of cottonwoods along the river; • spread of whirling disease; • reduced water quality in Grand Lake; • establishment of the didymo (rock snot), a nonnative algae that creates thick mats of moss that attach to rocks creating nuisances; and • increased nutrient loading and other potential impacts from birds (some non-native, such as pelicans) attracted to the Windy Gap Reservoir. Documentation of these existing conditions may be found in a number of technical reports, including Hydrosphere Resource Consultants, Inc., Upper Colorado River Basin Study, Phase II (May 29, 2003); and Coley/Forrest, Grand County: Its Economy & Water Resources (July 2007). Where existing conditions are presented, the information is not up-to-date. For example, water quality and aquatic life sections are based largely on stale information from the Two Forks EIS which has*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 46 document: to provide the public with information about federal projects that will impact the environment . . . . Defendants violated NEPA by purposefully including the inaccurate data in the FEIS. *See* 40 C.F.R. § **1500.1(b) ('**Accurate scientific analysis, expert agency comments, and public scrutiny are **essential to implementing NEPA.**')." *North Carolina Alliance for Transp. Reform, Inc. v. U.S. Dep't of Transp.*, 151 F. Supp. 2d 661, 688 (M.D.N.C. 2001). (And the court awarded attorneys fees in this case.) **Page 2-39** **Comment**. Paragraph 1: The potential termination of the water deliveries to Climax and the FROR on the purchase of the Climax rights have not been considered (roughly 3,000 to 6,000 AF) in the **DEIS. This circumstance would add to Denver Water's yield at Williams Fork Reservoir, which would increase Denver Water's firm**-yield. The DEIS should have considered these as a cumulative effect. **Page 2-39** **Comment**. Paragraph 4: **The DEIS doesn't explain** why Gross Reservoir is relied on most heavily initially. **Page 2-83** **Comment**. The PACSM model does not include any potential changes due to climate change. The potential impacts of climate change should be discussed in the DEIS by showing changes/precipitation and temperature changes since 1947 **Page 2-85** Why does the strategy under the No Action alternative involve reducing the strategic reserve by up to 15,000 in drought periods but there is no reduction of the strategic reserve in the preferred alternative? **CHAPTER 3** **Page 3-4** **Comment**. The methodology of selecting focus river segments based upon the annual average flow (greater than 10% change) is flawed because significant changes greater than 10% could have negative impacts in individual months that are not reflected in the annual average. **Comment**. The DEIS states that average monthly changes in flow under the action alternatives are less than 10% at the Colorado River near Kremmling gage. While average monthly changes at the Kremmling gage are less than 10% between the Full Use Existing scenario and the Preferred Alternative, average changes between current conditions and the Preferred Alternative are greater than 10% in some months and should be considered in the analysis. This is another	*been supplemented to some degree. A considerable amount of more recent data and information has not been considered, indicating that the level of research was less than rigorous and may not be accurate for existing conditions. In addition, much of the discussion about fishery and macroinvertebrate conditions in the Fraser River does not consider that there have been significant habitat improvement projects (Fraser River Enhancement Project, Granby Improvements), a new wastewater treatment plant that alters the return flows but more significantly removes ammonia which was a limiting factor for aquatic life, or provides much consideration to the changing ecology as a result of Whirling Disease. A more detailed description of the current effects of on-going water diversion projects (e.g., conditions before and after the C-BT project, the Windy Gap project, and Denver Water's diversions through the Moffat Tunnel) is necessary to understand how these conditions came about as well as how they can be mitigated. See Lands Council v. U.S. Forest Service, 395 F.3d 1019, 1028 (9th Cir. 2004) (holding EIS for a timber sale "should have provided adequate data of the time, type, place, and scale of past timber harvests and should have explained in sufficient detail how different project plans and harvest methods affected the environment."). A more detailed description is especially important here because of the complex interactions among the various diversions from Fraser River and Colorado River and their tributaries and the possibility that implementation of the Moffat Project could be a "tipping point," resulting in disproportionately greater impacts in the Fraser and Colorado river basins than otherwise would result if proposed Moffat Project depletions did not occur in an already severely degraded stream system. As EPA explains: The identification of the effects of past actions is critical to understanding the environmental condition of the area. Knowing whether the resource is healthy, declining, near collapse, or*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 47 example of how the DEIS 'front-loads' effects prior to 2016 and reduces the impacts due to the project. Comment: 'Focus River Segments' are selected on the basis of whether they will experience flow changes greater than 10% based on annual average flow, and are further defined on page 3-5, and in table 3.0-1, with the following explanation: "it was impractical to collect data on each individual sub-reach of every affected stream. Several representative river reaches, which experience the greatest flow change were therefore identified for detailed data collection and evaluation." Focus river segments are used to evaluate all flow related resources, and in some cases include more in-depth evaluation using so called "representative sampling sites" (see comment on DEIS page 3-5) to look at characteristics such as riparian habitat, stream channel dynamics, surface sediment, vegetation, hydraulics, and water quality. Table 3.0-1, explains that the Fraser River segment represents the "mainstem downstream of Denver Water's diversion points to its confluence with the Colorado River near Granby, and approximately 30 tributaries . . . ." It is not until section 3.9.5, table 3.9-4, that focus river segments are discussed in detail. It is difficult in some sections of the DEIS to ascertain whether the term "focus river segment" is being used in certain flow-related resource sections according to the definition in table 3.0-1 and as shown in figure 3.0-1, or as explained in section 3.9.5 for any given flow-related resource section other than aquatic biological resources. If the 'focus river segment' definition of table 3.0-1 applies to any of the flow-related resources evaluated in the DEIS, it means that approximately 95.1 river miles or 29% of the total project river miles (table 3.1-18) have been lumped together for consideration. This 'segment' includes probably the largest range and greatest variety of stream characteristics in the project. In addition, this segment includes 20 tributaries representing at least 22.9 river miles with *year 'round* percent changes in depletions ranging from less than 10% to 100% (appendix H, tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28), and presumably representing 100% diversion for these tributaries. It is inappropriate to lump these tributaries into a 'Fraser River segment' to avoid discussion of the magnitude of changes in any of the tributaries, in particular those without bypass flows. If focus river segments were indeed broken into smaller study areas such as the areas between nodes identified in figure 3.0-1, then the DEIS needs to be clear about which definition of the term 'focus river segment' it is using, and which region the text is referencing. This same obfuscation of the facts about diversions from the tributaries appears to be exercised in the arrangement of the Williams Fork focus river segment, which begins below the confluence of the four diverted tributaries (DEIS page 3-7, table 3.0-1). Comment. The downstream study area on the Colorado River did not extend far enough to assess the impacts of the project. Decreased releases from the Williams Fork Reservoir affect the	*completely devastated is necessary for determining the significance of any added impacts due to the proposed project. The NEPA document should consider how past activities have historically affected and will continue to detrimentally affect the resources of concern. EPA, Consideration of Cumulative Impacts in EPA Review of NEPA Documents, EPA 315-R-99-002/May 1999, Section 4.3.* **Response #910-263:** Several of the agricultural irrigators that pump from the Colorado River, including The Meadow Pumpers', water rights were granted senior status in relation to C-BT Project water rights per Senate Document 80. While these rights were granted senior status with respect to the C-BT Project, they would be operated in strict priority in relation to Denver Water's water rights. The physical ability for these rights to pump is primarily limited during dry years and late in the summer when flows in the Colorado River are lower. The Moffat Project would not affect low flows in dry years because there would be no additional diversions in dry years due to the Moffat Project. In dry years, Denver Water already diverts the maximum amount physically and legally available under its existing water rights and infrastructure without additional storage in its system, in which case, there would be no further reduction in low flows due to the Moffat Project. In addition, Denver Water's out-of-priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no net change in Colorado River's flows upstream of these pumps due to Denver Water's out-of-priority Moffat System diversions. In summary, there would be little to no impact on the agricultural irrigators' ability to pump due to the Moffat Project. Low flow conditions that occurred during the 2002 drought that inhibited irrigators from pumping from the Colorado River are described in FEIS Section 3.1.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 48 Colorado River below Williams Fork, which is one of the most stressed portions of the Colorado River in Grand County. This project also affects releases from Green Mountain Reservoir and the timing of both releases. **Page 3-5** Comment. **Similar to the way 'focus river segments' obscure the** facts, **so called "representative sampling sites" do not represent any of the 24 tributaries covering at least 27 riv**er miles (8% of the project river miles) in the Fraser and Williams Fork basins that have no bypass flows, because all sampling sites are located below the confluence of at least four tributary drainages, and all but the one in the Williams Fork are on streams with not just bypass flows, but prescribed bi-modal summer/winter bypass flows. Furthermore, the WF1 and FR2 sampling sites are located downstream of confluences with the Middle Fork of the Williams Fork, and Crooked Creek (to which Pole Creek is tributary) respectively, streams unimpaired by trans-basin diversions that provide at a minimum: 1) uninterrupted flow over a natural hydrograph with 2) strong peak and flushing flows for channel and habitat maintenance at each site. These are benefits that a**ren't shared and would not be seen with closer scrutiny of any of the 24 diverted** streams without bypass flows. Similarly, the 12.4 miles of streams with a single bypass flow are not represented by the **so called "representative sampling sites."** Evaluation of environmental consequences and cumulative impacts for the Fraser and Williams Fork basins must include focus river segments and sampling sites that allow for accurate disclosure of changes to flow-related resources, and that accurately characterize proposed management conditions in the 24 fully diverted tributary streams in the Fraser and Williams Fork basins for all flow-related resources. Failure to select and utilize representative sampling sites and possibly also focus river segments establishes the foundation for intentional systematic error resulting in underestimation of the environmental consequences of the project throughout the DEIS. **Page 3-5** Comment. Using only selected sample locations and the extrapolation of results from river focus segments to other segments in the collection area is flawed because within any one overall study area segment, conditions may vary drastically with respect to channel morphology, inflows, outflows, diversions, elevation, and land use. **Page 3-10** Comment. The section on water quality *and all related sections* (such as cumulative impacts) should include a thorough discussion of all discharge permits held in the region, in particular the **Union Pacific Railroad's discharge from Moffat Tunnel, and Climax Mine's two di**scharges to ground- and surface-water. This should include a quantitative evaluation, presentation, and consideration of impacts to the Fraser River and to municipal users from the Union Pacific	Past Actions CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in DEIS Chapter 3, specifically in Section 3.1. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows in the Fraser and

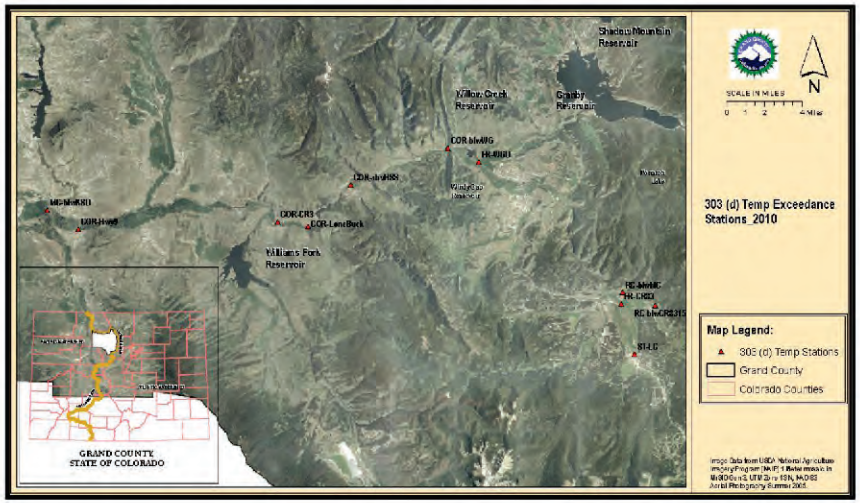
Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 49 Railroad Moffat Tunnel discharge CDPS Permit CO-0047554. The permit, and accompanying rationale, document the fact that at the time of re-issue of the permit, the discharge was in violation for total suspended solids (TSS), and that further analysis of the metals content of the discharge was required to determine whether treatment would be necessary for metals compliance. If treatment for metals is determined to be necessary, the variance for TSS will be re-evaluated. If not, the river will continue receiving 10 tons of less than 3 micrometer suspended sediment annually. With adequate velocity, this sediment will remain suspended, but can contribute to turbidity. Reducing flows may exacerbate this problem, potentially impairing the ability of trout to find food, as trout are sight-feeders. If the TSS concentrations are high enough, gill damage may occur. Once the sediment settles, it can contribute to embeddedness and reduce habitat for insects, and smother trout eggs. Similarly, metals concentrations have adverse effects both on the aquatic community and potentially on the water and sanitation districts downstream. **At the time of Grand County's PDEIS comments, UPRR had been collecting monthly** data on their discharge and reporting it to the State, where it is publicly available. The COE should utilize the available data in their analysis. The table below shows the range of values for a number of monitored parameters as reported to the State. **parameter / value/range / unit / fraction** copper / 3.1-36 / ug/L / dissolved iron / 120-1500 / ug/L / dissolved iron / 1400-9800 / ug/L / total uranium / 95-270 / ug/L / total lead / 4-98 / ug/L / dissolved manganese / 1.5-65 / ug/L / dissolved mercury / .37-1.1 / ug/L / total nickel / max 13 / ug/L / dissolved silver / max .5 / ug/L / dissolved zinc / 21-240 / ug/L / dissolved Flow / .04-1.14 / mgal/day TSS / 21-200 / mg/L **Comment**. The single paragraph on Channel Dynamics is not identified in the table of contents. **Page 3-16** **Comment**. Section 3.1.5 on surface water pertaining to the river segments, and also the appropriate corresponding sections on all flow related resources as outlined on DEIS page 4-4,	Williams Fork river basins diverted by Denver Water. This allows readers to compare the percentage of natural flows with past diversions at each of Denver Water's diversion locations modeled in PACSM under Current Conditions (2006), Full Use of the Existing System, and for each of the Moffat Project alternatives. Additional discussion of the affected environment related to water quality, Section 303(d) listings, and discharge permits has also been included in FEIS Section 3.2. Tipping Point There is not a known scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. For example, in fully diverted tributaries that do not contain fish and few macroinvertebrates, it is likely that the resource is past the tipping point. In other stream segments, site-specific information was assessed to determine if the Project would create a tipping point effect. This information is included in FEIS Sections 3.11, 4.6.11 and 5.11. Invasive Species FEIS Sections 3.11, 4.6.11 and 5.11 have been revised to include further evaluations of the effects of

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 50 should disclose what happens to aquatic resources when creeks with no bypass requirement are diverted 100%. This discussion should include: 1. the typical duration of the diversion and months in which diversions occur; 2. the typical percentage of streams impacted by such diversions; 3. presence/absence of stranded pools/beaver ponds during diversions and associated changes in water chemistry in the pools; and 4. impacts to the rivers (and other) systems when diversions begin and cease. The following photographs from Jim Creek are included to illustrate the oxidation of sediments that occurs due presumably to iron-oxidizing bacteria that thrive in low oxygen or anoxic conditions, and the surface scums from those bacteria that accumulate in stranded pools during times of diversion. These photographs were taken on September 1, 2009. At that time, Jim Creek had been 100% diverted until just 2 hours prior to a tour given to Representative Jared Polis, at which time Denver Water began bypassing what they identified as 0.5 cfs of water. These photographs were taken from or near the handicap accessible boardwalk used by the campground for the National Sports Center for the Disabled, just opposite the entrance to Winter Park off Highway 40. **Figure 1 Jim Creek below diversion 9/1/09. Note microbial scum not yet washed out by 0.5cfs bypass begun earlier that day.**	flows and water temperatures on aquatic organisms in the Fraser River, including nuisance and invasive species. Didymo is a native species that is creating water quality issues State-wide, not just in Grand County. Didymo apparently prefer cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo. Whirling disease is a State-wide epidemic being managed by Colorado Parks and Wildlife (CPW, previously called Colorado Division of Wildlife) and it does not appear to be associated with stream diversions. The diversions act as barriers to the upstream movements of fish and likely limit the expansion of whirling disease. Whirling disease is discussed in DEIS Section 3.9.0. Moffat Project diversions occur in high mountain streams (e.g., Upper Williams Fork, Vasquez Creek) that are generally free from whirling disease, so it is unlikely that the proposed Project would increase the spread of the disease. DEIS Section 3.1 presents information that demonstrates the hydrologic effects of upstream transbasin diversions and increased water use over time in the upper Fraser River Basin and along the Colorado River mainstem at Windy Gap. DEIS Table 3.1-10 summarizes the effects of historical Moffat Collection System diversions on native flow at the Fraser River at Winter Park gage. On average, Denver Water diverted approximately 50% of the average annual native flow at the Fraser River at Winter Park gage for the 30-year period from 1975 through 2004. The percentage of native flow diverted

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 51 **Figure 2 Jim Creek below diversion 9/1/09. Note iron oxides in sediments, embedded cobbles, and patches of microbial scum.** **Figure 3 Jim Creek below diversion 9/1/09. Note iron oxides and remaining patch of microbial scum.** **Page 3-17** Comment. The historical diversions by the Moffat Tunnel that are listed in the DEIS do not equate to **the records shown in the Colorado Office of the State Engineer's "Colorado Decision Support System" database. An explanation for this discrepancy is not given.** Comment. The PDEIS reported that diversions at the Moffat Tunnel for a 10 year period ending **in 2002 averaged 43,700 AF. The DEIS reports that "for the period from 1975 through 2005, the Moffat Tunnel conveyed an average of 55,800 AF per year under the Continental Divide . . . ."** DEIS 3-17. **The DEIS, however, displays "Current Conditions"** of Moffat Tunnel Diversions at a much higher value of 63,799 AF average annual. Table H-7.1: The ACTUAL diversions data should be used to display current conditions rather than a modeled figure that contradicts actual diversion data. **"Though an agency's** expert choice of methodology is entitled to deference, a model must be rejected as arbitrary and capricious "if there is simply no rational relationship between the model and the known behavior of [the items] to which it is applied.'" *Greater*	by Denver Water depends on the location in the basin. Denver Water would divert over 90% of the native flow with the Moffat Project on-line from some small tributaries that do not have bypass flow requirements. Denver Water would divert about 76% of the native flow at the Winter Park gage with the Moffat Project on-line. At the Granby gage located near the mouth of the Fraser River, Denver Water's average annual Moffat Collection System diversions represent approximately 41% of the native flow. Tables showing the percentage of native flow diverted by Denver Water under Current Conditions (2006), Full Use of the Existing System and the proposed Moffat Project flow were added to FEIS Appendix H. The discussion of the affected environment in FEIS Section 3.1 was expanded to provide more information on the current impacts of existing Moffat Collection System diversions. Current problems caused by low flows during the late summer and in dry years are partially due to operations of the existing Moffat Project. The proposed Moffat Project would not cause additional flow reductions during those times since there would be no additional diversions due to the Moffat Project in the late summer or in dry years. There would be no additional diversions in dry years because Denver Water would divert the maximum amount physically and legally available under its existing water rights without additional storage on-line. For some resources, there is not a known scientific threshold or "tipping point" at which negative impacts occur nor is the Corps aware of specific models or techniques available to conduct "threshold" analyses. The magnitude of impact depends on the current state of that resource and factors that influence that resource. Tipping point issues were addressed for aquatic biological resources in FEIS Sections 3.11, 4.6.11, and 5.11.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 52 *Yellowstone Coalition v. Kempthorne*, 577 F. Supp. 2d 183, 198 (D.D.C. 2008) (citations omitted). **Page 3-21** Comment. Table 3.1-10: The average annual volume of diversions for the Berthoud Canal shown in the table is inconsistent with the value stated on page 3-17 (725 af/yr vs. 670 af/yr). **Page 3-22** Comment. Figure 3.1-1: This figure should display the average daily streamflow under Preferred Alternative 1a and under the full use existing system. **Page 3-24** Comment. There are several comments regarding the section on water quality: Please correct the spelling of Hot Sulphur Springs throughout this section. **In the U.S. Forest Service "Watershed Condition Assessment" completed for the "1997 Revision of the Land and Resource Management Plan" for the Arapaho**-Roosevelt National Forests and Pawnee National Grassland,[12] the Fraser River is rated Class III from the Fraser headwaters on Berthoud Pass to the confluence with Vasquez Creek. Class III is defined as **"Watersheds exhibit low geomorphic, hydrologic and biotic integrity r**elative to their natural potential condition. A majority of the drainage network may be unstable. Physical, chemical and biologic conditions suggest that soil, riparian and aquatic systems do not support beneficial **uses." (Condition class definition from F**orest Service manual 2500, Chapter 2520). This assessment is not disclosed anywhere in the DEIS, starting here with the water quality section. Data collected as a part of the Grand County Stream Management Plan should be utilized where applicable in this DEIS, including in this section on water quality. Please note that there is a longer period of record (at least 5 years) for temperature data **and that it is now available on the "new" GCWIN website (accessible through** www.co.grand.co.us). Temperature discussions imply that high ambient air temperatures dictate water temperatures, and essentially that water temperature exceedances are unavoidable. This ignores the impact that high altitude groundwater recharge might have on stream temperatures throughout the year, in particular in late summer, when high temperatures are most dangerous to fish. The Fraser Drainage basin experiences high altitude interception and removal of over 50% of its water, a significant percentage of which might otherwise naturally flow to recharge zones [12] 1997 Revision of the Land and Resource Management Plan for the Arapahoe-Roosevelt National Forest and **Pawnee National Grassland" accessed online, February 2010 at** http://www.fs.fed.us/r2/arnf/projects/forest-planning/index.shtml.	***Comment #910-262*** *(ID 2512)**:*** *The COE's Analysis of Hydrologic Conditions in the Upper Colorado River Watershed Is Flawed. Some of the most significant impacts to Grand County result from hydrologic changes associated with flow depletions. The analysis of hydrologic changes should be revised to insure that such changes are accurately reported.* **Response #910-262:** The analysis of hydrologic changes was expanded in the FEIS. The specific comments presented under Sections 4.1 through 4.7 of this comment letter have been responded to individually. ***Comment #910-272*** *(ID 2511)**:*** *Actual Impacts and Observed Conditions Should Be Presented in Favor of Modeled Predictions. The analysis of hydrologic conditions in the DEIS must accurately document changes in magnitude, frequency, duration, timing and rate of change before impacts of flow depletions on the aquatic environment can be understood. (See B.D. Richter, J.V. Baumgartner, J. Powell and D.P. Braun, "A Method for Assessing Hydrologic Alteration within Ecosystems," 10 Conservation Biology 4 (1996)). NEPA requires EISs to contain high quality information and accurate scientific analysis. 40 C.F.R. § 1500.1(b). When relevant information is incomplete or unavailable except at an exorbitant cost, the EIS must disclose that the information is incomplete or unavailable and discuss its significance. Id. § 1502.22. To the extent, therefore, that information on actual impacts to the Fraser Basin and Upper Colorado River Basin is available or readily obtainable, it should be used in preference to predicted impacts from modeling. As discussed above, an understanding of the actual impacts of the Moffat Project requires a comparison of pre-Moffat Project conditions with actual existing conditions.*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 53 at a variety of locations in the basin, and then later be discharged throughout the year as base flow to streams. Adequate discharge of base flow later in the summer, when the river should be dominated by base flow, would have a moderating effect on stream temperatures, since groundwater temperatures in the Fraser Valley alluvial aquifer generally range from 4-10 degrees Celsius throughout the year.[13] Ground-water/surface-water interactions are often overlooked. A report in 2004 by Lui, Williams, and Caine[14] demonstrates that even during spring runoff, when conventional wisdom would have stream flow dominated by snowmelt, 64 ±2% of runoff consisted of reacted groundwater in the larger study area, located just on the flip side of the Continental Divide. If this recharge water is routinely removed before it can ever make it to groundwater, and stream flows are dominated by engineered flows coming from measured flumes higher in the valley that are subject to warming by air temperature throughout their paths down valley, this could be having a significant impact on stream temperatures. This circumstance would only be exacerbated by the increased withdrawals proposed in the project. The Fraser River is scheduled for listing on the 303(d) List Water Quality Limited Segments Requiring TMDLs (Regulation No. 93) for temperature, and for copper as of 2010. Several sites in Grand County where temperature issues have been identified are shown in the following map, and include: Fraser River in Tabernash, Ranch Creek below CR 8315, Ranch Creek Below Meadow Creek, Fraser River at County Road 83, Fraser River upstream of Windy Gap, Colorado River below Windy Gap, Colorado River above Hot Sulphur Springs, Colorado River at Lone Buck, Colorado River at County Road 3, Colorado River at Highway 9. [13] Bauch, N.J. and Bails, J.B. (2004), Water quality characteristics and ground-water quantity of the Fraser River watershed, Grand County, Colorado 1998-2001, USGS WRIR 03-4275. [14] Lui, F., Williams, M.W., Caine, N., (2004), Source waters and flow paths in an alpine catchment, Colorado Front Range, United States, *Water Resour. Res., 40,* W09401, doi:10.1029/2004WR003076.	*Only then will predictions of future conditions be meaningful. Moreover, it is important to recognize that models have their limitations: I sometimes think we place too much faith in models – computer programs, or similar patterns -- rather than walking the ground, looking, seeing, feeling. Models, rather than improving thought, often impose a barrier to thought. We get so wrapped up in our analogue we forget that it is reality we seek to describe. Utahans for Better Transp. v. U.S. Dep't of Transp., 180 F. Supp. 2d 1286, 1290 (D. Utah 2001), modified on other grounds, 319 F.3d 1207 (10th Cir. 2003).* **Response #910-272:** Please see the response to Comment ID 2510. ***Comment #910-266*** *(ID 2510)**:*** *The Model Does Not Accurately Describe Existing Diversions and Therefore Under-Reports the Magnitude of Changes in Diversions That Will Be Caused by the Proposed Action. The hydrologic model does not use existing levels of diversions in Grand County against which to measure impacts of flow depletions. The actual reported average annual diversions through the Moffat Tunnel are around 48,000 AF per year. (SEE ATTACHMENT 1 OF THIS LETTER.) In contrast, the DEIS uses a modeled number for Moffat Tunnel diversions of around 64,000 AF. DEIS, Table H-7.1. Thus "current" depletions are over- reported by 16,000 AF on average which gives an inaccurate picture of the existing baseline conditions. "Without establishing the baseline conditions which exist . . ., there is simply no way to determine what effect the proposed [action] will have on the environment and, consequently, no way to comply with NEPA. Half Moon Bay Fishermans' Mktg Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). The same error occurs for Gummlick and Roberts Tunnels – higher modeled numbers - instead of actual diversion were used for "current" conditions.*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 54  	*These errors become especially important when trying to understand the significance of the changes between existing conditions and future conditions. The modeled percentage differences in depletions are much smaller, and hence appear less significant, than if actual diversions are used as the point of comparison. When the actual diversion records exist for the Moffat Collection System, there is no rational basis to rely on a model.* **Response #910-266:** The purpose of the Current Conditions scenario is to represent hydrologic conditions that would occur over the 45-year study period under Current Conditions, including facilities, operations, consumptive and non-consumptive water rights, instream flow rights, demand levels, operating rules, and other water management considerations and preferences throughout the Upper Colorado River Basin. The Current Conditions scenario is not intended to replicate historical flows at U.S. Geological Survey (USGS) gages and diversions at the Moffat, Gumlick, and Roberts Tunnels. The Current Conditions scenario accurately depicts current level of diversions and does not understate the incremental change that would occur with a Project on-line. It is not appropriate to compare Current Conditions model data to historical data to evaluate effects for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. One would expect potentially large differences when comparing model results with historic records. If modeled flows with the proposed Moffat Project on-line are compared to

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* ATTACHMENT The water quality discussion does not systematically explain: 1. the quantity and years of water quality data available. 2. sample and data site locations: better maps are necessary, particularly as they relate not only to geographic features and diversion structures (diversion nodes should be shown in detail for the Fraser and Williams Fork watersheds), but also to major dischargers and location of discharges (ex: Climax Mine, Union Pacific Railroad Moffat Tunnel, WWTPs). The maps in appendix E4 are inadequate for these purposes, and figure 3.0-2 encompasses too much function in their stead. a. appendix E4 figure 2 of the Fraser River has a large callout box obscuring much of Crooked Creek and nearly all of Pole Creek. 3. how water quality data measures up to applicable standards: a table would have made this discussion clearer, and should include both acute and chronic values where applicable. a. Where standards values depend upon another parameter such as copper depends upon hardness, rather than presenting a single value for hardness that is not necessarily representative of the range of hardnesses in a reach, present the applicable range for that reach and calculate the copper values accordingly. Examples include: In the Fraser River at CR83, hardness ranges 18-48 mg/L (RiverWatch), yet metals concentrations were based on a hardness of 50 mg/L. In the Williams Fork, hardness from USGS site 09037500 ranged from 22-55 mg/L, yet metals concentrations were based on hardness of 25 mg/L. In the Blue, metals were based on a hardness of 100 mg/L. It is not clear at the conclusion of some of these paragraphs whether or not standards were approached, exceeded, or values were not even close. 4. where standards are exceeded. For example, in the Williams Fork, the paragraph **on dissolved oxygen reads "[t]he regulatory standard for DO is 6.0 mg/L during** non-spawning times for salmonoid species and 7.0 mg/L during salmonoid spawning times. DO Samples ranged from 3.5 to 10.7 mg/L. The 15th percentile **ranges from 5.4 to 7.4 mg/L." DEIS 3**-34. Clearly, samples have been collected that are below acceptable limits, but no further discussion or acknowledgement is made here. 5. where data are inadequate for comparison with the relevant standard, and whether or not a suitable proxy exists. For example: regulatory standards exist for nitrite **and nitrate separately, yet reported data is for "nitrate plus nitrite," with no** discussion of whether the values can be compared. #1463411 v2 den	historical flows, the differences would reflect all changes that have occurred and not just the effects of the proposed Moffat Project. Modeled Current Conditions Moffat Tunnel diversions (63,799 AF/yr) are higher than average annual Moffat Tunnel diversion of about 48,000 AF for the period from 1936-2006 because Current Conditions diversions reflect meeting an average annual demand for Denver Water of 285,000 AF/yr whereas, the average annual demand met during the period from 1936 through 2006 was less. In addition, there are likely differences in the averages because the periods compared are different lengths and may be hydrologically different. It is possible that the period from 1936 through 2006 is wetter overall than the period from 1947 through 1991, which could also partially explain why the historical average is lower. These reasons also apply to differences in Current Conditions versus historical Gumlick Tunnel and Roberts Tunnel diversions and flows in the Fraser and Colorado rivers. To provide more information on the impacts of past and current diversions on stream channels, FEIS Section 3.1 was revised to provide a discussion of natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver Water is estimated to divert under Current Conditions, Full Use of the Existing System and each of the Moffat Project alternatives. ***Comment #910-270*** *(ID 2509)**:*** *The Model Study Period Is Inadequate to Evaluate West Slope Impacts. A model study period of 1947 to 1991 was used. DEIS 1-15, 1-16, 4-10. This period overstates projected stream flows and therefore understates resulting impacts to the Fraser Basin and Upper Colorado River Basin in dry years. Extending the model study period through approximately 2005 to capture drought conditions would result in a more*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 56 6. whether Williams Fork Reservoir is in compliance with the linked DO-temperature standard that is designed to assure adequate refugia for trout. DO values in the reservoir are only discussed in general terms, yet temperature profiles are referred to, making it unclear whether DO profiles have also been taken but are not reported. DO values of concern are mentioned immediately downstream from the reservoir. 7. what other regulatory standards may apply. For example, the only metals that are examined in some of the sections are copper, iron, manganese, and zinc. Selenium ought to be discussed with respect to Williams Fork Reservoir and the surrounding watershed. Metals of concern in the UPRR Moffat Tunnel and Climax Mine discharge permits ought to be discussed with respect to the relevant watersheds. The discussion of wastewater discharges is inadequate. In the Fraser River segment discussion, the Union Pacific Railroad Moffat Tunnel Discharge (permit referenced earlier) **Devil's Thumb Ranch, Crooked Creek/Young Life Ranch, a**nd YMCA Snow Mountain Ranch dischargers must be included and analyzed. Discussion of dischargers should include seasonal flow variations, type of treatment and existing upgrades to systems, efficacy of these systems, and potential future upgrades. Some of this data is available from a study prepared by Black and Veatch. In addition to permitted discharges, this section should include a discussion of non-point source discharges in the watersheds: percentage of homes in the area served by ISDSs and the impact of those systems on water quality, estimation of impacts from livestock, and from golf courses should all be covered here. **Comment**. Although the DEIS recognizes that the lower portion of the Fraser River is currently on the Colorado Department of Public **Health and Environment's (CDPHE) Monitoring and** Evaluation List for copper, no analysis of this listing is provided in Chapter 4. **Page 3-25** **Comment**. Daily maximum (DM) exceedances of temperature are noted. No supporting data is provided for the conclusion that these incidences coincide with air temperature greater than the 90th percentile. No evaluation is provided in Chapter 4 for exceedances of DM in October. Although the DEIS recognizes that maximum weekly average temperature (MWAT) exceedances occur, no analysis is provided in Chapter 4 for the increasing risk of MWAT exceedances as a result of future stream flow depletions. **Page 3-28** **Comment**. River Watch data for the site at CR83 shows that pH in the Fraser River at that site continues to reach high values. This is supported by the calculation of the 85th percentile for pH	*accurate representation of water demands, stream flows, reservoir operations. See Hydrosphere Resources Consultants, Inc., Upper Colorado River Basin Study, Phase II 75 (May 29, 2003) (discussing impacts of 2002-2003 drought). As the DEIS itself points out in its discussion of River Segments, the 1975-2004 period is "relevant because it is representative of existing demands, facilities, and operations, and their effects on flows in Colorado's streams." DEIS 3-16. The DEIS provides no justification for omitting 2002 from its summary of annual changes in flow for the five driest years. We understand that single drought years, such as 2002, may not change the relative magnitude of Denver Water Moffat system diversions compared to other dry years. However, a comparison of the cumulative effects should be made to the lowest and highest flow records available to fully understand the magnitude of potential future effects. Many stream gages in the Fraser Basin, including the Moffat Collection System modeling area, recorded some of the highest streamflows in years just prior to the 2002 drought, and certainly recorded the lowest streamflows ever during this time period which are not included in the DEIS modeling study period. The DEIS considers the "Top 5" driest years at several locations throughout the basin of impact for its effects analysis. However, if the model study period included the recent drought years, many of these five years would be replaced, as highlighted on the table below. Any evaluation of effects to streamflow, water operations, water quality, stream morphology, recreation, etc. may be significantly inaccurate without considering this data. [SEE SOURCE FILE FOR TABLE, COLORADO RIVER HIGH/LOW ANNUAL STREAMFLOW COMPARISON 1950-2005.] Further, the record-low streamflows in 2002 and 2003 are likely to result in carry-over effects on regional water operations, water storage, water administration, water quality, recreation and other aspects that should be*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 57 at 9.04 by the State in its Water Quality Assessment for Tabernash Meadows Water & Sanitation District, CO-0045501, from August 2005 p6. These pH excursions do not appear to be tied to any seasonal cause, and could be damaging to the aquatic community and deserve further investigation under this DEIS, and discussion in the cumulative effects section of the document. **Page 3-29** **Comment**. 0.3 mg/L is the water supply standard for iron, not the copper standard as stated. 50 mg/L hardness is high for this river, meaning that the DEIS overestimates the water quality standard and existing water quality is closer to standards than portrayed. Copper is very toxic to trout and sculpin. Copper is on the CDPHE M&E list meaning there is limited data indicating exceedances. **Comment**. **Wastewater treatment facilities in the Fraser Basin below Denver's diversions are** already experiencing problems meeting discharge limits. New proposed state regulations place the responsibility for stream temperatures on the wastewater treatment facilities regardless of the impacts of diversions. Since this is currently a problem in the Fraser River, the impacts of this project will exacerbate a current problem without appropriate assessment of the issue. **Page 3-31** **Comment**. The DEIS should disclose that Denver owns the senior Big Lake Ditch right and that Denver can and does control the non-exercise of that water right in a drought, which allows Denver to divert under its junior right upstream. The DEIS should also disclose - as part of the cumulative impacts - other senior irrigation rights on the West Slope that Denver owns but does not divert. This practice creates a double impact to the West Slope. First, the water is not called down but rather diverted 100% to the East Slope by Denver. Second, when Denver diverts this water at its upstream diversion points, the historical return flows generated from those former irrigation rights are not returned to the stream. **Comment**. The DEIS says that ACTUAL annual average diversions through the Gumlick Tunnel from the Williams Fork for 1975 though 2005 were 5,100 AF. Appendix H, Table H-7.1 **uses a much higher number of 8,853 AF as average annual diversion under "current" conditions.** This error needs to be corrected and actual diversions – rather than modeled figures – should be used as a baseline to determine impacts. **Page 3-35** **Comment**. The DEIS describes the installation of a new smaller hydropower unit on Williams Fork Reservoir in 2010. This unit will have a smaller release capacity down to 15 cfs, compared to the old unit that has a minimum release rate of 70 cfs. The change to a smaller release rate should be described as part of the cumulative impacts to the reach of the river below Williams Fork Reservoir and on the Colorado.	*incorporated into the modeling for the Proposed Action. The dramatic changes in water operations and water supplies in the years following 2002 are an example of why this period needs to be included in the assessment of impacts. For example, the four highest total annual diversions for the Windy Gap Project, which is located downstream of the Moffat Collection System, occurred in the years immediately following 2002; 2003, 2005, 2006 and 2007. This is likely due to significantly increased demand for water to refill Windy Gap users' reservoirs, coupled with significant storage space available in general and, in particular, in Lake Granby.* **Response #910-270:** The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 58 **Page 3-36** Comment. There should be a discussion of metals in Williams Fork Reservoir, both because of the location of the Climax Mine up-gradient of the reservoir, and because of the low DO conditions present in the reservoir potentially supporting methylation of mercury and release of selenium. Temperature values cited indicate that it is possible that temperatures are reaching MWAT values and may warrant further investigation. **Page 3-37** Comment. **The DEIS reports that "historical average annual diversion at Windy Gap is approximately 10,600 AF (1985 through 2004)." Bishop Brogden Associates arrives at a** different value of 11,100 AF. The Windy Gap Firming Project would increase diversions by upwards of 30,000 AF, and through the Windy Gap EIS they are permitted for up to 56,000 AF. The extra diversions proposed by the WGFP EIS are very significant on their own, and when combined with flow reductions from this project, illustrate the need for a combined EIS due to the cumulative impacts of the two projects. **Page 3-38** Comment. **Please add 'changes in groundwater storage' to the last sentence associating variations in hydrologic conditions with "(snowpack, precipitation, temperature and runoff)** and changes in irrigation, municipal, and snowmaking diversions and return flows upstream of these **gages."** *See* additional comments on groundwater below. **Page 3-39** Comment. Table 3.1-**14: This table is misleading, as it uses a calculated 'native' flow f**or the Colorado River at Windy Gap Gage using recent data, whereas actual pre-project streamflows **were much higher. In fact Denver Water has developed 'native' streamflow at this location for** the pre-project years that should be presented here. Also, the volume of Moffat diversions **shown, 49,884 af/yr, is significantly less than the modeled 'current' conditions which show total** Moffat diversions of 63,799 af/yr. **Page 3-40** Comment. Figure 3.1-2 should not stop at 1993. Comment. Figure 3.1-3 showing an average from 1936-1994 makes no sense. This plot should show additive effects of diversions with averages starting from the date the diversions became active and ending in the most recent year feasible, such as 2006. An example of such a plot is provided in our comments from Bishop Brogden Associates. The plot shown on page 3-40 is misleading.	effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the DEIS study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period and consideration of tree-ring data to include additional dry years would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. While tree ring-based reconstructions of Colorado River flows may show greater hydrologic variability than that reflected in the gaged record, particularly with respect to drought, the inclusion of more severe dry years in the study period would not change the evaluation of hydrologic impacts due to the Moffat Project because the Moffat Project would not increase diversions in these years over the diversions that would take place without the Project. In summary, modifications to the modeled study period are not warranted. The PACSM study period is representative of expected hydrologic conditions. Table 5 in the Joint Rebuttal Report shows that 1983 and 1984, which are included in the PACSM study period and in the wet year average, were the two wettest years at almost all

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 59 **Page 3-41** **Comment**. Water quality data on this page and in all water quality sections comes from an odd assortment of years. For many years Denver Water collected data on the Fraser and Colorado Rivers that does not seem to be included in this analysis (or in the section on the Fraser). The resistance to use flow data from water years that include the drought around 2002 stands in sharp **contrast to the COE's decision to** use seemingly random water quality data, and particularly water quality data that is divorced from diversion records or flow data. Just because the full record of temperature data (2006-2009) was not available at the time that Denver Water requested the data from GCWIN does not mean that a longer period of record is not available for evaluation to determine instream temperatures for a number of years. In addition, the State standards for temperature require only daily maximum and maximum weekly average temperatures to determine compliance, not long term changes. The pH maximum of 9.5 in the Colorado River is stated, but not discussed with respect to where the high occurs, with what frequency, what the 85th percentile measurement is, and how this compares to the standard. Similarly, the fact that the regulatory standard for ammonia is dependent on pH is mentioned here, but not calculated for conditions that accompanied the maximum ammonia value cited in the section. How do these values fare when compared to the applicable standards? **Comment**. CDPHE has placed the Colorado River from just below Windy Gap to the confluence with the Blue River on the 2010 Section 303(d) list indicating exceedances of temperature standards. This listing is based on the same GCWIN data set as well as data from Northern Colorado Water Conservancy District. Reductions in stream flow are a significant factor contributing to temperature problems. Please udpate. **Page 3-42** **Comment**. Separate standards for nitrite and nitrate are given, and then a data range for a combined nitrite plus nitrate is provided, telling the reader nothing about how these parameters relate to one another and how the standard may apply. Please disclose. The range of values for iron is provided, but there is no discussion of how the high for the range appears to exceed the regulatory standard. There is some discussion of inconclusive data for zinc, but there is no identification of what party collected the data in dispute? Zinc appears to be in exceedance of the regulatory standard by quite a lot, yet this is not discussed. The section entitled **Water Quality Assessment** is confusing. Is this section supposed to be inclusive only of data for the Colorado River, or is this a wrap-up of the two preceding	locations shown in the table. Table 5 also shows that at each location at least one and often two of the five driest years are included in the PACSM study period. Therefore, the DEIS includes information for years that are reflective of the some of the driest and wettest conditions that have occurred in the past. The PACSM study period does not have to include all of the five driest and wettest years at each location shown to accurately characterize hydrologic effects in dry and wet years. Averaging the five wettest and driest years as opposed to selecting the single wettest and driest year is a reasonable approach for evaluating hydrologic effects under wet and dry conditions. For example, the average of the five driest years captures a broader range of flow conditions and diversions that could be expected to occur during a dry year and better represents a typical dry year. For example, Moffat Project diversions in a dry year following a wet year may be different than a dry year following a dry year. These differences would be reflected in a dry year average that includes five years with varying hydrologic conditions in preceding years. Comparison of flows for the single driest year or the average of the five driest years would not change the predicted impacts to flows as a result of the proposed Moffat Project. FEIS Sections 4.6.1 and 5.1 were revised to include more information on changes in daily diversions and streamflows for a sequence of dry years followed by a wet year. ***Comment #910-268*** *(ID 2508)**:*** *Using "Full Use Existing System" As the Baseline Masks the True Impacts to Stream Flows on the West Slope. The DEIS erroneously uses Full Use Existing System as the baseline. This hypothetical baseline may be appropriate in determining cumulative impacts, but it is meaningless and misleading as an indicator of the individual significance of the impacts*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 60 sections (Fraser, Williams Fork) as well, as these sections do not contain such a paragraph. Assuming it covers only the Colorado, the section is inconclusive with respect to what it presents about silver, cadmium, and iron. **The sentence "Near Hot Sulphur Springs, iron** concentrations are higher since some of the rocks along this reach are iron bearing olivine basalt, which is easily **weathered." fails to explain why there is a dissolved iron maximum of 2,600 µg/L from some** unidentified date, when from 1988 to 1992 the maximum iron concentration was only 260 µg/L; nothing has changed about the exposed and weathering rocks during any of the sampling periods, though Windy Gap Reservoir did come online after 1985, and lower flows expose more sediment to weathering. In addition, this section does not explain what might have caused the changes seen for cadmium, copper, and zinc. Comment. The DEIS recognizes the Town of Hot Sulphur Springs Wastewater Treatment Plant, however no evaluation of potential impacts to the treatment plant is provided in Chapter 4. **Page 3-46** Comment. It is not relevant to the standard to cite mean values for temperature, especially if they average summer and winter temperatures; a range would be more useful here, as would a comparison of the data to the daily maximum and the maximum weekly average temperature in the applicable season. Comment. **"Temperature (°C)** – . . . Overall, annual water temperatures ranged from -2 to 18.5**°C." 18.5 °C exceeds the state's MWAT temperature standard (17.0 °C June** – September) in the Blue River. Additional depletions to the Blue River will likely result in increased MWAT temperature exceedences. This potential impact is not considered in the report, and should be discussed. **Page 3-47** Comment. Nitrite plus nitrate data is presented in contrast to separate standards for each parameter, and how these relate is not discussed. And again, trace metal standard values are calculated for a hardness (100mg/L in this instance) that is not explained in terms of its relevance to the river or the hardness measured on the day that the high metals values are measured. **Page 3-66** Comment. **The section on channel dynamics relies on the "representative sampling sites"** objected to in the comment on DEIS page 3-5. This section refers the **reader repeatedly to "particle size distribution shown in Appendix** E-**4." There are no particle size distributions included in Appendix** E-4. Maps referenced for this section are inadequate and should show the locations of related diversions, tunnels, gauging stations, and other related areas of interest.	*of the proposed project. It is not a statement of existing conditions. The Full Use Existing System scenario reflects operation of Denver Water's existing system in 2016 without a Moffat Project online. Full Use Existing System also includes new projects, changes in existing projects, increases in demand levels, and administrative changes that are anticipated to occur between now and 2016. Significantly, the proposed WGFP is included in the Full Use Existing System model. DEIS App. H at H1-1, H1-3. By comparing the action alternatives to hydrologic conditions that include diversions that Denver has not yet made and WGFP Colorado River stream flow depletions, the COE has understated the percentage change in stream flows below Windy Gap that would occur under each action alternative over existing conditions. For example, average annual flows in the Colorado River below Windy Gap under the Proposed Action are predicted to be 126,767 AF, a decline of 7,918 AF, or 6% compared to Full Use Existing System. DEIS App. H, Table H-7.1. However, compared to current conditions¸ the change in flow is 28,886 AF/year, or 18%. The table below taken from Table H-7.1 shows how the DEIS presents the information compared to the Preferred Alternative 1a (PA) for diversions at the Moffat Tunnel (units in AF): Location: Moffat Tunnel Current Cond Avg Annual Flow: 63,799 Full Use Existing System Avg Annual Flow: 66,512 PA Annual Flow: 76,797 PA Difference: 10,284 PA Percent Difference: 15% The following table is corrected for actual diversions and corrected to compare the existing conditions to one future condition (2030). It shows a significant increase in diversions (units in AF): Location: Moffat Tunnel Current Cond Avg Annual Flow: 47,705* PA Avg Annual Flow: 76,797 PA Difference: 29,092 PA Percent Difference: 38% * Based on actual diversion records (1936-2006) rather than modeled diversions. EPA concurs that "To fully disclose the impacts of the no action and action alternatives, it is important that*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 61 Comment. **The DEIS states as follows: "The Project Area encompasses several river basins;** therefore, it was impractical to collect channel dynamics data on every affected river reach. Instead, data were col**lected at 12 sampling sites." A project of this magnitude, in an area such as** Grand County which has experienced huge environmental impacts from transbasin diversions, should be required to fully assess all the channel dynamics in all affected river reaches. To allow only 12 sampling sites and extrapolate from that data for the huge area that will be impacted by this project is to allow the proponent to gloss over the reality of impacts, especially in Grand County where a small amount of water can make a substantial difference in the health of any of the affected river reaches. The assertion that 12 sampling sites were evaluated does not appear to be borne out by Table 3.1-18 (which shows 10 sites), or by Table 3.1-19 (which shows 11 sites), or by the discussion in Chapter 4 under the heading Sampling Sites (see DEIS 4-15) which asserts eleven sites were identified for analysis. **Page 3-67** Comment. In the first paragraph, sediment size should also be included in the comparison of channels. The sampling sit**e selection based on "natural quality of the site" provides no details as** to what natural qualities were selected for. **Page 3-68** Comment. The modified Wolman pebble count method is outdated. **Page 3-69** Comment. Table 3.1-18 shows that most of the tributary streams have Rosgen level A or Aa+, **yet the "representative sample sites" include only one Rosgen A stream.** **Page 3-72** Comment. Table 3.1-**19 discloses that at 4 out of 6 upstream "representative sampling sites"** aggradation is apparent, and as mentioned in the comment referencing page DEIS page 3-5, these **sites don't even represent tributary streams well in the Williams Fork and Fraser River basins.** Yet, in the section on DEIS page 4-21 and elsewhere in the environmental consequences chapter, it is repea**tedly asserted "Results of the channel morphology analysis show that with or without** the Moffat Project, sediment transport capacity greatly exceeds supply in all locations **evaluated." The fact that the results of the channel morphology** *analysis* are in direct conflict with *field observations* disclosed in the DEIS should indicate to the authors that something is gravely wrong with the channel morphology analysis. *See* comments on DEIS pages 3-68 and 4-17, and ERC, 2006, *Moffat Collection System Project Existing Channel Conditions Report*.	*the DEIS also include a full analysis of the current conditions." EPA Moffat PDEIS Comments at 6. According to EPA, "The current conditions scenario would reflect operations as they were in 2006." Id.* **Response #910-268:** Please see the response to Comment ID 2860 regarding use of Full Use of the Existing System as the baseline. Regarding comparisons of modeled data to historical diversions and streamflows please see the response to Comment ID 2510. ***Comment #910-267** (ID 2507)**:*** *Average Annual or Monthly Flows Are Not Adequate to Determine Impacts to Aquatic Environment. The DEIS assesses impacts to environmental resources based on annual and monthly average flows for the Fraser River, Colorado River, and other river segments. See, e.g., DEIS 3-5 (only river segments with expected changes in average annual flow of 10% or greater were studied for impacts to flow-related resources such as aquatic biological resources, riparian and wetlands, etc.); id. 4-13 (hydrological data presented in the appendices consists of average monthly values for average, wet, and dry conditions), id. 4-22 (methodology for water quality impacts analysis); id. 4-25 (impact on wastewater treatment providers); id. 4-34 to -39 (stream flow changes in Fraser River under Proposed Action); id. 4-292 (impacts to downstream Colorado River Endangered Fish Species); id. 4-313 to -325 (impacts to aquatic biological resources in West Slope river segments); id. 4-370 to -377 (impacts to recreation on West Slope river segments); id. 3-21, 3-33, 3-38, App. E-3.[8] As Grand County has previously pointed out, what is important is not changes in average annual or monthly flows or water quality (or predicted water quality on a single day), but changes in daily flows*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 62 **Page 3-74** **Comment**. **In St. Louis Creek, the DEIS discloses that there are "considerable amounts of moss and organic material attached to surface sediments." Again, this** *field observation* contradicts and should trump the assertion based on a *calculation* on DEIS page 4-21 that transport capacity exceeds supply throughout the system. **Comment**. Paragraph 2: Particle sizes from riffles and runs should not be combined because the resulting sediment transport modeling (which is partially based on sediment size) could misrepresent the actual sediment transport in both morphological types. **Page 3-76** **Comment**. Analysis of impacts to the Colorado River downstream of the confluence with the Williams Fork River should be considered despite **the COE's assertion that average annual** monthly flow changes would be less than 10%. **Page 3-84** **Comment**. It is inappropriate to leave the Colorado River out of the hydrologic budget development for this EIS, particularly as depletions may cause regions of this river to switch from gaining to losing reaches. **Page 3-85** **Comment**. The graphic from the Great Lakes region on this page is inappropriate for use in the Rocky Mountains and is misleading. The graphic used should show a fractured crystalline basement, base flow discharging to the river, and the development of an alluvial aquifer at altitude, with deepening of the aquifer at lower elevations. The lack of precision and accurate conceptualization of this system is indicative of the fundamental inaccuracies that pervade the groundwater discussion, particularly in Chapter 4. **Page 3-86** **Comment**. The sections on the Fraser River and Williams Fork River should include a discussion of the influence of the Moffat and Williams Fork collection systems on groundwater. The decision not to consider evaporation from reservoirs in our arid climate in the west slope system seems very inappropriate and should be supported with a quantitative defense covering each instance: Dillon, Green Mountain, Williams Fork, Windy Gap, and Meadow Creek Reservoirs.	*and daily water quality, including temperature. Reporting annual or monthly average flows and ignoring other flow factors can mask significant impacts that may occur on a given day or series of days, creating the false impression that environmental impacts are insignificant, because on average they appear to be insignificant. The monthly time-step may be adequate to estimate gross-level changes in yield or reservoir storage, but it is not adequate to address daily fluctuations in river flow, stage, channel width, and other factors that effect the aquatic environment. FOOTNOTE: [8] Although the PACSM model uses a daily time-step and average daily hydrographs of streamflow are provided in Appendix H-4 and there is an analysis of daily flow changes in Appendix H-6, this kind of data has not been adequately incorporated into the text of the DEIS or, it seems, considered in the analysis of environmental consequences of the alternatives. If information on daily flows and water quality is unavailable or cannot readily be generated, the DEIS should disclose that fact and explain how the absence of such information precludes analysis of short-term impacts, so that members of the public will be better able to understand the limitations of the analysis of hydrologic impacts. The DEIS should also discuss the degree of error in its predictions. Nevertheless, we believe that more detailed information about the hydrologic regime in Grand County is available and should be incorporated into the analysis of environmental consequences of the Moffat Project.* **Response #910-267:** The resource evaluations did not rely solely on averages. Daily data was utilizes to evaluate effects on several resources, including surface water, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife, and water quality as described in the DEIS Section 4.1, subheading Use of

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 63 The DEIS references an Apodaca and Bails 2000 [*sic*] document, stating that groundwater in the Fraser basin is between 20 and 40 years old. In fact, the document says that groundwater is between 10 and 30 years old, *or younger*.[15] Simply because the document has aged by ten years does not mean that the groundwater in the basin is similarly static and aging in place. In addition, Apodaca and Bails refer the reader to their maps, where it can be seen that groundwater taken from further upstream tends to be younger than that taken from wells downstream, and they explain that oxygen depletion may have caused early degradation of some of the CFCs used to date the water, resulting in water appearing older than it really was. The auth**ors of the DEIS use their interpretations to conclude that "influences of land use changes on** the water quality of the basin may not be detected in the water supply aquifers for up to 40 **years." The implication seems to be that this delay would also be tru**e for changes to groundwater quantity, which would certainly be an unfortunate assumption, especially given that lower stream flows and recharge rates due to the project diversions would change hydraulic head, hydraulic gradients and groundwater surface elevations. **Page 3-87** **Comment**: The section on groundwater quality should include the low dissolved oxygen (<1.0 mg/L) and potentially reducing conditions which may be releasing the excess iron and manganese found near Tabernash as well as other observations by Bauch and Bails, 2004.[16] In addition, groundwater quality for the Williams Fork basin should include discussion of impacts **from the Climax Mine's detention basin discharge to groundwater, as well as its surface water** discharge. **Pages 3-87 to -89 [Chapter 3 Hydrologic budget Tables 3.2-1 through 3.2-3]:** 1. The tables do not account for recharge to groundwater. 2. The tables omit any change in groundwater storage, even though this variable is listed on DEIS page 3-85 and in the master equation. Groundwater storage is a critical component in this equation, and in this and related sections. 3. It appears that some of the assumptions made for some of the groundwater budget variables are improper, or need further definition: a. GW_{ub}—groundwater underflow out of the basin through bedrock: boundary conditions need to be defined for this variable to make sense. **This value is set equal to zero based on bedrock being "tight," which,** [15] Apodaca. L.E. and J.B. Bails. 1999. Fraser River Watershed, Colorado – Assessment of Available Water-Quantity and Water-Quality Data Through Water Year 1997, USGS WRIR 98-4255. [16] Bauch, N.J., and J.B. Bails, 2004, Water-Quality Characteristics and Ground-Water Quantity of the Fraser River Watershed, Grand County, Colorado, 1998-2001, USGS WRIR 03-4275.	Daily and Monthly PACSM Data for Resource Evaluations. For example, the aquatic analysis used daily flow data from PACSM to simulate habitat availability using the Instream Flow Incremental Methodology for brook trout and rainbow trout at each life stage (adult, spawning, fry and juvenile). The recreation analysis used daily data to determine differences in the number of days within certain flow rate intervals to determine impacts on boating including kayaking and rafting. The monthly averages presented in Appendix H-3 for average, wet and dry conditions provide an understanding the general timing and magnitude of hydrologic effects that would occur. Regarding the selection focus river segments based on expected changes in average annual flow of 10% of greater please see the response to Comment ID 2506. FEIS Sections 4.6.1 and 5.1 were revised to include additional discussion of the daily data provided in H-6 including the timing and magnitude of maximum flow reductions. Information was also added, which presents changes in daily diversions and streamflows for a sequence of dry years followed by a wet year. ***Comment #910-265*** *(ID 2506)**:*** *There Is No Basis to Use the 10% Screening Criterion. In determining whether a river segment was part of the affected environment for determining impacts, the COE used a screening "criterion of a 10% average annual flow change." DEIS 3-4, 3-5, 3-7. There is no basis for this arbitrary criterion. This criterion is particularly inappropriate in the Upper Colorado River Watershed where the vast majority of the native waters already have been diverted and the aquatic environment has been degraded. A change of 1% in streamflows could cause a violation of water quality standards or an impact to fisheries, depending*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 64 **though in conflict with text in Mr. Franklin's letter about recharge to** fractured rock (DEIS appendix H11-ii), might be justified in the areas where Precambrian igneous and metamorphic rocks provide the watershed boundaries along the Continental Divide, but it would not be justified through the river valleys unless it was used only for the bottom boundary, with intervening layers of differing composition and transmissivity. b. GW_{us}—groundwater underflow out of the basin through the alluvial **aquifer: this value is said to be calculated as "the residual of the hydrologic budget," meaning it essentially c**aptures the slop in the equation. This assumption is not acceptable when so many significant determinations are being made about groundwater as a result of this work. This value ought to be based on varying transmissivities of the substrate, hydraulic gradient, head, and other applicable properties and governing equations, as would result from development of an independent groundwater model. c. GW_{db}—groundwater discharge out of the basin as stream base flow: a thorough explanation in the DEIS needs to be provided explaining how base flow is calculated from what is primarily a surface water model. d. E_{sw}—evaporation of surface water: this variable is left out, though the Fraser basin contains Meadow Creek Reservoir and Windy Gap (depending on boundary definitions), Williams Fork contains the Williams Fork Reservoir, and the Climax Mine ponds, and of course the Blue River should consider Dillon and Green Mountain Reservoirs. e. ET—evapotranspiration: It is not clear how evapotranspiration for the Fraser basin is 225,700AF/year, over 297 square miles, but for the Williams Fork is only 69,300AF/year, at just a slightly smaller area of 230 square miles, and not terribly dissimilar topography, especially considering that a majority of the trees are now dead. The text should include a table showing how these values are calculated. **Page 3-139** **Comment**. Section 3.6.5, like other flow-**related resource sections, uses the 'representative sampling sites' to take a closer look at conditions at those sites. Again, we object to the u**se of these sites for this and for all other flow-related resources as they are not truly representative, as described in the comment for DEIS page 3-5. **Page 3-156** **Comment**. A 1.33 acre sampling site is determined to be representative of the entire Blue River	*upon existing conditions of a particular stream segment. Moreover, using average annual flow changes as a screening tool increases the likelihood that significant impacts of the Proposed Action will be ignored. All affected streams on the West Slope must be analyzed, regardless of the percent change in stream flows.* **Response #910-265:** A screening criterion of 10% was developed to provide focus on stream segments within the overall study area that would experience a flow increase or decrease of greater than 10% based on average annual flow. The purpose of identifying these river segments was to focus the selection of sample sites, data collection and field work in areas that experience the greatest flow change. Because the study area covers several river basins, it was impractical to collect data on each individual sub-reach of every affected stream. Representative river reaches were identified within the Focus River Segments for detailed data collection and evaluation. A variety of representative river reaches were selected that were examples of or statistically representative of different resource conditions encountered in the study area. Data for the representative river reaches was evaluated and extrapolated to the overall study area. Identifying Focus River Segments may suggest that other river segments within the overall study area were not evaluated, however, that is incorrect. The only river segments that were not identified as Focus River Reaches were the Blue River below Green Mountain Reservoir, Colorado River below the confluence with Williams Fork River, Williams Fork River below Williams Fork Reservoir, and Muddy Creek below Wolford Mountain Reservoir. Flow changes for all of these river segments are discussed in FEIS Section 4.6.1. Impacts on resources in these river segments were also assessed, however, because they were not identified as focus segments,

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 65 reach from Dillon to Green Mountain Reservoir, an area that contains multiple land uses and vegetation communities. Similar data limitations exist for other stream segments, including those with multiple Rosgen stream types. The DEIS estimates over 9,000 acres of riparian communities were identified in the six affected river segments on page 3-141. **Page 3-203** Comment. **The "study area" for the aquatic biological resources is not well defined. Was the** study area limited to the affected river segments? COE should clarify the reach of the study area. **Page 3-217** Comment. **The screening for changes in "average annual" flows of 10% is inappropriate for** determining impacts to the aquatic environment. The National Academy of Sciences noted in a recent report, **that "planners operate on a monthly basis, but fish live on a daily basis."** *National Academy Science Report, 2007*. **Reclamation's use of monthly average flows was a fatal flaw in** its *Natural Flow of the Upper Klamath River* study. Fish and other aquatic organisms respond to changes in flow that occur on much shorter time scales (hourly, daily). Accordingly, it is inappropriate to use a screening criterion based on changes in average annual flows. **Page 3-221** Comment. Paragraph 1: The distribution of the benthic macroinvertebrate community should be shown to appropriately assess aquatic health (some species may be more indicative of high water quality and gravel bed habitat than others). Page 3-223 Comment. **Paragraph 3: The DEIS describes "mildly diverted streams" as having less than 90%** of the flow diverted. A diversion of 90% of the streamflow is hardly mild! **Page 3-224** Comment. CSU Professor LeRoy Poff has been collecting data in several Fraser River tributaries to assess the impacts of diversions on aquatic life. This information is readily-available and should be included in DEIS Section 3.9 related to aquatic biological resources, especially considering that Professor Poff has been cited as a reference in the DEIS. **Pages 3-228 and 3-230** Comment. Tables 3.9-10 and 3.9-12 show very extreme changes in the average density of fish (fish/ha) between 1993 and 2005 because only brook trout were sampled in 2005 whereas many species were sampled in 1993. Because the sample distribution is so different between the two sample periods, this is not a valid comparison. Average density should be shown by species.	the analyses relied on existing, available data. ***Comment #910-261*** *(ID 2505)**:*** *The DEIS Fails to Adequately Describe Changes in Dry Years or Winter Flows. Although the Proposed Action may not divert during winter months, there are several concerns related to the winter time flow issue. The original Moffat and Williams Fork project included earthen ditches that diverted water in the summer months because the canals were full of snow. See Attachment 2, excerpts of testimony in CA 657 that decreed the project. Denver has not obtained a decree from the water court to expand the use of that project to divert water in the winter. C.R.S. § 37-92-103(5); Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139 (Colo. 2001). Instead, and without obtaining any approvals from Grand County, Denver Water recently has converted the original project to lined canals, installed pipes, and has "winterized" portions of the system to divert water in the winter. The change to lined and piped canals reduces seepage that has been augmenting the flows of the Fraser River system year round. Winterizing the system reduces the natural stream flows that used to pass downstream. The impacts from these actions must be included as part of the cumulative impacts analysis of the alternatives.* **Response #910-261:** Most of the canals in the Moffat Collection System have been lined and winterized for several decades. The Fraser River and Williams Fork systems have been diverting water through the winter since 1959 after Williams Fork Reservoir was enlarged and the Vasquez Tunnel was completed. The enlargement of Williams Fork Reservoir in 1959 provided sufficient replacement water for year round diversions from the Fraser and Williams Fork rivers. Both Gumlick and Moffat Tunnel diversion records confirm that water has been diverted consistently during winter months

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 66 **Page 3-236** Comment. Paragraph 3: Fish population studies from 1978 and 1984 are outdated and may not accurately represent the current populations. More recent fish population studies should be conducted before drawing conclusions about the effects of the project on the fishery. **Page 3-282 and 3-283** Comment. These pages report that St. Louis Creek and the Williams Fork River have Colorado Merit Water Stream designation. Neither this chapter nor the cumulative impacts chapter discusses if this designation is threatened by the 2016 System, the Proposed Action, or Action alternatives. **Page 3-283** Comment. **Paragraph 3: "High quality fishing" should be define**d (i.e. fish per unit effort, number or variety of fish, pounds per acre). CHAPTER 4 **Page 4-2** Comment. Impacts to water-based resources should be evaluated from 2006 through 2030 by comparing 2006 Current Conditions to 2030 Full Use with Project, as was done for land-based resources. Comment. **The Council on Environmental Quality reports that "Evidence is increasing that the** most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of ind**ividually minor affects of multiple actions over time."**[17] **Page 4-7** Comment. **The DEIS states that "Flows in the Fraser River and Williams Fork River basins** would decrease in average and wet years ***during the runoff months*** **due to Denver Water's** additional di**versions." This statement does not disclose the fact that additional diversions from** the tributaries listed below in both Williams Fork and Fraser watersheds represent percent changes for these streams in *non*-runoff months that, while less than 0.5 cfs individually, are frequently *significantly greater* than percent changes in diversions during runoff months, and that, cumulatively, may represent as much as 6 cfs in total (DEIS Appendix H-3). Under [17] **"Considering Cumulative Effects Under the National Environmental Policy Act." Council on Environmental** Quality, Executive Office of the President, January 1997	for several decades. The original decree does not limit Denver Water to divert only in the summer nor does it require a particular method or type of diversion structure whether open canal or pipe. Since the original decree does not require a certain type of diversion structure, Colorado Revised Statute (C.R.S.) § 37-92-103(5) does not require a change of water right or a new decree to line, pipe or enclose a ditch. Finally, the piping of open canals in Denver Water's right-of-way (ROW) has been upheld by the Federal courts. See City and County of Denver, By and Through Bd. of Water Com'rs v. Bergland 695 F.2d 465, 479 (C.A.Colo.1982). Many of the canals in the Fraser River Basin are being replaced with pipes for safety and maintenance reasons. There may be minor seepage reduction as a result of these improvements. However, estimates of yield from the Moffat Collection System have consistently assumed no losses from seepage associated with the collection system since most of the canals have been lined for many years. ***Comment #910-74*** *(ID 2504)**:*** *The Methodology the COE Used to Analyze Water Quality Impacts Is Flawed. There Is No Basis to Use the 15% Screening Criterion. One of the principal criteria that COE used to identify stream segments for which it examined water quality impacts is whether stream flow would increase or decrease by 15% according to Platte and Colorado Simulation Model ("PACSM") modeling. DEIS 4-22. The 15% threshold is based on CDPHE Water Quality Control Division's Antidegradation Significance Determination for New or Increased Water Quality Impacts Procedural Guidance (Dec. 2001) ("Antidegradation Guidance"). Id. The Antidegradation Guidance defines a significant new or increased discharge as one that increases constituent concentration by more than 15%. Id. Without articulating any reasoning or*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 67 Alternative 1a, so-**called "representative study sites" exper**ience flow reductions from just 9% to 24%. These represent some of the lowest reductions in flow shown in table H-7.1, and in some cases, such as at WF-2, FR-3, and FR-2, the low percent change is due to the inclusion of flows from un-diverted tributaries in the calculation. Nearly all of the tributaries in the Moffat and Williams Fork collection systems will experience flow reductions in the range of 22% - 100% (see list below). Impacts from such large flow reductions cannot be well represented by the study sites. Jim Creek Little Vasquez Creek Vasquez Creek Elk Creek and Tributaries St. Louis Creek Tributaries King Creek North Fork Ranch Creek and Dribble Creek Middle and South Fork Ranch Creek Steelman Creek Bobtail Creek Jones Creek McQueary Creek The total number of miles of creeks (almost 80) affected by these diversions is summarized below: **Tributary Name** — **Affected Length*** Jim Creek — 0.9 Buck Creek — 0.6 Cub Creek — 0.5 Cooper Creek — 0.6 Short Creek — 0.2 West St. Louis Creek — 2.4 Iron Creek — 0.2 Byers Creek — 0.2 East St. Louis Creek — 0.5 Fool Creek — 0.9 King Creek — 1.4 St. Louis Creek — 9.7	*rationale, the COE states, "it is unlikely that a change in streamflow of less than 15% would result in a change in concentration more than 15% for stream segments with ambient conditions well within water quality standards. Therefore, the 15% flow-change threshold was a criteria used to identify stream segments for evaluation that were not identified by the other criteria." Id. It is unreasonable to assume a one-to-one correlation between a percentage change in stream flow and concentrations of constituents in the water; yet that is exactly what the COE has done. This plainly is an apples-to-oranges comparison, and is an unreasonable basis upon which to guide the water quality assessment for the EIS. As noted elsewhere in the DEIS, constituent concentrations in a stream are influenced by many factors, such as presence of organic matter, temperature, and rate of mixing, among others. DEIS 4-62 (discussing dissolved oxygen concentration). The COE's statements that, "This evaluation uses the same criteria of 15% for finding of change or no change" and, "Where the percentage change is greater than 15%, a discussion regarding the potential for change is provided," DEIS 4-25, blur the distinction between concentration and stream flow. The COE's application of this methodology, as depicted in Tables 4.1-5, 4.1-6, and 4.1-7, and in the text at page 4-43, is difficult to follow, as it appears to conflate a 15% change in stream flow with a 15% change in wastewater effluent. The COE should be much clearer about the basis for its water quality analysis, and must provide a scientific rationale for its determination to use change in stream flow as a proxy for changes in actual constituent concentration when assessing water quality impacts of the alternatives. In addition, the application of the 15% screening factor is based on a 15% change in flow between the full-use alternative and the proposed action alternative (DEIS 4-25), not current ambient flow conditions and the various alternatives. Note that in some cases there is greater*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 68 **Tributary Name** — **Affected Length*** West Elk Creek — 2 East Elk Creek — 0.1 West Fork main Elk Creek — 0.1 East Fork main Elk Creek — 0.3 Main Elk Creek — 4.7 Little Vasquez Creek — 1.3 Vasquez Creek — 3 Trail Creek — 3.5 Hamilton Creek — 3 Hurd Creek — 4.1 Meadow Creek — 5.8 North Fork Ranch Creek — 0.8 Dribble Creek — 0.5 Middle Fork Ranch Creek — 2 South Fork Ranch Creek — 2.7 Little Cabin Creek — 2.1 Cabin Creek — 2.7 Main Ranch Creek — 10.6 Steelman Creek — 1.9 Bobtail Creek — 1.6 McQueary Creek — 0.4 Jones Creek — 0.2 Williams Fork — 8.1 **Total river Miles** — **79.6** * Table 3.1-18 DEIS Whether or not these additional diversions represent the drying up of these tributaries for an additional number of months is not discussed, nor is it disclosed for how many months any of	*than 15% flow difference between current conditions and full use which is ignored in this application of the screening criterion. For example the difference for Vasquez Creek is 30% and the difference for Fraser River below St. Louis Creek is 18% (see Table H-1.1). One immediate concern with the 15% screening factor is that it does not consider potential water temperature impacts on streams that are already close to, or possibly exceed, state water temperature standards. Based on water temperature information contained in the DEIS, segments of the Fraser, Williams Fork, Colorado and Blue Rivers all experience water temperatures at or near state water temperature standards and any additional depletions in these stream reaches will increase the likelihood of state water temperature violations. Another concern with the 15% screening factor is that wastewater treatment plants are mostly affected by the application of CDPHE's anti-degradation rule in calculating discharge permit limits. Although the DEIS recognizes that a 15% reduction in assimilative capacity is a consideration in anti-degradation, it fails to evaluate whether the combination of reduced dilution due to upstream diversions of clean water combined with increased wastewater treatment plant flows due to growth in-basin creates a significant impact to the ability to meet discharge permit limits due to loss of assimilative capacity.* **Response #910-74:** The 15% screening was but one of the screening criteria, other screening criteria included listing in Colorado Department of Public Health and Environment (CDPHE) Regulation 93 on the Monitoring and Evaluation List or the 3030(d) List, and constituents above, at, or near regulatory limits. Additional water quality analysis was performed for the Fraser and Colorado rivers. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 69 the tributaries are currently diverted to dryness, on average, or the effects of these actions. The current impacts of drying up those of the listed tributaries that do not have by-pass flows is also not discussed. While there are flumes in streams requiring bypass flows, there are no automatic stage recording devices, the flumes are in disrepair, and only a few have staff gages. Denver Water is not maintaining the gauges in the Englewood system per their 1970's era agreement with the Forest Service. There ought to be a reference here to tabular data that the public can access indicating what data were used and where it was measured. Not having flow monitoring equipment at headgates is out of Denver Water's right of way in the Englewood system. **Figure 4 Hamilton Creek, late summer 2009, there is no water in the stilling well, no staff gauge, and the flume is rusted and bent. (USFS)** **Page 4-8** **Comment**. Grand County disagrees with the conclusions of no impact or negligible impact to water quality in most streams and reservoirs, and of moderate impacts to Ranch Creek for reasons outlined variously throughout our comments on the DEIS, and particularly on the water quality and representative sampling site sections. In addition, the standard for purposes of 404 (b)(1) compliance is whether there would be "significant" degradation. **Comment**. The DEIS did not consider impacts to wastewater treatment plants (WWTPs) discharging to Dillon Reservoir which may be affected by fluctuating reservoir levels. **Comment**. There are already significant temperature impacts to the Fraser River and Colorado River downstream from the confluence with Windy Gap as evidenced by listing on the 2010 Section 303d list. Future diversions will compound this problem. The DEIS conclusion of negligible to moderate impacts is wrong.	***Comment #910-73*** *(ID 2503)**:*** *Water Quality Impacts to Wastewater Treatment Facilities Are Not Accurately Described. The DEIS concludes that there is "no impact expected to WWTP discharge permits" for wastewater treatment providers in the Fraser River watershed because the acute low flow (24-hour lowest flow with a recurrence interval of 3 years) would not be reduced because the Proposed Action does not divert additional water through the Moffat system during dry years or winter low flow periods. DEIS 4-51. Changes in flows evaluated in the DEIS are based on output from the PACSM model. However, PACSM modeling of future conditions assumes reductions in USFS bypass flows under certain drought-related conditions which result in projected stream flows in the Fraser River watershed that are lower at these critical times. DEIS 4-36. This modeling assumption is different than historical operations of the Moffat Collection System because these bypasses have only been reduced once during the period of record used by PACSM. Actual reductions in bypass flows would be included in the statistical analysis used by CDPHE for determining acute low flows, so future conditions as modeled may impact discharge permit conditions for wastewater treatment plants.* **Response #910-73:** Additional water quality analysis was performed for the Fraser and Colorado rivers, including evaluation of daily flows on the Fraser. Please refer to FEIS Sections 4.6.2 and 5.2. The reduction of bypass flows from Current Conditions (2006) to Full Use of the Existing System should not be compared with past reductions of bypass flows. Several of the years that bypass flows would be reduced under Current Conditions (2006), including 1954 through 1957 and 1963-1964, precede the agreements which provide for the reduction of

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 70 Page 4-9 Comment. **Grand County disagrees with the conclusions of "negligible impacts to channel morphology," "sediment transport capacity exceeds available sediment supply," and "only minor amounts of localized sediment deposition are anticipated." These conclusions are in error** because: 1) calculated values ignore system-wide empirical data to the contrary of calculated outcomes (see photos below); 2) representative sampling sites and focus river reaches have not been selected to be truly representative (see comments on DEIS pages 3-4 and 3-5); 3) the stream morphology analysis is flawed for a number of reasons further articulated in comments on the stream morphology pages from both chapters three and four; 4) sediment aggradation is a lagging indicator and this fact has not even been addressed in the DEIS; 5) this is the third rising of the Rocky Mountains, which necessarily involves massive amounts of erosional processes—it is preposterous to suggest that sediment transport capacity exceeds supply under both the existing reduced flow conditions and proposed circumstances of dramatically reducing flows in streams with bypass flows (impacting 11 streams, covering 72.2 miles) or in the majority of streams—those without bypass flows, completely eliminating the flow (24 streams, covering 27 miles) in tributary streams to the Fraser and Williams Fork Rivers; and 6) in some cases, data used for the stream morphology analysis is 24 years old. **Figure 5 Aggradation in upper Fraser River, below Denver Water diversion, but above WPWSD intake.**	bypass requirements. Bypass flows were historically reduced several times during the PACSM study period including 1975, 1977, and 1980. Denver Water anticipates needing to reduce bypass flows more frequently in the future than it has historically as its demand grows without additional storage on-line. This is demonstrated by the increase in bypass flow reductions under the Full Use of the Existing System scenario compared to Current Conditions (2006). Increases in bypass flow reductions are not anticipated with the Moffat Project on-line compared to Full Use of the Existing System. Additional information was included in FEIS Section 3.1 on historical bypass flow reductions. The effects of reduced bypass flows under Full Use of the Existing System are disclosed in FEIS Section 4.6.1. The reduction of bypass flows in the future as Denver Water's demand increases under Full Use of the Existing System would cause new impacts; however, any reduction in bypass flows or other proposed flow regimes would be a function of Denver Water's existing operations, not the proposed Moffat Project. The Proposed Action would not increase the conditions under which Denver Water may reduce bypass flows. Since the Proposed Action increases Denver Water's firm yield, system reliability and flexibility, the conditions under which Denver Water may reduce bypass flows could potentially occur less frequently. ***Comment #910-72*** *(ID 2502)**:*** *The DEIS Improperly Limits Analysis of Water Quality Impacts in the Fraser River Based on Changes in Proportion of Wastewater Treatment Effluent. The DEIS limits the evaluation of water quality impacts on the basis of changes in the proportion of wastewater effluent in the Fraser River. An unnecessarily convoluted approach is employed (see Table 4.1-4 and associated text) resulting in the unwarranted*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 71 Figure 6 Aggradation in upper Fraser River, below Denver Water diversion, but above WPWSD intake. Figure 7 Aggradation in upper Fraser River, below Denver Water diversion, but above WPWSD intake. Figure 8 Aggradation and embeddedness in Fraser River between WPWSD intake and Town of Winter Park.	*conclusion of no water quality impacts. A more straightforward approach would be to ask if the percentage of wastewater in the Fraser River increases by more than 15% which would lead to different conclusions. For example, the DEIS concludes that the Winter Park effluent proportion of the Fraser River will not increase by more than 15% and therefore, the impacts of those flows is dismissed from further analysis. However, the DEIS (Table 4.1-5) states that in May of average years under the full-use alternative, the Fraser River will comprise as much as 6.3% Winter Park Water and Sanitation District wastewater by 2030. The Proposed Action is estimated to result in the Fraser River being comprised of 9.7% wastewater effluent. This is an increase in the percentage of wastewater comprising the Fraser River in average May flows of 54%, and certainly is of the magnitude to require further analysis for water quality impacts.* **Response #910-72:** Additional water quality analysis on wastewater treatment effluent was performed for the Fraser and Colorado rivers. Additional water quality analysis with regard to nutrients was performed for the Fraser River. The FEIS has been reorganized to clarify Project impacts. Please see FEIS Sections 4.6.2 and 5.2. The methodology used in the DEIS is one way of acknowledging that the CDPHE issued National Pollutant Discharge Elimination System (NPDES) permit for each wastewater entity provides for a greater ratio of wastewater to stream flow than is currently being discharged. To ignore that ratio in concurrence with CDPHE determined discharge limits would be akin to assuming that the discharge would always be at current discharge concentrations, which are typically significantly lower than the permitted limits (thus constraining the treatment plants in the analysis to tighter treatment standards). Additionally, the methodology was conservative, using only 80% of

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 72 Figure 9 Aggradation and embeddedness in Fraser River between WPWSD intake and Town of Winter Park. Figure 10 Aggradation and embeddedness in Fraser River between WPWSD intake and Town of Winter Park. Figure 11 Aggradation in the Fraser River between the Town of Fraser and the FCWWTP.	the permitted flow to determine the maximum percentage of the stream that is permitted as wastewater discharge. The DEIS and FEIS utilized the permitted limits for flow and concentration as the starting point for the analysis and the point of reference for determination of potential impacts. In the example cited in the comment, the permitted discharge percentage is 21%. The Proposed Action percent of 9.7% is well within the permitted percentage, but was acknowledged in the DEIS as a change. ***Comment #910-260*** *(ID 2501)**:*** *Impacts to the Aquatic Habitat Have Not Been Accurately Assessed. The Impact Assessment to Trout Habitat Is Based on Flawed Assumptions. The DEIS incorrectly concludes that additional flow reductions during runoff and the descending limb of the hydrograph will not impact aquatic habitat in the Fraser and Williams Fork river tributaries because fish populations in the Fraser and Williams Fork tributaries are limited by low habitat availability during the winter months. The DEIS uses summertime habitat suitability curves to assess wintertime habitat availability and likely relies on the flawed assumption that trout utilize the same habitats during the non-winter seasons as they do during the winter. They do not. Winter habitat requirements for trout are very different from habitat requirements during other times of the year. During the winter, trout metabolism slows dramatically in response to cold water temperatures and they seek refuge from stream velocities in order to conserve energy reserves. This conclusion, which is used throughout the report to support a finding of no significant impact, is invalid unless winter habitat suitability curves are used in the IFIM modeling effort.* **Response #910-260:** Contrary to the statement in this comment, the DEIS and FEIS concluded that there would be minor

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 73 Figure 12 Aerial photograph of Ranch Creek showing natural source of sediment supply. Figure 13 Ranch Creek showing embeddedness of cobbles. Figure 14 Ranch Creek showing a trout redd just above photo center. Coverage by greater than 25% fine sediment will translate to juvenile mortality.	adverse impacts in many of the Fraser River tributaries and the Williams Fork River tributaries due to reduced flows. The DEIS and FEIS do not assume that trout use the same habitat in summer and winter, as discussed with respect to winter habitat use in several sections of the DEIS and FEIS. The site-specific flow data indicate that there are extremely low flows in many of the tributaries in winter, with some tributaries diverted all winter. Therefore, the assumption that low winter flows are critical to the populations is reasonable. ***Comment #910-327*** *(ID 2500)**:*** *The Data Should Be Supplemented. IFIM and hydrologic data is not available on most of the Fraser and Williams Fork tributaries that are included in the study area so many of the potential impacts were analyzed using professional judgment. Professional judgment is subjective. Additional IFIM data should be collected on each of the affected tributaries to ensure that impacts are quantified and evaluated using the best available data and scientific methods. See also Walsh Aquatic Consultants, Inc. review of PDEIS Chapters 4 and 5, dated January 20, 2009, included with this letter as Attachment 3.* **Response #910-327:** Physical Habitat Simulation (PHABSIM) is not necessary for modeling habitat just downstream of smaller, fully-diverted tributaries where there is no water, because no water assumes no habitat. Two of the tributaries that are not fully diverted and have bypass flows, Saint Louis and Vasquez creeks, have PHABSIM information that was used in the DEIS and FEIS. The information in both the DEIS and FEIS (Sections 4.6.11 and 5.11) indicate that the changes in flow with the Project in these two streams would have only minor changes in modeled habitat availability for fish and that the modeled changes

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 74 Figure 15 Sediment supply in Fraser Canyon. Figure 16 Aggradation evidenced by large sand bar in Fraser River between Canyon and Granby. Figure 17 Trout redds present here in the hydrologic control change-point are also present where fine sediment is most likely to deposit in low-flow conditions, threatening viability of the spawn. Fraser River near Granby.	would be beneficial (more habitat available). It's reasonable to assume that similar flow changes with the Project in the other streams with bypass flows would have similar results and additional PHABSIM modeling in all tributaries is not warranted. The flow changes in the streams without PHABSIM information were evaluated with professional judgment. ***Comment #910-5*** *(ID 2499)**:*** *The DEIS Should Include a Hydrologic Budget for the Upper Colorado River. The DEIS includes a hydrologic budget for the Fraser Basin, Williams Fork River Sub-Basin, and Blue River Sub-Watershed. DEIS 3-84, 3-87, 3-88, 3-89. No hydrologic budget is included for the Upper Colorado River. Id. 3-88. Because the proposed Moffat Project (along with the proposed WGFP) will have severe impacts on the Upper Colorado River, the DEIS should include a hydrologic budget for the Upper Colorado River and incorporate that budget into its analysis.* **Response #910-5:** This comment reflects a misunderstanding of the purpose of providing the hydrologic budget in the DEIS. The hydrologic budgets were intended to simply illustrate the components of water flux into and out of the watersheds for a typical year. The budget table is only semi-quantitative at best, and was included to help the interested public reader to generally understand the major hydrologic components of the system and how these major components relate to one another. These simple hydrologic budget tables were not intended to provide a basis for detailed hydrologic analysis. Rather, the detailed hydrologic analysis for assessing the impacts of the Moffat Project are largely based on the PACSM and HEC-RAS, coupled with hydrogeologic experience and judgment. Details of the hydrologic modeling methodology are described in DEIS and FEIS Section 4.1.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 75 Figure 18 Embeddedness of cobbles in fine sediment and attached algae in Colorado River below Windy Gap. Figure 19 Aggradation evident in this aerial photograph of the confluence of the Williams Fork and Colorado Rivers. Figure 20 Aggradation in the Williams Fork River below the reservoir.	Considering the tendency for misunderstanding and over-interpretation of the hydrologic budget estimates as reflected by this comment and similar comments, the hydrologic budget tables for the Fraser Basin, Williams Fork River Sub-Basin, and the Blue River Sub-Basin have been removed from the FEIS. For the same reason, the FEIS does not include a hydrologic budget table for the Upper Colorado River. ***Comment #910-259*** *(ID 2498)**:*** *The COE's Analysis of Aquatic Biological Resources Should Be Expanded. The DEIS gives abbreviated treatment to its study of "aquatic biological resources" in the Colorado River because "annual flow changes and flow changes in almost all months are not expected to be greater than 10% . . . ." DEIS 3-219, 3-239. This statement appears inconsistent with Table 3.0-1 (id. 3-7), which includes the Colorado River in the "River Segments Study Areas" precisely because it "would experience a flow increase or decrease of greater than 10% as a result of the Moffat Project, as determined from [PACSM] results." DEIS 3-7 n.2. But even if average flow changes in the Colorado River were less than 10%, Grand County disagrees with the COE's decision to provide an abbreviated analysis of "aquatic biological resources" in the Colorado River. The COE's reliance on annual and monthly average flow changes can mask significant impacts that may occur to aquatic resources in the Colorado River. The COE should, therefore, make a full study of such resources notwithstanding the annual and monthly average flow changes. The importance of a full study is especially compelling given that the DEIS, itself, reports that "The upper Colorado River, from the confluence with the Fraser River to Kremmling, offers outstanding fishing opportunities, considered to be among the best in the state . . . [and] the stretch from the confluence with the Fraser River to Troublesome Creek . . . is listed as a Gold Medal Water stream . . .*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 76 Figure 21 A mid-channel bar in the Colorado River from the KB Ditch to the confluence with the Blue River is a sure sign of aggradation. Figure 22 Mid-channel bars demonstrating aggradation in the Colorado River from below confluence with the Blue River to Pumphouse. Figure 23 Unremediated Vasquez Tunnel construction piles providing additional sediment supply to Vasquez Creek. Page 4-9 Comment. The statement "sediment transport capacity is orders of magnitude greater than	*." Id. 3-283 (citations omitted).* **Response #910-259:** The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the resources listed in this comment were unlikely. However, the FEIS has been modified to include the Colorado River as a focus reach with expanded discussion of existing conditions and impacts evaluation in Sections 3.11, 4.6.11, and 5.11. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in the DEIS and FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. ***Comment #910-330*** *(ID 2497)**:*** *The Need for the Project is Not Properly Documented. Denver Water May Not Use the 1999 Arvada Contract to Support Its Need for the Moffat Project. Denver Water's estimate of total system demand for 2030 includes 3,000 AF/year from the 1999 Arvada Contract. DEIS 1-10. However, Denver Water also reports that such increment in demand will exist only if the Moffat Project is actually built. Id. 1-11 ("Under an intergovernmental agreement with the City of Arvada, Denver Water agreed to allow Arvada to purchase a portion of increased firm yield that Denver Water is able to achieve with the Moffat Project.") Such increment cannot, therefore, be used to calculate Denver Water's projected system shortfall in 2030 and to justify the need for the project. While Denver Water reports that it will need to supply such water to the City of Arvada if the Moffat Project is built, Denver Water cannot reasonably rely on such*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 77 **available sediment supply" cannot be true for the upper Fraser River where the channel is** aggrading due to the contributions of unrecovered traction sand from Berthoud pass. **Furthermore the statement leads Grand County to believe that "sediment" has been very** narrowly defined, and may not bear significant relation to what ought to be discussed here; flows that are optimal for maintaining both the channel and aquatic habitat. **Page 4-10** **Comment**. The PACSM model, the input and output, and the assumptions for all scenarios **needs to be disclosed to Grand County's consultants and the public in general**. **The DEIS should** disclose who ran PACSM for the COE. **Comment**. P**lease provide a citation to "the Colorado water laws" and a list of "numerous contractual and operating agreement" that constrain the model.** **Comment**. The model ends in 1991. The model should be extended to cover the more recent hydrological system including droughts in the 2000s. **Comment**. The study period for PACSM extends 45 years from Water Years 1947 through 1991 and includes a variety of hydrologic conditions, such as dry, wet, and average years. The following scenarios were evaluated using PACSM: Current Conditions (2006), Full Use Existing System (2016), Action Alternatives - Proposed Action (Alternative 1a) and Alternatives 1c, 8a, 10a, and 13a, and No Action Alternative. Results of these four PACSM scenarios should be compared against pre-1947 hydrology to truly evaluate cumulative impacts of current conditions and proposed future depletions on pre-development, native stream flows. **Page 4-11** **Comment**. It is appropriate to point out here that the Flow data used in model scenarios is now 19 years old. **Page 4-12** **Comment**. Figure 4.1-1 is shown not to scale intentionally to obscure the fact that the slope of the line between 2006 and 2016 is actually much steeper than the slope post 2016, and would graphically illustrate the front-loading of demand (as illustrated in our comments from Bishop Brogden Associates) into the earlier period in order that effects from the project can appear minimized by contrast. Please show this plot to scale. **Page 4-13** **Comment**. The five driest years for the West Slope were based on measurements in Kremmling, and are not as meaningful for the analysis as they could be, had they been selected from a point further upstream in the Fraser, Williams Fork, or Colorado Rivers, where the impacts of the project are more heavily expressed.	*commitment to establish a system shortfall in 2030 when such commitment would not exist in the absence of the project. This discrepancy in accounting for the 3,000 AF of water under the contract with the City of Arvada is repeated elsewhere in the DEIS, notably in section 2.10 concerning the No Action Alternative. For example, the DEIS states, "Hydrologic modeling of the No Action Alternative is based on the same future water demands as the action alternatives (363,000 AF/year by the year 2030). The demand includes the 3,000 AF of firm yield for the City of Arvada." DEIS 2-83. The same discrepancy occurs in the text on page 2-90 under "Implementation of Alternative," and in Table 2-24 on the next page, where demand is shown as 363,000 AF/year under the No Action Alternative. It is clear, however, that Denver Water would not be obligated to provide this water to the City of Arvada under the No Action Alternative. See id. at 1-11, 2-92, 4-12. By overstating predicted 2030 demand by 3,000 AF/year, the COE has inflated supply shortfall by 20%, from 15,000 AF/year to 18,000.* **Response #910-330:** If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. However, Arvada would still have this demand to be met without an identified supply. Therefore, the Corps believes it is a reasonable and conservative approach to include the 3,000 AF in the predicted 2032 demand in the analysis for all alternatives. Hydrologic modeling of the No Action Alternative is based on the same future water demands as the action alternatives (363,000 AF/year by the year 2032). The demand includes the 3,000 AF of firm yield for the City of Arvada." For consistency purposes, the Arvada contract was evaluated for all alternatives, including the No Action Alternative. The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 78 **Page 4-15** Comment. Paragraph 2: The DEIS applies channel morphology and sediment transport data from the Two Forks EIS. This is not appropriate considering the fact that flow impacts vary between the two projects. Flow is the main driver for sediment transport and resulting sediment transport impacts should be analyzed separately for the Moffat DEIS. Comment. The DEIS states that at many focus sites the sediment transport capacity is much greater than the sediment supply. This assumption is flawed due to the fact that in order to attempt equilibrium, a stream will carry all of the sediment that it has capacity to carry at any given time. Therefore, if the streams in the Moffat system were truly sediment limited, degradation would likely be observed currently. This is not the case, and in fact some streams within the Moffat Collection system are currently experiencing aggradation. **Page 4-17** Comment. **Paragraph 2: The DEIS states that "Transport capacity of individual finer material** sizes important for **mobilization of materials was computed." However, it is not clear whether or** not the Meyer-Peter Muller (MPM) was used for this purpose. Additionally, it is not clear whether or not the finer material may potentially be transported as suspended load (which was not calculated). Comment. **The DEIS explains "This study evaluated the magnitude of flow required to** mobilize very fine gravel (4.0 millimeter [mm]). Flows necessary to transport these material classes would also be able to transport finer materials **including sands and silts." Four millimeter** gravel is not the size of sediment that maintains stream channels, and the assumption that flows **of this magnitude are sufficient to mobilize finer particulates ignores the "hiding factor" and the** affinity of very fine clays for other charged particles that may not be overcome by the force of weak flows. **Page 4-18** Comment. **"In some instances, HEC**-RAS results estimated unreasonably high sediment **transport capacities at very low flow levels." This is further indi**cation that the equations used for calculating impacts to stream morphology are incorrect. Comment. Paragraph 1: The DEIS states that sediment transport capacity at low flow levels was calculated by linearly extrapolating the low end of the transport capacity curve. Generally, sediment transport is not related linearly with flow. While it is stated that the results were determined to be accurate, the methodology for determining accuracy is not described.	agreed to allow Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. With a new Project, the need is for an additional 15,000 AF/yr of water supply for Denver Water's customers plus 3,000 AF/yr for Arvada. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water supply for Denver Water customers. ***Comment #910-329*** *(ID 2496)**:*** *The DEIS May Overstate the Expected Denver Water Demand Levels During Droughts. The Purpose and Need statement indicates that Denver Water needs an additional 18,000 acre-feet per year of firm yield by the year 2016. However, this was determined by using Denver Water's "unrestricted" demands through any drought period. The DEIS states that Denver Water expects to be able to reduce its demands in drought periods using water conservation measures, in addition to the institutional conservation measures. If Denver Water genuinely expects to achieve higher levels of water conservation demand reductions in a drought, then this effectively increases its firm-yield. This may dramatically change, or completely eliminate, the need for additional water supplies. This may be the least environmentally damaging, yet easily achievable, alternative. Even with such drought-planning during drought conditions, which would be expected of most normal water customers, Denver Water would still have the 30,000 AF Strategic Water Reserve. For example, the DEIS (page 2-88) states that Denver Water expects the following demand reductions during a drought (in addition to present and future water conservation programs): [See unnamed demand reductions Table in Source File pg. 28] It appears that even the Stage 1 drought restrictions are more than enough to meet*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 79 **Page 4-22** **Comment**. **"This definition considers cha**nges in concentration; however, it is unlikely that a change in stream flow less than 15% would result in a change in concentration more than 15% for stream segments with ambient conditions well within **water quality standards". This** statement assumes that all water quality parameters are well within standards. This criterion somehow has not resulted in closer scrutiny of water quality conditions for the most heavily impacted tributaries with depletions equaling 100% for many months of the year (appendix H3). The Union Pacific Railroad and Climax Mine discharges are inexplicably overlooked in this series of bullet points, and in the water quality analyses. **Comment**. The approach to screening for water quality impacts based on 15% change in average annual flows is flawed. In spite of the purported **link to CDPHE's Antidegradation** Guidance, there is none. That analysis is for new or increased discharges of pollutants. Most water quality problems associated with new diversions occur during lower flows as confirmed by the timing of existing temperature excursions, so the 15% annual average diversion is misleading. While it may be true that there is some connection between the percent change in flow and water quality changes, this water quality analysis should be performed as a mass balance on a monthly time step to estimate actual changes, or otherwise modeled using one of the many water quality models, such as SSTEMP. **Comment**. Limiting evaluation to existing exceedances of numeric water quality standards, or Section 303d listing, or an existing Total Maximum Daily Load (TMDL) only points to where problems currently exist that could be made worse. The DEIS methodology does not allow for consideration of water quality situations where marginal water quality situations could be made worse and potentially result in exceeding water quality standards. **Comment**. Focusing evaluation of water quality impacts on only streams segments where flows increase or decrease by 15% eliminates the evaluation of impacts on streams where water temperature are currently on the verge of exceeding state water quality standards. Small decreases in stream flow (less than 15%) are likely to increase the frequency of state water temperature standard violations in streams that are close to, or already above, DM and/or MWAT water temperature standards. An increase in concentration of certain water quality parameters by less than 15% may still be a significant impact to wastewater treatment plants with discharge permit limits controlled largely by anti-degradation due to loss of assimilative capacity. **Page 4-23** **Comment**. The following has not been done for any of the 35 tributary diversions in the DEIS: **"Evaluate water quality upstream and downstream of potential changes to determine diff**erences **and likely causes for those differences." This evaluation should be conducted and incorporated** into the DEIS.	*the projected "unrestricted" shortfall of 34,000 AF during dry years.* **Response #910-329:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Implementing mandatory drought restrictions to reduce demand does not result in a 'no shortage of supply' situation. The drought events during 2002 demonstrate that is not the case. There is a current need for new firm yield even with mandatory restrictions imposed during a drought as discussed in Section 1.4.4.1 of the DEIS. The shortfall of 18,000 AF/yr identified in the Purpose and Need is in meeting an "unconstrained" demand of 363,000 AF/yr. Denver Water's estimated 2032 demand is 379,000 AF/yr after accounting for Natural Replacement and Conservation Savings since 1980 and prior to 2002 (as well as 3,000 AF/yr for the Arvada contract). After backing out the 16,000 AF/yr for additional Conservation, Denver Water's estimated 2032 demand is 363,000 AF/yr, which takes into account Denver Water's plans to reduce its

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 80 **Page 4-25** Comment. It is not appropriate to use water quality data for current conditions (2000 to 2007) to evaluate Full Use or Alternatives. At minimum some sort of mass balance should be done to project future conditions based on depleted flows. Changes in average annual flow of 15% or more should not be used to limit analysis. Flow and concentrations should be examined together, and at least on a monthly basis to be meaningful. Comment. Using a 15% change screening tool in average annual flow, combined with a change in effluent/stream ratio of 15% or more is not meaningful to evaluate impacts to or from wastewater treatment plants (WWTP). The impacts to WWTPs should be evaluated at the periods of the year that are critical for specific water quality constituents on a parameter by parameter basis. Comment. **Impacts to WWTPs' discharge permits will occur in situations other than red**uctions in the statistical acute and chronic low flows, most notably by loss of assimilative capacity, and those situations may result in more stringent antidegradation based effluent limits. Comment. No consideration is given to WWTPs discharging to Dillon Reservoir. **Page 4-26** Comment. It is inappropriate to avoid detailed evaluation of the existing reservoirs based on the **unsupported statement that "existing reservoirs would see little change in operation, and little to** no change in influent water s**ource and quality." Based on this assumption, water quality in** Meadow Creek and Windy Gap is completely ignored, regardless of the impact that pumping of more concentrated Fraser flows into the Colorado Big-Thompson system will have. Similarly, Williams Fork reservoir will see greater variations in reservoir levels (DEIS page 4-27), increasing nutrient releases from exposed sediments and fugitive dust. Combined nitrite/nitrate values, dissolved oxygen and pH are already problems there and will likely be exacerbated, potentially causing other water quality issues. Evaluation methods for Gross Reservoir are likely outdated and are not dynamic. **Page 4-26** Comment. Paragraph 1: The DEIS concludes that existing reservoirs would see little change in operation and little to no change in influent water source and quality. However, water quality changes in West Slope reservoirs are still possible if the volume of inflow is decreased and existing stream pollutants are less diluted. **Page 4-27** Comment. The DEIS does not evaluate potential impacts to Williams Fork Reservoir that could result from a change in inflow timing.	demand with additional conservation measures, which are anticipated to achieve long-term sustainable reductions in water use. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from the Denver Regional Council of Governments (DRCOG), Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's available supplies in the year 2022. The modeled unrestricted demand in 2002 (i.e., Current Conditions) was 285,000 AF/yr. A value of 314,000 AF/yr is presented in FEIS Table 1-1, which reflects what the unrestricted demand would have been had conservation measures not been implemented since 1980. The conservation savings of 29,000 AF/yr since 1980 are related to public outreach and education, monitoring and audits, conservation rate structures, and other measures shown in Table 1-2. These conservation measures are independent of temporary reductions in demand that are achieved when the Drought Response Plan is implemented. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr. of additional conservation and the 18,000 AF/yr. proposed Project (72,000 AF enlargement of Gross Reservoir).

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 81 Comment: Maximum monthly changes in end-of-month reservoir contents should be addressed on a greater level of detail than averages. Averages tend to understate the possible maximum effects from the project. **Page 4-28** Comment: Water quality in Williams Fork Reservoir is not dependent only on upstream water quality, but also depends upon thermal stratification, insolation, internal and external nutrient contributions, mechanical mixing, gains and losses to groundwater and a host of other factors. **Page 4-29** Comment: **Changes in Dillon Reservoir levels may affect WWTPs' mixing zones and,** therefore, their discharge permit limits. **Page 4-30** Comment: Wolford Mountain Reservoir is on the 2010 Section 303d list for Dissolved Oxygen (DO) with temperature problems cited. Although the Moffat Project will alter the operation of Wolford Reservoir, no evaluation of how this change in reservoir operation may affect the DO problem is provided. **Page 4-34** Comment: Section 4.1.1.2 on Fraser River stream flows presents monthly stream flows only in the month of June for all of the tributaries, obscuring the fact that in many instances per DEIS Appendix H-3 Tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28 depletions throughout the year for tributaries without bypass flows frequently reach 100% (examples include Cooper Creek, Little Vasquez Creek, Cub and Buck Creeks, St. Louis Creek, King Creek, Elk Creek). In **contrast, depletions in June are quite a bit smaller. Similarly, statements like "There would be** virtually no additional diversions from late summer through early spring except in infrequent, **very wet years" are misleading. The additional diversion**s shown in the tables mentioned above occur in average years, and simply because a diversion is less than 0.5 cfs does not mean that it can be dismissed because it represents a comparatively small flow—the cumulative diversions from such streams may represent as much as 6 cfs! **Page 4-35** Comment: Paragraph 1: "Several of the smaller tributaries that Denver Water diverts from are combined and modeled jointly." It is not clear exactly how the diversions from these tributaries are combined and what effects this may have in the PACSM modeling. Even if diversions from **these streams are of "similar magnitude and timing," it may be important to assess the impacts to** each of the streams individually, particularly if the current conditions and biota differ amongst streams.	***Comment #910-68*** *(ID 2495)**:*** *The Analysis of Impacts in Grand County to Recreation, Land Use, Visual Resources, Cultural Resources and Socioeconomics Is Incomplete. 10.1 Affected Environment - Recreation in Grand County. The DEIS limits the definition of recreation to active sports. Fishing and boating are the only recreation activities discussed. Sections 3.13 and 4.13 of the DEIS do not discuss more passive recreation impacts such as sight-seeing, hiking, and biking. a. Fishing. The DEIS presents fishing information that is primarily anecdotal and found in sporadic locations. The discussion about fishing is understated. Private fishing is particularly understated. No comprehensive baseline standards are offered upon which to measure impacts. No environmental characteristics (water flow, water temperature, water clarity, etc.) are offered to explain the relationship between water diversion projects and fishing. DEIS 3-282 to -284. The DEIS states that "[o]nly limited portions of the Fraser River are open to the public." Id. 3-282. This statement is misleading and questionable. The most visible and highly used segment of the Fraser River for fishing is a two-mile stretch through the Town of Fraser with easy access from US 40. Fishing along this stretch is a significant and growing part of the Town's summer economy. We suggest verification of the estimate of 5 to 7 anglers on an average day and 10 to 12 anglers during a weekend day during peak season "at any one time." This analysis should be about more than the Fraser River, the Williams Fork River and the Colorado River. It should also include the creeks and tributaries that feed into these rivers. Viewing anglers "at any one time" is not meaningful. Many premier fishing locations are relatively hidden from public view; it is not physically possible to count "anglers at any one time" except, maybe by helicopter equipped with infrared devices. Anglers enjoy the Fraser River, Ranch Creek, Hurd Creek and other locations throughout the extended day. Many, more*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 82 **Page 4-36** Comment. Paragraph 1: According to the DEIS, increased Moffat diversions would occur in 34 out of 45 years. This statement is misleading and implies that there would be 11 dry years (the DEIS previously states that no additional diversions would occur in dry years). According to Appendix H, only 5 dry years are considered. The same conclusions are shown in paragraph 1 of page 4-**39, which states that "Monthly flows would decrease in 33 years out of the 45**-year study **period." The DEIS should state how many years could be considered 'dry years' based on this** methodology at 2016 and 2030. Comment. Paragraph 2: PACSM reduces the by-pass flows by 70% in cases when estimated reservoir contents are less that 65% in July. It is unclear why 70% was the selected reduction amount. Further, the DEIS does not describe other potential dry-year changes throughout the Denver Water system, both on the supply and demand sides, that may dramatically change the firm yield. All water contract obligations have potential reductions during drought conditions, as well as other reduced bypass obligations at other locations (e.g. Dillon outflows, South Boulder Creek releases). If Denver Water is modeling reduced bypasses here during drier conditions, similar effects should be modeled throughout their system. The changes at other locations may dramatically modify the need for reduced bypasses at these locations. Comment. **Paragraph 3: "The maximum monthly average increase in diversions would occur in** June, with a 106 cfs or 31% increase. In wet years, the maximum monthly average increase in **diversions would also occur in June, with a 126 cfs or 74% increase." The maximum daily** increases in diversions should also be listed and shown in Appendix H-6 similar to the way that maximum daily decreases in streamflow are shown at numerous locations. Comment. The DEIS states no additional dry year diversions will occur. It then describes reductions in bypass flows that would occur in dry years. Dry years are essentially 10% of the years, yet bypass reductions have only occurred once since the Moffat project was constructed; so there will be more dry year diversions. The DEIS implies that the problems associated with low flows in dry years would not be aggravated. However, there is no assessment of how future stream flow conditions in average hydrologic years will essentially mirror what are now considered to be dry year conditions in the affected streams. Comment. PACSM modeling assumptions of the Proposed Action include reductions in bypass flows for the Fraser River and tributaries. Bypass flows were not reduced below USFS prescribed levels during the period of record used by PACSM , thus reduced bypass flows in the future will cause new impacts. Rather than reducing bypass flows, storage provided in the Proposed Action should be adequate to provide for USFS bypasses under all conditions given the severity of impacts to aquatic life and local communities associated with reductions in bypass flows. Comment. Again, flow increases would be higher if compared to existing conditions	*knowledgeable anglers fish in the early morning and early evening when water temperatures are lower. The analysis provides essentially one statement regarding private fishing. "Several private fishing ranches hold property along the banks of the Fraser River and allow river access for a fee." DEIS 3-283. While accurate, there are also other ranches and resorts that authorize fishing on Ranch Creek, Hurd Creek and others. Significant among these is one rancher who leases fishing rights to the Rocky Mountain Anglers Club. Also, the Town of Fraser leases fishing rights along portions of the Fraser River. A number of guides privately lease stretches of the Fraser River and nearby creeks. This activity is a significant and growing component of the summer tourist economy in the Upper Fraser Valley that is understated in this section and not acknowledged in the socioeconomic impact analysis.* **Response #910-68:** A discussion of the analysis of non-flow dependent recreational activities was provided in DEIS Section 4.13.1. Please also see the response to Comment ID 2489. The analysis addresses the potential impacts on recreation as a result of the Proposed Action, focusing on activities that are water dependent. Activities such as hiking and mountain biking, which are not water dependent, are not expected to be directly affected. Impacts to the scenery of the area, which may be a component of the recreation experience, were addressed in DEIS Section 4.15. ***Comment #910-67** (ID 2494)**:*** *Other Recreation - Excluded. There is no discussion of the significance of the Fraser, Williams Fork and Colorado rivers and their tributaries and their riparian areas for the more substantial passive site seeing,*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 83 Comment. The DEIS should describe the projected change in number of days that the streamflows below Denver Water diversions will be at or below the minimum bypass flows (e.g. The number of days that the streamflow will be at or below the minimum bypass flows will increase from ____ days to ____ days per year) Comment. The DEIS needs to state that the flows will change from __ cfs to __ cfs. Comment. For the Fraser River (and all other impacted river systems) the impacts on stream **flows are to "average annual flows" and reference Tables 4**-7.1 to H-7.3 for wet, dry and average **years. Diversions and impacts to stream flows are also presented on an "average monthly" basis** and reference Tables H-1.1 to H-3.10 for wet, dry, and average years. Impacts using average annual and average monthly amounts mask the impacts that occur on a daily. The DEIS has a daily point flow model. It should present the impacts that can occur on a daily basis. **Page 4-37** Comment. Monthly assessment of stream flow changes would be a more realistic evaluation of water quality than screening based on 15% average annual change given that there are months where the change is much more than 15%, even though the average annual change is less than that amount. **Page 4-39** Comment. **"There would be little to no change in flow (flow change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the confluence with St. Louis Creek."** This sentence is exceedingly misleading, masking the fact that in average years the percent decrease in flow, though less than 0.5 cfs, will be 100% for October, December, January, and February, 96% in November, 91% in March, 90% in May, 30% in July, 40% in August, and 67% in September. Impacts to the West Slope Colorado-Big Thompson water bodies are not considered. The more highly concentrated flows of the Fraser River after the Moffat Project comes on line will be pumped up through the Windy Gap facility and into Granby Reservoir, where they will contribute to nutrient loading in the Colorado-Big Thompson Project, and in the Three Lakes Region (Granby and Shadow Mountain Reservoirs, and Grand Lake). Grand Lake clarity has declined throughout the operation of the C-BT project and efforts are underway among the State, Grand County, US Bureau of Reclamation, and Northern Colorado Water Conservancy District to improve water quality and clarity in Grand Lake and possibly Shadow Mountain Reservoir as well, and to reduce nutrients throughout the Three Lakes. Concentration of nutrients in the Fraser River due to the reduction of flows will exacerbate nutrient related water quality issues in the Three Lakes, undermining efforts to resolve water quality issues in this region. Comment. **Paragraph 2: The DEIS states that "In winter months when additional diversions** take place, bypass flows would usually be equal to or higher than the average winter flows and	*hiking and mountain biking activities. The Fraser Valley claims the title "Mountain Biking Capital of the Nation. There are ample locations throughout the Upper Fraser River watershed where the presence of flowing water enhances the quality of the recreation experience. The Fraser River, Vasquez Creek, Ranch Creek, St. Louis Creek and its many tributaries are vital parts of the visitor experience in the summer months.* **Response #910-67:** Please see the response to Comment ID 2483. ***Comment #910-351*** *(ID 2493)**:*** *Affected Environment – Land Use in Grand County. The DEIS contains absolutely no reference to land uses in Grand County. DEIS 3-287 to -292. There are several significant resorts, such as Devil's Thumb Ranch, Rendezvous, and the Winter Park Ski Base Area redevelopment that rely on the health as well as the passive beauty of the Fraser River and its tributaries to attract guests, visitors and homebuyers. There is an inextricable relationship between the tributaries, streams and rivers that Denver Water uses for diversion and land uses in Grand County. Also, several ranchers are currently experiencing problems with their irrigation ditch operations due to low flow in both dry and average years. Although agricultural concerns were mentioned in the Scoping Summary, there is no mention of this condition in the DEIS. In fact, there is no reference to agriculture land uses.* **Response #910-351:** The Moffat Project would not result in more than negligible direct land use effects in Grand County. In terms of effects to resort developments in Grand County, the analysis of impacts to fisheries concluded that adverse effects would generally be negligible to minor. Visual effects associated with stream flow

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 84 **always higher than the minimum flow." It is unclear what minimum flow is referred** to. Furthermore, the DEIS does not adequately describe why there would be additional diversions in the winter under the proposed action. Comment. **There are portions of the Fraser River and tributaries listed on the Colorado's 303(d)** and M&E list. Comment. The Devils Thumb Ranch WWTP, which discharges to Ranch Creek, is identified. Ranch Creek currently has exceedances of water quality standards for temperature. There is no **evaluation of how Full Use and Alternative 1a will impact the Devils Thumb's WWT**P discharge permit due to increased temperature as a result of reduced flows. **Page 4-40** Comment. **"No changes to water quality in Fraser River tributaries are anticipated." This** statement is not supported. **Grand County has objected to the COE's analysis b**ased upon the so-**called "representative sampling sites" in comments on DEIS pages 3**-4, 3-5, and 4-7. There is no above/below diversion analysis of water quality. Contributions to pollution from the UPRR Moffat Tunnel discharge are not considered. Empirical evidence such as the elimination of mottled sculpin from the Fraser River above its confluence with Vasquez Creek (personal communication with CDOW based on 2007 fish shocking data) is not considered. Because of their sensitivity to zinc and intolerance to pollution, mottled sculpin are useful as an indicator species (EPA http://www.epa.gov/bioindicators/html/fish_sculpins.html), and in this instance their absence is a signal that something is already wrong in the Fraser River above Vasquez Creek. The DEIS denies water quality problems such as the pH exceedances in the Fraser River (River Watch). Temperature exceedances and likely exacerbations, and all other water quality excursions are not quantitatively analyzed. Water quality was analyzed for impacts at the sampling sites, which are not representative of water quality below diversions without bypass flows or with single-value bypass flows (see comments on DEIS page 3-5). Impacts to water quality from frequent 100% diversion of 20 tributaries in the Fraser Watershed and 4 tributaries in the Williams Fork Watershed are not disclosed. See also Grand County comments referencing DEIS page 3-16. Comment. There is no description of impacts associated with the DEIS finding that there will **be "more stringent discharge permit limits (for Winter Park and Fraser WWTPs) as the projected low flow is less than the current flow used to calculate the discharge permit."** The costs to those WWTPs associated with more stringent permit limits must be quantified.	modifications were also acknowledged and determined to be minor at most locations, including the Colorado River, Blue River and lower portions of the Fraser River. Based on this level of adverse effects on the setting and recreational opportunities, and as stated in DEIS Section 4.17, no measurable changes in tourist recreational activity would be expected. Additional information on effects to irrigation operations is provided in FEIS Section 5.16. Water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law. Municipal and agricultural diversions per Colorado water law (C.R.S. Section 37-92-102[2][b]), would remain responsible for developing a reasonable means of diversion for their water. Current impacts on irrigation structures and irrigation practices caused by low flow conditions during the late summer and in dry years would be partially due to diversions by the Moffat Project as well as other upstream diversions including Windy Gap and C-BT project diversions. The proposed Moffat Project would have little to no impact on flows during the late summer and in dry years; therefore, impacts on irrigation structures and practices would not be exacerbated by the proposed Moffat Project. The proposed Moffat Project would not cause additional flow reductions during those times since there would be no additional diversions attributable to the Moffat Project in late summer months or in dry years because Denver Water would have already diverted the maximum amount physically and legally available under their existing water rights without additional storage on-line. DEIS Table H-3.1 Appendix H shows additional diversions through the Moffat Tunnel would occur primarily during the months of May, June, and July in average and wet years. During other months, there would be little to no additional water diverted. Denver Water's out-of-

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 85 **Pages 4-41 to 4-42** Comment. The qualitative discussion of changes in stream temperature in the Fraser River and Ranch and St. Louis Creeks cannot be considered an evaluation. The conclusion that there will be no to moderate impacts is unjustified. Temperature water quality standards are established to protect the aquatic resource via an extensive series of public rulemakings. Any situation that causes or contributes to violations of the standard is significant. **Pages 4-42 to 4-45** Comment. The use of the 15% screening for evaluating possible changes to water quality due to an increase in the percent WWTP discharge is not meaningful. The DEIS should consider water quality changes from monthly flow changes and increases in water quality parameters associated with increased discharges from in-basin growth combined with reduced dilution from Full Use and Alternative 1a. **Page 4-47** Comment. Metals data presented here cannot be made meaningful due to disclaimers about detection limits. The conclusions reached here could just as well be wrong as they may be right. **Page 4-50** Comment. Table 4.1-11: In the rows displaying the percentage contribution by tributaries to the Fraser River below Vasquez Creek, it is unclear why the percentages do not add to 100% or where additional contributions to the Fraser River below Vasquez Creek may be originating. Percent contribution should also be shown for dry years, even if no additional diversions occur. **Page 4-51** Comment. **"The Fraser River headwaters and Vasquez Creek are high mountain creeks in** adjacent watersheds with relatively pristine conditions". **Statements such as this (additionally** DEIS pages 4-47, 4-62, 4-92, 4-401) are qualitative, subjective, and misleading. The Fraser River headwaters experience impacts from the Moffat Collection System, Winter Park and Mary Jane ski areas, the Union Pacific Railroad Moffat Tunnel discharge, the railroad itself, Berthoud pass and the 9 tons of traction sand and magnesium chloride deposited on the pass in the winter, the construction waste piles from the Vasquez Tunnel construction, and other activities. **Page 4-51** Comment. **"The mainstem is expected to have negligible to minor impacts with regards to** temperature near the Town of Fraser and minor impacts with regards to temperature near the **Town of Granby."** The proper analysis is whether these changes in temperature will be significant, which in turn, depends on whether the changes will increase days when temperature standards are exceeded.	priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no net change in Colorado River flows upstream of these pumps due to out-of-priority Moffat Collection System diversions in dry years. In summary, there would be little to no impact on the Meadow Pumper's ability to pump due to the proposed Moffat Project. Furthermore, existing in-stream flow requirements, which can limit the amount of water pumped at Windy Gap, would still be in effect if the proposed Project is permitted. ***Comment #910-243*** *(ID 2931)**:*** *AFFECTED ENVIRONMENT – VISUAL RESOURCES (SECTION 3.15, PAGES 3-293-299). The DEIS states that the Fraser, Williams Fork, Colorado rivers "occur in scenic or visually sensitive locations. The setting in which the stream is viewed is equally important as the stream flow level when determining visual preferences." (Page 3-299) This section of the DEIS acknowledges the relationship of the visual experience of rivers in mountain communities dependent on visitation but "concludes" with a dismissive statement that river water levels fluctuate and visitors expect that. [TEXT BOX: "As a result, a stream is a dynamic system that rarely remains static and the viewer has an expectation of observing change over the course of the seasons." (Page 3-299)] There is no further discussion of whether the significant reductions in streamflow from the native condition to current conditions (2006), from current to 2016 "baseline" conditions and from 2016 "baseline" conditions to the Proposed Action might affect visitors. The parameters used in the qualitative discussion regarding visual resources are summarized below. There is no follow-through in the socioeconomic sections. PARAMETERS USED TO DESCRIBE THE VISUAL RESOURCES (BASELINE) AFFECTED ENVIRONMENT IN GRAND COUNTY - Qualitative remark: Fraser, Williams Fork and*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 86 Comment: Water quality limits for WWTP discharge permits are based on both chronic and acute low flows. Chronic flows impacts are not considered by the DEIS. This omission should be corrected. Comment: Paragraph 6, 1st bullet point: When comparing the proposed action to the full use **existing system, the DEIS states that "annual peak flood flows would be reduced in all years in the study period." This statement is inconsistent with the statement in paragraph 5 which says, "The** additional diversions would occur in average and wet years, while dry year diversions **would be unaffected."** **Page 4-52** Comment: **Paragraph 2: The terms "negligible impact" and "discernible, but no disturbance"** are not relevant to determining significance of impacts. **Page 4-53** Comment: Paragraph 2: The effects of potential changes to channel morphology and sediment transport under the proposed alternative should not be assumed to be equal to the effects analyzed in the Two Forks EIS, which may have had different magnitudes and timing of diversions. Comment: The DEIS states that localized sediment deposition could increase in extent and amount due to streamflow reductions. However, the consequences of increased deposition are not discussed. Furthermore, the DEIS states that model results suggest that deposited material will be remobilized during higher flow events. However, it is likely that some continual/permanent deposition will occur because the frequency of higher flow events will decrease under the proposed action. Comment: If sediment transport decreases in many areas within the collection system, the stream may aggrade and the amount of sediment being transported downstream may decrease. Will this in turn increase sediment mining downstream of all DW diversions and contributing tributaries? Bottom line; the DEIS methodology is incomplete and insufficient to understand what the effects may be. **Page 4-56** Comment: Paragraph 7: The DEIS concludes that increased diversions will not result in channel morphology changes based upon the sited USFS study. However, it is flawed to conclude that future diversions will not impact channel morphology simply because past diversions did not impact channel morphology. The streams in the Moffat Collection System are already highly depleted in many cases, and may be susceptible to impacts from increased diversions under the proposed alternative or on the verge of significant morphological effects.	*Colorado Rivers are in visually sensitive locations. - Qualitative remark: Visual Resources are particularly important in mountain communities that rely on tourism. - Qualitative remark: Stream flow is dynamic, not static.* **Response #910-243:** Please see the response to Comment ID 2492. ***Comment #910-66*** *(ID 2491)**:*** *Affected Environment – Cultural Resources. The analysts mention that they contacted the Grand County Historical Association without a citation of who spoke with whom and when. DEIS 3-301. There is no section in the DEIS whatsoever about cultural resources in Grand County. There is no statement that an investigation was done and no significant cultural resources or historic properties were found. If no cultural resources investigation was done, this would be a serious mistake. Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its tributaries. This cultural history includes the "Western White House" and President Eisenhower's fishing excursions to the Fraser River and St. Louis Creek. The Town of Fraser's cultural heritage focuses on the Fraser River, its namesake. While the recreation section (3.13) acknowledges that the historic elements of the Colorado River are one of the attributes that makes it eligible for Wild and Scenic River designation, this section provides no information about the historic element.* **Response #910-66:** Please see the response to Comment ID 2479. ***Comment #910-350*** *(ID 2490)**:*** *Affected Environment – Socioeconomics. Other sections of the DEIS contain qualitative conclusions about impacts such as major, minor, moderate,*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 87 **Page 4-59** Comment. **"Given that some deposition of sand was observed** as part of the Current Conditions **(2006) assessment in areas of low velocities, this pattern is expected to continue." This statement** contradicts the conclusion of DEIS page 4-9. **Page 4-60** Comment. Paragraph 5: The DEIS does not give any reasons why additional diversions occur in the winter in two years of the 45-year study period. Even small amounts of additional diversions in the winter may result in large impacts on aquatic communities in the winter months because flows are already at low levels and trout eggs are incubating in redds on the streambed during that time. **Page 4-62** Comment. The DEIS states that dissolved oxygen (5.3 mg/L) is below the State standard of 6 mg/L (non-**spawning season) at the Denver Water site "Williams Fork above Sugarloaf** Camp**ground," but, while saying it may alter water chemistry, dismisses this issue, saying that "diverting additional water from the four tributaries is unlikely to alter the dissolved oxygen concentrations at a point downstream." (DEIS page 4**-62) Oxygenation of streams occurs as they vigorously flow over irregular stream bottoms, not in quiescent conditions. The reduction in flows due to additional diversions is likely to exacerbate dissolved oxygen issues downstream of the diversions in Williams Fork. **Page 4-69** Comment. **The statement "effective discharge is expected to increase from 300cfs for Full Use of the Existing System (2016) to 360 cfs for the Proposed Action" needs to be explained. It is** not clear how increasing diversions will cause an increase in effective discharge. **Page 4-73** Comment. Paragraph 4: The 2% change in streamflow at the Colorado River at Kremmling gage is understated because the DEIS reports only average annual change. Monthly average changes in streamflow are as much as 6% as shown in Table H-3.32. **Page 4-74** Comment. The Town of Hot Sulphur Springs WWTP is located in this segment and is likely to be impacted by increased temperature in the Colorado River. It is not recognized in the DEIS.	*adverse, etc. impacts. DEIS 4-400 to -401. In some instances, the analysts provide quantitative descriptors for each adjective, which is good. However, the socioeconomics section does not follow up with any discussion of potential consequences of these effects, when there are direct socioeconomic consequences. It is as if the chapter analysts do not communicate with one another. The socioeconomics section divides the affected environment into primary impact areas and secondary impact areas. A primary impact area is defined as "that area in which an immediate and direct effect from construction or operation may occur, such as an area of proposed inundation." DEIS 3-317. The DEIS includes no primary impact area in Grand County even though there are 31 diversion locations in Grand County. At a minimum, the riparian areas along all rivers and streams that will lose flushing flows should be "primary impact areas" because of the absence of natural inundation. Grand County is one of six counties that is designated a secondary impact area. DEIS 3-326. The analysis provides the same cursory summary for each county with the exception of one free-standing paragraph about the importance of tourism to the local economy. Id. 3-330 to -331. In some cases, such as Adams County and Jefferson County, this cursory summation may be adequate. In Grand County, it is not. The impacts on Grand County are profound relative to the size of the County and the fact that this is a permanent diversion of water, 100% consumptive. One example of the relative magnitude of impacts caused by stream depletions in Grand County is the investment that the Town of Fraser has made in the Fraser River. In the last few years, the Town spearheaded a substantial restoration of the river as it flows through the Town. A major developer dedicated a substantial portion of the river corridor to the Town as part of its annexation. The Town allows public access for fishing on portions of the river and has just begun to lease fishing rights to private guides*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 88 **Page 4-75** **Comment**. Because of the screenin**g approach employed, impacts to Hot Sulphur Springs'** WWTP were not considered. The Town of Hot Sulphur Springs (ToHSS) is already having difficulty meeting its permit requirements during low flow months due to ammonia and Biological Oxygen Demand. The ToHSS WWTP uses a lagoon system and it is concern that reduced flows in the Colorado River, combined with increased incoming nutrients and temperatures, will result in additional violations which in the short term will trigger additional monitoring requirements at additional cost, and over the long term require construction of a new WWTP facility. Changes in Colorado River water quality attributable to changes in tributary inflows are **dismissed with statements of "no change" or a minor impact due to temperat**ures. This continues the unacceptable failure to consider, or the outright dismissal of, all of the other water quality issues associated with the Moffat Project, as well as water quality issues that are currently present in the Colorado River,, such as temperature exceedances, high pH, sedimentation and embeddedness and attached algae due to excess nutrients, didymosphenia geminata downstream of Windy Gap, and extirpation of mottled sculpin and the stonefly Pteronarcys californica downstream of Windy Gap.[18] **Page 4-76** **Comment**. Water quality on the Colorado River below Windy Gap currently exceeds temperature standards indicating significant water quality problems. Full Use and Alternative 1a will reduce flows compounding this situation. This is a significant impact. **Page 4-77** **Comment**. Paragraph 2: The DEIS states that, at the Colorado River at Kremmling gage, the annual peak flow will increase under the proposed action. The reason for the increase is not explained. Furthermore, the possible effects of such an increase and the change from current to the Full Use Existing scenario are not discussed. **Page 4-78** **Comment**. Paragraph 7: The basis for the conclusion that the Colorado River channel bed and banks are well armored should be described in more detail. [18] Nehring, R.B., J. Ewert, S. Hebein, 2009. A review of aquatic invertebrate studies and fish population survey data for the Colorado river in Middle Park, Colorado from 1980 through 2009: What does it tell us?, CDOW	*on other portions. As evidence of its increased emphasis on the Fraser River as a vital part of its summer economy, two fly fishing shops recently located in the Town. To COE, this may seem trivial; to the Town of Fraser, it is vital. The description of the Grand County affected environment in no way addresses the types of socioeconomic issues that were mentioned in the Scoping Summary. Quotes from the Scoping Summary, pages 3-14 and 3-15 follow. – "Additional costs to local wastewater treatment plants (i.e., more extensive treatment and plant upgrades) due to lack of dilution." "Evaluate economic implications of the Upper Fraser River valley community spending over $20 million in the past 4 years to construct wastewater treatment plants that may become out of compliance with the water diversion." The DEIS repeats these concerns but does not provide any information about the condition. See DEIS 3-331 ("These wastewater treatment providers are concerned about future operations and future compliance with their NPDES discharge permits, which depend, in part, on Fraser River flows.") – "Disclose current costs of water to existing and prospective water users in Grand County and changes in costs resulting from this project." The DEIS does not address this issue. – "Effect on power prices or power supply in Grand County." The DEIS states without substantiation that "The factors that influence power supplies and power prices in Grand County would not be affected by the Proposed Action." DEIS 4-432. This disregard for issues carefully summarized in the Scoping Summary calls into question the rigor of the affected environment description.* **Response #910-350:** The description of Grand County's economy, including the importance of the tourism economy, was expanded as necessary as part of FEIS Section 3.19. FEIS Section 4.6.19 addresses total environmental

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 89 **Page 4-80** Comment. Portions of Muddy Creek below Wolford Mountain Reservoir are either on the 2010 303d or M&E list, indicating that significant water quality problems exist. Full Use and Alternative 1a will alter the releases from the reservoir. No evaluation of how this change will alter water quality is provided, nor is any evaluation done to assess how these changes in **temperature will affect Kremmling's WWTP which discharges to Muddy Creek**. **Page 4-81** Comment. Paragraph 3: Should reductions in bypass flows below Dillon have been included in PACSM modeling of the proposed alternative? **Page 4-83** Comment. The Town of Silverthorne gets drinking water from alluvial wells adjoining the Blue River. This source is totally influenced by water quality in the Blue River. **Page 4-84** Comment. The acute low flow for the JSA discharge permit is listed at 44 cfs, which is less than the 50 cfs bypass flows at Dillon Reservoir that the DEIS states flows will not be reduced below. *See* DEIS 4-81. Flows less than 50 cfs at Dillon Dam and the intervening stream flows will have an impact to the JSA discharge permit regardless of what the DEIS says, just ask the WWTP operators. This impact occurs when flows drop below this level for 3 days or more. The DEIS states there is only one month when this is a problem, so there are "negligible to minor" impacts anticipated. This conclusion is wrong. Comment. The JSA is affected by anti-degradation and the loss of assimilative capacity at least as much as low flow. The DEIS fails to evaluate these potential impacts to discharge permit limits. This omission should be corrected. **Page 4-158** Comment. The bullet list of consequences of the No Action Alternative is neither complete nor objective. The No Action Alternative would have less impact on the aquatic environment than the action alternatives in many ways. For example, stream flow would not be reduced as much in West Slope rivers and their tributaries under no action. See DEIS 4-165, 4-168, 4-176, 4-180, 4-332, 4-386 (flows in Fraser River 17% higher in June of average year under NAA compared to Proposed Action). There would be no direct permanent impacts to wetlands, other waters of the U.S., or riparian habitats under the No Action Alternative. *Id.* 4-220. There would be no adverse impacts to the visual and aesthetic character of the Fraser River during May, June, and July of average and wet years, as there would be under the action alternatives. Compare *Id.* 4-404 to -405 with 4-415 to -416.	effects, including the impacts of past, present and reasonably foreseeable future action (RFFAs), to Grand County's economy, water and wastewater providers. FEIS Section 5.19 addresses the impacts resulting solely from Moffat Project alternatives. The analysis of socioeconomic impacts to Grand County from Moffat Project alternatives was reviewed and expanded as appropriate for the FEIS based upon the conclusions about impacts on other resources, such as recreation and surface water, and the resulting impacts upon of the county's economic activity. If the alternatives do not cause any socioeconomic effects, a limited amount of information or discussion was added to the affected environment section. ***Comment #910-65*** *(ID 2489)**:*** *Environmental Consequences – Recreation. a. Gold Medal Stream Designation. Chapter 3 of the DEIS appropriately mentions that segments of the Colorado River have Gold Medal Stream designation. DEIS 3-283. Neither this chapter nor the chapters on environmental consequences and cumulative impacts discuss the impact of the 2016 System, the Proposed Action or Action Alternatives on this designation.* **Response #910-65:** A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for FEIS Sections 4.6.2 and 5.2. The DEIS contained a discussion of water temperatures in these streams and the effects on aquatic biological resources. FEIS Sections 4.6.11 and 5.11 contain a more detailed discussion. The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the resources listed in this comment were unlikely. However, the FEIS has been modified to include the

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 90 **Pages 4-158 (paragraph 5) and 4-159 (paragraph 2)** **Comment**. A quantitative analysis to assess the effect of customer restrictions should have been conducted, and mandatory restrictions during drought should have been applied to the PACSM modeling. The DEIS does not give a definitive answer to why this type of analysis was not completed. **Page 4-185** **Comment**. Paragraph 2: While no changes to the NPDES permit are expected as a result of increased Denver Water diversions, it is possible that wastewater treatment providers have a more difficult time meeting the appropriate dilution standards if a larger percentage of streamflow is made up of effluent (because streamflows decrease). **Page 4-197** **Comment**. There are fundamental errors in the hydrology in not using actual diversions and in comparisons of future (2016) conditions to future (2030) conditions. **Comment**. Mitigation should include evaluation of which streams are likely to be diverted to dryness and whether or not the selected streams have access to the nearby geographic resources to make recovery from such diversion possible. If the recovery cannot occur within a reasonable distance from the diversion, all of the streams should be carefully and objectively evaluated for the amount of recovery they can tolerate, and managed accordingly. **Page 4-202** **Comment**. Additional comments on groundwater are included with our comments regarding DEIS appendix H11, and comments beginning with DEIS page 3-84. Please describe locations where rivers currently lose water to groundwater, and describe how the location of these reaches may be extended under the project. This section should disclose the diversion structure sealing activities that have taken place in the past, and that are scheduled to occur in the future. This discussion should include maps of sections and total feet/miles of structure affected, as well as actual and anticipated savings, which can be translated directly to losses to groundwater recharge. These pages fail to disclose the fact that all tributary streams without bypass flows in the Fraser and Williams Fork basins will be 100% diverted for much if not most of the year, leaving 27 miles of streambed without any flow or seepage to groundwater from that flow. This impact is minimized in the DEIS, but based on appendix H3 it could amount to almost 4,000 AF per year. The removal of up to 4,000 AF from 27 miles of stream will surely have a more significant impact to groundwater than is admitted in this section.	Colorado River as a focus reach with expanded discussion of existing conditions and impacts evaluation in Sections 3.11, 4.6.11, and 5.11. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in DEIS and FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. Impacts to the quality of the fishing experience are strongly influenced by the quality and health of the fisheries, which is addressed in DEIS Section 4.9.1. At most locations, the analysis of aquatic biological resources concluded that impacts to the health of the fishery would be minor or negligible. Therefore, impacts to the recreational experience would also be minor. The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. FEIS Section 3.17.5.6 includes a description of Grand County's tourism economy, including the impacts of tourism spending. However, the description was expanded in the FEIS to further address the number of tourism-related businesses in the county. FEIS Section 3.13.5 addresses fishing on various river segments in Grand County. FEIS Section 5.19 addresses socioeconomic impacts to Grand County businesses and residents. This text has been expanded for the FEIS as appropriate and applicable to provide clarification of impact conclusions. ***Comment #910-63*** *(ID 2488)**:*** *Magnitude of Impacts. Just like the PDEIS, the DEIS states: "Impacts to recreation would occur should the*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 91 This section is not supported with quantitative statistical analysis and confidence **intervals on the projections made, rather it is rife with statements such as "small declines in** stream levels would likely cause minor reductions in groundwater levels immediately adjacent to **the streams…" DEIS 4**-203. Such qualitative generalizations are unacceptable for a resource upon which many municipal and private users depend, and which supports riparian and wetland areas, cooling base flows, and water quality. **Page 4-205** Comment. **"Reductions in stream flow attributable to the Moffat** Project would be partly offset **by groundwater influx to the streams." If even less surface water is allowed to flow to recharge zones (as argued in Grand County's comments on appendix H11), then recharge to groundwater** from sheet and stream flow from the high altitude, high accumulation areas will be dramatically reduced, causing a potentially dramatic accompanying reduction in groundwater, and subsequent reductions in base flows. The effect could be a double whammy for area streams and rivers. **Page 4-213** Comment. **The DEIS has established no basis for saying that "impacts to groundwater are** minimal and short-**term in nature…," and therefore claiming that "no additional mitigation or** monitoring is expected to be necessary for impacts identified in sections 4.**2.1 through 4.2.6."** The impacts to groundwater are, in fact, likely to be cumulative and long term. Mitigation should include minimum bypass flows on all diverted tributaries to provide, at a minimum, for water to reach recharge zones. **Page 4-243** Comment. **"Impact of depletions to the Fraser River on the water quality functions of wetlands of the Fraser and Blue Rivers and the Colorado River downstream." This issue, identified in** scoping, is not addressed in this section (DEIS 4-256 to -257) nor in the section on water quality. **Presumably, this is because the DEIS asserts "given the conclusion that the project would have** little or no impact on groundwater levels, it can also be concluded that the project would have little or no impact on riparian vegetati**on dependent upon groundwater." Grand County disagrees** with the conclusions arrived at for groundwater, and hence also for those arrived at for riparian and wetland areas, and water quality impacts attributable to the loss of wetlands. Please see comments in response to appendix H11 for further commentary on Riparian and Wetland area analysis. In particular, page 4-245 of the DEIS does not disclose the 100% dry-up scheduled for 24 tributary streams or the profound changes in flows that have occurred in the upper Fraser and Williams Fork rivers.	*Moffat Project prohibit, or severely reduce the available and existing recreation opportunities and experiences in the Project area." DEIS 4-367 (emphasis added). This quote shows that the analysts take the unsubstantiated, biased position from the start that there must be a dire impact on recreation to matter. Unlike Front Range counties, water impacts affect the core and lifeblood of the Grand County economy. This irresponsible remark sets the tone for Section 4.13. The definition of "severely reduce" is not described or quantified in the text.* **Response #910-63:** FEIS Section 5.15 was revised to state: "Major, impacts to recreation would occur should the Moffat Project prohibit, or severely reduce, the available and existing recreation opportunities and experiences in the Project area." ***Comment #910-64*** *(ID 2487)**:*** *Fishing – Existing Conditions and 2016 System. The DEIS does not contain information on the relationship between stream flow, stream temperature, water clarity and the quality of the fishing experience on the Fraser, Williams Fork, or Colorado rivers. It is therefore difficult to know how the DEIS reaches its conclusions about no fishing impact. These conclusions of no impact are unsubstantiated and questionable, given that lower flows, higher water temperatures, and degraded quality conditions due to lack of flushing flows all negatively impact fishing. Fishing already has been compromised due to prior water diversions by Denver Water. Most of the Cumulative Impacts chapter says "fishing activity is generally not impacted." DEIS 5-49. However, the last page of the Cumulative Impacts Chapter reports: "Most streams would experience minor effects to fish and other aquatic resources. Exceptions to this includes some of the upper tributaries of both the Williams Fork and Fraser rivers where moderate*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 92 **Page 4-245** **Comment**. Impacts to wetland areas from stream depletions are based on an assessment of the reductions in area inundated at very limited locations. Impacts to riparian areas are extrapolated from those conclusions. This approach underestimates wetland and riparian impacts. One would expect based even on this limited analysis, however, real alterations in wetland and riparian areas would be greater than the 2.0 acres of direct impacts to wetlands given the large reaches of streams affected by stream flow depletions from the Proposed Action. In spite of this, only directly impacted wetlands are considered in the mitigation section. **Page 4-246** **Comment**. There are no tables summarizing direct impacts to wetlands on the West Slope. **Page 4-254** **Comment**. As mentioned previously (comments on DEIS pages 3-5, 4-7), the sampling sites investigated are insufficient to represent impacts to much of the tributary stream reaches. **Page 4-256** **Comment**. Please correct information taken from the McCarthy (2008) document to agree with **the more accurate representation corrected from the Moffat PDEIS per EPA's request on DEIS** page 4-202. **Page 4-266** **Comment**. The DEIS needs to provide information regarding the overall environmental value of East Slope agricultural wetlands compared to the riparian wetlands along the Fraser River. **Page 4-295** **Comment**. **The DEIS asserts "Flow changes are expected to have minor or negligible impacts** on riparian habitats and impacts to boreal **toad habitat would be negligible." As discussed** elsewhere in these comments, the riparian area analysis is based on a flawed study of groundwater, and is therefore flawed as well. The boreal toad is listed as a State endangered, **forest service "sensitive"** species. In response to Grand County comments on the PDEIS, section 3.8.5.1 now addresses the occurrence of boreal toads in the Project area. The section on this page, however, still fails to quantitatively address the impacts the Project will have on toad populations as a result of the complete dry-up of 24 tributary streams in the Williams Fork (where a population is known to exist at the confluence of the Williams Fork, McQueary, and Steelman creeks), or upon the populations that exist upstream from the Jim Creek and McQueary Creek diversions. In these latter two cases, habitat fragmentation has already occurred due to diversions. Boreal toads move 1-2 miles or more, and the impacts of further drying up of	*impacts to fish could be expected due to lower flows." DEIS 5-56 (emphasis added).* **Response #910-64:** Please see the response to Comment ID 2484. ***Comment #910-62*** *(ID 2486)**:*** *Measuring Favorable Stream Flow for Kayaking and Rafting - Current Conditions and 2016 System. The DEIS consistently uses a questionable mathematical methodology for quantifying days where streamflow is at minimum and maximum desired levels for kayaking and rafting. The method is repeated in Tables 4.13-1, 4.13-2, 4.13-3, and 4.13-4. In each instance, tabular data is presented for five sample years which are neither wet nor dry years. The authors examined the 45-year study period and selected five years. – No information is provided that describes how these five years fit into the larger study year context. – There is wide variation in data for each selected year, which are allegedly neither wet nor dry years. All conclusions are based on the average of these five years. This approach significantly masks any potential impacts. Table 4.13-3 (DEIS 4-375) is used here as an example. While the change in days extends from – 56 days to + 67 days and the percent change is from –47% to +84%, the only discussion focuses on the average of +0.2 days when flows fall within the desirable range. The standard deviation from the average is so high as to render this analysis meaningless. A better approach would have been to use all years where data is available and address not only averages but also variation, which seems more significant than average figures.* **Response #910-62:** The Corps analysis used two methods to examine potential impacts. The first method compared pre- and post-Project conditions over five randomly selected years, one per decade, over the full 45 years

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 93 tributary streams, and reductions in other tributaries should be discussed with respect to further curtailment of available habitat[19]. Impacts to Colorado River Cutthroat in Hamilton, Cabin (personal communication with the U.S. Forest Service), St Louis, and Vasquez Creeks and the Fraser River[20] are dismissed with **the inaccurate statement "Colorado River cutthroat trout occurs in both the Fraser River and William's Fork River drainages, but flow changes would occur downstream of occupied habitat."** **Comment**. The DEIS should analyze impacts to river otters on the Colorado River. **Page 4-307** **Comment**. Fish are entrained in the diversion structures, carried to the east slope, and die below the diversion dams when diversions are turned on. These structures should include fish screens to prevent fish mortality and entrainment. **Comment**. WUA vs. discharge should be shown in addition to WUA vs. time and would potentially be more informative. **Comment**. The analysis of impacts to aquatic habitat continues to be fatally flawed. Trout utilize different habitats in winter than they do during the rest of the year and therefore the comparison between summer and winter habitat availability is inappropriate. In the winter, trout metabolism slows dramatically and fish seek refuge from stream velocities in the interstitial spaces between rocks to conserve energy. Using summertime habitat preference curves to simulate winter habitat availability creates an erroneous modeling result and an incorrect conclusion regarding habitat availability. **The assumption that "changes in h**abitat in during other times of the year would have less influence on fish populations" would ultimately lead to the conclusion that there would be no impacts of depleting year-round streamflows to the wintertime minimum flow amount since winter flows are **the habitat bottleneck. Most of the conclusions of "no impact" from the aquatic** habitat analysis are based on this mistaken premise. **Page 4-309** **Comment**. Selecting stream segments with annual flow on the Fraser and only mentioning tributaries as an aside ignores impacts to the many partially or fully diverted tributary streams that will be affected by the Moffat Project. Also, impacts to invertebrate communities must be [19] Bunn, S.E., and A.H. Arthington, 2002. Basic principles and ecological consequences of altered flow regimes for aquatic biodiversity. Environmental Management 30:492-507 [20] **"1997 Revision of the Land and Resource Management Plan for the Arapaho**-Roosevelt National Forests and **Pawnee National Grassland" accessed online, February 2010 at** http://www.fs.fed.us/r2/arnf/projects/forest-planning/index.shtml	of record. The selected years were considered as neither "wet" nor "dry" but "typical." Hydrological data were used in an effort to illustrate conditions that would have occurred in real years and how the number of boatable days and other factors vary even in years that are considered normal. The second method of analysis considered each day over the full 45 years of record and a calculation of the number of boatable days was derived under pre and post-Project conditions. Conclusions were based on the results of both methods of analysis. The most current information available at the time of the DEIS analysis was used in identifying minimum and optimum flows. In the DEIS, the days for minimum and optimum flows were determined from several sources including the Upper Colorado River Basin Study (UPCO) study, American Whitewater, and personal interviews with commercial raft guides and private kayakers. New information in the Grand County Stream Management Plan (GCSMP) indicates slightly different, yet consistent flow ranges. As such, the analysis was revised in FEIS Section 5.15.1.2 to reflect the difference in range of flows. The Upper Colorado River Stakeholder Group Conceptual Plan for a Wild and Scenic Management Alternative was released on June 30, 2008 and an updated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan was provided to the Bureau of Land Management (BLM) in January 2012. This document was reviewed and included as a consulted resource in FEIS Section 3.15.5. An analysis on the section of the Blue River below Green Mountain Reservoir to the confluence with the Colorado River was also included. ***Comment #910-61*** *(ID 2485)**:*** *Kayaking - Proposed Action – Fraser River. On the Fraser River, the DEIS reports virtually no difference in days suitable for boating (kayaking) between 2006*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 94 analyzed. The areas influenced by these impacts represent a much larger geographic region than the two stream segments evaluated on the Fraser, with the potential for a much greater impact to the ecosystems and socioeconomic systems dependent upon them, particularly due to their remoteness when compared to the Fraser segments that were selected. The same is also true for the Williams Fork tributary streams. **Page 4-311** Comment. As noted earlier, the 10% screening factor is problematic. The problem with this screen is exacerbated based on a further screen of a 10% change in habitat, especially on the Colorado River headwaters that have been severely impacted by existing transmountain **diversions. Once again, comparisons based on average wet, dry and average years doesn't** permit analysis of true temporal variability in aquatic habitat based on (1) actual variability in daily flows and (2) creation of back-to-back dry years. Comment. **"A difference in minimum IFIM habitat availability of 10% or greater was used to** indicate that fish populations may be potentially affected and warranted further an**alysis." There** is no supporting documentation provided for electing to choose a change in habitat availability of 10%, arbitrary. **Page 4-313** Comment. Based on DEIS page 4-254, FR-1 will result in decrease stream depth of 8 inches. This appears to be in**consistent with the statement that there will be "no change" in channel** geomorphology. Comment. **"In general, as long as flushing flows are adequate to maintain substrate** composition, invertebrates would have more favorable habitat availability with reductions in **peak runoff flows." This statement is at odds with McCarthy, 2008 "At downstream reaches, the proportion of EPT taxa increased with discharge…" EPT taxa stands for ephemeroptera,** plecoptera, and tricoptera, and is a common grouping to represent environmentally sensitive, or indicator species. In addition, McCarthy finds that semi- and multivoltine species richness are strongly positively correlated with discharge. **Page 4-314** Comment. The quote from Tom Wesche is taken out of context. While a five year flood may be more detrimental to small fish than a 1.01 recurrence interval event, the overall long term benefits of the larger event may be much greater to the fish population by scouring out new pools, bringing woody debris into the channel, re-invigorating the riparian vegetation community, etc.	*and 2016. DEIS 4-372. With implementation of the Proposed Action, the DEIS reports a 20% drop in stream flow which triggers a 40% drop in minimum kayaking flows and a 35% drop in optimum kayaking flows. Id. This is one of the few places where a recreation impact is acknowledged, as the DEIS reports "Overall, the Project would have a major, long-term adverse impact on boating on the Fraser River." Id. 4-373. However, a later section on Unavoidable Adverse Impacts declares this impact "negligible." Id. 4-389. No mitigation recommendations are suggested. Id. Subsequently, in the socioeconomic section of the DEIS, this magnitude of impact is dismissed because there is purportedly "little boating use overall" on the Fraser River. Id. 4-431. This downplaying of the impact and failure to propose mitigation are arbitrary and inconsistent with the DEIS's prior conclusion of "major, long-term adverse impact." Id. 4-373.* **Response #910-61:** FEIS Section 5.15.8 was revised to reflect that the impact on Fraser River boating would be "major" not "negligible" for consistency with the impacts analysis reflected in Section 5.15.1.2. ***Comment #910-59*** *(ID 2484)**:*** *Fishing – Proposed Action. For the Fraser River, the DEIS provides no justification for its statement "[f]low reductions would not necessarily adversely effect [sic] the quality of the fishing experience. DEIS 4-374. The DEIS reports that between 2006 and 2016, there would be a 2% to 18% reduction in average monthly flows in the summer months during an average year, and a 22% to 42% reduction in flows during dry years. Id. 4-406. The DEIS also reports an additional 30% to 40% reduction in average stream flows during summer months between 2016 and the 2030 Proposed Action. Id. Flow reductions of this magnitude call into question, if not undermine, the*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 95 **Page 4-367** **Comment**. Recreational activities other than boating occur on streams that may not be considered in the boating analysis and are subsequently ignored in the DEIS analysis. **Page 4-371** **Comment**. Paragraph 5 and Table 4.13-1: The DEIS conclusions regarding the change in the number of boating days at specific flow rates is flawed because the analysis does not consider wet or dry years which are equally important to the boating community. Include tables of changes in usable days. **Page 4-373** **Comment**. Table 4.13-2: It is not possible to accurately compare the change in usable days from current to full use (Table 4.13-1) and full use to proposed action (Table 4.13-2) because Table 4.13-1 has a flow category representing flows greater than 700 cfs whereas the same column in Table 4.13-2 represents flows from 700 cfs to 2,000 cfs. It is unclear how many days greater than 2000 cfs occur under the current and full use scenarios. **Page 4-375** **Comment**. Table 4.13-3: The 5-year average masks the change in days on which the flow was 700-2000 cfs. The changes in any one of the years can be quite high. **Page 4-386** **Comment**. **COE should offer data to support its statement that "Flows associated with the No** Action Alternative during an average year during the primary boating season (May-September) **are very similar to those described for the Proposed Action." Average annual flows in the** Colorado River below Windy Gap would be about 5% higher under No Action compared to the Proposed Action. Most of that difference likely occurs between May and September, and seems significant enough to impact the boating experience. **Page 4-404** **Comment**. The results and conclusions presented here are unsupported. An 8 inch drop in depth should have a visible change in appearance of the stream system. Also, the fact that the flow reductions are within the range of normal variability does not equal no effects from the diversions. These statements are misleading and unsupported. The Proposed Action will be **"slicing the peak" in most years, and will have an effect.**	*DEIS's prior conclusions of no impact. There is also an unsubstantiated remark that reducing flushing flows may be beneficial to fishing because the fish will remain more active. Id. 4-374. Our research indicates that the reverse of this statement is more accurate. For the Williams Fork River, the DEIS reports "[n]o impacts are expected to occur to the quality of the fishing experience" as a result of the Proposed Action. Id. 4-374. There is no discussion of potential impacts between 2006 and 2016. Id. No data is provided to substantiate these statements. The DEIS reports "[n]o impacts to fishing on the Colorado River are anticipated." Id. 4-377. This remark is questionable since no supporting data is provided, and the Windy Gap Firming Project (presented as part of the 2016 baseline) will lower river flows near the Windy Gap Reservoir. The Executive Summary reiterates conclusions from Chapter 4 of the DEIS: "Generally, no negative impacts to fishing would occur, although possibly some improvements to the quality of fishing." Id. ES-36. These conclusions are again unsubstantiated.* **Response #910-59:** High flows can simultaneously have detrimental effects to populations while having beneficial effects to the channel. Channel maintenance, flushing flows, and sediment deposition are discussed in FEIS Sections 3.3 and 5.4 and were taken into account and incorporated into the aquatic biological resources discussions and impact evaluations in both the DEIS (see page 4-307) and in FEIS Section 4.6.11. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in DEIS and FEIS Section 3.11 indicate that there has not been a decline in these fisheries in

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 96 **Pages 4-497 through 4-505** Comment. The description of socioeconomic impacts resulting from the No Action Alternative are rife with speculation and worst case scenarios for which COE has provided no objective support. **Page 4-515** Comment. The definition of irretrievable commitment of resources here differs significantly from that explained on DEIS page 4-3. CHAPTER 5 **Page 5-4** Comment. Paragraph 5: Historical, current, and predicted future values for the number of Denver Water customers should be shown in addition to the Metropolitan Denver values. **Page 5-6** Comment. Table 5-2 and the DEIS must include at least three additional water-based cumulative impacts: (1) lining, piping **and winterization of Denver's Williams Fork and Moffat Collection Systems; 2) "retiring" or abandoning senior agricultural water rights that Denver owns that are located below Denver's collection system on the West Slope; and (3) Growth in Denver's water d**emand to 2016, to 2030, and to 2050 (see page 5-31 under land based actions, Denver estimates serving water to 1.9 million people). Comment. Table 5-2: The DEIS should include an analysis, even if just qualitative, of the W.I.S.E. Project considering its potential to generate/save x acre-feet of water on the Front Range. Further, the DEIS should explain why this is not a viable alternative to the Moffat Project; given that it projects a dry-year, firming yield that exceeds the stated purpose and need and results in NO additional diversions from the Colorado River basin. **Page 5-15** Comment. Paragraph 6: The cumulative effects are analyzed based upon the assumption (in both the Moffat Project DEIS and the Windy Gap Firming Project DEIS) that the preferred alternative will be executed. If this is not the case, the cumulative impacts conclusions will likely be flawed. The cumulative impacts of other alternative should be considered. **Page 5-18** Comment. **Paragraph 1: "Existing"/ "Current" conditions in the both t**he Windy Gap Firming Project DEIS and the Moffat DEIS overstate the actual, measured current diversions. Therefore, the relative impacts of the proposed project are understated.	the last few decades. Impacts to the quality of the fishing experience are strongly influenced by the quality and health of the fisheries, which is addressed in DEIS Section 4.9.1. At most locations, the analysis of aquatic biological resources concluded that impacts to the health of the fishery would be minor or negligible. Therefore, impacts to the recreational experience would also be minor. The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2 FEIS Section 3.17.5.6 includes a description of Grand County's tourism economy, including the impacts of tourism spending. However, the description was expanded in the FEIS to further address the number of tourism-related businesses in the county. FEIS Section 3.13.5 addresses fishing on various river segments in Grand County. FEIS Section 5.19 addresses socioeconomic impacts to Grand County businesses and residents. This text has been expanded for the FEIS as appropriate and applicable to provide clarification of impact conclusions. ***Comment #910-60*** *(ID 2483)**:*** *Recreation Impacts Missed. The DEIS pays the most attention to boating impacts on the Fraser River and then concludes there is not much boating on the Fraser River. The analysis ignores the important economic value of the rivers and the riparian habitat as contributors to the scenic beauty of the natural environment that brings visitors to the area. It also ignores the significant private resorts, lodges and developments that rely on the health of the rivers for fishing as well as the beauty of the rivers to attract site-seeing visitors, hikers and mountain bikers.*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 97 **Page 5-20** Comment. Paragraph 2: Based on PACSM results, the DEIS concludes that **"municipal and** domestic water supplies in the Fraser River basin were adequate for existing levels of water demand, but several water providers would experience shortages under build-**out demands…"** This conclusion assumes no reductions to bypass flows despite the earlier statements that bypass flows may be reduced in the future. By not considering bypass flow reductions, impacts to water suppliers may be underestimated. **Page 5-24** Comment. Paragraph 5: Data from 2003 and 2004 were used in the DEIS analysis to understand the effects of a Shoshone Call relaxation. These years should also be included in the PACSM modeling in order to understand the full spectrum of impacts that may result from a Shoshone Call relaxation. **Page 5-24 to -26** Comment. Because the DEIS presents impacts projected through 2030, and the Franchise Agreement with Xcel regarding Shoshone is valid through 2032, the effects of implementing this agreement should be included in the model. As presented in the DEIS, the actual level of diversions may be understated and reservoir releases may be significantly overstated compared to what may actually happen in future dry years. **Pages 5-5, 5-26 and 5-27** Comment. The DEIS should include a description regarding the reduction in streamflow in the Colorado River in late summer/early fall months, compared to existing and historic conditions, from the cessation of 10,825 releases from these reservoirs at this time. **Page 5-39** Comment. The DEIS does not discuss the cumulative effects to the Colorado River below **Kremmling and in particular the impacts to the ORVs in segments in the BLM's for Wild and** Scenic report. Comment. **This section states "In the Colorado River basin, the WGFP and Shoshone Call** reduction would likely have the greatest cumulative effect on flows when added to the effects of **the Moffat Project." This is exactly why the Shoshone call needs to** be included in the modeling for both the WGFP and the Moffat Expansion Project, and that they should be modeled together. In the next paragraph, it indicates that the Moffat Project and the WGFP are expected to cause additional depletions in average and wetter years, and yet the Shoshone agreement is likely to cause additional depletions in dry years. This means that, coupled together, these circumstances will tend to decrease streamflows in ALL YEARS, to a river system that is already heavily depleted from prior diversions. This type of information needs to be explicitly and thoroughly described in the PDEIS.	**Response #910-60:** The analysis addresses the potential impacts on recreation as a result of the Proposed Action, focusing on activities that are water dependent. Activities such as hiking and mountain biking, which are not water dependent, are not expected to be directly affected. Impacts to the scenery of the area, which may be a component of the recreation experience, were addressed in DEIS Section 4.15. ***Comment #910-349*** *(ID 2482)**:*** *Environmental Consequences – Land Use. The DEIS includes no environmental consequences to Grand County for land use. DEIS 4-391 to -398. Currently, some ranchers who use the river, creeks. and tributaries in the Fraser Valley upstream from Granby have problems with their irrigation ditch operations due to low flows not only during dry years but also during average years. Any exacerbation of this currently tenuous situation will only increase their problems and hamper ranching operations. Ranching is an important component of the economic history and fabric of Grand County. This important consideration was totally ignored in the DEIS.* **Response #910-349:** Additional information on effects to irrigation operations is provided in FEIS Section 5.16. Water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law. Municipal and agricultural diversions per Colorado water law (C.R.S. Section 37-92-102[2][b]), would remain responsible for developing a reasonable means of diversion for their water. Current impacts on irrigation structures and irrigation practices caused by low-flow conditions during the late summer and in dry years would be partially due to diversions by the Moffat Project as well as other upstream diversions including Windy Gap and C-BT

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 98 **Pages 5-39 to 5-40** Comment. The evaluation of cumulative impacts to water quality in Chapter 5 is lumped in with the discussion of surface water in section 5.6.1. The evaluation of these two topics is contained in one and a half pages. Increased water temperature due to the combined foreseeable Moffat, WGFP projects and Shoshone call reductions is the most significant potential water **quality impact. The entire analysis on this topic is limited to the statement: "[a]lthough the** Moffat Project is not expected to result in a significant change in stream water temperature, a slight increase may occur during periods of lower flow or periods of slightly increased treated wastewater influence. The Shoshone call reduction also has the potential to increase stream water temperature because of reduced releases from cold water depths of reservoirs as well as **lower flows."** This description completely misses the fact that the Fraser River and tributaries are currently significantly impacted by elevated water temperatures. Stream flow level is one of the most influential factors on stream water temperature, and future water diversions from the Moffat and WGFP, combined with Shoshone call reductions will reduce stream flows. There is no assessment about how the past action of the Moffat Collection system has brought the stream temperature issue to the point it is teetering around the water quality standard for much of the Fraser River watershed, Muddy Creek, and the Colorado River below Windy Gap. **Page 5-56** Comment. The Summary of Cumulative Effects states **"cumulative effects were analyzed for all resources." The statement in the paragraph above could not be considered "analysis." No** impacts to water quality are mentioned in this summary in spite of the fact that temperature, in particular, is an existing significant problem affected by changes in stream flow levels. **Executive Summary** **Page ES-2** Comment. **The DEIS identifies the need for a new project based upon the 1997 IRP and "recent events such as the 2002 drought." However 2002 is not included in the** PACSM modeling to determine effects of the project. It is inappropriate to justify the need for a project using hydrologic consequences that are not included in the model study period used to evaluate the hydrologic effects. **Page ES-14** Comment. Paragraph 1: The DEIS lists the average water supply and unrestricted demand for the drought period of 2002-2005. Because there were customer restrictions in 2002, the restricted demand should be listed as well.	project diversions. The proposed Moffat Project would have little to no impact on flows during the late summer and in dry years; therefore, impacts on irrigation structures and practices would not be exacerbated by the proposed Moffat Project. The proposed Moffat Project would not cause additional flow reductions during those times since there would be no additional diversions attributable to the Moffat Project in late summer months or in dry years because Denver Water would have already diverted the maximum amount physically and legally available under their existing water rights without additional storage on-line. DEIS Table H-3.1 Appendix H shows additional diversions through the Moffat Tunnel would occur primarily during the months of May, June, and July in average and wet years. During other months, there would be little to no additional water diverted. Denver Water's out-of-priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no net change in Colorado River flows upstream of these pumps due to out-of-priority Moffat Collection System diversions in dry years. In summary, there would be little to no impact on the Meadow Pumper's ability to pump due to the proposed Moffat Project. Furthermore, existing in-stream flow requirements, which can limit the amount of water pumped at Windy Gap, would still be in effect if the proposed Project is permitted. ***Comment #910-326*** *(ID 2481)**:*** *Impacts from the 2016 System. The DEIS uses a study from the Cheoah River in North Carolina to correlate viewer preferences and streamflows. DEIS 4-404. The analysis states that viewers are sensitive to low stream flows which occur in the winter and early spring months and dislike higher flow conditions. The DEIS concludes that the Moffat Project would only have a minor effect on flow levels during periods of low flow (which viewers are*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 99 **Page ES-16** Comment. **The figure entitled "Denver Water's Average Annual Water Demand" should be presented to scale in order to properly understand changes in demand. This figure 'skews' the graph, which hides the 'front-loading' of demands prior to 2016 and thereby reduces the impacts** from the project. **Pages ES-18 (paragraph numbered 4) and ES-19** Comment. How does the streamflow in South Boulder Creek increase by 10,400 AF under the proposed action but the increase in tunnel diversions is only 10,300 AF? This is an example where the data presented in the DEIS is inconsistent or without explanation, which results in confusion and/or inaccuracies. **Page ES-22 (paragraph numbered 2)** Comment. According to field observations in the Moffat Collection System, there is currently **more than "minor amounts of localized sediment depositions." Reductions in streamflow due to** increased Moffat Tunnel diversion have the potential to make sediment deposition considerably worse and may eventually result in changes to stream morphology. **Page ES-32** Comment. Paragraph 5: The D**EIS states that "there would be no changes to water quality or** channel geomorphology in the Fraser, Williams Fork, Colorado, Blue, South Platte rivers and **South Boulder Creek that would affect fish and other aquatic biological resources." Decreases in** flow are highly likely to affect the biotic community, and the DEIS fails to acknowledge this. **The same paragraph states "habitat suitability for benthic invertebrates is usually more favorable at lower runoff flows." Based upon the current literature, this s**tatement is not necessarily true for all benthic invertebrates in this area. **Page ES-36** Comment. Paragraph 2: Implementation of some of the action alternatives will result in greater than negligible effects to boating on the Colorado River, as illustrated through the usable days analysis completed through the W&S process. This statement of negligible effect contradicts the statement on page ES-**45 which says that "stream flow changes in the Fraser River during** average flow years could result in moderate impacts to the number of days with optimal stream **flow for recreational boating use." Stream flow changes to the Fraser will have a direct effect on** the water available for commercial and private boating on the main stem of the Colorado River. **Page ES-47** Comment. No mitigation for the reduction in boatable days in West Slope rivers is included.	*sensitive to). Id. This information does not square with local reality; visitors in Grand County are not typically viewing streamflow in the winter and early spring months. Throughout the analysis, the author uses the phrase "within the normal range of seasonal and annual variability" to claim that most observers would not notice. Id. 4-405 to -406. The DEIS states it would be "difficult for most observers to determine if flow variations are naturally occurring or are attributed to the Moffat Project . . . ." Id. 4-405. These statements are unsubstantiated.* **Response #910-326:** The DEIS states that "In general, the Moffat Project would have only a minor effect on flow levels during periods of low flows, when streams are most sensitive to visual change." It does not suggest that visitors are most sensitive to visual change in winter. Rather it states that in periods of low flow, streams are most sensitive to visual change. The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality . Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2. By and large, these studies further substantiate the conclusions drawn in the North Carolina study.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 100 **APPENDIX H** Appendix H-Hydrologic Data and PACSM Output **Appendix H-1** **Comment**. Tables such as those shown in Appendix H-1 should also include a comparison of current conditions to all alternatives, not just the preferred alternative in order to appropriately compare all alternatives described in the DEIS. **Comment**. Data for all months and all years (not just the averages) should be shown throughout Appendix H in order to understand the full impacts of the project due to antecedent year conditions (for example wet years following dry years and the level of expected fluctuations over time. **Comment**. Table H-1.51: It is unclear why bypass flow reductions are not shown in two of the five dry years (1977, 1981) while reductions occur in years that are classified as average (1956, 1957, 1964, 1978, and 1979) **Appendix H-3** **Comment**. Tables H-1.5 -H-1.50 should be presented at higher resolution. Many of these tables display zero flow change but a corresponding percentage change greater than zero. 0.5 cfs could be very important in some streams, particularly in the fall and winter. **Appendix H-4** **Comment**. The daily average hydrographs shown in Appendix H-4 do not clearly show the difference between each of the scenarios and alternatives. Furthermore, the scale on the y-axis should be adjusted so that low flows are more easily visible. **Appendices H-4 and H-5** **Comment**. The resolution on these plots is unsatisfactory for evaluating changes to low flows between alternatives. **Appendix H-6** **Comment**. The categories of flow changes shown in Tables H-6.1 through H-6.7 represent very large changes. For example, a decrease of 50 cfs impacts St. Louis Creek near the Fraser Gage quite differently than a decrease of 99 cfs (see Table H-6.1) yet the flow range represented in the table is from 50 to 99 cfs. Changes should be presented at higher resolution. **Comment**. Appendix H-6 tables should also include changes from current conditions to Full Use Existing conditions.	***Comment #910-325*** *(ID 2480)**:*** *Effect of visual impacts from the Proposed Action. The DEIS acknowledges adverse and noticeable visual impacts in May, June and July. DEIS 4-406 to -407, and ES-39. Nevertheless, the socioeconomic analysis fails to measure the impacts on the local economy. It is visitors, the core of the Upper Fraser Valley economy, that benefit from the visual and aesthetic resources.* **Response #910-325:** The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows (which would not be changed by the Moffat Project) are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality. Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2. The DEIS analysis examined flows over the course of the full 45 years of record. This same analysis has been repeated in FEIS Section 5.17.1.2, but compares Current Conditions to the Proposed Action using flows over the full 45 years of record. A discussion has also been included in FEIS 3.1 regarding native flow conditions and Current Conditions. Impacts to the visual aesthetics from impacts to the associated riparian vegetation communities was addressed in Section 4.15.1.2 of the DEIS.

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 101 **Appendix H-9** **Comment**. Current conditions should be added to the flow duration curves, bedload capacity and supply, and effective discharge graphs in order to understand the full range of changes. **Appendix H-11** **Comment**. **Scott Franklin's** letter of September 11, 2009 to Wes Wilson of the EPA on the subject of Groundwater Hydrology and included in the DEIS as Appendix H11-ii asserts the **Corps' reaffirmation of the "conclusions in Section 4.2 of the DEIS regarding the minor effects** that the Moffat Project would have on groundwater recharge and the negligible effect on **groundwater resources within the Fraser River basin." From section 4.2, changes for the Fraser River basin are summarized: "changes in the volume and level of the river would ca**use indirect, localized impacts to the groundwater system. The groundwater levels would decrease slightly, and the hydraulic gradient in groundwater near the river would increase slightly in response to **the reductions in stream flow." DEIS 4**-206. Changes for Williams Fork groundwater are said to **be "comparable to those described for the Fraser River."** *Id.* 4-207. For the Colorado, there is **only "the potential for indirect impacts on the groundwater gradient to the river and water levels** in the vicinity of th**e river."** *Id.* **The following discussion refers to specific paragraphs in Mr. Franklin's letter.** In paragraph four, the reader is referred to Figure 1, where it is explained that throughout the blue area, groundwater recharge rates remain the same in spite of the project. While this may be true, the blue area is all above 10,000 feet-9,300 feet in altitude, tends to be very steep, and is composed primarily of crystalline rock (granite, biotite and gneiss) per Figure 2, all of which will tend to minimize any recharge. It is true that there is a fraction of glacial drift in this zone where recharge may occur, but it will likely be very shallow or localized, and may be largely **intercepted at Denver Water's diversion dams. There may be some recharge to fractures** in the crystalline rock, but this may be very minimal, and it cannot be said with certainly if these fractures will even discharge in the Fraser basin. Instead of substantial recharge occurring in this zone, the more likely outcome is that these high altitude rocks will shed water to the tributaries and via sheet flow, all of which is collected by the Moffat and Williams Fork collection systems, just as they were designed to do. As Mr. Franklin points out, the blue area in figure 1 includes the largest precipitation rates and snowpack depths in the watershed; in fact it covers all of the zones of annual precipitation in excess of 30 and 40 inches. Paragraph six says that the recharge rates for the brown area in Figure 1 will also not change as a result of the project. While this is not technically true due to the changes that may be caused by lower instream flows and reduced frequency of flooding events, as documented in the DEIS, what may be more important to point out is that the brown area consists primarily of lower elevation lands that receive less than 20 inches of annual precipitation, and just a portion that receives between 20 and 30 inches	DEIS Section 4.1 has been further reviewed and any potential impacts to visual aesthetics due to changes in water clarity have been addressed in FEIS Section 5.17.1.2. Impacts to the economy of the area are addressed in DEIS Section 4.17, including those resulting from stream flow changes. ***Comment #910-58*** *(ID 2479)**:*** *Environmental Consequences – Cultural Resources. The DEIS reports no environmental consequences to cultural resources in Grand County. This is likely only because there is no discussion of cultural resources in the Affected Environment Chapter (Chapter 3).* **Response #910-58:** An investigation of cultural resources in Grand County was not undertaken because no physical alterations of existing conditions are proposed in Grand County. The analysis shows that the changes in stream flow due to the action alternatives result in little or no impacts to cultural resources; therefore, this information was not evaluated in the EIS. URS Corporation (URS), the Corps' consultant, invited Mr. Don Worster of the Grand County Historical Association to attend an interested parties meeting in November 2005. Mr. Worster declined to attend this meeting after a telephone conversation with URS on November 4, 2005. During that conversation, URS informed Mr. Worster that there were no new facilities planned in Grand County. ***Comment #910-348*** *(ID 2478)**:*** *Proposed Action. The DEIS concludes that socioeconomic impacts on Grand County due to the Proposed Action would be "negligible" because, according to the DEIS: - no construction activity would occur in Grand County (DEIS 4-431); - boating impacts on the Fraser River are excluded because the volume of boating is minimal and impacts on the*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 102 The whole discussion about the effects of stream flow reductions on groundwater recharge may really be missing the point, at least for the Fraser and Williams Fork drainage basins. By intercepting and diverting the high elevation, high accumulation runoff, this water is not allowed to flow overland or through creeks to recharge zones, which generally occur lower in the basins, a point that is returned to below. However, something else that the discussion about **stream flow reductions on groundwater recharge doesn't cover is if, where, and at what times of** the year gaining reaches of the Fraser and Colorado Rivers or lower reaches of tributaries such as Vasquez, St. Louis and Ranch Creeks convert to losing reaches, and what effects (exacerbation) the project will have on this phenomenon: how much farther upstream will losing reaches move, and how much earlier in the year will this occur? In paragraph nine where Mr. Franklin refers to the Apodaca and Bails, 1999 groundwater contours map, perhaps he should also communicate the fact that this is map is termed a **"generalized water**-table map of the alluvial and Troublesome Formation aquifers upstream from **Tabernash in the Fraser River Watershed." The text explains that water surface elevation detail** was sparse, so contours were spaced widely, every 100 feet, indicating the lack of specificity in the map. Furthermore, the area of this map of the alluvial aquifer is quite small and is nearly all confined within the white and brown areas of Figure 1, further illustrating how the blue area of crystalline rock does not overlap significantly with the alluvial aquifer, and that water is intercepted before it can reach recharge zones in the alluvial aquifer. In paragraph ten Mr. Franklin describes how the timing of the reductions in flow will **minimize impacts on groundwater resources, explaining that "Snowmelt runoff…dominate[s] the** hydrologic system in each watershed while groundwater recharge and discharge are relatively **minor components of the systems in each of the affected watersheds during these times." In** contrast, the research of Fengjing Liu and others, demonstrated using a two component hydrograph separation, **that in the larger of the two catchments surveyed near Niwot, "old water dominated (64±2%)" of streamflow during the 1996 snowmelt runoff season, suggesting "that** surface water and groundwater interactions are much more important to the quantity and quality of surface water in high-**elevation catchments than previously thought." Furthermore, base flow** discharged from groundwater comprised the majority of streamflow later in the summers. The DEIS does not distinguish the percentage of streamflow that will be comprised of surface water runoff or base flow, let alone characterize changes in these percentages throughout the season, nor does it attribute changes such as increasing late summer surface water temperatures to reductions in available late-summer base flow.[21] In paragraph eleven, Mr. Franklin refers Mr. Wilson to the riparian and wetlands characterization section, which in chapter three does disclose the presence of wetlands and fens and unique species or vegetative groups in the Fraser and Williams Fork basins. In fact, the text [21] Null, S.E., M.L. Deas, and J.R. Lund, 2009. Flow and water temperature simulation for habitat restoration in the Shasta River, California. River. Res. Applic. , accessed online March 2010 at cee.engr.ucdavis.edu/faculty/lund/papers/NullRiverResearch2010.pdf	*Colorado River are favorable (Id.); - there are no quantitative conclusions about fishing on the Fraser River and no fishing impacts on the Colorado or Williams Fork Rivers (Id.); - the recreation and aquatic resources analysis suggests "no measurable changes in overall resident or tourist recreational activity in Grand County would be expected" (Id.); - flow changes would "generally be unnoticeable to most observers" so there would be no impacts to land-based recreation activity such as hiking and biking (Id. 4-432); - impacts to wastewater treatment providers include a shortage of six acre feet for one provider and this shortage will not hinder development (Id.). Therefore, no socioeconomic consequences are provided in this section or the executive summary. The DEIS contains insufficient quantitative rigor. The socioeconomic analysis does not attempt to quantify the impacts to fishing, visual resources, and boating that are clearly stated elsewhere in the document. When an impact was reported in qualitative terms, such as "moderate," there was no attempt to quantify the environmental effect and no follow-up attempt to quantify the socioeconomic implications to the local economy. The U.S. Environmental Protection Agency Guidelines for Preparing Economic Analyses published in 2000,[9] and the draft Guidelines, prepared in 2008,[10] provide expert guidance on how to treat uncertainty and qualitative findings. The dismissive style of the DEIS is inconsistent with EPA Guidelines and suggests that the impact analysis is incomplete. This section should consider socioeconomic impacts which should be described and quantified in prior sections, including land use, visual resources, cultural resources and recreation. The prior sections include no impacts on land use and cultural resources, provide one qualitative remark in the visual resources section, and one impact to boating on the Fraser River in the recreation section. Excluded from prior sections are the following potential impacts*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 103 **mentions that "Although major impacts to riparian systems in the West have been documented as** a result of stream flow modifications (Stine et al. 1983), these are usually in situations where diversions resulted *in complete dewatering of the stream, profound changes in flows, or major modifications to stream hydrology*…" **(emphasis added). Yet in chapter four, impact** considerations on wetland and riparian areas are restricted to situations including only plant mortality or the drying of riverbanks. Identified wetlands and fens are not mentioned again. The next paragraph, explains how 24 tributary streams are scheduled for a more thorough execution of complete dewatering, like that indicated in the quote above, through the project. **In paragraph twelve, Mr. Franklin says, "There would be little to no change in flow (flow** change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the **confluence with St. Louis Creek." This** statement seeks to minimize what is shown in the DEIS Appendix H tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28: in all of the tributaries associated with the tables listed, while perhaps seemingly trivial (less than 0.5 cfs, so they are not **reported in the ΔCFS rows), additional diversions from the 24 tributaries without bypass flow** restrictions in both the Williams Fork and Fraser watersheds will be made throughout the year and represent *20% to 100% flow changes* for those creeks. In other words, *these creeks appear to be scheduled for 100% dry-up throughout the year*. **In contrast, the "four detailed study sites"** mentioned by Mr. Franklin in paragraph thirteen experience flow reductions from just 9% to 24% (table H-7.1), in part because at these locations it appears that flows may be included which come from un-diverted tributaries or include streams with bypass flows. Impacts from such large flow reductions as portrayed in the aforementioned tables cannot be well represented by any of the study sites for any flow related variable. At various locations in the letter Mr. Franklin refers Mr. Wilson to section 4.2 of the DEIS, but never to section 3.2, on which presumably the conclusions in section 4.2 are based. Grand County has reviewed section 3.2, and we believe that the groundwork done for this section is incomplete and flawed in its approach. Please refer to the comments on DEIS page 3-87. **Finally, Mr. Franklin explains that the Corps disagrees with the EPA suggestion to "use** historical air **photos and other information to assess past changes" because "Historical Denver Water diversions are not at issue for this Moffat Project EIS," and because they "would not be** adequate to discern the effects of the Denver Water diversions from other anthropogenic changes **and climatic variability." This represents an abrogation of the Corps' responsibility to "investigate to the best of their ability the relationship between local short-term uses of man's** environment and the maintenance and enhancement of long-**term productivity." (42 U.S.C. §** 4332(2)(c)) There is a significant body of published research suggesting it would be possible to use aerial or perhaps satellite imagery to assess past changes due to Denver Water diversions, and it would be reasonable to attempt to discern and factor out climatic and anthropomorphic changes with a combination of control photographs or images, climatic, and development data. From this work, the Corps could develop estimations of the impact of the project on not only groundwater but also a number of other variables.	*mentioned in the Scoping Summary that have socioeconomic consequences, whether or not the consequences can be measured: FOOTNOTES: [9] Environmental Protection Agency, Office of the Administrator, Guidelines for Preparing Economic Analyses, EPA 240-R-00-003 (Sept. 2000). [10] National Center for Environmental Economics, Guidelines for Preparing Economic Analyses-External Review Draft, Office of Policy Economics and Innovation, U.S. Environmental Protection Agency (Sept. 12, 2008). - impacts on ranching and agricultural properties; - impacts on private resorts, lodges and businesses that rely on the health and scenic beauty of the affected rivers and tributaries; - impacts on visitors who enjoy passive sight-seeing. The socioeconomic baseline (Section 3.17) provided minimal to no information about businesses associated with tourism or recreation. If there were better baseline information, then the analyst might have been able to observe impacts from the Proposed Action and their potential impact on these businesses, whether or not these impacts could be quantified.* **Response #910-348:** Refer to the FEIS text for an expanded description of Grand County in Section 3.19 and an expanded analysis of impacts to Grand County, where applicable, in Sections 4.6.19 and 5.19. The socioeconomic impact analysis does depend on and incorporates the results and conclusions about impact upon several other resources, including recreation, water quality, visual resources and land use to the fullest extent possible. If impacts to these resources cannot be quantified, the associated economic impacts must also be qualitative. ***Comment #910-347*** *(ID 2477)**:*** *Impacts to Water Providers. Using the PACSM model runs as proof, the DEIS claims that any water*

Comment Information	Comment	Comments and Responses
	Mr. J. Scott Franklin, US Army Corps of Engineers March 17, 2010 *Re: Moffat Collection System Project Draft Environmental Impact Statement* Page 104 Consequences to groundwater as a result of the project are not likely to be negligible. Without sufficient information, it is perhaps as difficult to accurately predict the most dramatic consequences as it is to predict the minor, however, a few things can probably safely be said. Tributary streams without bypass flows in the Fraser and Williams Fork basins will see more changes in vegetative cover, moving away from riparian and toward dryland plant communities. Recharge to groundwater in the regions where these tributaries contain pools will decline. Groundwater quality is likely to decline, particularly down-gradient from fully diverted steams, and the effects of this may become apparent in base flows. Examples of this may include exacerbation of the already low dissolved oxygen evident in the Tabernash alluvial groundwater that may indicate reducing conditions favorable to the release of iron and manganese, both of which are already showing high values in some sites.[22] Bauch and Bails (2004) also suggest that shallow ground water may be more susceptible to changes in land use in the watershed and that fecal coliform bacteria exhibit a seasonal pattern in groundwater, and reductions in flows will continue to diminish the assimilative capacity of this resource. The quantity of available groundwater is likely to decline under the project, which may impact stream flows as much as or more than flows bypassed at headgates, and which will in turn negatively impact mid-late summer stream temperatures. **Moffat Collection System Project Existing Channel Conditions Report, 2006, by Ecological Resources Consultants** The equations used to calculate sediment supply appear to have come from work done on the South Platte in 1986 for the Two Forks EIS, and it is not apparent in any of the current DEIS chapters that the sensitivity analyses have been performed that would help determine the appropriateness of using these equations in the very different Fraser and Williams Fork watersheds, as recommended on page 13 of the *Moffat Collection System Project Existing Channel Conditions Report*, which is referenced on page 3-68 of the DEIS. In addition, it appears that data from only one site in the Williams Fork from 1986 could be applied to the current DEIS, and that this 24 year old data was extrapolated to all tributary streams (page 5), and then projected into the future another 20 years to estimate environmental consequences of the project. This is not reasonable. [22] Bauch & Bails 2004.	*shortages experienced by Grand County water providers would occur without the proposed Project (DEIS 4-432, 4-441) but for 6 acre-feet for Grand County #1 Water and Sanitation District. The UPCO Phase II Report, using the PACSM model, concludes that in the Fraser Valley, average annual shortages at build-out may range between 1,060 and 2,300 acre-feet. The Grand County Water and Sanitation District alone may experience shortages of 973 to 1,903 acre-feet. The Moffat Project will exacerbate an already critical condition. The DEIS states that build-out in Grand County occurs prior to 2016 and is therefore in the 2016 System "baseline" and is not a Project impact. DEIS 4-432. If a common sense definition of "baseline" were applied, then the analysis would show that this resource is nearly exhausted.* **Response #910-347:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). For the purposes of analysis in the DEIS, growth in Grand County was accelerated and assumed to be fully developed by 2016. This allowed the Corps to analyze the effects of removing water from the Fraser River Basin by the proposed Project. If "build-out" were to occur later than predicted, then the impacts associated with those diversions would be delayed.

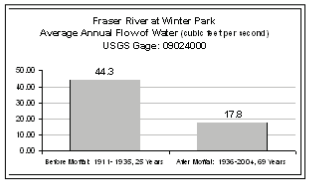
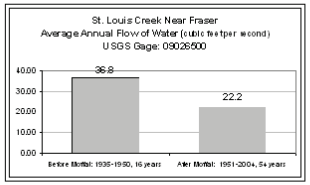
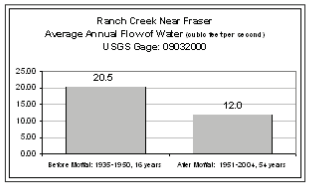
Comment Information	Comment	Comments and Responses
	ATTACHMENT: Grand County Comments, March 17, 2010: Moffat Collection System Project Draft Environmental Impact Statement COLEY/FORREST 990 S. ADAMS WAY • DENVER, CO 80209 •JTOWNSEND@COLEYFORREST.COM Date: February 26, 2010 To: Lurline Underbrink-Curran, County Manager Grand County, Colorado From: Jean Townsend, Coley/Forrest, Inc. RE: MOFFAT EXPANSION PROJECT - DRAFT ENVIRONMENTAL IMPACT REPORT This memorandum includes a review of the Moffat Expansion Project Draft Environmental Impact Statement (DEIS) with emphasis on land use, recreation, visual resources, cultural resources and socioeconomic considerations plus related matters regarding purpose and need, and methodology. Section 1.0 introduces issues, concerns and potential inadequacies of the DEIS. Section 2.0 provides page-specific comments that correspond to the issues referenced in Section 1.0. TABLE OF CONTENTS **1.0 General Comments** ..... 2 1.1 Impacts in the Scoping Summary ..... 2 1.2 Environmental Factors Not Addressed ..... 4 1.3 Purpose and Need ..... 4 1.4 Definition of Baseline ..... 4 1.5 Compromised Environmental Conditions – Tipping Point ..... 5 1.6 Measuring Environmental Consequences ..... 7 1.7 Recreation ..... 8 1.8 Land Use ..... 9 1.9 Visual Resources ..... 9 1.10 Cultural Resources ..... 9 1.11 Socioeconomics ..... 10 1.12 Cumulative Impacts ..... 10 1.13 Mitigation ..... 10 2.0 **Page-Specific Comments** ..... 11 *Affected Environment (Chapter 3)* 2.1 Affected Environment – Recreation (Section 3.13) ..... 11 2.2 Affected Environment - Land Use (Section 3.14 ..... 13 2.3 Affected Environment - Visual Resources (Section 3.15) ..... 13 PAGE 1 OF 32	***Comment #910-344*** *(ID 2476)**:*** *Wastewater Providers. The DEIS excludes analysis of low flow impacts on wastewater providers between 2006 and 2016 because it is part of the 2016 "baseline" conditions. DEIS 4-443 ("The economic impacts of lower flows in the Fraser River under the Full Use of the Existing System (2016) were not evaluated as part of this EIS since modeled year 2016 flow conditions are expected to occur regardless of the Proposed Action."). The DEIS is technically avoiding mention of a significant concern about increased environmental requirements and associated costs among wastewater treatment providers including the Combined Grand County Wastewater Treatment Plant, Devil's Thumb Ranch, and the Tabernash Meadows Water and Sanitation District. These costs could be triggered by water temperature increases and water flow decreases due in part to Denver Water actions between 2006 and 2016 that are not literally associated with the Moffat Project. At a minimum, the DEIS should clearly state the fragile nature of this anticipated environmental condition, since the health of environmental resources should be part of the DEIS analysis. There are related concerns that State authorities will require dischargers to remove phosphorus from the effluent dominated Fraser River. While these problems are exacerbated by increasing demands of the transmountain diverters, the State only has authority to impose constraints on the dischargers, not the diverters. The DEIS concludes that there are no additional impacts between 2016 and the Proposed Action. DEIS 4-443 to -444. If Denver Water anticipates no problem, then it should agree to an adaptive management measure to fund wastewater treatment plant upgrades triggered by their proposed additional diversion.*

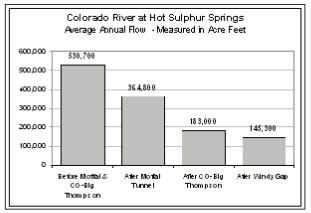
Comment Information	Comment	Comments and Responses
	2.4 Affected Environment - Cultural Resources (Section 3.16) ..... 14 2.5 Affected Environment - Socioeconomics (Section 3.17) ..... 14 *Environmental Consequences (Chapter 4)* 2.6 Environmental Consequences - Recreation (Section 4.13) ..... 16 2.7 Environmental Consequences – Land Use (Section 4.14) ..... 20 2.8 Environmental Consequences – Visual Resources (Section 4.15) ..... 20 2.9 Environmental Consequences – Cultural Resources (Section 4.16) ..... 22 2.10 Environmental Consequences – Socioeconomics (Section 4.17) ..... 23 2.11 *Cumulative Impacts (Chapter 5)* ..... 26 **SECTION 1.0 – GENERAL REMARKS** This section introduces issues and concerns about specific topics presented in the DEIS that affect Grand County. Page-specific comments are presented in Section 2.0. ▪ The first two sections address impacts that have been excluded from careful consideration. Some issues mentioned in the *Scoping Summary* [1] are referenced in a summary and qualitative manner and then dismissed (1.1); other pertinent issues are excluded from consideration (1.2) ▪ The next four sections discuss concerns about the purpose and need definition (1.3), the baseline definition (1.4), currently compromised environmental conditions (1.5) and measuring environmental consequences (1.6). ▪ The next five sections summarize concerns about specific sections of the DEIS including recreation (1.7), land use (1.8), visual resources (1.9), cultural resources (1.10), and socioeconomics (1.11). ▪ The final sections discuss issues regarding cumulative impacts (1.12) and mitigation (1.13). **1.1 IMPACTS IN THE SCOPING SUMMARY** On the summary page of the *Scoping Summary* [2] is a list the three most frequent issues and concerns. All relate to Grand County. They are quoted below with a description of how each is treated in the DEIS. ▪ **"Effect of proposed diversions by Denver Water from the Fraser River on water supply needs for municipal water demands and environmental requirements. "** This comment is reiterated in *Scoping Summary* comment #23a, page 3-6. The DEIS states that Grand County build-out conditions and related water supply shortages are **assumed within the 2016 "baseline" condition** *(page 4-432)*. Since built-out is achieved in the 2016 baseline, the DEIS finds no incremental impact between 2016 and the Proposed Action (2030). EPA provides clear direction regarding the need to disclose prior conditions even if they are part of **a baseline condition. See Section 1.4 for a discussion of EPA's direction.** PAGE 2 OF 32	**Response #910-344:** FEIS Section 4.6.19 addresses total environmental effects, including the impacts of past, present and RFFAs occurring between 2006 and 2032, including impacts to wastewater providers from all actions occurring during that period. FEIS Section 5.19 addresses the impacts solely from Moffat Project alternatives. The DEIS contained a discussion of water temperatures in these streams and the effects on aquatic resources. The FEIS contains a more detailed discussion of water temperature and nutrient levels in the Fraser in Sections 4.6.2 and 5.2. The DEIS evaluated all major domestic wastewater treatment plants (WWTPs) that discharge into the Fraser River, Colorado River (between Windy Gap and Kremmling), and the Blue River below Dillon Dam. FEIS also evaluated minor domestic WWTPs that discharge into the Fraser River, Colorado River and Blue River below Dillon Dam as well as the treatment plants that discharge just upstream of, or into Dillon Reservoir. Additional water quality analysis for each WWTP has also been performed. Please see FEIS Sections 4.6.2 and 5.2. Note that PACSM modeled low flows for existing conditions, Full use conditions, and with Project conditions have been estimated and are included in the discussion in FEIS Sections 4.6.2 and 5.2. Additionally, nutrient modeling for the Fraser was performed for the FEIS with results presented in Sections 4.6.2 and 5.2. ***Comment #910-343*** *(ID 2475)**:*** *Fiscal Conditions. The DEIS concludes that there is no fiscal impact on Grand County because there is no loss of property tax funding as a result of the Proposed Action. DEIS 4-436, -445. If a revised analysis shows that there may be fewer visitors, then there is a direct fiscal impact on the County and the*

Comment Information	Comment	Comments and Responses
	▪ **"Effect of the proposed diversion on the economy of the Fraser River Basin, in particular the** water-related, recreation-based economy of Grand County, and the potential lost opportunities for **future growth in Grand County."** This is reiterated in *Scoping Summary* comments #84, page 3-14 and #88, page 3-14. The affected environment chapter provides minimal descriptive information about **the "water-**related, recreation-based economy of Grand County. It provides no quantitative foundation for considering potential lost opportunities. Remarks about economic impacts are subsequently dismissed. *Guidelines for Preparing Economic Analyses*, prepared by EPA, provides principles for **describing baseline conditions. "Specification of baseline conditions can have profound influence on the measurement and interpretation of analytical results…The honesty and integrity of the** analysis depend on the ability of the analyst to provide well-defined and defensible choices in selection and estimation of baseline conditions. The first step is to select a baseline that is appropriate to the question the analysis is intended the address. The second step is to estimate the values of relevant **factors in the selected baseline scenario."** [3] ▪ **"**Effect of Denver Water reducing or eliminating bypass flows in the Fraser River Basin pursuant to **its U.S. Forest Service (USFS) agreements."** This concern is reiterated in *Scoping Summary* comments #23a and #23b, page 3-66. The DEIS states that reducing bypass flows are a part of the 2016 baseline conditions; as such, their impacts need not be described. Reducing bypass flows effects **"**the ability of local water districts to meet municipal water supply de**mand and water quality requirements."** *(Scoping Summary, #23a, page 3-6)* The effect of reducing USFS bypass flows has a significant effect on Grand County; these effects should be described and quantified so the fragile environmental circumstances that underlie the 2016 baseline condition are perfectly clear to reviewers. See Section 1.4 for relevant EPA Guidelines. The DEIS marginalizes these three key Grand County concerns that are highlighted in the *Scoping Summary*. All points of diversion for the Moffat Project are in Grand County; the water impacts are felt most directly in Grand County. **Scoping Remarks – Inadequate Consideration.** Other remarks were dismissed from evaluation in the DEIS because they were considered part of the baseline. ▪ **"Effect of reducing Fraser River bypass flows on the ability of local water districts to meet wastewater treatment discharge permit limits."** *(#23a, page 3-6)* ▪ **"Cumulative effects on the Colorado and Fraser Rivers as a result of Windy Gap Firming Project."** *(#108, page 3-16)* **Scoping Remarks Excluded from the Analysis.** Three *Scoping Summary* remarks appear to be excluded from the analysis. ▪ **"Effect on downstream agricultural water users."** *(#49, page 3-10)* PAGE 3 OF 32	*towns of Winter Park, Fraser, Granby and others. The impact of even small decreases in visitors on these small communities can be devastating.* **Response #910-343:** The socioeconomic impact analyses of the DEIS incorporates the conclusions of impacts upon several other resources, including recreation, surface water, aquatic biological resources and others. The socioeconomic impacts in Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 based on the impacts upon these other resources in considering effects upon the county's tourism industry and economy. If the analysis indicated that Moffat Project alternatives would have a negative impact on Grand County visitation, the effects were quantified in the fiscal analysis. ***Comment #910-13*** *(ID 2474)**:*** *The DEIS Fails to Examine Impacts to the Arapaho National Forest. Denver Water has 31 points of diversion in the Fraser Valley. All points of diversion are on federal land in the Arapahoe National Forest; some diversions are within the Vasquez Peak Wilderness and the Fraser Experimental Forest, which are also portions of the National Forest. Below these points of diversion, there is less water available to nourish the riparian habitat. There are a number of creeks that dry up 100% due to Denver Water diversions. DEIS 3-23 ("Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversions. This is how Denver Water has operated in the past and plans to operate in the future."). In Colorado, riparian areas comprise 3% of the land but 90% of all wildlife rely on healthy riparian area to live. In addition, Denver Water's proposed diversion regime would reduce flushing flows, which are essential to support native special of*

Comment Information	Comment	Comments and Responses
	▪ "Effect on opportunities for land development in Grand County that may be lost because of the additional water diversions." *(#75, page 3-13)* ▪ "Effect on historic ranching and agricultural uses." *(#79, page 3-13)* 1.2 ENVIRONMENTAL FACTORS NOT ADDRESSED The DEIS ignores a number of environmental relationships that impact the analytical results for recreation, land use, visual resources, cultural resources and socioeconomics. Several issues include: ▪ Flushing flows and their environmental value to the ecosystem; [4] ▪ The relationship between streamflow, water temperature, water clarity and fishing; ▪ The loss of scenic value which directly impacts tourism, a basic sector of the Grand County economy; ▪ Any environmental consequences or related impacts to tourism and property values because of impacts on Grand Lake. [5] 1.3 PURPOSE AND NEED The Purpose and Need statement is too narrow and therefore restricts the range of action alternatives considered. It includes the solution in the statement. (See text box.) After recalculating demand and supply, if there is a still a need, then the DEIS should restate the purpose and need to exclude the solution from the need. The purposes are to (a) serve additional demand, (b) decrease vulnerability and (c) improve flexibility. The narrow definition of purpose and need plus the screening criteria and analysis result in a set of alternatives that have only subtle differences among them from Grand County's perspective. *"The purpose of the Moffat Collection System Project is to develop 18,000 acre-feet per year of new, annual firm yield to the to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers" (Page 1-2)* In its discussion about Purpose and Need in the *National Environmental Policy Act Handbook*, the Bureau of Reclamation states "This (purpose and need) discussion should not be tied to any of the alternatives, but a general discussion of the problem that various alternatives were designed to solve. Care must be taken to ensure an objective presentation and not a justification … the resolution of the problem should not, at this time, be tied to any single alternative." [6] 1.4 DEFINITION OF BASELINE EPA provides clear direction regarding the development of "baseline" conditions. [7] [8] "To determine how the project will affect the resource's ability to sustain itself, the NEPA document should include a description of the baseline condition that considers "…how conditions have changed over time and how they are likely to change in the future without the proposed action." If it is not possible to establish the 'naturally occurring" condition, a description of modified by ecologically sustainable PAGE 4 OF 32	*fish and sustain healthy river ecosystems. A major reason why the federal government acquired forest service land in the west was protection of watersheds, as described by long-time USFS employee, Daina Dravneiks Apple in her article, "Evolution of U.S. Water Policy: Emphasis on the West" which is accessible via the USFS website. Maintaining supplies of clean water and protecting watersheds were major reasons why public domain forests and rangelands were reserved by the federal government at the end of the nineteenth century…The 1897 Organic Administrative Act said these forest reserves were set aside to protect and enhance water supplies, reduce flooding, secure favorable conditions of water flow, protect the forest from fires and depredations, and provide a continuous supply of timber…So, it was the headwaters of the western rivers and the cutover and eroded lands in the East that became the National Forest System. The DEIS meticulously narrows the definition of the affected environment to river segments. There appears to be no discussion about the health of the forest, which for reasons unrelated to Denver Water, is already in a compromised environmental situation. In its document, Consideration of Cumulative Impacts in EPA Review of NEPA Documents, EPA 315-R-99-002 (May 1999) EPA notes that "knowing whether the resource is healthy, declining, near collapse or completely devastated is necessary for determining the significance of any added impacts due to the proposed project. It is startling to see that no portion of the Arapahoe National Forest outside of "river Segments" is considered a part of the affected environment. There has to be some analysis as to whether the essential riparian areas within the National Forest will be further compromised by the 2016 System, the Proposed Action or other action alternatives. Even though the geographic area of the affected environment is extremely limited, some of the*

Comment Information	Comment	Comments and Responses
	condition can be used … Reviewers should determine whether NEPA documents incorporate the cumulative effects of *all relevant past activities* into the affected environment section."[9] This DEIS introduces 2016 – Full Use Existing System as a baseline by claiming this scenario is where Denver Water makes full use of its existing system. *(Page 4-305 +)* When considering impacts, the analysis compares the Proposed Action and other Action Alternatives against the 2016 System. *(Example, page 4-312)* The DEIS applies faulty methodology because it (a) it does not disclose past, directly relevant actions and (b) it purports a baseline condition that is 10 years into the future and contains speculative projects. These two faulty methodological errors have a direct effect on reducing the measured impact of all proposed actions. **USFS Bypass Flow Conditions – Part of the 2016 Baseline.** The DEIS should quantify the potential consequences of this action. **Grand County Water Supply Shortages – Part of the 2016 Baseline.** The DEIS reports significant anticipated water supply shortages between 2006 and 2016 and no or minimal additional water supply shortages between the 2016 and the Proposed Action. *(Table 5-4, page 5-17).* Therefore, the analysis concludes that the impacts are minimal. EPA is clear in its directive to clearly state when a natural resource is in a healthy or compromised condition. When an environmental condition is already at the tipping point, this should be acknowledged. **Windy Gap Firming Project – Part of the 2016 Baseline.** As described in the Cumulative Impacts Chapter and Appendix H, the Windy Gap Firming Project is built into the 2016 System. This appears to be a significant methodological error. The analysis should not include another unapproved project as if it were a given. **Upper Fraser Valley Build-Out – Part of 2016 Baseline.** The DEIS assumes that by 2016, the Upper Fraser Valley will be built-out. Since this is part of its 2016 baseline condition, the analysis assumes that there is no further need for water in the Upper Fraser Valley. This is a reason why impacts are found to be minimal. 2016 is 6 years from now. The Upper Fraser Valley will not be built out in 2016.[10] **Two Baseline Conditions.** The DEIS is explicit that when changes to "land-based resources" are discussed the analysis extends from 2006 (current conditions) to 2030 (Full Use with Project) and when "water-based resources" are discussed, the impact analysis extends from 2016 – Full Use of Existing System to 2030 (Full Use with Project). This is inconsistent with EPA *Guidelines for Preparing Economic Analyses* which state "The same baseline should be carried through for all components of the analysis."[11] **1.5 COMPROMISED ENVIRONMENTAL CONDITIONS – TIPPING POINT** Three major water providers [Denver Water, the Northern Colorado Water Conservancy District (NCWCD) and the Municipal Subdistrict of the NCWCD] have diverted water from Grand County to the East Slope for decades. Depending on where measurements occur, the volume of water diverted ranges between 40% and 73% of the average annual flow in the Fraser and Colorado Rivers, relative to natural state conditions. The DEIS calls for additional water diversion from the same resources. The PAGE 5 OF 32	*largest impacts in the entire DEIS have been found to be located in the upper tributaries of the Fraser and Williams Fork rivers on Arapaho National Forest land. DEIS 5-56. In particular, there is no mention of the extensive research being conducted by the USFS in the Fraser Experimental Forest. One extensive study samples water quality from the St. Louis Creek and uses the results as the national baseline standard of the highest water quality standards in the nation.* **Response #910-13:** The Moffat EIS alternatives do not include any construction or changes in facilities on the West Slope, and the only Project changes would be the amount and timing of water diversions. The EIS appropriately examines impacts to the Fraser Valley related to the flow changes. Information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in FEIS Section 5.7. The lodgepole pine forests that have been most affected by mountain pine beetle are upland plant communities that mostly do not occur along rivers and that would not be affected by changes in stream flows, either historically or in the future. The current diversions already capture most of the natural flow in the tributaries that lack bypass flows for large portions of the year. The action alternatives would not increase the number of streams where diversions cause streams to dry up compared to Current Conditions, but would extend the months when they are fully diverted. Many of these streams exhibit recovery downstream for the diversion from groundwater discharge or tributary flows, and wetlands and riparian vegetation along some stream segments appear to be supported mostly by groundwater. Additional analysis of the existing conditions of the Fraser and Williams Fork tributaries has been added to FEIS Section 4.6.8 and a

Comment Information	Comment	Comments and Responses
	Windy Gap Firming Project, which is inappropriately part of the DEIS 2016 "baseline", also calls for additional water diversion from the same resources. To provide perspective regarding the magnitude of change in water flow, data is provided below for three gage locations in the Fraser Valley and one location on the Colorado River. In each case, data is from the USGS gages at each site. These are the only locations where there is sufficient multi-year historical data before and after construction of the Moffat Tunnel and the Colorado-Big Thompson Project to provide meaningful information. The USFS manages a gage on the Fraser River at Winter Park[12] and has collected and recorded water flow information since 1911. During the 25 years prior to the first diversion of water through the Moffat Tunnel (1911 through 1935), the average annual flow of water was 44.3 cubic-feet-per second (cfs). During the last 69 years since the Moffat Tunnel diversion (1936 through 2004), the annual flow of water has averaged 17.8 cfs. This more recent flow activity represents a 60% reduction in the average annual water flow relative to the years before the Moffat Tunnel diversion.  The USGS-managed gage on the St. Louis Creek near Fraser has produced data since 1935. During the 16 year prior (1935 through 1950) to the estimated completion of the St. Louis Creek diversion cannel to the Moffat Tunnel, the average annual flow of water was 36.8 cfs; during the last 54 years (1951 through 2004), the annual flow of water has averaged 22.2 cfs, which represents an average annual reduction of 40% from the prior period.  The USGS-managed gage on Ranch Creek near Fraser has also produced data since 1935. During the 16 year prior (1935 through 1950) to the estimated completion of the Ranch Creek diversion cannel to the Moffat Tunnel, the average annual flow of water was 20.5 cfs; during the last 54 years (1951 through 2004), the annual flow of water has averaged 12.0 cfs, an average annual reduction of 41%.  The graph to the right provides some perspective on the combined impacts of the Denver Water, the BOR / NCWCD, and the Subdistrict of NCWCD trans-mountain water diversion projects. It shows the average annual flow of water on the Colorado River at Hot Sulphur Springs for several historic time PAGE 6 OF 32	comparison of flows under Current Conditions and with each of the alternatives has been added to FEIS Sections 3.8 and 5.8. The analysis of stream morphology was expanded to include a Phase 2 sediment transport evaluation. As part of this assessment, flows required to mobilize different particle sizes were quantified and the flow at which stream bed mobilization occurs was estimated. Results of this analysis were incorporated into an Indicators of Hydrologic Alteration (IHA) evaluation to quantify the duration, frequency and magnitude of flows exceeding the Phase 2 sediment transport threshold as well as changes to other high magnitude flood events. Changes resulting from the proposed Project were quantified. Results are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-346*** *(ID 2473)**:*** *Wild and Scenic Designation The DEIS notes that in 2006 the Kremmling and Glenwood Springs Field Offices of the BLM began the eligibility phase of a Wild and Scenic Rivers evaluation as part of their Resource Management Plan revision process. DEIS 3-282. BLM identified three segments of the Colorado River between Windy Gap and the mouth of Gore Canyon that are eligible for inclusion in the National Wild and Scenic Rivers System. Id. 3-284. It is BLM's policy that when a river segment is determined to be eligible "its identified outstandingly remarkable values shall be afforded adequate protection, subject to valid existing rights, and until the eligibility determination is superseded, management activities and authorized uses shall not be allowed to adversely affect either eligibility or the tentative classification . . . ." BLM Manual § 8351.32.C (May 19, 1992); see also id. § 8351.52.C. The DEIS fails to analyze what effect the alternatives would have on BLM's interim management policy and whether the COE should use its own authorities to protect these segments until the*

Comment Information	Comment	Comments and Responses
	periods: (a) before construction of Denver Water's Moffat Tunnel and BOR's Colorado Big Thompson Project (1904 -1936);[13] (b) after construction of the Moffat Tunnel and before construction of the Colorado Big-Thompson Project (1937-1951); (c) after construction of both the Moffat Tunnel and the Colorado-Big Thompson Project (1952-1984), and; (d) after construction of the Moffat Tunnel, the Colorado-Big Thompson Project and the Windy Gap Project. (1985-1994) [14] The cumulative effect of these three diversion projects plus any natural changes in climatic conditions, in-basin users and other smaller factors reduced the flow of water from an average of 530,700 to 145,300 acre-feet per year, a reduction of 73%. This data is from a gage that was managed by the USGS for 90 years, from 1904 through 1994. More recent data from this site is not available because the gage location was subsequently relocated.  The DEIS is inadequate in that it has not disclosed the significant magnitude of these prior impacts. Also, it is reasonable to question when the currently compromised environmental condition of the Fraser and Colorado rivers have already reached a tipping point where further degradation might trigger nonlinear consequences. The proposed Moffat Project will trigger additional diversion from the Fraser River, the Colorado River and its tributaries. The proposed Windy Gap Firming Project will also trigger further diversions from the Colorado River. Neither of these additional diversion projects is represented in the charts above. **1.6 MEASURING ENVIRONMENTAL CONSEQUENCES** The DEIS does not use a cost-benefit analysis to weigh the relative merits of alternatives. This methodology is not a NEPA requirement but it can be a useful analytical tool. If a cost-benefit analysis had been, then the analysts would have developed a common methodology [15] to weigh or at least compare and contrast the environmental impacts on the West Slope versus the demand for more water on the West Slope. The DEIS provides a poorly balanced perspective on consequences of proceeding with an Action Alternative. The consequences of not proceeding with a Moffat Project alternative are described as potentially **"logistically catastrophic."** *(Page 2-92)* **and may trigger a "major system failure (that)** represents dire consequences for Denver Water as an institution**…This perception of institutional** instability may lead to new management, new oversight responsibilities and control by other levels of **government."** *(Page 4-498)* The environmental consequences of proceeding with any action alternative in Grand County are either ignored or marginalized with qualitative words. The recent report published by the EPA Science Advisory Board, *Valuing the Protection of Ecological Systems and Services* [16] provides some useful insight on how to measure ecological values and place them into context. **Some organization other than the proponent should weigh Denver Water's desire to have and sell more** water on the East Slope versus the adverse and permanent environmental consequences to the West Slope. PAGE 7 OF 32	*eligibility determination is superseded. In addition, "[o]nce a river is found eligible, the respective agency is committed to evaluate all actions within its control through the filter of the river's potential for designation. Some specific authorities for protecting river-related values include the Clean Water Act for free flow and water quality, the Endangered Species Act for plant and animal species within a river corridor, and the Archaeologic[al] Resources Protection Act for cultural resources." Interagency Wild and Scenic Rivers Coordinating Council, The Wild & Scenic River Study Process 30 (Dec. 1999). The DEIS completely fails to evaluate the Moffat Project "through the filter of the river's potential for designation." Instead, it specifically declines to determine whether any of the alternatives would affect the suitability of the eligible segments for inclusion in the NWSRS. The Nationwide Rivers Inventory compiled by the National Park Service ("NPS"), available at http://www.nps.gov/ncrc/programs/rtca/nri/states/co.html, includes a 23-mile reach of the Colorado River, from State Bridge to the Blue River. (As of March 7, 2010, the NPS webpage had not been updated to include the three segments BLM determined were eligible in March 2007.) "Each federal agency shall, as part of its normal planning and environmental review process, take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Inventory . . . ." Presidential Memorandum for the Heads of Departments and Agencies from President Jimmy Carter (Aug. 2, 1979). The DEIS fails to do that. Further, "[a]gencies shall, as part of their normal environmental review process, consult with the Heritage Conservation and Recreation Service [now the NPS] prior to taking actions which could effectively foreclose wild, scenic, or recreational river status on rivers in the Inventory. Id.; see also CEQ Memorandum for Heads of Agencies, Interagency Consultation to Avoid or Mitigate Adverse Effects on*

Comment Information	Comment	Comments and Responses

1.7 RECREATION (SECTIONS 3.13 AND 4.13)

This section summarizes observations about recreation that are presented in Chapters 3 and 4 and how the recreation impacts are treated in the socioeconomics discussion.

- The affected environment chapter narrowed recreation impacts to fishing and boating. These sections do not discuss more passive recreation impacts such as sight-seeing, hiking and biking.
- In a number of instances, information about recreation is anecdotal and not quantified in a manner where the socioeconomic impacts can be measured.
- The recreation analysis contains no analysis of how the 2016 System, the Proposed Action or other Action alternatives might impact the pending Wild and Scenic River designation, the Gold Medal Stream Designation and the Colorado Merit Water Stream Designation. These designations are **particularly important to Grand County's water**-based recreation economy.
- The analysis of recreation impacts applies a questionable methodology that masks anticipated variability of impacts. It selects average year data and then averages the average year data.
- The DEIS concludes that there are no measurable recreation impacts as summarized in the tables that follow. In many cases, no data is provided to substantiate remarks. Where data is provided, there is no correlation between the information and the conclusion.

SUMMARY OF FISHING IMPACTS IN GRAND COUNTY

River Segment	Recreation Impact (Average Year)		Socioeconomic Effect
	2016 (Compared with 2006)	Proposed Action (Compared with 2016)	Proposed Action (Compared with 2016)
Fraser	**"flow reductions would not** adversely effect the quality **of fishing" (4**-374)	No impact	No quantitative conclusions.
Williams Fork	No analysis.	No impact (4-374)	No impact (4-431)
Colorado	No analysis.	No impact (4-377)	No impact (4-431)

SUMMARY OF KAYAKING IMPACTS IN GRAND COUNTY (MEASURED IN DAYS)

River Segment	Recreation Impact (Average Year)		Socioeconomic Effect
	2016 (Compared with 2006)	Proposed Action (Compared with 2016)	Proposed Action (Compared with 2016)
Fraser	-2.6% *(4-371)*	**"major, adverse impact"** (-41.5%) *(4-373)*	Little boating use; no commercial boating; no analysis (4-431)
Williams Fork	No Analysis	No analysis	No analysis
Colorado near Kremmling	+16.5% *(4-375)*	Beneficial impact,**"+2.6%** *(4-377)*	No analysis (4-431)

SUMMARY OF RAFTING IMPACTS IN GRAND COUNTY (MEASURED IN DAYS)

River Segment	Recreation Impact (Average Year)	Socioeconomic Effect

PAGE 8 OF 32

Rivers in the Nationwide Inventory, 45 Fed. Reg. 59,189, 59,190 (Sept. 8, 1980) ("CEQ Memorandum"). Such consultation apparently did not occur. The CEQ Memorandum also requires that "[w]hen environmental impact statements are prepared on proposals that affect Inventory rivers the lead agency should request HCRS and the affected land managing agency to be cooperating agencies as soon as the Notice of Intent to prepare an EIS has been published." 45 Fed. Reg. at 59,192. It does not appear, however, that the COE requested either the NPS or BLM to be cooperating agencies.

Response #910-346:
The Corps coordinated with the BLM regarding the Wild and Scenic River designation process throughout the NEPA process. Sections of the Colorado River within the Project area considered eligible for Wild and Scenic Rivers designation were described in DEIS Sections 3.13.5 and 3.13.5.3.

An eligibility determination for potential designation under the Wild and Scenic Rivers Act does not preclude a project from being permitted. The Corps' Section 404 regulations require the Corps to consider degradation to the waters of the United States (U.S.) and minimization of potential adverse effects to the aquatic ecosystem. Additionally, the Corps' public interest review balances both protection and utilization of natural resources and includes consideration of conservation, historic and cultural values, fish and wildlife values, aesthetics, etc. Thus, the resources recognized by the BLM as being eligible under the Wild and Scenic Rivers Eligibility study are similarly considered in the Corps' impact analysis and permitting decision.

Because the Corps analysis included a prudent hard look at impacts of the proposed Project on the Colorado River, the Corps did not extend Cooperating

Comment Information	Comment	Comments and Responses

	2016 (Compared with 2006)	Proposed Action (Compared with 2016)	Proposed Action (Compared with 2016)
Fraser	No Analysis	No Analysis	No analysis
Williams Fork	No Analysis	No analysis	No analysis
Colorado at Kremmling	**"minor"** , **+0**.2% (4-375)	**"Minor" (+0.7%) (4**-376)	No analysis

1.8 LAND USE (SECTIONS 3.14 AND 4.14)

The DEIS contains no reference to land uses in Grand County. There are significant impacts on agricultural and resort development land uses that correspond directly with the water diversion proposed in the Moffat Project.

1.9 VISUAL RESOURCES (SECTIONS 3.15 AND 4.15)

This section summarizes observations regarding visual resources that are presented in Chapters 3 and 4 and how the socioeconomic discussion uses the DEIS visual resource findings.

- There are significant changes in streamflow from 2006 to 2016. If the definition of baseline condition changes, then the Proposed Action results will be more significant.
- As written, the DEIS concludes there are no socioeconomic consequences even though there are **significant "detectable and adverse"** stream flow impacts on the Fraser River at Crooked Creek and other negative impacts on the Williams Fork and Colorado Rivers.

SUMMARY OF VISUAL RESOURCE IMPACTS (MEASURED IN CHANGES TO STREAM FLOW)			
River Segment	Visual Resource Chapter		Socioeconomic Effect
	2016 (Compared with 2006)	Proposed Action (Compared with 2016)	Proposed Action (Compared with 2016)
Fraser at Crooked Creek	-2% to -18% flow reduction in average year, **"Difficult for observers to detect"** (4-405)	-30% to -40% in average **years; "detectable and adverse"** *(4-406)*	**Flow changes "generally** unnoticeable to most **observers… No impacts** to land based recreation **activity … no changes in tourist visitation."** (**4**-432)
Williams Fork	-14% to -24% in upper reaches only, elsewhere, **"not apparent" (4**-406-07)	-30% in upper reaches in **May; elsewhere "minor and** limited to high flow **conditions" (4**-406)	
Colorado at Hot Sulphur	0% to -31% in average year, **"normal" "minimally detectible" (4**-405)	-13% in average year, **elsewhere "below perceptible change" (4**-406)	

1.10 CULTURAL RESOURCES (SECTIONS 3.16 AND 4.16, CHAPTER 6)

The DEIS includes no mention of cultural resources in Grand County, provides no reference as to who was contacted in Grand County regarding cultural resources, and lists no team expert with a cultural resource background (Chapter 6). If an investigation had occurred, then the analyst would have

PAGE 9 OF 32

Agency status to the National Park Service (NPS) nor the BLM. Formal agency consultation with the NPS as part of this planning process per this directive was not considered a requirement. However, these agencies, as well as other State and Federal agencies, have been invited to participate in the NEPA process as part of the public process.

Comment #910-345 *(ID 2472)**:***
An EIS must include a discussion of "[m]eans to mitigate adverse environmental impacts . . . ." 40 C.F.R. § 1502.16(h). As the Supreme Court recognized, such a discussion is essential to ensure that agencies take a hard look at the environmental consequences of proposed actions. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989). Furthermore, omission of a reasonably complete discussion of possible mitigation measures would undermine the "actionforcing" function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects. Id. (emphasis added); see also Colorado Environmental Coalition, 185 F.3d at 1173 ("It is not enough to merely list possible mitigation measures."). "An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective." South Fork Band Council of Western Shoshone of Nevada v. U.S. Dept. of the Interior, 588 F.3d 718, 727 (9th Cir. 2009). Judged by these requirements, the discussion of mitigation in the DEIS is inadequate. Some of the most significant West Slope impacts from the Moffat Project would result, directly or indirectly from reduced surface water flows. There are a number of obvious mitigation measures the DEIS should have considered, but does not. For example, the DEIS does not consider what would probably be the most effective mitigation measure, adaptive management of the Upper Colorado River. 73 Fed.

Comment Information	Comment	Comments and Responses
	discovered that Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its tributaries.[17] **1.11 SOCIOECONOMICS** (SECTIONS3.17 AND 4.17) The DEIS description of socioeconomic conditions in Grand County is inadequate. It includes a number of traditional economic indicators (population, housing values, number of commuters, household income, etc) that are later determined to be irrelevant because Grand County has no construction impact. There is one paragraph about the recreation based economy and qualitative remarks that repeat water and wastewater provider concerns about future demand conditions. There are a few instances (boating and visual resources) where an impact is acknowledged but there is no quantitative follow through in the socioeconomic discussion. In other instances, there is no socioeconomic discussion as summarized below. TYPES OF SOCIOECONOMIC IMPACT TYPE OF POTENTIAL IMPACT / SOCIOECONOMIC FINDING Recreation – Fishing: No impact Recreation – Boating: Adverse impact on Fraser, but the volume of boating is small. Visual Resources: No impact except an adverse impact on Fraser River; no follow-through. No impact on land-based recreation and no impact on tourist visitation. Land Use: No discussion Cultural Resources: No discussion **1.12 CUMULATIVE EFFECTS** (CHAPTER 5) The DEIS analysis of cumulative effects is inadequate because it lacks rigor, it provides only qualitative information about the two projects included in the cumulative effects analysis and reaches conclusions without reference to more detailed or quantitative analysis. The methodology is faulty because the Windy Gap Firming Project, a proposed project, is presented as part of the 2016 baseline analysis, not part of the cumulative effects analysis. **Even with all of these analytical concerns, the DEIS concludes that most of the "non-minor"** effects are in Grand County. These include moderate effects on surface and ground water tributaries, fish resources, and recreational boating. **1.13 MITIGATION** (CHAPTER 4, APPENDIX M, EXECUTIVE SUMMARY) The DEIS contains no mitigation recommendations with respect to recreation, land use, visual resources, cultural resources or socioeconomics in Grand County. The mitigation discussion in Appendix M does acknowledge that the Moffat Project would cause depletions to the upper Colorado River which would indirectly affect four endangered fish species. While good, this appears inconsistent with statements that there are no impacts to fishing on the Colorado River. PAGE 10 OF 32	*Reg. at 61,315 (to be codified at 43 C.F.R. § 46.30) ("Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain."), 61,317 (to be codified at 43 C.F.R. § 46.145) ("Bureaus should use adaptive management, as appropriate, particularly in circumstances where long-term impacts may be uncertain . . . .") See generally, NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation 44-56 (Sept. 2003).* **Response #910-345:** Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #910-320*** *(ID 2471)**:*** *Grand County has been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in Grand County. Phase 2 of that study focused among other things on an environmental flow regimen "determined to best maintain the ecological needs of the stream in relation to fisheries." Grand County's Stream Management Plan, Phase 2, Environmental and Water Users Flow Recommendations, April 2008, ES-1. ("GCSMP"). The GCSMP has been and is still on the Grand County website, and has been provided to Denver, the COE and Reclamation. The DEIS needs to include the information from the GCSMP and to include a discussion of potential mitigation measures developed in the GCSMP. Many of the stream reaches that are affected by the action alternatives are included in the GCSMP. The GCSMP would go along way toward an Adaptive Management Plan that could involve all of the major diverters in the Upper Colorado River Watershed. The plan would include qualitative goals, monitoring to identify whether the*

Comment Information	Comment	Comments and Responses
	SECTION 2.0 – DETAILED (*Page-Specific*) REMARKS Recreation, Land Use, Visual Resources, Cultural Resources, Socioeconomics, Cumulative Effects AFFECTED ENVIRONMENT – CHAPTER 3 2.1 AFFECTED ENVIRONMENT - RECREATION (SECTION 3.13, PAGES 3-275 – 3-284) In Grand County, the DEIS limits the definition of recreation to two active sports. Fishing and boating (and snowmaking) are the only recreation activities acknowledged. ***Fishing.*** Fishing information is primarily anecdotal and at sporadic locations. The discussion is understated. Private fishing is particularly understated. No comprehensive baseline standards are offered upon which to measure impacts. No environmental characteristics (water flow, water temperature, water clarity, etc.) are offered to explain the relationship between water diversion and fishing. The subsequent socioeconomic discussion does not follow up on the significance of fishing to the local economy. - *Fishing – Fraser River. (Page 3-282-283)* While the DEIS acknowledges the Fraser River has numerous, diverse and high quality fishing experiences, it **states that "only limited portions of the Fraser River are open to the public."** To quantify the volume of anglers, the DEIS provides an anecdotal observation about anglers seen at any one time. (See text box.) Counting anglers seen on stretches accessible to the public is not a meaningful measure. Many premier fishing locations are relatively hidden from public view; it is not physically possible to count anglers seen at any one time except, maybe by helicopter equipped with infrared devices. This demonstrates a misunderstanding of this sport, which, for many, is experienced in locations that are purposefully not visible to the public and conducted on private property that is either leased to guides or clubs or is part of a resort. Many, more knowledgeable anglers fish in the early morning and early evening when water temperatures are lower than average.[18] The DEIS would be more accurate if it addressed more than the Fraser River, the Williams Fork River and the Colorado River by including the creeks and tributaries that feed into these rivers. *"On an average day during the peak season, approximately five to seven anglers may be seen on stretches of the river accessible to the public. On weekend days during the same period, 10 to 12 anglers may be seen at any one time. (McHenry's Trout Shop 2005)" (Page 3-283)* The analyst provides one statement regarding private fishing. (See text box.) While accurate, there are also other ranches and resorts that authorize fishing on Ranch Creek, Hurd Creek and others. Significant among these is one rancher who leases fishing rights to the Rocky Mountain Anglers Club. Also, the Town of Fraser leases fishing rights along portions of the Fraser River. A number of guides privately lease stretches of the Fraser River and nearby creeks. This activity is a significant and growing component of the summer tourist economy in the Upper Fraser Valley that is understated in this section and not acknowledged in the socioeconomic impact analysis. *…"Several private fishing ranches hold property along the banks of the Fraser River and allow river access for a fee." (Page 3-283)* – *Fishing - Williams Fork River.* Chapter 3 acknowledges small stream fishing opportunities. Some are accessible only by hiking or mountain biking; some *"In 1997 (most recent data available) an estimated 7,427 angler trips occurred on the Williams Fork below the reservoir (Kemp and Breeze 2000). More recently, it has been estimated that informal use on this segment is approximately 30 to 50 anglers per weekend day and slightly less on weekdays (Crosby 2005)" (Page 3-283)* PAGE 11 OF 32	*goals are being met, and specified triggers to require changes in operation. A decision-making process would be established to adapt operations to achieve the management plan's goals for the benefit of all parties, when specified.* **Response #910-320:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #910-35*** *(ID 2470)**:*** *Changes of water rights are necessary to implement the preferred alternative, including changes in place of storage. In Colorado a "change of water right" is defined to include change in place of use, type of use, time of use, point of diversion, place of storage, and direct application to storage. C.R.S. § 37-92-103(5). Colorado law is clear that "[t]he change of water right . . . statutes provide that applications for approval of the water use practices they encompass are mandatory, not discretionary." Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139, (Colo. 2001) (emphasis added). The need for these changes is not discussed or disclosed in the DEIS with the exception of a brief, general reference in a table. DEIS 1-23.*

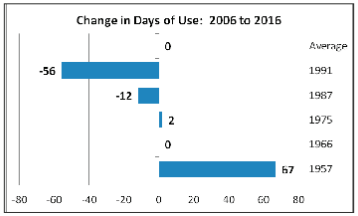
Comment Information	Comment	Comments and Responses
	are on private land; the best fishing is below the Reservoir at the confluence of the Colorado River where CDOW manages the Kemp and Breeze Units. The DEIS quantifies angler trips (See text box.) but there is no follow up effort to quantify the meaning of this recreation activity to the Grand County economy in the socioeconomic section. – *Fishing - Colorado River.* The DEIS states that some of the best trout fishing in the State is on the Colorado River from the Fraser River to Troublesome Creek, and is listed as a Gold Medal Water stream. Again, **the DEIS provides an estimate of "anglers seen at given time" but there is no effort to describe the i**mportance of this recreation activity to the Grand County economy or to quantify it in the subsequent socioeconomic section. *"The upper Colorado River, from the confluence with the Fraser River to Kremmling, offers outstanding fishing opportunities, considered to be among the best in the State. (Page 3-283)* ***Boating.*** The DEIS summarizes kayaking and rafting activities in Grand County along the Fraser River and the Colorado River. - *Boating - Fraser River.* Information about boating on the Fraser River is anecdotal. It addresses the number of boats observed during the weekday and weekend from commercial rafters but the significance of this activity to the local economy is not described further. *(Page 3-283)* - *Boating – Colorado River.* *(Page 3-284)* Rafting and kayaking on the Colorado River below the Town of Kremmling is discussed in this section. However, the DEIS does not extend the analysis of the Colorado River below the Kremmling gage, which is where there is substantial kayaking activity. *(Page 3-6).* There is no discussion of the significance of this extensive summertime activity to the local economy in this or the socioeconomic section. ***Other Recreation - Excluded.*** There is no mention of the significance of the Fraser, Williams Fork and Colorado Rivers and their tributaries and their riparian areas for the more substantial passive site seeing, hiking and mountain biking activities in the Recreation Section. [There is one dismissive conclusion in the socioeconomics section that there are no land-based recreation impacts. *(Page 4-432)*] There are ample locations throughout the Upper Fraser River watershed where the presence of flowing water enhances the quality of the recreation experience. The Fraser River, Vasquez Creek, Ranch Creek, St. Louis Creek and its many tributaries are vital parts of the visitor experience in the summer months. The parameters used to describe recreation in Grand County are summarized below. The socioeconomic section does not use this information. PARAMETERS USED TO DESCRIBE THE RECREATION (BASELINE) AFFECTED ENVIRONMENT IN GRAND COUNTY - recognition: Wild and Scenic River eligibility, Gold Medal Water designation, Colorado Merit Water Stream designation - anecdotal remarks # of anglers seen at one time from publically accessible locations on the Fraser and Williams Fork Rivers - anecdotal and qualitative remarks about private fishing - anecdotal remark – number of boats on one location of the Fraser River - anecdotal remark high quality fishing experiences in the Williams Fork and Colorado Rivers. - anecdotal remark – number of commercial rafting user days on an unstated portion of the Colorado River. PAGE 12 OF 32	**Response #910-35:** Denver Water does not believe a change of water right is necessary for uses of water stored in Gross Reservoir enlargement; but if so, there are means to do so. Regardless, the Corps defers to the State to resolve water law issues. The Corps' analysis for the EIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership would not be a factor in the Corps public interest decision". 33 CFR 320.4(g). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the proposed action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR 230.10. The Corps may issue a Section 404 Permit even if other Federal, State, or local authorizations have not been obtained before the applicant has applied for a permit. ***Comment #910-12*** *(ID 2469)**:*** *The COE determined that climate change and global warming are reasonably foreseeable. DEIS 5-35. However, the COE chose not to describe hydrologic changes related to climate change quantitatively due to the purported lack of an "accepted scientific method" of translating increases in temperature into incremental changes in stream flow or reservoir levels. Id. Nonetheless, a "simplified analysis" in the PACSM that modeled only temperature changes showed firm yield decreased between 7% and 14% with increases in temperature of 2 to 5 degrees Fahrenheit. PDEIS 5-29. Despite this significant reduction in firm yield, the COE carries the analysis of climate change impacts no further, and concludes that improved operational flexibility of the Moffat Collection System will be sufficient to address potential impacts of climate change. DEIS 5-36. The COE's analysis of potential impacts related to climate*

Comment Information	Comment	Comments and Responses
	2.2 Affected Environment – Land Use (Section 3.14, pages 3-287-292). The DEIS contains no reference to land uses in Grand County. This may be an outcome of the inappropriately narrow geographic definition of the affected environment, which, in Grand County, includes river segments that would experience a stream flow change of plus or minus 10% as a result of the Moffat Project. *(Page 3-4)* There are several significant residential developments and **resorts, such as Devil's Thumb Ranch,** Rendezvous, and the Winter Park Ski Base Area redevelopment that rely on the health as well as the passive beauty of the Fraser River and its tributaries to attract guests, visitors and homebuyers. There is an inextricable relationship between the tributaries, streams and rivers that Denver Water uses for diversion and land uses in Grand County. Also, several ranchers are currently experiencing problems with their irrigation ditch operations due to low flow in both dry and average years. [19] Although agricultural concerns were mentioned in the *Scoping Summary, (Pages 3-10 and 3-13)* there is no mention of this condition in the DEIS. In fact, there is no reference to agriculture. **2.3 Affected Environment – Visual Resources** (Section 3.15, pages 3-293-299). The DEIS states that the Fraser, Williams Fork, Colorado rivers **"occur in scenic or visually sensitive locations. The setting in which** the stream is viewed is equally important as the stream flow level **when determining visual preferences."** *(Page 3-299)* This section of the DEIS acknowledges the relationship of the visual experience of rivers in mountain communities dependent on visitation but **"concludes" with** a dismissive statement that river water levels fluctuate and visitors expect that. (See text box.) *"As a result, a stream is a dynamic system that rarely remains static and the viewer has an expectation of observing change over the course of the seasons." (Page 3-299)* There is no further discussion of whether the significant reductions in streamflow from the native condition to current conditions (2006), from current to 2016 **"baseline"** conditions and from 2016 **"baseline"** conditions to the Proposed Action might affect visitors. The parameters used in the qualitative discussion regarding visual resources are summarized below. There is no follow-through in the socioeconomic sections. Parameters used to Describe the Visual Resources (Baseline) Affected Environment in Grand County - Qualitative remark: Fraser, Williams Fork and Colorado Rivers are in visually sensitive locations. - Qualitative remark: Visual Resources are particularly important in mountain communities that rely on tourism. - Qualitative remark: Stream flow is dynamic, not static. Page 13 of 32	*change is insufficient, particularly as it relates to potential decreases to stream flow in the Fraser and Colorado rivers. Even the simplified PACSM analysis indicates climate change could induce meaningful reductions in stream flow. Such decreases would have a significant cumulative effect when added to the stream flow reductions resulting from the Moffat Project, WGFP, and other foreseeable actions. It is reasonably foreseeable that with projected climate change, minimum stream flows supporting less aquatic habitat and productivity will occur much more often than under current conditions. EPA's recent comments regarding cumulative impacts to the Colorado River from the Moffat Project are instructive: [I]t is reasonably foreseeable that with projected climate change induced drought, minimum stream flows supporting less aquatic habitat and productivity will occur much more often. Climate change, coupled with the reduced hydrograph due to water diversions, will likely cause and contribute to significant adverse impacts to the portions of the upper Colorado River impacted by the project. EPA Recommendation: The DEIS should provide a cumulative impact analysis that . . . models the impacts of a scenario where flows could be reduced substantially due to climate change. EPA Moffat Project PDEIS Comments at 2. To the same effect are EPA's comments regarding cumulative impacts of climate change on the WGFP: Climate change, coupled with the reduced hydrograph due to water diversions, will likely cause and contribute to significant adverse impacts to the portions of the upper Colorado River impacted by this [WGFP] project. . . . A broader cumulative impacts analysis is necessary to assess . . . the potential for threshold responses and uncertainty associated with projected climate change. EPA believes at a minimum, the applicant should provide a cumulative effect analysis that . . . also models the impacts of a scenario where flows are reduced substantially due to climate change. EPA WGFP Section 404 Comments*

Comment Information	Comment	Comments and Responses
	2.4 AFFECTED ENVIRONMENT – CULTURAL RESOURCES (SECTION 3.16, PAGES 3-301-316). The analysts mention that they contacted the Grand County Historic Association *(page 3-301)* without a citation of who spoke with whom and when. There is no discussion in the DEIS about cultural resources in Grand County. There is no statement that an investigation was done and no significant cultural resources or historic properties were found. Also, there is no expert listed in the Chapter 6 with a cultural resource background. *(See pages 6-2 and 6-3)* If no cultural resources investigation was done in Grand County, then this is a methodological error. Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its tributaries. **For example, the "Western White House" and** President **Eisenhower's** fishing excursions to the Fraser River and St. Louis Creek. The **Town of Fraser's cultural heritage focuses on the Fraser River**, its namesake. While the recreation section (3.13) acknowledges that the historic elements of the Colorado River are one of the attributes that makes it eligible for Wild and Scenic River designation, this section (3.16) provides no information about the historic element. **2.5 AFFECTED ENVIRONMENT – SOCIOECONOMICS** (SECTION 3.17, PAGES 3-317-333). In the socioeconomics section, the affected environment is divided into primary and secondary impact **areas. A primary impact area is defined as "that** area in which an immediate or direct effect from **construction or operation may occur, such as an area of proposed inundation."** *(Page 3-317)* The DEIS includes no primary impact area in Grand County even though there are 31 diversion locations in Grand County. Grand County will experience direct recreation, visual resources and land use effects as described above. Designating Grand County as a primary impact area merits consideration if this designation would trigger a more rigorous review of the effects of the Moffat Project on the County. Grand County is one of six counties that is designated a secondary impact area. The analysis provides the same cursory summary for each county with one the exception of one free-standing paragraph about the importance of tourism to the local economy. *(Page 3-330-331)*. The description of the Grand County affected environment excludes baseline information about a number of socioeconomic issues that were mentioned in the *Scoping Summary*. Quotes from the *Scoping Summary, pages 3-14 and 3-15* follow. – **"Additional costs to local wastewater treatment** plants (i.e., more extensive treatment and plant **upgrades) due to lack of dilution." "Evaluate** economic implications of the Upper Fraser River valley community spending over $20 million in the past 4 years to construct wastewater treatment **plants that may become out of compliance with the water diversion." The DEIS** repeats the concern but does not provide any information about the condition. (See text box.) *"**These wastewater** treatment providers are concerned about future operations and future compliance with their NPDES discharge permits, which depend, in part, on **Fraser River flows" (page 3**-331)* – **"Disclose** current costs of water to existing and prospective water users in Grand County and **changes in costs resulting from this project."** The DEIS does not address this issue. PAGE 14 OF 32	*at 7. As with the WGFP, the cumulative impacts analysis conducted by the COE for the Moffat Project should model a scenario in which flows in the rivers and streams from which additional diversions would be taken, and their tributaries, are reduced substantially due to climate change.* **Response #910-12:** Consideration was given for using the draft Phase I results of the Colorado River Water Availability Study (CRWAS) and other potential sources of information regarding the effects of potential climate change on native flow hydrology of the upper Colorado River Basin and on the management of water in the entire Colorado River Basin. The analyses available for use in the Moffat Project EIS are still in draft form, present a wide range of preliminary results, and consider only current water uses and demand levels without taking into account likely adjustments in these uses and demands as a result of potential climate change. The results of CRWAS highlight the wide range and variability of climate change projections, each of which are of unknown probability. Furthermore, there is a considerable amount of uncertainty inherent in the various climate and hydrology models and associated input data set used in that study. For example, the Global Climate Models contain a significant amount of uncertainty and routinely fail to represent regional climate phenomena, including the southwestern U.S. monsoon. Variable infiltration capacity uses data sets that are interpolated across large spatial and temporal scales, which introduces significant uncertainty. Modeling the impacts of a scenario where flows could be reduced substantially due to climate change suggests that is the most likely or probably outcome, however, CRWAS results indicate that a scenario where flows increase is equally likely to occur. There are still significant gaps and limitations in the datasets, tools and models necessary to perform a quantitative assessment as

Comment Information	Comment	Comments and Responses
	– **"Effect on power prices or power supply in Grand County."** The DEIS states without substantiation that "power supplies and power prices in Grand County would not be affected by the Proposed Action." *(Page 4-432)* This disregard for issues carefully summarized in the *Scoping Summary* calls into question the rigor of the affected environment description. The table below summarizes the types of baseline socioeconomic parameters presented in the DEIS. The depth of quantitative information provided is inadequate because it does not align with many questions and issues outlined in the *Scoping Summary* or provided by Grand County in prior written communication. PARAMETERS USED TO DESCRIBE THE SOCIOECONOMIC (BASELINE) AFFECTED ENVIRONMENT IN GRAND COUNTY - Permanent population, race, median age - % commuters - Housing vacancy rate, median home values - Median household income, unemployment rate - % residents employed in some sectors (qualitative remark) - # of businesses and volume of sales - Remark about services provided by County (sheriff, jail, etc.) - List of fire protection, school & library districts, mention of water and wastewater districts. - Remark and quantitative detail: tourism and recreation components of the local economy. - Remark - water providers are concerned about ability to meet future demands. - Remark - wastewater providers are concerned about future operations in lower flow conditions. The report, *Grand County: Its Economy and Water Resources*[20], describes the significant relationship between Grand County and water. With the exception of the last three items, there is little relationship between the socioeconomic characteristics used in the DEIS and the impact of the project on Grand County. The DEIS has a negligent disregard for Grand County and the special and significant impacts attributable to historic and proposed water diversions. One example is the investment that the Town of Fraser has made in the Fraser River. In the last few years, Fraser spearheaded a substantial restoration of the River as it flows through the Town. A major developer dedicated a substantial portion of the river corridor to the Town as part of its annexation. The Town allows public access for fishing on portions of the River and has just begun to lease fishing rights to private guides on other portions. As evidence of its increased emphasis on the Fraser River as a vital part of its summer economy, two fly fishing shops recently located in Fraser. To the small Town of Fraser (population 1,134 in 2008)[21], it is vital. If more rigor had been applied in collecting baseline information that aligned with the scoping remarks, then the analyst may have been less likely to ignore or dismiss potential impacts. As stated in Section 1.1, *Guidelines for Preparing Economic Analyses*, prepared by the EPA, suggests some principles for describing baseline conditions. PAGE 15 OF 32	described by U.S. Environmental Protection Agency (EPA) and for these reasons, an attempt was not made to model potential impacts associated with climate change. ***Comment #910-318*** *(ID 2468)**:*** *CHAPTER 1 Figure 1-2 Comment. Figure 1-2 is misleading in that drainages shown in yellow merely contribute to the Moffat Collection System when in reality there are diversion structures on many of those tributaries. For example, Figure 3.0-2 shows diversions at or near the headwaters of many small tributaries such as Jones Creek, McQuery Creek, and Dribble Creek.* **Response #910-318:** As shown in the index to Figure 1-2, the drainages shown in yellow contribute to the collection system. Figure 3.0-2 shows the "Overall Study Area Segments" and the location of the diversion(s). The drainage area that contributes to the diversion point is not marked on Figure 3.0-2 because the primary purpose of this figure is to show the location of sampling sites and the overall study area segments. ***Comment #910-317*** *(ID 2467)**:*** *Page 1-8 Comment. The last two sentences indicate that the drought restrictions in 2002/2003 resulted in a 16% decrease in 2000 demands. This would mean that 2000 demands were approximately 257,000 AF/year, whereas Table 1-1 indicates the "unrestricted" demand in 2002 would have been 312,500 AF/yr. These appear to be somewhat contradictory, as it is unlikely that Denver Water's normal demand would increase by nearly 56,000 AF in the intervening two years.* **Response #910-317:** A 16% reduction is related to treated water use within Denver Water's service area. It does not include fixed

Comment Information	Comment	Comments and Responses
	ENVIRONMENTAL CONSEQUENCES (CHAPTER 4) 2.6 ENVIRONMENTAL CONSEQUENCES – RECREATION (SECTION 4.13, PAGES 4-367 TO 4-389) **Wild & Scenic Rivers Designation.** The affected environment chapter *(Page 3-282, 3-246)* acknowledges that "affected" segments of the Colorado River are in consideration for Wild and Scenic Rivers designation. Neither this chapter nor the cumulative impacts chapter discusses the impact of the 2016 System, the Proposed Action or other Action Alternatives on this important eligibility. **Gold Medal Stream Designation.** The affected environment chapter *(Page 3-282)* appropriately mentions that segments of the Colorado River have Gold Medal Stream designation. Neither this chapter nor the cumulative impacts chapter discusses the impact of the 2016 System, the Proposed Action or other Action Alternatives on this designation. **Colorado Merit Water Stream Designation**. The affected environment chapter mentions that St. Louis Creek *(Page 3-282)* and the Williams Fork River *(Page 3-283)* have this designation. Neither this chapter nor the cumulative impacts chapter discusses if this designation is threatened by the 2016 System, the Proposed Action or other Action alternatives. **Measuring Favorable Steam Flow for Kayaking and Rafting - Current Conditions and 2016 System**. The DEIS consistently uses a questionable mathematical methodology for quantifying days where streamflow is at minimum and maximum desired levels for kayaking and rafting. The method is repeated in Tables 4.13-1, 4.13-2, 4.13-3, and 4.13-4. In each instance, tabular data is presented for five sample years which are neither wet nor dry years. There is wide variation in data for each selected year, which are allegedly neither wet nor dry years. All conclusions are based on the *average* of these five selected years. This approach significantly masks any potential impacts. Table 4.13-3 *(page 4-375)* is used as an example. While the change extends from – 56 days to + 67 days and the percent change is from –47% to +84%, the only discussion focuses on the average of +0.2 days when flows fall within the desirable range. The standard deviation[22] from the average is so high as to render the single-figure conclusion meaningless. Restatement of Data from Table 4.13-3 (page 4-375) Colorado River at Kremmling, Current Conditions Versus Full Use Existing System, Rafting | Year	Change in Days: Current to 2016 Full Use	% Change in Days: Current to Full Use
1957	+67	+84%
1966	0	0%
1975	+2	+2%
1987	–12	– 9%
1991	–56	– 47%
Total	0.2	+0.2% | PAGE 16 OF 32	contract use. Comparing year 2000 demands of 257,000 AF/yr to the unrestricted 2002 demand (312,500 AF) is misleading. The unrestricted demand in 2002 is shown as a gross figure and does not incorporate the historical conservation savings of 29,000 AF. Table 1-1 in the FEIS indicates that the unrestricted demand in 2002 would have been 285,000 AF/yr after subtracting 29,000 AF for conservation savings. This is the same as the referenced figure of 257,000 AF/yr of treated water use in the service area plus the demand from Denver Water's fixed contracts. Also, the numbers in Table 1-1 are average annual values, whereas the demand of 257,000 AF/yr in 2000 is an actual annual demand. An average annual demand of 285,000 AF/yr can reasonably be expected to fluctuate more than plus or minus 10% annually, and the 257,000 AF/yr demand in the year 2000 is within that range. ***Comment #910-316*** *(ID 2466)**:*** *Comment. The DEIS incorrectly characterizes Denver Water as a "public utility" for service of water outside the boundaries of the City and County of Denver. Instead Denver has the authority over the provision of water pursuant to C.R.S. § 31-35-402(1) and is not subject to regulation by the Public Utilities Commission. See Bd. of County Comm'rs of Arapahoe County v. Denver Bd. of Water Comm'rs, 718 P.2d 235, 245-246 (Colo. 1986). In fact, the 1993 form of contract provides that if Denver Water is ever placed under the authority of the Public Utilities Commission, Denver's obligations under the distributor's contract cease. (See for example Ken Caryl Ranch Contract, par. 5.4, page 12)* **Response #910-316:** The DEIS correctly characterizes Denver Water as a public utility. The Colorado Supreme Court held that Denver Water, when supplying water to customers inside and outside of Denver's territorial limits, clearly

Comment Information	Comment	Comments and Responses
	 A better approach would have been to use all years where data is available and describe not only an average figure but also the variation, which seems more significant than an average figure. **Magnitude of Impacts.** The analysts take the unsubstantiated position from the start that there must be a dire impact on recreation to matter. (See text box.) Unlike Front Range counties, water impacts affect the core of the Grand County economy. This irresponsible remark sets the tone for **Section 4.13. The definition of "severely reduce" is** not described or quantified in the text. *"Impacts to recreation would occur should the Moffat Project prohibit or severely reduce the available and existing recreation opportunities and **experiences in the Project Area." (Page** 4-367, emphasis added)* **Snowmaking – Existing Conditions, 2016 Full System and Proposed Action.** The DEIS states **that "The Moffat Project would not affect snowmaking activities"** *(Page 4-372)* because little if any depletions occur between October and December beyond the current conditions. No quantification of this remark was provided so it is difficult to evaluate the merits of the conclusion. There is substantial local concern about having sufficient physical (wet) water during the critical snowmaking months. Stream flow in the Fraser River near the Winter Park Ski Area is already severely compromised from prior Denver Water depletions.[23] **Fishing – Existing Conditions, 2016 Full System and Proposed Action.** The DEIS does not contain any information about the relationship between stream flow, stream temperature, water clarity and the quality of the fishing experience on the Fraser, Williams Fork or Colorado rivers. Broadly speaking, it is difficult to know how the DEIS reaches its conclusions about no fishing impact. The conclusions are unsubstantiated and questionable, given that lower flows, higher water temperatures, and degraded quality conditions due to lack of flushing flows all negatively impact fishing. Plus, fishing has already been compromised due to prior water diversions by Denver Water. On the Fraser River, the DEIS provides no justification for the statement that fishing is not impacted. (See box the right.) Elsewhere in the DEIS, it reported that between 2006 and 2016, there would be a 2% to 18% reduction in average monthly flows in ***"Flow reductions would not necessarily adversely** effect the quality of the **fishing experience." (Page** 4-374)* PAGE 17 OF 32	fits the definition of a "public utility" found at C.R.S. § 40-1-103. Bd. of County Comm'rs of Arapahoe County v. Denver Bd. Of Water Comm'rs Tri-County, 718 P.2d 235, 243-244 (Colo. 1986). But under State law, the Public Utilities Commission is prohibited from regulating municipally owned water service. Id. at 246. It is the Corps' understanding that the Colorado General Assembly has not placed Denver Water under the authority of the Public Utilities Commission. ***Comment #910-310** (ID 2465):* *Comment. Table 1-1: The DEIS should provide additional detailed information regarding the determination of the unrestricted demand of 312,000 AF/yr.* **Response #910-310:** The Corps completed a technical memorandum in 2004 entitled Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS. This document is included in DEIS Appendix A. ***Comment #910-315** (ID 2464):* *Comment. Table 1-1: Water conservation savings since 1980 should have become "institutional." If so, then it is misleading to show the gross demand of 312,000 AF/yr, when it appears to show an automatic reduction of 27,500 AF/yr for the institutional savings. It may be more straight forward to simply present the post-27,500 AF demands in bold.* **Response #910-315:** In response to Grand County's comment, the Corps has revised FEIS Table 1-1 to reflect the conservation savings since 1980 as institutional savings. See FEIS Table 1-1 for revisions.

Comment Information	Comment	Comments and Responses
	the summer months *(Page 4-406)* during an average year and a 22% to 42% reduction in flows during dry years *(Page 4-406)*. It also reports an additional 30% to 40% reduction in average stream flows during summer months between 2016 and the 2030 Proposed Action. *(Page 4-406)* There is also an unsubstantiated remark that reducing flushing flows may be beneficial to fishing because the fish will remain more active. Our research indicates that flushing flows are essential to a healthy riparian environment and the reverse of this statement is more accurate. [24] *"Flow reductions during periods of high flows are not likely to adversely effect the quality of the fishing experience. In some cases, flow reductions during periods of high flow may actually provide a minor beneficial **effect to the quality of fishing."** (Page 4-374)* On the Williams Fork River, the DEIS states that no impacts are expected to the quality of the fishing experience as a result of the Proposed Action. There is no discussion of potential impacts between 2006 and 2016. However, no data is provided to substantiate these statements. *"No impacts are expected to occur to the quality of the fishing experience along the Williams Fork River as a result of the Proposed Action." (Page 4-374)* On the Colorado River, the DEIS states simply that there are no impacts to fishing without any data to substantiate this statement. There is no indication as to whether the conclusion relates to the 2016 **"baseline" or the Proposed Action or** where these observations occurred that support this statement. The remark is questionable since the Windy Gap Firming Project (presented as part of the 2016 Baseline) will lower river flows near the Windy Gap Reservoir. *"No impacts to fishing on the Colorado River are anticipated." (Page 4-377)* The Executive Summary *(Page ES-35)* reiterates information from Chapter 4. **"Generally, no negative impacts to fishing would occur, although possibly some improvements to the quality of fishing."** **Kayaking – Existing Conditions, 2016, Proposed Action.** On the Fraser River, the DEIS reports virtually no difference in days suitable for boating (kayaking) between 2006 and 2016. Between 2016 and the Proposed Action, the DEIS reports a 20% drop in steam flow which triggers a 40% drop in days suitable for kayaking (30.4 to 17.8) in average years. This is one of a few places with a recreation impact is acknowledged. (See text box.) However, a later section on Unavoidable Adverse Impacts declares this impact **"negligible."** *(Page 4-389)*. **" No mitigation recommendations are suggested.** *(Page 4-389)* *Overall, the Project would have a major, long-term **adverse impact on boating on the Fraser River….this** would be considered a major, long-**term impact."** (Page 4-373)* Subsequently in the socioeconomic section of the DEIS, this magnitude of impact is dismissed because the DEIS reports that there is very little boating on the Fraser River *(Page 4-431)* On the Colorado River near Kremmling the DEIS concludes that days suitable for kayaking would increase from 84.6 to 98.6 (a 16.5% increase) between 2006 and 2016. *(Page 4-375)* This is curious because the Windy Gap Firming Project is included in the 2016 assumptions. According to the Windy Gap Firming Project DEIS, this Project triggers streamflow reductions are related reductions in preferred streamflows for kayaking. [25] Between 2016 and the Proposed Action, the DEIS states that number of days suitable for kayaking would increase slightly from 98.6 to 101.2. *(Page 4-377)* PAGE 18 OF 32	***Comment #910-309*** *(ID 2463)**:*** *Comment. Table 1-1: The DEIS fails to disclose individual sources that are combined to achieve the total present system supply of 315,000 AF/yr.* **Response #910-309:** Please refer to Section 1.4.2 of the DEIS, which summarizes the yield of Denver Water's system. The DEIS also includes Table 1-3 which provides a break-down of the yield from the major components of Denver Water's system. ***Comment #910-314*** *(ID 2462)**:*** *Comment. In Table 1-1, Denver Water's Total System Supply for the year 2030 should be 345,440 AF/year (not 345,000 AF/year). Revising this estimate would decrease the proposed water shortfall to 33,560 AF/year in 2030 (rather than 34,000 AF/year) and would reduce the proposed new water supply to 17,560 AF/year in 2030 (rather than 18,000 AF/year). While Table 1-1 reports that it is rounding to the "Nearest 1000," the table does not do so in presenting estimates in the demand section of the table. Since the table does not round to the nearest 1,000 in the demand section, it is inconsistent for it to round to the nearest 1,000 in the supply section.* **Response #910-314:** FEIS Table 1-1 has been updated and is no longer rounded to the nearest 1,000 AF. ***Comment #910-313*** *(ID 2461)**:*** *Comment. It is overly conservative to model full unrestricted demands through the worst known drought period hydrology, coupled with a 30,000 AF safety factor, when Denver Water has a thorough and comprehensive water conservation program that has proven drought demand reduction measures. If Denver Water is planning on reducing demands during a drought, then the firm-yield modeling should*

Comment Information	Comment	Comments and Responses
	No analysis is provided for the Williams Fork River. **Rafting – Existing Conditions, 2016 and Proposed Action.** The range of suitable streamflow for rafting is higher (700 to 2,000 cfs) than the range for kayaking (400 to 1,100 cfs). No information is provided for rafting for the Fraser River or Williams Fork River. On the Colorado River at Kremmling, the DEIS concludes that the days suitable for rafting would remain virtually unchanged between 2006 (107.4) and 2016 (107.6) *(Page 4-375)* even though 2016 includes the impact of Windy Gap. This appears contrary to conclusions contained in the Windy Gap Firming Project DEIS. [26] Also, the days suitable for rafting between 2016 and the Proposed Action would remain virtually unchanged (107.6 versus 108.4) *(Page 4-376)*. **Recreation Impacts Excluded.** The environmental consequences portion of the DEIS ignores the important economic value of the rivers and the riparian habitat as contributors to the scenic beauty of the natural environment that brings visitors to the area. It also ignores the significant private resorts, lodges and developments that rely on the health of the rivers for fishing as well as the beauty of the rivers to attract site-seeing visitors, hikers and mountain bikers. SUMMARY OF DEIS RECREATION IMPACTS BY RIVER SEGMENT (SECTION 4.13) RIVER | 2016 FULL USE (Compared to 2006) | PROPOSED ACTION (Compared to 2016 Full Use) | NO ACTION (Compared to 2016) Fraser River – **"Boating"** | Flow would change very little; impacts negligible or very minor. (4-372) | *Avg. Year:* Flow drops 20%; minimum kayaking day drop 35% to 40%. (4-372) major, long-term, adverse effects. (4-373) Minor long-term effects (ES-35) | Average flows 17% higher than proposed action. Overall impacts similar to 2016. (4-386) Fraser River Fishing | No mention of fishing impacts. | **"Flow reductions would not necessarily** adversely affect the quality of the fishing **experience." Might benefit fishing during** flushing flows. (4-374) **"Generally, no negative impacts to fishing,** although possibly some improvement to **quality of fishing."** ES-35 | Average flows 17% higher than proposed action. Overall impacts similar to 2016. (4-386) Fraser River-Snowmaking | No project impact (4-374) | No impact (4-374) | No mention Williams Fork River - Kayaking | No mention. | No mention | No mention Williams Fork River – Fishing | No impacts are expected. (No analysis provided) (4-374) | No impacts to quality of fishing experience (4-374) **"Generally, no negative impacts to fishing,** although possibly some improvement to quality **of fishing."** ES-35 | No mention Colorado River Rafting | *Avg. Year:* Monthly stream flows drop 3% to 15% (page 4-374) Kayaking flow days | *Avg. Year.* No mention of flows. # of days of kayaking increases slightly. (4-376) | Very similar to Proposed Action (4-386) PAGE 19 OF 32	*reflect this (i.e. not be unrestricted). There is still the 30,000 AF safety factor to provide additional insurance which is more than the yield of the project itself.* **Response #910-313:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. The safety factor must be held apart from the derivation of the 18,000 AF annual shortfall to appropriately reflect the risks which occur outside the models, methods and procedures to calculate that need. The safety factor is intended to protect against a host of uncertainties, including the constriction of existing supplies, a downward revision of the estimated safe annual yield from prolonged drought, challenges to historic operations of Denver Water's water rights, changes in administration of water rights resulting in adverse impacts to Denver Water's supplies, catastrophic loss of facilities, delays in the development of new supplies, or higher than anticipated demand forecasts. The 30,000 AF safety factor is reasonable to help account for these risks. A safety factor is a commonly accepted practice for major water utilities.

Comment Information	Comment	Comments and Responses
		Comment #910-319 *(ID 2460)**:*** *Comment. The DEIS describes Denver's efforts at water conservation in Section 1.4.1.2. This information should be up-dated. In a recent presentation to the West Slope Joint Water Roundtable Meeting, Colorado Water Conservation Board staff projected future water demands assuming that per capita water use is reduced by 25% in 2030 relative to use in 2000. (Hecox, Eric. November 14, 2008 Presentation to the West Slope Joint Roundtable Meeting). From Table 1-1 applying Denver Water's 2030 demand of 427,500 AF x 25% = a conservation saving of 106,875 AF or a revised demand of 320,625 AF. Comparing this revised demand to Denver Water's 2030 firm yield water supply of 345,000 AF, (without the Moffat Project) Denver would have a firm yield surplus of 24,375 AF. The DEIS should explain why water conservation at a level of 25% is not one of the least environmentally damaging alternatives.* **Response #910-319:** Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a

SUMMARY OF DEIS RECREATION IMPACTS BY RIVER SEGMENT (SECTION 4.13)

RIVER	2016 FULL USE (Compared to 2006)	PROPOSED ACTION (Compared to 2016 Full Use)	NO ACTION (Compared to 2016)
	remain the same.	*Wet Years:* **"Very** little **impact" (4**-376)	
Colorado River – Kayaking	*Avg. Year:* The impact would be positive; optimum flows for kayaking would increase 16.5%. (4-375)	Minor beneficial impact in kayak days in average years. *(4-377)*	Very similar to Proposed Action (4-386)
Colorado River – Fishing	No impacts (4-377) No analysis provided.	**"No impacts are anticipated" No analysis** provided. (4-377) **"Generally, no negative impacts to fishing,** although possibly some improvement to quali**ty of fishing." ES**-35	Very similar to Proposed Action (4-386)
Mitigation		Not mentioned.(4-389)	
Unavoidable adverse Impacts		Boating reduction in Fraser Canyon. (4-389)	

2.7 ENVIRONMENTAL CONSEQUENCES – LAND USE (SECTION 4.14)

The DEIS introduction **repeats an issue identified during scoping, "Impacts on land development and Grand County due to additional water diversion."** *(Page 4-391).* The DEIS finds that since there is no Project-related construction anticipated in Grand County between 2006 and 2016 or between 2016 and the Proposed Action in 2030, there would be no direct impacts to land use.
Grand County land uses are not discussed. *(Page 4-392)*

The analysts do not acknowledge the relationship between water resources, tourism, and agriculture. These relationships are described in *Grand County: Its Economy and Water Resources*[27] which is listed as a DEIS Reference. *(References 5)* To underscore one land use impact, there are some Grand County ranchers who use the river, creek and tributaries in the Fraser Valley upstream from Granby have problems with their irrigation ditch operations due to low flows not only during dry years but also during average years.[28] Any exacerbation of this currently tenuous situation will only increase their problems and hamper ranching operations. Ranching is an important component of the economic history and fabric of Grand County. This important consideration was totally ignored in the DEIS.

Also, the DEIS states that "there is no substantive causal relationship between population growth and **the development of water or vice versa."** *(Page 4-391).* If this is true, then there is no need to provide additional water to serve future development.

2.8 ENVIRONMENTAL CONSEQUENCES – VISUAL RESOURCES (SECTION 4.15)

Chapter 3 (affected environment) provides descriptive information about the significance of visual resources in the Fraser, Williams Fork and Colorado rivers particularly for mountain communities dependent upon visitors. *(page 3-299)* The opening paragraph of this section in Chapter 4 repeats a **scoping issue: "Impacts on Grand County's scenic characteristics and attractions, including water**

PAGE 20 OF 32

Comment Information	Comment	Comments and Responses
	courses affected by the Project." *(Page 4-399)* The DEIS provides qualitative definitions of "high or major" impacts, "moderate" impacts and "low or no conflicts" *(Page 4-401)* that are not correlated with the quantitative remarks about changes in stream flow. The visual resources analysis is confined to perception due to changes in stream flow. The DEIS relies upon one study in North Carolina to correlate viewer preferences and streamflows. The study concludes that viewers react adversely to both low stream flows and higher streamflow conditions. *(Page 4-404)* The DEIS states that low flows occur in the winter and spring months, and since the Moffat project would have minimal impact during periods of low flow, the impact on viewers would be minor. (See text box.) *" In general, the Moffat Project would have only a minor effect on flow levels during periods of low flows, when streams are most sensitive to visual change." (Page 4-404)* As described below, there are stream flow reductions in each summer month between 2006 and 2016 and additional stream flow reductions in each summer month between 2016 and 2030. Using one example, the DEIS reports that the Moffat Project would trigger average flow reductions on the Fraser River at Vasquez Creek, a highly visible location in the heart of the Town of Winter Park of 37% in June *(Page 4-37)*. The conclusion that this average stream flow reduction is not noticeable to visitors is unsubstantiated. Throughout the analysis, the author uses the phrase" within the normal range of seasonal and annual variability" to claim that most observers would not notice. The DEIS states that it would be "difficult for most observers to determine if flow variations are naturally occurring or are attributed to the Moffat Project." *(Page 4-405)* These statements are not substantiated. **Visual Resource Impacts: 2006 to 2016:** On the Fraser River at Crooked Creek, there would be a 2% to 18% reduction in streamflow between 2006 and 2016 in an average year. This reduction "would not be detectable to most observers." *(page 4-406)*. During dry years, there would be a 22% to 42% reduction, which is considered a "moderate" impact. *(Page 4-406)* On the Williams Fork River, during average years, stream flow changes in the upper reaches decrease 24% (from 50 to 38 cfs) near the Steelman Creek gage and 14% (from 86 to 74 cfs) above the Darling Gage. Again, these are considered within the normal range of seasonal and annual flow. At lower locations, the change is considered very minor, below the Williams Fork Reservoir, the change is positive. *(Pages 4-406,407)* On the Colorado River at Hot Sulphur Springs, during average years, streamflow changes would range between 0% and minus 31%. *(Page 4-405)* Without substantiation, this is considered "within the normal range of seasonable variability" and "minimally detectable" *(Page 4-405)* **Visual Resource Impacts: 2016 to Proposed Action.** On the Fraser River at Crooked Creek, during an average year, flow changes would be about 30% to 40%. The difference would be "detectable and adverse." *(Page 4-406)* PAGE 21 OF 32	part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. The presentation made by Eric Hecox was neither approved by, nor reviewed by Denver Water. To the Corps' knowledge, Mr. Hecox laid out a scenario of 25% conservation for all the basins in Colorado. He did not, to the Corps' knowledge, ask any water utility to set a 25% conservation goal. ***Comment #910-312*** *(ID 2459)**:*** *Page 1-16 [Table 1-3] Comment. Table 1-3: This table is misleading as South Boulder Creek and Ralston Creek yields should be included in the Moffat system yield.* **Response #910-312:** The yield of South Boulder Creek and Ralston Creek are included in calculating the total yield of Denver Water's Collection System. Please see footnote "c" under Table 1-3 that notes that the South Platte Collection System includes the South Boulder Creek rights. ***Comment #910-311*** *(ID 2458)**:*** *Page 1-16 [Section 1.4.2.1] Comment. "The study period used in PACSM extends 45 years from 1947 through 1991 and includes a variety of hydrologic conditions with dry years, wet years, and average precipitation years." (1) This 45-year period should be*

Comment Information	Comment	Comments and Responses
	On the Williams Fork River in an average year, streamflow changes would **be "minor and limited to periods of high flows" except in the upper reaches**. *(Page 4-407)* On the Colorado River at Hot Sulphur Springs, in June of an average year, flow reductions would be an additional 13%) and would be perceptible to highly skilled observers. Elsewhere, all flow depletions would be below the level of perceptible change. *(Page 4-406)* The DEIS acknowledges adverse and noticeable visual impacts along the Fraser River, yet the socioeconomic does not follow through by measuring the implications on the local economy. It is visitors, the core of the Upper Fraser Valley economy, that benefit from the visual and aesthetic resources. **Summary of DEIS Visual Resource Impacts (Section 4.15)** River Segment / 2016 Full Use (Compared to Current Conditions) / Proposed Action (compared to 2016 Full Use) / No Action (Compared to 2016) General: More diversions, including dry years. / Fewer diversions, only in average or wet years. / No remarks about Grand County. Fraser: *Avg Year:* Flow reductions 2.6% to 18%; within the normal range of seasonal and annual variability; not noticeable. (4-406) *Low Flows:* Greater visual impact, e.g. 39% below Vasquez Creek in October. (4-406) *Dry years:* Detectable, adverse, moderate *impact* (22% to 42% reduction at St. Louis Creek. (4-406) / *At Crooked Creek:* Detectable and adverse impacts in average and wet years. Flow reductions - 30% to 40% (4-406) *Upper reaches*, impacts would be adverse and moderate. *Downstream of Crooked Creek*, adverse and negligible. (4-406) / | Williams Fork: *Avg. Year:* 24% reduction at the Steelman gage; 14% at the Darling gage; both are within a normal range. (4-406) *Dry Years:* 81% reduction at Steelman in July. Highly apparent and adverse. (4-407) / *At Steelman:* 30% reduction noticeable in May. (4-407) Elsewhere: Minor, less perceptible, not likely noticed. (4-407) / | Colorado: *Avg. Year.* 31% to 0% reduction at Hot Sulphur Springs; within normal range. (4-405) *Dry Years:* No noticeable change. / *At Kremmling:* All flow depletions would be below the level of perceptible change. (4-406) *At HSS:* flow reductions of 13% perceptible to highly skilled observers only / | **2.9 Environmental Consequences – Cultural Resources** (Section 4.16, page 4-417 to 4-424) The DEIS reports no environmental consequences to cultural resources in Grand County. This is likely because there is no discussion of cultural resources in the Affected Environment Chapter (Chapter 3). Page 22 of 32	*extended to include the recent 2002 drought. (2) The impact of Denver's current diversions on native Fraser and Williams Fork tributary flows (pre-1947) are not included in the cumulative impacts section since the study began in 1947 after Denver started diverting.* **Response #910-311:** 1 The need to extend the PACSM study period was evaluated by the Corps to determine whether a study period that includes 2002 would result in different conclusions with respect to Denver Water's system yield and hydrologic impacts. The comment indicates that the current study period that ends in 1991 does not consider impacts during the more recent drought and understates resulting impacts to the Fraser Basin and Upper Colorado River Basin in dry years. Denver Water completed an analysis to compare the severity of the mid-1950's drought with the recent drought. Their analysis concluded that for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of the 2002 drought. Whether the 2002 drought and the series of years following that drought is more critical from the standpoint of environmental impacts associated with a Moffat Project alternative was also considered. Denver Water would not divert any additional water from the West Slope in dry years with the Moffat Project on-line because Denver Water already diverts the maximum amount physically and legally available under their existing water rights without additional storage in

Comment Information	Comment	Comments and Responses
	2.10 ENVIRONMENTAL CONSEQUENCES – SOCIOECONOMICS (SECTION 4-17, PAGES 4-425 TO 4-506) The DEIS concludes that socioeconomic impacts on Grand County due to the Proposed Action would **be "negligible"** because, according to the DEIS: ▪ There would be no construction activity. *(Page 4-431)* ▪ Boating impacts on the Fraser River are excluded because the volume of boating is minimal and impacts on the Colorado River are favorable. *(Page 4-431)* ▪ There are no quantitative conclusions about fishing on the Fraser River and no fishing impacts on the Colorado or Williams Fork. *(Page 4-431)* ▪ The recreation and aquatic resources analysis **suggest "no changes in resident or visitor recreational activity would be expected."** *(Page 4-431)* ▪ **Flow changes are "generally unnoticeable to most observers" so there would be no impacts to land-**based recreation activity such as hiking and biking. *(Page 4-432)* ▪ Impacts to wastewater treatment providers include a shortage of 6 acre feet for one provider and this shortage will not hinder development. *(Page 4-432)* Therefore, no socioeconomic consequences are provided in this section or the executive summary. The DEIS contains insufficient quantitative rigor. The socioeconomic analysis does not attempt to quantify the impacts to fishing, visual resources, and boating that are clearly stated elsewhere in the **document. When an impact was reported in qualitative terms, such as "moderate"**, there was no attempt to quantify the environmental effect and no follow up attempt to quantify the socioeconomic implications to the local economy. The US Environmental Protection Agency *Guidelines for Preparing Economic Analyses* [29], published in 2000, and the draft *Guidelines* [30], prepared in 2008, provide expert guidance on how to treat uncertainty and qualitative findings. The dismissive style of the DEIS is inconsistent with EPA *Guidelines* and suggests that the impact analysis is incomplete. There is descriptive mention of the importance of tourism and recreation to the Grand County economy in the affected environment socioeconomic section *(Section 3.17.5.6, page 3-330)* However, there is no follow through analysis which links this descriptive information to impacts associated with the Proposed Action. The *Scoping Summary (Page 3-14)* specifically calls for information that describes the: ▪ **"Effect on tourist-based economy."** ▪ **"Effect on Grand County's water-based recreation economy."** ▪ **"Effect on local economic development in municipalities and in Grand County. "** SOCIOECONOMIC SCOPING CONCERNS, AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES ISSUE IN SCOPING DOCUMENT / AFFECTED ENVIRONMENT (CHAPTER 3) / ENVIRONMENTAL CONSEQUENCES (CHAPTER 4) Dependence on Tourism and Recreation / Qualitative Remark / Dismissed Water Supply Concern after 2006 / Concern Repeated / No mention; **impacts in "baseline"** Wastewater Compliance Concern / Concern acknowledged / No further mention PAGE 23 OF 32	their system. PACSM results for the five driest years (1950, 1954, 1963, 1977, and 1981) in the current study period support this conclusion. In the five driest years, diversions and flows on the West Slope are the same under Full Use of the Existing System and all the EIS alternatives. Therefore, PACSM results indicate there would be no decrease in flows on the West Slope in a dry year. This conclusion would be the same if the model study period was extended to include 2002. Denver Water would not divert any additional water from the West Slope in a year like 2002 with the Moffat Project on-line because diversions would be limited by the amount physically and legally available at their diversion points as opposed to available storage capacity. Even if the dry year average were revised to include 2002 and 2004 as suggested in the comment, the evaluation of effects to flow-related resources would not change because the dry year average flows with and without the Project would be the same. The comment also points to the need to extend the study period to address carry-over effects from 2002 and 2003 on regional water operations, water storage, water administration, water quality, recreation, and other aspects. The existing model study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill Denver Water's reservoirs, coupled with significant storage space available. For example, the existing study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These types of sequences of years allow for an evaluation of impacts associated with diverting additional water

Comment Information	Comment	Comments and Responses
	Even though the DEIS finds some recreation impacts **to be adverse and "moderate" or "minor" without** substantiation of the derivation of these adjectives, the socioeconomic section provides no basis upon which to measure the socioeconomic consequences of recreation impacts, **and concludes there are "no measurable changes."** (See text box.) *"**Given the results of the recreation and aquatic resources** analyses, no measurable changes in overall resident or tourist recreational activity in Grand County would be **expected as a result of the proposed Action."** (Page 4-431)* The analysis reaches the same conclusion regarding the relationship between adverse Visual Resource impacts in the Fraser River and socioeconomic impacts to land-based recreation activity. (See text box.) *"**Visual Resources indicate flow changes … would** generally be unnoticeable to most observers, with the exce**ption of portions of the Fraser River … Given this** information, no impacts to land based recreational activity, i.e., hiking, mountain biking or scenic sightseeing are anticipated under the Proposed Action. (Page 4-432)* Excluded from prior sections are the following potential impacts mentioned in the *Scoping Summary* that have socioeconomic consequences, whether or not the consequences can be measured: ▪ impacts on ranching and agricultural properties; ▪ impacts private resorts, lodges and businesses that rely on the health and scenic beauty of the affected rivers and tributaries; ▪ impacts on visitors who enjoy passive sight-seeing. The socioeconomic baseline (Section 3.17) **provided minimal to no information about "businesses associated with tourism or recreation." If there were better b**aseline information, then the analyst might have been able to observe impacts from the Proposed Action and their potential impact on these businesses, whether or not these impacts could be quantified. **Water Providers.** Using the PACSM model, the DEIS claims that any water shortages experienced by Grand County water providers would occur without the proposed Project *(Page 4-432, 441)* but for 6 acre feet for Grand County #1 Water and Sanitation District. The UPCO Phase II Report *(page v)*, using the PACSM model, concludes that in the Fraser Valley, average annual shortages at build-out may range between 1,060 and 2,300 acre feet. The Grand County Water and Sanitation District alone may experience shortages of 973 to 1,903 acre feet. The Moffat Project will exacerbate an already critical condition. The DEIS states that build-out in Grand County **occurs prior to 2016 and is therefore in the 2016 System "baseline" and is not a Project impact.** *(Page 4-432)* **If a common sense definition of "baseline" were a**pplied, then the analysis would show that this resource is nearly exhausted. **The Council on Environmental Quality states that "the effects of past actions may warrant** consideration in the analysis of cumulative effects … **to the extent that they are relevan**t and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its **alternative may have a continuing additive and significant relationship to those effects."** [31] PAGE 24 OF 32	in wet years following dry years. 2 The need to extend the study period prior to 1947 was also evaluated. To assess the availability of diversion and streamflow data, Denver Water reviewed a sampling of streamflow records and diversion records for the Colorado and South Platte river basins. Based on a review of data availability, a study period that begins prior to the 1940's would require a significant amount of streamflow and diversion data estimation. To assess the statistical properties of the study period chosen, the annual natural flows at four gaging stations (two in the Colorado River Basin and two in the South Platte River Basin) was compared for the following three study periods: 1916-1990, 1940-1991, and 1950-1991. The average annual natural flow and standard deviation for the two shorter study periods are similar to the statistics for the long-term period from 1916 through 1990. In addition, at each gage the one-year, three-year and five-year duration droughts are exactly the same years for each study period. This demonstrates that the shortest period captures the statistical properties of the long-term period, and that the additional work to estimate missing data from the early 1940's is not warranted. Denver Water also investigated whether the study period from 1947 through 1991 is representative of a longer period of record (1916-1997), and to evaluate the level of reliability the study period provided for analysis of the supply system based on a statistical analysis of the recurrence intervals of wet and dry periods. It was concluded that the study period from 1947 through 1991 is representative of the long-term record with respect to streamflow characteristics on both an

Comment Information	Comment	Comments and Responses
	Wastewater Providers. The DEIS excludes analysis of low flow impacts on wastewater providers between 2006 and 2016 because it is part of the 2016 "baseline" conditions. (See text box.) The DEIS is technically avoiding mention of a significant concern about increased environmental requirements and associated costs among wastewater treatment providers including the Combined Grand County Wastewater Treatment Plant, Devils Thumb Ranch and the Tabernash Meadows Water and Sanitation District. These costs could be triggered by water temperature increases and water flow decreases due in part to Denver Water actions between 2006 and 2016 that are not literally associated with the Moffat Project. At a minimum, the DEIS should clearly state the fragile nature of this anticipated environmental condition, since the health of environmental resources should be part of the DEIS analysis. *"The economic impacts of lower flows in the Fraser River under the Full Use of the Existing System (2016) were not evaluated as part of this EIS since modeled year 2016 flow conditions are expected to occur regardless of the Proposed Action." (Page 4-443)* There are related concerns that State authorities will require dischargers to remove phosphorous from the effluent dominated Fraser River. While these problems are exacerbated by increasing demands of the transmountain diverters, the State only has authority to impose constraints on the dischargers, not the diverters. DEIS concludes that there are no additional impacts between 2016 and the Proposed Action. *(Pages 4-443-444)* If Denver Water anticipates no problem, then they should agree to an adaptive mitigation measure to fund wastewater treatment plant upgrades triggered by their proposed additional diversion. **Fiscal Conditions.** The DEIS concludes that there is no fiscal impact on the County because there is no loss of property tax funding as a result of the Proposed Action. *(Page 4-436, 445)* If a revised analysis shows that there may be fewer visitors, then there is a direct fiscal impact on the County and the towns of Winter Park, Fraser, Granby and others. *"No loss of property tax funding would accrue to service providers or to any special districts in the Denver metropolitan area or in Grand County as a Result of the Proposed Action." (Page 4-436)* **Socioeconomic Consequences – No Action Alternative** (Section 4.17.6) The DEIS notes concern about a "perception of institutional instability that may lead to new management, new oversight responsibilities and control by other levels of government." *(Page 4-498)* This discussion more appropriately belongs in an internal Denver Water memo and not in an Environmental Impact Analysis. SUMMARY OF DEIS SOCIOECONOMIC IMPACTS (SECTION 4.17) RIVER SEGMENT / 2016 FULL USE (Compared to Current Conditions) / PROPOSED ACTION (Compared to 2016) / NO ACTION (Compared to 2016) RECREATION – BOATING: No remarks. / Moderate negative impact on Fraser; minor beneficial impact on Colorado River (4-431) No quantitative conclusions provided. / No remarks. RECREATION FISHING: No remarks / No quantitative conclusions on Fraser; No impacts on Williams Fork and Colorado rivers. (4-431) / No remarks. PAGE 25 OF 32	annual and monthly basis for all years, including wet and dry years. It was also concluded that the critical period within the long-term period is the 1950's drought, which has an overall composite recurrence interval on the order of 30 to 50 years. In summary, the existing study period from 1947 through 1991 includes a variety of hydrologic conditions, including several dry years as well as wet and average years, and is suitable for estimating the hydrologic effects associated with each EIS alternative. ***Comment #910-219*** *(ID 2650)**:*** *CHAPTER 2 Page 2-11 Comment. Table 2-4. Indirect Potable Reuse was screened out in Screen 1C, because of costs, however, the DEIS does not disclose those costs. In issuing any 404 permit, the Corp can only approve of the least environmentally damaging alternative. 40 CFR 230.10(a). The indirect potable reuse option needs to be included in a meaningful way because of Denver's legal obligation to reuse West Slope water to the maximum extent feasible. "In order to minimize the amount of water removed from Western Colorado, eastern slope importers should, to the maximum extent feasible, reuse and make successive uses of the foreign water." City and County of Denver v. Fulton Irrigating Ditch Co., 506 P.2d 144, 148 (Colo. 1972) (emphasis added). The 1955 Blue River decree in paragraphs (e) and (f) requires Denver to "exercise due diligence, within legal limitations, and subject to economic feasibility," to reuse the Blue River transmountain return flows. The law in Colorado requires transmountain water to be reused, subject to "legal limitations." One of the legal limitations on Denver is the May 1, 1940 Agreement where Denver agreed with the Consolidated Ditches not to use "any water, irrespective of its source, which shall have been once used though its municipal water system" and returned*

Comment Information	Comment	Comments and Responses
		to the stream. In return, Denver would not make evaporative releases from specified streambed reservoirs. In Fulton, the validity of the 1940 Agreement was upheld. In a companion case, City and County of Denver v. Consolidated Ditches Co. of Dist. No. 2, 807 P.2d 23 (Colo. 1991), the 1940 Agreement was construed to apply to only those waters that Denver appropriated prior to May 1, 1940. Under Consolidated Ditches, all of the absolute water rights that would apparently be used to supply water for the preferred option through the Moffat Tunnel (except the Cabin-Meadow System, see page 1-6) would not be available for reuse because they precede 1940. It is wasteful for Denver to divert more water through the Moffat Tunnel that cannot be reused on the Eastern Slope. Reusable water in a municipal system is extremely valuable, because for indoor municipal use, a small percentage of the water is consumed and the vast majority returns as sewage effluent. In an indirect potable reuse project this water is recycled a number of times to extinction. If an indirect potable reuse project is implemented, Denver would realize increased firm yield that would likely supply its projected short term need of 18,000 AF, and correspondingly reduce the capacity of needed storage, which would in turn cause less environmental damage and reduce the overall cost of the project. Indirect potable reuse is generally more acceptable and can achieve drinking water standards by storing the water for a period of time and blending it with other water supplies. Denver could treat its transmountain effluent, pump it into Gross or Ralston Reservoirs or other nearby reservoirs, blend it with its existing supplies, and deliver the water to the Moffat Treatment Plant. An indirect potable reuse project would meet the two primary purposes without the need to divert additional water from the West Slope. The DEIS is flawed for not seriously evaluating indirect potable reuse projects. Table 2-4, lists two indirect potable reuse projects, but both involve a

Summary of DEIS Socioeconomic Impacts (Section 4.17)			
River Segment	2016 Full Use (Compared to Current Conditions)	Proposed Action (Compared to 2016)	No Action (Compared to 2016)
Land Use	No mention.	No mention	No mention
Visual Resources	No remarks.	Flow changes unnoticeable to most observers except on Fraser River (4-432) No impact on land-based recreation (biking, biking, sight-seeing)	
Cultural Resources	No mention	No mention	No mention
Water Providers	Impact acknowledged but not quantified. (4-441)	Grand County W&S 6 acre feet shortage; additional diversions will not place additional burden on water providers (4-441)	
Wastewater Providers	Economic impact not evaluated. (4-443)	No impact expected. (4-443-444)	

2.11 CHAPTER 5.0 – CUMULATIVE EFFECTS

Cumulative Effects - Introduction. The DEIS states that the cumulative impacts refer only to the "effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present and reasonably foreseeable future actions." *(Page 5-1)* The DEIS does not provide information about the aggregate effects of past actions.

Throughout this Chapter, there is a substantial lack of quantitative information. There are primarily conclusions, often without reference to more detailed or quantitative analysis. There is no underlying rigor, just conclusions.

Cumulative Effects - "Pertinent" Time Frames. *(Page 5-2, 5-3)* The DEIS states that the pertinent time frames are 2016 and 2030. There are too many unclear and unquantified assumptions within 2016 to make it a valid baseline from which to measure impacts. There is no quantitative description of the incremental effects of the "reasonably foreseeable future actions" that are included in the 2016 "baseline."

Cumulative Effects - Inclusions and Exclusions. Table 5-2 *(page 5-6)* lists projects considered for Cumulative Effects Analysis. It is less clear on whether the projects are included in the 2016 System or in the Cumulative Effects Analysis. This information is more clearly presented in Appendix H - page H-1-1 to H-1-4. On the West Slope, there are only two projects included in the Cumulative Effects analysis, reduction of the Shoshone Power Plant Call and the 10,825 water supply alternatives. Each is discussed in a qualitative manner.

West Slope - Water-Based Actions (Interpreted from Table 5-2, page 5-6	
Excluded from Cumulative Effects Included in 2016 Full System Effects Quantified via PASCM Model	Included in Cumulative Effects Addressed Qualitatively
Windy Gap Firming Project	Reduction of Shoshone Power Plant Call

Page 26 of 32

Comment Information	Comment	Comments and Responses
		72,000 AF reservoir. Why such a large reservoir is needed is not explained. These projects were apparently screened out because of costs. Those costs should be revaluated considering a smaller reservoir and with a serious discussion of Denver's legal obligation to reuse water diverted under the Blue River decree and the Corp's legal requirement to issue any 404 permit for the least environmentally damaging alternative. Potable reuse is already considered to be a practicable water supply option in Colorado. The Parker Water and Sanitation District's Reuter-Hess project that treats effluent and pumps it to Reuter-Hess where it is blended with other water. The City of Aurora's Prairie Waters Project diverts reusable effluent to underground storage where it is detained for a period of time and then pumped to Aurora Reservoir where it is blended with other waters of that City. The DEIS contains no reasons why Denver should not consider an indirect potable reuse project to meet its projected needs. The DEIS fatally ignores Denver's obligation to reuse water under the Blue River decree and Colorado law concerning transmountain water rights. Instead, large storage projects are passed through the screening process that would divert more water through the Moffat Tunnel that is not reusable. The DEIS should take a "hard look" at various indirect potable reuse projects that could achieve the yield sought, supply the Moffat Treatment Plant, abide by Colorado law applicable to Denver on its reuse of transmountain water, and cause less environmental damage to the aquatic ecosystems on the West Slope. **Response #910-219:** Denver Water will continue to fully comply with the requirements of the Blue River Decrees. Denver Water currently uses their reusable supplies for exchanges, augmentation, contract deliveries, and their non-potable system to the extent they can in combination with gravel pit storage. Any remaining

Urban Growth in Summit and Grand County Releases from Reservoirs to meet USFWS Flow Recs. Wolford Mountain Reservoir Contract Demand Expiration of Big Lake Ditch Contract CO Springs Agreements at Green Mountain Reservoir	10,825 Water Supply Alternatives

Cumulative Effects - Windy Gap Firming Project (WGFP) Inclusion. *(Page 5-2, page 5-6, Table 5-2, page 5-15)* The WGFP is included in the 2016 System. The Proposed Action and other Action Alternatives are compared against the 2016 System. The WGFP is not approved, it should be **presented and quantified discretely in the "Cumulative Impacts" section** and excluded from the 2016 System, which the DEIS considers a baseline condition. The analysis should not include an unapproved project as if it were a given. This makes many if not all conclusions about the Proposed Action and Action Alternatives flawed.

Cumulative Effects - Surface Water. *(pages 5-39 and 5-40)* The discussion about the WGFP impacts *(Page 5-33)* is muddled, because it is already in the **2016 System "baseline."**

> ***"In the Colorado River basin, the WGFP and Shoshone** Call reduction would likely have the greatest cumulative effect on flows when added to the effects of the Moffat **Project." (Page** 5-30)*

The DEIS claims that "potential changes are not likely to cause an exceedance of stream standards since the tributaries immediately above and below Windy Gap are high mountain streams of high **quality."** *(Page 5-40)* This does not seem consistent with the WGFP DEIS which acknowledges stream standard challenges. Concerns about these stream challenges are further underscored by EPA remarks about the WGFP DEIS. [32]

Without supporting documentation**, the analysis concludes that "the cumulative effects…on surface** water is minor, except on several of the upper tributaries of the Fraser River, where moderate effects to **stream flow should be expected during average to wet years."** *(Page 5-39)* These minor and moderate effects are not located, described or quantified; there is no mitigation suggested to minimize these effects.

Cumulative Effects – Groundwater. The DEIS states that "surface water and ground water are linked components of the hydrologic **system in every watershed."** *(Page 5-40)* However, it goes on to **say that "Groundwater recharge and discharge are relative minor components of the hydrologic systems in each of the West Slope watersheds."** *(Page 5-40)* This is unsubstantiated.

Cumulative Effects – Recreation. The DEIS states that "cumulative impacts to recreation very *(spelling error)* from minor to major, depending on the recreational activity, river segment and type of **year."** *(Page 5-49)* The reader is provided no further information; this lack of supporting documentation is unacceptable and inconsistent with EPA *Guidelines* about qualitative findings.

According to work conducted during the Upper Colorado Wild and Scenic Alternative Management Plan negotiations comparing current conditions to conditions under the Moffat Project preferred **alternative, the number of days suitable for recreational boating ("usable days") at the Colorado River** near Kremmling will decrease as shown in the table that follows.

This analysis compares the number of usable days during the permit season for commercial boating (April – September) under actual current conditions (stream gage data from 1983-2006) and under the Moffat preferred alternative (modeled with PACSM from 1947-1991 which includes full build out, the

Comment Information	Comment	Comments and Responses
	Moffat Expansion Project, and Windy Gap Firming Project. The three categories of float boating **"experiences" shown in the shaded cells are based upon a survey conducted by American Whitewater** in 2008 and reflect flow ranges that are acceptable to private and commercial boaters on the Upper Colorado. Each float boating experience is important for maintaining a viable recreational boating industry in Grand County because they provide opportunities for a wide range of private boaters and commercial customers at varying locations and times during the boating season. The greatest reduction in usable days, as a result of full build out, the Moffat expansion, and the Windy Gap Firming project (compared to current conditions) occurs in the wettest 50% of years. In the wettest years, the usable days lost fall in the standard and high water experience categories, which are the experiences that commercial and private boaters seek out during years of high flow. For example, in the wet typical years, approximately 50% of the standard experience usable days will be lost in the future compared to the actual current conditions. Furthermore, in wet typical years, the majority of the reduction in usable days is experienced during May, June, and July which represent the months during which commercial outfitters often serve the most customers. A loss of boating opportunities for even a few days may represent a significant loss of income for commercial outfitters that have historically relied on streamflows appropriate for a wide customer base. While the total number of lost usable days in the driest 25% of years is less than the total reduction in wetter years, the impact to the boating community will be large because in dry years and during the late season when flows are low, the Upper Colorado River is one of the few boatable locations in Colorado. PAGE 28 OF 32	unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. Alternatives that were formulated that include some component of reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated included some component of reuse (Corps 2007). These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 6, 7, and 14 were screened out due to cost (Screen 1C) because they had high relative costs associated with advanced water treatment and residual disposal. Alternative 11 was also screened out because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there is not sufficient unused reusable effluent supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in these alternatives was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. ***Comment #910-218*** *(ID 2649)**:*** *Comment. Paragraph 1: Why are reusable supplies only used in drought conditions under alternatives 8a*

Comment Information	Comment	Comments and Responses

Table 1
Comparison of Number of Usable Days under Actual Current Conditions and the Moffat Project Preferred Alternative (Modeled Future Conditions)

1. Wettest 25% Years
Median Number of Usable Days

	Apr	May	Jun	Jul	Aug	Sep	Total
Low Water Experience: 700-1,300 cfs							
Actual Current	0.5	0	0	0	9.5	26.5	36.5
Modeled Future	20	6	0	1	23	27	77
Difference	20	6	0	1	14	1	41
Standard Experience: 1,300-4,000 cfs							
Actual Current	20.5	21	8	16.5	21.5	0	87.5
Modeled Future	0	22	13	25	5	0	65
Difference	-21	1	5	9	-17	0	-23
High Water Experience: 4,000-7,400 cfs							
Actual Current	0	8	14.5	7.5	0	0	30
Modeled Future	0	0	11	2	0	0	13
Difference	0	-8	-4	-6	0	0	-17

2. Wet Typical 25%-50% Years
Median Number of Usable Days

	Apr	May	Jun	Jul	Aug	Sep	Total
Low Water Experience: 700-1,300 cfs							
Actual Current	23.5	5.5	2	16	22	26.5	95.5
Modeled Future	13	16	12	18	25	29	113
Difference	-11	11	10	2	3	3	18
Standard Experience: 1,300-4,000 cfs							
Actual Current	1.5	25	28	15	9	0	78.5
Modeled Future	0	8	16	11	5	0	40
Difference	-2	-17	-12	-4	-4	0	-39
High Water Experience: 4,000-7,400 cfs							
Actual Current	0	8	14.5	7.5	0	0	30
Modeled Future	0	0	0	0	0	0	0
Difference	0	-8	-15	-8	0	0	-30

3. Dry Typical 50%-75% Years
Median Number of Usable Days

	Apr	May	Jun	Jul	Aug	Sep	Total
Low Water Experience: 700-1,300 cfs							
Actual Current	17	9	11	24.5	30	28.5	120
Modeled Future	9	11	13	24	29	21	105.5
Difference	-8	2	2	-1	-1	-8	-15
Standard Experience: 1,300-4,000 cfs							
Actual Current	1.5	7.5	11.5	0	0	0	20.5
Modeled Future	0	1	3	0	0	0	3.5
Difference	-2	-7	-9	0	0	0	-17
High Water Experience: 4,000-7,400 cfs							
Actual Current	0	0	0	0	0	0	0
Modeled Future	0	0	0	0	0	0	0
Difference	0	0	0	0	0	0	0

4. Driest 75% Years
Median Number of Usable Days

	Apr	May	Jun	Jul	Aug	Sep	Total
Low Water Experience: 700-1,300 cfs							
Actual Current	7.5	3.5	1.5	20.5	31	21.5	85.5
Modeled Future	7	2	0	16	23	22	68.5
Difference	-1	-2	-2	-5	-8	0	-17
Standard Experience: 1,300-4,000 cfs							
Actual Current	0	0	0	0	0	0	0
Modeled Future	0	0	0	0	0	0	0
Difference	0	0	0	0	0	0	0
High Water Experience: 4,000-7,400 cfs							
Actual Current	0	0	0	0	0	0	0
Modeled Future	0	0	0	0	0	0	0
Difference	0	0	0	0	0	0	0

Notes:
- Actual current data is based upon the Colorado River near Kremmling gage data from 1983-2006.
- Modeled future data is based upon Denver Water's PACSM modeling (1947-1991) provided by Denver Water during the Upper Colorado Wild and Scenic Alternative Management PlanS takeholder Group meetings.
- The years in both the actual current and the modeled future datasets are ranked based upon total annual volume, based upon the operational water year defined during the Wild & Scenic process (April-March).
- **Floatboating experience categories (low water, standard, and high water) are based upon a 2008 survey conducted by American Whitewater which combines** floatboating preferences for commercial and private boaters at the Colorado River near Kremmling location.
- Differences are equal to the modeled future values less actual current values. A negative difference indicates that usable days decrease under future modeled conditions. Positive values indicate that there are more usable days under the future modeled condition.

Cumulative Effects – Socioeconomics. The DEIS concludes that there are no cumulative impacts to Grand County. *(Page 5-53 - 55)*

PAGE 29 OF 32

and 10a?

Response #910-218:
Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The water from the gravel pits and deep aquifer storage is only needed in a drought similar to the "new" water diverted to Gross Reservoir. Water in the gravel pits and the aquifer storage simply would not be needed every year to meet demands, only in dry years.

Comment #910-40 *(ID 2648)**:***
Comment. Gross Reservoir operations. The DEIS states that Denver Water does not currently utilize the bottom 12,000 AF of the reservoir due to siltation and/or damage to outlet works from releases below this level. This means that approximately 30% of this existing reservoir is not being used.

Response #910-40:
The comment is an accurate statement. Denver Water does not operate Gross Reservoir to go below 12,000 AF of storage as described in DEIS Section 2.3.3, and this is approximately 30% of the total storage. The bottom of Gross Reservoir has a narrow v-shaped canyon that, if mobilized, would allow accumulated sediment at the inlet to the reservoir to migrate toward the dam. Past studies have shown that the top level of this sediment plume is at an elevation of 7,169 feet (12,000 AF of storage). If the reservoir is drawn down below this point, it is likely the sediment plume would become mobilized and move closer to the outlet works of Gross Dam. If the sediment plume reaches Gross Dam, the outlet works could become plugged. In addition, the outlet works valves and hydropower turbines are not designed to pass the sediment and damage to the components would likely occur if the material were to pass through the outlet works. From a dam safety perspective, the

Comment Information	Comment	Comments and Responses
	Cumulative Effects – Summary. *(Pages 5-56)* Even with all of the analytical concerns highlighted above, **the DEIS concludes that most of the "non-minor" effects are in Grand County. These include** moderate effects on: ▪ surface and groundwater on upper tributaries of the Williams Fork and Fraser Rivers; ▪ fish resources on upper tributaries of the Williams For and Fraser; ▪ recreational boating on the Fraser River. There is no further description of these cumulative impacts and no mitigation recommendations offered. [1] US Army Corps of Engineers. *Scoping Summary – Moffat Collection System Project*. Cheyenne, WY. December 2003 (Scoping Summary, 2003) [2] Scoping Summary, 2003, page 3-1. [3] Environmental Protection Agency. Office of the Administrator. *Guidelines for Preparing Economic Analyses*. Office of the Administrator, EPA 240-R-00-003, September 2000, page 21. (EPA, 2000) [4] Coley/Forrest, Inc. *Significance of Flushing Flows*. Prepared for Grand County. November 2007. (Coley /Forrest, November 2007) [5] There are scholarly articles regarding the relationship between water clarity and property values that could have been applied. These include: Charles Krysel, Elizabeth Marsh Goyer, Charles Parson, and Patrick Weele. *Lakeshore Property Value and Water Quality: Evidence from Property Sales in the Mississippi Headwaters Region*. May 2003. Terrill R. Hanson, Luther Upton Hatch, Howard C. Clonts. *Reservoir Water Level Impacts on Recreation, Property and Nonuser Values*. Journal of American Water Resources, Volume 38, Number 4, 1007 – 1018, 2002. P. Joan Poor, Keri L. Pessagno, Robert W. Paul. *Exploring the hedonic value of ambient water quality: A local watershed-based study*. Environmental Economics, 2006, available at www.sciencedirect.com, pages 8-9. Holly Michael, Kevin Boyle, Roy Bourchard. *Water Quality Affects Property Values: A Case Study of Selected Main Lakes*. Maine Agricultural and Forest Experiment Station, Miscellaneous Report 398, University of Maine, February 1996. [6] United States Department of the Interior, Bureau of Reclamation. *National Environmental Policy Act Handbook*.. Denver, Colorado, page 4-3, Section 4-8 Purpose and Need. October 1990. [7] Environmental Protection Agency, Office of Federal Activities. *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*. EPA 315-R-99-002 / May 1999. Section 4.4 Describing the Condition of the Environment, no page reference. (EPA, 1999) PAGE 30 OF 32	existing drawdown limitation of 7,169 feet (12,000 AF of storage) should remain in effect to prevent the sediment plume from becoming mobilized. ***Comment #910-39*** *(ID 2647)**:*** *Comment. Section 2.3.3 of the PDEIS reported that Denver Water currently diverts 60,000 AF through the Moffat Tunnel on an average annual basis. PDEIS 2-34. While that language has been deleted from Section 2.3.3, Table H-7.1 continues to report a similar, inaccurate number. See Table H-7.1 (reporting 63,799 AF average annual flow through Moffat Tunnel). This is misleading. The figure is a modeled number. Denver actually diverts around 47,705 AF on average. (1936-2006) The DEIS must include actual diversions through the Moffat Tunnel, rather than a hypothetical modeled number. This error permeates the entire DEIS and is contrary to law. "The purposeful inclusion of inaccurate data in the FEIS, however, is a different matter . . . . Including inaccurate data in the FEIS hinders one of the primary reasons for producing the document: to provide the public with information about federal projects that will impact the environment . . . . Defendants violated NEPA by purposefully including the inaccurate data in the FEIS. See 40 C.F.R. § 1500.1(b) ('Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.')." North Carolina Alliance for Transp. Reform, Inc. v. U.S. Dep't of Transp., 151 F. Supp. 2d 661, 688 (M.D.N.C. 2001). (And the court awarded attorneys fees in this case.)* **Response #910-39:** Using historical averages, in this case, does not represent an accurate picture of existing conditions. Denver Water's service area has grown since the first water was diverted through the Moffat Tunnel. Since 1936 Denver Water has transferred more water from the West Slope to the East Slope to meet the needs

Comment Information	Comment	Comments and Responses
	[8] Council on Environmental Quality. *Considering Cumulative Effects under the National Environmental Policy Act*. Washington, DC. January 1997. (CEQ, 1997) [9] EPA.1999, Section 4.4, no page reference. [10] Memorandum. Dan Guimond & Brian Duffany to Town of Winter Park, et al. *Technical Memorandum #1: Economic Base and Demographic Framework*, April 18, 2006. Colorado State Demographer, Table #3 – Preliminary Population Forecasts by County, 2000 – 2035. Available on web site at www.dola.state.co.us/demog/pop_cnty_forecasts.html [11] EPA.2000, page 22. [12] This gage is 2.0 miles upstream from Vasquez Creek and 3.5 miles downstream from the point of diversion for the Moffat Water Tunnel. It is in between the commercial center of the Town of Winter Park and the Winter Park Ski Area. [13] The Water Supply and Storage Company's began its trans-mountain diversion of water through the Grand Ditch in the 1890s. [14] This data is from the USGS gage that was located on the Colorado River at Hot Sulphur Springs between 1904 and 1944. [15] Council on Environmental Quality Regulations, Section 1502.23 Cost-benefit analysis. [16] Environmental Protection Agency. Science Advisory Board. *Valuing the Protection of Ecosystems and Services*. EPA-SAB-09-012. May 2009. (EPA, 2009) [17] Coley/Forrest, Inc. *Grand County: Its Economy and Water Resources*. Denver Colorado. July 2007. (Coley/Forrest, July 2007). [18] Fishing experts and fishing-related business representatives. Conversation with owners of Mo Henry's Trout Shop, other experiences and knowledgeable anglers in Grand County and experts knowledgeable about fishing in Grand County. December 2008. [19] Ranchers who Use the Fraser River. Telephone conversations with ranchers in the Fraser Valley who use the Fraser River system for irrigation. (Fraser River Ranchers) [20] Coley/Forrest, July 2007. [21] Colorado State Demographer. Population Estimates by Municipality, July 1, 2008, web site. [22] The standard deviation is a measure of statistical dispersion from the mean or average. The higher the standard deviation, the less reliable is the mean or average. PAGE 31 OF 32	of customers. The highest amount of water transferred through the Moffat Tunnel historically was 90,766 AF (1982) and the average for the last 10 years (2001-2010) is 57,354 AF. As Denver Water's demand increased, the amount of water diverted through the Moffat Tunnel would continue to increase even if the Proposed Action is not approved. ***Comment #910-37*** *(ID 2646)**:*** *Page 2-39 Comment. Paragraph 1: The potential termination of the water deliveries to Climax and the FROR on the purchase of the Climax rights have not been considered (roughly 3,000 to 6,000 AF) in the DEIS. This circumstance would add to Denver Water's yield at Williams Fork Reservoir, which would increase Denver Water's firm-yield. The DEIS should have considered these as a cumulative effect.* **Response #910-37:** Denver Water is obligated to provide the Henderson Mill (Climax) with up to 3,000 AF per year of water from its Williams Fork Collection System. After the Henderson Mine ceases operation, Denver Water would no longer have any obligations to Climax. Nevertheless, the timing of the potential termination of water deliveries to Climax is unknown and is not considered reasonably foreseeable, and therefore, is not included as a cumulative effect. ***Comment #910-38*** *(ID 2645)**:*** *Page 2-39 Comment. Paragraph 4: The DEIS doesn't explain why Gross Reservoir is relied on most heavily initially.* **Response #910-38:** Presently, Gross Reservoir does not have storage for prolonged droughts. If the proposed Moffat Project is constructed, a portion of the drought reserve currently stored on the south end of the system would be stored in Gross Reservoir.

Comment Information	Comment	Comments and Responses
	[23] USGS gage 09024000 on the Fraser River upstream of Vasquez Creek and downstream of the Winter Park Ski area has continuous reporting data sufficient to measure depletions before and after Denver Water diversions. [24] Coley/Forrest, November 2007. [25] *Windy Gap Firming Project – Draft Environmental Impact Report* (DES 08-30), Tables 3-124, 3-126, 3-127, 3-128, 3-129, and 3-130. [26] *Ibid.,* Tables 3-124, 3-126, 3-127, 3-128, 3-129, and 3-130. [27] Coley/Forrest, July 2007. [28] Fraser River Ranchers. [29] EPA, 2000. *Ibid.* [30] National Center for Environmental Economics. 2008. *Guidelines for Preparing Economic Analyses – External Review Draft.* Office of Policy Economics and Innovation, US Environmental Protection Agency, September 12, 2008. [31] Council on Environmental Quality. "Guidance on Consideration of Past Actions in Cumulative Effects Analysis." Memo – James Connaughton to Heads of Federal Agencies. June 24, 2005 [32] Environmental Protection Agency. Letter: Larry Svoboda, Director NEPA Program, Region 8 to Michael Ryan, regional Director, Bureau of Reclamation. December 19, 2008. PAGE 32 OF 32	Currently, Gross Reservoir is used heavily to meet the needs of the Moffat Treatment Plant and raw water customers on the north end of Denver Water's system. With the completion of the proposed Project, Denver Water would still rely heavily on Gross Reservoir to meet these needs. During the first year of a drought, Denver Water would use the water stored in Gross Reservoir as well as other reservoirs to meet the needs of its customers. FEIS Section 2.3.3 has been revised to reflect this information. ***Comment #910-29*** *(ID 2644)**:*** *Page 2-83 Comment. The PACSM model does not include any potential changes due to climate change. The potential impacts of climate change should be discussed in the DEIS by showing changes/ precipitation and temperature changes since 1947.* **Response #910-29:** The model study period used in the DEIS (1947 through 1991) provides a broad range of average, wet, and dry flow conditions and sequences of years that include dry years followed by wet years, in which case it is suitable for estimating hydrologic effects associated with the Moffat Project EIS alternatives. A study period of 1950 through 1991 was used to analyze a range of possible Water Infrastructure and Supply Efficiency (WISE) scenarios because those years are included in both Denver Water's PACSM and Aurora's South Platte River planning model. DEIS Section 5.4 addressed climate change and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the

Comment Information	Comment	Comments and Responses
		West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cubic feet per second (cfs) at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the Proposed Action. The 2008 Western Water Assessment report prepared for Colorado Water Conservation Board (CWCB), Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree

Comment Information	Comment	Comments and Responses
		whether annual mean precipitation will increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: (1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and (2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the Proposed Action, however the absence of quantified climate-induced decreases in flows related to the Proposed Action makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated FEIS Section 4.4 with more recent technical documentation, including the Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). The concept of a systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, NEPA relies on Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps, as the lead Federal agency of the Moffat Project EIS, believes the analysis is

Comment Information	Comment	Comments and Responses
		adequate. ***Comment #910-43*** *(ID 2643)**:*** *Page 2-85 Why does the strategy under the No Action alternative involve reducing the strategic reserve by up to 15,000 in drought periods but there is no reduction of the strategic reserve in the preferred alternative?* **Response #910-43:** The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow the City of Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water demand for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. The purpose of the Moffat Project is not to build a Strategic Water Reserve in the North System in addition to the existing 30,000 AF Strategic Water Reserve. However, the additional storage helps balance North and South systems water storage. The amount of Strategic Water Reserve stored in each reservoir in Denver Water's system varies depending on hydrologic conditions and the severity of the drought. By adding storage to the North System, a portion of the Strategic Water Reserve could be stored in an enlarged Gross Reservoir because more water would be stored in the North System prior to dry-year sequences. Modeling of the No Action Alternative shows that none of the Strategic Water Reserve is available to the North System at times during the critical drought period because storage

Comment Information	Comment	Comments and Responses
		capacity is limited at Gross Reservoir. At the end of the critical drought period, Gross Reservoir is empty and the Strategic Water Reserve is located entirely in Denver Water's South System reservoirs. ***Comment #910-211*** *(ID 2642)**:*** *Page 3-4 Comment. The methodology of selecting focus river segments based upon the annual average flow (greater than 10% change) is flawed because significant changes greater than 10% could have negative impacts in individual months that are not reflected in the annual average.* **Response #910-211:** Please see the response to Comment ID 2506. ***Comment #910-216*** *(ID 2641)**:*** *Comment. The DEIS states that average monthly changes in flow under the action alternatives are less than 10% at the Colorado River near Kremmling gage. While average monthly changes at the Kremmling gage are less than 10% between the Full Use Existing scenario and the Preferred Alternative, average changes between current conditions and the Preferred Alternative are greater than 10% in some months and should be considered in the analysis. This is another example of how the DEIS 'front-loads' effects prior to 2016 and reduces the impacts due to the project.* **Response #910-216:** Please see the responses to Comment IDs 2639 and 2860. ***Comment #910-217*** *(ID 2640)**:*** *Comment: 'Focus River Segments' are selected on the basis of whether they will experience flow changes greater than 10% based on annual average flow, and are further defined on page 3-5, and in table 3.0-1, with the following explanation: "it was*

Comment Information	Comment	Comments and Responses
		impractical to collect data on each individual sub-reach of every affected stream. Several representative river reaches, which experience the greatest flow change were therefore identified for detailed data collection and evaluation." Focus river segments are used to evaluate all flow related resources, and in some cases include more in-depth evaluation using so called "representative sampling sites" (see comment on DEIS page 3-5) to look at characteristics such as riparian habitat, stream channel dynamics, surface sediment, vegetation, hydraulics, and water quality. Table 3.0-1, explains that the Fraser River segment represents the "mainstem downstream of Denver Water's diversion points to its confluence with the Colorado River near Granby, and approximately 30 tributaries . . . ." It is not until section 3.9.5, table 3.9-4, that focus river segments are discussed in detail. It is difficult in some sections of the DEIS to ascertain whether the term "focus river Segment" is being used in certain flow-related resource sections according to the definition in table 3.0-1 and as shown in figure 3.0-1, or as explained in section 3.9.5 for any given flow-related resource section other than aquatic biological resources. If the 'focus river segment' definition of table 3.0-1 applies to any of the flow-related resources evaluated in the DEIS, it means that approximately 95.1 river miles or 29% of the total project river miles (table 3.1-18) have been lumped together for consideration. This 'segment' includes probably the largest range and greatest variety of stream characteristics in the project. In addition, this segment includes 20 tributaries representing at least 22.9 river miles with year 'round percent changes in depletions ranging from less than 10% to 100% (appendix H, tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28), and presumably representing 100% diversion for these tributaries. It is inappropriate to lump these tributaries into a 'Fraser River segment' to avoid discussion of the magnitude

Comment Information	Comment	Comments and Responses
		of changes in any of the tributaries, in particular those without bypass flows. If focus river segments were indeed broken into smaller study areas such as the areas between nodes identified in figure 3.0-1, then the DEIS needs to be clear about which definition of the term 'focus river segment' it is using, and which region the text is referencing. This same obfuscation of the facts about diversions from the tributaries appears to be exercised in the arrangement of the Williams Fork focus river segment, which begins below the confluence of the four diverted tributaries (DEIS page 3-7, table 3.0-1). **Response #910-217:** Please see the response to Comment ID 2506. The discussion of focus segments was clarified in FEIS Section 3.1. ***Comment #910-215*** *(ID 2639)**:*** *Comment. The downstream study area on the Colorado River did not extend far enough to assess the impacts of the project. Decreased releases from the Williams Fork Reservoir affect the Colorado River below Williams Fork, which is one of the most stressed portions of the Colorado River in Grand County. This project also affects releases from Green Mountain Reservoir and the timing of both releases.* **Response #910-215:** In the DEIS, the downstream extent of the study area was based on the location where average monthly flow changes under the action alternatives would be less than 10% compared to Full Use of the Existing System. Table H-3.32, which compares average monthly flows for Full Use of the Existing System against each of the Moffat Project action alternatives and the No Action Alternative, shows that average, wet and dry average monthly flow changes would be less than 10% in all months for the Colorado River near Kremmling gage. The exception to the

Comment Information	Comment	Comments and Responses
		downstream extent includes the evaluation of recreation and special status species in the 15-mile reach. Resource evaluations were conducted to determine impacts near Kremmling and assess the validity of the downstream study area extent. Results of the resource evaluations based on a comparison against Full Use of the Existing System indicate effects due to the Moffat Project would be negligible to minor along the Colorado River at the Kremmling gage and would continue to diminish downstream with tributary inflows. Therefore, extension of the study area further downstream was not warranted based on the results of the resource evaluations. The resource evaluations were relied on to justify the criteria used to define the downstream extent of the study area. The study area was re-evaluated for the FEIS on a resource by resource basis to determine whether extension of the area was warranted. The need to extend the study area was based on an evaluation of total environmental effects associated with streamflow changes under each of the Moffat Project alternatives in combination with other RFFAs. Please see the response to Comment ID 2506 regarding evaluations on river segments that were not identified as focus segments. DEIS Section 4.1.1.2, subheading, Colorado River Stream Flow, contains a discussion of flow changes along the Colorado River below the confluence with the Williams Fork River. Each flow related resource section in the DEIS evaluated the effects for the Colorado River below the confluence with the Williams Fork River. In the DEIS, the downstream extent of the study area was based on the location where average monthly flow changes under the action alternatives would be

Comment Information	Comment	Comments and Responses
		less than 10% compared to Full Use of the Existing System. Table H-3.32, which compares average monthly flows for Full Use of the Existing System against each of the Moffat Project alternatives and the No Action Alternative, shows that average, wet and dry average monthly flow changes would be less than 10% in all months for the Colorado River near Kremmling gage. The exception to the downstream extent includes the evaluation of recreation and special status species in the 15-mile reach. Resource evaluations were conducted to determine impacts near Kremmling and assess the validity of the downstream study area extent. Results of the resource evaluations based on a comparison against Full Use of the Existing System indicate effects due to the Moffat Project would be negligible to minor along the Colorado River at the Kremmling gage and would continue to diminish downstream with tributary inflows. Therefore, extension of the study area further downstream was not warranted based on the results of the resource evaluations. The resource evaluations were relied on to justify the criteria used to define the downstream extent of the study area. Regarding the use of average statistics, the resource evaluations did not rely solely on average statistics to assess effects on resources. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects

Comment Information	Comment	Comments and Responses
		on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic biological resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading, Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5, and H-6). Regarding comparisons made in the comment to historical Moffat Tunnel diversions and historical streamflows shown in Table 3 of the Joint Rebuttal Report, please see the response to Comment ID 4743. It is appropriate to select representative dry and wet years based on natural or virgin flow hydrology. Table 1 referenced in the comment shows that 1983 and 1984, which are included in the PACSM study period and in the wet year average, were the two wettest years at almost all locations shown in the table. Table 1 also shows that at each location, at least one and often two of the five driest years are included in the PACSM study period. Therefore, the DEIS includes information for years that are reflective of the some of the driest and wettest conditions that have occurred in the past. The PACSM study period does not have to include all of the five driest and wettest years at each location shown in Table 1 to accurately characterize hydrologic effects in dry and wet years. Historical natural flows, which are based on historical gage records, represent the best available information to estimate hydrologic effects associated with the Project. The probability of similar hydrologic conditions occurring in the future is unknown.

Comment Information	Comment	Comments and Responses
		The resource evaluations did not rely solely on monthly and annual averages. Please also see the response to Comment ID 5199. The comparison of average annual flows using PACSM output completed for the UPCO study (2003) under Scenario 3 is flawed. The five driest and wettest years from the PACSM study period were selected based on the natural flow or virgin flow at the USGS gage Colorado River near Kremmling whereas the five driest and wettest years from the UPCO Scenario 3 output were selected based on modeled flows. It would be more appropriate to compare averages for the same five dry and wet years. For example, the average annual flow at the Fraser River near Winter Park in 1961 based on UPCO output was 4,549 AF versus 4,520 AF based on PACSM output for Alternative 1a. Therefore, to accurately compare averages at the locations shown in Table 1, the same five years (1954, 1976, 1961, 1965, and 1955) selected for UPCO data should be compared against an average of Moffat Project data for the same five years. However, there would still be differences even if the years selected coincide due to the changes made to PACSM since the modeling was completed for UPCO. The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the

Comment Information	Comment	Comments and Responses
		maximum amount of water physically and legally available under its existing water rights without additional storage in its system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the DEIS study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period and consideration of tree-ring data to include additional dry years would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. While tree ring-based reconstructions of Colorado River flows may show greater hydrologic variability than that reflected in the gaged record, particularly with respect to drought, the inclusion of more severe dry years in the study period would not change the evaluation of hydrologic impacts due to

Comment Information	Comment	Comments and Responses
		the Moffat Project because the Moffat Project would not increase diversions in these years over the diversions that would take place without the Project. In summary, modifications to the modeled study period and the use of paleo-hydrology is not warranted. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. The Current Conditions (2006) scenario does not present an idealized depiction of current hydrology that would maximize water demands and water diversions throughout the PACSM study period. The Full Use of the Existing System scenario demonstrates that Denver Water could meet at higher average annual demand (345,000 AF/yr) and divert additional water throughout its system using its existing system infrastructure and water rights without any additional storage on-line in the Moffat System. It is not appropriate to compare Current Conditions (2006) model data to historical data for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. For example, it is inaccurate to evaluate the effects of future diversions on flows in the Colorado River at the Hot Sulphur Springs gage based on a comparison with historical flows at that gage because historical flows prior to 1985 do not include the effects of the existing WGFP, which came on-line that year. The purpose of the Current Conditions (2006) scenario is to represent hydrologic conditions that

Comment Information	Comment	Comments and Responses
		would occur over the 45-year study period under Current Conditions, including facilities, operations, consumptive and non-consumptive water rights, instream flow rights, demand levels, operating rules, and other water management considerations and preferences throughout the Upper Colorado River Basin. The Current Conditions (2006) scenario is not intended to replicate historical flows at USGS gages and diversions at the Moffat, Gumlick, and Roberts tunnels as suggested in the comment. The Current Conditions scenario accurately depicts the current level of diversions and does not understate the incremental change that would occur with a Project on-line. It is not appropriate to compare Current Conditions (2006) model data to historical data to evaluate effects for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. One would expect potentially large differences when comparing model results with historic records. Modeled Current Conditions (2006) Moffat Tunnel diversions (63,799 AF/yr) are higher than average annual Moffat Tunnel diversions for the period from 1984 through 2006 because Current Conditions diversions reflect meeting an average annual demand for Denver Water of 285,000 AF/yr whereas, the average annual demand met during the period from 1984 through 2006 was less. In addition, there are likely differences in the averages because the periods compared are different lengths and may be hydrologically different. It is possible that the period from 1984 through 2006 is wetter overall than the period from 1947 through 1991, which could also partially explain why the

Comment Information	Comment	Comments and Responses
		historical average is lower. These reasons also apply to differences in Current Conditions versus historical Gumlick Tunnel and Roberts Tunnel diversions and flows in the Fraser and Colorado rivers. For similar reasons, Current Conditions (2006) modeled streamflows in the Fraser River should not be compared with historical data. At some locations in the Fraser River Basin, average monthly dry year streamflows for Current Conditions are higher than actual streamflows in 2002 for several reasons. The average monthly dry year streamflow is an average of the five driest years during the study period whereas 2002 is the driest year on record in the Fraser River Basin. Furthermore, bypass flows were reduced in 2002 whereas bypass flows were not reduced in two of the five years selected for the dry year average because the agreement to reduce bypass flows was not in effect until 1970. As discussed above, one would expect potentially large differences when comparing model flows with historic records. The comparison of flows at the St. Louis Creek gage shown in Table 3.1 of Bishop-Brogden Associates, Inc.'s letter is an excellent example of why modeled flows should not be compared to historical flows to assess hydrologic effects. Denver Water's diversions in the St. Louis Creek Basin did not commence until 1956. As a result, historical flows in 1954 and 1955 shown in Table 3.1 at the St. Louis Creek gage are considerably higher in May, June and July than in 1963, 1977, and 1981. This explains to a large degree why monthly averages of historical flows in 1954, 1955, 1964, 1977 and 1981 are much higher than historical monthly average flows in 2002 and the modeled dry year average monthly flows for Current Conditions and Full Use of the Existing System. Furthermore, historical flows in 1954 and 1955 are not reflective of Current Conditions since they do not reflect the effects of the existing Moffat Collection System diversions from St. Louis Creek. If modeled

Comment Information	Comment	Comments and Responses
		flows with the proposed Moffat Project on-line were compared to historical flows in 1954 and 1955, the differences would reflect all the changes that have occurred since that time and not just the effects of the proposed Moffat Project. Similar to dry years, average monthly wet year streamflows for Current Conditions are lower than actual streamflows in 1984 at some locations in the Fraser River Basin because the average monthly wet year streamflow is an average of the five wettest years during the study period, whereas 1984 is the wettest year on record in the Fraser River Basin. In addition, the demand met in the five wettest years under Current Conditions (2006) is different than the demand met in 1984. Differences in the timing of filling Gross Reservoir can also result in differences in Current Conditions average wet year monthly flows versus historical flows in 1984. Modeled Current Conditions average annual flows in the Colorado River below Windy Gap are lower than historical average annual flows from 1984 through 2008 primarily because the average annual demands for several entities upstream of this location, including Denver Water and Windy Gap, have increased due to growth and are higher under Current Conditions. As a result, Denver Water's diversions and Windy Gap diversions under Current Conditions are higher on average, resulting in lower modeled flows below Windy Gap on average than historically occurred. Dry year flows are not misrepresented and the impacts of the Project are not understated in a dry year. There would be no additional diversions due to the Moffat Project in the single driest year in the study period as well as the average of the five driest years. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of

Comment Information	Comment	Comments and Responses
		streamflows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic biological resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading, Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). Averaging the five driest years as opposed to selecting the single driest year is a reasonable approach for evaluating hydrologic effects under dry conditions. The average of the five driest years captures a broader range of flow conditions and diversions that could be expected to occur during a dry year and better represents a typical dry year. For example, Moffat Project diversions in a dry year following a wet year may be different that a dry year following a dry year. These differences would be reflected in a dry year average that includes five years with varying hydrologic conditions in preceding years. The driest year could be the year with the lowest total natural flow during the runoff period which extends from April through August, or it could be the year with the lowest total annual natural flow, or depending on the resource it could be the year with the lowest natural flow in a specific month.

Comment Information	Comment	Comments and Responses
		Furthermore, conditions may be more or less dry depending on the location selected. Therefore, the approach selected to average the five driest years based on the estimated natural flows at the USGS gage, Colorado River near Kremmling, takes into account the spatial and temporal variability in “dry conditions” that can occur. Even if one of the five dry years was selected for evaluation of impacts, the predicted impacts to flows as a result of the proposed Moffat Project in a dry year would not change since there would be no additional diversions associated with the Moffat Project in any of the five dry years included in the “average dry year.” Differences between Denver Water’s records of Moffat Tunnel flows at the East Portal versus records maintained by the Divison of Water Resources (DWR) are most likely due to gage height calibration corrections and shift adjustments to the standard 15-foot Parshall flume rating. The State and DWR operate their own data recording devices at the gage. Occasionally, operational conditions would cause the flume to deviate from its theoretical stage-discharge relationship. At the end of the water year, DWR staff takes all available data collected and make adjustments to daily mean flows by smoothing the application of any gage height calibration corrections and shift adjustments from gage visit to gage visit. This can cause differences between DWR and Denver Water records of flows recorded for the Moffat Tunnel at the East Portal. The comment mentions UPCO output for Scenario 3. Use of UPCO output is ineffective for comparison purposes in the Moffat EIS. The UPCO simulations were developed nearly 10 years ago and contained a different basis for the existing system, a different proposed project, different demands, and many other dissimilar conditions. Subsequent to the UPCO modeling effort, the Corps and its consultants

Comment Information	Comment	Comments and Responses
		conducted a thorough review of PACSM for use in the Moffat EIS. As a result of that review, Denver Water made numerous improvements to the model. These include changes to estimates of natural streamflow, water rights and agreements, system operations, physical system capacity, return flow timing and rates, and demands. Given these changes and improvements, it would be nearly impossible to quantify the specific causes for any given difference in results between UPCO and the Moffat EIS simulations. This type of comparison is unnecessary since the review of Moffat System hydrology should rely on Moffat EIS simulations, and not outdated UPCO output. The comment incorrectly states that Denver Water has only reduced bypass flows once in the winter of 2002/2003. Bypass flow reductions have occurred several times in 1975, 1977, 1980, 2002, 2003, and 2004. FEIS Chapter 4 was revised to provide additional information on bypass flow reductions including the time of year and at which location bypasses would be reduced and potential impacts on water providers attributable to future bypass reductions. In addition, FEIS Chapter 4 was revised to include information on the increased frequency, duration and time of year that streamflows would be reduced to minimum U.S. Forest Service (USFS) bypass flows and tributaries without bypass requirements would be dried up. ***Comment #910-213*** *(ID 2638)**:*** *Page 3-5 Comment. Similar to the way 'focus river segments' obscure the facts, so called "representative sampling sites" do not represent any of the 24 tributaries covering at least 27 river miles (8% of the project river miles) in the Fraser and Williams Fork basins that have no bypass flows, because all sampling sites are located below the confluence of at least four tributary drainages, and all*

Comment Information	Comment	Comments and Responses
		but the one in the Williams Fork are on streams with not just bypass flows, but prescribed bi-modal summer/winter bypass flows. Furthermore, the WF1 and FR2 sampling sites are located downstream of confluences with the Middle Fork of the Williams Fork, and Crooked Creek (to which Pole Creek is tributary) respectively, streams unimpaired by trans-basin diversions that provide at a minimum: 1) uninterrupted flow over a natural hydrograph with 2) strong peak and flushing flows for channel and habitat maintenance at each site. These are benefits that aren't shared and would not be seen with closer scrutiny of any of the 24 diverted streams without bypass flows. Similarly, the 12.4 miles of streams with a single bypass flow are not represented by the so called "representative sampling sites." Evaluation of environmental consequences and cumulative impacts for the Fraser and Williams Fork basins must include focus river segments and sampling sites that allow for accurate disclosure of changes to flow-related resources, and that accurately characterize proposed management conditions in the 24 fully diverted tributary streams in the Fraser and Williams Fork basins for all flow-related resources. Failure to select and utilize representative sampling sites and possibly also focus river segments establishes the foundation for intentional systematic error resulting in underestimation of the environmental consequences of the project throughout the DEIS. **Response #910-213:** Additional references sites were evaluated and modeled in areas with greater flow changes including a site on Jim Creek and a site on the Fraser River immediately downstream of its diversion point. Other locations with no bypass flows were evaluated qualitatively based on observed conditions. The analysis was also expanded to include a qualitative assessment of channel stability at reconnaissance sites selected by the USFS and Denver Water and

Comment Information	Comment	Comments and Responses
		evaluated as part of the evaluation for Two Forks, including segments with no bypass flows. General conclusions regarding channel stability and sediment transport conditions at these additional sites were reviewed and included to provide a better understanding of the similarities and differences between sample sites evaluated in the FEIS and other stream segments. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-214*** *(ID 2637)**:*** *Page 3-5 Comment. Using only selected sample locations and the extrapolation of results from river focus segments to other segments in the collection area is flawed because within any one overall study area segment, conditions may vary drastically with respect to channel morphology, inflows, outflows, diversions, elevation, and land use.* **Response #910-214:** Representative sites were selected as it is impractical to fully study all areas. Use of representative sites to estimate impacts on other areas is common. Additional sites on Jim Creek, the Fraser River, Vasquez Creek, the Colorado River and the Blue River were added to supplement the channel morphology analysis where channel types or specific conditions were believed to be underrepresented. The analysis was also expanded to include a qualitative assessment of channel stability at reconnaissance sites selected by the USFS and Denver Water and evaluated as part of the evaluation for Two Forks. General conclusions regarding channel stability and sediment transport conditions at these additional sites were reviewed and included to provide a better understanding of the similarities and differences between sample sites evaluated in the

Comment Information	Comment	Comments and Responses
		FEIS and other stream segments. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-118*** *(ID 2636)**:*** *Page 3-10 Comment. The section on water quality and all related sections (such as cumulative impacts) should include a thorough discussion of all discharge permits held in the region, in particular the Union Pacific Railroad's discharge from Moffat Tunnel, and Climax Mine's two discharges to ground- and surface-water. This should include a quantitative evaluation, presentation, and consideration of impacts to the Fraser River and to municipal users from the Union Pacific Railroad Moffat Tunnel discharge CDPS Permit CO-0047554. The permit, and accompanying rationale, document the fact that at the time of re-issue of the permit, the discharge was in violation for total suspended solids (TSS), and that further analysis of the metals content of the discharge was required to determine whether treatment would be necessary for metals compliance. If treatment for metals is determined to be necessary, the variance for TSS will be re-evaluated. If not, the river will continue receiving 10 tons of less than 3 micrometer suspended sediment annually. With adequate velocity, this sediment will remain suspended, but can contribute to turbidity. Reducing flows may exacerbate this problem, potentially impairing the ability of trout to find food, as trout are sight-feeders. If the TSS concentrations are high enough, gill damage may occur. Once the sediment settles, it can contribute to embeddedness and reduce habitat for insects, and smother trout eggs. Similarly, metals concentrations have adverse effects both on the aquatic community and potentially on the water and sanitation districts downstream. At the time of Grand County's PDEIS comments, UPRR had been*

Comment Information	Comment	Comments and Responses
		collecting monthly data on their discharge and reporting it to the State, where it is publicly available. The COE should utilize the available data in their analysis. The table below shows the range of values for a number of monitored parameters as reported to the State. [SEE UNNAMED TABLE IN SOURCE FILE.] **Response #910-118:** Additional water quality analysis for the Fraser River has been performed, including review of the Moffat and Climax NPDES permits. Please refer to FEIS Sections 4.6.2 and 5.2. In addition, the proposed Project would not divert water during low flow times and would not change Denver Water's existing bypass requirements. ***Comment #910-358*** *(ID 2635)**:*** *Comment. The single paragraph on Channel Dynamics is not identified in the table of contents.* **Response #910-358:** As part of the re-organization of the FEIS, geomorphology descriptions and analysis are presented as stand-alone chapters. Please refer to FEIS Sections 3.3, 4.6.3, and 5.3. ***Comment #910-212*** *(ID 2634)**:*** *Page 3-16 Comment. Section 3.1.5 on surface water pertaining to the river segments, and also the appropriate corresponding sections on all flow related resources as outlined on DEIS page 4-4, should disclose what happens to aquatic resources when creeks with no bypass requirement are diverted 100%. This discussion should include: 1. the typical duration of the diversion and months in which diversions occur; 2. the typical percentage of streams impacted by such diversions; 3. presence/absence of stranded pools/beaver ponds during diversions and associated changes in water chemistry in the pools;*

Comment Information	Comment	Comments and Responses
		and 4. impacts to the rivers (and other) systems when diversions begin and cease. The following photographs from Jim Creek are included to illustrate the oxidation of sediments that occurs due presumably to iron-oxidizing bacteria that thrive in low oxygen or anoxic conditions, and the surface scums from those bacteria that accumulate in stranded pools during times of diversion. These photographs were taken on September 1, 2009. At that time, Jim Creek had been 100% diverted until just 2 hours prior to a tour given to Representative Jared Polis, at which time Denver Water began bypassing what they identified as 0.5 cfs of water. These photographs were taken from or near the handicap accessible boardwalk used by the campground for the National Sports Center for the Disabled, just opposite the entrance to Winter Park off Highway 40. [SEE SOURCE FILE FOR FIGURE 1, JIM CREEK BELOW DIVERSION 9/1/09. NOTE MICROBIAL SCUM NOT YET WASHED OUT BY 0.5 CFS BYPASS BEGUN EARLIER THAT DAY.] [SEE SOURCE FILE FOR FIGURE 2, JIM CREEK BELOW DIVERSION 9/1/09. NOTE IRON OXIDES IN SEDIMENTS, EMBEDDED COBBLES, AND PATCHES OF MICROBIAL SCUM.] [SEE SOURCE FILE FOR FIGURE 3 JIM CREEK BELOW DIVERSION 9/1/09. NOTE IRON OXIDES AND REMAINING PATCH OF MICROBIAL SCUM.] **Response #910-212:** FEIS Section 3.11 was revised to more fully discuss the Current Conditions in diverted tributary streams. ***Comment #910-210*** *(ID 2633)**:*** *Page 3-17 Comment. The historical diversions by the Moffat Tunnel that are listed in the DEIS do not equate to the records shown in the Colorado Office of the State Engineer's "Colorado Decision Support System" database. An explanation for this discrepancy is not given.*

Comment Information	Comment	Comments and Responses
		Response #910-210: The State Engineer's Colorado Decision Support System Hydrobase database was queried for structure 09022500, Moffat Tunnel at East Portal, Colorado. The average annual Moffat Tunnel diversion in the text was revised from 55,800 AF/yr to 55,900 AF/yr to match the data in Hydrobase for structure ID 09022500. The commenter is correct about differences based on DWR's records for structure 514655 Moffat Tunnel. We relied on data for the gage at the Moffat Tunnel at East Portal (09022500), which is a USGS gage. There can be a difference between the flow recorded for structure 514655 versus data recorded for structure 09022500 at the East Portal if Denver Water is releasing water through a blow-off value before it reaches the East Portal. ***Comment #910-209*** *(ID 2632)**:*** *Comment. The PDEIS reported that diversions at the Moffat Tunnel for a 10 year period ending in 2002 averaged 43,700 AF. The DEIS reports that "for the period from 1975 through 2005, the Moffat Tunnel conveyed an average of 55,800 AF per year under the Continental Divide . . . ." DEIS 3-17. The DEIS, however, displays "Current Conditions" of Moffat Tunnel Diversions at a much higher value of 63,799 AF average annual. Table H-7.1: The ACTUAL diversions data should be used to display current conditions rather than a modeled figure that contradicts actual diversion data. "Though an agency's expert choice of methodology is entitled to deference, a model must be rejected as arbitrary and capricious 'if there is simply no rational relationship between the model and the known behavior of [the items] to which it is applied.'" Greater Yellowstone Coalition v. Kempthorne, 577 F. Supp. 2d 183, 198 (D.D.C. 2008) (citations omitted).*

Comment Information	Comment	Comments and Responses
		Response #910-209: Please see the response to Comment ID 2510. ***Comment #910-208*** *(ID 2631)**:*** *Page 3-21 Comment. Table 3.1-10: The average annual volume of diversions for the Berthoud Canal shown in the table is inconsistent with the value stated on page 3-17 (725 af/yr vs. 670 af/yr).* **Response #910-208:** The average annual volume of diversions for the Berthoud Canal was revised to 725 AF/yr in DEIS Section 3.1 to be consistent with the value presented in Table 3.1-10. The average of 670 AF/yr presented on page 3-17 of the DEIS was generated for an earlier period. ***Comment #910-207*** *(ID 2630)**:*** *Page 3-22 Comment. Figure 3.1-1: This figure should display the average daily streamflow under Preferred Alternative 1a and under the full use existing system.* **Response #910-207:** The purpose of Figure 3.1-1 is to display historical average daily streamflows at the Fraser River at Winter Park gage to demonstrate current surface water conditions in the Fraser River at that location. Modeled flows at that location under the Proposed Action (Alternative 1a) and Full Use of the Existing System are presented in DEIS Chapters 4 and 5. ***Comment #910-117*** *(ID 2629)**:*** *Page 3-24 Comment. There are several comments regarding the section on water quality: Please correct the spelling of Hot Sulphur Springs throughout this section.* **Response #910-117:** The spelling of “Hot Sulphur Springs” has been corrected in the FEIS.

Comment Information	Comment	Comments and Responses
		Comment #910-116 *(ID 2628)**:*** *In the U.S. Forest Service "Watershed Condition Assessment" completed for the "1997 Revision of the Land and Resource Management Plan" for the Arapaho-Roosevelt National Forests and Pawnee National Grassland,[12] the Fraser River is rated Class III from the Fraser headwaters on Berthoud Pass to the confluence with Vasquez Creek. Class III is defined as "Watersheds exhibit low geomorphic, hydrologic and biotic integrity relative to their natural potential condition. A majority of the drainage network may be unstable. Physical, chemical and biologic conditions suggest that soil, riparian and aquatic systems do not support beneficial uses." (Condition class definition from Forest Service manual 2500, Chapter 2520). This assessment is not disclosed anywhere in the DEIS, starting here with the water quality section. FOOTNOTE: [12] 1997 Revision of the Land and Resource Management Plan for the Arapahoe-Roosevelt National Forest and Pawnee National Grassland" accessed online, February 2010 at http://www.fs.fed.us/r2/arnf/projects/forestplanning/index.shtml.* **Response #910-116:** Per the CDPHE guidelines, Guidance on Data Requirements and Data Interpretation Methods Used in Water Quality Standards and Classification Proceedings, Water Quality Control Division, August 2004, data within the last 5 years has been emphasized in the FEIS. Data in the referenced report is much older than that used in other portions of the DEIS and FEIS. ***Comment #910-114*** *(ID 2627)**:*** *Data collected as a part of the Grand County Stream Management Plan should be utilized where applicable in this DEIS, including in this section on water quality.*

Comment Information	Comment	Comments and Responses
		Response #910-114: Grand County Water Information Network (GCWIN) data, as available from the GCWIN website, and Phases 2 and 3 of the GCSMP reports, was reviewed for the DEIS and was considered as part of the water quality analysis for the FEIS. ***Comment #910-115*** *(ID 2626)**:*** *Please note that there is a longer period of record (at least 5 years) for temperature data and that it is now available on the "new" GCWIN website (accessible through www.co.grand.co.us).Temperature discussions imply that high ambient air temperatures dictate water temperatures, and essentially that water temperature exceedances are unavoidable. This ignores the impact that high altitude groundwater recharge might have on stream temperatures throughout the year, in particular in late summer, when high temperatures are most dangerous to fish. The Fraser Drainage basin experiences high altitude interception and removal of over 50% of its water, a significant percentage of which might otherwise naturally flow to recharge zones at a variety of locations in the basin, and then later be discharged throughout the year as base flow to streams. Adequate discharge of base flow later in the summer, when the river should be dominated by base flow, would have a moderating effect on stream temperatures, since groundwater temperatures in the Fraser Valley alluvial aquifer generally range from 4-10 degrees Celsius throughout the year.[13] Ground-water/surface-water interactions are often overlooked. A report in 2004 by Lui, Williams, and Caine[14] demonstrates that even during spring runoff, when conventional wisdom would have stream flow dominated by snowmelt, 64 ±2% of runoff consisted of reacted groundwater in the larger study area, located just on the flip side of the Continental Divide. If this recharge water is routinely removed before it can ever make it to groundwater, and stream flows*

Comment Information	Comment	Comments and Responses
		are dominated by engineered flows coming from measured flumes higher in the valley that are subject to warming by air temperature throughout their paths down valley, this could be having a significant impact on stream temperatures. This circumstance would only be exacerbated by the increased withdrawals proposed in the project. FOOTNOTES: [13] Bauch, N.J. and Bails, J.B. (2004), Water quality characteristics and ground-water quantity of the Fraser River watershed, Grand County, Colorado 1998-2001, USGS WRIR 03-4275. [14] Lui, F., Williams, M.W., Caine, N., (2004), Source waters and flow paths in an alpine catchment, Colorado Front Range, United States, Water Resour. Res., 40, W09401, doi:10.1029/2004WR003076. **Response #910-115:** GCWIN data was accessed for the DEIS and was used for the FEIS. CDPHE Regulation 31 states: "Air temperature excursion: ambient water temperature may exceed the criteria in Table 1 or the applicable site-specific standard when the daily maximum air temperature exceeds the 90th percentile value of the monthly maximum air temperatures calculated using at least 10 years of air temperature data." Thus, including information regarding air temperature in discussions of water temperature is appropriate. Information provided in DEIS Sections 3.1 and 3.2 provides the reasons this Project would not cause a reduction in groundwater discharges into streams on the West Slope. A summary of the pertinent DEIS information follows. The groundwater flow system of the Fraser River watershed is hydraulically interconnected with the potentially affected stream segments. In the lower parts of the Fraser Valley, groundwater flows into the Fraser River and supports the base flow. This Project would only cause minor changes to the duration of

Comment Information	Comment	Comments and Responses
		the higher stream flows downstream of the existing diversion points during high runoff periods. At most, the additional diversions would cause only minor changes in stream levels downstream of the diversion points. However, the maximum change in groundwater level would be less than the maximum change in the high-flow stream level, which was estimated in the DEIS to be about 8 inches. The changes would only occur during the months when runoff and water levels are high. There would be no effect on groundwater recharge rates in the uplands of the watershed, and thus there would be essentially no change on groundwater discharge rates into the Fraser River lower in the valley. Thus, the Project would have no effect on groundwater levels or flows throughout the majority of the Fraser River watershed beyond the immediate limits of the diverted streams. Next to those streams, groundwater levels would decrease slightly compared to Current Conditions (2006) during May, June, and July. During the low flow season, groundwater discharge would support the Fraser River base flow, as is currently the case. Specific data and information from the DEIS and the rationale for these conclusions are further described below. Additional groundwater data collected in the fall of 2010 is provided in FEIS Section 5.4 and clarifies the groundwater-surface water relationships downstream of Denver Water diversion points. Additional stream flow analyses were used with the new groundwater data to further assess the Project-related effects on groundwater levels and stream interactions. Groundwater-Stream Interactions in the Fraser Valley The timing of the proposed diversions for the Moffat Project would not substantially affect recharge to the groundwater flow system in the West Slope

Comment Information	Comment	Comments and Responses
		watersheds. Rather, the proposed Moffat Project would result in minimal effects to recharge, and to groundwater resources overall, for the following reasons. The Moffat Project would not make any changes to the locations or the physical features of any of the existing Denver Water diversion structures west of the Continental Divide. FEIS Figure 3.4-1 shows the Denver Water diversions (red dots) within the Fraser River Basin and subdivides the watershed into areas to facilitate discussion of this concern. Throughout the blue area on Figure 3.4-1, groundwater recharge rates would remain the same as for Current Conditions (2006), both in the upland areas and along the stream channels, because these areas lie upstream of the Denver Water diversion points. The blue area on Figure 3.4-1 constitutes a large percentage of the whole watershed. This relatively large area includes the highest land surface elevations, precipitation rates, and snowpack amounts in this watershed. The geologic map from a recent USGS Technical Report referenced in DEIS Section 3.2 (Apodaca and Bails 1999) shows glacial deposits and alluvial gravels underlie large portions of the watershed. Fractured crystalline rocks are also exposed in many areas of the basin. Precipitation and snowmelt infiltrate though permeable soils and fractured rocks in upland areas of the basin to become groundwater recharge. Similar hydrogeologic conditions exist in the Williams Fork watershed where there are other Denver Water diversion structures. Figure 3.4-1 also shows another large area (shaded brown) in which the Proposed Action would not affect groundwater recharge rates, neither in the upland areas or along the stream channels, because these areas do not lie downstream of any Denver Water diversion points. Fundamental hydrogeologic concepts indicate substantial recharge of the

Comment Information	Comment	Comments and Responses
		groundwater flow system occurs throughout the blue and brown areas on Figure 3.4-1. Recharge rates would not change in any of those areas as a consequence of the proposed Moffat Project. Unaffected stream channel segments are depicted with light blue lines on Figure 3.4-1. Along the light blue lines within the darker blue areas (above the diversion points), the rate and volume of groundwater recharge due to seepage through the bottom of stream beds would not change due to this Project at any time of year. In areas downstream of the diversions but outside the stream channel limits (all the white areas on Figure 3.4-1), there also would not be any change in groundwater recharge rates at any time because the hydrogeologic factors controlling infiltration of precipitation and snowmelt into the ground surface would not be altered by this Project, Thus, the Project has no potential to change the groundwater recharge rates within the vast majority of the whole watershed, which includes all the blue, brown and white areas on Figure 3.4-1. For the same reasons, the proposed diversions would have no effect on groundwater recharge rates throughout the vast majority of the Williams Fork River watershed. In the other parts of the Fraser River watershed directly downstream of the diversions, the proposed Moffat Project would only have the potential to slightly reduce groundwater recharge rates in the relatively small areas directly beneath and immediately beside the stream channels where the diversions may reduce the extent of seasonal overbank flooding areas. These potentially affected stream channel segments within the Fraser River watershed are shown as gold lines on Figure 3.4-1. DEIS Section 4.2 described stream flow reductions that could conceivably cause some reduction in the groundwater levels and recharge rates directly beneath the stream channels (gold lines on Figure 3.4-1) if percolation

Comment Information	Comment	Comments and Responses
		through the streambeds decrease. Groundwater recharge rates would decline only where (1) the stream reach is losing water by seepage to groundwater under Current Conditions, and (2) the diverted stream flow causes a substantial decrease in the stream level and the wetted area of the stream bed. The potential change in groundwater recharge along those stream segments (along the gold lines) would be small for reasons described in the following paragraphs. A recent USGS Technical Report (Apodaca and Bails 1999) for the Fraser River Basin, which is cited in DEIS Section 4.2, shows groundwater level contour patterns that indicate hydraulic gradients, and thus groundwater flow directions, converge toward the streams in the central portion of the Fraser River Basin downstream of the Denver Water diversion points. Where water table contours show groundwater flow converging toward streams, this indicates the streams are not providing groundwater recharge, but rather the streams are receiving groundwater discharge. The groundwater level contours also indicate that recharge occurs in higher elevation areas, upland of the streams. Therefore, even though the increased diversions may cause slight reductions of the stream levels, there would not be a consequent reduction in groundwater recharge within the watershed. Information provided in the DEIS indicates there would be, at most, very small changes in groundwater recharge directly beneath potentially affected stream segments. Streambed percolation rates would remain essentially the same as for Current Conditions (2006) because: (1) stream levels and wetted areas of the streams would only change by a very small amount, and (2) the hydraulic conductance (permeability) of the streambed materials would not be affected by the Moffat Project. Streamflow changes were modeled

Comment Information	Comment	Comments and Responses
		using PACSM (described in DEIS Section 3.1), and riparian and wetlands areas were characterized in DEIS Section 3.6.5. Details of the methodology used to estimate stream flow changes were presented in DEIS Section 4.1. Details of the methodology used to estimate changes in flood flows, water levels and wetted areas of the stream were presented in DEIS Section 4.6. Streambed seepage rates are expected to decrease by an exceedingly small amount because the timing of the diversions would coincide with high runoff periods in wet or average years. DEIS Appendix H-5 provides a series of flow duration curves based on PACSM results for a number of locations along the Fraser River and tributaries downstream of the diversion points. Flow duration curves are shown on Figures H-5.1 through H-5.11 for several locations of interest in the Fraser River Basin. Those curves indicate that the potential changes in flow durations attributable to this Project would be minimal. As shown by the flow duration curves, flow reductions resulting from the Proposed Action would occur at higher flow rates, which typically correspond with wet years. Table H-6.1 shows the percentage of days from May through June that stream flow changes would occur at several locations of interest. There would be little to no change in stream flow (flow change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the confluence with St. Louis Creek. Below the confluence with St. Louis Creek there would be little to no change in flow (flow change less than 1 cfs) between 70% and 80% of the time. Hydraulic modeling using the HEC-RAS model has been conducted to analyze the changes in stream flows and flood inundation area, at representative sites downstream of the diversion points. As part of the impact assessment for wetland and riparian

Comment Information	Comment	Comments and Responses
		areas, DEIS Section 4.6.1.2 provided an analysis of the interaction between stream flow changes and inundated areas in the affected drainage. DEIS Table 4.6-4 provides predicted changes in stream levels and channel widths for four detailed study sites along streams in the Fraser River watershed. The modeling results indicate Site FR1 near Winter Park would have the largest reduction in stream level due to the Denver Water diversions; the peak stream level during a 2-year flow event would drop about 8 inches in that reach. The HEC-RAS model results also show changes in the wetted channel width at that location would be about 1.6 feet, which is very small in comparison to the existing 2-year water profile. DEIS Figure 4.6-1 illustrates the very small change in the 2-year water profile (stream width) that would be caused by the Proposed Action. Even extrapolating over a larger stream length, the reductions of flow-wetted area would be very small (e.g., a 1-mile stream segment would experience a reduction in inundated area of about 0.4 acre). In summary, for the reasons enumerated above, the proposed diversions are expected to have negligible to minor direct impacts on groundwater levels and recharge. Declining stream levels would likely cause only very minor reductions in groundwater levels immediately adjacent to the streams. Overall, groundwater recharge rates would not change substantially within the West Slope watersheds. In wet and average years, the net effect of the Moffat Project on groundwater levels is expected to be negligible. During dry years, there would be no additional water diversions, and thus, the Project would not impact groundwater levels or recharge rates.

Comment Information	Comment	Comments and Responses
		Comment #910-113 *(ID 2625)**:*** *The Fraser River is scheduled for listing on the 303(d) List Water Quality Limited Segments Requiring TMDLs (Regulation No. 93) for temperature, and for copper as of 2010. Several sites in Grand County where temperature issues have been identified are shown in the following map, and include: Fraser River in Tabernash, Ranch Creek below CR 8315, Ranch Creek Below Meadow Creek, Fraser River at County Road 83, Fraser River upstream of Windy Gap, Colorado River below Windy Gap, Colorado River above Hot Sulphur Springs, Colorado River at Lone Buck, Colorado River at County Road 3, Colorado River at Highway 9. [See "303 (d) TEMP EXCEEDANCE STATIONS_2010" Figure in Source File pg. 54]* **Response #910-113:** The 2012 303(d) and Monitoring and Evaluation lists per CDPHE Regulation 93 are incorporated into FEIS Sections 3.2, 4.6.2, and 5.2. ***Comment #910-97*** *(ID 2624)**:*** *The water quality discussion does not systematically explain: 1. the quantity and years of water quality data available.* **Response #910-97:** FEIS Section 3.2 was modified to more clearly explain the quantity and years of data used for evaluation. ***Comment #910-112*** *(ID 2623)**:*** *Sample and data site locations: better maps are necessary, particularly as they relate not only to geographic features and diversion structures (diversion nodes should be shown in detail for the Fraser and Williams Fork watersheds), but also to major dischargers and location of discharges (ex: Climax Mine, Union Pacific Railroad Moffat Tunnel, WWTPs). The maps in appendix E4 are inadequate for these purposes, and figure 3.0-2 encompasses*

Comment Information	Comment	Comments and Responses
		too much function in their stead. a. appendix E4 figure 2 of the Fraser River has a large callout box obscuring much of Crooked Creek and nearly all of Pole Creek. **Response #910-112:** Sample sites and locations of dischargers are as referenced in the FEIS. ***Comment #910-111*** *(ID 2622)**:*** *How water quality data measures up to applicable standards: a table would have made this discussion clearer, and should include both acute and chronic values where applicable. a. Where standards values depend upon another parameter such as copper depends upon hardness, rather than presenting a single value for hardness that is not necessarily representative of the range of hardnesses in a reach, present the applicable range for that reach and calculate the copper values accordingly. Examples include: In the Fraser River at CR 83, hardness ranges 18-48 mg/L (RiverWatch), yet metals concentrations were based on a hardness of 50 mg/L. In the Williams Fork, hardness from USGS site 09037500 ranged from 22-55 mg/L, yet metals concentrations were based on hardness of 25 mg/L. In the Blue, metals were based on a hardness of 100 mg/L. It is not clear at the conclusion of some of these paragraphs whether or not standards were approached, exceeded, or values were not even close.* **Response #910-111:** FEIS Section 3.2 provides for a more detailed discussion of existing water quality, including a table for each stream segment that details ambient water quality and State water quality standards.

Comment Information	Comment	Comments and Responses
		Comment #910-110 *(ID 2621)**:*** *Where standards are exceeded. For example, in the Williams Fork, the paragraph on dissolved oxygen reads "[t]he regulatory standard for DO is 6.0 mg/L during non-spawning times for salmonoid species and 7.0 mg/L during salmonoid spawning times. DO Samples ranged from 3.5 to 10.7 mg/L. The 15th percentile ranges from 5.4 to 7.4 mg/L." DEIS 3-34. Clearly, samples have been collected that are below acceptable limits, but no further discussion or acknowledgement is made here.* **Response #910-110:** Please see the response to Comment ID 2619. Note that CDPHE Regulation 31 defines existing quality as the 15th percentile for dissolved oxygen. ***Comment #910-109*** *(ID 2620)**:*** *Where data are inadequate for comparison with the relevant standard, and whether or not a suitable proxy exists. For example: regulatory standards exist for nitrite and nitrate separately, yet reported data is for "nitrate plus nitrite," with no discussion of whether the values can be compared.* **Response #910-109:** Please see the response to Comment ID 2600. ***Comment #910-108*** *(ID 2619)**:*** *Whether Williams Fork Reservoir is in compliance with the linked DO-temperature standard that is designed to assure adequate refugia for trout. DO values in the reservoir are only discussed in general terms, yet temperature profiles are referred to, making it unclear whether DO profiles have also been taken but are not reported. DO values of concern are mentioned immediately downstream from the reservoir.*

Comment Information	Comment	Comments and Responses
		Response #910-108: More detailed discussion of dissolved oxygen in the Williams Fork River is included in FEIS Sections 3.2, 4.6.2, and 5.2. ***Comment #910-107*** *(ID 2618)**:*** *What other regulatory standards may apply. For example, the only metals that are examined in some of the sections are copper, iron, manganese, and zinc. Selenium ought to be discussed with respect to Williams Fork Reservoir and the surrounding watershed. Metals of concern in the UPRR Moffat Tunnel and Climax Mine discharge permits ought to be discussed with respect to the relevant watersheds.* **Response #910-107:** FEIS Section 3.2 has been edited to provide a more clear description of existing conditions with regard to water quality. Both the Union Pacific Railroad (UPRR) Moffat Tunnel and Climax Mine discharges are now discussed in FEIS Sections 3.2, 4.6.2, and 5.2. Note that selenium is non-detect in the headwaters of the Williams Fork River. ***Comment #910-106*** *(ID 2617)**:*** *The discussion of wastewater discharges is inadequate. In the Fraser River segment discussion, the Union Pacific Railroad Moffat Tunnel Discharge (permit referenced earlier) Devil's Thumb Ranch, Crooked Creek/Young Life Ranch, and YMCA Snow Mountain Ranch dischargers must be included and analyzed. Discussion of dischargers should include seasonal flow variations, type of treatment and existing upgrades to systems, efficacy of these systems, and potential future upgrades. Some of this data is available from a study prepared by Black and Veatch. In addition to permitted discharges, this section should include a discussion of non-point source discharges in the watersheds: percentage of homes in the area served by ISDSs and the impact of*

Comment Information	Comment	Comments and Responses
		those systems on water quality, estimation of impacts from livestock, and from golf courses should all be covered here. **Response #910-106:** Permitted major domestic wastewater treatment dischargers were evaluated in the DEIS. Permitted minor domestic wastewater treatment dischargers, as well as the Moffat Tunnel discharge, have been added to FEIS Sections 3.2, 4.6.2, and 5.2. Additional water quality analysis related to nutrients on the Fraser River, including non-point sources of nutrients, is presented in FEIS Sections 4.6.2 and 5.2. ***Comment #910-105*** *(ID 2616)**:*** *Comment. Although the DEIS recognizes that the lower portion of the Fraser River is currently on the Colorado Department of Public Health and Environment's (CDPHE) Monitoring and Evaluation List for copper, no analysis of this listing is provided in Chapter 4.* **Response #910-105:** Additional water quality analysis for copper was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-104*** *(ID 2615)**:*** *Page 3-25 Comment. Daily maximum (DM) exceedances of temperature are noted. No supporting data is provided for the conclusion that these incidences coincide with air temperature greater than the 90th percentile. No evaluation is provided in Chapter 4 for exceedances of DM in October. Although the DEIS recognizes that maximum weekly average temperature (MWAT) exceedances occur, no analysis is provided in Chapter 4 for the increasing risk of MWAT exceedances as a result of future stream flow depletions.*

Comment Information	Comment	Comments and Responses
		Response #910-104: More detailed information on temperature for the Fraser and Colorado rivers is presented in FEIS Section 3.2. Additional water quality analysis on temperature is presented in FEIS Sections 4.6.2 and 5.2. ***Comment #910-103*** *(ID 2614)**:*** *Page 3-28 Comment. River Watch data for the site at CR 83 shows that pH in the Fraser River at that site continues to reach high values. This is supported by the calculation of the 85th percentile for pH at 9.04 by the State in its Water Quality Assessment for Tabernash Meadows Water & Sanitation District, CO-0045501, from August 2005 p 6. These pH excursions do not appear to be tied to any seasonal cause, and could be damaging to the aquatic community and deserve further investigation under this DEIS, and discussion in the cumulative effects section of the document.* **Response #910-103:** Additional water quality analysis, including pH, was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-102*** *(ID 2613)**:*** *Page 3-29 Comment. 0.3 mg/L is the water supply standard for iron, not the copper standard as stated. 50 mg/L hardness is high for this river, meaning that the DEIS overestimates the water quality standard and existing water quality is closer to standards than portrayed. Copper is very toxic to trout and sculpin. Copper is on the CDPHE M&E list meaning there is limited data indicating exceedances.* **Response #910-102:** FEIS Section 3.2 was revised to reflect the appropriate water quality standards and to reflect the 2012 Monitoring and Evaluation and 303(d) lists.

Comment Information	Comment	Comments and Responses
		Comment #910-36 *(ID 2611)**:*** *Page 3-31 Comment. The DEIS should disclose that Denver owns the senior Big Lake Ditch right and that Denver can and does control the non-exercise of that water right in a drought, which allows Denver to divert under its junior right upstream. The DEIS should also disclose - as part of the cumulative impacts - other senior irrigation rights on the West Slope that Denver owns but does not divert. This practice creates a double impact to the West Slope. First, the water is not called down but rather diverted 100% to the East Slope by Denver. Second, when Denver diverts this water at its upstream diversion points, the historical return flows generated from those former irrigation rights are not returned to the stream.* **Response #910-36:** Denver Water does not plan to purchase or apply for any additional water rights in order to produce the 18,000 AF of yield for the Proposed Action. The Big Lake Ditch water right was purchased by Denver Water in the 1960s and has been leased back to the owner of the land the Big Lake Ditch has historically irrigated since the 1960s. The lease has always had a clause that provides Denver Water with an option to reduce diversions made by the Big Lake Ditch during times of drought. The lease also has a clause that does not allow the landowner to place a call on the Williams Fork River which would “call-out” Denver Water’s upstream diversions. The Moffat Project would not change the existing Big Lake Ditch agreement. During the 2002 drought, Denver Water exercised this option and per the lease agreement, water was not diverted by the Big Lake Ditch and was allowed to flow into Williams Fork Reservoir. This is an existing condition and the Moffat Project would not change the existing lease agreement. A description of the Big Lake Ditch agreement can be found in DEIS Section

Comment Information	Comment	Comments and Responses
		5.3.1 “Expiration of Denver Water’s Contract with Big Lake Ditch in 2013”. DEIS Section 3.1 describes all the water rights that Denver Water would use to divert water from streams for the Moffat Project. Denver Water is currently in discussions with the owner of Bethel Hereford Ranch to extend the Big Lake Ditch contract on a temporary basis. As part of the Colorado River Cooperative Agreement (CRCA), Denver Water will participate in a joint study of how to maintain historic agricultural uses of the Big Lake Ditch so as to maximize environmental benefit while preserving the yield Denver Water expects from retiring the water right. If a balance between the two needs (environmental and yield) can be found, Denver Water would implement the study. Until the study is completed, Denver Water has agreed to temporarily extend the Big Lake Ditch contract beyond 2013. However, for the purpose of the EIS, Big Lake Ditch operations were modeled assuming the existing 1998 agreement expires in November 2013 for Full Use of the Existing System, the No Action Alternative, and the action alternatives. ***Comment #910-101*** *(ID 2612)**:*** *Comment. Wastewater treatment facilities in the Fraser Basin below Denver’s diversions are already experiencing problems meeting discharge limits. New proposed state regulations place the responsibility for stream temperatures on the wastewater treatment facilities regardless of the impacts of diversions. Since this is currently a problem in the Fraser River, the impacts of this project will exacerbate a current problem without appropriate assessment of the issue.* **Response #910-101:** Additional water quality analysis, including temperature, was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #910-206 *(ID 2610)**:*** *Comment. The DEIS says that ACTUAL annual average diversions through the Gumlick Tunnel from the Williams Fork for 1975 through 2005 were 5,100 AF. Appendix H, Table H-7.1 uses a much higher number of 8,853 AF as average annual diversion under "current" conditions. This error needs to be corrected and actual diversions – rather than modeled figures – should be used as a baseline to determine impacts.* **Response #910-206:** Please see the response to Comment ID 2510. ***Comment #910-205*** *(ID 2609)**:*** *Page 3-35 Comment. The DEIS describes the installation of a new smaller hydropower unit on Williams Fork Reservoir in 2010. This unit will have a smaller release capacity down to 15 cfs, compared to the old unit that has a minimum release rate of 70 cfs. The change to a smaller release rate should be described as part of the cumulative impacts to the reach of the river below Williams Fork Reservoir and on the Colorado.* **Response #910-205:** The new smaller hydropower plant at Williams Fork Reservoir would have the ability to produce power within the hydraulic range of approximately 15 to 50 cfs. Therefore, the new hydropower plant would increase the effective flow range over which power can be generated from approximately 60 to 220 cfs to approximately 15 to 270 cfs with a gap between the two units in the 50 to 60 cfs range. The addition of the new hydropower plant would not affect the timing and magnitude of reservoir releases to generate power. Power releases are made with the objective of filling without spilling, based on seasonal forecasts. As a condition of its FERC license, Denver Water must bypass 15 cfs or inflow, whichever is less at all times.

Comment Information	Comment	Comments and Responses
		This condition applied prior to the installation of the new hydropower unit and still applies. The addition of the new hydropower unit would enable Denver Water to produce power over a wider range of flow rates, however, it would not change the timing or magnitude of releases. The overriding function of Williams Fork Reservoir is exchange and substitution. The discussion of the new hydropower unit at Williams Fork Reservoir was revised in FEIS Section 3.1. ***Comment #910-100*** *(ID 2608)**:*** *Page 3-36 Comment. There should be a discussion of metals in Williams Fork Reservoir, both because of the location of the Climax Mine up-gradient of the reservoir, and because of the low DO conditions present in the reservoir potentially supporting methylation of mercury and release of selenium. Temperature values cited indicate that it is possible that temperatures are reaching MWAT values and may warrant further investigation.* **Response #910-100:** Climax NPDES permitted discharge is discussed in FEIS Sections 3.2, 4.6.2, and 5.2. ***Comment #910-200*** *(ID 2607)**:*** *Page 3-37 Comment. The DEIS reports that "historical average annual diversion at Windy Gap is approximately 10,600 AF (1985 through 2004)." Bishop Brogden Associates arrives at a different value of 11,100 AF. The Windy Gap Firming Project would increase diversions by upwards of 30,000 AF, and through the Windy Gap EIS they are permitted for up to 56,000 AF. The extra diversions proposed by the WGFP EIS are very significant on their own, and when combined with flow reductions from this project, illustrate the need for a combined EIS due to the cumulative impacts of the two projects.*

Comment Information	Comment	Comments and Responses
		Response #910-200: Historical Windy Gap diversion data that was used to determine the average annual diversion of 10,600 AF for the period from 1985 through 2004 was obtained from the Northern Colorado Water Conservancy District (NCWCD). The Moffat Project FEIS considered the cumulative impacts of the WGFP, as well as other RFFAs. The DEIS Section 5.3.1, subheading Coordination of Hydrologic Effects Assessment for the Moffat Project and WGFP describes the steps taken to consider the cumulative impacts of these two projects. ***Comment #910-10*** *(ID 2606)**:*** *Page 3-38 Comment. Please add 'changes in groundwater storage' to the last sentence associating variations in hydrologic conditions with "(snowpack, precipitation, temperature and runoff) and changes in irrigation, municipal, and snowmaking diversions and return flows upstream of these gages." See additional comments on groundwater below.* **Response #910-10:** FEIS Section 3.4 was revised to include mention of groundwater storage as a variable hydrologic condition. ***Comment #910-199*** *(ID 2605)**:*** *Page 3-39 Comment. Table 3.1-14: This table is misleading, as it uses a calculated 'native' flow for the Colorado River at Windy Gap Gage using recent data, whereas actual pre-project streamflows were much higher. In fact Denver Water has developed 'native' streamflow at this location for the pre-project years that should be presented here. Also, the volume of Moffat diversions shown, 49,884 af/yr, is significantly less than the modeled 'current' conditions which show total Moffat diversions of 63,799 af/yr.*

Comment Information	Comment	Comments and Responses
		Response #910-199: Table 3.1-14 summarizes the effects of historical upstream depletions at the Colorado River at Windy Gap gage for the 20-year period from 1985 through 2004. This period was selected because the Windy Gap project came on-line in 1985; therefore, it includes the effects of all major upstream transbasin diversions. It would be misleading to present average annual native flows for an earlier period for comparison against average annual historical diversions for a later period. If different periods are used there is no way to discern differences in flow caused by diversions versus differences due to variations in hydrologic conditions (snowpack, precipitation, temperature, and runoff). This table presents historical data not modeled data. Please refer to the response to Comment ID 2510 regarding why historical Moffat Tunnel diversions are less than modeled Current Conditions Moffat Tunnel diversions and why it is inappropriate to compare historical data to modeled data. ***Comment #910-204*** *(ID 2604)**:*** *Page 3-40 Comment. Figure 3.1-2 should not stop at 1993.* **Response #910-204:** Figure 3.1-2 stops in 1994 because the Hot Sulphur Springs gage was discontinued after 1994. The post Moffat period presented from 1936 through 1994 is sufficiently long to demonstrate differences in annual flows at the Hot Sulphur Springs gage after the Moffat, C-BT and Windy Gap Projects came on line. ***Comment #910-203*** *(ID 2603)**:*** *Comment. Figure 3.1-3 showing an average from 1936-1994 makes no sense. This plot should show additive effects of diversions with averages starting from the date the diversions became active and*

Comment Information	Comment	Comments and Responses
		ending in the most recent year feasible, such as 2006. An example of such a plot is provided in our comments from Bishop Brogden Associates. The plot shown on page 3-40 is misleading. **Response #910-203:** The data presented in Figure 3.1-3 does not extend past 1994 because the Hot Sulphur Springs gage was discontinued after 1994. The post Moffat period presented from 1936 through 1994 is sufficiently long and provides a broad range of average, wet and dry flow conditions to demonstrate differences in average daily flow rates prior to the existing Moffat Collection System and after the Moffat, C-BT, and Windy Gap projects came on line. It is not misleading to show the combined effects of diversions under the Moffat, C-BT, and Windy Gap projects for the period from 1936 through 1994 since the purpose of the graph is to demonstrate the effects of transbasin diversions and increased water use over time. Figure 1 developed by Bishop-Brogden shows similar data at the Hot Sulphur Springs gage however, the data is shown for shorter periods including pre-Moffat (1911-1935), pre-C-BT (1937-1946), pre-Windy Gap (1947-1984), and post-Windy Gap (1985-2007). If the periods shown are not hydrologically consistent, there is no way to discern differences in average daily flow rates caused by diversions versus differences due to variations in hydrologic conditions (snowpack, precipitation, temperature, and runoff). Bishop-Brogden's figure is misleading since they indicate that differences in average daily flow rates are due to the hydrologic manipulation to the Upper Colorado River Basin over time, however, there are also differences due to variations in hydrologic conditions for the periods shown particularly since some of the periods reflected in the graph are relatively short. The DEIS discloses that there are differences due to variations in hydrologic conditions for the periods shown in Figure 3.1-13 on page 3-38.

Comment Information	Comment	Comments and Responses
		Comment #910-99 *(ID 2602)**:*** *Page 3-41 Comment. Water quality data on this page and in all water quality sections comes from an odd assortment of years. For many years Denver Water collected data on the Fraser and Colorado Rivers that does not seem to be included in this analysis (or in the section on the Fraser). The resistance to use flow data from water years that include the drought around 2002 stands in sharp contrast to the COE's decision to use seemingly random water quality data, and particularly water quality data that is divorced from diversion records or flow data. Just because the full record of temperature data (2006-2009) was not available at the time that Denver Water requested the data from GCWIN does not mean that a longer period of record is not available for evaluation to determine instream temperatures for a number of years. In addition, the State standards for temperature require only daily maximum and maximum weekly average temperatures to determine compliance, not long term changes. The pH maximum of 9.5 in the Colorado River is stated, but not discussed with respect to where the high occurs, with what frequency, what the 85th percentile measurement is, and how this compares to the standard. Similarly, the fact that the regulatory standard for ammonia is dependent on pH is mentioned here, but not calculated for conditions that accompanied the maximum ammonia value cited in the section. How do these values fare when compared to the applicable standards?* **Response #910-99:** Please see the response to Comment ID 2600. Additional temperature data from GCWIN was used for the FEIS. ***Comment #910-96*** *(ID 2601)**:*** *Comment. CDPHE has placed the Colorado River from just below Windy Gap to the confluence with the Blue River on the 2010 Section 303(d) list indicating exceedances of temperature standards. This listing is*

Comment Information	Comment	Comments and Responses
		based on the same GCWIN data set as well as data from Northern Colorado Water Conservancy District. Reductions in stream flow are a significant factor contributing to temperature problems. Please update. **Response #910-96:** The 2012 303(d) and Monitoring and Evaluation lists are included in the FEIS as detailed in CDPHE Regulation 93. Additional water quality analysis was performed on the Fraser and Colorado rivers. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-98*** *(ID 2600)**:*** *Page 3-42 Comment. Separate standards for nitrite and nitrate are given, and then a data range for a combined nitrite plus nitrate is provided, telling the reader nothing about how these parameters relate to one another and how the standard may apply. Please disclose. The range of values for iron is provided, but there is no discussion of how the high for the range appears to exceed the regulatory standard. There is some discussion of inconclusive data for zinc, but there is no identification of what party collected the data in dispute? Zinc appears to be in exceedance of the regulatory standard by quite a lot, yet this is not discussed. The section entitled Water Quality Assessment is confusing. Is this section supposed to be inclusive only of data for the Colorado River, or is this a wrap-up of the two preceding sections (Fraser, Williams Fork) as well, as these sections do not contain such a paragraph. Assuming it covers only the Colorado, the section is inconclusive with respect to what it presents about silver, cadmium, and iron. The sentence "Near Hot Sulphur Springs, iron concentrations are higher since some of the rocks along this reach are iron bearing olivine basalt, which is easily weathered." fails to explain why there is a dissolved iron maximum of 2,600 µg/L from some unidentified date, when from 1988 to 1992 the maximum iron concentration was only 260 µg/L;*

Comment Information	Comment	Comments and Responses
		nothing has changed about the exposed and weathering rocks during any of the sampling periods, though Windy Gap Reservoir did come online after 1985, and lower flows expose more sediment to weathering. In addition, this section does not explain what might have caused the changes seen for cadmium, copper, and zinc. **Response #910-98:** FEIS Section 3.2 includes detailed information on water quality and regulatory limits, as available in the data sources. Explanatory information is included where needed for data that does not match regulatory standards. Additionally, FEIS Section 3.2 has been updated to include only information from 2000 to present, in conformance with CDPHE guidelines to use recent (i.e., preferably the last 5 years) information. ***Comment #910-95*** *(ID 2599)**:*** *Comment. The DEIS recognizes the Town of Hot Sulphur Springs Wastewater Treatment Plant, however no evaluation of potential impacts to the treatment plant is provided in Chapter 4.* **Response #910-95:** FEIS Sections 4.6.2 and 5.2 have been updated to include an evaluation of potential impacts to the Town of Hot Sulphur Springs' WWTP. ***Comment #910-94*** *(ID 2598)**:*** *Page 3-46 Comment. It is not relevant to the standard to cite mean values for temperature, especially if they average summer and winter temperatures; a range would be more useful here, as would a comparison of the data to the daily maximum and the maximum weekly average temperature in the applicable season.*

Comment Information	Comment	Comments and Responses
		Response #910-94: FEIS Section 3.2 includes more detailed information on temperature than presented in the DEIS, where available, for each stream segment. ***Comment #910-93*** *(ID 2597)**:*** *Page 3-47 Comment. Nitrite plus nitrate data is presented in contrast to separate standards for each parameter, and how these relate is not discussed. And again, trace metal standard values are calculated for a hardness (100mg/L in this instance) that is not explained in terms of its relevance to the river or the hardness measured on the day that the high metals values are measured.* **Response #910-93:** Water quality data was presented as it was available. For nitrate and nitrite, those parameters are typically reported as one value. Explanatory text has been added to FEIS Section 3.2. ***Comment #910-202*** *(ID 2596)**:*** *Page 3-66 Comment. The section on channel dynamics relies on the "representative sampling sites" objected to in the comment on DEIS page 3-5. This section refers the reader repeatedly to "particle size distribution shown in Appendix E-4." There are no particle size distributions included in Appendix E-4. Maps referenced for this section are inadequate and should show the locations of related diversions, tunnels, gauging stations, and other related areas of interest.* **Response #910-202:** Gradation curves were added to FEIS Appendix E. ***Comment #910-201*** *(ID 2595)**:*** *Comment. The DEIS states as follows: "The Project Area encompasses several river basins; therefore, it was impractical to collect channel dynamics data on*

Comment Information	Comment	Comments and Responses
		every affected river reach. Instead, data were collected at 12 sampling sites." A project of this magnitude, in an area such as Grand County which has experienced huge environmental impacts from transbasin diversions, should be required to fully assess all the channel dynamics in all affected river reaches. To allow only 12 sampling sites and extrapolate from that data for the huge area that will be impacted by this project is to allow the proponent to gloss over the reality of impacts, especially in Grand County where a small amount of water can make a substantial difference in the health of any of the affected river reaches. The assertion that 12 sampling sites were evaluated does not appear to be borne out by Table 3.1-18 (which shows 10 sites), or by Table 3.1-19 (which shows 11 sites), or by the discussion in Chapter 4 under the heading Sampling Sites (see DEIS 4-15) which asserts eleven sites were identified for analysis. **Response #910-201:** Additional sites on Jim Creek, the Fraser River, Vasquez Creek, the Colorado River, and the Blue River were added to supplement the channel morphology analysis. The analysis was also expanded to include a qualitative assessment of channel stability at reconnaissance sites selected by the USFS and Denver Water and evaluated as part of the evaluation for Two Forks. General conclusions regarding channel stability and sediment transport conditions at these additional sites were reviewed and included to provide a better understanding of the similarities and differences between sample sites evaluated in the FEIS and other stream segments. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		Comment #910-198 *(ID 2594)**:*** *Page 3-67 Comment. In the first paragraph, sediment size should also be included in the comparison of channels. The sampling site selection based on "natural quality of the site" provides no details as to what natural qualities were selected for.* **Response #910-198:** The methodology for selecting sampling sites for channel dynamics was expanded in FEIS Section 3.2. ***Comment #910-184*** *(ID 2593)**:*** *Page 3-68 Comment. The modified Wolman pebble count method is outdated.* **Response #910-184:** Surface sediment sampling was accomplished following procedures outlined in the Sampling Surface and Subsurface Particle-Size Distributions in Wadable Gravel – and Cobble-Bed Stream for Analysis in Sediment Transport, Hydraulics, and Streambed Monitoring (Bunte and Abt 2001). Sampling included a sampling frame which has been shown to reduce bias and a gravelometer. Techniques followed industry standard and were appropriate for the stream types evaluated. ***Comment #910-197*** *(ID 2592)**:*** *Page 3-69 Comment. Table 3.1-18 shows that most of the tributary streams have Rosgen level A or Aa+, yet the "representative sample sites" include only one Rosgen A stream.* **Response #910-197:** An additional representative site was added on a Rosgen Type A stream, Jim Creek. ***Comment #910-196*** *(ID 2591)**:*** *Page 3-72 Comment. Table 3.1-19 discloses that at 4 out of 6 upstream "representative sampling sites"*

Comment Information	Comment	Comments and Responses
		aggradation is apparent, and as mentioned in the comment referencing page DEIS page 3-5, these sites don't even represent tributary streams well in the Williams Fork and Fraser river basins. Yet, in the section on DEIS page 4-21 and elsewhere in the environmental consequences chapter, it is repeatedly asserted "Results of the channel morphology analysis show that with or without the Moffat Project, sediment transport capacity greatly exceeds supply in all locations evaluated." The fact that the results of the channel morphology analysis are in direct conflict with field observations disclosed in the DEIS should indicate to the authors that something is gravely wrong with the channel morphology analysis. See comments on DEIS pages 3-68 and 4- 17, and ERC, 2006, Moffat Collection System Project Existing Channel Conditions Report. **Response #910-196:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. The study incorporates many factors including site observation, numeric modeling, historic data and sensitivity analysis in making its conclusions. Results are provided in Sections 4.6.3 and 5.3. ***Comment #910-195*** *(ID 2590)**:*** *Page 3-74 Comment. In St. Louis Creek, the DEIS discloses that there are "considerable amounts of moss and organic material attached to surface sediments." Again, this field observation contradicts and should trump the assertion based on a calculation on DEIS page 4-21 that transport capacity exceeds supply throughout the system.* **Response #910-195:** Please see the response to Comment ID 2878.

Comment Information	Comment	Comments and Responses
		Comment #910-194 *(ID 2589)**:*** *Comment. Paragraph 2: Particle sizes from riffles and runs should not be combined because the resulting sediment transport modeling (which is partially based on sediment size) could misrepresent the actual sediment transport in both morphological types.* **Response #910-194:** Particles were collected from the range of different features to obtain a composite of overall sediment. ***Comment #910-193*** *(ID 2588)**:*** *Page 3-76 Comment. Analysis of impacts to the Colorado River downstream of the confluence with the Williams Fork River should be considered despite the COE's assertion that average annual monthly flow changes would be less than 10%.* **Response #910-193:** DEIS Section 4.1.1.2 subheading, Colorado River Stream Flow includes a discussion of flows changes along the Colorado River below the confluence with the Williams Fork River. Each flow related resource section in the DEIS evaluated the effects for the Colorado River below the confluence with Williams Fork River. ***Comment #910-8*** *(ID 2587)**:*** *Page 3-84 Comment. It is inappropriate to leave the Colorado River out of the hydrologic budget development for this EIS, particularly as depletions may cause regions of this river to switch from gaining to losing reaches.* **Response #910-8:** Please see the response to Comment ID 2499. A simple hydrologic budget of a watershed would not be of any use in assessing whether some reaches of the Colorado River switch from gaining to losing reaches.

Comment Information	Comment	Comments and Responses
		Comment #910-7 *(ID 2586)**:*** *Page 3-85 Comment. The graphic from the Great Lakes region on this page is inappropriate for use in the Rocky Mountains and is misleading. The graphic used should show a fractured crystalline basement, base flow discharging to the river, and the development of an alluvial aquifer at altitude, with deepening of the aquifer at lower elevations. The lack of precision and accurate conceptualization of this system is indicative of the fundamental inaccuracies that pervade the groundwater discussion, particularly in Chapter 4.* **Response #910-7:** The groundwater section of the DEIS does not contain fundamental inaccuracies. Rather, the DEIS presents the available hydrogeologic information accurately, and at a general level that is appropriate for an EIS. The comment also reflects a misunderstanding of the purpose of providing this graphic in the DEIS. This schematic was intended to simply illustrate the major hydrologic components in watersheds. It was included to help the interested public reader to generally understand the major hydrologic components of the system and how they relate to one another. To preclude the possibility that this simple hydrologic budget presentation is misleading, it is not included in the FEIS. ***Comment #910-6*** *(ID 2585)**:*** *Page 3-86 Comment. The sections on the Fraser River and Williams Fork River should include a discussion of the influence of the Moffat and Williams Fork collection systems on groundwater. The decision not to consider evaporation from reservoirs in our arid climate in the west slope system seems very inappropriate and should be supported with a quantitative defense covering each instance: Dillon,*

Comment Information	Comment	Comments and Responses
		Green Mountain, Williams Fork, Windy Gap, and Meadow Creek Reservoirs. The DEIS references an Apodaca and Bails 2000 [sic] document, stating that groundwater in the Fraser basin is between 20 and 40 years old. In fact, the document says that groundwater is between 10 and 30 years old, or younger. [15] Simply because the document has aged by ten years does not mean that the groundwater in the basin is similarly static and aging in place. In addition, Apodaca and Bails refer the reader to their maps, where it can be seen that groundwater taken from further upstream tends to be younger than that taken from wells downstream, and they explain that oxygen depletion may have caused early degradation of some of the CFCs used to date the water, resulting in water appearing older than it really was. The authors of the DEIS use their interpretations to conclude that "influences of land use changes on the water quality of the basin may not be detected in the water supply aquifers for up to 40 years." The implication seems to be that this delay would also be true for changes to groundwater quantity, which would certainly be an unfortunate assumption, especially given that lower stream flows and recharge rates due to the project diversions would change hydraulic head, hydraulic gradients and groundwater surface elevations. FOOTNOTE: [15] Apodaca. L.E. and J.B. Bails. 1999. Fraser River Watershed, Colorado – Assessment of Available Water-Quantity and Water-Quality Data Through Water Year 1997, USGS WRIR 98-4255. **Response #910-6:** The influence of the Moffat and Williams Fork Collection systems on groundwater is described in DEIS Section 4.2 rather than in DEIS Section 3. The rate of evaporation from surface water reservoirs is, in this context, not relevant to the groundwater impact assessment. However, evaporation rates were

Comment Information	Comment	Comments and Responses
		included in the daily hydrology model (DEIS page 4-10). On page 3-86, the DEIS summarizes groundwater sample information from Apodaca and Bails (2000), and provides a correct reference citation to that report. The complete reference to that USGS report is provided in the references section of the DEIS. That USGS report includes these statements: "Water samples that were dated in the 1990s were collected from the alluvial aquifers. Most of the ground water sampled ranged in age from the late 1960s to early 1980s, indicating that the interval from the time the water recharged the aquifer to the time it was withdrawn from the aquifer was about 18 to 38 years. These dates indicate that changes in the land use in recharge areas may not affect the ground-water quality in the Fraser River watershed for 20 to 40 years; correspondingly, land-management practices may take 20 to 40 years to cause changes in ground-water quality." Therefore this section of the DEIS is correct as written. Moreover, the DEIS does not imply what the comment suggests. ***Comment #910-9*** *(ID 2584)**:*** *Page 3-87 Comment. The section on groundwater quality should include the low dissolved oxygen (<1.0 mg/L) and potentially reducing conditions which may be releasing the excess iron and manganese found near Tabernash as well as other observations by Bauch and Bails, 2004. [16] In addition, groundwater quality for the Williams Fork basin should include discussion of impacts from the Climax Mine's detention basin discharge to groundwater, as well as its surface water discharge. FOOTNOTE: [16] Bauch, N.J., and J.B. Bails, 2004, Water-Quality Characteristics and Ground-Water Quantity of the Fraser River Watershed, Grand County, Colorado,*

Comment Information	Comment	Comments and Responses
		1998-2001, USGS WRIR 03-4275. Pages 3-87 to -89 [Chapter 3 Hydrologic budget Tables 3.2-1 through 3.2-3]: 1. The tables do not account for recharge to groundwater. 2. The tables omit any change in groundwater storage, even though this variable is listed on DEIS page 3-85 and in the master equation. Groundwater storage is a critical component in this equation and in this and related sections. 3. It appears that some of the assumptions made for some of the groundwater budget variables are improper, or need further definition: a. GWub—groundwater underflow out of the basin through bedrock: boundary conditions need to be defined for this variable to make sense. This value is set equal to zero based on bedrock being "tight," which, though in conflict with text in Mr. Franklin's letter about recharge to fractured rock (DEIS appendix H11-ii), might be justified in the areas where Precambrian igneous and metamorphic rocks provide the watershed boundaries along the Continental Divide, but it would not be justified through the river valleys unless it was used only for the bottom boundary, with intervening layers of differing composition and transmissivity. b. GWua—groundwater underflow out of the basin through the alluvial aquifer: this value is said to be calculated as "the residual of the hydrologic budget," meaning it essentially captures the slop in the equation. This assumption is not acceptable when so many significant determinations are being made about groundwater as a result of this work. This value ought to be based on varying transmissivities of the substrate, hydraulic gradient, head, and other applicable properties and governing equations, as would result from development of an independent groundwater model. c. GWdb—groundwater discharge out of the basin as stream base flow: a thorough explanation in the DEIS needs to be provided explaining how base flow is calculated from what is primarily a surface water model. d. Esw—evaporation of surface water: this variable is left out,

Comment Information	Comment	Comments and Responses
		though the Fraser basin contains Meadow Creek Reservoir and Windy Gap (depending on boundary definitions), Williams Fork contains the Williams Fork Reservoir, and the Climax Mine ponds, and of course the Blue River should consider Dillon and Green Mountain Reservoirs. e. ET—evapotranspiration: It is not clear how evapotranspiration for the Fraser basin is 225,700 AF/year, over 297 square miles, but for the Williams Fork is only 69,300 AF/year, at just a slightly smaller area of 230 square miles, and not terribly dissimilar topography, especially considering that a majority of the trees are now dead. The text should include a table showing how these values are calculated. **Response #910-9:** It is unnecessary and potentially misleading to add text to the FEIS to describe the low dissolved oxygen values reported in Bauch and Bails (2004) because the comment's summary of these findings are taken out of context from that report, and are not typical of the overall groundwater quality conditions in the Fraser Valley. Prior to the sentence that mentions the low dissolved oxygen values in a couple of wells near Tabernash and a well near Fraser, Bauch and Bails (2004) state: "Most (76 percent) dissolved-oxygen concentrations measured in ground water for this study were greater than 1.0 mg/L." The report by Bauch and Bails (2004) does not include any information regarding water quality effects from the Climax Mine's detention basin discharge to groundwater, or surface water discharge. If such information exists, as is suggested in the comment, it is not clear why the information should be included it in this FEIS. The Project would not have any effect on any Climax mine discharges because it is located on the other side of the Continental Divide from the Williams Fork Basin.

Comment Information	Comment	Comments and Responses
		In Chapter 3, the hydrologic budget, Tables 3.2-1 through 3.2-3, do not separately list recharge to groundwater because this type of water balance is intended to simply illustrate the components of water flux into and out of the watersheds. Groundwater recharge is a relatively small portion of the average annual precipitation (P), typically estimated to be on the order of 10-20 % of P. But it is not possible to directly measure the recharge flux (water volume through time) within a watershed. Recharge rates vary temporally and spatially depending on a host of factors that either cannot be measured, or vary more rapidly than is feasible to measure at the scale of these basins. If any published reports had provided even approximate estimates of the annual recharge rates into these watersheds, those estimates would have been included in the DEIS. The remainder of the comment reflects a misunderstanding of the purpose of providing the hydrologic budget in the DEIS. This hydrologic budget is intended to simply illustrate the components of water flux into and out of the watersheds for a typical year. The budget is only semi-quantitative at best, and was included to help the interested public reader to generally understand the major hydrologic components of the system and how these major components relate to one another. This simple hydrologic budget presentation was not intended to provide a basis for detailed hydrologic analysis. Rather, the detailed hydrologic analysis for assessing the impacts of the Project are largely based on the PACSM and HEC-RAS, coupled with hydrogeologic experience and judgment. Details of the hydrologic modeling methodology are described in DEIS Section 4.1. Considering the tendency for over-interpretation of this simple hydrologic budget presentation as reflected by this comment, the hydrologic budget tables were removed from the FEIS.

Comment Information	Comment	Comments and Responses
		Comment #910-357 *(ID 2583)**:*** *Page 3-139 Comment. Section 3.6.5, like other flow-related resource sections, uses the 'representative sampling sites' to take a closer look at conditions at those sites. Again, we object to the use of these sites for this and for all other flow-related resources as they are not truly representative, as described in the comment for DEIS page 3-5.* **Response #910-357:** Please see the response to Comment ID 2582. ***Comment #910-356*** *(ID 2582)**:*** *Page 3-156 Comment. A 1.33 acre sampling site is determined to be representative of the entire Blue River reach from Dillon to Green Mountain Reservoir, an area that contains multiple land uses and vegetation communities. Similar data limitations exist for other stream segments, including those with multiple Rosgen stream types. The DEIS estimates over 9,000 acres of riparian communities were identified in the six affected river segments on page 3-141.* **Response #910-356:** Riparian vegetation along the overall river segments study area was generally characterized using CPW data sets, and a more detailed evaluation at one or more study sites was conducted in each focus stream segment to address the needs of several resources, including riparian. The detailed study sites were selected based on a preliminary level assessment of the stream type and field reconnaissance to evaluate the site characteristics as representative of the focus river segment, as well as a site's suitability for hydraulic modeling, the quality and type of riparian and wetland vegetation, land use or disturbance history, and accessibility. The detailed study site information was presented as an example of the communities that occur within a segment without

Comment Information	Comment	Comments and Responses
		suggesting that there isn't variability within each stream segment. The study sites provide a detailed look at impacts that would not be feasible over larger areas, and the results should be generally representative of the magnitude of impacts that could occur. The study sites represent a range of stream and riparian conditions. ***Comment #910-192*** *(ID 2581)**:*** *Page 3-203 Comment. The "study area" for the aquatic biological resources is not well defined. Was the study area limited to the affected river segments? COE should clarify the reach of the study area.* **Response #910-192:** FEIS Section 3.11 has been revised to include better definition of the study area for aquatic biological resources. ***Comment #910-191*** *(ID 2580)**:*** *Page 3-217 Comment. The screening for changes in "average annual" flows of 10% is inappropriate for determining impacts to the aquatic environment. The National Academy of Sciences noted in a recent report, that "planners operate on a monthly basis, but fish live on a daily basis." National Academy Science Report, 2007. Reclamation's use of monthly average flows was a fatal flaw in its Natural Flow of the Upper Klamath River study. Fish and other aquatic organisms respond to changes in flow that occur on much shorter time scales (hourly, daily). Accordingly, it is inappropriate to use a screening criterion based on changes in average annual flows.* **Response #910-191:** Please see the response to Comment ID 2843. ***Comment #910-190*** *(ID 2579)**:*** *Page 3-221 Comment. Paragraph 1: The distribution of the benthic macroinvertebrate community should*

Comment Information	Comment	Comments and Responses
		be shown to appropriately assess aquatic health (some species may be more indicative of high water quality and gravel bed habitat than others). **Response #910-190:** FEIS Section 3.11 has been revised to better describe the invertebrate communities, including more extensive description of species composition. ***Comment #910-189*** *(ID 2578)**:*** *Page 3-223 Comment. Paragraph 3: The DEIS describes "mildly diverted streams" as having less than 90% of the flow diverted. A diversion of 90% of the streamflow is hardly mild!* **Response #910-189:** The definitions of mildly and severely diverted streams were taken from the available literature. The FEIS has been revised to make this clearer. ***Comment #910-188*** *(ID 2577)**:*** *Page 3-224 Comment. CSU Professor LeRoy Poff has been collecting data in several Fraser River tributaries to assess the impacts of diversions on aquatic life. This information is readily available and should be included in DEIS Section 3.9 related to aquatic biological resources, especially considering that Professor Poff has been cited as a reference in the DEIS.* **Response #910-188:** FEIS Section 3.11 has been updated to include all available information, including information from Dr. Poff's students' research in the Fraser River Basin. ***Comment #910-187*** *(ID 2576)**:*** *Pages 3-228 and 3-230 Comment. Tables 3.9-10 and 3.9-12 show very extreme changes in the average density of fish (fish/ha) between 1993 and 2005 because only brook trout were sampled in 2005*

Comment Information	Comment	Comments and Responses
		whereas many species were sampled in 1993. Because the sample distribution is so different between the two sample periods, this is not a valid comparison. Average density should be shown by species. **Response #910-187:** The differences in species composition were due to different site locations in the two years. This has been explained in more detail in FEIS Section 3.11. ***Comment #910-186*** *(ID 2575)**:*** *Page 3-236 Comment. Paragraph 3: Fish population studies from 1978 and 1984 are outdated and may not accurately represent the current populations. More recent fish population studies should be conducted before drawing conclusions about the effects of the project on the fishery.* **Response #910-186:** FEIS Section 3.11 has been updated include more recent information. ***Comment #910-92*** *(ID 2574)**:*** *Page 3-282 and 3-283 Comment. These pages report that St. Louis Creek and the Williams Fork River have Colorado Merit Water Stream designation. Neither this chapter nor the cumulative impacts chapter discusses if this designation is threatened by the 2016 System, the Proposed Action, or Action alternatives.* **Response #910-92:** The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. Considering this information, a determination regarding the potential impacts to Merit Water and Gold Medal Water status was made.

Comment Information	Comment	Comments and Responses
		Comment #910-91 *(ID 2573)**:*** *Page 3-283 Comment. Paragraph 3: "High quality fishing" should be defined (i.e. fish per unit effort, number or variety of fish, pounds per acre).* **Response #910-91:** This discussion in FEIS Section 3.15.5.1 was revised and the term "high quality" was removed from the statement. ***Comment #910-182*** *(ID 2572)**:*** *Comment. Impacts to water-based resources should be evaluated from 2006 through 2030 by comparing 2006 Current Conditions to 2030 Full Use with Project, as was done for land-based resources.* **Response #910-182:** Please see the response to Comment ID 2860. ***Comment #910-17*** *(ID 2571)**:*** *Comment. The Council on Environmental Quality reports that "Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor affects of multiple actions over time."[17] FOOTNOTE: [17] "Considering Cumulative Effects Under the National Environmental Policy Act." Council on Environmental Quality, Executive Office of the President, January 1997* **Response #910-17:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #910-185*** *(ID 2570)**:*** *Page 4-7 Comment. The DEIS states that "Flows in the Fraser and Williams Fork river basins would decrease in average and wet years during the runoff months due to Denver Water's additional diversions."*

Comment Information	Comment	Comments and Responses
		This statement does not disclose the fact that additional diversions from the tributaries listed below in both Williams Fork and Fraser watersheds represent percent changes for these streams in non-runoff months that, while less than 0.5 cfs individually, are frequently significantly greater than percent changes in diversions during runoff months, and that, cumulatively, may represent as much as 6 cfs in total (DEIS Appendix H-3). Under Alternative 1a, so-called "representative study sites" experience flow reductions from just 9% to 24%. These represent some of the lowest reductions in flow shown in table H-7.1, and in some cases, such as at WF-2, FR-3, and FR-2, the low percent change is due to the inclusion of flows from un-diverted tributaries in the calculation. Nearly all of the tributaries in the Moffat and Williams Fork collection systems will experience flow reductions in the range of 22% - 100% (see list below). Impacts from such large flow reductions cannot be well represented by the study sites. Jim Creek; Little Vasquez Creek; Vasquez Creek; Elk Creek and Tributaries; St. Louis Creek Tributaries; King Creek; North Fork Ranch Creek and Dribble Creek; Middle and South Fork Ranch Creek; Steelman Creek; Bobtail Creek; Jones Creek; McQueary Creek. The total number of miles of creeks (almost 80) affected by these diversions is summarized below: (Tributary Name, Affected Length) Jim Creek, 0.9; Buck Creek, 0.6; Cub Creek, 0.5; Cooper Creek, 0.6; Short Creek, 0.2; West St. Louis Creek, 2.4; Iron Creek, 0.2; Byers Creek, 0.2; East St. Louis Creek, 0.5; Fool Creek, 0.9; King Creek, 1.4; St. Louis Creek, 9.7; West Elk Creek, 2; East Elk Creek, 0.1; West Fork main Elk Creek, 0.1; East Fork main Elk Creek, 0.3; Main Elk Creek, 4.7; Little Vasquez Creek, 1.3; Vasquez Creek, 3; Trail Creek, 3.5; Hamilton Creek, 3; Hurd Creek, 4.1; Meadow Creek, 5.8; North Fork Ranch Creek, 0.8; Dribble Creek, 0.5; Middle Fork Ranch Creek, 2; South Fork Ranch Creek, 2.7; Little Cabin Creek, 2.1;*

Comment Information	Comment	Comments and Responses
		Cabin Creek, 2.7; Main Ranch Creek, 10.6; Steelman Creek, 1.9; Bobtail Creek, 1.6; McQueary Creek, 0.4; Jones Creek; 0.2; Williams Fork, 8.1; Total river Miles, 79.6 [Table 3.1-18 DEIS]* *Whether or not these additional diversions represent the drying up of these tributaries for an additional number of months is not discussed, nor is it disclosed for how many months any of the tributaries are currently diverted to dryness, on average, or the effects of these actions. The current impacts of drying up those of the listed tributaries that do not have by-pass flows is also not discussed. While there are flumes in streams requiring bypass flows, there are no automatic stage recording devices, the flumes are in disrepair, and only a few have staff gages. Denver Water is not maintaining the gauges in the Englewood system per their 1970's era agreement with the Forest Service. There ought to be a reference here to tabular data that the public can access indicating what data were used and where it was measured. Not having flow monitoring equipment at headgates is out of Denver Water's right of way in the Englewood system. [SEE SOURCE FILE FOR FIGURE 4, HAMILTON CREEK, LATE SUMMER 2009, THERE IS NO WATER IN THE STILLING WELL, NO STAFF GAUGE, AND THE FLUME IS RUSTED AND BENT. (USFS)]* **Response #910-185:** Changes in flows in the non-runoff months are discussed on page 4-39 of the DEIS. Tables in Appendix H-3 were revised to present streamflows and changes in streamflows to the nearest tenth to clarify the magnitude of flow reductions during non-runoff months. There would be virtually no additional diversions from late summer through early spring except in infrequent, very wet years. Additional diversions occur in the winter in only 2 years out of the 45-year study period because Gross Reservoir was full under Full Use of the Existing System,

Comment Information	Comment	Comments and Responses
		whereas under the Proposed Action there was additional space in the reservoir so more water is diverted. In winter months when additional diversions take place, flows below the diversion would be equal to or higher than the average winter flows and always higher than the minimum flow. For example, in Table 3.3 (Below Denver Water's Diversions from Jim Creek), the average monthly percent flow reduction would be as high as 100% in October, however, the average flow in that month would decrease by 0.002 cfs from 0.002 cfs under Current Conditions to 0 cfs under the Proposed Action. As shown in Table H-3.1, average monthly diversions through the Moffat Tunnel increase by 0.7 cfs or less from September through April. Additional information was included in FEIS Section 4.6.1 on the frequency and duration that tributaries without bypass flows would be dried up. The flumes used to verify minimum bypasses within the Englewood's Cabin-Meadow Creek System, which are listed below, are generally in good condition. • Little Cabin Creek: A 9-inch Parshall Flume operates downstream of the diversion structure and is in good condition. • Cabin Creek: An 18-inch Parshall Flume operates just downstream of the diversion structure and is in good condition. This flume is near the access road and the USGS gauging station on Cabin Creek. • Hurd Creek: A 12-inch Parshall Flume operates just downstream of the diversion structure and is in good condition. • Trail Creek (North and South): The outlet structure on each diversion has a location where flow bypass measurements are taken when water is being

Comment Information	Comment	Comments and Responses
		diverted at North and South Trail creeks diversions from the Trail Creek Basin could be limited in any given year due to downstream senior diversions for irrigation. • Hamilton Creek: A 12-inch Parshall Flume operates just downstream of the diversion structure and is in good condition. • Meadow Creek: A structure that measures relatively low flows with a 2-foot Parshall Flume and higher flows with a 6-foot Parshall Flume operates immediately below Meadow Creek Dam and is in good condition. In addition, an 18-inch Parshall Flume measures the flow bypassed at the turnout to Englewood's Cabin-Meadow Creek System. With regard to Englewood's Cabin-Meadow System, Denver Water can provide information on water storage, release records, and stream flows. In addition, Denver Water is willing to furnish rating tables for its measurement flumes. Additional references sites were evaluated and modeled in areas with greater flow changes including a site on Jim Creek and a site on the Fraser River immediately downstream of its diversion point. Other locations with no bypass flows were evaluated qualitatively based on observed conditions. ***Comment #910-90*** *(ID 2569)**:*** *Page 4-8 Comment. Grand County disagrees with the conclusions of no impact or negligible impact to water quality in most streams and reservoirs, and of moderate impacts to Ranch Creek for reasons outlined variously throughout our comments on the DEIS, and particularly on the water quality and representative sampling site sections. In addition, the standard for purposes of 404 (b)(1) compliance is whether there would be "significant" degradation.*

Comment Information	Comment	Comments and Responses
		Response #910-90: Additional water quality analysis was performed for multiple stream segments, including most in Grand County. The FEIS conclusions on impacts are based on the DEIS analysis and the additional analysis noted and that is stated in FEIS Sections 4.6.2 and 5.2 ***Comment #910-89*** *(ID 2568)**:*** *Comment. The DEIS did not consider impacts to wastewater treatment plants (WWTPs) discharging to Dillon Reservoir which may be affected by fluctuating reservoir levels.* **Response #910-89:** NPDES discharges for those entities discharging into Dillon Reservoir were reviewed with respect to proposed reservoir levels in FEIS Sections 4.6.2. and 5.2. ***Comment #910-88*** *(ID 2567)**:*** *Comment. There are already significant temperature impacts to the Fraser River and Colorado River downstream from the confluence with Windy Gap as evidenced by listing on the 2010 Section 303d list. Future diversions will compound this problem. The DEIS conclusion of negligible to moderate impacts is wrong.* **Response #910-88:** Additional water quality analysis, including temperature, was performed for the Fraser River and the Colorado River. The FEIS conclusions on impacts are based on the DEIS analysis and the additional analysis noted and that is stated in FEIS Sections 4.6.2 and 5.2. ***Comment #910-183*** *(ID 2566)**:*** *Page 4-9 Comment. Grand County disagrees with the conclusions of "negligible impacts to channel*

Comment Information	Comment	Comments and Responses
		morphology," "sediment transport capacity exceeds available sediment supply," and "only minor amounts of localized sediment deposition are anticipated." These conclusions are in error because: 1) calculated values ignore system-wide empirical data to the contrary of calculated outcomes (see photos below); 2) representative sampling sites and focus river reaches have not been selected to be truly representative (see comments on DEIS pages 3-4 and 3-5); 3) the stream morphology analysis is flawed for a number of reasons further articulated in comments on the stream morphology pages from both chapters three and four; 4) sediment aggradation is a lagging indicator and this fact has not even been addressed in the DEIS; 5) this is the third rising of the Rocky Mountains, which necessarily involves massive amounts of erosional processes—it is preposterous to suggest that sediment transport capacity exceeds supply under both the existing reduced flow conditions and proposed circumstances of dramatically reducing flows in streams with bypass flows (impacting 11 streams, covering 72.2 miles) or in the majority of streams—those without bypass flows, completely eliminating the flow (24 streams, covering 27 miles) in tributary streams to the Fraser and Williams Fork Rivers; and 6) in some cases, data used for the stream morphology analysis is 24 years old. [See Figures 5 to 23 in the Source File pgs. 70-76: "FIGURE 5 AGGRADATION IN UPPER FRASER RIVER, BELOW DENVER WATER DIVERSION, BUT ABOVE WPWSD INTAKE." "FIGURE 6 AGGRADATION IN UPPER FRASER RIVER, BELOW DENVER WATER DIVERSION, BUT ABOVE WPWSD INTAKE." "FIGURE 7 AGGRADATION IN UPPER FRASER RIVER, BELOW DENVER WATER DIVERSION, BUT ABOVE WPWSD INTAKE." "FIGURE 8 AGGRADATION AND EMBEDDEDNESS IN FRASER RIVER BETWEEN WPWSD INTAKE AND TOWN OF WINTER PARK." "FIGURE 9

Comment Information	Comment	Comments and Responses
		AGGRADATION AND EMBEDDEDNESS IN FRASER RIVER BETWEEN WPWSD INTAKE AND TOWN OF WINTER PARK." "FIGURE 10 AGGRADATION AND EMBEDDEDNESS IN FRASER RIVER BETWEEN WPWSD INTAKE AND TOWN OF WINTER PARK." "FIGURE 11 AGGRADATION IN THE FRASER RIVER BETWEEN THE TOWN OF FRASER AND THE FCWWTP." "FIGURE 12 AERIAL PHOTOGRAPH OF RANCH CREEK SHOWING NATURAL SOURCE OF SEDIMENT SUPPLY." "FIGURE 13 RANCH CREEK SHOWING EMBEDDEDNESS OF COBBLES." "FIGURE 14 RANCH CREEK SHOWING A TROUT REDD JUST ABOVE PHOTO CENTER. COVERAGE BY GREATER THAN 25% FINE SEDIMENT WILL TRANSLATE TO JUVENILE MORTALITY." "FIGURE 15 SEDIMENT SUPPLY IN FRASER CANYON." "FIGURE 16 AGGRADATION EVIDENCED BY LARGE SAND BAR IN FRASER RIVER BETWEEN CANYON AND GRANBY." "FIGURE 17 TROUT REDDS PRESENT HERE IN THE HYDROLOGIC CONTROL CHANGE-POINT ARE ALSO PRESENT WHERE FINE SEDIMENT IS MOST LIKELY TO DEPOSIT IN LOW-FLOW CONDITIONS, THREATENING VIABILITY OF THE SPAWN. FRASER RIVER NEAR GRANBY." "FIGURE 18 EMBEDDEDNESS OF COBBLES IN FINE SEDIMENT AND ATTACHED ALGAE IN COLORADO RIVER BELOW WINDY GAP." "FIGURE 19 AGGRADATION EVIDENT IN THIS AERIAL PHOTOGRAPH OF THE CONFLUENCE OF THE WILLIAMS FORK AND COLORADO RIVERS." "FIGURE 20 AGGRADATION IN THE WILLIAMS FORK RIVER BELOW THE RESERVOIR." "FIGURE 21 A MID-CHANNEL BAR IN THE COLORADO RIVER FROM THE KB DITCH TO THE CONFLUENCE WITH THE BLUE RIVER IS A SURE SIGN OF AGGRADATION." "FIGURE 22 MID-CHANNEL BARS DEMONSTRATING AGGRADATION IN THE COLORADO RIVER FROM

Comment Information	Comment	Comments and Responses
		BELOW CONFLUENCE WITH THE BLUE RIVER TO PUMPHOUSE." "FIGURE 23 UNREMEDIATED VASQUEZ TUNNEL CONSTRUCTION PILES PROVIDING ADDITIONAL SEDIMENT SUPPLY TO VASQUEZ CREEK." **Response #910-183:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. This is particularly true in locations where flow velocities decrease, either in response to natural or manmade hydraulic control (pipes, diversions, grade controls). In these areas localized deposition occurs. As described in the FEIS, these localized areas would be susceptible to additional deposition with future flow reductions. Features such as point bars, eroding banks and eddies are natural features that should be expected in the channel. Additional sediment sampling and modeling sites were analyzed as part of the FEIS. Sediment supply equations used in the FEIS were derived from an extensive field sediment sampling program conducted within the impacted watersheds for the Two Forks EIS. Sediment supply equations were based on measured sediment loads and therefore account for subsurface materials that are transported at higher flow rates. Additional information on sediment supply equation derivation is provided in FEIS Section 4.6.3. Sensitivity analyses were performed to evaluate impacts of sediment transport and supply equations on predicted results. Historic data were also evaluated to provide additional insight to past and current stream conditions. The analysis was also expanded to include a qualitative assessment of channel stability at reconnaissance sites selected by the USFS and Denver Water and evaluated as part of the evaluation for Two Forks. General conclusions

Comment Information	Comment	Comments and Responses
		regarding channel stability and sediment transport conditions at these additional sites were reviewed and included to provide a better understanding of the similarities and differences between sample sites evaluated in the FEIS and other stream segments. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-181*** *(ID 2565)**:*** *Page 4-9 Comment. The statement "sediment transport capacity is orders of magnitude greater than available sediment supply" cannot be true for the upper Fraser River where the channel is aggrading due to the contributions of unrecovered traction sand from Berthoud pass. Furthermore the statement leads Grand County to believe that "sediment" has been very narrowly defined, and may not bear significant relation to what ought to be discussed here; flows that are optimal for maintaining both the channel and aquatic habitat.* **Response #910-181:** The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic data, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Impacts of traction sand on the Fraser River were included in the assessment. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		Comment #910-180 *(ID 2564)**:*** *Page 4-10 Comment. The PACSM model, the input and output, and the assumptions for all scenarios need to be disclosed to Grand County's consultants and the public in general. The DEIS should disclose who ran PACSM for the COE.* **Response #910-180:** In a letter dated May 18, 2009, Grand County provided comments for the Moffat Collection System EIS on several PACSM-related documents. The Corps response to that letter dated July 19th included electronic copies of numerous documents and operating memoranda provided by Denver Water, which addressed specific requests for information by Grand County. The Corps believes that the information provided to Grand County in addition to the following PACSM-related documents are sufficient to assess the adequacy of PACSM and the related predictions regarding water availability and hydrologic impacts. • Memo dated December 30, 2003, re: Summary of Phase 1-Task 3, Moffat Project • Memo dated March 11, 2004, re: Final Review of PACSM Modifications • Memo data May 8, 2006, re: Review of Lower South Platte River Extension to PACSM • Memo dated November 29, 2006, re: Review of Modifications Made to PACSM to Reflect the Baseline Scenario and EIS Alternatives In some instances, information requested by Grand County was not obtained by the Corps' consulting team from Denver Water for the purposes of the EIS. That information was not used to support conclusions in the DEIS, therefore, it was not provided to Grand County. The Corps does not require Denver Water to

Comment Information	Comment	Comments and Responses
		release an executable version of PACSM, however, the public may request from Denver Water use of PACSM at Denver Water's office within the terms and conditions of a disclaimer. The FEIS discloses that Denver Water executed PACSM for the Corps FEIS Section 4.6.1, subheading Description of the Model. ***Comment #910-178*** *(ID 2563)**:*** *Comment. Please provide a citation to "the Colorado water laws" and a list of "numerous contractual and operating agreement" that constrain the model.* **Response #910-178:** PACSM simulates the physical system and water rights as administered under the Prior Appropriation Doctrine. Please refer to the memorandum, Summary of Phase I-Task 3, Moffat Project EIS (Boyle 2003), for a discussion of key contractual and operating agreements reflected in the model. A reference to this memorandum was included under the DEIS Section 4.1, subheading Description of the Model. ***Comment #910-177*** *(ID 2562)**:*** *Comment. The model ends in 1991. The model should be extended to cover the more recent hydrological system including droughts in the 2000s.* **Response #910-177:** Please see the response to Comment ID 2509. ***Comment #910-179*** *(ID 2561)**:*** *Comment. The study period for PACSM extends 45 years from Water Years 1947 through 1991 and includes a variety of hydrologic conditions, such as dry, wet, and average years. The following scenarios were evaluated using PACSM: Current Conditions (2006), Full Use Existing System (2016), Action Alternatives - Proposed Action (Alternative 1a) and*

Comment Information	Comment	Comments and Responses
		Alternatives 1c, 8a, 10a, and 13a, and No Action Alternative. Results of these four PACSM scenarios should be compared against pre-1947 hydrology to truly evaluate cumulative impacts of current conditions and proposed future depletions on pre-development, native stream flows. **Response #910-179:** Please see the response to Comment ID 2510. The effects of historic reductions in flow are considered in Chapter 3 since the current state of the affected environment is a function of Denver Water's past and present operations and diversions. To provide more information on the impacts of past and current operations on native or natural stream flows, Section 3.1 in the FEIS was revised to provide a discussion of the natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver Water is estimated to divert under Current Conditions, Full Use of the Existing System and each of the Moffat Project alternatives. The impact analysis was also revised in the FEIS to present total environmental effects in Chapter 4 based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs. The Corps finds that this evaluation and consideration of past events is adequate to inform decision-makers of the significance and consequences of the potential Project alternatives in the context of past events. ***Comment #910-176*** *(ID 2560)**:*** *Page 4-11 Comment. It is appropriate to point out here that the Flow data used in model scenarios is now 19 years old.*

Comment Information	Comment	Comments and Responses
		Response #910-176: Please see the response to Comment ID 2509. ***Comment #910-278*** *(ID 2559)**:*** *Page 4-12 Comment. Figure 4.1-1 is shown not to scale intentionally to obscure the fact that the slope of the line between 2006 and 2016 is actually much steeper than the slope post 2016, and would graphically illustrate the front-loading of demand (as illustrated in our comments from Bishop Brogden Associates) into the earlier period in order that effects from the project can appear minimized by contrast. Please show this plot to scale.* **Response #910-278:** The purpose of Figure 4.1-1 was and is to graphically represent how future water demands would relate to supplies over time. The key features of this graphic are the dates when demands would exceed supplies and when the additional 18,000 AF of new supply would be fully required by Denver customers. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) (note that the socioeconomic analysis also referred to more recent data that was obtained in 2010) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #910-277*** *(ID 2558)**:*** *Page 4-13 Comment. The five driest years for the West Slope were based on measurements in Kremmling, and are not as meaningful for the*

Comment Information	Comment	Comments and Responses
		analysis as they could be, had they been selected from a point further upstream in the Fraser, Williams Fork, or Colorado Rivers, where the impacts of the project are more heavily expressed. **Response #910-277:** Other locations further upstream of the Colorado River near Kremmling gage were considered when evaluating the methodology for selecting the five driest years for the West Slope. For example, based on natural flows at the Fraser near Winter Park gage, four of the five driest years, including 1954, 1963, 1977, and 1981, were similar to the five driest years at the Kremmling gage. The only difference in the five driest years at the Fraser River near Winter Park gage compared to the Kremmling gage was 1955, however, that was the eighth driest year at that location as opposed to the fifth driest year at the Kremmling gage. The five driest and wettest years selected were reasonably similar at locations upstream of the Kremmling gage. For example, Table 5 in the Joint Rebuttal Report shows that 1983 and 1984, which are included in the PACSM study period and in the wet year average, were the two wettest years at almost all locations shown in the table. ***Comment #910-271*** *(ID 2557)**:*** *Page 4-15 Comment. Paragraph 2: The DEIS applies channel morphology and sediment transport data from the Two Forks EIS. This is not appropriate considering the fact that flow impacts vary between the two projects. Flow is the main driver for sediment transport and resulting sediment transport impacts should be analyzed separately for the Moffat DEIS.* **Response #910-271:** Sediment supply equations used in the FEIS were derived from an extensive field sediment sampling program conducted within the impacted watersheds for the Two Forks EIS. Sediment supply equations

Comment Information	Comment	Comments and Responses
		were based on measured sediment loads and therefore account for subsurface materials that are transported at higher flow rates. Additional information on sediment supply equation derivation is provided in FEIS Section 4.6.3. Sediment transport data was not derived from the Two Forks EIS but was calculated based on current site surveys, hydraulic modeling and sediment transport analysis specific to the Moffat Project. Flow impacts evaluated for this study were based on daily flows specific to the Moffat Project. ***Comment #910-269*** *(ID 2556)**:*** *Comment. The DEIS states that at many focus sites the sediment transport capacity is much greater than the sediment supply. This assumption is flawed due to the fact that in order to attempt equilibrium, a stream will carry all of the sediment that it has capacity to carry at any given time. Therefore, if the streams in the Moffat system were truly sediment limited, degradation would likely be observed currently. This is not the case, and in fact some streams within the Moffat Collection system are currently experiencing aggradation.* **Response #910-269:** Sediment transport capacity can exceed sediment supply without incision. This situation often occurs in stream with armored beds and banks. This is supported by historical evidence as past flow diversions, which decreased flows and sediment transport capacity, have not resulted in systematic degradation. ***Comment #910-175*** *(ID 2555)**:*** *Page 4-17 Comment. Paragraph 2: The DEIS states that "Transport capacity of individual finer material sizes important for mobilization of materials was computed." However, it is not clear whether or not the*

Comment Information	Comment	Comments and Responses
		Meyer-Peter Muller (MPM) was used for this purpose. Additionally, it is not clear whether or not the finer material may potentially be transported as suspended load (which was not calculated). **Response #910-175:** For the FEIS, sediment transport was evaluated using the MPM and other transport equations. Additional assessments including sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport were completed. Results are provided in FEIS Sections 4.6.3 and 5.3. An assessment of transport capacity for suspended load was not completed as channel morphology of streams in the Project area is not impacted by suspended loads. ***Comment #910-174*** *(ID 2554)**:*** *Comment. The DEIS explains "This study evaluated the magnitude of flow required to mobilize very fine gravel (4.0 millimeter [mm]). Flows necessary to transport these material classes would also be able to transport finer materials including sands and silts." Four millimeter gravel is not the size of sediment that maintains stream channels, and the assumption that flows of this magnitude are sufficient to mobilize finer particulates ignores the "hiding factor" and the affinity of very fine clays for other charged particles that may not be overcome by the force of weak flows.* **Response #910-174:** Additional assessments including sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport were completed. Results are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-173*** *(ID 2553)**:*** *Page 4-18 Comment. "In some instances, HEC-RAS results estimated unreasonably high sediment*

Comment Information	Comment	Comments and Responses
		transport capacities at very low flow levels." This is further indication that the equations used for calculating impacts to stream morphology are incorrect. **Response #910-173:** Please see the response to Comment ID 2552. ***Comment #910-172*** *(ID 2552)**:*** *Comment. Paragraph 1: The DEIS states that sediment transport capacity at low flow levels was calculated by linearly extrapolating the low end of the transport capacity curve. Generally, sediment transport is not related linearly with flow. While it is stated that the results were determined to be accurate, the methodology for determining accuracy is not described.* **Response #910-172:** Irregularities in sediment transport occurred at some locations at low flows. It is acknowledged that uncertainty exists in these instances and transport capacity was estimated using professional judgment in these instances. As this extrapolation only occurred at the lowest end of the transport capacity curve, minimal transport is occurring therefore this assumption has a negligible impact on results. As part of the FEIS, a sensitivity analysis of sediment supply and sediment transport equations were completed. Results are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-87*** *(ID 2551)**:*** *Page 4-22 Comment. "This definition considers changes in concentration; however, it is unlikely that a change in stream flow less than 15% would result in a change in concentration more than 15% for stream segments with ambient conditions well within water quality standards". This statement assumes that all water quality parameters are well within standards. This criterion somehow has not resulted in closer*

Comment Information	Comment	Comments and Responses
		scrutiny of water quality conditions for the most heavily impacted tributaries with depletions equaling 100% for many months of the year (appendix H3). The Union Pacific Railroad and Climax Mine discharges are inexplicably overlooked in this series of bullet points, and in the water quality analyses. **Response #910-87:** Please see the response for Comment ID 2504. Additional water quality analysis was performed, including the Moffat Tunnel and Climax Mine discharges. Please see FEIS Sections 4.6.2 and 5.2. ***Comment #910-86*** *(ID 2550)**:*** *Comment. The approach to screening for water quality impacts based on 15% change in average annual flows is flawed. In spite of the purported link to CDPHE's Antidegradation Guidance, there is none. That analysis is for new or increased discharges of pollutants. Most water quality problems associated with new diversions occur during lower flows as confirmed by the timing of existing temperature excursions, so the 15% annual average diversion is misleading. While it may be true that there is some connection between the percent change in flow and water quality changes, this water quality analysis should be performed as a mass balance on a monthly time step to estimate actual changes, or otherwise modeled using one of the many water quality models, such as SSTEMP.* **Response #910-86:** The 15% screening tool was but one screening tool used. SSTEMP does not provide for evaluation of constituents beyond temperature. ***Comment #910-77*** *(ID 2549)**:*** *Comment. Limiting evaluation to existing exceedances of numeric water quality standards, or Section 303d listing, or an existing Total Maximum*

Comment Information	Comment	Comments and Responses
		Daily Load (TMDL) only points to where problems currently exist that could be made worse. The DEIS methodology does not allow for consideration of water quality situations where marginal water quality situations could be made worse and potentially result in exceeding water quality standards. **Response #910-77:** The DEIS methodology included evaluation of stream segments where one or more constituents were near the regulatory limit, thus also highlighting areas with marginal water quality. ***Comment #910-85*** *(ID 2548)**:*** *Comment. Focusing evaluation of water quality impacts on only streams segments where flows increase or decrease by 15% eliminates the evaluation of impacts on streams where water temperature are currently on the verge of exceeding state water quality standards. Small decreases in stream flow (less than 15%) are likely to increase the frequency of state water temperature standard violations in streams that are close to, or already above, DM and/or MWAT water temperature standards. An increase in concentration of certain water quality parameters by less than 15% may still be a significant impact to wastewater treatment plants with discharge permit limits controlled largely by anti-degradation due to loss of assimilative capacity.* **Response #910-85:** Please see the response to Comment ID 2546. ***Comment #910-84*** *(ID 2547)**:*** *Page 4-23 Comment. The following has not been done for any of the 35 tributary diversions in the DEIS: "Evaluate water quality upstream and downstream of potential changes to determine differences and likely causes for those differences." This evaluation should be conducted and*

Comment Information	Comment	Comments and Responses
		incorporated into the DEIS. **Response #910-84:** Water quality data on which to base an evaluation was limited on the major tributaries and is not available for every minor tributary. ***Comment #910-83*** *(ID 2546)**:*** *Page 4-25 Comment. It is not appropriate to use water quality data for current conditions (2000 to 2007) to evaluate Full Use or Alternatives. At minimum some sort of mass balance should be done to project future conditions based on depleted flows. Changes in average annual flow of 15% or more should not be used to limit analysis. Flow and concentrations should be examined together, and at least on a monthly basis to be meaningful.* **Response #910-83:** Please see the response to Comment ID 2504. Note that the 15% screening criteria was applied on a monthly, not an annual basis. Using Current Conditions (2006) for water quality is more conservative than projecting future water quality. ***Comment #910-82*** *(ID 2545)**:*** *Comment. Using a 15% change screening tool in average annual flow, combined with a change in effluent/stream ratio of 15% or more is not meaningful to evaluate impacts to or from wastewater treatment plants (WWTP). The impacts to WWTPs should be evaluated at the periods of the year that are critical for specific water quality constituents on a parameter by parameter basis.* **Response #910-82:** Please see the response to Comment ID 2504. Additional analysis of permitted WWTP discharges was performed for the FEIS. Please see FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #910-81 *(ID 2544)**:*** *Comment. Impacts to WWTPs' discharge permits will occur in situations other than reductions in the statistical acute and chronic low flows, most notably by loss of assimilative capacity, and those situations may result in more stringent antidegradation based effluent limits.* **Response #910-81:** Please see the response to Comment ID 2864. ***Comment #910-71*** *(ID 2543)**:*** *Comment. No consideration is given to WWTPs discharging to Dillon Reservoir.* **Response #910-71:** Permit conditions for those entities were reviewed with regard to projected reservoir levels at Dillon Reservoir. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-80*** *(ID 2542)**:*** *Page 4-26 Comment. It is inappropriate to avoid detailed evaluation of the existing reservoirs based on the unsupported statement that "existing reservoirs would see little change in operation, and little to no change in influent water source and quality." Based on this assumption, water quality in Meadow Creek and Windy Gap is completely ignored, regardless of the impact that pumping of more concentrated Fraser flows into the Colorado Big-Thompson system will have. Similarly, Williams Fork reservoir will see greater variations in reservoir levels (DEIS page 4-27), increasing nutrient releases from exposed sediments and fugitive dust. Combined nitrite/nitrate values, dissolved oxygen and pH are already problems there and will likely be exacerbated, potentially causing other water quality issues. Evaluation methods for Gross Reservoir are likely outdated and are not dynamic.*

Comment Information	Comment	Comments and Responses
		Response #910-80: Additional evaluation of water quality for the Fraser River and the Three Lakes area was performed. Additional analysis was performed to provide clearer discussion of changes from Current Conditions (2006) to Full Use of the Existing System, to Full Use with a Project Alternative (2032). Please refer to FEIS Sections 4.6.2 and 5.2. The Corps believes methods used for Gross Reservoir analysis are appropriate for the EIS because they are scientifically established and accepted methodologies. ***Comment #910-76*** *(ID 2541)**:*** *Page 4-26 Comment. Paragraph 1: The DEIS concludes that existing reservoirs would see little change in operation and little to no change in influent water source and quality. However, water quality changes in West Slope reservoirs are still possible if the volume of inflow is decreased and existing stream pollutants are less diluted.* **Response #910-76:** Additional water quality analysis was performed for the Three Lakes system. There is only one permitted discharge upstream of Williams Fork Reservoir, thus there would be little impact to reduced inflow. Dillon Reservoir volume compared to permitted discharge upstream of the reservoir is extremely large and the Project would not reduce inflow into Dillon Reservoir, thus there would not be an impact as described in the comment. There would be no changes in inflow to Muddy Creek Reservoir. Potential impacts to the Blue River due to discharge from the joint sewer authority (JSA) permitted discharge in combination with changes in flow upstream of Green Mountain Reservoir were evaluated in more detail as presented in FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #910-70 *(ID 2540)**:*** *Page 4-27 Comment. The DEIS does not evaluate potential impacts to Williams Fork Reservoir that could result from a change in inflow timing.* **Response #910-70:** Additional evaluation of dissolved oxygen levels (potential violations of State water quality standards have been identified) upstream and downstream of the reservoir has been performed in FEIS Sections 4.6.2 and 5.2. Potential impacts to the reservoir related to timing are described. ***Comment #910-75*** *(ID 2539)**:*** *Comment. Maximum monthly changes in end-of-month reservoir contents should be addressed on a greater level of detail than averages. Averages tend to understate the possible maximum effects from the project.* **Response #910-75:** Maximum monthly changes in reservoir elevation over the study period are presented for each reservoir in the study area. Elevation is a more meaningful parameter than content in the analysis of impacts on resources, particularly recreation and economic resources. Change in monthly content, without translation to change in elevation, is not an input to analysis of effects from the Project. ***Comment #910-79*** *(ID 2538)**:*** *Page 4-28 Comment. Water quality in Williams Fork Reservoir is not dependent only on upstream water quality, but also depends upon thermal stratification, insolation, internal and external nutrient contributions, mechanical mixing, gains and losses to groundwater and a host of other factors.*

Comment Information	Comment	Comments and Responses
		Response #910-79: FEIS Sections 4.6.2 and 5.2 have been edited to reflect the factors noted in the comment. The biggest potential impact from the Project to Williams Fork Reservoir is the potential change in timing and quality of inflows to the Williams Fork Reservoir. ***Comment #910-69*** *(ID 2537)**:*** *Page 4-29 Comment. Changes in Dillon Reservoir levels may affect WWTPs' mixing zones and, therefore, their discharge permit limits.* **Response #910-69:** Permit conditions for those entities were reviewed with regard to projected reservoir levels. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-78*** *(ID 2536)**:*** *Page 4-30 Comment. Wolford Mountain Reservoir is on the 2010 Section 303d list for Dissolved Oxygen (DO) with temperature problems cited. Although the Moffat Project will alter the operation of Wolford Reservoir, no evaluation of how this change in reservoir operation may affect the DO problem is provided.* **Response #910-78:** The Project would not significantly alter the operation of Wolford Mountain Reservoir. There would be significant changes in the operation of Wolford Mountain Reservoir with Full Use of the Existing System conditions as compared to Current Conditions (2006). Water quality on Muddy Creek, including Wolford Mountain Reservoir, is reported in FEIS Sections 4.6.2 and 5.2. ***Comment #910-276*** *(ID 2535)**:*** *Page 4-34 Comment. Section 4.1.1.2 on Fraser River stream flows presents monthly stream flows only in the month of June for all of the tributaries, obscuring*

Comment Information	Comment	Comments and Responses
		the fact that in many instances per DEIS Appendix H-3 Tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28 depletions throughout the year for tributaries without bypass flows frequently reach 100% (examples include Cooper Creek, Little Vasquez Creek, Cub and Buck Creeks, St. Louis Creek, King Creek, Elk Creek). In contrast, depletions in June are quite a bit smaller. Similarly, statements like "There would be virtually no additional diversions from late summer through early spring except in infrequent, very wet years" are misleading. The additional diversions shown in the tables mentioned above occur in average years, and simply because a diversion is less than 0.5 cfs does not mean that it can be dismissed because it represents a comparatively small flow—the cumulative diversions from such streams may represent as much as 6 cfs! **Response #910-276:** DEIS Section 4.1.1.2 presents the maximum average, wet and dry monthly flow changes. In all locations the maximum average monthly flow reduction occurs in June. While the percent flow reduction may be greater during the winter months, the magnitude of the flow decrease is greatest during June. For example, in Table 3.3 (Below Denver Water's Diversions from Jim Creek), the maximum average flow change is 4 cfs or 46% in June. The average monthly percent flow reduction would be as high as 100% in October, however, the average flow in that month would decrease by 0.002 cfs from 0.002 cfs under Current Conditions to 0 cfs under the Proposed Action. The statement that there would be virtually no additional diversions from late summer through early spring except in infrequent, very wet years is accurate. Additional diversions occur in the winter in only 2 years out of the 45-year study period because Gross Reservoir was full under Full Use of the Existing System, whereas under the Proposed Action there was additional space in the reservoir so more

Comment Information	Comment	Comments and Responses
		water would be diverted with the Moffat Project on-line. In winter months when additional diversions take place, flows below the diversion would be equal to or higher than the average winter flows and always higher than the minimum flow. As shown in Table H-3.1, average monthly diversions through the Moffat Tunnel increase by 0.7 cfs or less from September through April. The tables in Appendix H were revised to show flows and diversions and expected changes to the nearest tenth. ***Comment #910-324*** *(ID 2534)**:*** *Page 4-35 Comment. Paragraph 1: "Several of the smaller tributaries that Denver Water diverts from are combined and modeled jointly." It is not clear exactly how the diversions from these tributaries are combined and what effects this may have in the PACSM modeling. Even if diversions from these streams are of "similar magnitude and timing," it may be important to assess the impacts to each of the streams individually, particularly if the current conditions and biota differ amongst streams.* **Response #910-324:** The approach taken to combine and model smaller tributaries jointly is reasonable because tributaries that were combined are located in close proximity, diversions are of similar magnitude and timing, there is little or no gage data that could be used to model them separately, and the affected environment was similar. For example, Cub and Buck creeks were modeled jointly. These creeks have no gages, they are within one mile of each other, and the elevation, size and aspect of the contributing watersheds to these creeks are similar. There is also little difference in the affected environment along these tributaries, in which case it is reasonable to combine them.

Comment Information	Comment	Comments and Responses
		Comment #910-323 *(ID 2533)**:*** *Page 4-36 Comment. Paragraph 1: According to the DEIS, increased Moffat diversions would occur in 34 out of 45 years. This statement is misleading and implies that there would be 11 dry years (the DEIS previously states that no additional diversions would occur in dry years). According to Appendix H, only 5 dry years are considered. The same conclusions are shown in paragraph 1 of page 4-39, which states that "Monthly flows would decrease in 33 years out of the 45-year study period." The DEIS should state how many years could be considered 'dry years' based on this methodology at 2016 and 2030.* **Response #910-323:** The discussion of additional Moffat system diversions was revised in the FEIS as follows. With a Moffat Project on-line there would be no additional diversions in dry and below average years when Denver Water already diverts the maximum amount physically and legally available based on their current system and water rights. The five dry years considered in the dry-year averages presented in Appendix H are the five driest years in the study period from 1947 through 1991 based on the estimated natural flow at the USGS gage, Colorado River near Kremmling, as described on page 4-13 of the DEIS. The definition of a dry year depends on the years included in the study period and the selection criteria. The dry year average presented in the DEIS represents the driest 10% of the study period. There are other below average years in the study period, however, they are not as severe as the five years included in the dry year average. The purpose of developing dry year average flows is to characterize hydrologic effects in years when flows are below average.

Comment Information	Comment	Comments and Responses
		Comment #910-322 *(ID 2532)**:*** *Comment. Paragraph 2: PACSM reduces the by-pass flows by 70% in cases when estimated reservoir contents are less that 65% in July. It is unclear why 70% was the selected reduction amount. Further, the DEIS does not describe other potential dry-year changes throughout the Denver Water system, both on the supply and demand sides, that may dramatically change the firm yield. All water contract obligations have potential reductions during drought conditions, as well as other reduced bypass obligations at other locations (e.g. Dillon outflows, South Boulder Creek releases). If Denver Water is modeling reduced bypasses here during drier conditions, similar effects should be modeled throughout their system. The changes at other locations may dramatically modify the need for reduced bypasses at these locations.* **Response #910-322:** Bypass flows were reduced to 70% of the bypass requirement when Denver Water's total reservoir contents were less than 65% full in July because that is reasonably consistent with the reductions that historically occurred when bypass flows were reduced from September 2002 through July 2004. The DEIS describes what would occur if Denver Water implemented their Drought Response Plan to reduce water demands during drought periods in DEIS Section 2.10.2.2. Denver Water has the ability to reduce certain raw water contract deliveries during drought conditions. The discussion in DEIS Section 2.10.2.2 was expanded to describe potential reductions in raw water contract obligations during drought conditions. Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to

Comment Information	Comment	Comments and Responses
		droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Denver Water has the ability to reduce bypass flows below Dillon, Eleven Mile Canyon, and Cheesman reservoirs and below Strontia Springs Reservoir to the Kassler Pump Station under certain circumstances, however, Denver Water cannot reduce bypass flows on South Boulder Creek as indicated in the comment. Denver Water would not divert native South Boulder Creek water from November through March if those diversions cause flows in South Boulder Creek to fall below 7 cfs. Denver Water could reduce bypass flows below Eleven Mile Canyon and Cheesman reservoirs if it is determined that operations under the South Platte Protection Plan would result in loss of existing or future water supplies. This is how Denver Water currently operates and would continue to operate in the future, however, they have not reduced those bypass flows historically. Bypass flows were historically reduced in the Fraser River Basin due to the concern that Denver Water would deplete their North System supplies. Denver Water has not reduced bypass flows below Eleven Mile Canyon, Cheesman and Strontia Springs Reservoirs because the conditions under which those bypass flows can be reduced were not met. Denver Water could have reduced bypass flows below Dillon Reservoir

Comment Information	Comment	Comments and Responses
		historically based on the provisions of that agreement, however, Denver Water did not exercise that option. Even if Denver Water chose to reduce bypass flows below Dillon Reservoir and their South Platte Reservoirs, the increased yield generated would not be sufficient to alter reductions in bypass flows in the Fraser River Basin, particularly since supplies from the Blue River and South Platte River cannot be delivered to the Moffat Treatment Plant and raw water customers upstream of that plant. The Proposed Action would not increase the conditions under which Denver Water may reduce bypass flows or affect Denver Water's ability to meet bypass flows below those reservoirs. Any reduction in bypass flows or other proposed flow regimes would be a function of Denver Water's existing operations, not the proposed Moffat Project. Since the Proposed Action increases Denver Water's firm yield, system reliability and flexibility, the conditions under which Denver Water may reduce bypass flows could potentially occur less frequently. Additional information was included in FEIS Sections 3.1 and 4.6.1 on bypass flow reductions. ***Comment #910-321*** *(ID 2531)**:*** *Comment. Paragraph 3: "The maximum monthly average increase in diversions would occur in June, with a 106 cfs or 31% increase. In wet years, the maximum monthly average increase in diversions would also occur in June, with a 126 cfs or 74% increase." The maximum daily increases in diversions should also be listed and shown in Appendix H-6 similar to the way that maximum daily decreases in streamflow are shown at numerous locations.* **Response #910-321:** Maximum daily increases in diversions at the Moffat, Gumlick and Roberts Tunnel were included in FEIS Sections 4.6.1 and 5.1 and in Appendix H-6.

Comment Information	Comment	Comments and Responses
		Comment #910-258 *(ID 2530)**:*** *Comment. The DEIS states no additional dry year diversions will occur. It then describes reductions in bypass flows that would occur in dry years. Dry years are essentially 10% of the years, yet bypass reductions have only occurred once since the Moffat project was constructed; so there will be more dry year diversions. The DEIS implies that the problems associated with low flows in dry years would not be aggravated. However, there is no assessment of how future stream flow conditions in average hydrologic years will essentially mirror what are now considered to be dry year conditions in the affected streams.* **Response #910-258:** Please see the response to Comment ID 2529. Information was added to FEIS Sections 4.6.1 and 5.1 on the increased frequency and duration of dry year conditions and the associated effects on resources. ***Comment #910-257*** *(ID 2529)**:*** *Comment. PACSM modeling assumptions of the Proposed Action include reductions in bypass flows for the Fraser River and tributaries. Bypass flows were not reduced below USFS prescribed levels during the period of record used by PACSM , thus reduced bypass flows in the future will cause new impacts. Rather than reducing bypass flows, storage provided in the Proposed Action should be adequate to provide for USFS bypasses under all conditions given the severity of impacts to aquatic life and local communities associated with reductions in bypass flows.* **Response #910-257:** Bypass flows were historically reduced several times during the PACSM study period including 1975, 1977, and 1980. Additional information was included in

Comment Information	Comment	Comments and Responses
		FEIS Section 3.1 on historical bypass flow reductions. The effects of reduced bypass flows under are disclosed in FEIS Section 4.6.1. The reduction of bypass flows in the future as Denver Water's demand increases under Full Use of the Existing System would cause new impacts, however, any reduction in bypass flows or other proposed flow regimes would be a function of Denver Water's existing operations, not the proposed Moffat Project. The Proposed Action would not increase the conditions under which Denver Water may reduce bypass flows. Since the Proposed Action increases Denver Water's firm yield, system reliability and flexibility, the conditions under which Denver Water may reduce bypass flows could potentially occur less frequently. Additional information was included in FEIS Sections 3.1 and 4.6.1 on bypass flow reductions. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. ***Comment #910-331*** *(ID 2528)**:*** *Comment. Again, flow increases would be higher if compared to existing conditions.* **Response #910-331:** Please see the response to Comment ID 2860. ***Comment #910-222*** *(ID 2832)**:*** *Page 4-36 Comment. The DEIS should describe the projected change in number of days that the streamflows below Denver Water diversions will be at or below the minimum bypass flows (e.g. The number of days that the streamflow will be at or below the minimum bypass flows will increase from ____ days to ____ days per year)*

Comment Information	Comment	Comments and Responses
		Response #910-222: FEIS Section 4.6.1 were also revised to include more information on the increased frequency and duration that streamflows would be reduced to minimum USFS bypass flows and tributaries without bypass requirements would be dried up. ***Comment #910-223*** *(ID 2831)**:*** *Page 4-36 Comment. The DEIS needs to state that the flows will change from __ cfs to __ cfs.* **Response #910-223:** The reader can refer to the tables in Appendix H-3 for the information requested in the comment. ***Comment #910-221*** *(ID 2830)**:*** *Page 4-36 Comment. For the Fraser River (and all other impacted river systems) the impacts on stream flows are to "average annual flows" and reference Tables 4-7.1 to H-7.3 for wet, dry and average years. Diversions and impacts to stream flows are also presented on an "average monthly" basis and reference Tables H-1.1 to H-3.10 for wet, dry, and average years. Impacts using average annual and average monthly amounts mask the impacts that occur on a daily. The DEIS has a daily point flow model. It should present the impacts that can occur on a daily basis.* **Response #910-221:** Please see the response to Comment ID 2874. ***Comment #910-127*** *(ID 2829)**:*** *Page 4-37 Comment. Monthly assessment of stream flow changes would be a more realistic evaluation of water quality than screening based on 15% average annual change given that there are months where the change is much more than 15%, even though the average annual change is less than that amount.*

Comment Information	Comment	Comments and Responses
		Response #910-127: The 15% change in flow was used on a monthly basis for the DEIS. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-133*** *(ID 2828)**:*** *Page 4-39 Comment. "There would be little to no change in flow (flow change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the confluence with St. Louis Creek." This sentence is exceedingly misleading, masking the fact that in average years the percent decrease in flow, though less than 0.5 cfs, will be 100% for October, December, January, and February, 96% in November, 91% in March, 90% in May, 30% in July, 40% in August, and 67% in September. Impacts to the West Slope Colorado-Big Thompson water bodies are not considered. The more highly concentrated flows of the Fraser River after the Moffat Project comes on line will be pumped up through the Windy Gap facility and into Granby Reservoir, where they will contribute to nutrient loading in the Colorado-Big Thompson Project, and in the Three Lakes Region (Granby and Shadow Mountain Reservoirs, and Grand Lake). Grand Lake clarity has declined throughout the operation of the C-BT project and efforts are underway among the State, Grand County,*

Comment Information	Comment	Comments and Responses
		US Bureau of Reclamation, and Northern Colorado Water Conservancy District to improve water quality and clarity in Grand Lake and possibly Shadow Mountain Reservoir as well, and to reduce nutrients throughout the Three Lakes. Concentration of nutrients in the Fraser River due to the reduction of flows will exacerbate nutrient related water quality issues in the Three Lakes, undermining efforts to resolve water quality issues in this region. **Response #910-133:** The tables in FEIS Appendices H-1 and H-3 were revised to show flows and expected flow changes to the nearest tenth to clarify the magnitude of flow changes during the winter months. While the percentage change in average monthly flow would be significant during the winter months, the actual average monthly flow change would be less than 0.1 cfs from September through March. For example, in Table H-3.3 (Below Denver Water's Diversions from Jim Creek), the average monthly percent flow reduction would be as high as 100% in October; however, the average flow in that month would decrease by 0.002 cfs, from 0.002 cfs under Current Conditions (2006) to 0 cfs under the Proposed Action. There would virtually be no additional diversions from late summer through early spring except in infrequent, very wet years. Additional diversions would occur in the winter in only two years out of the 45-year study period because Gross Reservoir would be full under Full Use of the Existing System, whereas under the Proposed Action, there would be additional space in the reservoir so more water would be diverted. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average monthly winter flows and always higher than the minimum flow at those locations.

Comment Information	Comment	Comments and Responses
		Additional water quality evaluation of the Fraser River and the Three Lakes area was performed. Please see FEIS Sections 4.6.2 and 5.2. ***Comment #910-220*** *(ID 2827)**:*** *Page 4-39 Comment. Paragraph 2: The DEIS states that "In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow." It is unclear what minimum flow is referred to. Furthermore, the DEIS does not adequately describe why there would be additional diversions in the winter under the proposed action.* **Response #910-220:** Additional diversions occur in the winter in only 2 years out of the 45-year study period because Gross Reservoir was full under Full Use of the Existing System, whereas under the Proposed Action there was additional space in the reservoir so more water is diverted. As shown in Table H-3.1, average monthly diversions through the Moffat Tunnel increase by 0.7 cfs or less from September through April. The minimum flow referred to in the comment is the minimum flow that occurred where bypass requirements are met (see Table 3.1-8 in the DEIS) during the 1947 through 1991 study period. The text in the FEIS was revised to explain why additional diversions take place in the winter and clarify that in winter months when additional diversions take place, the flow below the diversion structure would be equal to or higher than the average winter flow at that location. ***Comment #910-129*** *(ID 2826)**:*** *Page 4-39 Comment. There are portions of the Fraser River and tributaries listed on the Colorado's 303(d) and M&E list.*

Comment Information	Comment	Comments and Responses
		Response #910-129: The 2012 303(d) and Monitoring Evaluation lists per CPDHE Regulation 93 are included in FEIS Sections 3.2, 4.6.2, and 5.2. ***Comment #910-126*** *(ID 2825)**:*** *Page 4-39 Comment. The Devils Thumb Ranch WWTP, which discharges to Ranch Creek, is identified. Ranch Creek currently has exceedances of water quality standards for temperature. There is no evaluation of how Full Use and Alternative 1a will impact the Devils Thumb's WWTP discharge permit due to increased temperature as a result of reduced flows.* **Response #910-126:** Additional water quality analysis, including temperature, was performed for the Fraser River and Ranch Creek. All WWTPs, including minor ones such as Devil's Thumb Ranch, were evaluated with results presented in FEIS Sections 4.6.2 and 5.2. ***Comment #910-128*** *(ID 2824)**:*** *Page 4-40 Comment. "No changes to water quality in Fraser River tributaries are anticipated." This statement is not supported. Grand County has objected to the COE's analysis based upon the so called "representative sampling sites" in comments on DEIS pages 3-4, 3-5, and 4-7. There is no above/below diversion analysis of water quality. Contributions to pollution from the UPRR Moffat Tunnel discharge are not considered. Empirical evidence such as the elimination of mottled sculpin from the Fraser River above its confluence with Vasquez Creek (personal communication with CDOW based on 2007 fish shocking data) is not considered. Because of their sensitivity to zinc and intolerance to pollution, mottled sculpin are useful as an indicator species (EPA http://www.epa.gov/bioindicators/html/fish_sculpins.ht*

Comment Information	Comment	Comments and Responses
		ml), and in this instance their absence is a signal that something is already wrong in the Fraser River above Vasquez Creek. The DEIS denies water quality problems such as the pH exceedances in the Fraser River (River Watch). Temperature exceedances and likely exacerbations, and all other water quality excursions are not quantitatively analyzed. Water quality was analyzed for impacts at the sampling sites, which are not representative of water quality below diversions without bypass flows or with single-value bypass flows (see comments on DEIS page 3-5). Impacts to water quality from frequent 100% diversion of 20 tributaries in the Fraser Watershed and 4 tributaries in the Williams Fork Watershed are not disclosed. See also Grand County comments referencing DEIS page 3-16. **Response #910-128:** Additional water quality analysis has been performed for the Fraser River and tributaries. Water quality data on which to base an evaluation was limited on the major tributaries and is not available for every minor tributary, precluding above/below diversion analysis for every diversion. The Moffat Tunnel NPDES permit has been reviewed and included in the FEIS. Please refer to FEIS Sections 4.6.2 and 5.2. The distribution of sculpins in the Fraser River Basin is the typical distribution for this species. They sometimes do not inhabit the extreme upper reaches of high-elevation streams or the headwater tributaries. A similar distribution of sculpins is present in the adjacent Williams Fork Basin where sculpins are absent from the headwater streams and the upper reaches of the Williams Fork River itself and are more common lower in the basin. The historical information in the DEIS and FEIS from the upper Fraser River and tributary fish sampling sites shows that sculpins have not previously been found in this part of the Fraser River Basin upstream of Vasquez

Comment Information	Comment	Comments and Responses
		Creek. They become more common in lower Vasquez Creek, Saint Louis Creek, and in the Fraser downstream of Vasquez Creek. Their presence, and abundance lower in the basin indicates that water quality is sufficient to maintain sculpins. Their absence in upstream reaches is likely due to a natural elevational gradient. ***Comment #910-125*** *(ID 2823)**:*** *Page 4-40 Comment. There is no description of impacts associated with the DEIS finding that there will be "more stringent discharge permit limits (for Winter Park and Fraser WWTPs) as the projected low flow is less than the current flow used to calculate the discharge permit" The costs to those WWTPs associated with more stringent permit limits must be quantified.* **Response #910-125:** Additional water quality analysis was performed for the Fraser River, including estimates of acute and chronic low flow. Potential impacts to WWTPs were evaluated in greater detail with results presented in FEIS Sections 4.6.2 and 5.2. Costs of changes to treatment processes vary considerably due to location, existing condition of the plant, and needs and desires of the owning utility. Additionally, changes in treatment processes may be required for reasons other than low flow. Potential needs for changes to treatment processes are included, where identified, in FEIS Sections 4.6.2 and 5.2, but costs are not estimated for the reasons listed in this comment. ***Comment #910-124*** *(ID 2822)**:*** *Pages 4-41 to 4-42 Comment. The qualitative discussion of changes in stream temperature in the Fraser River and Ranch and St. Louis Creeks cannot be considered an evaluation. The conclusion that there will be no to moderate impacts is unjustified.*

Comment Information	Comment	Comments and Responses
		Temperature water quality standards are established to protect the aquatic resource via an extensive series of public rulemakings. Any situation that causes or contributes to violations of the standard is significant. **Response #910-124:** Additional water quality analysis, including temperature, was performed for the Fraser River. Conclusions from the additional analyses regarding impacts are presented in FEIS Sections 4.6.2 and 5.2. ***Comment #910-123*** *(ID 2821)**:*** *Pages 4-42 to 4-45 Comment. The use of the 15% screening for evaluating possible changes to water quality due to an increase in the percent WWTP discharge is not meaningful. The DEIS should consider water quality changes from monthly flow changes and increases in water quality parameters associated with increased discharges from in-basin growth combined with reduced dilution from Full Use and Alternative 1a.* **Response #910-123:** Please see the response to Comment ID 2504. Additional water quality analysis was performed for the Fraser River. ***Comment #910-122*** *(ID 2820)**:*** *Page 4-47 Comment. Metals data presented here cannot be made meaningful due to disclaimers about detection limits. The conclusions reached here could just as well be wrong as they may be right.* **Response #910-122:** The water quality data available are subject to the limitations of how the data was collected and processed. The detection limits are disclosed for the benefit of the reader where there is discussion of

Comment Information	Comment	Comments and Responses
		metals concentrations in FEIS Sections 3.2, 4.6.2, and 5.2. ***Comment #910-121*** *(ID 2819)**:*** *Page 4-50 Comment. Table 4.1-11: In the rows displaying the percentage contribution by tributaries to the Fraser River below Vasquez Creek, it is unclear why the percentages do not add to 100% or where additional contributions to the Fraser River below Vasquez Creek may be originating. Percent contribution should also be shown for dry years, even if no additional diversions occur.* **Response #910-121:** "Percent Fraser Headwaters" is the flow at Winter Park divided by the flow in the Fraser River at the confluence with Vasquez Creek. Information in DEIS Table 4.1.-11 is presented in FEIS Sections 4.6.2 and 5.2. ***Comment #910-120*** *(ID 2818)**:*** *Page 4-51 Comment. "The Fraser River headwaters and Vasquez Creek are high mountain creeks in adjacent watersheds with relatively pristine conditions". Statements such as this (additionally DEIS pages 4-47, 4-62, 4-92, 4-401) are qualitative, subjective, and misleading. The Fraser River headwaters experience impacts from the Moffat Collection System, Winter Park and Mary Jane ski areas, the Union Pacific Railroad Moffat Tunnel discharge, the railroad itself, Berthoud pass and the 9 tons of traction sand and magnesium chloride deposited on the pass in the winter, the construction waste piles from the Vasquez Tunnel construction, and other activities.* **Response #910-120:** Additional water quality analysis for the Fraser River has been performed and the FEIS text has been revised. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		The analyses of stream morphology, specifically the anticipated response of the streams to projected flow changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations, and an assessment of transport capacity by substrate particle size. Impacts of traction sand on the Fraser River were included in the assessment. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the predicted response of the streams to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-119*** *(ID 2817)**:*** *Page 4-51 Comment. "The mainstem is expected to have negligible to minor impacts with regards to temperature near the Town of Fraser and minor impacts with regards to temperature near the Town of Granby." The proper analysis is whether these changes in temperature will be significant, which in turn, depends on whether the changes will increase days when temperature standards are exceeded.* **Response #910-119:** Additional water quality analysis, including temperature, for the Fraser River has been performed. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-56*** *(ID 2885)**:*** *Page 4-51 Comment. Water quality limits for WWTP discharge permits are based on both chronic and acute low flows. Chronic flows impacts are not considered by the DEIS. This omission should be corrected.*

Comment Information	Comment	Comments and Responses
		Response #910-56: Estimated acute and chronic low flows for various conditions and a discussion of changes in these low flows is included in FEIS Sections 4.6.2 and 5.2. ***Comment #910-55*** *(ID 2884)**:*** *Page 4-51 Comment. Paragraph 6, 1st bullet point: When comparing the proposed action to the full use existing system, the DEIS states that "annual peak flood flows would be reduced in all years in the study period." This statement is inconsistent with the statement in paragraph 5 which says, "The additional diversions would occur in average and wet years, while dry year diversions would be unaffected."* **Response #910-55:** The FEIS was revised. On the mainstem, annual peak flood flows would not change in dry years. Annual peak flows associated with recurrence intervals less than approximately 1.2 years would be largely unaffected by the Moffat Project. ***Comment #910-342*** *(ID 2883)**:*** *Page 4-52 Comment. Paragraph 2: The terms "negligible impact" and "discernible, but no disturbance" are not relevant to determining significance of impacts.* **Response #910-342:** DEIS Section 4.0 states: "Impact thresholds are defined as changes in intensity in terms of the degree, level, or strength of an impact. The following thresholds are used to determine the change in intensity of impacts resulting from a Project alternative: • No impact: no discernable effect • Negligible: effect is at the lowest level of detection

Comment Information	Comment	Comments and Responses
		and causes very little or no disturbance • Minor: effect that is slight, but detectable, with some perceptible effects of disturbance • Moderate: effect is readily apparent and has measurable effects of disturbance • Major: effect is readily apparent and has substantial effects of disturbance" These thresholds were applied to the magnitude (the Corps uses the word "intensity") of impact for each environmental resource/biological condition based on technical analysis and professional judgment. When possible, the impacts were quantified before an impact threshold was applied to them. For example, the aquatic biological resources analysis (FEIS Section 5.11) includes a more in-depth explanation of how impact intensity was measured and includes changes in community parameters for each level of intensity for fish and benthic macroinvertebrates. ***Comment #910-299*** *(ID 2882)**:*** *Page 4-53 Comment. Paragraph 2: The effects of potential changes to channel morphology and sediment transport under the proposed alternative should not be assumed to be equal to the effects analyzed in the Two Forks EIS, which may have had different magnitudes and timing of diversions.* **Response #910-299:** Changes to channel morphology were not assumed to be equal to the effects analyzed in the Two Forks EIS. Conclusions reached on anticipated impacts to channel morphology were based on field observations, numeric modeling including sediment transport for current and anticipated future flows given specific flow changes resulting from the proposed Project, review of other studies and analysis of historic information.

Comment Information	Comment	Comments and Responses
		Comment #910-298 *(ID 2881)**:*** *Page 4-53 Comment. The DEIS states that localized sediment deposition could increase in extent and amount due to streamflow reductions. However, the consequences of increased deposition are not discussed. Furthermore, the DEIS states that model results suggest that deposited material will be remobilized during higher flow events. However, it is likely that some continual/permanent deposition will occur because the frequency of higher flow events will decrease under the proposed action.* **Response #910-298:** An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #910-297*** *(ID 2880)**:*** *Page 4-53 Comment: If sediment transport decreases in many areas within the collection system, the stream may aggrade and the amount of sediment being transported downstream may decrease. Will this in turn increase sediment mining downstream of all DW diversions and contributing tributaries? Bottom line; the DEIS methodology is incomplete and insufficient to understand what the effects may be.* **Response #910-297:** The anticipated response of the channel to flow reductions was evaluated using numeric modeling, sensitivity analysis, research of impacts from flow diversions and review of historic aerial photos. Results suggest that in general channel morphology

Comment Information	Comment	Comments and Responses
		would not be impacted. Localized areas of sediment deposition, particularly at lower flows, may occur. No sediment mining is anticipated. ***Comment #910-293*** *(ID 2879)**:*** *Page 4-56 Comment. Paragraph 7: The DEIS concludes that increased diversions will not result in channel morphology changes based upon the sited USFS study. However, it is flawed to conclude that future diversions will not impact channel morphology simply because past diversions did not impact channel morphology. The streams in the Moffat Collection System are already highly depleted in many cases, and may be susceptible to impacts from increased diversions under the proposed alternative or on the verge of significant morphological effects.* **Response #910-293:** Conclusions reached on anticipated impacts to channel morphology were based on field observations, numeric modeling including sediment transport for current and anticipated future flows, review of other studies and analysis of historic information. ***Comment #910-292*** *(ID 2878)**:*** *Page 4-59 Comment. "Given that some deposition of sand was observed as part of the Current Conditions (2006) assessment in areas of low velocities, this pattern is expected to continue." This statement contradicts the conclusion of DEIS page 4-9.* **Response #910-292:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in

Comment Information	Comment	Comments and Responses
		FEIS Sections 4.6.3 and 5.3. ***Comment #910-296*** *(ID 2877)**:*** *Page 4-60 Comment. Paragraph 5: The DEIS does not give any reasons why additional diversions occur in the winter in two years of the 45-year study period. Even small amounts of additional diversions in the winter may result in large impacts on aquatic communities in the winter months because flows are already at low levels and trout eggs are incubating in redds on the streambed during that time.* **Response #910-296:** FEIS Sections 4.6.11 and 5.11 have been revised to explain the occasional diversions during winter. Flows in these two years would be higher than during average and dry years. The additional diversions in two of the wetter years out of the 45-year period of record would have a negligible impact on aquatic resources. ***Comment #910-54*** *(ID 2876)**:*** *Page 4-62 Comment. The DEIS states that dissolved oxygen (5.3 mg/L) is below the State standard of 6 mg/L (non-spawning season) at the Denver Water site "Williams Fork above Sugarloaf Campground," but, while saying it may alter water chemistry, dismisses this issue, saying that "diverting additional water from the four tributaries is unlikely to alter the dissolved oxygen concentrations at a point downstream." (DEIS page 4-62) Oxygenation of streams occurs as they vigorously flow over irregular stream bottoms, not in quiescent conditions. The reduction in flows due to additional diversions is likely to exacerbate dissolved oxygen issues downstream of the diversions in Williams Fork.* **Response #910-54:** Additional water quality evaluations on dissolved oxygen were performed on the Williams Fork River.

Comment Information	Comment	Comments and Responses
		Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-295*** *(ID 2875)**:*** *Page 4-69 Comment. The statement "effective discharge is expected to increase from 300 cfs for Full Use of the Existing System (2016) to 360 cfs for the Proposed Action" needs to be explained. It is not clear how increasing diversions will cause an increase in effective discharge.* **Response #910-295:** Additional information on effective discharge was added to the FEIS. An analysis was also completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #910-294*** *(ID 2874)**:*** *Page 4-73 Comment. Paragraph 4: The 2% change in streamflow at the Colorado River at Kremmling gage is understated because the DEIS reports only average annual change. Monthly average changes in streamflow are as much as 6% as shown in Table H-3.32.* **Response #910-294:** The change in streamflow at the Colorado River at Kremmling gage is not understated. Monthly average, wet and dry changes in streamflows at the Colorado River near Kremmling gage are described in the DEIS Section 4.1.1.2, subheading Colorado River. That section also describes the range and frequency of daily flow changes at that location.

Comment Information	Comment	Comments and Responses
		A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). The discussion and analysis of daily data was expanded in Sections 4.6.1 and 5.1 in the FEIS. ***Comment #910-53*** *(ID 2873)**:*** *Page 4-74 Comment. The Town of Hot Sulphur Springs WWTP is located in this segment and is likely to be impacted by increased temperature in the Colorado River. It is not recognized in the DEIS.* **Response #910-53:** Additional water quality analysis, including temperature, was performed on the Colorado River and the town of Hot Sulphur Springs wastewater discharge was specifically evaluated. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #910-52 *(ID 2872)**:*** *Page 4-75 Comment. Because of the screening approach employed, impacts to Hot Sulphur Springs' WWTP were not considered. The Town of Hot Sulphur Springs (ToHSS) is already having difficulty meeting its permit requirements during low flow months due to ammonia and Biological Oxygen Demand. The ToHSS WWTP uses a lagoon system and it is concern that reduced flows in the Colorado River, combined with increased incoming nutrients and temperatures, will result in additional violations which in the short term will trigger additional monitoring requirements at additional cost, and over the long term require construction of a new WWTP facility. Changes in Colorado River water quality attributable to changes in tributary inflows are dismissed with statements of "no change" or a minor impact due to temperatures. This continues the unacceptable failure to consider, or the outright dismissal of, all of the other water quality issues associated with the Moffat Project, as well as water quality issues that are currently present in the Colorado River,, such as temperature exceedances, high pH, sedimentation and embeddedness and attached algae due to excess nutrients, didymosphenia geminata downstream of Windy Gap, and extirpation of mottled sculpin and the stonefly Pteronarcys californica downstream of Windy Gap.[18] FOOTNOTE: [18] Nehring, R.B., J. Ewert, S. Hebein, 2009. A review of aquatic invertebrate studies and fish population survey data for the Colorado river in Middle Park, Colorado from 1980 through 2009: What does it tell us?, CDOW* **Response #910-52:** The inability of the existing treatment plant to meet existing discharge requirements is not impacted by a proposed project. These issues currently exist and are not related to a project that has not yet been permitted and constructed. Additionally, the more

Comment Information	Comment	Comments and Responses
		stringent regulations regarding ammonia have been enacted state wide to improve water quality state wide and are not specific to the Upper Colorado River. Many lagoon systems are experiencing difficulties meeting these new regulations. Additional, more stringent, discharge requirements in the future are a strong possibility with or without the Project, due to increasingly tighter regulations on all wastewater dischargers. Additional water quality analysis, including temperature, was performed on the Colorado River and the town of Hot Sulphur Springs wastewater discharge was specifically evaluated. Please refer to FEIS Sections 4.6.2 and 5.2. The third paragraph of DEIS Section 4.9.1.2 states: "Didymo apparently prefer cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo." Additional discussions on algae (Didymo) have been added to FEIS Sections 4.6.11 and 5.11. The revised FEIS Sections 3.11, 4.6.11, and 5.11 also contain discussions of the distribution of sculpins and Pteronarcys stoneflies in the Project area. ***Comment #910-51*** *(ID 2871)**:*** *Page 4-76 Comment. Water quality on the Colorado River below Windy Gap currently exceeds temperature standards indicating significant water quality problems. Full Use and Alternative 1a will reduce flows compounding this situation. This is a significant impact.*

Comment Information	Comment	Comments and Responses
		Response #910-51: Additional water quality analysis, including temperature, was performed for the Colorado River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-50*** *(ID 2870)**:*** *Page 4-77 Comment. Paragraph 2: The DEIS states that, at the Colorado River at Kremmling gage, the annual peak flow will increase under the proposed action. The reason for the increase is not explained. Furthermore, the possible effects of such an increase and the change from current to the Full Use Existing scenario are not discussed.* **Response #910-50:** The DEIS gives an example of one year (1984) in which the annual maximum daily flow peak is greater for the Proposed Action than Full Use of the Existing System. In this case, Dillon Reservoir spills one day earlier under the Proposed Action than under Full Use of the Existing System, and the spill happens to coincide with the peak daily flow for 1984 on the Colorado River above the confluence with the Blue River. The overwhelmingly general pattern, however, is for the annual peak to be lower under the Proposed Action than Full Use of the Existing System. Specifically, in 43 out of 45 modeled years, the annual peak daily flow is smaller for the Proposed Action than for Full Use of the Existing System. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project

Comment Information	Comment	Comments and Responses
		Alternative (2032). Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-291*** *(ID 2869)**:*** *Page 4-78 Comment. Paragraph 7: The basis for the conclusion that the Colorado River channel bed and banks are well armored should be described in more detail.* **Response #910-291:** The statement in the DEIS is based on the bed and banks that were observed to be armored by the Corps during site visits conducted in Summer 2006. Channel beds and banks were also evaluated as part of the 2005 and 2010 field programs to collect data for the channel morphology assessment and found to be well armored. ***Comment #910-49*** *(ID 2868)**:*** *Page 4-80 Comment. Portions of Muddy Creek below Wolford Mountain Reservoir are either on the 2010 303d or M&E list, indicating that significant water quality problems exist. Full Use and Alternative 1a will alter the releases from the reservoir. No evaluation of how this change will alter water quality is provided, nor is any evaluation done to assess how these changes in temperature will affect Kremmling's WWTP which discharges to Muddy Creek.* **Response #910-49:** The 2012 303(d) and Monitoring and Evaluation lists were incorporated into FEIS Sections 4.6.2 and 5.2. ***Comment #910-287*** *(ID 2867)**:*** *Page 4-81 Comment. Paragraph 3: Should reductions in bypass flows below Dillon have been included in PACSM modeling of the proposed alternative?* **Response #910-287:** Denver Water's ability to reduce bypass flows below

Comment Information	Comment	Comments and Responses
		Dillon Reservoir is pursuant to their ROW agreement with the USFS (see DEIS Section 3.1.5.4), which is part of their current system and operations. Denver Water may reduce bypass flows whenever mandatory restrictions are imposed on the use of water in the area served by Denver Water due to insufficient water supply. Although Denver Water has the ability to reduce bypass flows below Dillon Reservoir, they have not exercised that right to date in response to water use restrictions imposed on their customers. Denver Water has had to reduce the outflow from Dillon Reservoir below 50 cfs for temporary periods in the past for maintenance, repairs or construction on associated water facilities. The Moffat Project could potentially reduce Denver Water's need to reduce bypass flows below Dillon Reservoir because the Moffat Project would increase Denver Water's water supply and the reliability of their system in which case restrictions may be imposed less frequently. Since there is no indication that reductions in Dillon Reservoir bypass flows would increase under the Proposed Action, reductions in bypass flows below Dillon should not have been included in the PACSM for the Proposed Action. ***Comment #910-48*** *(ID 2866)**:*** *Page 4-83 Comment. The Town of Silverthorne gets drinking water from alluvial wells adjoining the Blue River. This source is totally influenced by water quality in the Blue River.* **Response #910-48:** As Dillon Reservoir water quality is not expected to change, the quality in the Blue River at the location of Silverthorne's well is also not likely to change as a result of the Project. ***Comment #910-47*** *(ID 2865)**:*** *Page 4-84 Comment. The acute low flow for the JSA discharge permit is listed at 44 cfs, which is less than*

Comment Information	Comment	Comments and Responses
		the 50 cfs bypass flows at Dillon Reservoir that the DEIS states flows will not be reduced below. See DEIS 4-81. Flows less than 50 cfs at Dillon Dam and the intervening stream flows will have an impact to the JSA discharge permit regardless of what the DEIS says, just ask the WWTP operators. This impact occurs when flows drop below this level for 3 days or more. The DEIS states there is only one month when this is a problem, so there are "negligible to minor" impacts anticipated This conclusion is wrong. **Response #910-47:** Please see the response to Comment ID 2864. ***Comment #910-46*** *(ID 2864)**:*** *Page 4-84 Comment. The JSA is affected by anti-degradation and the loss of assimilative capacity at least as much as low flow. The DEIS fails to evaluate these potential impacts to discharge permit limits. This omission should be corrected.* **Response #910-46:** Additional analyses of flows below Dillon Dam with respect to the JSA were performed. Discharge permits for those entities discharging into Dillon Reservoir were reviewed with respect to projected reservoir levels. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-41*** *(ID 2863)**:*** *Page 4-158 Comment. The bullet list of consequences of the No Action Alternative is neither complete nor objective. The No Action Alternative would have less impact on the aquatic environment than the action alternatives in many ways. For example, stream flow would not be reduced as much in West Slope rivers and their tributaries under no action. See DEIS 4-165, 4-168, 4-176, 4-180, 4-332, 4-386 (flows in Fraser River 17% higher in June of average year under NAA compared to Proposed*

Comment Information	Comment	Comments and Responses
		Action). There would be no direct permanent impacts to wetlands, other waters of the U.S., or riparian habitats under the No Action Alternative. Id. 4-220. There would be no adverse impacts to the visual and aesthetic character of the Fraser River during May, June, and July of average and wet years, as there would be under the action alternatives. Compare Id. 4-404 to -405 with 4-415 to -416. **Response #910-41:** The Corps notes the comment. The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps, or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. ***Comment #910-290*** *(ID 2862)**:*** *Pages 4-158 (paragraph 5) and 4-159 (paragraph 2) Comment. A quantitative analysis to assess the effect of customer restrictions should have been conducted,*

Comment Information	Comment	Comments and Responses
		and mandatory restrictions during drought should have been applied to the PACSM modeling. The DEIS does not give a definitive answer to why this type of analysis was not completed. **Response #910-290:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Information was included in the FEIS which explains why Denver Water's demand was modeled as unrestricted in PACSM. Denver Water's Drought Response Plan and the effects of customer restrictions are described in DEIS Section 2.10.2.2. Table 2-23 provides a summary of monthly water demand reductions that were achieved as a result of the restrictions implemented during the 2002 through 2005 drought. ***Comment #910-45*** *(ID 2861)**:*** *Page 4-185 Comment. Paragraph 2: While no changes to the NPDES permit are expected as a result of increased Denver Water diversions, it is possible that wastewater treatment providers have a*

Comment Information	Comment	Comments and Responses
		more difficult time meeting the appropriate dilution standards if a larger percentage of streamflow is made up of effluent (because streamflows decrease). **Response #910-45:** Additional evaluation of flows, percent of stream that is wastewater, and projected impacts to the JSA were performed for the FEIS. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #910-289*** *(ID 2860)**:*** *Page 4-197 Comment. There are fundamental errors in the hydrology in not using actual diversions and in comparisons of future (2016) conditions to future (2030) conditions*. **Response #910-289:** The purpose of the Current Conditions scenario is to represent hydrologic conditions that would occur over the 45-year study period under Current Conditions, including facilities, operations, consumptive and non-consumptive water rights, instream flow rights, demand levels, operating rules, and other water management considerations and preferences throughout the Upper Colorado River Basin. The Current Conditions scenario is not intended to replicate historical flows at USGS gages and diversions at the Moffat, Gumlick, and Roberts Tunnels. The Current Conditions scenario accurately depicts current level of diversions and does not understate the incremental change that would occur with a Project on-line. It is not appropriate to compare Current Conditions model data to historical data to evaluate effects for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain

Comment Information	Comment	Comments and Responses
		facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. One would expect potentially large differences when comparing model results with historic records. If modeled flows with the proposed Moffat Project on-line are compared to historical flows, the differences would reflect all changes that have occurred and not just the effects of the proposed Moffat Project. Modeled Current Conditions Moffat Tunnel diversions (63,799 AF/yr) are higher than average annual Moffat Tunnel diversions for the period from 1936 through 2006 because Current Conditions diversions reflect meeting an average annual demand for Denver Water of 285,000 AF/yr whereas, the average annual demand met during the period from 1936 through 2006 was less. In addition, there are likely differences in the averages because the periods compared are different lengths and may be hydrologically different. It is possible that the period from 1936 through 2006 is wetter overall than the period from 1947 through 1991, which could also partially explain why the historical average is lower. These reasons also apply to differences in Current Conditions versus historical Gumlick Tunnel and Roberts Tunnel diversions and flows in the Fraser and Colorado rivers. For example, at some locations in the Fraser River Basin, average monthly dry year streamflows for Current Conditions are higher than actual streamflows in 2002 for several reasons. The average monthly dry year streamflow is an average of the five driest years during the study period whereas 2002 is the driest year on record in the Fraser River Basin. Furthermore, bypass flows were reduced in 2002 whereas bypass flows were not reduced in two of the five years selected for the dry year average because storage triggers were not met. The Proposed Action would not change flows during dry years. Similar to dry years, average monthly wet year streamflows for Current Conditions are lower than actual streamflows in 1984 at some locations in

Comment Information	Comment	Comments and Responses
		the Fraser River Basin and along the Colorado River because the average monthly wet year streamflow is an average of the five wettest years during the study period, whereas 1984 is the wettest year on record at most locations in the Upper Colorado River Basin. In addition, the demand met in the five wettest years under Current Conditions is different than the demand met in 1984. Differences in the timing of filling Gross Reservoir and the timing and magnitude of spills at other reservoirs in the Upper Colorado River Basin can also result in differences in Current Conditions average wet year monthly flows versus historical flows in 1984. The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios. • Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water.

Comment Information	Comment	Comments and Responses
		Full Use of the Existing System includes RFFAs including growth in Denver Water's average annual demand to 345,000 AF/year, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #910-340*** *(ID 2859)**:*** *Page 4-197 Comment. Mitigation should include evaluation of which streams are likely to be diverted to dryness and whether or not the selected streams have access to the nearby geographic resources to make recovery from such diversion possible. If the recovery cannot occur within a reasonable distance from the diversion, all of the streams should be carefully and objectively evaluated for the amount of recovery they can tolerate, and managed accordingly.* **Response #910-340:** FEIS Section 4.6.1 has been revised to include information concerning the total amount of water diverted from tributaries. This information has been incorporated into FEIS Sections 3.11, 4.6.11, and 5.11. Both the DEIS and FEIS include discussions of the magnitude and severity of diversions and if the streams are fully diverted or have bypass flows. Flow related changes that have occurred in the Fraser River Basin since 1936 are due in large part to

Comment Information	Comment	Comments and Responses
		Denver Water's existing Moffat Collection System diversions; however, those impacts are attributable to past and present operations of that system, not the proposed Moffat Project. Under the proposed Moffat Project, additional diversions through the Moffat Tunnel would occur primarily during runoff months in May, June, and July (see DEIS Table H-3.1 in Appendix H). The environmental effects of additional diversions attributable to the Moffat Project were evaluated and determined to be minimal to moderate depending on the resource. Denver Water is not responsible for mitigating the effects of other reasonably foreseeable actions. FEIS Appendix M presents Denver Water's Conceptual Mitigation Plan to provide compensatory mitigation for unavoidable adverse effects associated with the Moffat Project. ***Comment #910-4*** *(ID 2858)**:*** *Page 4-202 Comment. Additional comments on groundwater are included with our comments regarding DEIS appendix H11, and comments beginning with DEIS page 3-84. Please describe locations where rivers currently lose water to groundwater, and describe how the location of these reaches may be extended under the project. This section should disclose the diversion structure sealing activities that have taken place in the past, and that are scheduled to occur in the future. This discussion should include maps of sections and total feet/miles of structure affected, as well as actual and anticipated savings, which can be translated directly to losses to groundwater recharge. These pages fail to disclose the fact that all tributary streams without bypass flows in the Fraser and Williams Fork basins will be 100% diverted for much if not most of the year, leaving 27 miles of streambed without any flow or seepage to groundwater from that flow. This impact is minimized in the DEIS, but based on appendix H3 it could amount to almost 4,000 AF per year. The removal of up to 4,000 AF from 27 miles of stream will surely*

Comment Information	Comment	Comments and Responses
		have a more significant impact to groundwater than is admitted in this section. This section is not supported with quantitative statistical analysis and confidence intervals on the projections made, rather it is rife with statements such as "small declines in stream levels would likely cause minor reductions in groundwater levels immediately adjacent to the streams…" DEIS 4-203. Such qualitative generalizations are unacceptable for a resource upon which many municipal and private users depend, and which supports riparian and wetland areas, cooling base flows, and water quality. **Response #910-4:** Please see the response to Comment ID 2887. ***Comment #910-3*** *(ID 2857)**:*** *Page 4-205 Comment. "Reductions in stream flow attributable to the Moffat Project would be partly offset by groundwater influx to the streams." If even less surface water is allowed to flow to recharge zones (as argued in Grand County's comments on appendix H11), then recharge to groundwater from sheet and stream flow from the high altitude, high accumulation areas will be dramatically reduced, causing a potentially dramatic accompanying reduction in groundwater, and subsequent reductions in base flows. The effect could be a double whammy for area streams and rivers.* **Response #910-3:** Please see the responses to Comment IDs 2856 and 2887. ***Comment #910-2*** *(ID 2856)**:*** *Page 4-213 Comment. The DEIS has established no basis for saying that "impacts to groundwater are minimal and short-term in nature…," and therefore claiming that "no additional mitigation or monitoring is expected to be necessary for impacts identified in*

Comment Information	Comment	Comments and Responses
		sections 4.2.1 through 4.2.6." The impacts to groundwater are, in fact, likely to be cumulative and long term. Mitigation should include minimum bypass flows on all diverted tributaries to provide, at a minimum, for water to reach recharge zones. **Response #910-2:** Sections of the DEIS provide the information supporting the conclusion that groundwater impacts would be minimal and short term in nature, and further describes the rationale for this conclusion. The proposed diversions would take place during the snowmelt runoff period in average and wet years; there would be not additional diversions in low flow seasons or during dry years. Stream level declines would be relatively small, and would occur during high runoff periods. Stream flow changes and methodology used to estimate those changes are presented in DEIS Section 4.1. DEIS Section 4.2 describes stream flow reductions that could conceivably cause some reduction in the groundwater levels and recharge rates directly beneath the stream channels (blue lines downstream of the proposed diversions) if percolation through the streambeds decrease. Groundwater recharge rates would decline only where (1) the stream reach is losing water by seepage to groundwater under Current Conditions, and (2) the diverted stream flow causes a substantial decrease in the stream level and the wetted area of the stream bed. A recent USGS Report (Apodaca and Bails 1999) for the Fraser River Basin, which is cited in the DEIS Section 4.2, shows groundwater level contour patterns that indicate hydraulic gradients, and thus groundwater flow directions, converge toward the streams in the central portion of the Fraser River Basin downstream of the Denver Water diversion points.

Comment Information	Comment	Comments and Responses
		Hydraulic modeling using the HEC-RAS model has been conducted to analyze the changes in stream flows and flood inundation area, at representative sites downstream of the diversion points. As part of the impact assessment for wetland and riparian areas, DEIS Section 4.6.1.2 provides an analysis of the interaction between stream flow changes and inundated areas in the affected drainage. Table 4.6-4 provides predicted changes in stream levels and channel widths for four detailed study sites along streams in the Fraser River watershed. The modeling results indicate Site FR1 near Winter Park would have the largest reduction in stream level due to the Denver Water diversions; the peak stream level during a 2-year flow event would drop about 8 inches in that reach. The HEC-RAS model results also show changes in the wetted channel width at that location would be about 1.6 feet, which is very small in comparison to the existing 2-year water profile. DEIS Figure 4.6-1 illustrates the very small change in the 2-year water profile (stream width) that would be caused by the Proposed Action. Even extrapolating over a larger stream length, the reductions of flow-wetted area would be very small (e.g., a 1-mile stream segment would experience a reduction in inundated area of about 0.4 acre). In summary, the proposed diversions are expected to have minor direct impacts on groundwater levels and recharge. These minor impacts would be short term. Declining stream levels would likely cause only very minor reductions in groundwater levels immediately adjacent to the streams during the high runoff period. Overall, groundwater recharge and discharge rates would not change substantially in the watershed. In wet and average years, the net effect of the Moffat Project on groundwater levels is expected to be negligible. During dry years, there would be no additional water diversions, and thus, the Project

Comment Information	Comment	Comments and Responses
		would not impact groundwater levels or recharge rates. The FEIS includes additional analyses of stream flow changes in all of the potentially affected stream segments and tributaries to clarify the effects of the Moffat Project and other RFFAs. Additional groundwater data collected in the fall of 2010 was provided and described to further clarify the groundwater-surface water relationships downstream of Denver Water diversion points. The monitor well installation and field data collection activities performed in the fall of 2010 provide measurements of groundwater level elevations and adjacent stream water level elevations at several locations in the Fraser River watershed downstream of Denver Water diversion points. In addition, precision surveying of ground surface elevations at existing shallow wells at the Town of Winter Park Shops Expansion Project site (Grand Environmental Services 2008) define groundwater level and stream level elevations there. These data are expected to further clarify the groundwater-surface water relationships described in the DEIS downstream of Denver Water diversion points. The additional stream flow analyses were used with the new groundwater data to further assess the Project effects on groundwater, stream flow, wetlands, and wells along the Fraser River in FEIS Sections 4.6.4, 4.6.8, 5.4, and 5.8. Considering that the impacts to groundwater are minimal and short term in nature, no additional mitigation or monitoring is expected to be necessary for impacts identified in FEIS Sections 5.4.1 through 5.4.6. ***Comment #910-341*** *(ID 2855)**:*** *Page 4-243 Comment. "Impact of depletions to the Fraser River on the water quality functions of wetlands of the Fraser and Blue Rivers and the Colorado River downstream." This issue, identified in scoping, is not addressed in this section (DEIS 4-256*

Comment Information	Comment	Comments and Responses
		to -257) nor in the section on water quality. Presumably, this is because the DEIS asserts "given the conclusion that the project would have little or no impact on groundwater levels, it can also be concluded that the project would have little or no impact on riparian vegetation dependent upon groundwater." Grand County disagrees with the conclusions arrived at for groundwater, and hence also for those arrived at for riparian and wetland areas, and water quality impacts attributable to the loss of wetlands. Please see comments in response to appendix H11 for further commentary on Riparian and Wetland area analysis. In particular, page 4-245 of the DEIS does not disclose the 100% dry-up scheduled for 24 tributary streams or the profound changes in flows that have occurred in the upper Fraser and Williams Fork rivers. **Response #910-341:** Information on water quality functions of wetlands and riparian areas has been added to the FEIS Sections 3.8.5 and 5.8.1.2. Riparian zones act as filters that protect stream water quality from upland runoff that contains sediment, nitrates and other nutrients, and also affect nutrient levels in adjacent streams. Shading by riparian vegetation moderates water temperatures. Please see the response to Comment ID 2849. ***Comment #910-338*** *(ID 2854)**:*** *Page 4-245 Comment. Impacts to wetland areas from stream depletions are based on an assessment of the reductions in area inundated at very limited locations. Impacts to riparian areas are extrapolated from those conclusions. This approach underestimates wetland and riparian impacts. One would expect based even on this limited analysis, however, real alterations in wetland and riparian areas would be greater than the 2.0 acres of direct impacts to wetlands given the large*

Comment Information	Comment	Comments and Responses
		reaches of streams affected by stream flow depletions from the Proposed Action. In spite of this, only directly impacted wetlands are considered in the mitigation section. **Response #910-338:** Impacts from lower flow levels cannot be measured in the same way as the direct impacts shown in Tables 4.6-1 and 4.6-3 of the DEIS and in most cases would involve a shift in vegetation type rather than loss or full conversion to upland. An accurate quantitative summary of acres of indirect impacts in a format like Table 4.6-3 is not possible and would be misleading if it were presented. Direct impacts, from construction or inundation, can be calculated based on preliminary engineering and occur in discrete areas that can be fully covered during field work. Indirect effects from changes in stream flows are much more difficult to estimate because they require detailed data and modeling, and the resulting analysis can't necessarily be extrapolated over longer reaches because of confounding factors such as groundwater and topography. The study sites provide a detailed look at impacts that would not be feasible over larger areas, and the results should be generally representative of the types and magnitude of impacts that could occur. Both the detailed information collected at the study sites and more general observations over larger areas were used in the assessment of riparian impacts in the DEIS. Additional observations were made based on the comments on the DEIS, and more information has been added regarding impacts to the Fraser River Valley. ***Comment #910-334*** *(ID 2853)**:*** *Page 4-246 Comment. There are no tables summarizing direct impacts to wetlands on the West Slope.*

Comment Information	Comment	Comments and Responses
		Response #910-334: There would be no direct impacts (i.e., impacts resulting from construction or inundation) to wetlands on the West Slope. Any impacts to the West Slope would be indirect, resulting from changes in stream flows associated with operational changes in the Moffat Collection System. Impacts from lower flow levels cannot be measured in the same way as the direct impacts shown in Tables 4.6-1 and 4.6-3 of the DEIS and in most cases would involve a shift in vegetation type rather than loss or full conversion to upland. An accurate quantitative summary of acres of indirect impacts in a format like Table 4.6-3 is not possible and would be misleading if it were presented. ***Comment #910-337*** *(ID 2852)**:*** *Page 4-254 Comment. As mentioned previously (comments on DEIS pages 3-5, 4-7), the sampling sites investigated are insufficient to represent impacts to much of the tributary stream reaches.* **Response #910-337:** The affected stream reaches in the Fraser Valley include 20.5 miles of streams below diversions with no bypass flows and 72.2 miles below diversions with bypass flows, including 27.7 miles in the Fraser River. Many of the tributaries that lack bypass flows are relatively short, which is why the miles of streams with no bypass flows is much less even though the number of these streams is larger. Detailed sampling was not conducted at these sites for several reasons. As described in DEIS Section 3.0: “The sampling reaches were selected based on a preliminary level assessment of the stream type and field reconnaissance to evaluate the site characteristics as representative of the focus river segment. Other factors considered in site selection included a site’s suitability for hydraulic modeling, the

Comment Information	Comment	Comments and Responses
		quality and type of riparian and wetland vegetation, land use or disturbance history, as well as accessibility to the site." Most of the streams that lack bypass flows are classified as Rosgen A or AA streams, and occur in relatively steep and narrow V-shaped valleys with little development of riparian vegetation. Conditions more favorable for wetlands and riparian vegetation mostly occur downstream where there are wider valleys, more level terrain, more soil development, and larger stream flows. Some diverted streams such as Jim Creek do have larger areas of wetland and riparian vegetation that appear to be mostly supported by groundwater. However, the sample sites lower in the watershed are representative of the majority of miles of stream affected and the areas where riparian vegetation was expected to be more developed. In addition, a number of the tributary streams that lack bypass flows are already severely diverted except in the wet season. In response to this and other comments, additional observations of the general condition and type of riparian vegetation above and below diversion structures were made during the Fall of 2010, and are discussed in FEIS Sections 3.8.5, 4.6.8 and 5.8.1.2. In addition, geomorphology analysis was conducted at two additional sample sites, one above and one below a diversion. ***Comment #910-336*** *(ID 2851)**:*** *Page 4-256 Comment. Please correct information taken from the McCarthy (2008) document to agree with the more accurate representation corrected from the Moffat PDEIS per EPA's request on DEIS page 4-202.* **Response #910-336:** The suggested language was incorporated into FEIS Section 5.8.1.2.

Comment Information	Comment	Comments and Responses
		Comment #910-335 *(ID 2850)**:*** *Page 4-266 Comment. The DEIS needs to provide information regarding the overall environmental value of East Slope agricultural wetlands compared to the riparian wetlands along the Fraser River.* **Response #910-335:** Both higher elevation and lower elevation wetlands can have important functions, such as wildlife habitat, groundwater discharge/recharge, and sediment/ nutrient retention and removal. Functions depend both on the characteristics of individual wetlands and the landscape in which they occur. Information on individual wetlands is not available either for the wetlands that may be lost through transfer of agricultural rights, or for wetlands along the Fraser River. Impacts to the riparian areas along the Fraser River would be the same between the Proposed Action and alternative 13a (Gross Reservoir / Transfer of Agricultural Water Rights). See DEIS Section 4.6.5. ***Comment #910-339*** *(ID 2849)**:*** *Page 4-295 Comment. The DEIS asserts "Flow changes are expected to have minor or negligible impacts on riparian habitats and impacts to boreal toad habitat would be negligible." As discussed elsewhere in these comments, the riparian area analysis is based on a flawed study of groundwater, and is therefore flawed as well. The boreal toad is listed as a State endangered, forest service "sensitive" species. In response to Grand County comments on the PDEIS, section 3.8.5.1 now addresses the occurrence of boreal toads in the Project area. The section on this page, however, still fails to quantitatively address the impacts the Project will have on toad populations as a result of the complete dry-up of 24 tributary streams in the Williams Fork (where a population is known to exist at*

Comment Information	Comment	Comments and Responses
		the confluence of the Williams Fork, McQueary, and Steelman creeks), or upon the populations that exist upstream from the Jim Creek and McQueary Creek diversions. In these latter two cases, habitat fragmentation has already occurred due to diversions. Boreal toads move 1-2 miles or more, and the impacts of further drying up of tributary streams, and reductions in other tributaries should be discussed with respect to further curtailment of available habitat[19]. FOOTNOTE: [19] Bunn, S.E., and A.H. Arthington, 2002. Basic principles and ecological consequences of altered flow regimes for aquatic biodiversity. Environmental Management 30:492-507 Impacts to Colorado River Cutthroat in Hamilton, Cabin (personal communication with the U.S. Forest Service), St Louis, and Vasquez Creeks and the Fraser River[20] are dismissed with the inaccurate statement "Colorado River cutthroat trout occurs in both the Fraser River and William's Fork River drainages, but flow changes would occur downstream of occupied habitat." FOOTNOTE: [20] "1997 Revision of the Land and Resource Management Plan for the Arapaho-Roosevelt National Forests and Pawnee National Grassland" accessed online, February 2010 at http://www.fs.fed.us/r2/arnf/projects/forestplanning/index.shtml **Response #910-339:** The DEIS conclusion on groundwater effects is correct based on the data presented and reports cited within the DEIS, which include reports by the USGS, monitoring data provided by Denver Water, PACSM results, HEC-RAS model results and independent assessments of that information by Corps hydrogeologists. Streamflow changes were modeled using the PACSM (described in DEIS Section 3.1), and riparian and wetlands areas are characterized in Section 3.6.5. Details of the methodology used to estimate stream flow changes are presented in

Comment Information	Comment	Comments and Responses
		Section 4.1 of the DEIS. Methods used to estimate changes in flood flows, water levels and wetted areas of streams are presented in Section 4.6 of the DEIS. Appendix H-5 of the DEIS also provides a series of flow duration curves for a number of locations in the Fraser River watershed. The rationale for the conclusions on groundwater effects are described more thoroughly in the response to Comment ID 2887. Denver Water only has four diversions in the upper Williams Fork Basin, on Steelman, McQueary, Jones, and Bobtail creeks. We assume that the comment intended to refer to tributaries of both the Fraser River and Williams Fork. The action alternatives do not include a “100% dry up scheduled for 24 tributary streams.” First, the current diversions already capture most of the natural flow in the tributaries that lack bypass flows for large portions of the year. The action alternatives would not increase the number of streams where diversions cause streams to dry up compared to Current Conditions, but would extend the time when they are fully diverted. In addition, many of these streams exhibit recovery downstream of the diversion from groundwater discharge or tributary flows, and wetlands and riparian vegetation along some stream segments appear to be supported mostly by groundwater. Second, about two-thirds of the total annual flow in these small streams occurs during June and July. The percentage of water diverted is lower during these months than during the rest of the year, and these high flows during the growing season appear to be an important factor in maintaining the existing riparian vegetation. Although the action alternatives would also decrease stream flows during the high flow season, there would continue to be seasonally high stream flow. Additional analysis of the existing conditions of the Fraser and Williams Fork tributaries has been added to FEIS Section 4.6.8 and a comparison of flows under

Comment Information	Comment	Comments and Responses
		Current Conditions and with each of the alternatives has been added to FEIS Sections 3.8.5 and 5.8.1.2. The discussion of boreal toad and Colorado River cutthroat trout was expanded and updated in FEIS Sections 3.10 and 5.10. Although Colorado River cutthroat trout occur in some affected stream reaches, conservation populations are located upstream of the diversions. ***Comment #910-44*** *(ID 2848)**:*** *Page 4-295 Comment. The DEIS should analyze impacts to river otters on the Colorado River.* **Response #910-44:** DEIS Section 4.8 included a brief analysis of river otters along the Colorado and other rivers. More discussion of potential Project impacts to otters was added to FEIS Section 4.6.10. ***Comment #910-286*** *(ID 2847)**:*** *Page 4-307 Comment. Fish are entrained in the diversion structures, carried to the east slope, and die below the diversion dams when diversions are turned on. These structures should include fish screens to prevent fish mortality and entrainment.* **Response #910-286:** The extent that the diversion structures may entrain individual fish would not change appreciably with the additional diversion of water with the Project. Fish populations have obviously sustained themselves for decades since the diversions were first installed with the diversions functioning as they have in the past. The additional diversions during some of the wetter years should not affect the ability of the populations to continue to sustain themselves.

Comment Information	Comment	Comments and Responses
		Comment #910-285 *(ID 2846)**:*** *Page 4-307 Comment. WUA vs. discharge should be shown in addition to WUA vs. time and would potentially be more informative.* **Response #910-285:** Appendix E of the Aquatic Resources Technical Report has been modified to include the weighted usable area (WUA) vs. discharge curves. ***Comment #910-288*** *(ID 2845)**:*** *Page 4-307 Comment. The analysis of impacts to aquatic habitat continues to be fatally flawed. Trout utilize different habitats in winter than they do during the rest of the year and therefore the comparison between summer and winter habitat availability is inappropriate. In the winter, trout metabolism slows dramatically and fish seek refuge from stream velocities in the interstitial spaces between rocks to conserve energy. Using summertime habitat preference curves to simulate winter habitat availability creates an erroneous modeling result and an incorrect conclusion regarding habitat availability. The assumption that "changes in habitat in during other times of the year would have less influence on fish populations" would ultimately lead to the conclusion that there would be no impacts of depleting year-round streamflows to the wintertime minimum flow amount since winter flows are the habitat bottleneck. Most of the conclusions of "no impact" from the aquatic habitat analysis are based on this mistaken premise.* **Response #910-288:** The Corps believes that winter use of habitat by trout was reasonably portrayed in the EIS. Taking into account the differences in habitat use between winter and summer and making conclusions about the relative effects on trout populations is reasonable and necessary. The speculation in this comment that

Comment Information	Comment	Comments and Responses
		flows can be flat-lined at winter low flows without an impact is not an assumption in the EIS and is not a realistic result of the Project. ***Comment #910-284*** *(ID 2844)**:*** *Page 4-309 Comment. Selecting stream segments with annual flow on the Fraser and only mentioning tributaries as an aside ignores impacts to the many partially or fully diverted tributary streams that will be affected by the Moffat Project. Also, impacts to invertebrate communities must be analyzed. The areas influenced by these impacts represent a much larger geographic region than the two stream segments evaluated on the Fraser, with the potential for a much greater impact to the ecosystems and socioeconomic systems dependent upon them, particularly due to their remoteness when compared to the Fraser segments that were selected. The same is also true for the Williams Fork tributary streams.* **Response #910-284:** The circumstances in this comment do not appear in the DEIS. Both the DEIS and FEIS fully evaluated the full length of the Fraser River and all the tributaries with diversions. Small tributaries are not underrepresented in the analysis. For example, within the Fraser River, resources were evaluated on several small tributaries including Jim Creek, King Creek, Little Vasquez Creek, Cooper Creek, Cub Creek, Buck Creek, Elk Creek and tributaries, St. Louis Creek tributaries, North Fork Ranch Creek, Middle and South Fork Ranch Creek, and Dribble Creek. The discussion of surface water effects on upper tributaries of the Fraser River and Williams Fork River in average and wet years was revised in FEIS Section 5.1. ***Comment #910-283*** *(ID 2843)**:*** *Page 4-311 Comment. As noted earlier, the 10% screening factor is problematic. The problem with this*

Comment Information	Comment	Comments and Responses
		screen is exacerbated based on a further screen of a 10% change in habitat, especially on the Colorado River headwaters that have been severely impacted by existing transmountain diversions. Once again, comparisons based on average wet, dry and average years doesn't permit analysis of true temporal variability in aquatic habitat based on (1) actual variability in daily flows and (2) creation of back-to-back dry years. **Response #910-283:** Screening criteria of 10% was developed to provide focus on stream segments within the overall study area that would experience a flow increase or decrease of greater than 10% based on average annual flow. The purpose of identifying these segments was to focus the selection of sample sites, data collection and field work in areas that experience the greatest flow change. In other words, 10% screening levels help to focus the analysis on streams in the study area that are likely to be impacted and not on small changes in streams that are very unlikely to be impacted. Because the study area covers several river basins, it was impractical to collect data on each individual sub-reach of every affected stream. Several representative river reaches, which experience the greatest flow change were therefore identified for detailed data collection and evaluation. The approach was to select a variety of reaches that were examples of or statically representative of different resource conditions encountered in the study area. All of the Colorado River headwater tributary streams with diversions were fully evaluated; none of these streams were "screened out." Impacts to daily flow rates (wet, average and dry years where applicable) are displayed graphically in hydrographs included in Appendix H-4. Daily flow data is also presented in the form of flow duration

Comment Information	Comment	Comments and Responses
		curves in Appendix H-5 DEIS and the percentage of days that daily flow increases and decreases of varying magnitudes would occur is presented in Appendix H-6 of the DEIS. Additional information on daily flow changes was included in FEIS Sections 4.1 and 5.1 and Appendix H. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see the sub-section Use of Daily and Monthly PACSM Data for Resource Evaluations in DEIS Section 4.1). The time step used in PHABSIM was a daily time step for creating a daily time series for fish habitat. This information was used for impact evaluation in the DEIS and FEIS, and was not based on monthly flow data. The use of wet, dry, and average year hydrology is an accepted practice in preparing EIS's and is a reasonable method to use in the Moffat Project EIS. Additional information was added to Chapters 4 and 5 of the FEIS on the increased frequency and duration

Comment Information	Comment	Comments and Responses
		of dry year conditions (FEIS Sections 4.6.1 and 5.1) and the associated effects on resources. Most of the additional diversions with the Project would occur in May, June, and July of wet and average years and there would be no additional diversions in dry years. Therefore, the additional diversions usually would not occur during the late summer period of low flows and highest water temperatures. This discussion has been incorporated into the evaluation of impacts for aquatic biological resources in FEIS Sections 4.6.11 and 5.11. ***Comment #910-282*** *(ID 2842)**:*** *Page 4-311 Comment. "A difference in minimum IFIM habitat availability of 10% or greater was used to indicate that fish populations may be potentially affected and warranted further analysis." There is no supporting documentation provided for electing to choose a change in habitat availability of 10%; arbitrary.* **Response #910-282:** Fish communities naturally vary in abundance over time by more than 10%, as demonstrated in many instances in the DEIS and FEIS Section 3.11 with sampling data from the streams in the Project area. Because Project-related flow changes less than 10% likely would have little effect on fish populations relative to natural variability, the Corps chose a threshold that would both define the effects of the Project and account for noise in modeling and hydrology. Ten percent is also a threshold that has been used in other EIS's, notably the Southern Delivery System EIS under the Reclamation and the Two Forks EIS. ***Comment #910-281*** *(ID 2841)**:*** *Page 4-313 Comment. Based on DEIS page 4-254, FR-1 will result in decrease stream depth of 8 inches. This appears to be inconsistent with the statement*

Comment Information	Comment	Comments and Responses
		that there will be "no change" in channel geomorphology. **Response #910-281:** Stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions are a function of many factors, including streamflow and energy, sediment supply, and the frequency and duration of different magnitude flows. Changes in flows (and the resulting flow depths) at a given time were evaluated by modeling sediment transport for existing and proposed conditions as part of evaluating sediment transport capacity for each condition. Sediment transport modeling completed as part of the FEIS evaluates the stream's ability to transport its sediment load for both existing conditions and Project alternatives. Changes in flow magnitudes, which result in changes in flow depths, were included in the analysis as flow duration curves for all conditions were directly modeled. It should be noted that changes in flow depths do not necessarily result in changes in channel morphology. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-280*** *(ID 2840)**:*** *Page 4-313 Comment. "In general, as long as flushing flows are adequate to maintain substrate composition, invertebrates would have more favorable habitat availability with reductions in peak runoff flows." This statement is at odds with McCarthy, 2008 "At downstream reaches, the proportion of EPT taxa increased with discharge…" EPT taxa stands for ephemeroptera, plecoptera, and tricoptera, and is a common grouping to represent environmentally sensitive, or indicator species. In addition, McCarthy finds that semi- and multivoltine*

Comment Information	Comment	Comments and Responses
		species richness are strongly positively correlated with discharge. **Response #910-280:** The statement in the DEIS is not at odds with McCarthy's work. McCarthy's work was done specifically in small tributaries where most or all of the flow was diverted and documented the changes that occurred as water returned to the stream channel downstream of the diversions. This is a different case than the context of the statement in the DEIS. This statement in the DEIS referred to reductions in peak runoff flows and was intended to describe conditions in the larger streams in the Project area that are not fully or mostly diverted. The FEIS in Section 4.6.11 has been revised to make this more clear. Additional invertebrate community metrics, including Ephemeroptera, Plecoptera, and Trichoptera species and changes in community composition have been included in FEIS Sections 3.11, 4.6.11, and 5.11. ***Comment #910-279*** *(ID 2839)**:*** *Page 4-314 Comment. The quote from Tom Wesche is taken out of context. While a five year flood may be more detrimental to small fish than a 1.01 recurrence interval event, the overall long term benefits of the larger event may be much greater to the fish population by scouring out new pools, bringing woody debris into the channel, re-invigorating the riparian vegetation community, etc.* **Response #910-279:** The citation of Wesche's work in the DEIS appropriately attributed his work in the context of available, short-term habitat for aquatic populations, especially fish and macroinvertebrates This is also consistent with applications of the PHABSIM model and with observations of fish and invertebrate dynamics in streams that members of the Corps team

Comment Information	Comment	Comments and Responses
		have followed for decades. This discussion has been slightly modified in the FEIS to help clarify this issue. The discussion does not contradict the channel dynamics context of his work, and the need for flows that maintain the channel. However, as discussed in the DEIS and FEIS, high flows can simultaneously have detrimental effects to populations while having beneficial effects to the channel. Channel maintenance, flushing flows, and sediment deposition are discussed in the FEIS Section 3.3 and 5.4 and were taken into account and incorporated into the biological discussions and impact evaluation in both the DEIS (see page 4-307) and FEIS Section 4.6.11. ***Comment #910-139*** *(ID 2925)**:*** *Page 4-367 Comment. Recreational activities other than boating occur on streams that may not be considered in the boating analysis and are subsequently ignored in the DEIS analysis.* **Response #910-139:** Fishing activities were considered in the DEIS analysis (DEIS Section 4.13), as was non-flow dependent activities. The analysis addressed the potential impacts on recreation as a result of the Proposed Action, focusing on activities that are water dependent. Activities such as hiking and mountain biking, which are not water dependent, are not expected to be directly affected. Impacts to the scenery of the area, which may be a component of the recreation experience, were addressed in DEIS Section 4.15. ***Comment #910-138*** *(ID 2924)**:*** *Page 4-371 Comment. Paragraph 5 and Table 4.13-1: The DEIS conclusions regarding the change in the number of boating days at specific flow rates is flawed because the analysis does not consider wet or dry years which are equally important to the boating community. Include tables of changes in usable days.*

Comment Information	Comment	Comments and Responses
		Response #910-138: Please see the response to Comment ID 2922. ***Comment #910-137*** *(ID 2923)**:*** *Page 4-373 Comment. Table 4.13-2: It is not possible to accurately compare the change in usable days from current to full use (Table 4.13-1) and full use to proposed action (Table 4.13-2) because Table 4.13-1 has a flow category representing flows greater than 700 cfs whereas the same column in Table 4.13-2 represents flows from 700 cfs to 2,000 cfs. It is unclear how many days greater than 2000 cfs occur under the current and full use scenarios.* **Response #910-137:** FEIS Section 5.15.1.2 was revised to provide a comparison between Current Conditions (2006) and Full Use with a Project Alternative (2032). ***Comment #910-136*** *(ID 2922)**:*** *Page 4-375 Comment. Table 4.13-3: The 5-year average masks the change in days on which the flow was 700-2000 cfs. The changes in any one of the years can be quite high.* **Response #910-136:** An analysis of the full 45 year period of record is provided in narrative form in DEIS Section 4.13.1.2. This analysis was replicated for comparing Current Conditions (2006) to Full Use with a Project Alternative (2032). ***Comment #910-135*** *(ID 2921)**:*** *Page 4-386 Comment. COE should offer data to support its statement that "Flows associated with the No Action Alternative during an average year during the primary boating season (May-September) are very similar to those described for the Proposed Action." Average annual flows in the Colorado River below Windy Gap would be about 5% higher under*

Comment Information	Comment	Comments and Responses
		No Action compared to the Proposed Action. Most of that difference likely occurs between May and September, and seems significant enough to impact the boating experience. **Response #910-135:** Additional information and analysis was included in FEIS Section 5.15.1.2. This new data and analysis concluded that there would be negligible to no impacts to boating on the Colorado River as a result of the Proposed Action. ***Comment #910-242*** *(ID 2920)**:*** *Page 4-404 Comment. The results and conclusions presented here are unsupported. An 8 inch drop in depth should have a visible change in appearance of the stream system. Also, the fact that the flow reductions are within the range of normal variability does not equal no effects from the diversions. These statements are misleading and unsupported. The Proposed Action will be "slicing the peak" in most years, and will have an effect.* **Response #910-242:** The DEIS states that "In general, the Moffat Project would have only a minor effect on flow levels during periods of low flows, when streams are most sensitive to visual change." It does not suggest that visitors are most sensitive to visual change in winter. Rather it states that in periods of low flow, streams are most sensitive to visual change. The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research

Comment Information	Comment	Comments and Responses
		indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality . Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2. ***Comment #910-368*** *(ID 2919)**:*** *Pages 4-497 through 4-505 Comment. The description of socioeconomic impacts resulting from the No Action Alternative are rife with speculation and worst case scenarios for which COE has provided no objective support.* **Response #910-368:** The No Action Alternative developed for the EIS and described in Section 2.10 defines the most likely actions taken by Denver Water without the Moffat Project and the general outcomes resulting from those actions. As explained in Section 2.10, Denver Water has not yet experienced the situations or conditions described for the No Action Alternative and the resulting effects must therefore be projected. It is uncertain to what degree the Strategic Water Reserve would be depleted or what levels of restrictions would be put in place under various conditions. However, drought restrictions would be more frequently imposed than in the past and would likely be more severe, water shortages in the North System would be increasingly likely and treatment plant vulnerabilities would worsen under the No Action Alternative. The uncertainties surrounding the No Action Alternative do no lend themselves to quantification of socioeconomic impacts and therefore qualitative assessments of some outcomes must be described in the EIS. ***Comment #910-360*** *(ID 2918)**:*** *Page 4-515 Comment. The definition of irretrievable commitment of resources here differs significantly*

Comment Information	Comment	Comments and Responses
		from that explained on DEIS page 4-3. **Response #910-360:** The definition of irretrievable commitment of resources in FEIS Section 5.0 (DEIS Section 4.0) was revised to read: "Irretrievable commitment of resources would result from resources used, consumed, destroyed, or degraded during construction, operation, and abandonment of the Project and could not ever be retrieved or replaced" to match the definition provided in DEIS Section 4.19 (FEIS Section 5.21). ***Comment #910-18*** *(ID 2917)**:*** *Page 5-4 Comment. Paragraph 5: Historical, current, and predicted future values for the number of Denver Water customers should be shown in addition to the Metropolitan Denver values.* **Response #910-18:** Please see the response to Comment ID 2916. ***Comment #910-28*** *(ID 2916)**:*** *Page 5-6 Comment. Table 5-2 and the DEIS must include at least three additional water-based cumulative impacts: (1) lining, piping and winterization of Denver's Williams Fork and Moffat Collection Systems; 2) "retiring" or abandoning senior agricultural water rights that Denver owns that are located below Denver's collection system on the West Slope; and (3) Growth in Denver's water demand to 2016, to 2030, and to 2050 (see page 5-31 under land based actions, Denver estimates serving water to 1.9 million people).* **Response #910-28:** Winterization of System The canals in these systems have been lined and winterized for several decades. The Fraser River and Williams Fork systems have been diverting water

Comment Information	Comment	Comments and Responses
		through the winter since 1959 after Williams Fork Reservoir was enlarged and the completion of the Vasquez Tunnel. The enlargement of Williams Fork Reservoir in 1959 provided sufficient replacement water for year round diversions. Both Gumlick and Moffat Tunnel diversion records confirm that water has been diverted consistently during winter months for several decades. The original decree does not limit Denver Water to divert only in the summer nor does it require a particular method or type of diversion structure whether open canal or pipe. Since the original decree does not require a certain type of diversion structure, C.R.S. Section 37-92-103(5) does not require a change of water right or a new decree to line, pipe or enclose a ditch. Finally, the piping of open canals in Denver Water's ROW has been upheld by the Federal courts. See City and County of Denver, By and Through Bd. of Water Com'rs v. Bergland 695 F.2d 465, 479 (C.A.Colo.1982). Many of the canals in the Fraser River Basin are being replaced with pipes for safety and maintenance reasons. There may be minor seepage reduction as a result of these improvements. However, estimates of yield from the Moffat Collection System have consistently assumed no losses from seepage associated with the collection system since most of the canals have been lined for many years. Water Rights The Corps relies on administration and enforcement of the State water laws with regards to water rights and defers to the State to resolve water law issues. A Section 404 Permit would not impose conditions on the operation of the Project that are within the jurisdiction of Colorado Water Law. The Corps' analysis for the EIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership will not be a

Comment Information	Comment	Comments and Responses
		factor in the Corps public interest decision." 33 CFR Part 320.4(g). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR Part 230.10. The Corps may issue a Section 404 Permit even if other Federal, State, or local authorizations have not been obtained before the applicant has applied for a permit. The Corps cannot predict with any certainty the amount of water that may be developed in the future, therefore this component was not included in the cumulative effects analysis for the EIS. Operations of Denver Water's downstream water rights would not change as a result of this Project. Demand Projections Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, Colorado Department of Local Affairs or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #910-27*** *(ID 2915)**:*** *Page 5-6 Comment. Table 5-2: The DEIS should include an analysis, even if just qualitative, of the W.I.S.E. Project considering its potential to generate/save x acre-feet of water on the Front Range. Further, the DEIS should explain why this is not a viable alternative to the Moffat Project; given that it projects a dry-year, firming yield that exceeds the stated purpose and need and results in NO additional diversions from the Colorado River basin.*

Comment Information	Comment	Comments and Responses
		Response #910-27: Conjunctive use of WISE water does not alter the period of record used in Denver Water's hydrologic modeling. The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions and sequences of years that include dry years followed by wet years, in which case it is suitable for estimating hydrologic effects associated with the Moffat Project EIS alternatives. A study of period of 1950 through 1991 was used to analyze a range of possible WISE scenarios because those years are included in both Denver Water's PACSM and Aurora's South Platte River planning model. There is currently insufficient information available to incorporate the WISE Project in Denver Water's PACSM because a variety of possible scenarios are being considered and evaluated by the project proponents. A qualitative evaluation of this project was added to FEIS Section 4.6.1, which describes the purpose of the project, the participants, and generally how it would operate. While WISE would have participation from several water providers, WISE would use, in part the same water (unused Denver Water reusable effluent) as Moffat Project Alternatives 8a and 10a and various aquifers in the regions to store water similar to Alternative 10a. Furthermore, as currently designed, the WISE Project does not provide water to the north end of Denver Water's Collection System. ***Comment #910-26*** *(ID 2914)**:*** *Page 5-15 Comment. Paragraph 6: The cumulative effects are analyzed based upon the assumption (in both the Moffat Project DEIS and the Windy Gap Firming Project DEIS) that the preferred alternative will be executed. If this is not the case, the cumulative impacts conclusions will likely be flawed. The cumulative impacts of other alternative should be*

Comment Information	Comment	Comments and Responses
		considered. **Response #910-26:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #910-25*** *(ID 2913)**:*** *Page 5-18 Comment. Paragraph 1: "Existing"/ "Current" conditions in the both the Windy Gap Firming Project DEIS and the Moffat DEIS overstate the actual, measured current diversions. Therefore, the relative impacts of the proposed project are understated.* **Response #910-25:** Data obtained from NCWCD was generated using the WGFP Model for the WGFP EIS. Model results were provided for the Proposed Action, Chimney Hollow Reservoir with prepositioning, which was analyzed in the EIS. Monthly WGFP Model output provided by NCWCD includes Adams Tunnel C-BT and Windy Gap deliveries (separately), Windy Gap demands, Windy Gap deliveries from Chimney Hollow and Granby Reservoir to meet demands, Windy Gap pumping, Willow Creek Feeder Canal diversions, Willow Creek Reservoir end-of-month storage contents, Granby Reservoir end-of-month storage contents by account (C-BT, Windy Gap, and dead storage), and flow data at the Colorado River below Lake Granby gage (09019500), Colorado River below the Windy Gap diversion, Willow Creek at the

Comment Information	Comment	Comments and Responses
		confluence with the Colorado River, and Fraser River at the Granby gage (09034000). PACSM was configured to reflect similar Windy Gap demands, diversions, and deliveries. This was accomplished by modifying the demands placed at the Windy Gap and Adams Tunnel nodes in PACSM to match the data provided by NCWCD. ***Comment #910-241*** *(ID 2912)**:*** *Page 5-20 Comment. Paragraph 2: Based on PACSM results, the DEIS concludes that "municipal and domestic water supplies in the Fraser River basin were adequate for existing levels of water demand, but several water providers would experience shortages under build-out demands…" This conclusion assumes no reductions to bypass flows despite the earlier statements that bypass flows may be reduced in the future. By not considering bypass flow reductions, impacts to water suppliers may be underestimated.* **Response #910-241:** Bypass flow reductions were considered under Full Use of the Existing System, therefore, the shortages expected to occur in the Fraser River Basin between Current Conditions and Full Use of the Existing System are not underestimated because they reflect the impacts of the bypass flow reductions. Please see the response to Comment ID 2984. ***Comment #910-240*** *(ID 2911)**:*** *Page 5-24 Comment. Paragraph 5: Data from 2003 and 2004 were used in the DEIS analysis to understand the effects of a Shoshone Call relaxation. These years should also be included in the PACSM modeling in order to understand the full spectrum of impacts that may result from a Shoshone Call relaxation.*

Comment Information	Comment	Comments and Responses
		Response #910-240: Please see the response to Comment ID 2509. ***Comment #910-239*** *(ID 2910)**:*** *Page 5-24 to -26 Comment. Because the DEIS presents impacts projected through 2030, and the Franchise Agreement with Xcel regarding Shoshone is valid through 2032, the effects of implementing this agreement should be included in the model. As presented in the DEIS, the actual level of diversions may be understated and reservoir releases may be significantly overstated compared to what may actually happen in future dry years.* **Response #910-239:** The franchise agreement for the Shoshone Call relaxation was renewed in 2007 for 25 years. Denver Water is currently working with water users on the West Slope and discussing potential options for a relaxation of the Shoshone call during droughts. These discussions incorporate the current agreement and other proposals. The degree to which these discussions lead to a permanent agreement is unknown. Therefore, a permanent Shoshone call relaxation of variation of the current agreement is not considered a reasonably foreseeable action because there isn't reasonable certainty as to the likelihood of that action occurring within the same projected time period at the Moffat Project. Shoshone call reduction per the current agreement between Denver Water and Xcel Energy (Shoshone Agreement) is analyzed as a reasonable foreseeable action in DEIS Section 5.3.1, subheading Reduction of Xcel Energy's Shoshone Power Plant Call. It is difficult to quantify the potential hydrologic effects associated with the Shoshone Call reduction per the Franchise Agreement between Denver Water and Xcel because the magnitude and timing of flow reductions could vary widely and would depend on many factors including stream flows, storage contents, project operations and bypass/instream flow

Comment Information	Comment	Comments and Responses
		requirements. The analysis presented in Section 5.3.1 describes the potential frequency of the call reduction and the magnitude of additional diversions when the call reduction is in place based on the relaxation of the call in 2003 and 2004. While Denver Water's diversions may increase under a Shoshone Call reduction, diversions with or without the Moffat Project would be the same since available storage capacity in Gross Reservoir would not be a limiting factor in dry years when the Shoshone Call reduction would be invoked per the Shoshone Agreement. The Shoshone Agreement would provide limited additional water to the Moffat Collection System because Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. The model may understate diversions and overstate reservoir releases in a dry year in relation to a Shoshone Call relaxation, however, possible changes in diversions and reservoir releases would not be attributable to the Moffat Project. As described above, the Shoshone Agreement does not provide additional water to the Moffat Collection System. Due to the complexity of modeling the agreement and the fact that diversions in the Moffat Collection System are not affected by a Shoshone Call relaxation, the analysis presented in the DEIS, which relies on historical data, is reasonable. ***Comment #910-238*** *(ID 2909)**:*** *Pages 5-5, 5-26 and 5-27 Comment. The DEIS should include a description regarding the reduction in streamflow in the Colorado River in late summer/early fall months, compared to existing and historic conditions, from the cessation of 10,825 releases from these reservoirs at this time.* **Response #910-238:** The discussion of reductions in streamflows in the Colorado River in later summer/early fall months due

Comment Information	Comment	Comments and Responses
		to the cessation of 10,825 Water releases from Williams Fork and Wolford Mountain reservoirs was expanded in FEIS Section 4.1. ***Comment #910-24*** *(ID 2908)**:*** *Page 5-39 Comment. The DEIS does not discuss the cumulative effects to the Colorado River below Kremmling and in particular the impacts to the ORVs in segments in the BLM's for Wild and Scenic report.* **Response #910-24:** The Corps coordinated with BLM regarding the Wild and Scenic River designation process throughout the NEPA process. Sections of the Colorado River within the Project area considered eligible for Wild and Scenic Rivers designation are described in DEIS Section 3.13.5 and FEIS Section 3.15.5. Upon conclusion of the eligibility phase, the BLM prepared a Wild and Scenic Eligibility Report that identified five river segments within the Moffat Project EIS study area (portions of the Colorado and the Blue rivers) that were eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS) (BLM 2007). The Wild and Scenic Suitability Report followed in April 2010. In the report, the BLM states: "The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection." Those segments of the Colorado River between Kremmling and Glenwood Springs were determined to be eligible. The Kremmling and Glenwood Springs Field Offices of the BLM addressed this issue in separate Draft Resource Management Plan (RMP)/EIS documents that were released in 2011. The preferred alternative in both RMP's includes a determination that much of the Colorado River between Kremmling and Glenwood Springs is suitable for inclusion in the Wild

Comment Information	Comment	Comments and Responses
		and Scenic Rivers Act. A variation of the preferred alternative by both field offices would defer designation by adopting and implementing the Stakeholder Group Management Plan. If monitoring indicates that the Management Plan was not providing an adequate level of protection, BLM would initiate a process to evaluate suitability at a future date. The recreation analysis did evaluate effects of the Project alternatives on the Colorado River below Kremmling (see DEIS Section 4.13.1.2). However, the Corps does not use its authorities to protect those segments under BLM study for determination in a greater capacity than it does all waterways under their jurisdiction. The Corps' direct and cumulative impact analysis shows that minor impacts would result from implementation of the action alternatives. These results can then be interpreted to find that the alternatives would likely not affect the suitability of the eligible segments for inclusion in the NWSRS. This conclusion was added to the FEIS. ***Comment #910-23*** *(ID 2907)**:*** *Page 5-39 Comment. This section states "In the Colorado River basin, the WGFP and Shoshone Call reduction would likely have the greatest cumulative effect on flows when added to the effects of the Moffat Project." This is exactly why the Shoshone call needs to be included in the modeling for both the WGFP and the Moffat Expansion Project, and that they should be modeled together. In the next paragraph, it indicates that the Moffat Project and the WGFP are expected to cause additional depletions in average and wetter years, and yet the Shoshone agreement is likely to cause additional depletions in dry years. This means that, coupled together, these circumstances will tend to decrease streamflows in ALL YEARS, to a river system that is already heavily depleted from prior diversions. This type of*

Comment Information	Comment	Comments and Responses
		information needs to be explicitly and thoroughly described in the PDEIS. **Response #910-23:** The Shoshone Agreement does not provide additional water to the Moffat Collection System since available storage capacity in Gross Reservoir would not be a limiting factor in dry years when the Shoshone Call reduction would be invoked and Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. It is highly unlikely that the Shoshone Agreement would affect stream flows in a manner that translate into additional shortages in Grand and Summit counties in any given or subsequent year for the following reasons: 1. The 2006 Shoshone Agreement does not increase the supply to the Moffat System because Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat System. Therefore, there would be no change in stream flows in the Fraser River Basin due to this agreement. 2. Any additional exchanges from Williams Fork Reservoir to Dillon Reservoir and Roberts Tunnel would occur when the Shoshone Call is on and calling out all junior upstream water rights, including Roberts Tunnel and Dillon Reservoir. During this time any diversions at Dillon Reservoir would be fully replaced, resulting in no effect on stream flows below the point of replacement. 3. If the Shoshone Call reduction results in additional storage at reservoirs such as Dillon, Green Mountain, Williams Fork, and Wolford Mountain, the subsequent demand for water under those facilities' respective water rights is

Comment Information	Comment	Comments and Responses
		reduced. 4. Upstream junior in-basin water rights would benefit when the Shoshone Call is reduced because they could divert and/or Green Mountain and Wolford Mountain reservoirs gain water supplies, which are used for West Slope purposes. 5. Shortages in Summit County are typically the result of physical water shortages and minimum in-stream flows upstream of Dillon Reservoir, as opposed to Denver Water's operations. In response to Grand County's comments, see revisions to DEIS Section 5.3.1 under the subheading Relaxation of Xcel Energy's Shoshone Call. ***Comment #910-34*** *(ID 2906)**:*** *Pages 5-39 to 5-40 Comment. The evaluation of cumulative impacts to water quality in Chapter 5 is lumped in with the discussion of surface water in section 5.6.1. The evaluation of these two topics is contained in one and a half pages. Increased water temperature due to the combined foreseeable Moffat, WGFP projects and Shoshone call reductions is the most significant potential water quality impact. The entire analysis on this topic is limited to the statement: "[a]lthough the Moffat Project is not expected to result in a significant change in stream water temperature, a slight increase may occur during periods of lower flow or periods of slightly increased treated wastewater influence. The Shoshone call reduction also has the potential to increase stream water temperature because of reduced releases from cold water depths of reservoirs as well as lower flows." This description completely misses the fact that the Fraser River and tributaries are currently significantly impacted by elevated water temperatures. Stream flow level is one of the most influential factors on stream water temperature, and*

Comment Information	Comment	Comments and Responses
		future water diversions from the Moffat and WGFP, combined with Shoshone call reductions will reduce stream flows. There is no assessment about how the past action of the Moffat Collection system has brought the stream temperature issue to the point it is teetering around the water quality standard for much of the Fraser River watershed, Muddy Creek, and the Colorado River below Windy Gap. **Response #910-34:** Please see the response to Comment ID 2905. A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (Sections 4.6.2 and 5.2). ***Comment #910-33*** *(ID 2905)**:*** *Page 5-56 Comment. The Summary of Cumulative Effects states "cumulative effects were analyzed for all resources." The statement in the paragraph above could not be considered "analysis." No impacts to water quality are mentioned in this summary in spite of the fact that temperature, in particular, is an existing significant problem affected by changes in stream flow levels.* **Response #910-33:** Cumulative effects analysis for water quality is included in the discussion for Surface Water in DEIS 5.6.1. As part of the restructuring of the FEIS, water quality cumulative effects analysis is presented as a stand-alone chapter (see FEIS 4.6.2). ***Comment #910-237*** *(ID 2904)**:*** *Page ES-2 Comment. The DEIS identifies the need for a new project based upon the 1997 IRP and "recent events such as the 2002 drought." However 2002 is not included in the PACSM modeling to determine effects of the project. It is inappropriate to justify the need for a project using hydrologic*

Comment Information	Comment	Comments and Responses
		consequences that are not included in the model study period used to evaluate the hydrologic effects. **Response #910-237:** Please see the response to Comment ID 2458. ***Comment #910-235*** *(ID 2903)**:*** *Page ES-14 Comment. Paragraph 1: The DEIS lists the average water supply and unrestricted demand for the drought period of 2002-2005. Because there were customer restrictions in 2002, the restricted demand should be listed as well.* **Response #910-235:** The information requested in the comment should not be added to paragraph 1 of the Executive Summary. Whereas it is true that water demands were restricted by drought response measures in 2002, water deliveries after drought restrictions are imposed misses the point of this paragraph and would create confusion. The point of this paragraph is that drought planning prior to the occurrence of the drought requires a recognition of unrestricted demands compared with supplies to establish appropriate drought responses. That is rendered more difficult with greater conservation and unrestricted demands that are higher and thus closer in magnitude to potential supplies. ***Comment #910-234*** *(ID 2902)**:*** *Page ES-16 Comment. The figure entitled "Denver Water's Average Annual Water Demand" should be presented to scale in order to properly understand changes in demand. This figure 'skews' the graph, which hides the 'front-loading' of demands prior to 2016 and thereby reduces the impacts from the project.* **Response #910-234:** Please see the response to Comment ID 2559.

Comment Information	Comment	Comments and Responses
		Comment #910-233 *(ID 2901)**:*** *Pages ES-18 (paragraph numbered 4) and ES-19 Comment. How does the streamflow in South Boulder Creek increase by 10,400 AF under the proposed action but the increase in tunnel diversions is only 10,300 AF? This is an example where the data presented in the DEIS is inconsistent or without explanation, which results in confusion and/or inaccuracies.* **Response #910-233:** The text in the Executive Summary was corrected as follows: Average annual flows in South Boulder Creek at the Pinecliffe gage (above Gross Reservoir) would increase by about 2,300 AF (2%) under the No Action Alternative, 10,300 AF (9%) under the Proposed Action, and between 9,200 AF and 10,100 AF (8 to 9%) for the other action alternatives. ***Comment #910-232*** *(ID 2900)**:*** *Page ES-22 (paragraph numbered 2) Comment. According to field observations in the Moffat Collection System, there is currently more than "minor amounts of localized sediment depositions." Reductions in streamflow due to increased Moffat Tunnel diversion have the potential to make sediment deposition considerably worse and may eventually result in changes to stream morphology.* **Response #910-232:** The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic data, sensitivity analysis of sediment supply and sediment transport equations and an assessment of transport capacity by substrate particle size. Analyses of the existing systems are provided in FEIS Section

Comment Information	Comment	Comments and Responses
		3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #910-308*** *(ID 2899)**:*** *Page ES-32 Comment. Paragraph 5: The DEIS states that "there would be no changes to water quality or channel geomorphology in the Fraser, Williams Fork, Colorado, Blue, South Platte rivers and South Boulder Creek that would affect fish and other aquatic biological resources." Decreases in flow are highly likely to affect the biotic community, and the DEIS fails to acknowledge this. The same paragraph states "habitat suitability for benthic invertebrates is usually more favorable at lower runoff flows." Based upon the current literature, this statement is not necessarily true for all benthic invertebrates in this area.* **Response #910-308:** The DEIS and FEIS in their entirety evaluate the effects of the changes in flow with the Project with numerous analyses. It is not reasonable to discount the science-based analyses and simply assume that any reduction in flow is an impact, as suggested in this comment. The general assumption concerning the approach to impacts evaluation to benthic invertebrates in the DEIS was reasonable with respect to the general invertebrate community. However, as noted in this comment, there may be some exceptions. FEIS Section 4.6.11 has been revised to account for some of the exceptions. ***Comment #910-57*** *(ID 2898)**:*** *Page ES-36 Comment. Paragraph 2: Implementation of some of the action alternatives will result in greater than negligible effects to boating on the Colorado River, as illustrated through the usable days analysis*

Comment Information	Comment	Comments and Responses
		completed through the W&S process. This statement of negligible effect contradicts the statement on page ES-45 which says that "stream flow changes in the Fraser River during average flow years could result in moderate impacts to the number of days with optimal stream flow for recreational boating use." Stream flow changes to the Fraser will have a direct effect on the water available for commercial and private boating on the main stem of the Colorado River. ***Response #910-57:*** Impacts to recreation on the Colorado River were evaluated independently of those on the Fraser River. FEIS Section 5.15.8 was revised to reflect that the impact on Fraser River boating would be "major" not "negligible" for consistency with the impacts analysis reflected in Section 5.15.1.2. ***Comment #910-359*** *(ID 2897)**:*** *Page ES-47 Comment. No mitigation for the reduction in boatable days in West Slope rivers is included.* **Response #910-359:** Several changes were made in the FEIS to respond to this and other comments received on the DEIS, including elimination of the 5-year average as a basis for comparison. Flow data from individual years are still presented because they provide a good snapshot of conditions that would be expected under actual hydrologic conditions. However, the overall level of change is presented using the period of record rather than the 5-year average. Also, the analysis of impacts on boating has been revised in the FEIS to provide a comparison of Current Conditions (2006) versus Full Use with a Project Alternative (2032) as well as Full Use of the Existing System versus Full Use with a Project Alternative (2032). Conclusions on the resulting levels of impact have been revised accordingly in the FEIS.

Comment Information	Comment	Comments and Responses
		Comment #910-307 *(ID 2896)**:*** *Appendix H-1 Comment. Tables such as those shown in Appendix H-1 should also include a comparison of current conditions to all alternatives, not just the preferred alternative in order to appropriately compare all alternatives described in the DEIS.* **Response #910-307:** Tables such as those shown in Appendix H-1, which compare Current Conditions to Full Use of the Existing System and all of the alternatives, including the No Action, were added to the FEIS. ***Comment #910-306*** *(ID 2895)**:*** *Appendix H-1 Comment. Data for all months and all years (not just the averages) should be shown throughout Appendix H in order to understand the full impacts of the project due to antecedent year conditions (for example wet years following dry years and the level of expected fluctuations over time.* **Response #910-306:** It is impractical to present all of the daily and monthly data for all 45-years of the study period at the 46 locations shown in Appendix H-3. The monthly averages presented in Appendix H-1 and H-3 for average, wet and dry conditions provide an understanding of the general timing, magnitude and range of hydrologic effects that would occur. More information on daily diversions and flows was added to FEIS Sections 4.6.1 and 5.1 to present hydrologic changes during a sequence of dry years followed by a wet year. ***Comment #910-305*** *(ID 2894)**:*** *Appendix H-1 Comment. Table H-1.51: It is unclear why bypass flow reductions are not shown in two of the five dry years (1977, 1981) while reductions occur in years that are classified as average (1956, 1957, 1964, 1978, and 1979)*

Comment Information	Comment	Comments and Responses
		Response #910-305: To reflect reductions in minimum bypass flows in the Fraser River Basin in PACSM, the bypass flows were reduced to 70% of the bypass requirement based on Denver Water's total reservoir storage contents being less than 65% full in July. Depending on the severity of the dry year and the preceding years, storage contents may or may not drop below 65% full in a dry year. Because 1977 was preceded by several average and wet years, PACSM results show that Denver Water's total storage contents did not drop below 65% full in July 1977. However, due to the severity of that dry year and runoff conditions in subsequent years, total storage contents in Denver Water's reservoirs dropped below 65% in the two years following 1977. Similarly PACSM results show that Denver Water's total storage contents in 1981 did not drop below 65% in July that year because their reservoirs were full the preceding year. ***Comment #910-304*** *(ID 2893)**:*** *Appendix H-3 Comment. Tables H-1.5 -H-1.50 should be presented at higher resolution. Many of these tables display zero flow change but a corresponding percentage change greater than zero. 0.5 cfs could be very important in some streams, particularly in the fall and winter.* **Response #910-304:** The tables in Appendix H-1 and H-3 were revised to show flows and diversions and expected changes to the nearest tenth. ***Comment #910-303*** *(ID 2892)**:*** *Appendix H-4 Comment. The daily average hydrographs shown in Appendix H-4 do not clearly show the difference between each of the scenarios and alternatives. Furthermore, the scale on the y-axis should be adjusted so that low flows are more easily visible.*

Comment Information	Comment	Comments and Responses
		Response #910-303: To improve the clarity of the hydrographs in Appendix H-4, the x-axis was reduced to March through September at locations where flow changes during the winter months would be minimal. Given the wide range of flows expected at most locations it is not possible to reduce the scale of the y-axis and improve the resolution of low flows without removing high flows from the graph. Where possible, the flow intervals displayed on the y-axis were presented at higher resolution. ***Comment #910-231*** *(ID 2891)**:*** *Appendices H-4 and H-5 Comment. The resolution on these plots is unsatisfactory for evaluating changes to low flows between alternatives.* **Response #910-231:** To improve the clarity of the hydrographs in Appendix H-4, the x-axis was reduced to April through September at locations at locations where flow changes during the winter months would be minimal. Given the wide range of flows expected at most locations it is not possible to reduce the scale of the y-axis and improve the resolution of low flows without removing high flows from the graph. Where possible, the flow intervals displayed on the y-axis were presented at higher resolution. ***Comment #910-302*** *(ID 2890)**:*** *Appendix H-6 Comment. The categories of flow changes shown in Tables H-6.1 through H-6.7 represent very large changes. For example, a decrease of 50 cfs impacts St. Louis Creek near the Fraser Gage quite differently than a decrease of 99 cfs (see Table H-6.1) yet the flow range represented in the table is from 50 to 99 cfs. Changes should be presented at higher resolution.*

Comment Information	Comment	Comments and Responses
		Response #910-302: Flow range intervals were selected based on the size of the tributary and the percentage of daily flow changes within each interval. The flow range interval was generally 10 to 20 cfs for relatively small tributaries to present the percentage of daily flow changes expected at higher resolution. For example, the flow range interval selected for Little Vasquez Creek (Node 2340), Ranch Creek (Node 2500), Jim Creek (Node 2160), St. Louis tributaries (Node 2180), and the Englewood Ranch Gravity System (Node 2480) was 20 cfs because these tributaries are relatively small. The flow range interval for St. Louis Creek was reduced from 50 cfs to 25 cfs. ***Comment #910-230*** *(ID 2889)**:*** *Appendix H-6 Comment. Appendix H-6 tables should also include changes from current conditions to Full Use Existing conditions.* **Response #910-230:** Tables were included in FEIS Appendix H-6 summarizing the range and percent occurrence of daily flow changes based on a comparison of Current Conditions and each Moffat Project alternative to display total environmental effects of the Moffat Project in combination with reasonably foreseeable actions. ***Comment #910-301*** *(ID 2888)**:*** *Appendix H-9 Comment. Current conditions should be added to the flow duration curves, bedload capacity and supply, and effective discharge graphs in order to understand the full range of changes.* **Response #910-301:** Current conditions have been added to the respective figures in the FEIS.

Comment Information	Comment	Comments and Responses
		Comment #910-1 *(ID 2887)**:*** *Appendix H-11 Comment. Scott Franklin's letter of September 11, 2009 to Wes Wilson of the EPA on the subject of Groundwater Hydrology and included in the DEIS as Appendix H11-ii asserts the Corps' reaffirmation of the "conclusions in Section 4.2 of the DEIS regarding the minor effects that the Moffat Project would have on groundwater recharge and the negligible effect on groundwater resources within the Fraser River basin." From section 4.2, changes for the Fraser River basin are summarized: "changes in the volume and level of the river would cause indirect, localized impacts to the groundwater system. The groundwater levels would decrease slightly, and the hydraulic gradient in groundwater near the river would increase slightly in response to the reductions in stream flow." DEIS 4-206. Changes for Williams Fork groundwater are said to be "comparable to those described for the Fraser River." Id. 4-207. For the Colorado, there is only "the potential for indirect impacts on the groundwater gradient to the river and water levels in the vicinity of the river." Id. The following discussion refers to specific paragraphs in Mr. Franklin's letter. In paragraph four, the reader is referred to Figure 1, where it is explained that throughout the blue area, groundwater recharge rates remain the same in spite of the project. While this may be true, the blue area is all above 10,000 feet-9,300 feet in altitude, tends to be very steep, and is composed primarily of crystalline rock (granite, biotite and gneiss) per Figure 2, all of which will tend to minimize any recharge. It is true that there is a fraction of glacial drift in this zone where recharge may occur, but it will likely be very shallow or localized, and may be largely intercepted at Denver Water's diversion dams. There may be some recharge to fractures in the crystalline rock, but this may be very minimal, and it cannot be said with certainly if these fractures will even discharge in the Fraser basin. Instead of substantial recharge*

Comment Information	Comment	Comments and Responses
		occurring in this zone, the more likely outcome is that these high altitude rocks will shed water to the tributaries and via sheet flow, all of which is collected by the Moffat and Williams Fork collection systems, just as they were designed to do. As Mr. Franklin points out, the blue area in figure 1 includes the largest precipitation rates and snowpack depths in the watershed; in fact it covers all of the zones of annual precipitation in excess of 30 and 40 inches. Paragraph six says that the recharge rates for the brown area in Figure 1 will also not change as a result of the project. While this is not technically true due to the changes that may be caused by lower instream flows and reduced frequency of flooding events, as documented in the DEIS, what may be more important to point out is that the brown area consists primarily of lower elevation lands that receive less than 20 inches of annual precipitation, and just a portion that receives between 20 and 30 inches The whole discussion about the effects of stream flow reductions on groundwater recharge may really be missing the point, at least for the Fraser and Williams Fork drainage basins. By intercepting and diverting the high elevation, high accumulation runoff, this water is not allowed to flow overland or through creeks to recharge zones, which generally occur lower in the basins, a point that is returned to below. However, something else that the discussion about stream flow reductions on groundwater recharge doesn't cover is if, where, and at what times of the year gaining reaches of the Fraser and Colorado Rivers or lower reaches of tributaries such as Vasquez, St. Louis and Ranch Creeks convert to losing reaches, and what effects (exacerbation) the project will have on this phenomenon: how much farther upstream will losing reaches move, and how much earlier in the year will this occur? In paragraph nine where Mr. Franklin refers to the Apodaca and Bails, 1999 groundwater contours map, perhaps he should also communicate the fact that this is map is

Comment Information	Comment	Comments and Responses
		termed a "generalized water-table map of the alluvial and Troublesome Formation aquifers upstream from Tabernash in the Fraser River Watershed." The text explains that water surface elevation detail was sparse, so contours were spaced widely, every 100 feet, indicating the lack of specificity in the map. Furthermore, the area of this map of the alluvial aquifer is quite small and is nearly all confined within the white and brown areas of Figure 1, further illustrating how the blue area of crystalline rock does not overlap significantly with the alluvial aquifer, and that water is intercepted before it can reach recharge zones in the alluvial aquifer. In paragraph ten Mr. Franklin describes how the timing of the reductions in flow will minimize impacts on groundwater resources, explaining that "Snowmelt runoff…dominate[s] the hydrologic system in each watershed while groundwater recharge and discharge are relatively minor components of the systems in each of the affected watersheds during these times." In contrast, the research of Fengjing Liu and others, demonstrated using a two component hydrograph separation, that in the larger of the two catchments surveyed near Niwot, "old water dominated (64±2%)" of streamflow during the 1996 snowmelt runoff season, suggesting "that surface water and groundwater interactions are much more important to the quantity and quality of surface water in high-elevation catchments than previously thought." Furthermore, base flow discharged from groundwater comprised the majority of streamflow later in the summers. The DEIS does not distinguish the percentage of streamflow that will be comprised of surface water runoff or base flow, let alone characterize changes in these percentages throughout the season, nor does it attribute changes such as increasing late summer surface water temperatures to reductions in available late-summer base flow. [21] FOOTNOTE: [21] Null, S.E., M.L. Deas, and J.R. Lund, 2009. Flow and water

Comment Information	Comment	Comments and Responses
		temperature simulation for habitat restoration in the Shasta River, California. River. Res. Applic. , accessed online March 2010 at cee.engr.ucdavis.edu/faculty/lund/papers/NullRiverResearch2010.pdf In paragraph eleven, Mr. Franklin refers Mr. Wilson to the riparian and wetlands characterization section, which in chapter three does disclose the presence of wetlands and fens and unique species or vegetative groups in the Fraser and Williams Fork basins. In fact, the text mentions that "Although major impacts to riparian systems in the West have been documented as a result of stream flow modifications (Stine et al. 1983), these are usually in situations where diversions resulted in complete dewatering of the stream, profound changes in flows, or major modifications to stream hydrology…" (emphasis added). Yet in chapter four, impact considerations on wetland and riparian areas are restricted to situations including only plant mortality or the drying of riverbanks. Identified wetlands and fens are not mentioned again. The next paragraph, explains how 24 tributary streams are scheduled for a more thorough execution of complete dewatering, like that indicated in the quote above, through the project. In paragraph twelve, Mr. Franklin says, "There would be little to no change in flow (flow change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the confluence with St. Louis Creek." This statement seeks to minimize what is shown in the DEIS Appendix H tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28: in all of the tributaries associated with the tables listed, while perhaps seemingly trivial (less than 0.5 cfs, so they are not reported in the "CFS rows), additional diversions from the 24 tributaries without bypass flow restrictions in both the Williams Fork and Fraser watersheds will be made throughout the year and represent 20% to 100% flow changes for those creeks. In other words, these creeks appear to be scheduled for 100% dry-up throughout the year. In

Comment Information	Comment	Comments and Responses
		contrast, the "four detailed study sites" mentioned by Mr. Franklin in paragraph thirteen experience flow reductions from just 9% to 24% (table H-7.1), in part because at these locations it appears that flows may be included which come from un-diverted tributaries or include streams with bypass flows. Impacts from such large flow reductions as portrayed in the aforementioned tables cannot be well represented by any of the study sites for any flow related variable. At various locations in the letter Mr. Franklin refers Mr. Wilson to section 4.2 of the DEIS, but never to section 3.2, on which presumably the conclusions in section 4.2 are based. Grand County has reviewed section 3.2, and we believe that the groundwork done for this section is incomplete and flawed in its approach. Please refer to the comments on DEIS page 3-87. Finally, Mr. Franklin explains that the Corps disagrees with the EPA suggestion to "use historical air photos and other information to assess past changes" because "Historical Denver Water diversions are not at issue for this Moffat Project EIS," and because they "would not be adequate to discern the effects of the Denver Water diversions from other anthropogenic changes and climatic variability." This represents an abrogation of the Corps' responsibility to "investigate to the best of their ability the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." (42 U.S.C. § 4332(2)(c)) There is a significant body of published research suggesting it would be possible to use aerial or perhaps satellite imagery to assess past changes due to Denver Water diversions, and it would be reasonable to attempt to discern and factor out climatic and anthropomorphic changes with a combination of control photographs or images, climatic, and development data. From this work, the Corps could develop estimations of the impact of the project on not only groundwater but also a number of other variables. Consequences to groundwater as a

Comment Information	Comment	Comments and Responses
		result of the project are not likely to be negligible. Without sufficient information, it is perhaps as difficult to accurately predict the most dramatic consequences as it is to predict the minor, however, a few things can probably safely be said. Tributary streams without bypass flows in the Fraser and Williams Fork basins will see more changes in vegetative cover, moving away from riparian and toward dryland plant communities. Recharge to groundwater in the regions where these tributaries contain pools will decline. Groundwater quality is likely to decline, particularly down-gradient from fully diverted steams, and the effects of this may become apparent in base flows. Examples of this may include exacerbation of the already low dissolved oxygen evident in the Tabernash alluvial groundwater that may indicate reducing conditions favorable to the release of iron and manganese, both of which are already showing high values in some sites.[22] Bauch and Bails (2004) also suggest that shallow ground water may be more susceptible to changes in land use in the watershed and that fecal coliform bacteria exhibit a seasonal pattern in groundwater; and reductions in flows will continue to diminish the assimilative capacity of this resource. The quantity of available groundwater is likely to decline under the project, which may impact stream flows as much as or more than flows bypassed at headgates, and which will in turn negatively impact mid-late summer stream temperatures. FOOTNOTE: [22] Bauch & Bails 2004. **Response #910-1:** This comment focuses on the September 11, 2009 letter sent by the Corps to the EPA, which is included in DEIS Appendix H-11b. The comment contains many questionable assertions that are not based on data and are not consistent with available hydrogeologic information. The following headings correlate with the main points in the comment.

Comment Information	Comment	Comments and Responses
		Recharge in the blue and brown areas of Figure 1 in letter to EPA (the letter) – Some of the characteristics of the blue area may cause lower recharge rates but it is also true that other factors cause higher recharge rates there. The comment takes issue with a statement in the letter: “Paragraph six says that the recharge rates for the brown area in Figure 1 will also not change as a result of the Project” and then the comment asserts “While this is not technically true due to the changes that may be caused by lower instream flows and reduced frequency of flooding events…” This statement exemplifies the incoherent thoughts. Apparently the commenter did not realize that all of the brown area on Figure 1 is not downstream of any Denver Water diversion. Therefore, the commenter did not understand that it is impossible for there to be any “lower instream flows and reduced frequency of flooding events” caused by the proposed Moffat Project anywhere within that area. Although not understood by the commenter, the main point is rather simple: groundwater recharge does occur in both the blue and brown areas, and the recharge rates in those areas would not be affected in any way by this Project. Therefore there would be no change in the rate of groundwater flow (and mass flux) from those recharge areas toward and into the Fraser River lower in the watershed. Groundwater flow toward and into Fraser River -- The USGS Technical Report (Apodaca and Bails 1999) cited in DEIS Section 4.2 shows ground water discharges to the stream segments in the Fraser River watershed. Even though that USGS report provides a generalized map with 100-foot contour lines, the fundamental concept that groundwater generally discharges to streams in that area was based on the publically available data compiled by the USGS. The concept that groundwater flows generally toward and into the streams in that area is also consistent with the professional experience and

Comment Information	Comment	Comments and Responses
		expertise of the USGS. Nonetheless, there may be locations along the tributaries and the main stem of the Fraser River where surface water is recharging groundwater. However, such areas would be localized exceptions the general hydrogeologic concept of groundwater flow into the streams reflected in this USGS groundwater level contour map. Under typical hydrologic conditions throughout these watersheds, groundwater discharges to the streams rather than vice versa. More recent groundwater level data available from the USGS for monitor wells in the Fraser Valley also shows groundwater levels are higher than the adjacent stream levels, which indicates that groundwater flows into the Fraser River, even during the snowmelt period. The DEIS clearly describes that groundwater is hydraulically interconnected with the potentially affected stream segments and thus groundwater levels immediately adjacent to the streams could change. For example, in DEIS Section 4.2 states: “In areas where groundwater discharges into a stream or river under Current Conditions (2006), water level declines in the river would increase hydraulic gradients between the stream and the adjacent groundwater, which would increase groundwater flow toward the stream. On the other hand, in reaches where rivers lose water to groundwater under Current Conditions (2006), the rate of seepage from the streambed would likely decrease when stream flows decrease. However, the rate of decline in streambed seepage would be much smaller than the amount of stream flow reduction in all such cases because the rate of seepage is controlled largely by the physical properties of the stream bed.” The DEIS also provides extensive descriptions of stream flow changes that have been evaluated for the potentially affected stream segments using PACSM

Comment Information	Comment	Comments and Responses
		(described in DEIS Section 3.1). Details of the methodology used to estimate stream flow changes are presented in DEIS Section 4.1. Details of the methodology used to estimate changes in flood flows, water levels and wetted areas of the stream are presented in DEIS Section 4.6. The monitor well installation and field data collection activities conducted in the fall of 2010 provide measurements of groundwater level elevations and adjacent stream water level elevations in the Fraser River watershed. In addition, precision surveying of ground surface elevations at existing shallow wells at the Town of Winter Park Shops Expansion Project site (Grand Environmental Services 2009) define groundwater level and stream level elevations there. These data further clarify the groundwater-surface water relationships described in the DEIS exist downstream of Denver Water diversion points. Specific data and information from the DEIS and the rationale for these conclusions are further described below. The timing of the proposed diversions for the Moffat Project would not substantially affect recharge to the groundwater flow system in the West Slope watersheds. Rather the Moffat Project would result in minimal effects to recharge, and to groundwater resources overall, for the following reasons. The Moffat Project would not make any changes to the locations or the physical features of any of the existing Denver Water diversion structures west of the Continental Divide. The FEIS Figure 3.4-1 shows the Denver Water diversions (red dots) within the Fraser River Basin and subdivides the watershed into areas to facilitate discussion of this concern. Throughout the blue area on Figure 3.4-1, groundwater recharge rates would remain the same as for Current

Comment Information	Comment	Comments and Responses
		Conditions, both in the upland areas and along the stream channels, because these areas lie upstream of the Denver Water diversion points. The blue area on Figure 3.4-1 constitutes a large percentage of the whole watershed. This relatively large area includes the highest land surface elevations, precipitation rates, and snowpack amounts in this watershed. The geologic map from a recent USGS Technical Report referenced in DEIS Section 3.2 (Apodaca and Bails 1999) shows glacial deposits and alluvial gravels underlie large portions of the watershed. Fractured crystalline rocks are also exposed in many areas of the basin. Precipitation and snowmelt infiltrate though permeable soils and fractured rocks in upland areas of the basin to become groundwater recharge. Similar hydrogeologic conditions exist in the Williams Fork watershed where there are other Denver Water diversion structures. Figure 3.4-1 also shows another large area (shaded brown) in which the Proposed Action would not affect groundwater recharge rates, neither in the upland areas or along the stream channels, because these areas do not lie downstream of any Denver Water diversion points. Fundamental hydrogeologic concepts indicate substantial recharge of the groundwater flow system occurs throughout the blue and brown areas on Figure 3.4-1. Recharge rates would not change in any of those areas as a consequence of the Moffat Project. Unaffected stream channel segments are depicted with light blue lines on Figure 3.4-1. Along the light blue lines within the darker blue areas (above the diversion points), the rate and volume of groundwater recharge due to seepage through the bottom of stream beds would not change due to the Project at any time of year. In areas downstream of the diversions but outside the stream channel limits (all the white areas on Figure 3.4-1), there also would not

Comment Information	Comment	Comments and Responses
		be any change in groundwater recharge rates at any time because the hydrogeologic factors controlling infiltration of precipitation and snowmelt into the ground surface would not be altered by the Project. Thus, the Project has no potential to change the groundwater recharge rates within the vast majority of the whole watershed, which includes all the blue, brown and white areas on Figure 3.4-1. For the same reasons, the proposed diversions would have no effect on groundwater recharge rates throughout the vast majority of the Williams Fork River watershed. In the other parts of the Fraser River watershed directly downstream of the diversions, the Moffat Project only has the potential to slightly reduce groundwater recharge rates in the relatively small areas directly beneath and immediately beside the stream channels where the diversions may reduce the extent of seasonal overbank flooding areas. These potentially affected stream channel segments within the Fraser River watershed are shown as gold lines on Figure 3.4-1. DEIS Section 4.2 describes stream flow reductions that could conceivably cause some reduction in the groundwater levels and recharge rates directly beneath the stream channels (gold lines on Figure 3.4-1) if percolation through the streambeds decrease. Groundwater recharge rates would decline only where (1) the stream reach is losing water by seepage to groundwater under Current Conditions, and (2) the diverted stream flow causes a substantial decrease in the stream level and the wetted area of the stream bed. The potential change in groundwater recharge along those stream segments (along the gold lines) would be small for reasons described in the following paragraphs. A USGS Technical Report (Apodaca and Bails 1999) for the Fraser River Basin, which is cited in DEIS Section 4.2, shows groundwater level contour patterns that indicate hydraulic gradients, and thus

Comment Information	Comment	Comments and Responses
		groundwater flow directions, converge toward the streams in the central portion of the Fraser River Basin downstream of the Denver Water diversion points. Where water table contours show groundwater flow converging toward streams, this indicates the streams are not providing groundwater recharge, but rather the streams are receiving groundwater discharge. The groundwater level contours also indicate that recharge occurs in higher elevation areas, upland of the streams. Therefore, even though the increased diversions may cause slight reductions of the stream levels, there would not be a consequent reduction in groundwater recharge within the watershed. Information provided in the DEIS indicates there would be, at most, very small changes in groundwater recharge directly beneath potentially affected stream segments. Streambed percolation rates would remain essentially the same as for Current Conditions because: (1) stream levels and wetted areas of the streams would only change by a very small amount, and (2) the hydraulic conductance (permeability) of the streambed materials would not be affected by the Moffat Project. Stream flow changes were modeled using the PACSM (described in DEIS Section 3.1), and riparian and wetlands areas are characterized in Section 3.6.5. Details of the methodology used to estimate stream flow changes are presented in DEIS Section 4.1. Details of the methodology used to estimate changes in flood flows, water levels and wetted areas of the stream are presented in DEIS Section 4.6. Streambed seepage rates are expected to decrease by an exceedingly small amount because the timing of the diversions would coincide with high runoff periods in wet or average years. DEIS Appendix H-5 provides a series of flow duration curves based on PACSM results for a number of locations along the

Comment Information	Comment	Comments and Responses
		Fraser River and tributaries downstream of the diversion points. Flow duration curves are shown in Figures H-5.1 through H-5.11 for several locations of interest in the Fraser River Basin. Those curves indicate that the potential changes in flow durations attributable to the Project would be minimal. As shown by the flow duration curves, flow reductions resulting from the Proposed Action would occur at higher flow rates, which typically correspond with wet years. Table H-6.1 shows the percentage of days from May through June that stream flow changes would occur at several locations of interest. There would be little to no change in stream flow (flow change less than 1 cfs) more than 80% of the time at all locations in the basin upstream of the confluence with St. Louis Creek. Below the confluence with St. Louis Creek there would be little to no change in flow (flow change less than 1 cfs) between 70% and 80% of the time. Hydraulic modeling using the Hydrologic Engineering Centers-River Analysis System (HEC-RAS) model has been conducted to analyze the changes in stream flows and flood inundation area, at representative sites downstream of the diversion points. As part of the impact assessment for wetland and riparian areas, DEIS Section 4.6.1.2 provides an analysis of the interaction between stream flow changes and inundated areas in the affected drainage. DEIS Table 4.6-4 provides predicted changes in stream levels and channel widths for four detailed study sites along streams in the Fraser River watershed. The modeling results indicate Site Fraser River (FR) 1 near Winter Park would have the largest reduction in stream level due to the Denver Water diversions; the peak stream level during a 2-year flow event would drop about 8 inches in that reach. The HEC-RAS model results also show changes in the wetted channel width at that location would be

Comment Information	Comment	Comments and Responses
		about 1.6 feet, which is very small in comparison to the existing 2-year water profile. DEIS Figure 4.6-1 illustrates the very small change in the 2-year water profile (stream width) that would be caused by the Proposed Action. Even extrapolating over a larger stream length, the reductions of flow-wetted area would be very small (e.g., a 1-mile stream segment would experience a reduction in inundated area of about 0.4 acre). In summary, for the reasons enumerated above, the proposed diversions are expected to have negligible to minor direct impacts on groundwater levels and recharge. Declining stream levels would likely cause only very minor reductions in groundwater levels immediately adjacent to the streams. Overall, groundwater recharge rates would not change substantially within the West Slope watersheds. In wet and average years, the net effect of the Moffat Project on groundwater levels is expected to be negligible. During dry years, there would be no additional water diversions, and thus, the Project would not impact groundwater levels or recharge rates. Another commenter asserts that: The DEIS describes groundwater recharge and discharge as “relatively minor components of the (hydrologic) systems” but the hydrologic budget for the Fraser Basin shows otherwise. For example, the DEIS Fraser Basin water budget claims that groundwater discharge amounts to approximately 42,000 AF/y) compared to 64,500 AF of surface flow out of the watershed annually. Thus, groundwater discharge is greater than 10% of the total water budget and about two-thirds of the total surface flow out of the basin.

Comment Information	Comment	Comments and Responses
		As described in the DEIS, snowmelt runoff during the spring and early summer months causes high stream flows that dominate the hydrologic system in each watershed, whereas groundwater recharge and discharge are relatively minor components of the hydrologic systems in each of the affected watersheds during these times. DEIS Table 3.2-1 provides average annual estimates of the components of the annual hydrologic budget for the Fraser River watershed to facilitate discussion and understanding. In this annual hydrologic budget, the inputs and outputs each total approximately 400,600 AF/yr for an average year. In this table, the values for precipitation, evapotranspiration and consumptive use are the same as those provided by the USGS (Apodaca and Bails 1999). The water budget table (DEIS Table 3.2-1) does not show what the comment suggests. In stating the groundwater discharge amounts to approximately 42,000 AF/yr, the commenter confuses groundwater underflow (GWua), with groundwater discharge (GWdb). In this hydrologic budget table, groundwater underflow represents flow out of the basin below the ground surface whereas groundwater discharge is flow out of the ground surface (e.g., to streams). The comment adds 13,700 AF/yr of groundwater underflow to the amount of groundwater discharge as stream base flow, (GWdb) 28,300 AF/yr, to arrive at the value of 42,000 AF/yr for groundwater discharge. Rather, this table actually indicates that average annual groundwater discharge to the stream base flow is about 28,300 AF/yr, or about 7% of the total water budget. The Moffat Project would not measurably affect groundwater discharge that supports base flow because the proposed diversions would not substantially reduce groundwater levels or recharge rates for the reasons described above.

Comment Information	Comment	Comments and Responses
		The comment also reflects a misunderstanding of the purpose of providing the simple water budget table and graphic in the DEIS. This information was intended to simply illustrate the hydrologic processes in the watersheds. They were included in the DEIS to help the interested public reader to generally understand the major hydrologic components and how they interrelate. To avoid the type of confusion expressed in this comment and the possibility for others to over-interpret the meaning of the hydrologic budget values, the water budget table (DEIS Table 3.2-1) and graphic are not included in the FEIS. Although it is conceptually reasonable to expect that if groundwater levels were to decline by more than the range of natural temporal fluctuations because of the Project, the productivity of some wells could be affected. However, the magnitude of this potential effect would depend on the amount of static (non-pumping) groundwater level decline at each specific well location compared to the saturated thickness of the aquifer penetrated by the well and the distance between that well and the affected stream segment. Information provided in the DEIS shows that the Project would not cause a reduction in groundwater levels within any of the West Slope basins, except there would possibly be minor temporary declines in areas immediately next to some of the streams during the high-runoff period. Thus, compiling and presenting the information for all the existing wells is not necessary or justified for an EIS-level of analysis. Moreover even if the well information were complete and available from public sources, those data would not provide a basis for the impacts analysis suggested in the comment. Rather, impacts to well productivity could only be evaluated based on the magnitude of changes in stream flows and stream levels, and the distance between the well and the stream.

Comment Information	Comment	Comments and Responses
		The groundwater flow system is hydraulically interconnected with the potentially affected stream segments and thus groundwater levels immediately adjacent to the streams could change. The Project would only cause minor changes to the duration of the higher stream flows downstream of the existing diversion points during high runoff periods. At most, the additional diversions would cause only a minor change in stream levels downstream the diversion points. The change would only occur during the months when water levels are high. There would be no effect on groundwater levels in the headwater tributaries upstream of the diversion structures or throughout the majority of the Fraser River watershed beyond the immediate limits of the diverted streams. Immediately adjacent to the potentially affected stream segments, groundwater levels would decrease slightly compared to Current Conditions during May, June, and July. However, the maximum change in groundwater level would be less than the maximum change in stream level because groundwater flows toward the streams from the surrounding upland areas and discharges into the streams in the vicinity of the Denver Water diversion points and further downstream. Hydraulic modeling results provided in the DEIS indicate that detailed study Site FR1 near Winter Park would have the largest reduction in stream level due to the Denver Water diversions; a drop in peak stage of about 8 inches. Groundwater levels immediately adjacent to this stream segment would drop less than 8 inches because groundwater flows toward and into the stream due to groundwater recharge in the surrounding uplands. This recharge is derived primarily from infiltration of snowmelt in the uplands above the stream and would not be affected in any way by the Project.

Comment Information	Comment	Comments and Responses
		Based on comments from the EPA, the Corps installed groundwater wells in the fall of 2010 to provide measurements of groundwater level elevations and adjacent stream water level elevations in the Fraser River watershed. These data demonstrate the groundwater-surface water relationships described in the DEIS exist downstream of Denver Water diversion points. The FEIS includes additional analyses of stream flow changes in all of the potentially affected stream segments and tributaries to clarify the effects of the Moffat Project and other reasonably foreseeable future actions (RFFAs). Additional groundwater data collected in the fall of 2010 was provided and described to further clarify the groundwater-surface water relationships downstream of Denver Water diversion points. The additional stream flow analyses were used with the new groundwater data to further assess the Project effects on groundwater, stream flow, wetlands, and wells along the Fraser River in FEIS Sections 4.6.4, 4.6.8, 5.4 and 5.8. Effects on tributary flows – The comment is not correct in asserting that the letter “seeks to minimize what is shown in DEIS Appendix H tables 3.3, 3.8, 3.9, 3.11, 3.13, 3.15, 3.18, 3.20, 3.24-3.28.” In fact, the letter correctly references the values in those tables. Nonetheless, the Corps conducted further analysis of stream flow changes in all the potentially affected stream segments and tributaries to clarify the effects of the Denver Water planned changes to attain Full Use of the Existing System (which is not part of this Moffat Project) in conjunction with the proposed Moffat Project. The additional stream flow analyses were used with the new groundwater data collected by the Corps to further assess the Project effects on groundwater, stream flow, tributaries and wetlands in FEIS Sections 4.6.4, 4.6.8, 5.4 and 5.8.

Comment Information	Comment	Comments and Responses
		Comment #910-300 *(ID 2886)**:*** *Moffat Collection System Project Existing Channel Conditions Report, 2006, by Ecological Resources Consultants The equations used to calculate sediment supply appear to have come from work done on the South Platte in 1986 for the Two Forks EIS, and it is not apparent in any of the current DEIS chapters that the sensitivity analyses have been performed that would help determine the appropriateness of using these equations in the very different Fraser and Williams Fork watersheds, as recommended on page 13 of the Moffat Collection System Project Existing Channel Conditions Report, which is referenced on page 3-68 of the DEIS. In addition, it appears that data from only one site in the Williams Fork from 1986 could be applied to the current DEIS, and that this 24 year old data was extrapolated to all tributary streams (page 5), and then projected into the future another 20 years to estimate environmental consequences of the project. This is not reasonable.* **Response #910-300:** Sediment supply equations used in the FEIS were derived from an extensive field sediment sampling program conducted within the impacted watersheds for the Two Forks EIS. Sediment supply equations were based on measured sediment loads and therefore account for subsurface materials that are transported at higher flow rates. Additional information on sediment supply equation derivation is provided in FEIS Section 4.6.3. Additional sediment supply information derived by the USFS from the Fraser Experimental Forest has been included in the FEIS. Additional assessments including sensitivity analysis of sediment supply and sediment transport equations were completed. Results are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		Comment #910-381 *(ID 2971)**:*** *ATTACHMENT 1 This memorandum includes a review of the Moffat Expansion Project Draft Environmental Impact Statement (DEIS) with emphasis on land use, recreation, visual resources, cultural resources and socioeconomic considerations plus related matters regarding purpose and need, and methodology. Section 1.0 introduces issues, concerns and potential inadequacies of the DEIS. Section 2.0 provides page-specific comments that correspond to the issues referenced in Section 1.0. TABLE OF CONTENTS 1.0 General Comments 2 1.1 Impacts in the Scoping Summary 2 1.2 Environmental Factors Not Addressed 4 1.3 Purpose and Need 4 1.4 Definition of Baseline 4 1.5 Compromised Environmental Conditions – Tipping Point 5 1.6 Measuring Environmental Consequences 7 1.7 Recreation 8 1.8 Land Use 9 1.9 Visual Resources 9 1.10 Cultural Resources 9 1.11 Socioeconomics 10 1.12 Cumulative Impacts 10 1.13 Mitigation 10 2.0 Page-Specific Comments 11 Affected Environment (Chapter 3) 2.1 Affected Environment – Recreation (Section 3.13) 11 2.2 Affected Environment - Land Use (Section 3.14 13 2.3 Affected Environment - Visual Resources (Section 3.15) 13 2.4 Affected Environment - Cultural Resources (Section 3.16) 14 2.5 Affected Environment - Socioeconomics (Section 3.17) 14 Environmental Consequences (Chapter 4) 2.6 Environmental Consequences - Recreation (Section 4.13) 16 2.7 Environmental Consequences – Land Use (Section 4.14) 20 2.8 Environmental Consequences – Visual Resources (Section 4.15) 20 2.9 Environmental Consequences – Cultural Resources (Section 4.16) 22 2.10 Environmental Consequences – Socioeconomics (Section 4.17) 23 2.11 Cumulative Impacts (Chapter 5) 26* **Response #910-381:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
		Comment #910-379 *(ID 2970)**:*** *SECTION 1.0 – GENERAL REMARKS This section introduces issues and concerns about specific topics presented in the DEIS that affect Grand County. Page-specific comments are presented in Section 2.0. • The first two sections address impacts that have been excluded from careful consideration. Some issues mentioned in the Scoping Summary[1] are referenced in a summary and qualitative manner and then dismissed (1.1); other pertinent issues are excluded from consideration (1.2) FOOTNOTE: [1] US Army Corps of Engineers. Scoping Summary – Moffat Collection System Project. Cheyenne, WY. December 2003 (Scoping Summary, 2003) • The next four sections discuss concerns about the purpose and need definition (1.3), the baseline definition (1.4), currently compromised environmental conditions (1.5) and measuring environmental consequences (1.6). • The next five sections summarize concerns about specific sections of the DEIS including recreation (1.7), land use (1.8), visual resources (1.9), cultural resources (1.10), and socioeconomics (1.11). • The final sections discuss issues regarding cumulative impacts (1.12) and mitigation (1.13).* **Response #910-379:** The Corps notes the comment. Responses to comments pertaining to the general remarks are presented throughout the letter in the appropriate locations. ***Comment #910-380*** *(ID 2969)**:*** *On the summary page of the Scoping Summary[2] is a list the three most frequent issues and concerns. All relate to Grand County. They are quoted below with a description of how each is treated in the DEIS. FOOTNOTE: [2] Scoping Summary, 2003, page 3-1. • "Effect of proposed diversions by Denver Water from the Fraser River on water supply needs for municipal water demands and environmental requirements."*

Comment Information	Comment	Comments and Responses
		This comment is reiterated in Scoping Summary Comment #23a, page 3-6. The DEIS states that Grand County build-out conditions and related water supply shortages are assumed within the 2016 "baseline" condition (page 4-432). Since built-out is achieved in the 2016 baseline, the DEIS finds no incremental impact between 2016 and the Proposed Action (2030). EPA provides clear direction regarding the need to disclose prior conditions even if they are part of a baseline condition. See Section 1.4 for a discussion of EPA's direction. • "Effect of the proposed diversion on the economy of the Fraser River Basin, in particular the water-related, recreation-based economy of Grand County, and the potential lost opportunities for future growth in Grand County." This is reiterated in Scoping Summary comments #84, page 3-14 and #88, page 3-14. The affected environment chapter provides minimal descriptive information about the "water-related, recreation-based economy of Grand County. It provides no quantitative foundation for considering potential lost opportunities. Remarks about economic impacts are subsequently dismissed. Guidelines for Preparing Economic Analyses, prepared by EPA, provides principles for describing baseline conditions. "Specification of baseline conditions can have profound influence on the measurement and interpretation of analytical results…The honesty and integrity of the analysis depend on the ability of the analyst to provide well-defined and defensible choices in selection and estimation of baseline conditions. The first step is to select a baseline that is appropriate to the question the analysis is intended the address. The second step is to estimate the values of relevant factors in the selected baseline scenario."[3] FOOTNOTE: [3] Environmental Protection Agency. Office of the Administrator. Guidelines for Preparing Economic Analyses. Office of the Administrator, EPA 240-R-00-003, September 2000, page 21. (EPA, 2000) • "Effect of Denver Water

Comment Information	Comment	Comments and Responses
		reducing or eliminating bypass flows in the Fraser River Basin pursuant to its U.S. Forest Service (USFS) agreements." This concern is reiterated in Scoping Summary comments #23a and #23b, page 3-66. The DEIS states that reducing bypass flows are a part of the 2016 baseline conditions; as such, their impacts need not be described. Reducing bypass flows effects "the ability of local water districts to meet municipal water supply demand and water quality requirements." (Scoping Summary, #23a, page 3-6) The effect of reducing USFS bypass flows has a significant effect on Grand County; these effects should be described and quantified so the fragile environmental circumstances that underlie the 2016 baseline condition are perfectly clear to reviewers. See Section 1.4 for relevant EPA Guidelines. The DEIS marginalizes these three key Grand County concerns that are highlighted in the Scoping Summary. All points of diversion for the Moffat Project are in Grand County; the water impacts are felt most directly in Grand County. **Response #910-380:** Baseline Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Past Actions CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past

Comment Information	Comment	Comments and Responses
		actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the Proposed Action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the Proposed Action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. DEIS Section 5.2 catalogued a list of past projects. These projects were included in PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows were accounted for and disclosed in DEIS Chapter 3, specifically Section 3.1. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversion locations modeled in PACSM.

Comment Information	Comment	Comments and Responses
		West Slope Tourism The importance of recreation and tourism to the West Slope economies is recognized in FEIS Chapter 3. Numerous factors will affect local economies in the future. However, there are expected to be no noticeable changes in the number of sportsmen, their pattern of activity, or their daily expenditures on the West Slope as a result of any of the Moffat Project action alternatives, and therefore no measurable impact on those local economies. ***Comment #910-377*** *(ID 2968)**:*** *Scoping Remarks – Inadequate Consideration. Other remarks were dismissed from evaluation in the DEIS because they were considered part of the baseline. • "Effect of reducing Fraser River bypass flows on the ability of local water districts to meet wastewater treatment discharge permit limits." (#23a, page 3-6) • "Cumulative effects on the Colorado and Fraser Rivers as a result of Windy Gap Firming Project." (#108, page 3-16)* **Response #910-377:** Impacts to WWTPs due to the Project would be from a potential change in discharge permits, which are most strongly affected by low flow. Low flow and potential impacts to WWTPs are presented in FEIS Sections 4.6.2 and 5.2. Additional water quality analyses, including impacts to WWTPs discharging to the Fraser, were performed on the Fraser River and the Three Lakes area. Please see FEIS Sections 4.6.2 and 5.2. The DEIS included the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The FEIS analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the

Comment Information	Comment	Comments and Responses
		flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water related resources such as water quality, aquatic biological resources, and stream morphology are anticipated to be minor. Additional analysis was conducted in the FEIS for the cumulative effects of the Moffat Project and WGFP. Data obtained from NCWCD was generated using the WGFP Model for the WGFP EIS. Model results were provided for the Proposed Action, Chimney Hollow Reservoir with prepositioning, which was analyzed in the EIS. Monthly WGFP Model output provided by NCWCD includes Adams Tunnel C-BT and Windy Gap deliveries (separately), Windy Gap demands, Windy Gap deliveries from Chimney Hollow and Granby Reservoir to meet demands, Windy Gap pumping, Willow Creek Feeder Canal diversions, Willow Creek Reservoir end-of-month storage contents, Granby Reservoir end-of-month storage contents by account (C-BT, Windy Gap, and dead storage), and flow data at the Colorado River below Lake Granby gage (09019500), Colorado River below the Windy Gap diversion, Willow Creek at the confluence with the Colorado River, and Fraser River at the Granby gage (09034000). PACSM was configured to reflect similar Windy Gap demands, diversions, and deliveries. This was accomplished by modifying the demands placed at the Windy Gap and Adams Tunnel nodes in PACSM to match the data provided by NCWCD. ***Comment #910-376*** *(ID 2967)**:*** *Scoping Remarks Excluded from the Analysis. Three Scoping Summary remarks appear to be excluded from the analysis.*

Comment Information	Comment	Comments and Responses
		• *"Effect on downstream agricultural water users." (#49, page 3-10)* • *"Effect on opportunities for land development in Grand County that may be lost because of the additional water diversions." (#75, page 3-13)* • *"Effect on historic ranching and agricultural uses." (#79, page 3-13)* **Response #910-376:** The effects on downstream agricultural users, historic ranching and land development potential from the diversions related to the action alternatives are addressed in FEIS Section 5.19 and were determined to be negligible. ***Comment #910-378*** *(ID 2966)**:*** *ENVIRONMENTAL FACTORS NOT ADDRESSED The DEIS ignores a number of environmental relationships that impact the analytical results for recreation, land use, visual resources, cultural resources and socioeconomics. Several issues include: • Flushing flows and their environmental value to the ecosystem;[4] FOOTNOTE: [4] Coley/Forrest, Inc. Significance of Flushing Flows. Prepared for Grand County. November 2007. (Coley /Forrest, November 2007) • The relationship between streamflow, water temperature, water clarity and fishing; • The loss of scenic value which directly impacts tourism, a basic sector of the Grand County Economy; • Any environmental consequences or related impacts to tourism and property values because of impacts on Grand Lake.[5] FOOTNOTE: [5] There are scholarly articles regarding the relationship between water clarity and property values that could have been applied. These include: Charles Krysel, Elizabeth Marsh Goyer, Charles Parson, and Patrick Weele. Lakeshore Property Value and Water Quality: Evidence from Property Sales in the Mississippi Headwaters Region. May 2003. Terrill R.*

Comment Information	Comment	Comments and Responses
		Hanson, Luther Upton Hatch, Howard C. Clonts. Reservoir Water Level Impacts on Recreation, Property and Nonuser Values. Journal of American Water Resources, Volume 38, Number 4, 1007 – 1018, 2002. P. Joan Poor, Keri L. Pessagno, Robert W. Paul. Exploring the hedonic value of ambient water quality: A local watershed-based study. Environmental Economics, 2006, available at www.sciencedirect.com, pages 8-9. Holly Michael, Kevin Boyle, Roy Bourchard. Water Quality Affects Property Values: A Case Study of Selected Main Lakes. Maine Agricultural and Forest Experiment Station, Miscellaneous Report 398, University of Maine, February 1996. **Response #910-378:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all of Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would

Comment Information	Comment	Comments and Responses
		occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years; however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA, was used to evaluate the change in frequency, duration, magnitude and timing of high flow pulses, small floods (two-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows, changes as the result of additional water diversions during high spring flow. These conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of transport capacity by substrate particle size. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are

Comment Information	Comment	Comments and Responses
		provided in FEIS Sections 4.6.3 and 5.3. Additional analysis was completed by the Corps and included in the FEIS on the relationship between stream temperature and stream flow (refer to FEIS Sections 4.6.2 and 5.2). The analysis of socioeconomic impacts to Grand County incorporates the conclusions of a number of other resources, including recreation, visual resources, surface water and others. FEIS Section 5.19 focuses on the impacts of the Moffat Project alternatives and includes an expanded explanation of the socioeconomic impacts in Grand County, including summaries of the major conclusions of other resources as supporting evidence. ***Comment #910-252*** *(ID 2965)**:*** *PURPOSE AND NEED The Purpose and Need statement is too narrow and therefore restricts the range of action alternatives considered. It includes the solution in the statement. [TEXT BOX: "The purpose of the Moffat Collection System Project is to develop 18,000 acre-feet per year of new, annual firm yield to the to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers" (Page 1-2)] After recalculating demand and supply, if there is a still a need, then the DEIS should restate the purpose and need to exclude the solution from the need. The purposes are to (a) serve additional demand; (b) decrease vulnerability and (c) improve flexibility. The narrow definition of purpose and need plus the screening criteria and analysis result in a set of alternatives that have only subtle differences among them from Grand County's perspective. In its discussion about Purpose and Need in the National Environmental Policy Act Handbook, the Bureau of Reclamation states "This (purpose and need)*

Comment Information	Comment	Comments and Responses
		discussion should not be tied to any of the alternatives, but a general discussion of the problem that various alternatives were designed to solve. Care must be taken to ensure an objective presentation and not a justification … the resolution of the problem should not, at this time, be tied to any single alternative." [6] FOOTNOTE: [6] United States Department of the Interior, Bureau of Reclamation. National Environmental Policy Act Handbook.. Denver, Colorado, page 4-3, Section 4-8 Purpose and Need. October 1990. **Response #910-252:** The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the issues would jeopardize Denver Water's ability to meet projected demand needs. ***Comment #910-251*** *(ID 2964)**:*** *EPA provides clear direction regarding the development of "baseline" conditions.[7][8] "To*

Comment Information	Comment	Comments and Responses
		determine how the project will affect the resource's ability to sustain itself, the NEPA document should include a description of the baseline condition that considers "…how conditions have changed over time and how they are likely to change in the future without the proposed action." If it is not possible to establish the 'naturally occurring' condition, a description of modified by ecologically sustainable condition can be used … Reviewers should determine whether NEPA documents incorporate the cumulative effects of all relevant past activities into the affected environment section."[9] FOOTNOTES: [7] Environmental Protection Agency, Office of Federal Activities. Consideration of Cumulative Impacts in EPA Review of NEPA Documents. EPA 315-R-99-002 / May 1999. Section 4.4 Describing the Condition of the Environment, no page reference. (EPA, 1999) [8] Council on Environmental Quality. Considering Cumulative Effects under the National Environmental Policy Act. Washington, DC. January 1997. (CEQ, 1997) [9] EPA.1999, Section 4.4, no page reference. This DEIS introduces 2016 – Full Use Existing System as a baseline by claiming this scenario is where Denver Water makes full use of its existing system. (Page 4-305 +) When considering impacts, the analysis compares the Proposed Action and other Action Alternatives against the 2016 System. (Example, page 4-312) The DEIS applies faulty methodology because it (a) it does not disclose past, directly relevant actions and (b) it purports a baseline condition that is 10 years into the future and contains speculative projects. These two faulty methodological errors have a direct effect on reducing the measured impact of all proposed actions. **Response #910-251:** Regarding the disclosure of past actions, FEIS Section 3.1 was revised to provide a discussion of the natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver

Comment Information	Comment	Comments and Responses
		Water is estimated to divert under Current Conditions, Full Use of the Existing System and each of the Moffat Project alternatives. This discussion provides information on the impacts of past and existing operations on stream channels. Regarding baseline conditions, please see the response to Comment ID 2860. ***Comment #910-245*** *(ID 2963)**:*** *USFS Bypass Flow Conditions – Part of the 2016 Baseline. The DEIS should quantify the potential consequences of this action.* **Response #910-245:** Regarding the definition of the baseline, please see the response to Comment ID 2860. Regarding the analysis of bypass flow reductions, please see the response to Comment ID 2529. ***Comment #910-250*** *(ID 2962)**:*** *Grand County Water Supply Shortages – Part of the 2016 Baseline. The DEIS reports significant anticipated water supply shortages between 2006 and 2016 and no or minimal additional water supply shortages between the 2016 and the Proposed Action. (Table 5-4, page 5-17). Therefore, the analysis concludes that the impacts are minimal. EPA is clear in its directive to clearly state when a natural resource is in a healthy or compromised condition. When an environmental condition is already at the tipping point, this should be acknowledged.* **Response #910-250:** Please see the response to Comment ID 2984. ***Comment #910-249*** *(ID 2961)**:*** *Windy Gap Firming Project – Part of the 2016 Baseline. As described in the Cumulative Impacts*

Comment Information	Comment	Comments and Responses
		Chapter and Appendix H, the Windy Gap Firming Project is built into the 2016 System. This appears to be a significant methodological error. The analysis should not include another unapproved project as if it were a given. **Response #910-249:** Please see response to Comment ID 2860. The WGFP was included in the Full Use of Existing System scenario because it was identified as RFFA. There is reasonable certainty as to the likelihood of that action occurring given the status of the on-going WGFP EIS, in which case it is appropriate to consider the effects of that project. The WGFP is anticipated to be on-line by 2016 assuming a ROD is issued by Reclamation and the Corps approves a Section 404 Permit for that project. Regarding the definition of Baseline, the impact analysis was revised to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). ***Comment #910-248*** *(ID 2960)**:*** *Upper Fraser Valley Build-Out – Part of 2016 Baseline. The DEIS assumes that by 2016, the Upper Fraser Valley will be built-out. Since this is part of its 2016 baseline condition, the analysis assumes that there is no further need for water in the Upper Fraser Valley. This is a reason why impacts are found to be minimal. 2016 is 6 years from now. The Upper Fraser Valley will not be built out in 2016.[10] FOOTNOTE: [10] Memorandum. Dan Guimond & Brian Duffany to Town of Winter Park, et.al. Technical Memorandum #1: Economic Base and Demographic Framework, April 18, 2006. Colorado State Demographer, Table #3 – Preliminary Population Forecasts by County, 2000 – 2035. Available on web site at www.dola.state.co.us/demog/pop_cnty_forecasts.html.*

Comment Information	Comment	Comments and Responses
		Response #910-248: Please see the response to Comment ID 2860. Regarding the definition of Baseline, the impact analysis was revised to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs including growth in Grand County. Therefore, the socioeconomic effects of shortages in Grand County that are expected to occur between Current Conditions and Full Use of the Existing System are described in FEIS Chapter 4. The analysis does not assume there is no further need for water in the Upper Fraser Valley. The shortages by water user that are anticipated to occur as the Fraser Valley is built-out are presented in FEIS Chapter 4. Some of the water users in the Upper Fraser Valley may be at build out conditions by 2016 while others may not. Build-out conditions for Grand County were included in the Full Use of the Existing System scenario to separate the hydrologic effects of additional water use in the Upper Fraser Valley from the effects of the Moffat Project. Inclusion of Grand County demands at build-out is conservative because the maximum potential hydrologic effects of that action are considered when compared to Current Conditions. ***Comment #910-247*** *(ID 2959)**:*** *Two Baseline Conditions. The DEIS is explicit that when changes to "land-based resources" are discussed the analysis extends from 2006 (current conditions) to 2030 (Full Use with Project) and when "water-based resources" are discussed, the impact analysis extends from 2016 – Full Use of Existing System to 2030 (Full Use with Project). This is inconsistent with EPA Guidelines for Preparing Economic Analyses which state "The same baseline should be carried through for all components of the*

Comment Information	Comment	Comments and Responses
		analysis."[11] FOOTNOTE: [11] EPA.2000, page 22. **Response #910-247:** Please see the response to Comment ID 2860. ***Comment #910-244*** *(ID 2958)**:*** *COMPROMISED ENVIRONMENTAL CONDITIONS – TIPPING POINT Three major water providers [Denver Water, the Northern Colorado Water Conservancy District (NCWCD) and the Municipal Subdistrict of the NCWCD] have diverted water from Grand County to the East Slope for decades. Depending on where measurements occur, the volume of water diverted ranges between 40% and 73% of the average annual flow in the Fraser and Colorado Rivers, relative to natural state conditions. The DEIS calls for additional water diversion from the same resources. The Windy Gap Firming Project, which is inappropriately part of the DEIS 2016 "baseline", also calls for additional water diversion from the same resources. To provide perspective regarding the magnitude of change in water flow, data is provided below for three gage locations in the Fraser Valley and one location on the Colorado River. In each case, data is from the USGS gages at each site. These are the only locations where there is sufficient multi-year historical data before and after construction of the Moffat Tunnel and the Colorado-Big Thompson Project to provide meaningful information. The USFS manages a gage on the Fraser River at Winter Park[12] and has collected and recorded water flow information since 1911. During the 25 years prior to the first diversion of water through the Moffat Tunnel (1911 through 1935), the average annual flow of water was 44.3 cubic-feet-per second (cfs). During the last 69 years since the Moffat Tunnel diversion (1936 through 2004), the annual flow of water has averaged 17.8 cfs. This more recent flow activity represents a 60% reduction in the average annual water flow relative to the years before*

Comment Information	Comment	Comments and Responses
		the Moffat Tunnel diversion. [SEE SOURCE FILE FOR FIGURE, FRASER RIVER AT WINTER PARK AVERAGE ANNUAL FLOW OF WATER (CUBIC FEET PER SECOND) USGS GAGE: 09024000.] FOOTNOTE: [12] This gage is 2.0 miles upstream from Vasquez Creek and 3.5 miles downstream from the point of diversion for the Moffat Water Tunnel. It is in between the commercial center of the Town of Winter Park and the Winter Park Ski Area. The USGS-managed gage on the St. Louis Creek near Fraser has produced data since 1935. During the 16 year prior (1935 through 1950) to the estimated completion of the St. Louis Creek diversion cannel to the Moffat Tunnel, the average annual flow of water was 36.8 cfs; during the last 54 years (1951 through 2004), the annual flow of water has averaged 22.2 cfs, which represents an average annual reduction of 40% from the prior period. [SEE SOURCE FILE FOR FIGURE, ST. LOUIS CREEK NEAR FRASER AVERAGE ANNUAL FLOW OF WATER (CUBIC FEET PER SECOND) USGS GAGE: 09026500.] The USGS-managed gage on Ranch Creek near Fraser has also produced data since 1935. During the 16 year prior (1935 through 1950) to the estimated completion of the Ranch Creek diversion cannel to the Moffat Tunnel, the average annual flow of water was 20.5 cfs; during the last 54 years (1951 through 2004), the annual flow of water has averaged 12.0 cfs, an average annual reduction of 41%. [SEE SOURCE FILE FOR FIGURE, RANCH CREEK NEAR FRASER AVERAGE ANNUAL FLOW OF WATER (CUBIC FEET PER SECOND) USGS GAGE: 09032000.] The graph to the right provides some perspective on the combined impacts of the Denver Water, the BOR / NCWCD, and the Subdistrict of NCWCD trans-mountain water diversion projects. It shows the average annual flow of water on the Colorado River at Hot Sulphur Springs for several historic time periods: (a) before construction of Denver Water's Moffat Tunnel and BOR's Colorado

Comment Information	Comment	Comments and Responses
		Big Thompson Project (1904 -1936);[13] (b) after construction of the Moffat Tunnel and before construction of the Colorado Big-Thompson Project (1937-1951); (c) after construction of both the Moffat Tunnel and the Colorado-Big Thompson Project (1952-1984), and; (d) after construction of the Moffat Tunnel, the Colorado-Big Thompson Project and the Windy Gap Project. (1985-1994) [14] The cumulative effect of these three diversion projects plus any natural changes in climatic conditions, in-basin users and other smaller factors reduced the flow of water from an average of 530,700 to 145,300 acre-feet per year, a reduction of 73%. This data is from a gage that was managed by the USGS for 90 years, from 1904 through 1994. More recent data from this site is not available because the gage location was subsequently relocated. [SEE SOURCE FILE FOR FIGURE, COLORADO RIVER AT HOT SULPHUR SPRINGS AVERAGE ANNUAL FLOW - MEASURED IN ACRE FEET.] FOOTNOTES: [13] The Water Supply and Storage Company's began its trans-mountain diversion of water through the Grand Ditch in the 1890s. [14] This data is from the USGS gage that was located on the Colorado River at Hot Sulphur Springs between 1904 and 1944. The DEIS is inadequate in that it has not disclosed the significant magnitude of these prior impacts. Also, it is reasonable to question when the currently compromised environmental condition of the Fraser and Colorado rivers have already reached a tipping point where further degradation might trigger nonlinear consequences. The proposed Moffat Project will trigger additional diversion from the Fraser River, the Colorado River and its tributaries. The proposed Windy Gap Firming Project will also trigger further diversions from the Colorado River. Neither of these additional diversion projects is represented in the charts above.

Comment Information	Comment	Comments and Responses
		Response #910-244: Regarding the definition of baseline, please see the response to Comment ID 2860. FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs including the WGFP. The WGFP was included in the Full Use of the Existing System scenario because it is a RFFA that is anticipated to be on-line by 2016. Therefore, the effects of the WGFP that are expected to occur between Current Conditions and Full Use of the Existing System are described in FEIS Chapter 4. The historical impacts on streamflows due to the C-BT, WGFP and Moffat Projects are adequately displayed in DEIS Section 3.1. Tables 3.1-10 and 3.1-14 provide summaries of average annual stream flow depletions for the Fraser River near Winter Park gage and Colorado River near Windy Gap gages, respectively. These tables present the percentage of native flows depleted by the C-BT, WGFP and Moffat Projects for the periods evaluated. Figure 3.1-2 shows average annual flows at the Hot Sulphur Springs for the period from 1904 through 1994 and Figure 3.1-3 shows average daily flows at the Hot Sulphur Springs gage for the period prior to the Moffat Collection System (1904-1935) and after the Moffat Collection System came on-line (1936-1994). These figures display the effects of transbasin diversions (C-BT, Moffat, and WGFP) over time. To display the effects of Denver Water's mainstem Fraser River diversions, Figure 3.1-1 presents average daily streamflow at the Fraser River at Winter Park for the period prior to the Moffat Collection System (1904-1935) and after the Moffat Collection System came on-line (1936-1994). FEIS Section 3.1 was expanded to provide a discussion of the natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver Water is estimated to divert under Current Conditions, Full Use of the Existing System and each of the Moffat Project

Comment Information	Comment	Comments and Responses
		alternatives. The flow reductions at various locations referenced in the comment reflect differences in hydrologic conditions (snowpack, precipitation, temperature, and runoff), irrigation and municipal diversions, and return flows for different time periods. The calculation of percentage flow reductions should be based on data for one consistent period as shown in Tables 3.1-10 and 3.1-14 in the DEIS. For some resources, there is not a known scientific threshold or “tipping point” at which negative impacts occur nor is the Corps aware of specific models or techniques available to conduct “threshold” analyses. The magnitude of impact depends on the current state of that resource and factors that influence that resource. Tipping point issues were addressed for aquatic resources in FEIS Sections 3.11, 4.6.11 and 5.11. ***Comment #910-375*** *(ID 2957)**:*** *The DEIS does not use a cost-benefit analysis to weigh the relative merits of alternatives. This methodology is not a NEPA requirement but it can be a useful analytical tool. If a cost-benefit analysis had been, then the analysts would have developed a common methodology [15] to weigh or at least compare and contrast the environmental impacts on the West Slope versus the demand for more water on the West Slope. FOOTNOTE: [15] Council on Environmental Quality Regulations, Section 1502.23 Cost-benefit analysis.* **Response #910-375:** A benefit-cost analysis of the alternatives is not required nor is it needed. The monetary costs of each alternative are discussed and summarized in Chapter 2 (Section 2.9) and also described as part of the socioeconomics impact analysis included in DEIS Section 4.17. Estimated costs for each alternative include both the capital costs of construction as well

Comment Information	Comment	Comments and Responses
		as annual operations and maintenance costs. Impacts, which can be positive or negative, are specific to each resource and are discussed throughout the various impact analyses included in DEIS Section 4.17. A summary of the impacts to each resource for each alternative is provided in the DEIS. This would provide the information necessary for the Corps to make an informed decision on the permit application. ***Comment #910-362*** *(ID 2956)**:*** *The DEIS provides a poorly balanced perspective on consequences of proceeding with an Action Alternative. The consequences of not proceeding with a Moffat Project alternative are described as potentially "logistically catastrophic." (Page 2-92) and may trigger a "major system failure (that) represents dire consequences for Denver Water as an institution…This perception of institutional instability may lead to new management, new oversight responsibilities and control by other levels of government." (Page 4-498) The environmental consequences of proceeding with any action alternative in Grand County are either ignored or marginalized with qualitative words. The recent report published by the EPA Science Advisory Board, Valuing the Protection of Ecological Systems and Services[16] provides some useful insight on how to measure ecological values and place them into context. FOOTNOTE: [16] Environmental Protection Agency. Science Advisory Board. Valuing the Protection of Economical Systems and Services. EPA-SAB-09-012. May 2009. (EPA, 2009)* **Response #910-362:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
		Comment #910-374 *(ID 2955)**:*** *Some organization other than the proponent should weigh Denver Water's desire to have and sell more water on the East Slope versus the adverse and permanent environmental consequences to the West Slope.* **Response #910-374:** The Corps has complied and will comply with Federal regulations for the preparation of the described EIS and the Section 404 Permit, including an adequate proponent needs evaluation, as discussed in DEIS and FEIS Chapter 1. ***Comment #910-157*** *(ID 2954)**:*** *The affected environment chapter narrowed recreation impacts to fishing and boating. These sections do not discuss more passive recreation impacts such as sight-seeing, hiking and biking.* **Response #910-157:** Please see the response to Comment ID 2483. ***Comment #910-152*** *(ID 2953)**:*** *In a number of instances, information about recreation is anecdotal and not quantified in a manner where the socioeconomic impacts can be measured.* **Response #910-152:** Impacts to the economy of the area were addressed in DEIS Section 4.17. ***Comment #910-156*** *(ID 2952)**:*** *The recreation analysis contains no analysis of how the 2016 System, the Proposed Action or other Action alternatives might impact the pending Wild and Scenic River designation, the Gold Medal Stream Designation and the Colorado Merit Water Stream Designation. These designations are particularly important to Grand County's water-based recreation*

Comment Information	Comment	Comments and Responses
		economy. **Response #910-156:** Please see the response to Comment IDs 2927 and 2933. The FEIS was reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. Considering the revised analysis, a determination regarding the potential impacts to Merit Water and Gold Medal Water status was made. ***Comment #910-155*** *(ID 2951)**:*** *The analysis of recreation impacts applies a questionable methodology that masks anticipated variability of impacts. It selects average year data and then averages the average year data.* **Response #910-155:** The full 45 years of record was analyzed in DEIS Section 4.13 as detailed in the narrative. ***Comment #910-154*** *(ID 2950)**:*** *The DEIS concludes that there are no measurable recreation impacts as summarized in the tables that follow. In many cases, no data is provided to substantiate remarks. Where data is provided, there is no correlation between the information and the conclusion.* **Response #910-154:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
		Comment #910-153 *(ID 2949)**:*** *[SEE SOURCE FILE FOR TABLE, SUMMARY OF FISHING IMPACTS IN GRAND COUNTY.] [SEE SOURCE FILE FOR TABLE, SUMMARY OF KAYAKING IMPACTS IN GRAND COUNTY (MEASURED IN DAYS).] [SEE SOURCE FILE FOR TABLE, SUMMARY OF RAFTING IMPACTS IN GRAND COUNTY (MEASURED IN DAYS).]* **Response #910-153:** This information was reviewed by the Corps. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #910-373*** *(ID 2948)**:*** *LAND USE (SECTIONS 3.14 AND 4.14) The DEIS contains no reference to land uses in Grand County. There are significant impacts on agricultural and resort development land uses that correspond directly with the water diversion proposed in the Moffat Project.* **Response #910-373:** The Moffat Project would not result in more than negligible direct land use effects in Grand County. In terms of effects to resort developments in Grand County, the analysis of impacts to fisheries concluded that adverse effects would generally be negligible to minor. Visual effects associated with stream flow modifications were also acknowledged and determined to be minor at most locations, including the Colorado River, Blue River and lower portions of the Fraser River. Based on this level of adverse effects on the setting and recreational opportunities, and as stated in DEIS Section 4.17, no measurable changes in tourist recreational activity would be expected. Additional information on effects to irrigation operations is provided in FEIS Section 5.16. Water rights for existing agriculture, municipal, and

Comment Information	Comment	Comments and Responses
		other uses would be protected under Colorado water law. Municipal and agricultural diversions per Colorado water law (C.R.S. Section 37-92-102[2][b]),would remain responsible for developing a reasonable means of diversion for their water. ***Comment #910-246*** *(ID 2947)**:*** *This section summarizes observations regarding visual resources that are presented in Chapters 3 and 4 and how the socioeconomic discussion uses the DEIS visual resource findings. • There are significant changes in streamflow from 2006 to 2016. If the definition of baseline condition changes, then the Proposed Action results will be more significant.* **Response #910-246:** The DEIS analysis examined flows over the course of the full 45 years of record. This same analysis has been repeated in FEIS Section 5.17.1.2, but compares Current Conditions to the Proposed Action using flows over the full 45 years of record. A discussion has also been included in FEIS Section 3.1 regarding native flow conditions and Current Conditions. ***Comment #910-372*** *(ID 2946)**:*** *As written, the DEIS concludes there are no socioeconomic consequences even though there are significant "detectable and adverse" stream flow impacts on the Fraser River at Crooked Creek and other negative impacts on the Williams Fork and Colorado Rivers. [See SUMMARY OF VISUAL RESOURCE IMPACTS (MEASURED IN CHANGES TO STREAM FLOW) Table in Source File.]* **Response #910-372:** The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes

Comment Information	Comment	Comments and Responses
		that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality . Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2, River Segments. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate to support or revise the conclusions stated in the FEIS. ***Comment #910-148*** *(ID 2945)**:*** *CULTURAL RESOURCES (SECTIONS 3.16 AND 4.16, CHAPTER 6) The DEIS includes no mention of cultural resources in Grand County, provides no reference as to who was contacted in Grand County regarding cultural resources, and lists no team expert with a cultural resource background (Chapter 6). If an investigation had occurred, then the analyst would have discovered that Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its tributaries.[17] FOOTNOTE: [17] Coley/Forrest, Inc. Grand County: Its Economy and Water Resources. Denver Colorado. July 2007. (Coley/Forrest, July 2007).* **Response #910-148:** Please see the response to Comment ID 2479. ***Comment #910-361*** *(ID 2944)**:*** *The DEIS description of socioeconomic conditions in Grand County is inadequate. It includes a number of traditional economic indicators (population, housing values, number of commuters, household income,*

Comment Information	Comment	Comments and Responses
		etc.) that are later determined to be irrelevant because Grand County has no construction impact. There is one paragraph about the recreation based economy and qualitative remarks that repeat water and wastewater provider concerns about future demand conditions. There are a few instances (boating and visual resources) where an impact is acknowledged but there is no quantitative follow through in the socioeconomic discussion. In other instances, there is no socioeconomic discussion as summarized below. TYPES OF SOCIOECONOMIC IMPACT TYPE OF POTENTIAL IMPACT: SOCIOECONOMIC FINDING Recreation – Fishing: No impact Recreation – Boating: Adverse impact on Fraser, but the volume of boating is small. Visual Resources: No impact except an adverse impact on Fraser River; no follow-through No impact on land-based recreation and no impact on tourist visitation. Land Use: No discussion Cultural Resources: No discussion **Response #910-361:** The description of Grand County's economy, including the importance of the tourism economy, was expanded as necessary as part of FEIS Section 3.19. FEIS Section 4.6.19 addresses total environmental effects, including the impacts of past, present and RFFAs, to Grand County's economy, water and wastewater providers. FEIS Section 5.19 addresses the impacts resulting solely from Moffat Project alternatives. The analysis of socioeconomic impacts to Grand County from Moffat Project alternatives was reviewed and expanded as appropriate for the FEIS based upon the conclusions about impacts on other resources, such as recreation and surface water, and the resulting impacts upon of the county's economic activity. If the alternatives do not cause any socioeconomic effects, a limited amount of information or discussion was added to the affected environment section.

Comment Information	Comment	Comments and Responses
		Comment #910-19 *(ID 2943)**:*** *The DEIS analysis of cumulative effects is inadequate because it lacks rigor; it provides only qualitative information about the two projects included in the cumulative effects analysis and reaches conclusions without reference to more detailed or quantitative analysis. The methodology is faulty because the Windy Gap Firming Project, a proposed project, is presented as part of the 2016 baseline analysis, not part of the cumulative effects analysis. Even with all of these analytical concerns, the DEIS concludes that most of the "non-minor" effects are in Grand County. These include moderate effects on surface and ground water tributaries, fish resources, and recreational boating.* **Response #910-19:** It is untrue that the cumulative effects analysis in the EIS provides only qualitative information about two projects. DEIS Section 5.1 states: "Pertinent cumulative effect timeframes and/or hydrologic scenarios were evaluated using PACSM, since the scenarios were previously used for modeling effects analysis and provide the most logical evaluation process. The Full Use with a Project Alternative (2032) scenario was used to bind the identification of potential cumulative effects related to potential stream flow changes. Cumulative effects with reasonably foreseeable projects (Denver Water's demand is 363,000 AF)/yr (379,000 AF/yr demand less the 16,000 AF/yr demand met by conservation measures, plus other entities have implemented projects/actions). The potential hydrologic effects of implementing a Moffat Project alternative, with the cumulative effect of other entities' reasonable foreseeable actions, are based on this scenario. PACSM results include the proposed water-related projects that are reasonably foreseeable between Current Conditions (2006) and Full Use of the Existing System (refer to Section 5.3). These projects

Comment Information	Comment	Comments and Responses
		are incorporated into the Full Use of the Existing System scenario. Additional reasonably foreseeable projects that could occur between 2016 and 2032 will be addressed qualitatively (refer to Section 5.3)." DEIS Table 5-2 summarizes the reasonably foreseeable future projects, including the WGFP, that are included in PACSM. ***Comment #910-371*** *(ID 2942)**:*** *MITIGATION (CHAPTER 4, APPENDIX M, EXECUTIVE SUMMARY) The DEIS contains no mitigation recommendations with respect to recreation, land use, visual resources, cultural resources or socioeconomics in Grand County. The mitigation discussion in Appendix M does acknowledge that the Moffat Project would cause depletions to the upper Colorado River which would indirectly affect four endangered fish species. While good, this appears inconsistent with statements that there are no impacts to fishing on the Colorado River.* **Response #910-371:** The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the resources listed in this comment were unlikely. However, the FEIS has been modified to include the Colorado River as a focus reach with an expanded discussion of existing conditions and impacts evaluation in FEIS Sections 3.11, 4.6.11, and 5.11. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades.

Comment Information	Comment	Comments and Responses
		The Moffat Project would not impact or change existing land use types in Grand County. The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows (which would not be changed by the Moffat Project) are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality. Additional studies on this relationship have been reviewed and incorporated into FEIS Section 5.17.1.2. An investigation of cultural resources in Grand County was not undertaken because no physical alterations of existing conditions are proposed in Grand County. The analysis shows that the changes in stream flow due to the action alternatives would result in little or no impacts to cultural resources; therefore, this information was not evaluated in the FEIS. URS, the Corps' consultant, invited Mr. Don Worster of the Grand County Historical Association to attend an interested parties meeting in November 2005. Mr. Worster declined to attend that meeting after a telephone conversation with URS on November 4, 2005. During that conversation, URS informed Mr. Worster that there were no new facilities planned in Grand County. ***Comment #910-151*** *(ID 2941)**:*** *In Grand County, the DEIS limits the definition of recreation to two active sports. Fishing and boating (and snowmaking) are the only recreation activities acknowledged.*

Comment Information	Comment	Comments and Responses
		Response #910-151: Other non-flow dependent recreational activities were discussed in DEIS Section 4.13. The analysis addresses the potential impacts on recreation as a result of the Proposed Action, focusing on activities that are water dependent. Activities such as hiking and mountain biking, which are not water dependent, are not expected to be directly affected. Impacts to the scenery of the area, which may be a component of the recreation experience, were addressed in DEIS Section 4.15. ***Comment #910-150*** *(ID 2940)**:*** *Fishing. Fishing information is primarily anecdotal and at sporadic locations. The discussion is understated. Private fishing is particularly understated. No comprehensive baseline standards are offered upon which to measure impacts. No environmental characteristics (water flow, water temperature, water clarity, etc.) are offered to explain the relationship between water diversion and fishing. The subsequent socioeconomic discussion does not follow up on the significance of fishing to the local economy.* **Response #910-150:** Baseline use data is provided in DEIS Section 3.13. Information on recreational use was gathered from recreation resource plans and studies prepared by Federal and State agencies, as well as through field visits and personal communications with recreation providers. Recreation use was based on existing information and no formal recreation/user surveys were conducted. Please see the response to Comment ID 2489. Impacts to the local economy of the area were addressed in DEIS Section 4.17.

Comment Information	Comment	Comments and Responses
		Comment #910-149 *(ID 2939)**:*** *Fishing – Fraser River. (Page 3-282-283) While the DEIS acknowledges the Fraser River has numerous, diverse and high quality fishing experiences, it states that "only limited portions of the Fraser River are open to the public." To quantify the volume of anglers, the DEIS provides an anecdotal observation about anglers seen at any one time. [TEXT BOX: "On an average day during the peak season, approximately five to seven anglers may be seen on stretches of the river accessible to the public. On weekend days during the same period, 10 to 12 anglers may be seen at any one time. (MoHenry's Trout Shop 2005)" (Page 3-283)] Counting anglers seen on stretches accessible to the public is not a meaningful measure. Many premier fishing locations are relatively hidden from public view; it is not physically possible to count anglers seen at any one time except, maybe by helicopter equipped with infrared devices. This demonstrates a misunderstanding of this sport, which, for many, is experienced in locations that are purposefully not visible to the public and conducted on private property that is either leased to guides or clubs or is part of a resort. Many, more knowledgeable anglers fish in the early morning and early evening when water temperatures are lower than average.[18] The DEIS would be more accurate if it addressed more than the Fraser River, the Williams Fork River and the Colorado River by including the creeks and tributaries that feed into these rivers. FOOTNOTE: [18] Fishing experts and fishing-related business representatives. Conversation with owners of Mo Henry' Trout Shop, other experiences and knowledgeable anglers in Grand County and experts knowledgeable about fishing in Grand County. December 2008. The analyst provides one statement regarding private fishing. [TEXT BOX: …"Several private fishing ranches hold property along the banks of the Fraser River and allow river access for a fee." (Page 3-283)] While*

Comment Information	Comment	Comments and Responses
		accurate, there are also other ranches and resorts that authorize fishing on Ranch Creek, Hurd Creek and others. Significant among these is one rancher who leases fishing rights to the Rocky Mountain Anglers Club. Also, the Town of Fraser leases fishing rights along portions of the Fraser River. A number of guides privately lease stretches of the Fraser River and nearby creeks. This activity is a significant and growing component of the summer tourist economy in the Upper Fraser Valley that is understated in this section and not acknowledged in the socioeconomic impact analysis. **Response #910-149:** Information on recreational use was gathered from relevant recreation resource plans and studies prepared by Federal and State agencies, as well as through field visits and personal communications with recreation providers. Recreation use was based on existing information and no formal recreation/user surveys were conducted. The information provided allowed the Persons at One Time (PAOT) method to be used to estimate angler use. The PAOT method is a widely accepted and used method of determining visitor use levels and crowding at recreational resources and is employed by many Federal land management agencies. ***Comment #910-147*** *(ID 2938)**:*** *Fishing - Williams Fork River. Chapter 3 acknowledges small stream fishing opportunities. Some are accessible only by hiking or mountain biking; some are on private land; the best fishing is below the Reservoir at the confluence of the Colorado River where CDOW manages the Kemp and Breeze Units. The DEIS quantifies angler trips [TEXT BOX: "In 1997 (most recent data available) an estimated 7,427 angler trips occurred on the Williams Fork below the reservoir (Kemp and Breeze 2000). More recently, it has been estimated that informal use on*

Comment Information	Comment	Comments and Responses
		this segment is approximately 30 to 50 anglers per weekend day and slightly less on weekdays (Crosby 2005)"](Page 3-283) but there is no follow up effort to quantify the meaning of this recreation activity to the Grand County economy in the socioeconomic section. **Response #910-147:** Impacts to the economy of the area are specifically addressed in FEIS Section 5.19. ***Comment #910-145*** *(ID 2937)**:*** *Fishing - Colorado River. The DEIS states that some of the best trout fishing in the State is on the Colorado River from the Fraser River to Troublesome Creek, and is listed as a Gold Medal Water stream. Again, the DEIS provides an estimate of "anglers seen at given time" but there is no effort to describe the importance of this recreation activity to the Grand County economy or to quantify it in the subsequent socioeconomic section. TEXT BOX: "The upper Colorado River, from the confluence with the Fraser River to Kremmling, offers outstanding fishing opportunities, considered to be among the best in the State. (Page 3-283)* **Response #910-145:** Impacts to fishing and other recreational uses were addressed in DEIS Section 4.13.1.2. Impacts to the economy of the area are addressed in FEIS Section 5.19. ***Comment #910-134*** *(ID 2936)**:*** *Boating. The DEIS summarizes kayaking and rafting activities in Grand County along the Fraser River and the Colorado River.* **Response #910-134:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for

Comment Information	Comment	Comments and Responses
		clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #910-144*** *(ID 2935)**:*** *Boating - Fraser River. Information about boating on the Fraser River is anecdotal. It addresses the number of boats observed during the weekday and weekend from commercial rafters but the significance of this activity to the local economy is not described further. (Page 3-283)* **Response #910-144:** Impacts to boating on the Fraser River were specifically addressed in DEIS Section 4.13. Impacts to the economy of the area are addressed in FEIS Section 5.19. ***Comment #910-143*** *(ID 2934)**:*** *Boating – Colorado River. (Page 3-284) Rafting and kayaking on the Colorado River below the Town of Kremmling is discussed in this section. However, the DEIS does not extend the analysis of the Colorado River below the Kremmling gage, which is where there is substantial kayaking activity. (Page 3-6). There is no discussion of the significance of this extensive summertime activity to the local economy in this or the socioeconomic section.* **Response #910-143:** The DEIS analysis did include the Colorado River below Kremmling. The most current information available at the time was used in identifying minimum and optimum flows. In the DEIS, the days for minimum and optimum flows were determined from several sources including the UPCO study, American Whitewater, and personal interviews with commercial raft guides and private kayakers. New information in the GCSMP indicates slightly different, yet consistent

Comment Information	Comment	Comments and Responses
		flow ranges. As such, the analysis was adjusted to reflect the difference in range of flows. The Upper Colorado River Stakeholder Group Conceptual Plan for a Wild and Scenic Management Alternative was released on June 30, 2008, and an updated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan was provided to BLM in January 2012. This document was reviewed and included as a consulted resource in FEIS Section 3.15.5. An analysis on the section of the Blue River below Green Mountain Reservoir to the confluence with the Colorado River was also included. Tables in FEIS Section 5.15.1.2 have been revised so that the flow ranges and any potential reductions in boatable days are more readable. Impacts to the economy of the area are addressed in FEIS Section 5.19. ***Comment #910-146*** *(ID 2933)**:*** *Other Recreation - Excluded. There is no mention of the significance of the Fraser, Williams Fork and Colorado Rivers and their tributaries and their riparian areas for the more substantial passive site seeing, hiking and mountain biking activities in the Recreation Section. [There is one dismissive conclusion in the socioeconomics section that there are no land-based recreation impacts. (Page 4-432)] There are ample locations throughout the Upper Fraser River watershed where the presence of flowing water enhances the quality of the recreation experience. The Fraser River, Vasquez Creek, Ranch Creek, St. Louis Creek and its many tributaries are vital parts of the visitor experience in the summer months. The parameters used to describe recreation in Grand County are summarized below. The socioeconomic section does not use this information. PARAMETERS USED TO DESCRIBE THE RECREATION (BASELINE) AFFECTED ENVIRONMENT IN GRAND COUNTY - recognition: Wild and Scenic*

Comment Information	Comment	Comments and Responses
		River eligibility, Gold Medal Water designation, Colorado Merit Water Stream designation - anecdotal remarks – # of anglers seen at one time from publically accessible locations on the Fraser and Williams Fork Rivers - anecdotal and qualitative remarks about private fishing - anecdotal remark – number of boats on one location of the Fraser River - anecdotal remark – high quality fishing experiences in the Williams Fork and Colorado Rivers. - anecdotal remark – number of commercial rafting user days on an unstated portion of the Colorado River. **Response #910-146:** Please see the response to Comment ID 2927 related to Wild and Scenic designation. The analysis addresses the potential impacts on recreation as a result of the Proposed Action, focusing on activities that are water dependent. Activities such as hiking and mountain biking, which are not water dependent, are not expected to be directly affected. Impacts to the scenery of the area, which may be a component of the recreation experience, were addressed in DEIS Section 4.15. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Colorado River would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. Potential impacts to the Grand County economy were addressed in FEIS Section 5.19. A discussion of potential scenic impacts on the recreation experience was provided in DEIS Section 4.13.1.2 with further detail provided in DEIS Section 4.15.

Comment Information	Comment	Comments and Responses
		Comment #910-370 *(ID 2932)**:*** *AFFECTED ENVIRONMENT – LAND USE (SECTION 3.14, PAGES 3-287-292). The DEIS contains no reference to land uses in Grand County. This may be an outcome of the inappropriately narrow geographic definition of the affected environment, which, in Grand County, includes river segments that would experience a stream flow change of plus or minus 10% as a result of the Moffat Project. (Page 3-4) There are several significant residential developments and resorts, such as Devil's Thumb Ranch, Rendezvous, and the Winter Park Ski Base Area redevelopment that rely on the health as well as the passive beauty of the Fraser River and its tributaries to attract guests, visitors and homebuyers. There is an inextricable relationship between the tributaries, streams and rivers that Denver Water uses for diversion and land uses in Grand County. Also, several ranchers are currently experiencing problems with their irrigation ditch operations due to low flow in both dry and average years.[19] Although agricultural concerns were mentioned in the Scoping Summary, (Pages 3-10 and 3-13) there is no mention of this condition in the DEIS. In fact, there is no reference to agriculture. FOOTNOTE: [19] Ranchers who Use the Fraser River. Telephone conversations with ranchers in the Fraser Valley who use the Fraser River system for irrigation. (Fraser River Ranchers)* **Response #910-370:** Please see the response to Comment ID 2493. ***Comment #910-328*** *(ID 2492)**:*** *Affected Environment – Visual Resources in Grand County. The DEIS states that the Fraser, Williams Fork, and Colorado rivers "occur in scenic or visually sensitive locations. The setting in which the stream is viewed is equally important as the stream flow level when determining visual preferences." DEIS 3-299. This section of the DEIS acknowledges the*

Comment Information	Comment	Comments and Responses
		relationship of the visual experience of rivers in mountain communities dependent on visitation, but "concludes" with a dismissive statement that river water levels fluctuate and visitors expect that. Id. There is no further discussion of whether the significant reductions in stream flow from the native condition to current conditions (2006), from current to 2016 "baseline" conditions and from 2016 "baseline" conditions to the Proposed Action might affect visitors. **Response #910-328:** The statement made on Page 3-299 of the DEIS -- "As a result, a stream is a dynamic system that rarely remains static and the viewer has an expectation of observing change over the course of the seasons." is not meant to be dismissive of the importance of stream flows on the visual setting of mountain or other communities. The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality . Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2. The DEIS analysis examined flows over the course of the full 45 years of record. This same analysis has been repeated in FEIS Section 5.17.1.2, but compares Current Conditions to the Proposed Action using flows over the full 45 years of record. A discussion has also been included in FEIS Section 3.1 regarding native flow conditions and Current

Comment Information	Comment	Comments and Responses
		Conditions. ***Comment #910-142*** *(ID 2930)**:*** *AFFECTED ENVIRONMENT – CULTURAL RESOURCES (SECTION 3.16, PAGES 3-301-316). The analysts mention that they contacted the Grand County Historic Association (page 3-301) without a citation of who spoke with whom and when. There is no discussion in the DEIS about cultural resources in Grand County. There is no statement that an investigation was done and no significant cultural resources or historic properties were found. Also, there is no expert listed in the Chapter 6 with a cultural resource background. (See pages 6-2 and 6-3) If no cultural resources investigation was done in Grand County, then this is a methodological error. Grand County has a rich and diverse cultural history in the Upper Fraser Valley that is directly linked with the water resources of the Fraser River and its tributaries. For example, the "Western White House" and President Eisenhower's fishing excursions to the Fraser River and St. Louis Creek. The Town of Fraser's cultural heritage focuses on the Fraser River, its namesake. While the recreation section (3.13) acknowledges that the historic elements of the Colorado River are one of the attributes that makes it eligible for Wild and Scenic River designation, this section (3.16) provides no information about the historic element.* **Response #910-142:** Please see the response to Comment ID 2479. ***Comment #910-369*** *(ID 2929)**:*** *AFFECTED ENVIRONMENT – SOCIOECONOMICS (SECTION 3.17, PAGES 3-317-333). In the socioeconomics section, the affected environment is divided into primary and secondary impact areas. A primary impact area is defined as "that area in which an immediate or direct effect from construction or*

Comment Information	Comment	Comments and Responses
		operation may occur, such as an area of proposed inundation." (Page 3-317) The DEIS includes no primary impact area in Grand County even though there are 31 diversion locations in Grand County. Grand County will experience direct recreation, visual resources and land use effects as described above. Designating Grand County as a primary impact area merits consideration if this designation would trigger a more rigorous review of the effects of the Moffat Project on the County. **Response #910-369:** The designation of an area as a primary or secondary impact area does not determine the rigor of the analysis of socioeconomic impacts. Whatever socioeconomic effects that are likely to occur in Grand County was addressed in the FEIS. ***Comment #910-333*** *(ID 2928)**:*** *AFFECTED ENVIRONMENT – SOCIOECONOMICS (SECTION 3.17, PAGES 3-317-333). Grand County is one of six counties that is designated a secondary impact area. The analysis provides the same cursory summary for each county with one the exception of one free-standing paragraph about the importance of tourism to the local economy. (Page 3-330-331). The description of the Grand County affected environment excludes baseline information about a number of socioeconomic issues that were mentioned in the Scoping Summary. Quotes from the Scoping Summary, pages 3-14 and 3-15 follow. – "Additional costs to local wastewater treatment plants (i.e., more extensive treatment and plant upgrades) due to lack of dilution." "Evaluate economic implications of the Upper Fraser River valley community spending over $20 million in the past 4 years to construct wastewater treatment plants that may become out of compliance with the water diversion." The DEIS repeats the concern but does not provide any information about the condition. [TEXT BOX: "These*

Comment Information	Comment	Comments and Responses
		wastewater treatment providers are concerned about future operations and future compliance with their NPDES discharge permits, which depend, in part, on Fraser River flows" (page 3-331)] – "Disclose current costs of water to existing and prospective water users in Grand County and changes in costs resulting from this project." The DEIS does not address this issue. – "Effect on power prices or power supply in Grand County." The DEIS states without substantiation that "power supplies and power prices in Grand County would not be affected by the Proposed Action." (Page 4-432) This disregard for issues carefully summarized in the Scoping Summary calls into question the rigor of the affected environment description. The table below summarizes the types of baseline socioeconomic parameters presented in the DEIS. The depth of quantitative information provided is inadequate because it does not align with many questions and issues outlined in the Scoping Summary or provided by Grand County in prior written communication. [SEE SOURCE FILE FOR TABLE, PARAMETERS USED TO DESCRIBE THE SOCIOECONOMIC (BASELINE) AFFECTED ENVIRONMENT IN GRAND COUNTY] The report, Grand County: Its Economy and Water Resources[20], describes the significant relationship between Grand County and water. With the exception of the last three items, there is little relationship between the socioeconomic characteristics used in the DEIS and the impact of the project on Grand County. The DEIS has a negligent disregard for Grand County and the special and significant impacts attributable to historic and proposed water diversions. FOOTNOTE: [20] Coley/Forrest, July 2007. One example is the investment that the Town of Fraser has made in the Fraser River. In the last few years, Fraser spearheaded a substantial restoration of the River as it flows through the Town. A major developer dedicated a substantial portion of the river corridor to the Town as part of its annexation. The Town allows

Comment Information	Comment	Comments and Responses
		public access for fishing on portions of the River and has just begun to lease fishing rights to private guides on other portions. As evidence of its increased emphasis on the Fraser River as a vital part of its summer economy, two fly fishing shops recently located in Fraser. To the small Town of Fraser (population 1,134 in 2008)[21], it is vital. FOOTNOTE: [21] Colorado State Demographer. Population Estimates by Municipality, July 1, 2008, web site. If more rigor had been applied in collecting baseline information that aligned with the scoping remarks, then the analyst may have been less likely to ignore or dismiss potential impacts. As stated in Section 1.1, Guidelines for Preparing Economic Analyses, prepared by the EPA, suggests some principles for describing baseline conditions. **Response #910-333:** The description of Grand County's economy, including the importance of the tourism economy, was expanded as appropriate in FEIS Section 3.19. FEIS Section 4.6.19 addresses total environmental effects, including the impacts of past, present and RFFAs, to Grand County's economy, water and wastewater providers. FEIS Section 5.19 addresses the impacts resulting solely from Moffat Project alternatives. The analysis of socioeconomic impacts to Grand County from Moffat Project alternatives was reviewed and expanded as appropriate for the FEIS based on the conclusions about impacts on other resources, such as recreation and surface water, and the resulting impacts upon of the county's economic activity. If the alternatives do not cause any socioeconomic effects, a limited amount of information or discussion was added to the affected environment section. ***Comment #910-141*** *(ID 2927)**:*** *Wild & Scenic Rivers Designation. The affected environment chapter (Page 3-282, 3-246) acknowledges that "affected" segments of the*

Comment Information	Comment	Comments and Responses
		Colorado River are in consideration for Wild and Scenic Rivers designation. Neither this chapter nor the cumulative impacts chapter discusses the impact of the 2016 System, the Proposed Action or other Action Alternatives on this important eligibility. **Response #910-141:** The most recent and updated version of the Upper Colorado River Wild and Scenic Stakeholder Group Management Plan, dated January 2012, was reviewed and included as a consulted resource in the FEIS. In 2006, the Kremmling and Glenwood Springs field offices of the BLM began the eligibility phase of a Wild and Scenic Rivers' evaluation as part of its RMP revision process. The Wild and Scenic Rivers study process is composed of two main components: the eligibility phase and the suitability phase. The eligibility phase involves identifying eligible rivers and stream segments, and determining a tentative classification (i.e., Wild, Scenic, or Recreational). To be eligible for designation, a river must be free flowing and contain at least one Outstandingly Remarkable Value (ORV) that is scenic, recreational, geological, fish-related, wildlife-related, historic, cultural, botanical, hydrological, paleontological, or scientific. Upon conclusion of the eligibility phase, the BLM prepared a Wild and Scenic Eligibility Report that identified five river segments within the Moffat Project EIS study area (portions of the Colorado and the Blue rivers) that were eligible for inclusion in the NWSRS (BLM 2007). The Wild and Scenic Suitability Report followed in April 2010. In the report, the BLM states: “The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS by considering tradeoffs between corridor development

Comment Information	Comment	Comments and Responses
		and river protection." Those segments of the Colorado River between Kremmling and Glenwood Springs were determined to be eligible. The Kremmling and Glenwood Springs field offices of the BLM addressed this issue in separate Draft RMPs/EISs that were released in 2011. The preferred alternative in both RMPs includes a determination that much of the Colorado River between Kremmling and Glenwood Springs is suitable for inclusion in the Wild and Scenic Rivers Act. A variation of the preferred alternative in both field offices would defer designation by adopting and implementing the Stakeholder Group Management Plan. If monitoring indicates that the Stakeholder Group Management Plan was not providing an adequate level of protection, BLM would initiate a process to evaluate suitability at a future date. The recreation analysis in the EIS did evaluate effects of the Project alternatives on the Colorado River below Kremmling (see DEIS Section 4.13.1.2). The Corps coordinated with BLM regarding the Wild and Scenic River designation process throughout the NEPA process. However, the Corps does not use its authorities to protect those segments under the BLM study for determination in a greater capacity than it does all waterways under its jurisdiction. The Corps' direct and cumulative impact analysis shows that minor impacts would result from implementation of the action alternatives. These results were then interpreted to find that the alternatives would likely not affect the suitability of the eligible segments for inclusion in the NWSRS. This conclusion was added to the FEIS. The Corps coordinated with the BLM regarding the Wild and Scenic River designation process throughout the NEPA process. Sections of the Colorado and Blue rivers within the Project area considered eligible for Wild and Scenic Rivers

Comment Information	Comment	Comments and Responses
		designation are described in DEIS Section 3.13.5 and FEIS Section 3.15.5. ***Comment #910-140*** *(ID 2926)**:*** *Gold Medal Stream Designation. The affected environment chapter (Page 3-282) appropriately mentions that segments of the Colorado River have Gold Medal Stream designation. Neither this chapter nor the cumulative impacts chapter discusses the impact of the 2016 System, the Proposed Action or other Action Alternatives on this designation.* **Response #910-140:** Revisions and additional information included in FEIS Sections 4.6.11 and 5.11 were reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to Section 5.15.1.2. Considering this information, a determination regarding the potential impacts to Merit Water and Gold Medal Water status was made. ***Comment #910-132*** *(ID 3011)**:*** *Colorado Merit Water Stream Designation. The affected environment chapter mentions that St. Louis Creek (Page 3-282) and the Williams Fork River (Page 3-283) have this designation. Neither this chapter nor the cumulative impacts chapter discusses if this designation is threatened by the 2016 System, the Proposed Action or other Action alternatives.* **Response #910-132:** The FEIS was reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered in FEIS Section 5.15.1.2. Considering this analysis, a determination regarding the potential impacts to Merit Water and Gold Medal Water status was made.

Comment Information	Comment	Comments and Responses
		Comment #910-131 *(ID 3010)**:*** *Measuring Favorable Steam Flow for Kayaking and Rafting - Current Conditions and 2016 System. The DEIS consistently uses a questionable mathematical methodology for quantifying days where streamflow is at minimum and maximum desired levels for kayaking and rafting. The method is repeated in Tables 4.13-1, 4.13-2, 4.13-3, and 4.13-4. In each instance, tabular data is presented for five sample years which are neither wet nor dry years. There is wide variation in data for each selected year, which are allegedly neither wet nor dry years. All conclusions are based on the average of these five selected years. This approach significantly masks any potential impacts. Table 4.13-3 (page 4-375) is used as an example. While the change extends from – 56 days to + 67 days and the percent change is from –47% to +84%, the only discussion focuses on the average of +0.2 days when flows fall within the desirable range. The standard deviation[22] from the average is so high as to render the single-figure conclusion meaningless. FOOTNOTE: [22] The standard deviation is a measure of statistical dispersion from the mean or average. The higher the standard deviation, the less reliable is the mean or average. Restatement of Data from Table 4.13-3 (page 4-375) Colorado River at Kremmling, Current Conditions Versus Full Use Existing System, Rafting Year Change in Days: % Change in Days: Current to 2016 Full Use Current to Full Use 1957 +67 +84% 1966 0 0% 1975 +2 +2% 1987 –12 – 9% 1991 –56 – 47% Total 0.2 + 0.2% A better approach would have been to use all years where data is available and describe not only an average figure but also the variation, which seems more significant than an average figure. [See CHANGE IN DAYS OF USE: 2006 TO 2016 Figure in Source File.]*

Comment Information	Comment	Comments and Responses
		Response #910-131: The DEIS did not base all impact conclusions on the five selected years. The full 45 years of record was analyzed for key river segments and the predicted change in the number of days when flows would fall within the optimum range was also reported. Several changes were made in the FEIS to respond to this and other comments received on the DEIS, including elimination of the 5-year average as a basis for comparison. Flow data from individual years are still presented because they provide a good snapshot of conditions that would be expected under actual hydrologic conditions. However, the overall level of change is presented using the period of record rather than the 5-year average. ***Comment #910-130*** *(ID 3009)**:*** *Magnitude of Impacts. The analysts take the unsubstantiated position from the start that there must be a dire impact on recreation to matter. ([TEXT BOX: "Impacts to recreation would occur should the Moffat Project prohibit or severely reduce the available and existing recreation opportunities and experiences in the Project Area." (Page 4-367, emphasis added)] Unlike Front Range counties, water impacts affect the core of the Grand County economy. This irresponsible remark sets the tone for Section 4.13. The definition of "severely reduce" is not described or quantified in the text.* **Response #910-130:** FEIS Section 5.15 was revised to state: "Major, significant impacts to recreation would occur should the Moffat Project prohibit, or severely reduce, the available and existing recreation opportunities and experiences in the Project area." ***Comment #910-171*** *(ID 3008)**:*** *Snowmaking – Existing Conditions, 2016 Full System and Proposed Action. The DEIS states that "The*

Comment Information	Comment	Comments and Responses
		Moffat Project would not affect snowmaking activities" (Page 4-372) because little if any depletions occur between October and December beyond the current conditions. No quantification of this remark was provided so it is difficult to evaluate the merits of the conclusion. There is substantial local concern about having sufficient physical (wet) water during the critical snowmaking months. Stream flow in the Fraser River near the Winter Park Ski Area is already severely compromised from prior Denver Water depletions.[23] FOOTNOTE: [23] USGS gage 09024000 on the Fraser River upstream of Vasquez Creek and downstream of the Winter Park Ski area has continuous reporting data sufficient to measure depletions before and after Denver Water diversions. **Response #910-171:** As described in the DEIS, snowmaking at local ski resorts occurs primarily from October through December. PACSM results indicate that there would be little, if any, additional depletions occurring during these months. If little to no additional depletions are expected to occur during this time period, there is no reason to assume there would be less water available for snowmaking than is presently available. ***Comment #910-170*** *(ID 3007)**:*** *Fishing – Existing Conditions, 2016 Full System and Proposed Action. The DEIS does not contain any information about the relationship between stream flow, stream temperature, water clarity and the quality of the fishing experience on the Fraser, Williams Fork or Colorado rivers. Broadly speaking, it is difficult to know how the DEIS reaches its conclusions about no fishing impact. The conclusions are unsubstantiated and questionable, given that lower flows, higher water temperatures, and degraded quality conditions due to lack of flushing flows all negatively impact fishing. Plus, fishing has already been compromised due to prior water diversions by Denver Water.*

Comment Information	Comment	Comments and Responses
		Response #910-170: Please see the response to Comment ID 2489. ***Comment #910-169*** *(ID 3006)**:*** *On the Fraser River, the DEIS provides no justification for the statement that fishing is not impacted. (See box the right.) Elsewhere in the DEIS, it reported that between 2006 and 2016, there would be a 2% to 18% reduction in average monthly flows in the summer months (Page 4-406) during an average year and a 22% to 42% reduction in flows during dry years (Page 4-406). It also reports an additional 30% to 40% reduction in average stream flows during summer months between 2016 and the 2030 Proposed Action. (Page 4-406) TEXT BOX; "Flow reductions would not necessarily adversely affect the quality of the fishing experience." (Page 4-374) There is also an unsubstantiated remark that reducing flushing flows may be beneficial to fishing because the fish will remain more active. Our research indicates that flushing flows are essential to a healthy riparian environment and the reverse of this statement is more accurate. [24] FOOTNOTE: [24] Coley/Forrest, November 2007. TEXT BOX: "Flow reductions during periods of high flows are not likely to adversely affect the quality of the fishing experience. In some cases, flow reductions during periods of high flow may actually provide a minor beneficial affect to the quality of fishing." (Page 4-374)* **Response #910-169:** Please see the response to Comment ID 2489. ***Comment #910-162*** *(ID 3005)**:*** *On the Williams Fork River, the DEIS states that no impacts are expected to the quality of the fishing experience as a result of the Proposed Action. There is no discussion of potential impacts between 2006 and 2016. However, no data is provided to*

Comment Information	Comment	Comments and Responses
		substantiate these statements. TEXT BOX: "No impacts are expected to occur to the quality of the fishing experience along the Williams Fork River as a result of the Proposed Action." (Page 4-374) **Response #910-162:** Please see the response to Comment ID 2489. ***Comment #910-168*** *(ID 3004)**:*** *On the Colorado River, the DEIS states simply that there are no impacts to fishing without any data to substantiate this statement. There is no indication as to whether the conclusion relates to the 2016 "baseline" or the Proposed Action or where these observations occurred that support this statement. The remark is questionable since the Windy Gap Firming Project (presented as part of the 2016 Baseline) will lower river flows near the Windy Gap Reservoir. TEXT BOX: "No impacts to fishing on the Colorado River are anticipated." (Page 4-377)* **Response #910-168:** Please see the response to Comment ID 2489. ***Comment #910-167*** *(ID 3003)**:*** *The Executive Summary (Page ES-35) reiterates information from Chapter 4. "Generally, no negative impacts to fishing would occur, although possibly some improvements to the quality of fishing."* **Response #910-167:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
		Comment #910-166 *(ID 3002)**:*** *Kayaking – Existing Conditions, 2016, Proposed Action. On the Fraser River, the DEIS reports virtually no difference in days suitable for boating (kayaking) between 2006 and 2016. Between 2016 and the Proposed Action, the DEIS reports a 20% drop in steam flow which triggers a 40% drop in days suitable for kayaking (30.4 to 17.8) in average years. This is one of a few places with a recreation impact is acknowledged. [TEXT BOX: Overall, the Project would have a major, long-term adverse impact on boating on the Fraser River….this would be considered a major, long-term impact." (Page 4-373)] However, a later section on Unavoidable Adverse Impacts declares this impact "negligible." (Page 4-389). " No mitigation recommendations are suggested. (Page 4-389)* **Response #910-166:** The term "negligible" was changed to "major" in FEIS Section 5.15.8. ***Comment #910-165*** *(ID 3001)**:*** *Subsequently in the socioeconomic section of the DEIS, this magnitude of impact is dismissed because the DEIS reports that there is very little boating on the Fraser River (Page 4-431)* **Response #910-165:** Impacts to the economy of the area are addressed in FEIS Section 5.19. ***Comment #910-164*** *(ID 3000)**:*** *On the Colorado River near Kremmling the DEIS concludes that days suitable for kayaking would increase from 84.6 to 98.6 (a 16.5% increase) between 2006 and 2016. (Page 4-375) This is curious because the Windy Gap Firming Project is included in the 2016 assumptions. According to the Windy Gap Firming Project DEIS, this Project triggers streamflow*

Comment Information	Comment	Comments and Responses
		reductions are related reductions in preferred streamflows for kayaking.[25] Between 2016 and the Proposed Action, the DEIS states that number of days suitable for kayaking would increase slightly from 98.6 to 101.2. (Page 4-377) FOOTNOTE: [25] Windy Gap Firming Project – Draft Environmental Impact Report (DES 08-30), Tables 3-124, 3-126, 3-127, 3-128, 3-129, and 3-130. **Response #910-164:** A revised discussion of impacts to boating on the Colorado River is provided in FEIS Sections 4.6.15 and 5.15. ***Comment #910-158*** *(ID 2999)**:*** *No analysis is provided for the Williams Fork River.* **Response #910-158:** Discussion of the Williams Fork River was provided in DEIS Sections 3.13 and 4.13. ***Comment #910-163*** *(ID 2998)**:*** *Rafting – Existing Conditions, 2016 and Proposed Action. The range of suitable streamflow for rafting is higher (700 to 2,000 cfs) than the range for kayaking (400 to 1,100 cfs). No information is provided for rafting for the Fraser River or Williams Fork River. On the Colorado River at Kremmling, the DEIS concludes that the days suitable for rafting would remain virtually unchanged between 2006 (107.4) and 2016 (107.6) Page 4-375) even though 2016 includes the impact of Windy Gap. This appears contrary to conclusions contained in the Windy Gap Firming Project DEIS.[26] Also, the days suitable for rafting between 2016 and the Proposed Action would remain virtually unchanged (107.6 versus 108.4) (Page 4-376). FOOTNOTE: [26] Ibid., Tables 3-124, 3-126, 3-127, 3-128, 3-129, and 3-130.*

Comment Information	Comment	Comments and Responses
		Response #910-163: Based on interviews with representatives of the rafting industry, it was revealed that no commercial rafting takes place on the Fraser, and very limited private rafting in high water years only. Interviews also revealed no rafting occurs on the Williams Fork. Beyond this, the most current information available at the time of DEIS analysis was used in identifying minimum and optimum flows. In the DEIS, the days for minimum and optimum flows were determined from several sources including the UPCO study, American Whitewater, and personal interviews with commercial raft guides and private kayakers. New information in the GCSMP indicates slightly different, yet consistent flow ranges. As such, the analysis was revised in FEIS Section 5.15.1.2 to reflect the difference in range of flows. The new analysis evaluates daily flow data over the full 45 years of record from Current Conditions (2006) to Full Use with a Project Alternative (2032). The Upper Colorado River Stakeholder Group Conceptual Plan for a Wild and Scenic Management Alternative was released on June 30, 2008 and an updated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan was provided to BLM in January 2012. This document was reviewed and included as a consulted resource in the FEIS. ***Comment #910-161*** *(ID 2997)**:*** *Recreation Impacts Excluded. The environmental consequences portion of the DEIS ignores the important economic value of the rivers and the riparian habitat as contributors to the scenic beauty of the natural environment that brings visitors to the area. It also ignores the significant private resorts, lodges and developments that rely on the health of the rivers for fishing as well as the beauty of the rivers to attract site-seeing visitors, hikers and mountain bikers. [See SUMMARY OF DEIS RECREATION IMPACTS BY RIVER SEGMENT (SECTION 4.13)*

Comment Information	Comment	Comments and Responses
		Table in Source File.] **Response #910-161:** Please see the response to Comment ID 2483. ***Comment #910-385*** *(ID 2996)**:*** *The DEIS introduction repeats an issue identified during scoping, "Impacts on land development and Grand County due to additional water diversion." (Page 4-391). The DEIS finds that since there is no Project-related construction anticipated in Grand County between 2006 and 2016 or between 2016 and the Proposed Action in 2030, there would be no direct impacts to land use. Grand County land uses are not discussed. (Page 4-392)* **Response #910-385:** The Moffat Project would not result in more than negligible direct land use effects in Grand County. In terms of effects to resort developments in Grand County, the analysis of impacts to fisheries concluded that adverse effects would generally be negligible to minor. Visual effects associated with stream flow modifications were also acknowledged and determined to be minor at most locations, including the Colorado River, Blue River and lower portions of the Fraser River. Based on this level of adverse effects on the setting and recreational opportunities, and as stated in DEIS Section 4.17, no measurable changes in tourist recreational activity would be expected. ***Comment #910-387*** *(ID 2995)**:*** *The analysts do not acknowledge the relationship between water resources, tourism, and agriculture. These relationships are described in Grand County: Its Economy and Water Resources [27] which is listed as a DEIS Reference. (References 5) To underscore one land use impact, there are some Grand County ranchers who use the river, creek and tributaries in the Fraser Valley upstream from Granby have*

Comment Information	Comment	Comments and Responses
		problems with their irrigation ditch operations due to low flows not only during dry years but also during average years.[28] Any exacerbation of this currently tenuous situation will only increase their problems and hamper ranching operations. Ranching is an important component of the economic history and fabric of Grand County. This important consideration was totally ignored in the DEIS. FOOTNOTES: [27] Coley/Forrest, July 2007. [28] Fraser River Ranchers. **Response #910-387:** Please see the response to Comment ID 2493. ***Comment #910-384*** *(ID 2994)**:*** *Also, the DEIS states that "there is no substantive causal relationship between population growth and the development of water or vice versa." (Page 4-391). If this is true, then there is no need to provide additional water to serve future development.* **Response #910-384:** DEIS Section 4.14 provides a detailed description and substantiation of why water development projects do not precipitate residential and commercial development. However, forward-thinking local governments usually plan and prepare for potential growth, whatever is the cause. ***Comment #910-256*** *(ID 2993)**:*** *Chapter 3 (affected environment) provides descriptive information about the significance of visual resources in the Fraser, Williams Fork and Colorado rivers particularly for mountain communities dependent upon visitors. (page 3-299) The opening paragraph of this section in Chapter 4 repeats a scoping issue: "Impacts on Grand County's scenic characteristics and attractions, including water courses affected by the Project." (Page 4-399) The DEIS provides qualitative definitions of "high or major" impacts, "moderate" impacts and "low or no conflicts" (Page 4-*

Comment Information	Comment	Comments and Responses
		401) that are not correlated with the quantitative remarks about changes in stream flow. **Response #910-256:** These definitions are meant to apply to visual impacts at Gross Reservoir and the proposed Leyden Gulch Reservoir site. The discussion in FEIS Section 5.17 has been revised to reflect this. ***Comment #910-255*** *(ID 2992)**:*** *The visual resources analysis is confined to perception due to changes in stream flow. The DEIS relies upon one study in North Carolina to correlate viewer preferences and streamflows. The study concludes that viewers react adversely to both low stream flows and higher streamflow conditions. (Page 4-404) The DEIS states that low flows occur in the winter and spring months, and since the Moffat project would have minimal impact during periods of low flow, the impact on viewers would be minor. [TEXT BOX: " In general, the Moffat Project would have only a minor effect on flow levels during periods of low flows, when streams are most sensitive to visual change." (Page 4-404)] As described below, there are stream flow reductions in each summer month between 2006 and 2016 and additional stream flow reductions in each summer month between 2016 and 2030. Using one example, the DEIS reports that the Moffat Project would trigger average flow reductions on the Fraser River at Vasquez Creek, a highly visible location in the heart of the Town of Winter Park of 37% in June (Page 4-37). The conclusion that this average stream flow reduction is not noticeable to visitors is unsubstantiated. Throughout the analysis, the author uses the phrase" within the normal range of seasonal and annual variability" to claim that most observers would not notice. The DEIS states that it would be "difficult for most observers to determine if flow variations are naturally occurring or are attributed to the Moffat*

Comment Information	Comment	Comments and Responses
		Project." (Page 4-405) These statements are not substantiated. **Response #910-255:** Please see the response to Comment ID 2492. ***Comment #910-254*** *(ID 2991)**:*** *Visual Resource Impacts: 2006 to 2016: On the Fraser River at Crooked Creek, there would be a 2% to 18% reduction in streamflow between 2006 and 2016 in an average year. This reduction "would not be detectable to most observers." (page 4-406). During dry years, there would be a 22% to 42% reduction, which is considered a "moderate" impact. (Page 4-406) On the Williams Fork River, during average years, stream flow changes in the upper reaches decrease 24% (from 50 to 38 cfs) near the Steelman Creek gage and 14% (from 86 to 74 cfs) above the Darling Gage. Again, these are considered within the normal range of seasonal and annual flow. At lower locations, the change is considered very minor; below the Williams Fork Reservoir, the change is positive. (Pages 4-406,407) On the Colorado River at Hot Sulphur Springs, during average years, streamflow changes would range between 0% and minus 31%. (Page 4-405) Without substantiation, this is considered "within the normal range of seasonable variability" and "minimally detectable" (Page 4-405)* **Response #910-254:** The statement made on page 3-299 of the DEIS -- "As a result, a stream is a dynamic system that rarely remains static and the viewer has an expectation of observing change over the course of the seasons." is not meant to be dismissive of the importance of stream flows on the visual setting of mountain or other communities. The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and

Comment Information	Comment	Comments and Responses
		diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality. Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2. ***Comment #910-253*** *(ID 2990)**:*** *Visual Resource Impacts: 2016 to Proposed Action. On the Fraser River at Crooked Creek, during an average year, flow changes would be about 30% to 40%. The difference would be "detectable and adverse." (Page 4-406) On the Williams Fork River in an average year, streamflow changes would be "minor and limited to periods of high flows" except in the upper reaches. (Page 4-407) On the Colorado River at Hot Sulphur Springs, in June of an average year, flow reductions would be an additional 13%) and would be perceptible to highly skilled observers. Elsewhere, all flow depletions would be below the level of perceptible change. (Page 4-406) The DEIS acknowledges adverse and noticeable visual impacts along the Fraser River, yet the socioeconomic does not follow through by measuring the implications on the local economy. It is visitors, the core of the Upper Fraser Valley economy, that benefit from the visual and aesthetic resources. [See SUMMARY OF DEIS VISUAL RESOURCE IMPACTS (SECTION 4.15) Table in Source File.]* **Response #910-253:** Impacts to the economy of the area are addressed in DEIS Section 4.17.

Comment Information	Comment	Comments and Responses
		Comment #910-160 *(ID 2989)**:*** *ENVIRONMENTAL CONSEQUENCES – CULTURAL RESOURCES (SECTION 4.16, PAGE 4-417 TO 4-424) The DEIS reports no environmental consequences to cultural resources in Grand County. This is likely because there is no discussion of cultural resources in the Affected Environment Chapter (Chapter 3).* **Response #910-160:** Please see the response to Comment ID 2479. ***Comment #910-386*** *(ID 2988)**:*** *ENVIRONMENTAL CONSEQUENCES – SOCIOECONOMICS (SECTION 4-17, PAGES 4-425 TO 4-506) The DEIS concludes that socioeconomic impacts on Grand County due to the Proposed Action would be "negligible" because, according to the DEIS:* • *There would be no construction activity. (Page 4-431)* • *Boating impacts on the Fraser River are excluded because the volume of boating is minimal and impacts on the Colorado River are favorable. (Page 4-431)* • *There are no quantitative conclusions about fishing on the Fraser River and no fishing impacts on the Colorado or Williams Fork. (Page 4-431)* • *The recreation and aquatic resources analysis suggest "no changes in resident or visitor recreational activity would be expected." (Page 4-431)* • *Flow changes are "generally unnoticeable to most observers" so there would be no impacts to land-based recreation activity such as hiking and biking. (Page 4-432)* • *Impacts to wastewater treatment providers include a shortage of 6 acre feet for one provider and this shortage will not hinder development. (Page 4-432) Therefore, no socioeconomic consequences are*

Comment Information	Comment	Comments and Responses
		provided in this section or the executive summary. The DEIS contains insufficient quantitative rigor. The socioeconomic analysis does not attempt to quantify the impacts to fishing, visual resources, and boating that are clearly stated elsewhere in the document. When an impact was reported in qualitative terms, such as "moderate", there was no attempt to quantify the environmental effect and no follow up attempt to quantify the socioeconomic implications to the local economy. The US Environmental Protection Agency Guidelines for Preparing Economic Analyses [29], published in 2000, and the draft Guidelines [30], prepared in 2008, provide expert guidance on how to treat uncertainty and qualitative findings. The dismissive style of the DEIS is inconsistent with EPA Guidelines and suggests that the impact analysis is incomplete. FOOTNOTES: [29] EPA, 2000. Ibid. [30] National Center for Environmental Economics. 2008. Guidelines for Preparing Economic Analyses – External Review Draft. Office of Policy Economics and Innovation, US Environmental Protection Agency, September 12, 2008. There is descriptive mention of the importance of tourism and recreation to the Grand County economy in the affected environment socioeconomic section (Section 3.17.5.6, page 3-330) However, there is no follow through analysis which links this descriptive information to impacts associated with the Proposed Action. The Scoping Summary (Page 3-14) specifically calls for information that describes the: • "Effect on tourist-based economy." • *"Effect on Grand County's water-based recreation economy."* • *"Effect on local economic development in municipalities and in Grand County." [See SOCIOECONOMIC SCOPING CONCERNS, AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES Table in Source File.]*

Comment Information	Comment	Comments and Responses
		Response #910-386: Refer to the FEIS text for an expanded description of Grand County in Section 3.19 and an expanded analysis of impacts to Grand County, where applicable, in Sections 4.6.19 and 5.19. The socioeconomic impact analysis does depend on and incorporates the results and conclusions about impact upon several other resources, including recreation, water quality, visual resources and land use to the fullest extent possible. If impacts to these resources cannot be quantified, the associated economic impacts must also be qualitative. FEIS Section 5.19 describes the socioeconomic impacts resulting from the Proposed Action and alternatives. Grand County Water and Sanitation District #1 would experience a shortage of 6 AF as a result of the Proposed Action or alternatives; no other Grand County water provider would experience shortages as a direct result of the Moffat Project. Grand County wastewater treatment providers would not be affected as a result of the Proposed Action since acute low flows in relevant rivers and streams would not decrease as a result of a Moffat Project. FEIS Section 4.6.19 discusses the socioeconomic impacts of all past, present and RFFAs, including the Moffat Project alternatives (total environmental effects, or cumulative effects). This section discusses the water shortages faced by Grand County water providers (between 1 and 358 AF/yr) as they approach build-out demands and the socioeconomic implications. The FEIS also addresses the cumulative impacts of changes in stream and river flows on wastewater treatment providers; lower acute low flow levels would likely occur at the WWTPs used by the Winter Park Water and Sanitation District and the Fraser Sanitation District/Grand County Water and Sanitation District #1.

Comment Information	Comment	Comments and Responses
		Comment #910-383 *(ID 2987)**:*** *Even though the DEIS finds some recreation impacts to be adverse and "moderate" or "minor" without substantiation of the derivation of these adjectives, the socioeconomic section provides no basis upon which to measure the socioeconomic consequences of recreation impacts, and concludes there are "no measurable changes." [TEXT BOX: "Given the results of the recreation and aquatic resources analyses, no measurable changes in overall resident or tourist recreational activity in Grand County would be expected as a result of the proposed Action." (Page 4-431)]* **Response #910-383:** DEIS Section 4.0 states: "Impact thresholds are defined as changes in intensity in terms of the degree, level, or strength of an impact. The following thresholds are used to determine the change in intensity of impacts resulting from a Project alternative: • No impact: no discernible effect • Negligible: effect is at the lowest level of detection and causes very little or no disturbance • Minor: effect that is slight, but detectable, with some perceptible effects of disturbance • Moderate: effect is readily apparent and has measurable effects of disturbance • Major: effect is readily apparent and has substantial effects of disturbance These thresholds were applied to the intensity of impact for each environmental resource/biological condition based on technical analysis and professional judgment. When possible, the impacts were quantified before an impact threshold was applied to them. For example, the aquatic biological

Comment Information	Comment	Comments and Responses
		resources analysis (FEIS Section 5.11) includes a more in-depth explanation of how impact intensity was measured and includes changes in community parameters for each level of intensity for fish and benthic macroinvertebrates. The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in Section 5.15. The analysis of socioeconomic impacts in Grand County considers the conclusions reached in other resource sections, such as recreation. If the impacts upon recreation are insufficient to change visitation or related expenditures, there would be no associated socioeconomic effect. For example, recreational impacts must be placed in the context of the level of participation in various recreational activities as well as the degree of impact of those activities on local economies. The basis for the conclusions of socioeconomic impacts in Grand County are explained in DEIS Section 4.17, which refers to the specific text of other resource sections. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in Section 4.6.19 and 5.19 of the FEIS. ***Comment #910-365*** *(ID 2986)**:*** *The analysis reaches the same conclusion regarding the relationship between adverse Visual Resource impacts in the Fraser River and socioeconomic impacts to land-based recreation activity. [TEXT BOX: "Visual Resources indicate flow changes … would generally be unnoticeable to most observers, with the exception of portions of the Fraser River … Given this information, no impacts to land based recreational activity, i.e., hiking, mountain biking or scenic sightseeing are anticipated under the Proposed Action. (Page 4-432)]*

Comment Information	Comment	Comments and Responses
		Response #910-365: The fluctuation of river water levels, both diurnally and seasonally, is a widely accepted consequence of natural hydrologic cycles, reservoir management, irrigation practices, and diversions for other purposes that have occurred for more than a century in Colorado. Although relatively little academic research has been completed on the relationship between stream flows and aesthetics, available research indicates that changes during periods of low flows are the most sensitive to viewers and that peak flows are not necessarily viewed as having a higher visual quality . Additional studies on this relationship have been reviewed and incorporated in FEIS Section 5.17.1.2, River Segments. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate to support or revise the conclusions stated in the FEIS. ***Comment #910-367*** *(ID 2985)**:*** *Excluded from prior sections are the following potential impacts mentioned in the Scoping Summary that have socioeconomic consequences, whether or not the consequences can be measured: • impacts on ranching and agricultural properties; • impacts private resorts, lodges and businesses that rely on the health and scenic beauty of the affected rivers and tributaries; • impacts on visitors who enjoy passive sight-seeing. The socioeconomic baseline (Section 3.17) provided minimal to no information about "businesses associated with tourism or recreation." If there were better baseline information, then the analyst might have been able to observe impacts from the Proposed Action and their potential impact on these businesses, whether or not these impacts could be quantified.*

Comment Information	Comment	Comments and Responses
		Response #910-367: The description of Grand County's economy, including the importance of the tourism economy, was expanded as part of FEIS Section 3.19. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 4.6.19 and 5.19. ***Comment #910-236*** *(ID 2984)**:*** *Water Providers. Using the PACSM model, the DEIS claims that any water shortages experienced by Grand County water providers would occur without the proposed Project (Page 4-432, 441) but for 6 acre feet for Grand County #1 Water and Sanitation District. The UPCO Phase II Report (page v), using the PACSM model, concludes that in the Fraser Valley, average annual shortages at build-out may range between 1,060 and 2,300 acre feet. The Grand County Water and Sanitation District alone may experience shortages of 973 to 1,903 acre feet. The Moffat Project will exacerbate an already critical condition. The DEIS states that build-out in Grand County occurs prior to 2016 and is therefore in the 2016 System "baseline" and is not a Project impact. (Page 4-432) If a common sense definition of "baseline" were applied, then the analysis would show that this resource is nearly exhausted. The Council on Environmental Quality states that "the effects of past actions may warrant consideration in the analysis of cumulative effects … to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternative may have a continuing additive and significant relationship to those effects."[31] FOOTNOTE: [31] Council on Environmental Quality. "Guidance on Consideration of Past Actions in Cumulative Effects Analysis." Memo – James Connaughton to Heads of Federal Agencies. June 24, 2005.*

Comment Information	Comment	Comments and Responses
		Response #910-236: The comment mentions UPCO output for Scenario 3. Use of UPCO output is ineffective for comparison purposes in the Moffat EIS. The UPCO simulations were developed nearly 10 years ago and contained a different basis for the existing system, a different proposed project, different demands, and many other dissimilar conditions. Subsequent to the UPCO modeling effort, the Corps and its consultants conducted a thorough review of PACSM for use in the Moffat EIS. As a result of that review, Denver Water made numerous improvements to the model. These include changes to estimates of natural streamflow, water rights and agreements, system operations, physical system capacity, return flow timing and rates, and demands. Given these changes and improvements it would be difficult to quantify the specific causes for any given difference in results between UPCO and the Moffat EIS simulations. This type of comparison is unnecessary since the review of Moffat System hydrology should rely on Moffat EIS simulations, and not outdated UPCO output. Regarding the definition of “baseline”, the impact analysis was revised to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). Please see the response to Comment ID 2860. FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs including growth in Grand County. Therefore, the socioeconomic effects of shortages in Grand County that are expected to occur between Current Conditions and Full Use of the Existing System are described in FEIS Chapter 4. The only additional shortages expected to occur due to the Proposed Action are for Grand County Water and Sanitation District. The additional average annual shortage of 6 AF of water for one water provider with a Moffat Project on-line is addressed in FEIS

Comment Information	Comment	Comments and Responses
		Chapter 5. The Shoshone call reduction per the agreement between Denver Water and Xcel Energy (Shoshone Agreement) is analyzed as a reasonable foreseeable action in DEIS Section 5.3.1 under the subheading "Reduction of Xcel Energy's Shoshone Power Plant Call." The analysis of the Shoshone call reduction describes the potential frequency and magnitude of hydrologic effects when the call reduction is in place. Denver Water diverted an additional 4,739 AF in 2003 (voluntary call reduction) and 14,141 AF in 2004 (maintenance) due to the relaxation of the Shoshone call in those years. While Denver Water's diversions may increase under a Shoshone Call reduction, diversions with or without the Moffat Project would be the same since available storage capacity in Gross Reservoir would not be a limiting factor in dry years when the Shoshone Call reduction would be invoked per the Shoshone Agreement. The Shoshone Agreement would provide limited additional water to the Moffat Collection System because Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. Modeled streamflows in the Fraser River Basin would remain essentially the same with or without the Shoshone call reduction since Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. Modeled streamflows along the Colorado River downstream to the confluence with the Williams Fork River would also be similar with or without a Shoshone call since diversions at Windy Gap are more often constrained by the instream flow requirements below Windy Gap as opposed to the Shoshone call. Windy Gap did not divert any additional water when the Shoshone call was off in 2004 which is considered typical of Windy Gap benefits during call reductions. While Windy Gap gained more water in 2003 due to the Shoshone call

Comment Information	Comment	Comments and Responses
		relaxation, the supply available to Windy Gap was higher in 2003 than it would likely be in most years the call is relaxed. Late-season snow increased runoff significantly in 2003 which resulted in a considerably more water available for Windy Gap pumping than would normally be the case when the call is relaxed per the terms of the current agreement. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). For the purposes of analysis in the DEIS, growth in Grand County was accelerated and assumed to be fully developed by 2016. This allowed the Corps to analyze the effects of removing water from the Fraser River Basin by the proposed Project. If "build-out" were to occur later than predicted, then the impacts associated with those diversions would be delayed. ***Comment #910-366*** *(ID 2983)**:*** *Wastewater Providers. The DEIS excludes analysis of low flow impacts on wastewater providers between 2006 and 2016 because it is part of the 2016 "baseline" conditions. [TEXT BOX: "The economic impacts of lower flows in the Fraser River under the Full Use of the Existing System (2016) were not evaluated as part of this EIS since modeled year 2016 flow conditions are expected to occur regardless of the Proposed Action." (Page 4-443)] The DEIS is technically avoiding mention of a significant concern about increased environmental*

Comment Information	Comment	Comments and Responses
		requirements and associated costs among wastewater treatment providers including the Combined Grand County Wastewater Treatment Plant, Devils Thumb Ranch and the Tabernash Meadows Water and Sanitation District. These costs could be triggered by water temperature increases and water flow decreases due in part to Denver Water actions between 2006 and 2016 that are not literally associated with the Moffat Project. At a minimum, the DEIS should clearly state the fragile nature of this anticipated environmental condition, since the health of environmental resources should be part of the DEIS analysis. There are related concerns that State authorities will require dischargers to remove phosphorous from the effluent dominated Fraser River. While these problems are exacerbated by increasing demands of the transmountain diverters, the State only has authority to impose constraints on the dischargers, not the diverters. DEIS concludes that there are no additional impacts between 2016 and the Proposed Action. (Pages 4-443-444) If Denver Water anticipates no problem, then they should agree to an adaptive mitigation measure to fund wastewater treatment plant upgrades triggered by their proposed additional diversion. **Response #910-366:** FEIS Section 4.6.19 addresses total environmental effects of past, present and RFFAs occurring between 2006 and 2032 including socioeconomic impacts to wastewater providers from actions occurring during that period. FEIS Section 5.19 addresses the impacts solely from Moffat Project alternatives. The DEIS contained a discussion of water temperatures in these streams and the effects on aquatic resources. The FEIS contains a more detailed discussion of water temperature and nutrient levels in

Comment Information	Comment	Comments and Responses
		the Fraser in Sections 4.6.2 and 5.2. The DEIS evaluated all major domestic WWTPs that discharge into the Fraser River, Colorado River (between Windy Gap and Kremmling), and the Blue River below Dillon Dam. FEIS also evaluated minor domestic WWTPs that discharge into the Fraser River, Colorado River, and Blue River below Dillon Dam as well as the treatment plants that discharge just upstream of, or into Dillon Reservoir. Additional water quality analysis for each WWTP has also been performed. Please see FEIS Sections 4.6.2 and 5.2. Note that PACSM modeled low flows for existing conditions, Full use conditions, and with Project conditions have been estimated and are included in the discussion in FEIS Sections 4.6.2 and 5.2. Additionally, nutrient modeling for the Fraser was performed for the FEIS with results presented in Sections 4.6.2 and 5.2. ***Comment #910-364*** *(ID 2982)**:*** *Fiscal Conditions. The DEIS concludes that there is no fiscal in Action. (Page 4-436, 445) If a revised analysis shows that there may be fewer visitors, then there is a direct fiscal impact on the County and the towns of Winter Park, Fraser, Granby and others. TEXT BOX: "No loss of property tax funding would accrue to service providers or to any special districts in the Denver metropolitan area or in Grand County as a Result of the Proposed Action." (Page 4-436)* **Response #910-364:** The socioeconomic impact analyses of the DEIS incorporates the conclusions about impacts upon other resources, including recreation, surface water, aquatic biological resources and others. The socioeconomic impacts in Grand County was reviewed and expanded as appropriate for the FEIS based on the conclusions about the impacts on these other resources and the resulting impacts upon the

Comment Information	Comment	Comments and Responses
		county's tourism industry and economy. If the analysis indicated that Moffat Project alternatives would have a negative impact on Grand County visitation, the effects were quantified to the extent possible. ***Comment #910-363*** *(ID 2981)**:*** *Socioeconomic Consequences – No Action Alternative (Section 4.17.6) The DEIS notes concern about a "perception of institutional instability that may lead to new management, new oversight responsibilities and control by other levels of government." (Page 4-498) This discussion more appropriately belongs in an internal Denver Water memo and not in an Environmental Impact Analysis. [See SUMMARY OF DEIS SOCIOECONOMIC IMPACTS (SECTION 4.17) Table in Source File.]* **Response #910-363:** The full suite of potential impacts of the No Action Alternative extends to the Denver Water Board and the Denver Water organization as well as to Denver Water's customers and others affected by the Project. Therefore, any potential impacts to the organization should be addressed as part of the EIS. ***Comment #910-31*** *(ID 2980)**:*** *Cumulative Effects - Introduction. The DEIS states that the cumulative impacts refer only to the "effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present and reasonably foreseeable future actions." (Page 5-1) The DEIS does not provide information about the aggregate effects of past actions. Throughout this Chapter, there is a substantial lack of quantitative information. There are primarily conclusions, often without reference to more detailed or quantitative analysis. There is no underlying rigor; just conclusions.*

Comment Information	Comment	Comments and Responses
		Response #910-31: CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This

Comment Information	Comment	Comments and Responses
		allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. ***Comment #910-30*** *(ID 2979)**:*** *Cumulative Effects - "Pertinent" Time Frames. (Page 5-2, 5-3) The DEIS states that the pertinent time frames are 2016 and 2030. There are too many unclear and unquantified assumptions within 2016 to make it a valid baseline from which to measure impacts. There is no quantitative description of the incremental effects of the "reasonably foreseeable future actions" that are included in the 2016 "baseline."* **Response #910-30:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #910-20*** *(ID 2978)**:*** *Cumulative Effects - Inclusions and Exclusions. Table 5-2 (page 5-6) lists projects considered for Cumulative Effects Analysis. It is less clear on whether the projects are included in the 2016 System or in the Cumulative Effects Analysis. This information is more clearly presented in Appendix H – page H-1-1 to H-1-4. On the West Slope, there are only two projects included in the Cumulative Effects analysis, reduction of the Shoshone Power Plant Call and the 10,825 water supply alternatives. Each is discussed in a qualitative manner. [SEE SOURCE FILE FOR*

Comment Information	Comment	Comments and Responses
		WEST SLOPE - WATER-BASED ACTIONS TABLE (INTERPRETED FROM TABLE 5-2, PAGE 5-6.] **Response #910-20:** Please see the response to Comment ID 2943. ***Comment #910-22*** *(ID 2977)**:*** *Cumulative Effects - Windy Gap Firming Project (WGFP) Inclusion. (Page 5-2, page 5-6, Table 5-2, page 5-15) The WGFP is included in the 2016 System. The Proposed Action and other Action Alternatives are compared against the 2016 System. The WGFP is not approved; it should be presented and quantified discretely in the "Cumulative Impacts" section and excluded from the 2016 System, which the DEIS considers a baseline condition. The analysis should not include an unapproved project as if it were a given. This makes many if not all conclusions about the Proposed Action and Action Alternatives flawed.* **Response #910-22:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions. WGFP meets the criteria as a RFFA and therefore was included in the cumulative effects analysis. Potential future actions were considered reasonably foreseeable and included in the cumulative effects analysis if they met all of the following criteria: 1. The action would occur within the same geographic area where effects from the Moffat Project alternatives are expected to occur. Geographic extent was chosen based on boundaries of similar land- and water-based projects where the direct and indirect effects of the Moffat Project alternatives could be

Comment Information	Comment	Comments and Responses
		adequately and reasonably quantified (using PACSM) or qualified. 2. The action would affect the same environmental resources as the Moffat Project alternatives, and contribute to the total resource impact. 3. There is reasonable certainty as to the likelihood of the action occurring within the same projected time period as construction and initial operation of the Moffat Project (2032), regardless of the implementation of any of the Moffat Project alternatives, including the No Action Alternative. This time period was chosen because it coincides with Denver Water's demand/supply planning objectives, strategy, and milestones. ***Comment #910-32*** *(ID 2976)**:*** *Cumulative Effects - Surface Water. (pages 5-39 and 5-40) The discussion about the WGFP impacts (Page 5-33) is muddled, because it is already in the 2016 System "baseline." [TEXT BOX: " In the Colorado River basin, the WGFP and Shoshone Call reduction would likely have the greatest cumulative effect on flows when added to the effects of the Moffat Project." (Page 5-30)] The DEIS claims that "potential changes are not likely to cause an exceedance of stream standards since the tributaries immediately above and below Windy Gap are high mountain streams of high quality." (Page 5-40) This does not seem consistent with the WGFP DEIS which acknowledges stream standard challenges. Concerns about these stream challenges are further underscored by EPA remarks about the WGFP DEIS.[32] FOOTNOTE: [32] Environmental Protection Agency. Letter: Larry Svoboda, Director NEPA Program, Region 8 to Michael Ryan, regional Director, Bureau of Reclamation. December 19, 2008. Without supporting documentation, the analysis concludes that "the cumulative effects…on surface water is minor, except*

Comment Information	Comment	Comments and Responses
		on several of the upper tributaries of the Fraser River, where moderate effects to stream flow should be expected during average to wet years." (Page 5-39) These minor and moderate effects are not located, described or quantified; there is no mitigation suggested to minimize these effects. **Response #910-32:** The Moffat DEIS (page 5-40) claims that "potential changes are not likely to cause an exceedance of stream standards since the tributaries immediately above and below Windy Gap are high mountain streams of high quality." This does not seem inconsistent with the WGFP DEIS which acknowledges stream standard challenges. Impacts for the WGFP are disclosed in FEIS Chapter 4 which evaluates the total impacts of reasonably foreseeable actions including the WGFP, in combination with the Moffat Project. Additional water quality analysis, including temperature, was performed for the Fraser and Colorado rivers. Please see FEIS Sections 4.6.2 and 5.2. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #910-11*** *(ID 2975)**:*** *Cumulative Effects – Groundwater. The DEIS states that "surface water and ground water are linked components of the hydrologic system in every watershed." (Page 5-40) However, it goes on to say that "Groundwater recharge and discharge are relative minor components of the hydrologic systems in each of the West Slope watersheds." (Page 5-40) This is unsubstantiated.*

Comment Information	Comment	Comments and Responses
		Response #910-11: In hydrologic studies of mountain watersheds, groundwater recharge is typically estimated to be about 10 to 20% of the average annual precipitation. The remainder of the annual precipitation is either lost to evapotranspiration or becomes runoff. For a given watershed, hydrologists generally regard the annual amount of groundwater recharge (and discharge) to be much smaller than the amount of precipitation, evapotranspiration or runoff. ***Comment #910-159*** *(ID 2974)**:*** *Cumulative Effects – Recreation. The DEIS states that "cumulative impacts to recreation very (spelling error) from minor to major, depending on the recreational activity, river segment and type of year." (Page 5-49) The reader is provided no further information; this lack of supporting documentation is unacceptable and inconsistent with EPA Guidelines about qualitative findings. According to work conducted during the Upper Colorado Wild and Scenic Alternative Management Plan negotiations comparing current conditions to conditions under the Moffat Project preferred alternative, the number of days suitable for recreational boating ("usable days") at the Colorado River near Kremmling will decrease as shown in the table that follows. This analysis compares the number of usable days during the permit season for commercial boating (April – September) under actual current conditions (stream gage data from 1983-2006) and under the Moffat preferred alternative (modeled with PACSM from 1947-1991 which includes full build out, the Moffat Expansion Project, and Windy Gap Firming Project. The three categories of float boating "experiences" shown in the shaded cells are based upon a survey conducted by American Whitewater in 2008 and reflect flow ranges that are acceptable to private and commercial boaters on the Upper Colorado. Each float boating experience is important for maintaining a viable recreational boating industry in*

Comment Information	Comment	Comments and Responses
		Grand County because they provide opportunities for a wide range of private boaters and commercial customers at varying locations and times during the boating season. The greatest reduction in usable days, as a result of full build out, the Moffat expansion, and the Windy Gap Firming project (compared to current conditions) occurs in the wettest 50% of years. In the wettest years, the usable days lost fall in the standard and high water experience categories, which are the experiences that commercial and private boaters seek out during years of high flow. For example, in the wet typical years, approximately 50% of the standard experience usable days will be lost in the future compared to the actual current conditions. Furthermore, in wet typical years, the majority of the reduction in usable days is experienced during May, June, and July which represent the months during which commercial outfitters often serve the most customers. A loss of boating opportunities for even a few days may represent a significant loss of income for commercial outfitters that have historically relied on streamflows appropriate for a wide customer base. While the total number of lost usable days in the driest 25% of years is less than the total reduction in wetter years, the impact to the boating community will be large because in dry years and during the late season when flows are low, the Upper Colorado River is one of the few boatable locations in Colorado. [See TABLE 1, COMPARISON OF NUMBER OF USABLE DAYS UNDER ACTUAL CURRENT CONDITIONS AND THE MOFFAT PROJECT PREFERRED ALTERNATIVE (MODELED FUTURE CONDITIONS in the Source File.] **Response #910-159:** The most current information available at the time of the DEIS analysis was used in identifying minimum and optimum flows. In the DEIS, the days for minimum and optimum flows were determined from several sources including the UPCO study, American

Comment Information	Comment	Comments and Responses
		Whitewater, and personal interviews with commercial raft guides and private kayakers. The analysis examined daily flows over the course of the full 45 years of record. This same analysis was repeated in FEIS Section 5.15.1.2 but was revised to compare Current Conditions (2006) to Full Use with a Project Alternative (2032) using daily flows over the full 45 years of record. The Upper Colorado River Stakeholder Group Conceptual Plan for a Wild and Scenic Management Alternative was released on June 30, 2008 and an updated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan was provided to the BLM in January 2012. This document was reviewed and included as a consulted resource in the FEIS. Furthermore, the proposed Project would not divert water during dry years. ***Comment #910-382*** *(ID 2973)**:*** *Cumulative Effects – Socioeconomics. The DEIS concludes that there are no cumulative impacts to Grand County. (Page 5-53 - 55)* **Response #910-382:** Socioeconomic impacts to Grand County, including cumulative impacts, was reviewed and revised as appropriate for the FEIS. FEIS Section 4.6.19 addresses total environmental effects, including the impacts of past, present and RFFAs between 2006 and 2032 in Grand County. Several Grand County water providers are likely to experience water shortages in the future as they approach build-out demand levels. As a result, Grand County would experience cumulative socioeconomic effects as a result of RFFAs. These effects are described in FEIS Chapter 4. ***Comment #910-21*** *(ID 2972)**:*** *Cumulative Effects – Summary. (Pages 5-56) Even with all of the analytical concerns highlighted above,*

Comment Information	Comment	Comments and Responses
		the DEIS concludes that most of the "non-minor" effects are in Grand County. These include moderate effects on: • surface and ground water on upper tributaries of the Williams Fork and Fraser Rivers; • fish resources on upper tributaries of the Williams For and Fraser; • recreational boating on the Fraser River. There is no further description of these cumulative impacts and no mitigation recommendations offered. **Response #910-21:** Please see the response to Comment ID 2979. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.

Comment Information	Comment	Comments and Responses
Comment #911 Robert G. Frie, Mayor City of Arvada P.O. Box 8101, 8101 Ralston Road Arvada, CO 80001-8101	CITY OF ARVADA CITY COUNCIL FACSIMILE: 720-898-7513 ▲ TDD: 720-898-7869 PHONE: 720-898-7500 Monday, March 1, 2010 Mr. Scott Franklin U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Dear Mr. Franklin: The City of Arvada fully supports the Moffat Collection System Project and encourages the U. S. Army Corps of Engineers to issue the requested 404 permit for the project. The Moffat Water Collection System has supplied water to the City of Arvada since 1960, and is the City's main water supply for its businesses and residents. During the 2002 drought, the Moffat Collection System came shockingly close to going dry. Had it not been for the cooperative and extraordinary efforts of the Denver Water and Arvada staff to rapidly invent, design, and construct a convoluted alternative supply system, the 100,000 citizens of Arvada would have lost their drinking water for months. Increasing the reliability of the Moffat Collection System is a goal the City firmly supports. The completion of the Gross Reservoir would enhance the health, safety and welfare of the citizens of Arvada The City of Arvada is an active member of Denver Regional Council of Governments, and contributes to the regional planning efforts conducted under the DRCOG Metro Vision. Using DRCOG projections and the City's Comprehensive Land Use Plan zonings, the City has determined that the vacant lands within the City's long established planning area will support 14,450 housing units, 34,300 new citizens, and 13 million square feet of new retail, office and industry, with a potential for 37,160 new jobs. The City recognized in the 1990's that its water supplies were inadequate to meet the drinking water needs for this projected population. In 1999, Arvada entered into an agreement with the Denver Board of Water Commissioners to financially assist in the expansion of the Moffat Collection System in return for additional water supplies. The City supports Denver Water's efforts to expand the Moffat system, and is committed to acquiring the 3,000 Acre Feet of water for which it can contract. The City has long supported the value of water conservation and established strong conservation programs decades ago, mandating universal metering, increasing block rates, mandatory low-flow plumbing fixtures, and various other measures designed to encourage the wise use of water. P.O. BOX 8101 ▲ 8101 RALSTON ROAD ▲ ARVADA, COLORADO ▲ 80001-8101	***Comment #911-1*** *(ID 1162)**:*** *The City of Arvada fully supports the Moffat Collection System Project and encourages the U. S. Army Corps of Engineers to issue the requested 404 permit for the project. The Moffat Water Collection System has supplied water to the City of Arvada since 1960, and is the City's main water supply for its businesses and residents. During the 2002 drought, the Moffat Collection System came shockingly close to going dry. Had it not been for the cooperative and extraordinary efforts of the Denver Water and Arvada staff to rapidly invent, design, and construct a convoluted alternative supply system, the 100,000 citizens of Arvada would have lost their drinking water for months. Increasing the reliability of the Moffat Collection System is a goal the City firmly supports. The completion of the Gross Reservoir would enhance the health, safety and welfare of the citizens of Arvada The City of Arvada is an active member of Denver Regional Council of Governments, and contributes to the regional planning efforts conducted under the DRCOG Metro Vision. Using DRCOG projections and the City's Comprehensive Land Use Plan zonings, the City has determined that the vacant lands within the City's long established planning area will support 14,450 housing units, 34,300 new citizens, and 13 million square feet of new retail, office and industry, with a potential for 37,160 new jobs. The City recognized in the 1990's that its water supplies were inadequate to meet the drinking water needs for this projected population. In 1999, Arvada entered into an agreement with the Denver Board of Water Commissioners to financially assist in the expansion of the Moffat Collection System in return for additional water supplies. The City supports Denver Water's efforts to expand the Moffat system, and is committed to acquiring the 3,000 Acre Feet of water for which it can contract. The City has long supported the value of water conservation and established strong conservation programs decades*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin Page 2 Monday, March 1, 2010 Attached to this letter is a short description of conservation programs the City has enacted. By themselves, these conservation programs will not be enough to support the full build out of Arvada. The additional water made available through the Moffat Collection System expansion will provide a ready and reliable supply for the residents of Arvada thereby ensuring them a continuation of the quality of life they have come to enjoy. Sincerely, Robert G. Frie Mayor	*ago, mandating universal metering, increasing block rates, mandatory low-flow plumbing fixtures, and various other measures designed to encourage the wise use of water. Attached to this letter is a short description of conservation programs the City has enacted. By themselves, these conservation programs will not be enough to support the full build out of Arvada. The additional water made available through the Moffat Collection System expansion will provide a ready and reliable supply for the residents of Arvada thereby ensuring them a continuation of the quality of life they have come to enjoy.* **Response #911-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #911-2*** *(ID 1163)**:*** *City of Arvada Water Conservation Measures February, 2010 1.100% Water Metering. All water usage within the city is metered. All City facilities, including parks, must pay for the water that is used. This encourages responsible water usage by all customers. 2. Water-Efficient Fixtures. The City of Arvada Plumbing Codes requires that all new and replacement construction can install only low-flow water conserving fixtures. 3. Water Rate Structures. The City's water rates are designed to promote water conservation. Customer's who use more water, pay at a higher rate. There are three blocks; the base rate, 125% of the base rate and 250% of the base rate. 4. Distribution System Leak Detection and Repair. The City utilizes a leak detection system to routinely monitor the system for leaks that have not surfaced. The system is also used to assist homeowners in detecting leaks in the household system, such as toilet overflows or broken irrigation lines. The City has a main line replacement program ($3.8 million in*

Comment Information	Comment	Comments and Responses
	City of Arvada **City of Arvada** **Water Conservation Measures** **February, 2010** **1. 100% Water Metering.** All water usage within the city is metered. All City facilities, including parks, must pay for the water that is used. This encourages responsible water usage by all customers. **2. Water-Efficient Fixtures.** The City of Arvada Plumbing Codes requires that all new and replacement construction can install only low-flow water conserving fixtures. **3. Water Rate Structures.** The City's water rates are designed to promote water conservation. Customer's who use more water, pay at a higher rate. There are three blocks; the base rate, 125% of the base rate and 250% of the base rate. **4. Distribution System Leak Detection and Repair.** The City utilizes a leak detection system to routinely monitor the system for leaks that have not surfaced. The system is also used to assist homeowners in detecting leaks in the household system, such as toilet overflows or broken irrigation lines. The City has a main line replacement program ($3.8 million in 2010) to replace the older water mains which are increasingly prone to failure and leakage. **5. Water Efficient Industrial and Commercial Processes.** The City code requires the recycling of water for: a. All heating, processing or other industrial use where reuse of the water without treatment is found practical. b. All evaporative cooling or air conditioning facilities. c. All refrigerated cooling or air conditioning units. d. All new In-bay Automatic or Conveyor car wash facilities. **6. Low Water-Use Landscapes and Efficient Irrigation.** The City has installed a Xeriscape gardens at its Streets Department Facility, 6161 Olde Wadsworth, and at the Arvada Nature Center, Majestic View Park. These are designed to provide a demonstration of plants typically found in Xeriscape landscaping. In 2004 we funded a 'This Old Yard' DVD to demonstrate ideas on how to retrofit existing yards into a more water use efficient landscaping. City Channel 8 provides programs on conservation issues. **7. Interruptible Water Supply for Parks.** The water rate structure provides that water service to parks is an interruptible supply and that the City may restrict the amount of water used on parks. The parks were required to cut back by 30% in 2002, 2003, and 2004, and exceeded this goal in all years. The Parks department saved money on their water bills and was allowed to use those funds to improve the parks; this practice has resulted in a conscious effort by parks workers to reduce over-watering.	*2010) to replace the older water mains which are increasingly prone to failure and leakage. 5. Water Efficient Industrial and Commercial Processes. The City code requires the recycling of water for: a. All heating, processing or other industrial use where reuse of the water without treatment is found practical. b. All evaporative cooling or air conditioning facilities. c. All refrigerated cooling or air conditioning units. d. All new In-bay Automatic or Conveyor car wash facilities. 6. Low Water-Use Landscapes and Efficient Irrigation. The City has installed a Xeriscape gardens at its Streets Department Facility, 6161 Olde Wadsworth, and at the Arvada Nature Center, Majestic View Park. These are designed to provide a demonstration of plants typically found in Xeriscape landscaping. In 2004 we funded a 'This Old Yard' DVD to demonstrate ideas on how to retrofit existing yards into a more water use efficient landscaping. City Channel 8 provides programs on conservation issues. 7. Interruptible Water Supply for Parks. The water rate structure provides that water service to parks is an interruptible supply and that the City may restrict the amount of water used on parks. The parks were required to cut back by 30% in 2002, 2003, and 2004, and exceeded this goal in all years. The Parks department saved money on their water bills and was allowed to use those funds to improve the parks; this practice has resulted in a conscious effort by parks workers to reduce over-watering. 8. Irrigation Water Tap Fee. The City uses an irrigation water tap fee schedule which is based on square footage in order to determine tap fees for parks, street medians and irrigated common open space. In the past the designers looked only on how to design the irrigation system to function with the smallest possible tap. The irrigation tap fee schedule changes the focus to the planting materials since the fees are doubled for sod and grasses. The 2010 tap fee schedule is $0.45 per sq. ft. of non-sod materials, and $0.90 per sq. ft. of sod materials. 9. Water Meter Monitor Program. The*

Comment Information	Comment	Comments and Responses
	City of Arvada **City of Arvada** **Water Conservation Measures** **February, 2010** **8. Irrigation Water Tap Fee.** The City uses an irrigation water tap fee schedule which is based on square footage in order to determine tap fees for parks, street medians and irrigated common open space. In the past the designers looked only on how to design the irrigation system to function with the smallest possible tap. The irrigation tap fee schedule changes the focus to the planting materials since the fees are doubled for sod and grasses. The 2010 tap fee schedule is $0.45 per sq. ft. of non-sod materials, and $0.90 per sq. ft. of sod materials. **9. Water Meter Monitor Program.** The manufacturers of water meters have developed technology where the customers can receive continuous remote readings from their water meter. This enables the customer to easily keep track of their water usage at all times. We offer the meter reader device to our interested customers with a $20 refundable deposit. **10. Water Conservation Specialist Position.** Starting in 2005 a ¾ Full Time Equivalent (FTE) position was funded to help provide water conservation educational materials to the public. Many of our programs are designed for elementary age children, providing them with ideas and concepts towards saving water **11. Rebate Programs.** Rebate programs were offered in the 1990's and more recently in 2003. The rebates focused mainly on low flow toilets and efficient washing machines, but did include funds for Xeriscape plant materials. The City's philosophy on water conservation rebates is that these programs must be available to everyone, have proven water savings, and are the best use of resources for that period of time. This philosophy differs from that of many businesses, where rebates are a means of enticing the consumer to try their product and hopefully become repeat buyers. At this time the City's funding has been directed towards the educational programs and the water meter monitoring program.	*manufacturers of water meters have developed technology where the customers can receive continuous remote readings from their water meter. This enables the customer to easily keep track of their water usage at all times. We offer the meter reader device to our interested customers with a $20 refundable deposit. 10. Water Conservation Specialist Position. Starting in 2005 a % Full Time Equivalent WE) position was funded to help provide water conservation educational materials to the public. Many of our programs are designed for elementary age children, providing them with ideas and concepts towards saving water 11. Rebate Programs. Rebate programs were offered in the 1990's and more recently in 2003. The rebates focused mainly on low flow toilets and efficient washing machines, but did include funds for Xeriscape plant materials. The City's philosophy on water conservation rebates is that these programs must be available to everyone, have proven water savings, and are the best use of resources for that period of time. This philosophy differs from that of many businesses, where rebates are a means of enticing the consumer to try their product and hopefully become repeat buyers. At this time the City's funding has been directed towards the educational programs and the water meter monitoring program.* **Response #911-2:** Arvada submitted a conservation plan to the State of Colorado and it was approved in September of 2012. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #912 Michael T. Gallivan, President Coal Creek Canyon Fire Protection District P.O. Box 7187 Cresent Branch Golden, CO 80403 and Joe Ceurvorst, Fire Chief Coal Creek Canyon Fire Protection District P.O. Box 7187 Cresent Branch Golden, CO 80403	**Coal Creek Canyon** **Fire Protection District** P.O. Box 7187 Crescent Branch • Golden, Colorado 80403 303-642-3121 • Fax 303-642-1652 CCCFPD@aol.com • www.coalcreekcanyonfd.org RECEIVED 2010 Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Sir: The Coal Creek Canyon Fire Protection District would like to take this opportunity to express our concerns related to the Gross Reservoir expansion portion of the Moffat Collection System Project. We have not decided to take a public stand for or against the project, but we have several concerns that we would like addressed during the decision making process. We are an all-volunteer fire protection district with limited financial and personnel resources. This project, while massive in scope, would provide no additional revenue to offset the additional strains on District resources. Questions have been put forward by our members and residents, and we submit the following as representative of the most serious: • How would the project affect egress to the north in the event of a major incident such as a wild fire, hazardous material spill, or a major accident? • How would the project impact the Community Wildfire Protection Plan (CWPP)? • How would the various aspects of the project affect wildland fire potential and risk? • How much would the increased volume of construction traffic extend the response time to an emergency incident (stuck behind construction traffic with no places to pass safely)? • What would be the increased demand responding to incidents on the construction site, and would that dilute the effectiveness of the Department to respond to incidents within the community? • Does the Department have the necessary equipment and training to support all facets of an industrial construction project? We hope you will consider these points as you proceed with your evaluation. Sincerely, Michael T Gallivan, President CCCFPD Joe Ceurvorst Fire Chief	***Comment #912-4*** *(ID 1164)**:*** *The Coal Creek Canyon Fire Protection District would like to take this opportunity to express our concerns related to the Gross Reservoir expansion portion of the Moffat Collection System Project. We have not decided to take a public stand for or against the project, but we have several concerns that we would like addressed during the decision making process. We are an all-volunteer fire protection district with limited financial and personnel resources. This project, while massive in scope, would provide no additional revenue to offset the additional strains on District resources.* **Response #912-4:** No estimates have been made regarding the number of various types of incidents that could occur on the construction site, although the possibility for increased incidents is acknowledged in the EIS. As described in DEIS Section 3.17, a number of different police and fire departments currently have responsibilities at Gross Reservoir and the surrounding areas. DEIS Section 4.17 concludes that these departments should be able to respond to potential emergencies and meet any additional demands based on the assumption that the number of increased incidents would be small. ***Comment #912-5*** *(ID 1165)**:*** *How would the project affect egress to the north in the event of a major incident such as a wild fire, hazardous material spill, or a major accident?* **Response #912-5:** Construction of the Moffat Project would not affect any access to Gross Reservoir in the event of a major incident. Emergency vehicle access would be maintained at all times. Vehicle access to Gross Reservoir would remain open via the north and south access points during the construction period. The

Comment Information	Comment	Comments and Responses
		north side of the reservoir would remain accessible by Flagstaff Road from Boulder and the south and west sides of the reservoir would still be accessible via County Road (CR) 68 and CR 97E. Denver Water has a Fire Operating Plan for Gross Reservoir prepared with the Colorado State Forest Service. The Plan establishes the protocols for fire management, fire response readiness, wildfire suppression, fire prevention and fuels management. ***Comment #912-6*** *(ID 1166)**:*** *How would the project impact the Community Wildfire Protection Plan (CWPP)?* **Response #912-6:** Please see the response to Comment ID 1165. The Project is not anticipated to impact the Community Wildfire Protection Plan. ***Comment #912-7*** *(ID 1167)**:*** *How would the various aspects of the project affect wildland fire potential and risk?* **Response #912-7:** Please see the response to Comment ID 1165. The Moffat Project would not affect wildfire potential or risk. Denver Water is currently collaborating with the USFS to provide forest treatments on USFS lands within the Gross Reservoir watershed as part of the "Forest to Faucets" partnership. In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. This partnership would accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects

Comment Information	Comment	Comments and Responses
		would take place around and upstream of Denver Water reservoirs. ***Comment #912-1*** *(ID 1168)**:*** *How much would the increased volume of construction traffic extend the response time to an emergency incident (stuck behind construction traffic with no places to pass safely)?* **Response #912-1:** No increase in emergency vehicle response time is anticipated as a result of the Project. Emergency vehicles would have access to the same response routes during construction that currently exist. If an emergency vehicle needed access to closed road, access would be granted. Additionally, construction contractors would pull over to allow emergency response vehicles to pass as needed. ***Comment #912-2*** *(ID 1169)**:*** *What would be the increased demand responding to incidents on the construction site, and would that dilute the effectiveness of the Department to respond to incidents within the community?* **Response #912-2:** Emergency vehicles would have access to the same response routes during construction that currently exist. Additionally, construction contractors would pull over to allow emergency response vehicles to pass as needed. No estimates have been made regarding the number of various types of incidents that could occur on the construction site, although the possibility for increased incidents is acknowledged in the EIS. As described in Section DEIS 3.17, a number of different police and fire departments currently have responsibilities at Gross Reservoir and the surrounding areas. DEIS Section 4.17 concludes that

Comment Information	Comment	Comments and Responses
		these departments should be able to respond to potential emergencies and meet any additional demands based on the assumption that the number of increased incidents would be small. ***Comment #912-3*** *(ID 1170)**:*** *Does the Department have the necessary equipment and training to support all facets of an industrial construction project?* **Response #912-3:** Denver Water does not itself intend to construct the Moffat Project, but rather anticipates that construction contracts would be competitively bid to third-party contractors. The selected contractor would have to demonstrate that they have constructed a project of similar size and scope in order to be qualified to begin construction. Similarly, the design and construction management would be handled by qualified third-party contractors experienced in similar construction projects.

Comment Information	Comment	Comments and Responses
Comment #913 Cheryl Hoese, President Grand County Colorado Tourism Board P.O. Box 131 Granby, CO 80446	GRAND COUNTY COLORADO GRAND COUNTY COLORADO TOURISM BOARD PO BOX 131 GRANBY, CO 80446 (970) 247-0726 www.visitgrandcounty.com February 22, 2010 Scott Franklin Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, Coo 80128 Dear Mr. Franklin, The Grand County Colorado Tourism Board would like to express extreme concern over the Denver Water Draft EIS, Moffat Firming Project for the Fraser River. Our Board is charged with the promotion of tourism in Grand County, a primary source of jobs, income and tax revenue in our area. The Fraser and Upper Colorado Rivers are keystone attractions and vitally important for fishing, boating and as a source of natural and agricultural irrigation throughout our county. In additional Grand Lake is an important tourist destination and any continuing decline in water quality will be detrimental to the tourist economy. The Denver Water Draft EIS omits the very viable option of increased conservation by Denver Water customers. A mere 10% reduction in usage would save 34,000 acre feet of water. In particular, we assume that most Denver residents would not be in favor of maintaining their Kentucky Bluegrass lawns in the semi-arid climate of the Denver area if they knew that it was at the expense of the mountain rivers, lakes, and streams just 90 minutes from the metro area. Please consider a requirement for Denver Water to maintain baseline flows, sustain all rivers at temperatures equal to or above state standards, and to establish flushing and channel maintenance flows for optimum river health. Thank you for your consideration, Cheryl Hoese Cheryl Hoese – President Grand County Colorado Tourism Board P.O. Box 131 Granby, CO 80446 970-531-7020 RECEIVED 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 CHAMBERS OF COMMERCE: GRANBY 800.325.1661 GRAND LAKE 800.531.1019 KREMMLING 877 KREMMLING WINTER HIGH COUNTRY VALLEY 800.903.2279	***Comment #913-1*** *(ID 1171)**:*** *The Grand County Colorado Tourism Board would like to express extreme concern over the Denver Water Draft EIS, Moffat Firming Project for the Fraser River. Our Board is charged with the promotion of tourism in Grand County, a primary source of jobs, income and tax revenue in our area. The Fraser and Upper Colorado Rivers are keystone attractions and vitally important for fishing, boating and as a source of natural and agricultural irrigation throughout our county. In additional Grand Lake is an important tourist destination and any continuing decline in water quality will be detrimental to the tourist economy.* **Response #913-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #913-2*** *(ID 1172)**:*** *The Denver Water Draft EIS omits the very viable option of increased conservation by Denver Water customers. A mere 10% reduction in usage would save 34,000 acre feet of water. In particular, we assume that most Denver residents would not be in favor of maintaining their Kentucky Bluegrass lawns in the semi-arid climate of the Denver area if they knew that it was at the expense of the mountain rivers, lakes, and streams just 90 minutes from the metro area.* **Response #913-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water

Comment Information	Comment	Comments and Responses
		Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #913-3*** *(ID 1173)**:*** *Please consider a requirement for Denver Water to maintain baseline flows, sustain all rivers at temperatures equal to or above state standards, and to establish flushing and channel maintenance flows for optimum river health.* **Response #913-3:** Denver Water has not proposed to reduce minimum flows which protect baseline conditions. Evaluation of flushing flow requirements ("low flow protection"), minimum instream flow rights, baseline flows and bypass flows are included in the FEIS. Appropriate conceptual mitigation is discussed in FEIS Appendix

Comment Information	Comment	Comments and Responses
		M and, if a Section 404 Permit is issued, mitigation will be included as a condition of a Section 404 Permit. The Corps evaluated other RFFAs including the CRCA, Learning by Doing (LBD) Cooperative Effort and the Fish and Wildlife Enhancement Plan (see FEIS Appendix M). These actions may address the commenter's concerns related to flows. Through the LBD process, Denver Water and other stakeholders would coordinate resources to benefit the environment, including consideration of flushing flows and channel maintenance flows.

Comment Information	Comment	Comments and Responses
Comment #915 Kathryn Jensen, President, Board of Directors North Table Mountain Water and Sanitation District 14806 West 52nd Avenue Golden, CO 80403-1228	NORTH TABLE MOUNTAIN WATER AND SANITATION DISTRICT 14806 WEST 52ND AVENUE GOLDEN COLORADO 80403-1228 January 27, 2010 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd Littleton, CO 80128 **RE: Corps of Engineers – Draft Environmental Impact Statement for the Moffat Collection System Project** Dear Mr. Franklin As a raw water customer of Denver Water, North Table Mountain Water and Sanitation District (NTM) would like to submit the following comments in support of Denver's proposed Moffat Collection System Project. Denver Water's proposal to add additional storage to their Gross Reservoir would benefit the entire region. Numerous entities divert water from Denver's Moffat collection system. The impacts of a vulnerable and unreliable water supply in this system would be far reaching and serious. NTM has a contract to buy raw water from Denver's Moffat collection system. Our diversion is downstream of Gross Reservoir at Ralston Reservoir. This is currently the only source of water for our water treatment plant. During the 2004 drought it was apparent that Denver struggled to move water up to their northern customers. Additional storage in Gross Reservoir would have eased this situation. It is very important to the 10,000 residents of our District that Denver is able to build and maintain a reliable delivery system. Increasing the reliability of the Moffat system in order to provide a more secure water source for those who depend on it is very important to the entire region between Boulder and Denver. In addition to a more reliable, less vulnerable supply, the District is committed to conserving the supply that we presently have. As a result the District has adopted and implemented a water conservation plan that will help to slow the growth in our demands. However, we anticipate that the projected growth in our District in the near future will require us to utilize our full contract amount. Increasing the reliability and reducing the vulnerability of Denver's collection system is very important to NTM and our customers, and for these reasons we support the Moffat Collection System Project. Signed, Kathryn Jensen Kathryn Jensen, President North Table Mountain Water and Sanitation District Board of Directors	***Comment #915-1*** *(ID 1175)**:*** *As a raw water customer of Denver Water, North Table Mountain Water and Sanitation District (NTM) would like to submit the following comments in support of Denver's proposed Moffat Collection System Project. Denver Water's proposal to add additional storage to their Gross Reservoir would benefit the entire region. Numerous entities divert water from Denver's Moffat collection system. The impacts of a vulnerable and unreliable water supply in this system would be far reaching and serious. NTM has a contract to buy raw water from Denver's Moffat collection system. Our diversion is downstream of Gross Reservoir at Ralston Reservoir. This is currently the only source of water for our water treatment plant. During the 2004 drought it was apparent that Denver struggled to move water up to their northern customers. Additional storage in Gross Reservoir would have eased this situation. It is very important to the 10,000 residents of our District that Denver is able to build and maintain a reliable delivery system. Increasing the reliability of the Moffat system in order to provide a more secure water source for those who depend on it is very important to the entire region between Boulder and Denver. In addition to a more reliable, less vulnerable supply, the District is committed to conserving the supply that we presently have. As a result the District has adopted and implemented a water conservation plan that will help to slow the growth in our demands. However, we anticipate that the projected growth in our District in the near future will require us to utilize our full contract amount. Increasing the reliability and reducing the vulnerability of Denver's collection system is very important to NTM and our customers, and for these reasons we support the Moffat Collection System Project.*

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
		Response #915-1: The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #918 Shanna B. Koenig, Co-Director Northwest Colorado Council of Governments P.O. Box 2308 Silverthorne, CO 80498	**WATER QUALITY / QUANTITY COMMITTEE (QQ)** Northwest Colorado Council of Governments Post Office Box 2308 • Silverthorne, Colorado 80498 970-468-0295 • Fax 970-468-1208 • email: qqwater@nwc.cog.co.us December 8, 2009 RECEIVED DEC 2009 VIA E-MAIL: j.scott.franklin@usace.army.mil HARD COPY TO FOLLOW BY MAIL Mr. J. Scott Franklin, P.E. Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Re: Moffat Collection System Project Draft Environmental Impact Statement Dear Mr. Franklin: On behalf of its members, Northwest Colorado Council of Governments Water Quality and Quantity Committee ("NWCCOG/QQ") respectfully requests a 45 day extension of time to review the Moffat Collection System Project Draft Environmental Statement ("Moffat DEIS"). NWCCOG/QQ is comprised of towns, counties and water and sanitation districts located in Grand, Summit, Eagle, Pitkin, Gunnison and Park Counties, many of whom may be directly impacted by the project. The Moffat DEIS is an extremely lengthy and technical document, and therefore our members need additional to do a thorough review of the Moffat DEIS and to assess impacts in the region. Moreover, the release of the DEIS and the 90 day comment period following that release spans three major holidays. It is also a time of year when the tourist season goes into full swing, with Christmas and New Year's being the busiest time of the year for our resort mountain areas. For these reasons we would appreciate your consideration of a 45 day extension. Sincerely, Shanna B. Koenig NWCCOG/QQ Co-Director qqwater@colorado.net (970) 468-0295 ext. 117 Cc: NWCCOG/QQ Members (via email)	***Comment #918-1*** *(ID 1180)**:*** *On behalf of its members, Northwest Colorado Council of Governments Water Quality and Quantity Committee ("NWCCOG/QQ) respectfully requests a 45 day extension of time to review the Moffat Collection System Project Draft Environmental Statement ("Moffat DEIS"). NWCCOG/QQ is comprised of towns, counties and water and sanitation districts located in Grand, Summit, Eagle, Pitkin, Gunnison and Park Counties, many of whom may be directly impacted by the project. The Moffat DEIS is an extremely lengthy and technical document, and therefore our members need additional to do a thorough review of the Moffat DEIS and to assess impacts in the region. Moreover, the release of the DEIS and the 90 day comment period following that release spans three major holidays. It is also a time of year when the tourist season goes into full swing, with Christmas and New Year's being the busiest time of the year for our resort mountain areas.* **Response #918-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A Notice of Availability (NOA) of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
Comment #920 Gary Martinez, County Manager Summit County P.O. Box 68, 208 East Lincoln Avenue Breckenridge, CO 80424	OFFICE OF THE COUNTY MANAGER RECEIVED DEC 2009 970-453-2561 fax 970-453-3535 Post Office Box 68 208 East Lincoln Avenue Breckenridge, Colorado 80424 December 9, 2009 *Via E-Mail j.scott.franklin@usace.army.mil* *and U.S. Mail* Mr. J. Scott Franklin, P.E. Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Re: Moffat Collection System Project Draft Environmental Impact Statement Dear Mr. Franklin: On behalf of the Board of County Commissioners of Summit County, I respectfully request a 45-day extension of time to review the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS"). Summit County will be directly impacted by the project. The Moffat DEIS is an extremely lengthy and technical document. It also appears that a number of relevant documents have not yet been made available to the public (see the attached e-mail from David Taussig). Therefore, Summit County needs additional time to do a thorough review of the DEIS, to assess impacts in the County and other matters related to the permit application, and prepare comments. Moreover, the 90-day comment period that follows the release of the DEIS coincides with three major holidays and is the busiest time of year for our resort mountain towns and Summit County. For these reasons, Summit County would appreciate your consideration of a 45-day extension of time in which to provide comments on the DEIS. Very truly yours, Gary Martinez County Manager Enclosure	***Comment #920-1*** *(ID 1187)**:*** *On behalf of the Board of County Commissioners of Summit County, I respectfully request a 45-day extension of time to review the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS'). Summit County will be directly impacted by the project. The Moffat DEIS is an extremely lengthy and technical document. It also appears that a number of relevant documents have not yet been made available to the public (see the attached e-mail from David Taussig). Therefore, Summit County needs additional time to do a thorough review of the DEIS, to assess impacts in the County and other matters related to the permit application, and prepare comments. Moreover, the 90-day comment period that follows the release of the DEIS coincides with three major holidays and is the busiest time of year for our resort mountain towns and Summit County. For these reasons, Summit County would appreciate your consideration of a 45-day extension of time in which to provide comments on the DEIS.* **Response #920-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
		Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment Information	Comment	Comments and Responses
Comment #921 Mike McGinnis, Chairman of the Board Jefferson Economic Council 1667 Cole Boulevard, Suite 400 Golden, CO 80401	JEFFERSON ECONOMIC COUNCIL March 2, 2010 Mr. Scott Franklin Moffat EIS Project Manager Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 Subject: Comments on the Moffat Collection System Project Dear Mr. Franklin: The Jefferson Economic Council (JEC) is the oldest and one of the most prestigious economic development organizations in Colorado. Our members include a broad spectrum of industries and city and county organizations that are focused on promoting and ensuring a vibrant economy and quality of life in Jefferson County. Our board includes elected officials representing the cities of Arvada, Lakewood, Wheat Ridge, and Westminster, all three elected County Commissioners, and numerous other businesses, civic and non-profit organizations ranging from the National Renewable Energy Laboratory to Wells Fargo to Red Rocks Community College. An essential ingredient to our quality of life is a sufficient and reliable supply of water. Hundreds of thousands of residents and hundreds if not thousands of businesses in Jefferson County rely on Denver Water for their water needs, and Denver Water has a long history of doing an excellent job in meeting that need. The reliability of our future supplies is threatened, however, because of some major water supply challenges facing Denver Water. The northern part of our county receives its water from Denver Water's Moffat Collection System, a system through which 20 percent of Denver water's supply flows. The remaining 80 percent comes from Denver Water's southern system. If we have a serious drought, that puts those who rely on the 20 percent portion at significant risk. Indeed, the Moffat system was perilously close to running out of water in the 2002 drought, jeopardizing the water supply for hundreds of thousands of county residents. Moreover, this heavy reliance on the southern end of the system puts added strains on the entire system, making it more vulnerable. For example, if a natural disaster were to limit or shut down the deliveries out of the southern system, the Moffat system would have to pick up the slack, something we understand it is simply incapable of doing today. Finally, there is just not enough water to meet our region's future needs. Denver Water is forecasting a water supply shortfall of 34,000 acre-feet by 2030. While almost half of that will be met through conservation, our region will nonetheless need more water. Denver Water has proposed the Moffat Collection System Project as the best answer to these challenges. 1667 Cole Boulevard, Suite 400, Golden, CO 80401 • p 303.202.2965 • f 303.202.2967	***Comment #921-1*** *(ID 1188)**:*** *The Jefferson Economic Council (JEC) is the oldest and one of the most prestigious economic development organizations in Colorado. Our members include a broad spectrum of industries and city and county organizations that are focused on promoting and ensuring a vibrant economy and quality of life in Jefferson County. Our board includes elected officials representing the cities of Arvada, Lakewood, Wheat Ridge, and Westminster, all three elected County Commissioners, and numerous other businesses, civic and non-profit organizations ranging from the National Renewable Energy Laboratory to Wells Fargo to Red Rocks Community College. An essential ingredient to our quality of life is a sufficient and reliable supply of water. Hundreds of thousands of residents and hundreds if not thousands of businesses in Jefferson County rely on Denver Water for their water needs, and Denver Water has a long history of doing an excellent job in meeting that need. The reliability of our future supplies is threatened, however, because of some major water supply challenges facing Denver Water. The northern part of our county receives its water from Denver Water's Moffat Collection System, a system through which 20 percent of Denver water's supply flows. The remaining 80 percent comes from Denver Water's southern system. If we have a serious drought, that puts those who rely on the 20 percent portion at significant risk. Indeed, the Moffat system was perilously close to running out of water in the 2002 drought, jeopardizing the water supply for hundreds of thousands of county residents. Moreover, this heavy reliance on the southern end of the system puts added strains on the entire system, making it more vulnerable. For example, if a natural disaster were to limit or shut down the deliveries out of the southern system, the Moffat system would have to pick up the slack, something we understand it is simply incapable of doing today. Finally, there is just*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 2, 2010 Page 2 There are some who would suggest that if we stopped growth in the region, we would not need this project. The reality, however, in our view is that even if we did not add one more resident to the region, the Moffat Project is still needed because of the imbalances and vulnerabilities in Denver Water's system. There are also some who argue that the Moffat Project would not be needed if we all conserved more water. The fact is that while Denver Water has an ambitious and highly effective water conservation program today and we are told, is committed to emphasize the importance of conservation in the future, that alone will not produce the future supplies that are needed or address the system vulnerabilities that exist. These aggressive conservation efforts extend to the many Jefferson County residents, businesses and municipalities in water districts that are supplied by Denver Water, but will not be adequate to protect them. Several large-scale projects are underway to retrofit inefficient fixtures in the Jefferson County School District, FCI Englewood Prison, and Lakewood and Littleton Housing Authorities. Irrigation programs are in place to save water at homeowners associations and the South Suburban Parks and Recreation District, and many residents in these Jefferson County water districts have taken advantage of rebates on water-saving toilets and washing machines all in an effort to conserve. The fact is that the Moffat Project is the best answer for the water needs of our county and our region, and that is why the Board of the Jefferson Economic Council adopted a resolution unanimously endorsing this project. We strongly encourage the Army Corps of Engineers to issue a favorable Record of Decision on the Moffat Project. Sincerely, Mike McGinnis Chairman of the Board Cc: Brian Gogas, Denver Water	*not enough water to meet our region's future needs. Denver Water is forecasting a water supply shortfall of 34,000 acre-feet by 2030. While almost half of that will be met through conservation, our region will nonetheless need more water. Denver Water has proposed the Moffat Collection System Project as the best answer to these challenges. There are some who would suggest that if we stopped growth in the region, we would not need this project. The reality, however, in our view is that even if we did not add one more resident to the region, the Moffat Project is still needed because of the imbalances and vulnerabilities in Denver Water's system. There are also some who argue that the Moffat Project would not be needed if we all conserved more water. The fact is that while Denver Water has an ambitious and highly effective water conservation program today and we are told, is committed to emphasize the importance of conservation in the future, which alone will not produce the future supplies that are needed or address the system vulnerabilities that exist. These aggressive conservation efforts extend to the many Jefferson County residents, businesses and municipalities in water districts that are supplied by Denver Water, but will not be adequate to protect them. Several large-scale projects are underway to retrofit inefficient fixtures in the Jefferson County School District, FCI Englewood Prison, and Lakewood and Littleton Housing Authorities. Irrigation programs are in place to save water at homeowners associations and the South Suburban Parks and Recreation District, and many residents in these Jefferson County water districts have taken advantage of rebates on water-saving toilets and washing machines all in an effort to conserve. The fact is that the Moffat Project is the best answer for the water needs of our county and our region, and that is why the Board of the Jefferson Economic Council adopted a resolution unanimously endorsing this project. We strongly encourage the Army Corps*

Comment Information	Comment	Comments and Responses
		of Engineers to issue a favorable Record of Decision on the Moffat Project. **Response #921-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
Comment #922 James F. Myers, Mayor Town of Winter Park P.O. Box 3327 Winter Park, CO 80482	March 2, 2010 U.S. Army Corps of Engineers Attn: Mr. Scott Franklin 9307 South Wadsworth Boulevard Littleton, CO 80128-6901 RE: Moffat Collection System Project Draft Environmental Impact Statement To Whom It May Concern: Please accept this letter as public comment from the Winter Park Town Council regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS"). The following is a list of concerns that we would like entered into the record regarding the impact of the Moffat DEIS: General • We firmly believe that the projected impacts of the Moffat DEIS and the previously-submitted Windy Gap Firming Project should be reviewed cumulatively. These two projects will create significant impacts to the Fraser and Upper Colorado Rivers in Grand County, and their total effect should be calculated in sum. On average, well over half of the total water in the Upper Colorado River system is diverted to the east slope of Colorado. If Denver Water's Moffat DEIS and the Windy Gap Firming Project are both implemented it is expected that up to three quarters or more of the annual water yield will be diverted to the Front Range, which creates significant municipal, environmental, social, economic, and aesthetic impacts on our small mountain communities in Grand County. • The Moffat DEIS states that there will be little to no impact caused by the project; however, it is nearly impossible to guarantee that there will be no impacts. Therefore, the Corps of Engineers should condition any approvals on the basis that if there are new impacts revealed by sound scientific discovery, new impacts will be addressed according to the enforceable mitigation outlined along with any approval of the project. RECEIVED Town of Winter Park p.o. box 3327 winter park, colorado 80482 phone (970) 726-8081 fax (970) 726-8084 www.winterpark.gov.com	***Comment #922-2*** *(ID 1189)**:*** *Please accept this letter as public comment from the Winter Park Town Council regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS"). The following is a list of concerns that we would like entered into the record regarding the impact of the Moffat DEIS:* **Response #922-2:** The Corps notes the comment. ***Comment #922-11*** *(ID 1190)**:*** *We firmly believe that the projected impacts of the Moffat DEIS and the previously-submitted Windy Gap Firming Project should be reviewed cumulatively. These two projects will create significant impacts to the Fraser and Upper Colorado Rivers in Grand County, and their total effect should be calculated in sum. On average, well over half of the total water in the Upper Colorado River system is diverted to the east slope of Colorado. If Denver Water's Moffat DEIS and the Windy Gap Firming Project are both implemented it is expected that up to three quarters or more of the annual water yield will be diverted to the Front Range, which creates significant municipal, environmental, social, economic, and aesthetic impacts on our small mountain communities in Grand County.* **Response #922-11:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts

Comment Information	Comment	Comments and Responses
	• Coloradoans living on the Western Slope choose to live here for the enhanced quality of life that the Rocky Mountains provide. Water is a common thread between all of us who choose to live, work, and play here. Visitors and guests from around the world, including the Front Range of Colorado, come to the Fraser Valley to enjoy the quality of life and amenities we have worked so hard to maintain. Reductions in water mean a direct reduction in quality of life. **Impacts** • Due to the numerous transmountain diversion projects currently operating in Grand County, existing conditions in our creeks and rivers need to be evaluated and resolved prior to new diversions of water to the Front Range. A variety of users are already impacted, including agricultural irrigators not being able to divert water in late summer, municipalities having to pump water to meet surface diversion needs, and warmer water temperatures that endanger fish populations and affect the local recreation-based economy. The Moffat DEIS does not adequately explain the current impacts that existing diversions create on our creeks and rivers. Additional diversions will only exacerbate problems created by reduced flows, and the Moffat DEIS does not accurately combine all conditions. • The Moffat DEIS purports that the impacts from the project are negligible; however, the Upper Colorado River basin – and especially the Fraser River – are already severely stressed. Even a negligible impact would be considered severe when all cumulative impacts (existing diversions as well as future ones) are evaluated. • The Moffat DEIS acknowledges there are fragile environmental conditions in 2016 (low flows, substantial effluent, etc.); however, the Moffat DEIS concludes that past water-related projects may have had an adverse effect but future water projects would have limited new effects. NEPA guidelines say that the EIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions in the Fraser River may be at such a seriously compromised condition that the river is at a tipping point where it cannot return to any reasonably healthy state. • The Moffat DEIS claims that additional water will only be diverted during runoff months and the impact to be negligible to the existing ecosystem. However, annual high water flows which naturally occur with runoff are necessary to clear sediment from spawning beds and maintain stream channel structure. If unmitigated, increased water diversions may prevent such "flushing flows" from occurring, and this in turn causes negative impacts to aquatic life and to the natural function of wetlands in mountain areas. A natural hydrograph (high spring flows) is necessary to allow wetlands to serve as natural reservoirs and to filter and recharge alluvial aquifers. This project removes the natural hydrograph, and the Moffat DEIS ignores the important ecological services that flushing flows and channel maintenance flows provide to the ecosystem. • The Moffat DEIS states that only 1.95 acres of wetlands will be impacted by new diversions (specifically around Gross Reservoir). At no time does the Moffat DEIS contemplate the existing degradation of wetlands caused by existing diversions, nor the degradation and loss of existing wetlands following the removal of the semi-natural but still impacted hydrograph that occurs in the Fraser River. The loss of this wetland habitat has significant environmental, cultural, and water quality impacts to the residents of Grand County. Further removal of a natural hydrograph will only further destroy the existing wetlands that we are fortunate enough to enjoy.	associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #922-17*** *(ID 1191)**:*** *The Moffat DEIS states that there will be little to no impact caused by the project; however, it is nearly impossible to guarantee that there will be no impacts. Therefore, the Corps of Engineers should condition any approvals on the basis that if there are new impacts revealed by sound scientific discovery, new impacts will be addressed according to the enforceable mitigation outlined along with any approval of the project.* **Response #922-17:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #922-5*** *(ID 1192)**:*** *Coloradoans living on the Western Slope choose to live here for the enhanced quality of life that the Rocky Mountains provide. Water is a common thread between all of us who choose to live, work, and play here. Visitors and guests from around the world,*

Comment Information	Comment	Comments and Responses
	• The Moffat DEIS Proposed Action calls for water to be diverted in wet years following dry years, specifically in the spring and early summer months. Under this scenario, water will be diverted exactly when the overall environment (both aquatic and terrestrial habitat) has an opportunity to replenish water from the previous dry year or years. This only extends dry conditions when the impacted habitat is already severely stressed, which may create a tipping point beyond which no habitat may be able to recover. Further, the Moffat DEIS fails to consider the impacts on expected yield should changes in climate result in earlier and more-concentrated spring runoff as well as reduced water supplies in the Colorado River basin. • As our local communities transition from resource-extraction economies to recreation-based economies, water becomes more integral to our local businesses. Our local economies rely on fishing, rafting, kayaking, and alpine skiing (snow-making) and will all be significantly impacted by reductions in flows in the Colorado River. For industries that are as low-impact as these, every drop of water in the river is a significant financial benefit. The Moffat DEIS states that no impact to sales-tax collection would occur; however, it is clear that if these industries cannot operate then a significant impact is felt in our local communities that are dependent on water resources for environmental and aesthetic (and not consumptive) purposes. • As stated earlier, visitors and guests from around the world, including the Front Range of Colorado, come to the Fraser Valley to enjoy the quality of life and amenities we have worked so hard to maintain. Reduced flows in our rivers and streams have direct impacts on our community's quality of life. Socioeconomic impacts to Grand County communities have only slightly been considered in the Moffat DEIS. Any final Moffat DEIS should include a thorough study of the socioeconomic impacts to our community, and consideration of mitigation for these impacts should be provided. **Water Quality** • For municipal water providers on the Western Slope, the impact of increased diversions is two-fold: less water for municipal purposes and less water for treatment of wastewater. Ongoing changes to state and federal requirements for treatment of water have been exclusively borne by local communities in the form of enhanced treatment facilities, and reduced flows will surely mean additional treatment requirements in the future. The Moffat DEIS does not contemplate the state of water quality for treatment when the impacts of past and future diversions occur. • Additional depletions of quality water from the Fraser River and its tributaries will tend to lower the quality of water pumped at Windy Gap, which will tend to decrease the quality and clarity of water in Grand Lake. This was not addressed in the Moffat DEIS even though conditions in Grand Lake are already visibly stressed. • The Fraser River already faces significantly elevated water temperatures seasonally, and removal of flows will only exacerbate the river's ability to sustain itself ecologically during the seasonal fluctuation of temperature. Stretches of the Fraser River and the Colorado River below Windy Gap have been listed as a 303(d) impaired stream requiring Total Maximum Daily Load (TMDL) regulations. It is easy to correlate the impairment with the existing diversions of Denver Water, and the Moffat DEIS needs to include mitigation for further impairment that will surely occur due to increased diversions. The Moffat DEIS should be modified to analyze this listing and the additional impacts that will be created by the proposed actions of Denver Water.	*including the Front Range of Colorado, come to the Fraser Valley to enjoy the quality of life and amenities we have worked so hard to maintain. Reductions in water mean a direct reduction in quality of life.* **Response #922-5:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #922-6*** *(ID 1193)**:*** *Due to the numerous transmountain diversion projects currently operating in Grand County, existing conditions in our creeks and rivers need to be evaluated and resolved prior to new diversions of water to the Front Range. A variety of users are already impacted, including agricultural irrigators not being able to divert water in late summer, municipalities having to pump water to meet surface diversion needs, and warmer water temperatures that endanger fish populations and affect the local recreation-based economy. The Moffat DEIS does not adequately explain the current impacts that existing diversions create on our creeks and rivers. Additional diversions will only exacerbate problems created by reduced flows, and the Moffat DEIS does not accurately combine all conditions. The Moffat DEIS purports that the impacts from the project are negligible; however, the Upper Colorado River basin - and especially the Fraser River - are already severely stressed. Even a negligible impact would be considered severe when all cumulative impacts (existing diversions as well as future ones) are evaluated.* **Response #922-6:** The discussion of the affected environment in FEIS Chapter 3 was expanded to provide more information on the current impacts of existing Moffat Collection System diversions. Additional information on

Comment Information	Comment	Comments and Responses
	• Approval of the Moffat DEIS would result in the depletion of flushing flows, which significantly improve the Fraser River's ecosystem (as identified in Grand County's Stream Management Plan). Removal of flushing flows will also deposit additional materials in the river from traction materials placed on local roads and highways without the ability to mitigate their impact. Any new diversions should be limited to prevent further long-term degradation in these demanding periods. **Mitigation** • The Moffat DEIS needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized, or adequately mitigated. None of these requirements are being followed in the Moffat DEIS. It is difficult to avoid, minimize, or truly mitigate when the real past actions and cumulative impacts are not identified or are blatantly ignored. It is difficult to mitigate against a collapsing ecosystem when the process refuses to recognize what has happened in the past, what is currently happening, and what is likely to happen due to the proposed actions. Unfortunately, a collapsed ecosystem could occur simply from the Denver Water Board's "Full Use" 2016 scenario before the proposed Moffat project actually is in effect. • The Moffat DEIS provides little information on potential mitigation in exchange for increased diversions and no mitigation for existing diversions. The lack of mitigation proves further that municipal providers of water on the northern Front Range have little regard for all of the above-mentioned issues. As communities that rely on strong, healthy streams for many of the aspects that keep us here, mitigation of the impacts of diversions to improve our rivers and streams is critical. Any diversion should be offset by fair mitigation provided by those performing the impact. • The Moffat DEIS concludes that there are little to no impacts from the project by utilizing a baseline in 2016 as opposed to today and assumes that other projects (specifically the Windy Gap Firming Project) will be approved and running. It is true that the Moffat project would have little impact when compared to the significant degradation that would have occurred at that point (half of nothing is nothing). This flawed model should be revised in the Moffat DEIS to accommodate both existing conditions and proposed cumulative conditions. • The Moffat DEIS needs to include Grand County's Stream Management Plan as mitigation for the project. Grand County and its municipal water providers have been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in our area. The Stream Management Plan takes into consideration the concerns of cumulative impact and looks at the river system and various project operations as a whole. The Moffat DEIS should include information from the Stream Management Plan and mitigation needs to be based on the findings in the Plan. • Denver Water has discussed an opportunity to include bypass flows as part of mitigation for increased diversions as part of the Moffat DEIS. The bypass flows would undoubtedly provide great relief for municipalities in Grand County that struggle to provide water during times of low flows. Any mitigation proposed or approved as part of the permit process should include bypass flow usage for Grand County municipalities.	agricultural diversions in the late summer and water temperatures during low flow conditions was included in FEIS Section 3.2. Current problems caused by low flows during the late summer and in dry years are partially due to operations of the existing Moffat Project. The proposed Moffat Project would not cause additional flow reductions during those times since there would be no additional diversions due to the Moffat Project in the late summer or in dry years. There would be no additional diversions in dry years because Denver Water would divert the maximum amount physically and legally available under their existing water rights without additional storage on-line. Table H-3.1 in DEIS Appendix H shows additional diversions through the Moffat Tunnel would occur primarily during the months May, June, and July. During the late summer in August and September, there would be little to no additional water diverted. Therefore, current problems caused by low flow conditions would not be exacerbated by the proposed Moffat Project. The environmental effects of existing diversions in combination with additional diversions due to the Moffat Project are presented in FEIS Chapters 4 and 5. ***Comment #922-12*** *(ID 1194)**:*** *The Moffat DEIS acknowledges there are fragile environmental conditions in 2016 (low flows, substantial effluent, etc.); however, the Moffat DEIS concludes that past water-related projects may have had an adverse effect but future water projects would have limited new effects. NEPA guidelines say that the EIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions in the Fraser River may be at such a seriously compromised condition that the river is at a tipping point where it cannot return to any reasonably healthy state.*

Comment Information	Comment	Comments and Responses
	• The Moffat DEIS considers the impact of population growth and need only until 2030. Denver Water's charter requires that any need be met for any required amount with no concern for where the water comes from. The Town of Winter Park, in its master plan, has limited its ability to grow exponentially by considering the impacts of our own water use on stream habitat and quality. The Town's master plan requires that growth be restricted in order to keep minimum stream flows in both the Fraser River and Vasquez Creek (ironically below Denver Water's diversions on both watersheds). The Town has negotiated this solution with our water and sanitation districts and has put itself on a strict diet when it comes to new development and growth. There are no efforts to do so by Denver Water, which only continues to perpetuate unrestricted growth that will have additional negative impacts to the Fraser and Colorado Rivers past 2030. The Moffat DEIS should contemplate a solution where a realistic limitation on growth is put in place to reflect that this water resource is finite. • Denver Water is acknowledged as a leader in Colorado for water conservation efforts. Outdoor water use for lawns and landscaping constitutes half of Denver Water's total use. The Moffat DEIS identifies that 16,000 acre-feet of water will be acquired through "aggressive conservation". It is our belief that any water conservation effort that does not place a significant emphasis on outdoor water use can hardly be called "aggressive". The Moffat DEIS should identify explicit plans for this conservation effort, and if these plans are not met in the future any approved permit needs to be re-evaluated based on non-compliance with Denver Water's own stated goals. • The Moffat DEIS does not contemplate the development of a comprehensive re-use system that uses the existing water from transmountain diversions to extinction. A substantial re-use program should be developed and in place prior to allowing for any further diversions from Grand County. Other neighboring communities have found cost-effective and reliable technologies for reuse. The City of Aurora's Prairie Water project illustrates how a major water utility in Colorado can develop an indirect potable re-use project. Re-use has proven to provide a highly competitive and cost-effective means of augmenting water supplies. • Permit requirements must include adequate protections, enhancements, and mitigation for water quality, which suffers as a result of low flows and high temperatures. This should include mandatory flushing flows as identified in the Grand County Stream Management Plan. • The Moffat DEIS does not capture the biological effects of the proposed changes that will likely occur due to the fact that the Fraser River ecosystem is so complex. Any approval should allow for mid-course corrections in the event that the predicted outcomes are incorrect. This should include tree removal and mitigation after a significant wildfire event, construction of the sedimentation basin on the Fraser River near the entrance to the Mary Jane Ski Area, accommodation of enhancements in the upper Fraser Valley (such as pump-back pipelines and additional storage, if appropriate), and mandatory flushing flows that are appropriate based on the Grand County Stream Management Plan.	**Response #922-12:** The Corps is not aware of a scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. The direct impact discussion for aquatic resources (DEIS Section 4.9) identifies minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. ***Comment #922-7*** *(ID 1195)**:*** *The Moffat DEIS claims that additional water will only be diverted during runoff months and the impact to be negligible to the existing ecosystem. However, annual high water flows which naturally occur with runoff are necessary to clear sediment from spawning beds and maintain stream channel structure. If unmitigated, increased water diversions may prevent such "flushing flows" from occurring, and this in turn causes negative impacts to aquatic life and to the*

Comment Information	Comment	Comments and Responses
	• The Moffat DEIS process should identify a plan for enforcement to ensure the provisions in the permit or any other Intergovernmental Agreement (IGA) that may be procured as part of this process. Enforcement needs to be a requirement of all of the participants in this process as it is simply not fair or sustainable for Grand County to solely protect the water resources that are owned and enjoyed by all residents and guests of the state of Colorado (including the Front Range). Active management by the Corps of Engineers, beyond just the permitting process, is essential to a sustainable solution. Thank you for this opportunity to comment on the Moffat Collection System Project Draft Environmental Impact Statement. Our community is concerned about the significant potential impacts of this project, and would appreciate your consideration of this letter. Thank you for your time in this matter. Sincerely, James F. Myers Mayor CC: Grand County Board of County Commissioners Town of Fraser Board of Trustees Town of Grand Lake Board of Trustees Town of Granby Board of Trustees Town of Kremmling Town Council Town of Hot Sulphur Springs Board of Trustees Grand County Water and Sanitation District No. 1 Winter Park Water and Sanitation District Winter Park Ranch Water and Sanitation District	*natural function of wetlands in mountain areas. A natural hydrograph (high spring flows) is necessary to allow wetlands to serve as natural reservoirs and to filter and recharge alluvial aquifers. This project removes the natural hydrograph, and the Moffat DEIS ignores the important ecological services that flushing flows and channel maintenance flows provide to the ecosystem.* **Response #922-7:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year

Comment Information	Comment	Comments and Responses
		would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic

Comment Information	Comment	Comments and Responses
		photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #922-8*** *(ID 1196)**:*** *The Moffat DEIS states that only 1.95 acres of wetlands will be impacted by new diversions (specifically around Gross Reservoir). At no time does the Moffat DEIS contemplate the existing degradation of wetlands caused by existing diversions, nor the degradation and loss of existing wetlands following the removal of the semi-natural but still impacted hydrograph that occurs in the Fraser River. The loss of this wetland habitat has significant environmental, cultural, and water quality impacts to the residents of Grand County. Further removal of a natural hydrograph will only further destroy the existing wetlands that we are fortunate enough to enjoy.*

Comment Information	Comment	Comments and Responses
		Response #922-8: The analysis of impacts to riparian habitat included both direct losses of habitat from construction and inundation at Gross Reservoir (DEIS Section 4.6.1.1), and discussion of indirect impacts due to stream flow changes along the Fraser River and other rivers (DEIS Section 4.6.1.2). The DEIS did address the existing diversions in DEIS Section 4.6.1.2. Impacts from lower flow levels cannot be measured in the same way as the direct impacts shown in Tables 4.6-1 and 4.6-3 of the DEIS and in most cases would involve a shift in vegetation type rather than loss or full conversion to upland. An accurate quantitative summary of acres of indirect impacts in a format like Table 4.6-3 is not possible and a table of indirect impacts would be misleading if it were presented. ***Comment #922-3*** *(ID 1197)**:*** *The Moffat DEIS Proposed Action calls for water to be diverted in wet years following dry years, specifically in the spring and early summer months. Under this scenario, water will be diverted exactly when the overall environment (both aquatic and terrestrial habitat) has an opportunity to replenish water from the previous dry year or years. This only extends dry conditions when the impacted habitat is already severely stressed, which may create a tipping point beyond which no habitat may be able to recover. Further, the Moffat DEIS fails to consider the impacts on expected yield should changes in climate result in earlier and more-concentrated spring runoff as well as reduced water supplies in the Colorado River basin.* **Response #922-3:** Information was added to FEIS Sections 4.6.1 and 5.1 on the increased frequency and duration of dry year conditions due to additional diversions in average and wet years following dry years.

Comment Information	Comment	Comments and Responses
		For some resources, there is not a known scientific threshold or “tipping point” at which negative impacts occur nor is the Corps aware of specific models or techniques available to conduct “threshold” analyses. The magnitude of impact depends on the current state of that resource and factors that influence that resource. Tipping point issues were addressed for aquatic resources in FEIS Sections 3.11, 4.6.11, and 5.11. The DEIS addressed climate change in Section 5.4 and described the impacts on the expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water’s yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water’s water rights are in priority to

Comment Information	Comment	Comments and Responses
		divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, “In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation will increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation.” The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1 The best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally. 2 Climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends

Comment Information	Comment	Comments and Responses
		that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation. ***Comment #922-9*** *(ID 1198)**:*** *As our local communities transition from resource-extraction economies to recreation-based economies, water becomes more integral to our local businesses. Our local economies rely on fishing, rafting, kayaking, and alpine skiing (snow-making) and will all be significantly impacted by reductions in flows in the Colorado River. For industries that are as low-impact as these, every drop of water in the river is a significant financial benefit. The Moffat DEIS states that no impact to sales-tax collection would occur; however, it is clear that if these industries cannot operate then a significant impact is felt in our local communities that are dependent on water resources for environmental and aesthetic (and not consumptive) purposes. As stated earlier, visitors and guests from around the world, including the Front Range of Colorado, come to the Fraser Valley to enjoy the quality of life and amenities we have worked so hard to maintain. Reduced flows in our rivers and streams have direct impacts on our community's quality of life. Socioeconomic impacts to Grand County communities have only slightly been considered in the Moffat DEIS. Any final Moffat DEIS should include a thorough study of the socioeconomic impacts to our community, and consideration of mitigation for these impacts should be provided.*

Comment Information	Comment	Comments and Responses
		Response #922-9: Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in Section 5.15. The analysis of socioeconomic impacts in Grand County considers the conclusions reached in other resource sections, such as recreation. If the impacts upon recreation are insufficient to change visitation or related expenditures, there would be no associated socioeconomic effect. For example, recreational impacts must be placed in the context of the level of participation in various recreational activities as well as the degree of impact of those activities on local economies. The basis for the conclusions of socioeconomic impacts in Grand County are explained in DEIS Section 4.17, which refers to the specific text of other resource sections. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in Section 4.6.19 and 5.19 of the FEIS. ***Comment #922-16*** *(ID 1199)**:*** *For municipal water providers on the Western Slope, the impact of increased diversions is twofold: less water for municipal purposes and less water for treatment of wastewater. Ongoing changes to state and federal requirements for treatment of water have been exclusively borne by local communities in the form of enhanced treatment facilities, and reduced flows will surely mean additional treatment requirements in the future. The Moffat DEIS does not contemplate the state of water quality for treatment when the impacts of past and future diversions occur.* *• Additional depletions of quality water from the*

Comment Information	Comment	Comments and Responses
		Fraser River and its tributaries will tend to lower the quality of water pumped at Windy Gap, which will tend to decrease the quality and clarity of water in Grand Lake. This was not addressed in the Moffat DEIS even though conditions in Grand Lake are already visibly stressed. • The Fraser River already faces significantly elevated water temperatures seasonally, and removal of flows will only exacerbate the river's ability to sustain itself ecologically during the seasonal fluctuation of temperature. Stretches of the Fraser River and the Colorado River below Windy Gap have been listed as a 303(d) impaired stream requiring Total Maximum Daily Load (TMDL) regulations. It is easy to correlate the impairment with the existing diversions of Denver Water, and the Moffat DEIS needs to include mitigation for further impairment that will surely occur due to increased diversions. The Moffat DEIS should be modified to analyze this listing and the additional impacts that will be created by the proposed actions of Denver Water. **Response #922-16:** Water treatment costs are dependent on removing contaminants to meet drinking water standards. As shown in FEIS Sections 3.2 and 4.6.2, the Fraser River Basin is well within these standards and costs of water treatment would not be expected to change. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable future projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032).

Comment Information	Comment	Comments and Responses
		Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #922-4*** *(ID 1200)**:*** *Approval of the Moffat DEIS would result in the depletion of flushing flows, which significantly improve the Fraser River's ecosystem (as identified in Grand County's Stream Management Plan). Removal of flushing flows will also deposit additional materials in the river from traction materials placed on local roads and highways without the ability to mitigate their impact. Any new diversions should be limited to prevent further long-term degradation in these demanding periods.* **Response #922-4:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would

Comment Information	Comment	Comments and Responses
		occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M.

Comment Information	Comment	Comments and Responses
		The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #922-21*** *(ID 1201)**:*** *The Moffat DEIS needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized, or adequately mitigated. None of these requirements are being followed in the Moffat DEIS. It is difficult to avoid, minimize, or truly mitigate when the real past actions and cumulative impacts are not identified or are blatantly ignored. It is difficult to mitigate against a collapsing ecosystem when the process refuses to recognize what has*

Comment Information	Comment	Comments and Responses
		happened in the past, what is currently happening, and what is likely to happen due to the proposed actions. Unfortunately, a collapsed ecosystem could occur simply from the Denver Water Board's "Full Use" 2016 scenario before the proposed Moffat project actually is in effect. The Moffat DEIS provides little information on potential mitigation in exchange for increased diversions and no mitigation for existing diversions. The lack of mitigation proves further that municipal providers of water on the northern Front Range have little regard for all of the abovementioned issues. As communities that rely on strong, healthy streams for many of the aspects that keep us here, mitigation of the impacts of diversions to improve our rivers and streams is critical. Any diversion should be offset by fair mitigation provided by those performing the impact. **Response #922-21:** The Corps requires that impacts to the aquatic environment must first be avoided or minimized. Mitigation is then used to compensate for residual impacts after impacts have been reduced through avoidance and minimization. If a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required as appropriate. The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs. ***Comment #922-13*** *(ID 1202)**:*** *The Moffat DEIS concludes that there are little to no impacts from the project by utilizing a baseline in 2016 as opposed to today and assumes that other projects (specifically the Windy Gap Firming Project) will be approved and running. It is true that the Moffat project would have little impact when compared to the*

Comment Information	Comment	Comments and Responses
		significant degradation that would have occurred at that point (half of nothing is nothing). This flawed model should be revised in the Moffat DEIS to accommodate both existing conditions and proposed cumulative conditions. **Response #922-13:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #922-23*** *(ID 1203)**:*** *The Moffat DEIS needs to include Grand County's Stream Management Plan as mitigation for the project. Grand County and its municipal water providers have been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in our area. The Stream Management Plan takes into consideration the concerns of cumulative impact and looks at the river system and various project operations as a whole. The Moffat DEIS should include information from the Stream Management Plan and mitigation needs to be based on the findings in the Plan.* **Response #922-23:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8),

Comment Information	Comment	Comments and Responses
		PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #922-22*** *(ID 1204)**:*** *Denver Water has discussed an opportunity to include bypass flows as part of mitigation for increased diversions as part of the Moffat DEIS. The bypass flows would undoubtedly provide great relief for municipalities in Grand County that struggle to provide water during times of low flows. Any mitigation proposed or approved as part of the permit process should include bypass flow usage for Grand County municipalities.* **Response #922-22:** Please see the CRCA. This agreement can be found in FEIS Appendix M and is discussed in FEIS Section 4.3.1. ***Comment #922-10*** *(ID 1205)**:*** *The Moffat DEIS considers the impact of population growth and need only until 2030. Denver Water's charter requires that any need be met for any required amount with no concern for where the water comes from. The Town of Winter Park, in its master plan, has limited its ability to grow exponentially by considering the impacts of our own water use on stream habitat and quality. The Town's master plan requires that growth be restricted in order to keep minimum stream flows in both the Fraser River and Vasquez Creek (ironically below Denver Water's diversions on both watersheds). The Town has*

Comment Information	Comment	Comments and Responses
		negotiated this solution with our water and sanitation districts and has put itself on a strict diet when it comes to new development and growth. There are no efforts to do so by Denver Water, which only continues to perpetuate unrestricted growth that will have additional negative impacts to the Fraser and Colorado Rivers past 2030. The Moffat DEIS should contemplate a solution where a realistic limitation on growth is put in place to reflect that this water resource is finite. **Response #922-10:** Denver Water serves customers within the City and County of Denver as well as a number of suburban distributors in surrounding counties (portions of Adams, Arapahoe, Douglas and Jefferson Counties) in addition to special contracts. Denver Water's customers are described in Section 1.3.3. Figure 1-4 shows Denver Water's Combined Service Area (CSA), which includes the City and County of Denver as well as the portions of other counties served by Denver Water. Denver Water also has a number of contracts with entities outside the CSA, which are perpetual obligations. Denver Water does not control the growth policies of the City and County of Denver or other municipalities or water providers, Denver Water has a responsibility to meet future water demands as well as reliably serve existing customers. Denver Water must make water resource planning decisions based on reasonable projections of future customers. Denver Water does have a defined geographic service area and does not have plans to expand its service area. Expected growth on the East Slope outside of Denver Water's service area would have water needs met by other water providers.

Comment Information	Comment	Comments and Responses
		Comment #922-15 *(ID 1206)**:*** *Denver Water is acknowledged as a leader in Colorado for water conservation efforts. Outdoor water use for lawns and landscaping constitutes half of Denver Water's total use. The Moffat DEIS identifies that 16,000 acre-feet of water will be acquired through "aggressive conservation". It is our belief that any water conservation effort that does not place a significant emphasis on outdoor water use can hardly be called "aggressive". The Moffat DEIS should identify explicit plans for this conservation effort, and if these plans are not met in the future any approved permit needs to be re-evaluated based on non-compliance with Denver Water's own stated goals.* **Response #922-15:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment Information	Comment	Comments and Responses
		Comment #922-14 *(ID 1207)**:*** *The Moffat DEIS does not contemplate the development of a comprehensive re-use system that uses the existing water from transmountain diversions to extinction. A substantial re-use program should be developed and in place prior to allowing for any further diversions from Grand County. Other neighboring communities have found cost-effective and reliable technologies for reuse. The City of Aurora's Prairie Water project illustrates how a major water utility in Colorado can develop an indirect potable re-use project. Re-use has proven to provide a highly competitive and cost-effective means of augmenting water supplies.* **Response #922-14:** All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The MWRD Plant and the Littleton–Englewood (Bi-City) Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are

Comment Information	Comment	Comments and Responses
		relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). ***Comment #922-18*** *(ID 1208)**:*** *Permit requirements must include adequate protections, enhancements, and mitigation for water quality, which suffers as a result of low flows and high temperatures. This should include mandatory flushing flows as identified in the Grand County Stream Management Plan,* **Response #922-18:** Evaluation of flushing flow requirements ("low flow protection"), minimum instream flow rights, baseline flows and bypass flows are included in the FEIS. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. The Corps evaluated other RFFAs including the CRCA, LBD Cooperative Effort, and the Fish and Wildlife Enhancement Plan (see FEIS Appendix M). These actions may address the commenter's concerns related to flows. Through the LBD process, Denver Water and other stakeholders would coordinate resources to benefit the environment, including consideration of flushing flows and minimum instream flow rights. ***Comment #922-19*** *(ID 1209)**:*** *The Moffat DEIS does not capture the biological effects of the proposed changes that will likely occur due to the fact that the Fraser River ecosystem is so complex. Any approval should allow for mid-course corrections in the event that the predicted outcomes are incorrect. This should include tree removal and mitigation after a significant wildfire event, construction of the sedimentation basin on the Fraser*

Comment Information	Comment	Comments and Responses
		River near the entrance to the Mary Jane Ski Area, accommodation of enhancements in the upper Fraser Valley (such as pump-back pipelines and additional storage, if appropriate), and mandatory flushing flows that are appropriate based on the Grand County Stream Management Plan. **Response #922-19:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), channel morphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #922-20*** *(ID 1210)**:*** *The Moffat DEIS process should identify a plan for enforcement to ensure the provisions in the permit or any other Intergovernmental Agreement (IGA) that may be procured as part of this process. Enforcement needs to be a requirement of all of the participants in this process as it is simply not fair or sustainable for Grand County to solely protect the water resources that are owned and enjoyed by all residents and guests of the state of Colorado (including the Front Range). Active management by the Corps of Engineers, beyond just the permitting process, is essential to a sustainable solution.* **Response #922-20:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a

Comment Information	Comment	Comments and Responses
		Section 401 Certification. The U.S. Fish and Wildlife Service will include specific requirements to protect threatened and endangered species that are enforceable through a Biological Opinion. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #922-1*** *(ID 1211)**:*** *Thank you for this opportunity to comment on the Moffat Collection System Project Draft Environmental Impact Statement. Our community is concerned about the significant potential impacts of this project, and would appreciate your consideration of this letter. Thank you for your time in this matter.* **Response #922-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #929 William R. Roecker, District Manager Crestview Water & Sanitation District 7145 Mariposa, P.O. Box 21299 Denver, CO 80221-0299	CRESTVIEW WATER & SANITATION DISTRICT **Scott Franklin, Moffat EIS Project Manager** **February 10, 2010** **Corps Denver Regulatory Office** **9307 S. Wadsworth Blvd.** **Littleton, CO 80128** **moffat.eis@usace.army.mil** **Re: Moffat EIS** Crestview Water & Sanitation District has 4400 service connections and serves a population of approximately 17,000 in the south west corner of unincorporated Adams County. Our district is a distributor of Denver Water. Our service area has participates with all of Denver Water's conservation efforts. We have seen a decline of 17 percent water usage of over the past several years. However, even with significant conservation efforts, we still need additional water supply. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Stronita Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not *if* we will need this water; it's *when*. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system. We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. Sincerely, William R. Roecker William R. Roecker District Manager 7145 Mariposa • P.O. Box 21299 • Denver, Colorado 80221-0299 • 303-429-1881 • Fax 303-650-5562	***Comment #929-1*** *(ID 1233)**:*** *Crestview Water & Sanitation District has 4400 service connections and serves a population of approximately 17,000 in the south west comer of unincorporated Adams County. Our district is a distributor of Denver Water. Our service area has participates with all of Denver Water's conservation efforts. We have seen a decline of 17 percent water usage of over the past several years. However, even with significant conservation efforts, we still need additional water supply.* **Response #929-1:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #929-2*** *(ID 1234)**:*** *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-*

Comment Information	Comment	Comments and Responses
		feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. **Response #929-2:** The Corps notes the comment. ***Comment #929-3*** *(ID 1235)**:*** *It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.* **Response #929-3:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #929-4*** *(ID 1236)**:*** *We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.* **Response #929-4:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #932 Robert D. Taylor, P.E., P.L.S., Public Works Director City of Glendale 950 South Birch Street Glendale, CO 80246-2599	Glendale, Colorado "The Urban Village" March 3, 2010 Larry Harte, Mayor Michael Dunafon, Mayor Pro-Tem Jerry Peters, City Manager Council Members: Jeff Allen, LuVerne Davenport, R. Wayne King, Patricia Opper, Steven St. James Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 SUBJECT: Enlargement of Gross Reservoir Dear Mr. Franklin: My name is Robert Taylor and I am the Public Works Director for the City of Glendale. I am writing this letter to support the enlargement of Gross Reservoir and the revisions to the Moffat Collection System as proposed by Denver Water. The City of Glendale is a home-rule city that was incorporated in 1952. We currently serve about 4500 residents and about twice that many non-resident customers that work or shop in our city. Glendale has been a distributor of Denver Water since 1996 and one of the main reasons that we joined Denver's distribution network was to ensure a dependable source of water. Prior to that we operated our system off of a well field and our well rights were rather junior and certainly vulnerable in case of a major drought. Our city has participated with all of Denver Water's conservation efforts and this has resulted in a decline in water usage over the past several years. In addition we have constructed and are currently utilizing a separate non-potable water distribution system that is supplied by the old wells that previously fed our potable system. This non-potable system is for the irrigation of our parks and the grassed area of a major office complex. However, even with significant conservation efforts, we will still need additional water supply in the near future. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural or human-caused disasters that affect Stronita Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System could become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Glendale is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. 950 South Birch Street Glendale, Colorado 80246-2599 Phone (303) 759-1513 Fax (303) 639-4707 Recorded Meeting Information Line (303) 639-4717 http://www.glendale.co.us	***Comment #932-2*** *(ID 1249)**:*** *My name is Robert Taylor and I am the Public Works Director for the City of Glendale. I am writing this letter to support the enlargement of Gross Reservoir and the construction of the entire Moffat Collection System Project as proposed by Denver Water. The City of Glendale is a home-rule city that was incorporated in 1952. We currently serve about 4500 residents and about twice that many non-resident customers that work or shop in our city. Glendale has been a distributor of Denver Water since 1996 and one of the main reasons that we joined Denver's distribution network was to ensure a dependable source of water. Prior to that we operated our system off of a well field and our well rights were rather junior and certainly vulnerable in case of a major drought.* **Response #932-2:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #932-3*** *(ID 1250)**:*** *Our city has participated with all of Denver Water's conservation efforts and this has resulted in a decline in water usage over the past several years. In addition we have constructed and are currently utilizing a separate non-potable water distribution system that is supplied by the old wells that previously fed our potable system. This non-potable system is for the irrigation of our parks and the grassed area of a major office complex. However, even with significant conservation efforts, we will still need additional water supply in the near future.* **Response #932-3:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment Information	Comment	Comments and Responses
	Scott Franklin March 3, 2010 Page 2 It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system. We support the Moffat Collection System Project because it will enable us to continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. As I understand it, these environmental efforts are substantial and should certainly make the entire project more palatable to the environmental community which is a community that I personally support and consider myself a member of. Thank you for accepting and considering these comments. Sincerely, Robert D. Taylor, P.E. & P.L.S. Glendale Public Works Director CC: Brian Gogas Pat Fitzgerald	***Comment #932-4*** *(ID 1251)**:*** *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural or human-caused disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System could become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Glendale is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project.* **Response #932-4:** The Corps notes the comment. ***Comment #932-5*** *(ID 1252)**:*** *It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional*

Comment Information	Comment	Comments and Responses
		supply, especially on the north end of Denver Water's system. We support the Moffat Collection System Project because it will enable us to continue to provide the water our customers need. **Response #932-5:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #932-1*** *(ID 1253)**:*** *We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. As I understand it, these environmental efforts are substantial and should certainly make the entire project more palatable to the environmental community which is a community that I personally support and consider myself a member of.* **Response #932-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #936 Jon Westerlund, President Winter Park Ranch Water & Sanitation District P.O. Box 1390, 601 Park Place Fraser, CO 80442	WINTER PARK RANCH WATER & SANITATION DISTRICT January 19, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, Co. 80128 Mr. Franklin, The Winter Park Ranch Water and Sanitation District wishes to express these concerns with the draft environmental impact statement submitted by Denver Water for their Moffat Firming project. We feel that the scope of the draft EIS is too narrow and doesn't cover these impacts to our water and sanitation system. The Clean Water Act requires Denver Water to avoid impacts as much as possible, minimize impacts that can not be avoided and mitigate whatever impacts are left. Listed below are impacts to our District that either have not been identified or if identified have no mitigations offered: • The EIS does not acknowledge the impact to ground water in the Troublesome Formation in the Fraser Valley. This formation is the aquifer that supplies water to the 1,495 customers in Winter Park Ranch. The recharge of this aquifer comes from the southwestern portion of the Fraser Valley and Denver Water's collection system runs parallel to this recharge area, potentially diverting ground water flow from our aquifer. We request that Denver's final EIS include a study of the Troublesome Formation that can determine the amount of recharge to the aquifer affected by Denver's water diversions before and after the proposed firming project. This impact has not been identified in the draft EIS. • The draft EIS does not include the impact increased diversions will have on our District's treatment plant discharge permit. We require that the EIS set baseline stream flows that will not dip below the stream flows that our discharge permit is presently based on. If these flows are reduced to have an impact on our discharge permit, then Denver Water must be held accountable for the impacts that a revised discharge permit, based on lower flows will have on our treatment facility. Our District needs these flows mitigated in the EIS. • Currently, Colorado Department of Public Health and Environment stream standards are enforced on entities that hold discharge permits. Water diverters do not hold discharge permits but create a tremendous impact to the streams water P. O. Box 1390 • 601 Park Place • Fraser, CO 80442 • (970) 726-8691 • Fax (970) 726-9627	***Comment #936-1*** *(ID 1271)**:*** *The Winter Park Ranch Water and Sanitation District wishes to express these concerns with the draft environmental impact statement submitted by Denver Water for their Moffat Firming project. We feel that the scope of the draft EIS is too narrow and doesn't cover these impacts to our water and sanitation system. The Clean Water Act requires Denver Water to avoid impacts as much as possible, minimize impacts that can not be avoided and mitigate whatever impacts are left. Listed below are impacts to our District that either have not been identified or if identified have no mitigations offered:* **Response #936-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. Responses to comments are presented throughout the letter in the appropriate locations. ***Comment #936-2*** *(ID 1272)**:*** *The EIS does not acknowledge the impact to ground water in the Troublesome Formation in the Fraser Valley. This formation is the aquifer that supplies water to the 1,495 customers in Winter Park Ranch. The recharge of this aquifer comes from the southwestern portion of the Fraser Valley and Denver Water's collection system runs parallel to this recharge area, potentially diverting ground water flow from our aquifer. We request that Denver's final EIS include a study of the Troublesome Formation that can determine the amount of recharge to the aquifer affected by Denver's water diversions before and after the proposed firming project. This impact has not been identified in the draft EIS.* **Response #936-2:** Groundwater in the Troublesome Formation that is tapped by some wells to supply residents of the

Comment Information	Comment	Comments and Responses
	quality. Denver Water must commit through their EIS to help discharge permit holders meet CDPHE stream standards that are impacted by diminished flows. Past Denver Water projects have reduced the flows in the Fraser River so much that the State has required the few thousand people in the upper Fraser Valley to pay for over $20 million worth of advanced wastewater treatment. Increasing the amount of water diverted will increase the burden on Fraser Valley residents who have to pay for the additional treatment costs. Impacts to additional treatment requirements caused by decreased flows need to be mitigated in the EIS. • The Colorado Department of Public Health and Environment has set new stream temperature standards on the Fraser River. The State is presently advising that section 10c of the Fraser River be placed on the 303d list for temperature. Our District's wastewater treatment facility is located on this stream section. Denver Water's draft EIS is using average daily temperatures in their modeling. This modeling is flawed because the diurnal temperatures in late summer (mid July through August) can vary as much as 20 degrees F., reaching high temperatures of 70 degrees F., at today's dewatered flow levels. Increased diversions will increase the time span that the river will experience high temperatures. It is the State's chronic levels being reached that have the Fraser River being considered for the 303d list and it is these levels that Denver Water must use in their modeling. The expense of our wastewater treatment and the health of the cold water fishery are directly related to the rivers chronic temperatures, not their daily average. The EIS needs to be re-written using daily high temperatures in their model, not the daily average temperatures. The draft EIS does admit that this project will cause higher temperatures but offers no mitigation. Stream temperature mitigation must be addressed in the EIS. • The State is also holding hearings to put section 10c of the Fraser River on the M&E list for Copper. The draft EIS does not address the impact that reduced flows resulting in a higher concentration of metals will have on the Fraser River. A large contributor to the heavy metals entering the Fraser River is the discharge from the Moffat Tunnel. Reducing the flows in the Fraser River will increase the concentration of Copper in the Fraser River coming from the Moffat Tunnel. Increased concentrations of Copper will result in more stringent discharge requirements on our wastewater treatment plant for Copper removal. This will have a strong financial impact on the Fraser Valley's handful of people who would be required by the State to pay for more advanced treatment because of Denver Water's proposed lower flows. This impact is not addressed in the draft EIS. Sincerely, Jon Westerlund President cc: Environmental Protection Agency	Winter Park Ranch would not be affected by the Moffat Project because no groundwater would be diverted from that aquifer. Moreover, groundwater recharge to this aquifer would not be reduced by the Project. Denver water currently diverts stream flow from the upper parts of St. Louis Creek. However, those diversion points would not change as a result of the Project. The Project would only be increasing the duration of the diversion at these points during the period of high stream flow caused by snowmelt runoff in wet and average years. The recharge areas are toward the west of the ranch area and are not downhill of any of the stream diversion points. Groundwater flows away from the recharge areas generally toward the northeast beneath the ranch area, and groundwater eventually discharges to the Fraser River lower in the valley. The field data collection activities conducted in Fall 2010 included installing a monitor well completed in the Troublesome Formation and other wells near St. Louis Creek. Measurements of groundwater level elevations in the wells are higher than the adjacent stream water level elevations, which indicate that groundwater is discharging to the streams. Groundwater flows from the recharge areas in higher elevations toward the lower elevation areas along St. Louis Creek and the Fraser River. These data show the local groundwater flow directions are toward the in areas downstream of Denver Water diversion points. Therefore, as described in the DEIS Section 4.2, the Project would cause only minimal temporary effects on groundwater levels immediately next to the streams. The changes in groundwater levels near the stream would be similar to the slight changes in stream levels during the high runoff season. The FEIS includes additional analyses of stream flow changes in all of the potentially affected stream segments and tributaries to clarify the effects of the

Comment Information	Comment	Comments and Responses
		Moffat Project and other RFFAs. Additional groundwater data collected in the fall of 2010 was provided and described to further clarify the groundwater-surface water relationships downstream of Denver Water diversion points. The additional stream flow analyses were used with the new groundwater data to further assess the Project effects on groundwater, stream flow, wetlands, and wells along the Fraser River in FEIS Sections 4.6.4, 4.6.8, 5.4 and 5.8. ***Comment #936-3*** *(ID 1273)**:*** *The draft EIS does not include the impact increased diversions will have on our District's treatment plant discharge permit. We require that the EIS set baseline stream flows that will not dip below the stream flows that our discharge permit is presently based on. If these flows are reduced to have an impact on our discharge permit, then Denver Water must be held accountable for the impacts that a revised discharge permit, based on lower flows will have on our treatment facility. Our District needs these flows mitigated in the EIS. • Currently, Colorado Department of Public Health and Environment stream standards are enforced on entities that hold discharge permits. Water diverters do not hold discharge permits but create a tremendous impact to the streams water quality. Denver Water must commit through their EIS to help discharge permit holders meet CDPHE stream standards that are impacted by diminished flows. Past Denver Water projects have reduced the flows in the Fraser River so much that the State has required the few thousand people in the upper Fraser Valley to pay for over $20 million worth of advanced wastewater treatment. Increasing the amount of water diverted will increase the burden on Fraser Valley residents who have to pay for the additional treatment costs. Impacts to additional treatment requirements caused by decreased flows need to be mitigated in the EIS. • The Colorado*

Comment Information	Comment	Comments and Responses
		Department of Public Health and Environment has set new stream temperature standards on the Fraser River. The State is presently advising that section 10c of the Fraser River be placed on the 303d list for temperature. Our District's wastewater treatment facility is located on this stream section. Denver Water's draft EIS is using average daily temperatures in their modeling. This modeling is flawed because the diurnal temperatures in late summer (mid July through August) can vary as much as 20 degrees F., reaching high temperatures of 70 degrees F., at today's dewatered flow levels. Increased diversions will increase the time span that the river will experience high temperatures. It is the State's chronic levels being reached that have the Fraser River being considered for the 303d list and it is these levels that Denver Water must use in their modeling. The expense of our wastewater treatment and the health of the cold water fishery are directly related to the rivers chronic temperatures, not their daily average. The EIS needs to be re-written using daily high temperatures in their model, not the daily average temperatures. The draft EIS does admit that this project will cause higher temperatures but offers no mitigation. Stream temperature mitigation must be addressed in the EIS. • The State is also holding hearings to put section 10c of the Fraser River on the M&E list for Copper. The draft EIS does not address the impact that reduced flows resulting in a higher concentration of metals will have on the Fraser River. A large contributor to the heavy metals entering the Fraser River is the discharge from the Moffat Tunnel. Reducing the flows in the Fraser River will increase the concentration of Copper in the Fraser River coming from the Moffat Tunnel. Increased concentrations of Copper will result in more stringent discharge requirements on our wastewater treatment plant for Copper removal. This will have a strong financial impact on the Fraser Valley's handful of people who would be required by the State to pay for

Comment Information	Comment	Comments and Responses
		more advanced treatment because of Denver Water's proposed lower flows. This impact is not addressed in the draft EIS. **Response #936-3:** Additional water quality analysis has been performed for the Fraser River, including temperature analysis. The DEIS did not use average daily temperature, but rather looked at daily maximum and maximum weekly average temperature. The 2012 303(d) and Monitoring and Evaluation lists at CDPHE Regulation 93 are used in the FEIS, and the Moffat Tunnel NPDES permit is reviewed in the FEIS. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.

Comment Information	Comment	Comments and Responses
Comment #938 David Wright, President Castlewood Water & Sanitation District 1331 17th Street, Suite 500 Denver, CO 80202	CASTLEWOOD WATER & SANITATION DISTRICT C/O E. EDWARD ICENOGLE ICENOGLE, NORTON, SMITH, GILIDA & POGUE, P.C. 1331 17TH STREET, SUITE 500 DENVER, CO 80202 TELEPHONE: (303) 292-6400 FACSIMILE: (303) 292 6401 **Scott Franklin, Moffat EIS Project Manager** **Corps Denver Regulatory Office** **9307 S. Wadsworth Blvd.** **Littleton, CO 80128** **moffat.eis@usace.army.mil** **Name:** David Wright **Address:** See above **Representing:** Castlewood Water & Sanitation District **Date:** February 22, 2010 **Comments:** Castlewood Water & Sanitation District serves 2,685 customers in the area located east of I-25 to Havana Street, south of Belleview Avenue and north of Dry Creek Road. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. However, even with significant conservation efforts, we still need additional water supply. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water from the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not *if* we will need this water; it's *when*. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.	***Comment #938-1*** *(ID 1275)**:*** *Castlewood Water & Sanitation District serves 2,685 customers in the area located east of 1-25 to Havana Street, south of Belleview Avenue and north of Dry Creek Road. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. However, even with significant conservation efforts, we still need additional water supply.* **Response #938-1:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #938-2*** *(ID 1276)**:*** *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water from the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is*

Comment Information	Comment	Comments and Responses
	Scott Franklin February 22, 2010 Page 2 of 2 We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. Sincerely, David Wright President	*expected to be addressed with the Moffat Collection System Project.* **Response #938-2:** The Corps notes the comment. ***Comment #938-3*** *(ID 1277)**:*** *It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.* **Response #938-3:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #938-4*** *(ID 1278)**:*** *We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.* **Response #938-4:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1032 Mayor Hershal Deputy Town of Hot Sulphur Springs 513 Aspen Street, P.O. Box 116 Hot Sulphur Springs, CO 80451	Town of Hot Sulphur Springs COLORADO January 28, 2010 Scott Franklin, Moffat EIS Project Manager US Army Corps of Engineers, Omaha District Denver Regulatory Office 9307 South Wadsworth Boulevard Littleton, CO 80128 RECEIVED FEB 2010 Moffat DEIS Comments from the Town of Hot Sulphur Springs, Grand County, Colorado Dear Mr. Franklin, The Town of Hot Sulphur Springs (ToHSS) appreciates this opportunity to comment on the Draft Environmental Impact Statement (DEIS) dated 30Oct09 for the proposed Denver Water Department Moffat Collection System Project (Moffat Project). We understand the Moffat Project proposal would include trans-mountain diversion of an additional 18,000 acre feet per year from the Colorado River headwaters upstream from ToHSS. We are directly downstream from the proposed additional diversions and are deeply concerned that the project will affect our town and river in Pioneer Park. We have supplied our residents with drinking water via an intake on the Colorado River since 1910, well before the first Moffat diversion. We have been treating wastewater at our present facility and discharging back to the river since 1973. We would like to be on record with the following concerns for the proposed Moffat Project as presented in the DIES: **1) The Draft EIS (DEIS) does not meet the NEPA Requirement for "Plain Language"** The DEIS is unwieldy, displays serious lapses of disclosure, lacks reasoned analysis, and presents unsupported conclusions. The document thus clearly does not meet the NEPA requirement for "plain language" in 40 CFR Part 1502.8: *"Environmental Impact Statements should be written in plain language and may use appropriate graphics so that decisionmakers and the public can readily understand them."* *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 1* *513 Aspen Street • PO Box 116 • Hot Sulphur Springs, CO 80451* *Phone (970) 725-3933 • Fax (970) 725-3443*	***Comment #1032-27*** *(ID 1288)**:*** *The Town of Hot Sulphur Springs (ToHSS) appreciates this opportunity to comment on the Draft Environmental Impact Statement (DEIS) dated 30 Oct 09 for the proposed Denver Water Department Moffat Collection System Project (Moffat Project). We understand the Moffat Project proposal would include trans-mountain diversion of an additional 18,000 acre-feet per year from the Colorado River headwaters upstream from ToHSS. We are directly downstream from the proposed additional diversions and are deeply concerned that the project will affect our town and river in Pioneer Park. We have supplied our residents with drinking water via an intake on the Colorado River since 1910, well before the first Moffat diversion. We have been treating wastewater at our present facility and discharging back to the river since 1973. We would like to be on record with the following concerns for the proposed Moffat Project as presented in the DIES:* **Response #1032-27:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1032-1*** *(ID 1289)**:*** *The Draft EIS (DEIS) does not meet the NEPA Requirement for "Plain Language" The DEIS is unwieldy, displays serious lapses of disclosure, lacks reasoned analysis, and presents unsupported conclusions. The document thus clearly does not meet the NEPA requirement for "plain language" in 40 CFR Part 1502.8: "Environmental Impact Statements should be written in plain language and may use appropriate graphics so that decisionmakers and the public can readily understand them."*

Comment-Response Report (Jurisdictions/Municipalities Part D)

Comment Information	Comment	Comments and Responses
	We understand the document is so big it was not printable for the general public, which has led to many people being unable to obtain, read, and understand the proposal and predicted impacts. This document is actually larger than the Spotted Owl EIS which evaluated a multi-state, multi-watershed area with numerous cooperating agencies. The sheer volume of the Moffat DEIS makes it nearly impossible for us to understand what is being proposed and how it could affect our town and our residents. The document relies on quantity rather than quality. We believe that another DEIS version is needed and the USACE should rework this document and produce a user-friendly, readable document. The changes needed in this this document are so significant and substantial that it only makes sense for you to prepare another DEIS version and not the final EIS. The public deserves the right to comment on the additional data, research and analysis that the DEIS clearly needs to provide. We would be happy to review the next EIS document version. • The next EIS version must be cut to a reasonable size and focus on clear presentation of baseline conditions, logical analysis of impacts, and reasonable conclusions. This would in turn support a realistic risk analysis, project design, and mitigation that would address real issues affecting West Slope stakeholders including municipalities and residents. • The USACE must meet its mandate of reducing unnecessary paperwork (33 CFR Part 320.1 (a) (4) and not just shift the paperwork burden to the interested public. • The next EIS version should incorporate much of this material by reference (40CFR 152.21) to *"cut down on bulk"* and improve communicating technical discussions. Supporting information should be *"cited in the [EIS] and the content briefly summarized."* • The next EIS version team should utilize capable scientific managers who can focus real studies and analysis that clarifies environmental concerns and drives toward real solutions and project mitigation. That team of capable scientific writers and editors should develop a reasonable DEIS document that would be understandable by the general public. *"Agencies should employ writers of clear prose or editors to write, review, and edit"* NEPA documents (40CFR 1502.8). • The next EIS version should be consistent in every possible way. *"Minor to moderate effects"* deep in the text of Chapter 4 should not become *"negligible to minor"* in the Executive Summary or *"negligible"* in the Mitigation Section. • There must be a clear and comprehensive Executive Summary with direct references to document text so the reader can explore details where needed. • Technical conclusions such as *"negligible affect"* must be fully supported by real analysis of relevant baseline data based upon realistic metrics, not proponent-friendly surrogates. • Finally, next EIS version must include analysis and conclusions on the most sensitive areas such as our ToHSS water intake and wastewater discharge areas where cumulative effects are likely to *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 2*	*We understand the document is so big it was not printable for the general public, which has led to many people being unable to obtain, read, and understand the proposal and predicted impacts. This document is actually larger than the Spotted Owl EIS which evaluated a multi-state, multi-watershed area with numerous cooperating agencies. The sheer volume of the Moffat DEIS makes it nearly impossible for us to understand what is being proposed and how it could affect our town and our residents. The document relies on quantity rather than quality. We believe that another DEIS version is needed and the USACE should rework this document and produce a user-friendly, readable document. The changes needed in this this document are so significant and substantial that it only makes sense for you to prepare another DEIS version and not the final EIS. The public deserves the right to comment on the additional data, research and analysis that the DEIS clearly needs to provide. We would be happy to review the next EIS document version. • The next EIS version must be cut to a reasonable size and focus on clear presentation of baseline conditions, logical analysis of impacts, and reasonable conclusions. This would in turn support a realistic risk analysis, project design, and mitigation that would address real issues affecting West Slope stakeholders including municipalities and residents. • The USACE must meet its mandate of reducing unnecessary paperwork (33 CFR Part 320.1 (a) (4) and not just shift the paperwork burden to the interested public. • The next EIS version should incorporate much of this material by reference (40CFR 152.21) to "cut down on bulk" and improve communicating technical discussions. Supporting information should be "cited in the [EIS] and the content briefly summarized."*

Comment Information	Comment	Comments and Responses
	have dramatic implications for local stakeholders and force unreasonable costs upon our local municipality. **2) Water Rights** We were unable to find a discussion of water rights in the DEIS and how the *"firming"* process works and would affect senior water rights. The DEIS states that Denver Water holds *"conditional water rights"* and that this project would convert those conditional rights to *"absolute rights"* for 18,000 acre feet of "firm water yield." This could be dangerous and have enormous consequences upon Grand County residents who, we believe, hold senior water rights such as ToHSS and our neighboring ranchers. A thorough list of diversions along the Fraser and Colorado Rivers is available in the 2008 Draft Grand County Stream Management Plan. This list was available during preparation of the DEIS and should have been utilized. • The next EIS version must evaluate the impacts of the project on water rights including a reasonable effort to model the effects of past, present, and future Moffat diversions upon surface water and shallow groundwater in our riparian zones and irrigated hay fields. Colorado water law cannot be ignored! • The next EIS version must evaluate all water diversions along the Fraser and Colorado Rivers and their associated water rights and priorities, and evaluate the impacts upon those water rights. • The next EIS version must address how this *"firming process"* affects priority water rights in general including the question of whether or not your agency decision would create a precedent for future water users. This must be in plain language and needs to explain how *"conditional rights"* could trump senior absolute water rights based upon Denver Water's clear engineering and legal advantage. • Finally, the next EIS version must discuss the water rights impact of the no-action alternative. Would the conditional 18,000 acre feet then be available to other water users including conservation flows? What other "firming" projects would be affected by a no-action decision? **3) Sustainability and Conservation** We are pleased to see that Denver Water has put in place conservation measures resulting in a 21% drop in water use (DEIS page 1-13), which reduces their overall need for new water sources. However, we understand certain California municipalities with longer lawn growing seasons have recently achieved reductions of up to 50% (Water Efficiency Magazine Winter 2009). We wonder why Denver Water cannot pursue a similar goal? • The next EIS version must address conservation in both the Purpose and Need and Alternatives Sections along with economic analyses of cost effectiveness (*"conservation potential of various* *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 3*	*• The next EIS version team should utilize capable scientific managers who can focus real studies and analysis that clarifies environmental concerns and drives toward real solutions and project mitigation. That team of capable scientific writers and editors should develop a reasonable DEIS document that would be understandable by the general public. "Agencies should employ writers of clear prose or editors to write, review, and edit" N EPA documents (40CFR 1502.8). • The next EIS version should be consistent in every possible way. "Minor to moderate effects" deep in the text of Chapter 4 should not become "negligible to minor" in the Executive Summary or "negligible" in the Mitigation Section. • There must be a clear and comprehensive Executive Summary with direct references to document text so the reader can explore details where needed. • Technical conclusions such as "negligible affect" must be fully supported by real analysis of relevant baseline data based upon realistic metrics, not proponent-friendly surrogates. • Finally, next EIS version must include analysis and conclusions on the most sensitive areas such as our ToHSS water intake and wastewater discharge areas where cumulative effects are likely to have dramatic implications for local stakeholders and force unreasonable costs upon our local municipality.* **Response #1032-1:** DEIS Section 4.0 states: "Impact thresholds are defined as changes in intensity in terms of the degree, level, or strength of an impact. The following thresholds are used to determine the change in intensity of impacts resulting from a Project alternative: • No impact: no discernable effect • Negligible: effect is at the lowest level of detection and causes very little or no disturbance • Minor: effect that is slight, but detectable, with some perceptible effects of disturbance

Comment Information	Comment	Comments and Responses
	alternatives" in 40CFR 1502.16 (e)). USACE policy requires the "*efficient use of water resources in all actions which involve the significant use of water or that significantly affects the availability of water for alternative uses including opportunities to reduce demand and improve efficiency in order to minimize new supply requirements* (33 CFR 320.4 (m). • USACE should prioritize conservation as the *"low-alteration strategy"* to preserve natural ecosystem function (see Ecological Society of America Position Statement on Ecosystem Management in a Changing Climate dated January 2010). Indeed, we suspect that an aggressive conservation campaign could be the most cost-effective way for Denver Water to meet their future water needs without this firming project. • The next EIS version must include evaluation of the measures put in place in 2002 that resulted in significant water conservation in Denver. Which of these measures could be put in place permanently and what are the ramifications of those measures to the Denver water users? • The next EIS version must address the ever-expanding Denver Water service area and how this plays into the project purpose and need. Denver Water should not be allowed to continually increase the size of their service area; thereby increasing their need for water. The USACE must balance the needs of Front Range developers and new bluegrass lawns against the needs of progressively water-starved Grand County. • The next EIS version must include a discussion of how Denver Water's corporate structure could be changed in order to better support conservation. We understand that aggressive conservation measures in the early part of the last decade led to significant water savings but this in turn affected Denver Water's "bottom line", which is unfair and counterproductive. Denver Water customers should be applauded and compensated for conservation not penalized • The next EIS version must include an evaluation of other institutional drivers for water waste including local municipalities in the Denver Water service area that require thirsty bluegrass lawns. Should bluegrass remain an option with more sophisticated watering technology now readily available in the conservation/landscaping market? • The next EIS version Proposed Action must include lining all Denver Water ditches on both West and East slopes. How much water is wasted on seepage from these ditches and how much could be conserved? • The next EIS version must include at least one alternative that addresses all possible conservation measures and how this would reduce the need for additional firm yield. • The next EIS version must recognize that there are unresolved conflicts as to the best use of the water resource, and should seriously evaluate conservation as an alternative method to accomplish Denver Water's objective of 18,000 acre feet firm yield. *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 4*	• Moderate: effect is readily apparent and has measurable effects of disturbance • Major: effect is readily apparent and has substantial effects of disturbance" These thresholds were applied to the magnitude (the Corps uses the word "intensity") of impact for each environmental resource/biological condition based on technical analysis and professional judgment. When possible, the impacts were quantified before an impact threshold was applied to them. For example, the aquatic biological resources analysis (FEIS Section 5.11) includes a more in-depth explanation of how impact intensity was measured and includes changes in community parameters for each level of intensity for fish and benthic macroinvertebrates. The Corps made significant efforts to present the technical information in "plain language" for the general public. Where possible, tables, graphics, and maps were used to summarize and present technical data. For example, a comparative summary of the potential impacts by resource discipline for each action alternative and the No Action Alternative is presented in FEIS Table 5.22-1 (by alternative) and FEIS Table 5.22-2 (by river segments). These tables allow the reader to compare potential effects by discipline and alternative. Hard copies of the DEIS were available for review at the Public Hearings and at the following locations: • Denver Water • Corps Denver Regulatory Office • Arvada Library • Boulder County Main Library • Denver Central Library • Fraser Valley Library • Golden Library

Comment Information	Comment	Comments and Responses
	• Finally, the next EIS version must present a firm-yield target less than 18,000 acre feet based upon increased conservation targets. **4) River/Stream Flows** We are concerned that reduced flows in the Colorado River will have enormous consequences on our town property and residents. The DEIS is inconsistent, with different proportions of predicted depleted flows in different parts of the document, then unsubstantiated extrapolations to other resources. Part of the technical argument is based upon historic flows at Hot Sulphur Springs through 1994 (DEIS Figure 3.1-3). This graphic does give the reader a sense of flows at different times including our water/wastewater operators who must monitor flows for operations. But the discussion changes from daily flows to average annual yield at Kremmling (DEIS page ES-18). This is a good example of what we see as "proponent-friendly surrogates" that prevent ToHSS from understanding real affects upon our river reach. In another example, Table 3.1-14 presents various existing depletions as measured at Windy Gap between 1985 and 2004 but the total existing depletion (a whopping 62%) is buried in the text on page 3-38. This pattern of obfuscation only makes the document unusable for decisionmakers (see concern #1 above). • The next EIS version must be based upon conservative long term climate models and river flows then present consistent hydrologic models in plain language that help us understand the actual affects upon flows in the river on a reasonable time scales of value to water/wastewater plant operators. • The next EIS version must offer a reader-friendly presentation of more recent flows in the river. Averaged flows should separate data from the first half of the 20th Century before the transmountain diversions were in place, from the second half of the 20th Century, in fact we should see things compared to the last 10 years which would better reflect recent additions of water storage on the Front Range and recent climate change. • The next EIS version must analyze the cumulative effects of all "past, present, and reasonably foreseeable future actions" (40CFR 1508.7) upon the Colorado River. Indeed, we already experience 60% reductions in river flows and are very concerned the additional proposed flows will be cumulatively crippling to the river. Graphical presentations must include a comparison of ALL trans-mountain diversions, historic, present, and proposed. • The next EIS version must analyze the cumulative effects of past, present, and proposed Windy Gap diversions on the Colorado River (See for instance Page 4 of Considering Cumulative Effects Under the National Environmental Policy Act by the Council on Environmental Quality, Executive Office of the President dated January 1997). *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 5*	• Granby Library • Kremmling Library • Summit County Library North Branch • Summit County Library South Branch • Thornton Branch Library Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use of the System with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use of the System with a Project Alternative (2032). The Project would not influence or impact the Current Conditions of the Hot Sulphur Springs WWTP. The DEIS and FEIS evaluate all major domestic WWTPs that discharge into the Fraser River, Colorado River (between Windy Gap and Kremmling), and the Blue River below Dillon Dam. The FEIS also evaluates minor domestic WWTPs that discharge into the Fraser River, Colorado River and Blue River below Dillon Dam as well as the treatment plants that discharge just upstream of, or into Dillon Reservoir. Additional water quality analysis for each WWTP has also been performed. Please see FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
	• The next EIS version must extend analysis as far downstream as effects can reasonably be traced, at least as far as the confluence with the Blue River in Kremmling. • The next EIS version must expand analysis to include the effects upon other diversions along the river such as ranchers with senior water rights to Denver. Such models could then support mitigations such as assisting ranchers with re-fitting headgates to deal with incrementally lower flows. • The next EIS version must expand analysis laterally to evaluate impacts to shallow aquifers in riparian zones including ranchlands. • The next EIS version must then integrate the cumulative effects upon water flows into all subsequent modeling and discussion of water quality, groundwater, riparian vegetation, fisheries, socioeconomics, environmental justice, and mitigation. **5) River Water Quality** We are concerned that reduced flows in the Colorado River will make our water and wastewater treatment more difficult in ToHSS and perhaps drive us into violation of our permits with the Colorado Department of Public Health and Environment (CDPHE). As discussed above in Concern #4, the DEIS offers no reasonable modeling of flows in our reach of the Colorado River other than general reductions from 7-29%. We know that flow reductions of this magnitude would reduce our discharge dilutions to dangerous levels for our operations. These flow reductions would certainly be noticeable by local anglers as well as children playing in the river during warm summer months. We are now investing ARRA/Stimulus funds into our drinking water infrastructure which includes our town taking on significant debt. The DEIS predicts increased water temperatures and increased concentration of nutrients at upstream wastewater treatment plants but somehow concludes negligible to minor impacts to water quality in the Colorado River. This dangerously unsubstantiated claim gives us no way to actually understand how the proposed changes would affect our daily operations in ToHSS or how we would be expected to engineer our own solutions. Our wastewater treatment plant, which is operated under CDPHE permit, is not recognized in parts of the DEIS (compare for instance DEIS page 3-42 versus page 4-75) and we were generally unable to find any usable predictions of changes in water quality in our reach of the river at particular times of year. It is thus impossible for us to understand how the proposed action would affect our day to day operations or how the document concludes "*no change with regards to WWTPs and their discharges*" (page 4-75). • The next EIS version must model the cumulative effects of increased diversions, including Moffat and NCWCD Windy Gap Firming Projects, upon water quality in the Colorado River in ToHSS and operations of our water-treatment and wastewater-treatment plants. *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 6*	***Comment #1032-3*** *(ID 1290)**:*** *Water Rights We were unable to find a discussion of water rights in the DEIS and how the "firming" process works and would affect senior water rights. The DEIS states that Denver Water holds "conditional water rights" and that this project would convert those conditional rights to "absolute rights" for 18,000 acre feet of "firm water yield." This could be dangerous and have enormous consequences upon Grand County residents who, we believe, hold senior water rights such as ToHSS and our neighboring ranchers. A thorough list of diversions along the Fraser and Colorado Rivers is available in the 2008 Draft Grand County Stream Management Plan. This list was available during preparation of the DEIS and should have been utilized. • The next EIS version must evaluate the impacts of the project on water rights including a reasonable effort to model the effects of past, present, and future Moffat diversions upon surface water and shallow groundwater in our riparian zones and irrigated hay fields. Colorado water law cannot be ignored! • The next EIS version must evaluate all water diversions along the Fraser and Colorado Rivers and their associated water rights and priorities, and evaluate the impacts upon those water rights. • The next EIS version must address how this "firming process" affects priority water rights in general including the question of whether or not your agency decision would create a precedent for future water users. This must be in plain language and needs to explain how "conditional rights" could trump senior absolute water rights based upon Denver Water's clear engineering and legal advantage. • Finally, the next EIS version must discuss the water rights impact of the no-action alternative. Would the conditional 18,000 acre feet then be available to other water users including conservation flows? What other "firming" projects would be affected by a no-action decision?*

Comment Information	Comment	Comments and Responses
	• The next EIS version must evaluate impacts and compliance with all applicable effluent limitations on water quality standards (33 CFR Part 320.4 (d). • The next EIS version must consider the past and present patterns of significant algal blooms and effects upon biological oxygen demand (BOD) in the river and our water-wastewater system. We already see an overabundance of algae now, how much will this increase and when will we be subjected to a septic river and fish kills? • USACE must protect water quality and quantity by evaluating long-term sustainability of our water resources including what may be painful social tradeoffs to protect coldwater resources from warming (see Ecological Society of America Position Statement on Ecosystem Management in a Changing Climate). • The next EIS version must evaluate the affects of flows on river temperature in different channel morphologies. We challenge the unsubstantiated concept that water temperature is solely controlled by air temperature. Remember we are downstream from Windy Gap which receives enormous solar gain. • The next EIS version must evaluate temperatures in relation to any future TMDL for temperature on the Colorado River (see NWCCOG pre hearing comments on Temperature TMDL dated 5Jan09). • The next EIS version must model the cumulative effects of temperature + nutrients and BOD at different times of year and likely effects upon our water-wastewater system including permit compliance. For instance, how often are we likely to be forced into non-compliance with our permits due to the Moffat project? • The next EIS version must present the cumulative models in graphical form with acceptable ranges in water quality parameters to better inform the public how the Moffat proposal affects operations and why, for instance, our local taxpayers may have to spend more on capital improvements to deal with the lower flows and reduced water quality because of this project. **6) River Morphology** We rely on the Colorado River for municipal needs as well as recreation and are concerned that the river may now, as it presently flows, not have the natural resilience to withstand additional impacts. Our concern is that river is already on the verge of ecological collapse and the DEIS does not properly address river health in any reasonable way. The proponent-friendly surrogate of sediment transport does nothing to tell us about equilibrium conditions between the river and riparian corridor. We see reference to "Rosgen-style" analysis, but the studies do not complete the analysis and present data that is difficult to interpret. For instance, the data *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 7*	**Response #1032-3:** The proposed Moffat Project would not affect water rights that are senior to those owned by Denver Water. DEIS Section 3.1 presents Denver Water' conditional water rights for Gross Reservoir and the South Boulder Diversion Conduit in Table 3.1-1, the Moffat Tunnel and Meadow Creek Reservoir in Table 3.1-7, and the Gumlick Tunnel in Table 3.1-12. Denver Water's conditional water rights on Darling Creek, Webb Creek, and Middle and South Fork of the Williams Fork, which are conditional water rights for the possible future extension and enlargement of the Williams Fork Collection System, are also mentioned in DEIS Section 3.1. While conditional rights related to the Moffat Collection System are listed in Section 3.1, the DEIS does not state that the proposed Moffat Project would convert those conditional rights to "absolute rights" to generate new firm yield. The proposed Moffat Project would rely on Denver Water's existing absolute rights to divert additional water during runoff in average and wet years. Similar to other water right holders, Denver Water diverts water that is physically and legally available at their diversion points based on their decreed water rights subject to minimum bypass flows and calls from downstream senior water rights. Therefore, Denver Water's additional diversions under the Moffat Project would not impact senior water rights nor would Denver Water's conditional rights trump senior absolute water rights as suggested in the comment. PACSM was used to evaluate hydrologic effects associated other water users in the system. PACSM reflects other agricultural, municipal and industrial water users, including their water rights (decreed amounts and administration number) and demands. For example, municipal diversions in Grand and Summit Counties that are reflected in PACSM are listed in DEIS Table 5.4.

Comment Information	Comment	Comments and Responses
	for study area CR1 (DEIS Table 3.1-19) describe a river that is straight (sinuosity = 1) and over-wide (width/depth ratio greater than 90% of C3 rivers) (see Rosgen 1996). Studies show that a straight and over-wide river in not a healthy river. In fact, this morphology, plus the excessive sediment transport, put this reach well outside the "norm" of a healthy C3 river as we understand it. How can such abnormal river morphology be extrapolated to overall stream conditions and "negligible affects"? In fact this morphology goes a long way toward explaining high water temperatures and lack of overbank flows. Although the DEIS outlines the dynamics of surface water-groundwater interactions (page 3-84) and the importance of water-quality functions of wetlands (DEIS page 3-120), we were unable to find any serious modeling of how the proposed reduced flows would affect our vital river riparian corridor, including loss of cleansing wetlands (water quality functions) and other protective vegetation. • The next EIS version must re-evaluate all studies in the DEIS that are based upon flawed river evaluations founded primarily on excessive sediment transport. In, fact, C3 rivers are dynamic, meandering systems with active floodplains. They are only slightly entrenched and "*flows greater than bankfull stage* [recurrence interval 1-2 years] *overtop their streambanks and extend onto their floodplains*" (Applied River Morphology by Dave Rosgen, page 5-21). These macro-characteristics must be considered in any evaluation of stream health. • The next EIS version must include a full description of river morphology at a statistically representative number of locations. This must include standard parameters such as entrenchment, extent of overbank flows, width/depth ratios, and riffle-pool sequence and graphical presentation of how these parameters compare to normal (using the proper use of the term) C3 rivers. • The next EIS version must address the existing, cumulatively affected river channel and effects upon the local ranching community. How will the existing ranch diversions respond to reduced flows and will ranchers be expected to pay the cost of modifying in-stream structures? How many ranchers will be forced to use pumps rather than gravity-fed diversions? • The next EIS version must include consideration of numerous local river studies and restoration efforts, including Grand County's Stream Management Plan, with assessments of success and cost-effectiveness. • The next EIS version must include target parameters that would guide future river restoration back toward a healthy river in equilibrium with its riparian corridor. This must include dimensionless variables including width/depth ratio, flood prone width/bankfull width (entrenchment), and riffle-pool spacing. **7) Floodplains and Groundwater Recharge** *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 8*	The majority of the water rights included in the 2008 Draft GCSMP are reflected in PACSM, however, some of the smaller rights were not modeled explicitly. While some smaller rights are not modeled explicitly in PACSM, their effect on flows was considered in the development of natural flows. This approach is reasonable when the operations and diversions associated with those rights are not expected to change. PACSM determines whether water rights are in or out of priority based on the amount of water physically and legally available to each right. Table 5.4 demonstrates the impact of the proposed Moffat Project on Grand and Summit County municipal and industrial diversions including Hot Sulphur Springs. These impacts are associated with additional diversions under Denver Water's absolute water rights. Shortages to Grand County water users would occur during dry years and winter months, which are times when the proposed Moffat Project would not divert additional water. The only additional shortages expected to occur due to the Proposed Action are for Grand County Water and Sanitation District. The additional average annual shortage of 6 AF of water for one water provider with a Moffat Project on-line is addressed in FEIS Chapter 5. This incremental shortage represents a small contribution to the total effects. Overall, the ability of Grand County water providers to meet future customer demand would not be impacted by additional Denver Water diversion from the Fraser River or Williams Fork Rivers that would occur under the Proposed Action. The impact of the No Action alternative on other water rights was included in FEIS Section 4.6.1.6. Denver Water's Moffat Project and the No Action alternative would impact the WGFP. The Moffat Project would reduce Windy Gap pumping by approximately 500 AF.

Comment Information	Comment	Comments and Responses
	We are pleased to see the DEIS recognize the importance of river-riparian interactions (page 3-117) but are concerned that the document only makes general observations of impacts to groundwater elevations and increased gradients toward streams (DIFS page FX-25). In fact, Robert Hirsch, Chief Hydrologist for the US Geological Survey wrote in 1998: *"effective land management requires a clear understanding of the linkages between ground water and surface water as it applies to any given hydrologic setting…Effective policies and management practices must be built on a foundation that recognizes that surface water and ground water are simply manifestations of a single integrated resource"* (US Geological Survey Circular 1139 Ground Water and Surface Water, A Single Resource). The Fraser/Colorado River corridor floodplain possesses significant natural values that carry out numerous functions important to the public interest (See 33 CFR Part 320.4 (l)) including a) water resource values, b) living resource values, c) cultural resource values, and d) cultivated resource values. Our concern is that the DEIS presents the indirect effects of further dewatering of our floodplains by the proposed Moffat Project as constituting minor changes when in fact the project can lead to significant degradation of floodplain values and functions and increased potential harm for downstream activities (see Presidential Executive Order 11988). In fact, we already see the dramatic effects of trans-mountain diversions. We can only expect the continued and increased trans-mountain diversions will drain additional riparian areas and other valley bottom areas including local hay fields. Yet the DEIS minimizes these effects with no technical reasons, analysis or substantiations. Here the DEIS borders on being flippant! (DEIS page 4-77). ToHSS residents and neighbors including 4th generation ranchers with senior water rights deserve to know how the project will affect their day-to-day operations (see concern #2 Water Rights above) We know that recent studies show that even small changes in groundwater elevations could dewater root zones of wetland vegetation and hay fields, the latter of which would require additional irrigation to maintain vegetative health and possibly trigger additional cumulative effects. • The next EIS version must include detailed studies of surface water – groundwater interactions throughout the Fraser-Colorado River corridor from at least the Denver Water diversions near Winter Park to the downstream boundary of Grand County. • The next EIS version must present a clear model showing groundwater-surface water interactions. • The next EIS version must analyze the cumulative effects of reduced river flows on all valley floor habitats, including Pioneer Park, as far as flows are expected to be measurable (Kremmling? Radium?). • The next EIS version must map and model groundwater in three dimensions throughout the project area (Winter Park to Kremmling) and identify areas predicted to experience various drops *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 9*	***Comment #1032-28*** *(ID 1291)**:*** *Sustainability and Conservation We are pleased to see that Denver Water has put in place conservation measures resulting in a 21% drop in water use (DEIS page 1-13), which reduces their overall need for new water sources. However, we understand certain California municipalities with longer lawn-growing seasons have recently achieved reductions of up to 50% (Water Efficiency Magazine Winter 2009). We wonder why Denver Water cannot pursue a similar goal. • The next EIS version must address conservation in both the Purpose and Need and Alternatives Sections along with economic analyses of cost effectiveness ("conservation potential of various alternatives" in 40CFR 1502.16 (e)). USACE policy requires the "efficient use of water resources in all actions which involve the significant use of water or that significantly affects the availability of water for alternative uses including opportunities to reduce demand and improve efficiency in order to minimize new supply requirements (33 CFR 320.4 (m). • USACE should prioritize conservation as the "low-alteration strategy" to preserve natural ecosystem function (see Ecological Society of America Position Statement on Ecosystem Management in a Changing Climate dated January 2010). Indeed, we suspect that an aggressive conservation campaign could be the most cost-effective way for Denver Water to meet their future water needs without this firming project. • The next EIS version must include evaluation of the measures put in place in 2002 that resulted in significant water conservation in Denver. Which of these measures could be put in place permanently and what are the ramifications of those measures to the Denver water users? • The next EIS version must address the ever-expanding Denver Water service area and how this plays into the project purpose and need. Denver Water should not be allowed to continually increase the size of their service area; thereby increasing their need for water.*

Comment Information	Comment	Comments and Responses
	in groundwater elevation. Which areas would no longer support wetland vegetation? Which areas would no longer support hay grasses? Which areas will require additional irrigation to support a viable hay crop? • The next EIS version must offer enough groundwater mapping detail to support an assessment of socioeconomic effects upon our already stressed local ranching community who rely on irrigation for their livelihood. Many of these neighbors hold senior water rights to Denver Water. • The next EIS version must analyze the cumulative effect of ranchers having to divert more water from the rivers in order to make up for these groundwater losses. • The next EIS version must also analyze the effects on river bank vegetation from reduced groundwater elevations. What would this do to riverbank stability? How many more banks will begin caving into the river with lost riparian vegetation? • The USACE should deny any Moffat project alternatives that do not honor Presidential Executive Order 11988 by evaluating practicable alternatives to dewatering our floodplains. **8) Riparian Vegetation Including Wetlands** The Fraser/Colorado River riparian corridor includes wetlands with important functions important to the public interest including a) wetlands that offer natural biological functions, b) wetlands that offer valuable storage areas for flood waters, groundwater recharge/discharge, and maintain minimum base flows, c) wetlands that offer significant water purification, and d) wetlands that are increasingly scarce in this region (See 33 CFR Part 320.4 (b). This river corridor already shows evidence of wetland loss. Extensive areas that were once wetlands (hydric soils) are now perched and dry above depleted groundwater elevations. Vegetation patters in our Pioneer Park show old river channel paths, now perched, support only mesic vegetation. Other areas that were once productive agricultural land are now dry, supporting only sage and sparse grasses. We are particularly concerned for the health of our majestic cottonwood gallery woodland and flanking wetland areas. Although the DEIS presents the Moffat Project as a minor alteration with minor changes to our rivers, the cumulative effect of this and other piecemeal changes could result in a major impairment of wetland resources. • The next EIS version must re-evaluate the conclusion of only minor project impacts to a few acres of wetland at Gross Reservoir (DEIS Page ES-28). In fact we believe the indirect affects could include loss of hundreds of acres of wetlands in the Fraser-Colorado River headwaters in addition to thousands of acres already lost due to 60% diversions on-going now. *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 20, 2010 • Page 10*	*The USACE must balance the needs of Front Range developers and new bluegrass lawns against the needs of progressively water-starved Grand County. • The next EIS version must include a discussion of how Denver Water's corporate structure could be changed in order to better support conservation. We understand that aggressive conservation measures in the early part of the last decade led to significant water savings but this in turn affected Denver Water's "bottom line", which is unfair and counterproductive. Denver Water customers should be applauded and compensated for conservation not penalized. • The next EIS version must include an evaluation of other institutional drivers for water waste including local municipalities in the Denver Water service area that require thirsty bluegrass lawns. Should bluegrass remain an option with more sophisticated watering technology now readily available in the conservation/landscaping market? • The next EIS version Proposed Action must include lining all Denver Water ditches on both West and East slopes. How much water is wasted on seepage from these ditches and how much could be conserved? • The next EIS version must include at least one alternative that addresses all possible conservation measures and how this would reduce the need for additional firm yield. • The next EIS version must recognize that there are unresolved conflicts as to the best use of the water resource, and should seriously evaluate conservation as an alternative method to accomplish Denver Water's objective of 18,000 acre feet firm yield. • Finally, the next EIS version must present a firm-yield target less than 18,000 acre feet based upon increased conservation targets.* **Response #1032-28:** The purpose of the proposed Project is to provide water for Denver Water's existing customers and contractual agreements, not to allow Denver Water to expand its service area. Additionally, under the CRCA, Denver Water has agreed to a CSA (FEIS Section 4.3).

Comment Information	Comment	Comments and Responses
	• The next EIS version must evaluate the effects of reduced flows and groundwater elevations on specific plant communities including wetlands, especially the 833 acres of Riparian Herbaceous Vegetation along the Colorado River that would be predicted to become partially dewatered (Table 3.6-7 on DEIS page 3-141). How much of this wetland community would be forced from obligate/perennially saturated species toward facultative/seasonally saturated species? What about facultative wetland species that would become toward mesic uplands? • The next EIS version must include determination of "*Significant Nexus*" for all adjacent wetlands to better understand the project impacts to waters of the US (see USACE Jurisdictional Determination Form Instructional Handbook dated 30May07). • The next EIS version must make a reasonable estimate of actual wetland losses due to indirect and cumulative effects and include these wetland losses in the permitted totals to be fully mitigated under Clean Water Act Section 404 regulations. • The next FIS version must direct West Slope wetland losses to be fully mitigated along the Fraser and Colorado Rivers in such a way as to restore river-riparian health, in particular groundwater recharge and water quality functions. • The next EIS version must evaluate the wildlife habitat losses associated with indirect and cumulative wetland losses and evaluate these loses in context of CDOW wildlife goals for viability and connectivity. • The next EIS version must evaluate the effects to the Colorado River Flyway including migratory songbirds, waterfowl, birds of prey, and bald eagles. What are the programmatic implications of these losses? What about the international implications? **9) Fishing and Other Outdoor Recreation** ToHSS has made significant investments in the Colorado River at our Pioneer Park in partnership with Great Outdoors Colorado, USEPA/Colorado Department of Public Health and Environment, National Fish and Wildlife Foundation, Colorado Division of Wildlife, USACE, Natural Resources Conservation Services, and the Grand County Board of County Commissioners, among others. Our obvious concern is that the proposed reduced flows will affect our local fishery habitat value but we were unable to find information about our local fishery even though extensive data is available at our local office of the Colorado Division of Wildlife just outside ToHSS. Study area CR1 may not have any deep pools but our Pioneer Park does. We see that the DEIS models reduced river flows but we are unable to find any usable extrapolation toward actual effects upon our local fishery both in terms of water quality (temperature, nutrients, etc) and habitat availability (especially riffle/pool depth, shading, and connectivity). Instead we are offered unsubstantiated arguments of "*no changes to water quality or channel geomorphology...that would affect fish or other aquatic biological resources*" (DEIS page ES-32-33). *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 11*	As shown in FEIS Table 1-1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs.

Comment Information	Comment	Comments and Responses
	The DEIS states that "*habitat relationships* (in the Colorado River) *indicate the highest habitat availability for most life stages of trout at flows from approximately 200 to 600 cfs*" (DEIS pg 3-240) yet flows in the Colorado River in Pioneer park are below these numbers for most of the year and the proposed action will result in even lower flows. How can this support negligible affects? • The next EIS must re-evaluate the conclusion of no impacts upon fishing in the Colorado River at Pioneer Park. Most reasonable people would expect the cumulative effects to be significant, even disastrous. What do we know about an ecosystem crash in the Colorado River? • The next EIS must evaluate riffle-pool characteristics in our river reach and predict changes in water depths and temperatures at different time of the year. Such information could then be used to predict changes in fishery habitat and loss of fishery value including our 2002-2009 river restoration areas. • The next EIS must give us enough clear detail for a reasonable prediction of changes to existing habitat. Which pools would become disconnected by shallower riffles? How many children will lose their favorite fishing holes? • The next EIS must predict the extent of channel bed that will become choked with algae and other water plants due to shallow flows. We have seen that channel areas less than 18 inches deep tend to be covered in vegetation, covering aquatic macroinvertebrate habitat. • The next EIS must provide guidelines for restoration of a viable river channel with normal C3 characteristics critical to a quality fishery including off channel habitat, overbank flows, food chain support, riffle-pool spacing and ratios, cover, and instream structure. • The next EIS must provide a realistic evaluation of the fishery in Pioneer Park and risks from the proposed action upon the fishery. Will we be forced to return grant funding because we failed to protect our river project areas? **10) Socioeconomics** The DEIS rightly points to the importance of water-based recreation on our local economy (page 3-330) including fishing, camping, and other outdoor recreation in the riparian corridor. This is of course one of the reasons we and our agency partners have invested so heavily in Pioneer Park. The DEIS presents a convoluted argument of no socioeconomic impacts based upon conclusions of no impacts upon boating and fishing in the Colorado River. We would be pleased if this were the case but, as discussed above, have no confidence in the technical merits of the argument. Tourism is critical to our small town and our residents are concerned that the Moffat project will devastate local businesses. In addition, we believe that the cost of a new wastewater treatment plant *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 12*	Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities.

Comment Information	Comment	Comments and Responses
	would be crippling for our small town. We believe that the Moffat project would have unacceptable adverse effects on our municipal water supplies, fishery areas, and recreational areas (See 33 CFR Part 230.2 (f) and 40 CFR Part 230). • The next EIS version must re-evaluate the conclusion that there will be no socioeconomic impacts upon boating and fishing and related businesses here in ToHSS. Most reasonable people see that lowering the flows in the Colorado River will have impacts upon boating, rafting, and fishing as well as other day uses and camping. • The next EIS version must evaluate the project costs of reduced flows and water quality on our newly installed water intake system and soon-to-be installed water filter. • The next EIS version must evaluate the project costs of reduced flows and water quality upon our wastewater system including dilution factors in the Colorado River. We should have a realistic idea of how often we will be forced into violation of our CDPHE permit and the cost of remedying the low-flow situations. • The next EIS version must make realistic predictions of water quality at various times of Moffat project buildout so that we can begin engineering and financing additional wastewater treatment. • The next EIS version must analysis the costs of restoring river and riparian habitats lost in Pioneer Park, including jurisdictional wetlands. • The next EIS version must analyze the loss of business and employment due to reduced fishing opportunities, day use, and camping in Pioneer Park. **11) Environmental Justice** ToHSS is a small town of 625 residents, many of whom are blue-collar workers commuting to work in larger towns. Our water/wastewater rate structure has been raised 50% in the last few years in order to catch up on infrastructure needs including paying off debt. We do not have the resources to pay attorneys and Front-Range consultants to press our arguments in this NEPA process. We are deeply concerned that we will be held responsible under our CDPHE permits for the reduction in dilutions and temperature-stabilizing flows. The cost of remedying these impacts, imposed upon us by larger more affluent Front Range communities, would be enormous for our small town. We are also deeply concerned for our local ranching community, many of whom live in our town. The cumulative effects of reduced flows and groundwater elevations could have a crippling effect on irrigation needs and operations. • The next EIS version must make a full analysis of the comparative economic effects between Front Range beneficiaries and those of us in Grand County who will bear the cost burdens. *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 13*	***Comment #1032-4*** *(ID 1292)**:*** *River/Stream Flows We are concerned that reduced flows in the Colorado River will have enormous consequences on our town property and residents. The DEIS is inconsistent, with different proportions of predicted depleted flows in different parts of the document, then unsubstantiated extrapolations to other resources. Part of the technical argument is based upon historic flows at Hot Sulphur Springs through 1994 (DEIS Figure 3.1-3). This graphic does give the reader a sense of flows at different times including our water/wastewater operators who must monitor flows for operations. But the discussion changes from daily flows to average annual yield at Kremmling (DEIS page ES-18). This is a good example of what we see as "proponent-friendly surrogates" that prevent ToHSS from understanding real affects upon our river reach. In another example, Table 3.1-14 presents various existing depletions as measured at Windy Gap between 1985 and 2004 but the total existing depletion (a whopping 62%) is buried in the text on page 3-38. This pattern of obfuscation only makes the document unusable for decisionmakers (see concern #1 above). • The next EIS version must be based upon conservative long term climate models and river flows, then present consistent hydrologic models in plain language that help us understand the actual affects upon flows in the river on a reasonable time scales of value to water/wastewater plant operators.* **Response #1032-4:** Streamflow data is presented in multiple formats (daily, monthly and annual) and locations in DEIS Section 3.1 to accurately describe existing flow conditions. Graphs of annual and average monthly flow in the Colorado River immediately downstream of the Windy Gap diversion dam and near Kremmling present the variability in flow during the year and changes in flow over time from 1975 through 2004.

Comment Information	Comment	Comments and Responses
	• The next EIS version must evaluate the specific cost ratios to Denver Water customers versus our local water/wastewater customers. The Moffat Project gives Denver Water an unfair engineering and legal advantage over Grand County water users. • The next EIS version must evaluate the cost-benefits of East Slope recreational opportunities versus our local losses in recreational opportunities. • Finally, the next EIS version must evaluate the costs to our local ranching community in terms of needed infrastructure (headgates and diversions that will need modification to honor their senior water rights) and additional time that would be needed to irrigate fields. Why should 4th-generation ranchers pay for Front Range convenience? Why is Denver bluegrass more important than Grand County hay? **12) Mitigation** The DEIS mitigation plan reflects a fatal underestimate of project impacts. We believe that an honest assessment of project impacts will drive vastly increased mitigation for the numerous impacts to flows, water quality, water temperature, groundwater, wetlands, ranching, fishing, boating, socioeconomics, and environmental justice. We agree to the need for water quality monitoring and reasonable bypass during times of exceedences (DFIS page M4), but we question the focus on worst case situations such as extreme low flows, temperatures warm enough to kill trout and species of concern. This supports our fears that increased trans-mountain diversions will push conditions past certain unpredictable thresholds and devastate us with massive fish kill and septic river conditions. • The next EIS version must present realistic mitigation plans that help the proponent meet legal requirement to avoid, minimize, rectify, reduce, and compensate for lost resource values (40CFR 1508.20). • The next EIS version must include a practicable mitigation plan to replace lost aquatic resource functions with a minimum 1:1 ratio for all wetlands lost by indirect affects (40 CFR Part 230 Section 332.3 (f)). • The next EIS version must place high priority on restoring and rehabilitating aquatic functions in the river channels and riparian wetlands (40 CFR Part 230 Section 332.3 (a) (1)), using a watershed approach (40 CFR Part 230 Section 332.2 (b) (4)). • The next EIS version Mitigation Plan must include the real cost of fully mitigating cumulative effects upon the Fraser and Colorado Rivers. Since the primary river impacts are from historic and ongoing trans-mountain depletions, it is only reasonable that these newly proposed *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 14*	Figure 3.1-2 presents the average annual flow at Hot Sulphur Springs from 1904 through 1994 to demonstrate the effects of transbasin diversions and increased water use over time. Figure 3.1-3, which presents average daily historical flow at the Colorado River at the Hot Sulphur Springs gage for the period prior to the existing Moffat Collection System and after the existing Moffat Collection System came on-line, demonstrate the effects of transbasin diversions and increased water use over time within the year. The information presented in Table 3.1-14 is presented in the text on page 3-38 of the DEIS. A paragraph was devoted to explaining and presenting the information included in that table, therefore, the information is not buried in the text as suggested in the comment. Information presented in DEIS Chapter 3 describes the affected environment, whereas information in DEIS Chapter 4 presents the hydrologic effects of the proposed Moffat Project. Streamflow information included in DEIS Section 4.1 is presented in multiple formats (daily, monthly and annual) to display the frequency, magnitude and timing of flow changes anticipated with the Moffat Project on-line. The Executive Summary provides a summary of the entire document; therefore, the information included in that section is more broad and general than what is included in the individual chapters of the EIS. The Stream Flows section of the Executive Summary presents average annual flow data to provide a general understanding of the magnitude of flow change anticipated at various locations. That level of detail is appropriate for the Executive Summary. More detailed daily and monthly stream flow data is presented in DEIS Chapters 3 and 4.

Comment Information	Comment	Comments and Responses
	diversions are mitigated to such an extent that the rivers are restored to full viable equilibrium, especially water quality functions. • The next EIS version must include monitoring in perpetuity and contingency plans paid for in advance in an escrow account placed in a local Grand County bank. • The next EIS version Mitigation Plan must present a detailed summary of all impact costs that would be forced upon ToHSS and how those costs would be fully borne by the project proponent, including contingencies in an escrow account. • The next EIS version Mitigation Plan must include contingencies and monitoring milestones that clearly alert West Slope water providers when mitigation efforts are not reaching goals and leaving ToHSS at increased risk. • Finally, the next EIS version Mitigation Plan must present, in plain language, how the mitigations will reduce project impacts upon ToHSS. **Looking Forward** It is possible that we have missed key data in the DEIS due to its ponderous size, encyclopedic presentation, and lack of clear analysis. If so we apologize and ask you to point us toward some of the answers we seek. Looking forward, we would be pleased to work with USACE and Denver Water to address these concerns and suggest you contact our local NEPA consultant Grand Environmental Services (970-627-5464) for further discussion. Thank you for the opportunity to comment on the Moffat DEIS, Sincerely, Mayor Hershal Deputy Hot Sulphur Springs *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 15*	***Comment #1032-22*** *(ID 1293)**:*** • *The next EIS version must analyze the cumulative effects of all "past, present, and reasonably foreseeable future actions" (40CFR 1508.7) upon the Colorado River. Indeed, we already experience 60% reductions in river flows and are very concerned the additional proposed flows will be cumulatively crippling to the river. Graphical presentations must include a comparison of ALL trans-mountain diversions, historic, present, and proposed.* • *The next EIS version must analyze the cumulative effects of past, present, and proposed Windy Gap diversions on the Colorado River (See for instance Page 4 of Considering Cumulative Effects Under the National Environmental Policy Act by the Council on Environmental Quality, Executive Office of the President dated January 1997).* • *The next EIS version must extend analysis as far downstream as effects can reasonably be traced, at least as far as the confluence with the Blue River in Kremmling.* • *The next EIS version must expand analysis to include the effects upon other diversions along the river such as ranchers with senior water rights to Denver. Such models could then support mitigations such as assisting ranchers with re-fitting headgates to deal with incrementally lower flows.* • *The next EIS version must expand analysis laterally to evaluate impacts to shallow aquifers in riparian zones including ranchlands.* • *The next EIS version must then integrate the cumulative effects upon water flows into all subsequent modeling and discussion of water quality, groundwater, riparian vegetation, fisheries, socioeconomics, environmental justice, and mitigation.*

Comment Information	Comment	Comments and Responses
	Distribution: Scott Franklin, US Army Corps of Engineers Gary Bumgarner, Grand County Commissioner Mely Whiting, Trout Unlimited Senator Mark Udall c/o Matt Sugar Kirk Klancke, East Grand Water Quality Board Lane Wyatt, Northwest Colorado Council of Governments Geoff Elliott, Grand Environmental Services *Town of Hot Sulphur Springs • Moffat DEIS Comment Letter • January 28, 2010 • Page 16*	**Response #1032-22:** Cumulative Effects The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and RFFAs. The Section 404 regulations state that "cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1]). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions, and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions.

Comment Information	Comment	Comments and Responses
		Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. Past Actions CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo

Comment Information	Comment	Comments and Responses
		documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. The DEIS and FEIS evaluate Project impacts on the Colorado River from the Windy Gap Reservoir to the confluence of the Blue River. ***Comment #1032-30*** *(ID 1294)**:*** *River Water Quality We are concerned that reduced flows in the Colorado River will make our water and wastewater treatment more difficult in ToHSS and perhaps drive us into violation of our permits with the Colorado Department of Public Health and Environment (CDPHE). As discussed above in Concern #4, the DEIS offers no reasonable modeling of flows in our reach of the Colorado River other than general reductions from 7-29%. We know that flow reductions of this magnitude would reduce our discharge dilutions to dangerous levels for our operations. These flow reductions would certainly be noticeable by local anglers as well as children playing in the river during warm summer months. We are now investing ARRA/Stimulus funds into our drinking water infrastructure which includes our town taking on significant debt. The DEIS predicts increased water temperatures and increased concentration of nutrients at upstream wastewater treatment plants but somehow concludes negligible to minor impacts to water quality in the Colorado River. This dangerously unsubstantiated claim gives us no way to actually understand how the proposed changes would affect our daily operations in ToHSS or how we would be expected to engineer our own solutions. Our wastewater treatment plant, which is operated under CDPHE permit, is not recognized in parts of the DEIS*

Comment Information	Comment	Comments and Responses
		(compare for instance DEIS page 3-42 versus page 4-75) and we were generally unable to find any usable predictions of changes in water quality in our reach of the river at particular times of year. It is thus impossible for us to understand how the proposed action would affect our day-to-day operations or how the document concludes "no change with regards to WWTPs and their discharges" (page 4-75). **Response #1032-30:** FEIS Sections 3.2, 4.6.2, and 5.2 have been modified for inclusion of Hot Sulphur Springs' water and wastewater. Existing problems with the water (CDPHE Enforcement Order in 2008) and wastewater (CDPHE Cease and Desist Order in 2010) treatment plants are not the result of the proposed Project. Additional water quality analysis has been performed for the Colorado River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1032-20*** *(ID 1295)**:*** *The next EIS version must model the cumulative effects of increased diversions, including Moffat and NCWCD Windy Gap Firming Projects, upon water quality in the Colorado River in ToHSS and operations of our water-treatment and wastewater-treatment plants.* **Response #1032-20:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface

Comment Information	Comment	Comments and Responses
		water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the Colorado C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #1032-29*** *(ID 1296)**:*** *The next EIS version must evaluate impacts and compliance with all applicable effluent limitations on water quality standards (33 CFR Part 320.4 (d). • The next EIS version must consider the past and present patterns of significant algal blooms and effects upon biological oxygen demand (BOD) in the river and our water-wastewater system. We already see an overabundance of algae now, how much will this increase and when will we be subjected to a septic river and fish kills?* **Response #1032-29:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1032-21*** *(ID 1297)**:*** *USACE must protect water quality and quantity by evaluating long-term sustainability of our water resources including what may be painful social tradeoffs to protect coldwater resources from warming (see Ecological Society of America Position Statement on Ecosystem Management in a Changing*

Comment Information	Comment	Comments and Responses
		Climate). **Response #1032-21:** The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little

Comment Information	Comment	Comments and Responses
		quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, “In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation.” The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation planning document titled, Addressing Climate Change in Long-Term Water Resources

Comment Information	Comment	Comments and Responses
		Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate. ***Comment #1032-31*** *(ID 1298)**:*** *The next EIS version must evaluate the affects of flows on river temperature in different channel morphologies. We challenge the unsubstantiated concept that water temperature is solely controlled by air temperature. Remember we are downstream from Windy Gap which receives enormous solar gain.* *The next EIS version must evaluate temperatures in relation to any future TMDL for temperature on the Colorado River (see NWCCOG pre-hearing comments on Temperature TMDL dated 5 Jan 09).* **Response #1032-31:** Additional water quality analysis was performed on the Colorado River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1032-23*** *(ID 1299)**:*** *The next EIS version must model the cumulative effects of temperature + nutrients and BOD at different times of year and likely effects upon our water-wastewater system including permit compliance. For instance, how often are we likely to be forced into non-compliance with our permits due to the Moffat project? • The next EIS version must present the cumulative models in graphical form with acceptable ranges in water quality parameters to*

Comment Information	Comment	Comments and Responses
		better inform the public how the Moffat proposal affects operations and why, for instance, our local taxpayers may have to spend more on capital improvements to deal with the lower flows and reduced water quality because of this project. **Response #1032-23:** Water treatment costs are dependent on removing contaminants to meet drinking water standards. The Fraser River Basin is well within these standards and costs of water treatment would not be expected to change as a result of the Project. Additional water quality analysis has been performed on the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. Potential future requirements for wastewater treatment would be influenced by many factors. Currently, wastewater treatment permits are developed based on low flows; which have been estimated and are discussed in FEIS Sections 4.6.2 and 5.2. Additionally, the proposed Project would not divert water during low flow periods and minimum bypass requirements would not be changed. ***Comment #1032-6*** *(ID 1300)**:*** *River Morphology We rely on the Colorado River for municipal needs as well as recreation and are concerned that the river may now, as it presently flows, not have the natural resilience to withstand additional impacts. Our concern is that river is already on the verge of ecological collapse and the DEIS does not properly address river health in any reasonable way. The proponent-friendly surrogate of sediment transport does nothing to tell us about equilibrium conditions between the river and riparian corridor. We see reference to "Rosgen-style" analysis, but the studies do not complete the analysis and present data that is difficult to interpret. For instance, the data for study area CR1 (DEIS Table 3.1-19) describe a river that is straight (sinuosity = 1)*

Comment Information	Comment	Comments and Responses
		and over-wide (width/depth ratio greater than 90% of C3 rivers) (see Rosgen 1996). Studies show that a straight and over-wide river in not a healthy river. In fact, this morphology, plus the excessive sediment transport, put this reach well outside the "norm" of a healthy C3 river as we understand it. How can such abnormal river morphology be extrapolated to overall stream conditions and "negligible affects"? In fact this morphology goes a long way toward explaining high water temperatures and lack of overbank flows. Although the DEIS outlines the dynamics of surface water-groundwater interactions (page 3-84) and the importance of water-quality functions of wetlands (DEIS page 3-120), we were unable to find any serious modeling of how the proposed reduced flows would affect our vital river-riparian corridor, including loss of cleansing wetlands (water quality functions) and other protective vegetation. • The next EIS version must re-evaluate all studies in the DEIS that are based upon flawed river evaluations founded primarily on excessive sediment transport. In, fact, C3 rivers are dynamic, meandering systems with active floodplains. They are only slightly entrenched and "flows greater than bankfull stage [recurrence interval 1-2 years] overtop their streambanks and extend onto their floodplains" (Applied River Morphology by Dave Rosgen, page 5-21). These macrocharacteristics must be considered in any evaluation of stream health. • The next EIS version must include a full description of river morphology at a statistically representative number of locations. This must include standard parameters such as entrenchment, extent of overbank flows, widthldepth ratios, and riffle-pool sequence and graphical presentation of how these parameters compare to normal (using the proper use of the term) C3 rivers. **Response #1032-6:** Values listed for sinuosity are calculated for the limited reach length where the detailed survey and

Comment Information	Comment	Comments and Responses
		sediment sampling was completed and therefore should not be compared with typical sinuosity values based on extended stream segments. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic data, sensitivity analysis of sediment supply and sediment transport equations and an assessment of transport capacity by substrate particle size. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The concern that the river and riparian corridor is "on the verge of ecological collapse" is not supported by data collected for the GCSMP. The Phase 3 Stream Management Plan for Grand County provides a detailed assessment of stream conditions by stream segment for the Colorado River and other rivers in Grand County. For the segments from the Fraser River confluence to the Blue River confluence, the lower part of Segment 3 and Segments 4 and 5 are rated suboptimal (the second highest of four ranks) by the Stream Reach Inventory and Channel Stability Evaluation (SRI/CSE) method and good (the second highest of four rankings) by the EPA Rapid Assessment Protocol. Segment 6, from the KB Ditch to the Blue River confluence, is rated lower, marginal by the SRI/CSE method and fair by the EPA method. Ratings for bank stability range from suboptimal to optimal in the four segments, while ratings for riparian vegetation cover and disturbance and riparian vegetation zone width were generally in the suboptimal range.

Comment Information	Comment	Comments and Responses
		The DEIS analyzed impacts to riparian and wetland areas along the river segments using modeling of 2-year flow changes at study sites and evaluation of groundwater changes. The FEIS includes additional analysis of groundwater, and evaluation of changes in flood flows at greater than 2 year intervals. ***Comment #1032-24*** *(ID 1301)**:*** *The next EIS version must address the existing, cumulatively affected river channel and effects upon the local ranching community. How will the existing ranch diversions respond to reduced flows and will ranchers be expected to pay the cost of modifying in-stream structures? How many ranchers will be forced to use pumps rather than gravity-fed diversions?* **Response #1032-24:** The West Slope agricultural economies were further addressed in FEIS Section 5.19. ***Comment #1032-34*** *(ID 1302)**:*** *The next EIS version must include consideration of numerous local river studies and restoration efforts, including Grand County's Stream Management Plan, with assessments of success and cost-effectiveness.* **Response #1032-34:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). ***Comment #1032-11*** *(ID 1303)**:*** *The next EIS version must include target parameters that would guide future river restoration back toward a*

Comment Information	Comment	Comments and Responses
		healthy river in equilibrium with its riparian corridor. This must include dimensionless variables including width/depth ratio, flood prone width/bankfull width (entrenchment), and riffle-pool spacing. **Response #1032-11:** Please see the response to Comment ID 1313. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. In addition, Denver Water, in collaboration with the Municipal Subdistrict NCWCD, developed a voluntary Fish and Wildlife Enhancement Plan to improve the existing aquatic habitat in approximately 14 miles of the Upper Colorado River from Windy Gap to the Kemp-Breeze State Wildlife Area. The Fish and Wildlife Enhancement Plan will be implemented through an Intergovernmental Agreement with CPW. Denver Water has also committed to future stream restoration projects in Grand County through the cooperative effort called LBD. Both of these efforts are described in more detail in FEIS Section 4.3.1. ***Comment #1032-9*** *(ID 1304)**:*** *Floodplains and Groundwater Recharge We are pleased to see the DEIS recognize the importance of river-riparian interactions (page 3-117) but are concerned that the document only makes general observations of impacts to groundwater elevations and increased gradients toward streams (DIES page EX-25). In fact, Robert Hirsch, Chief Hydrologist for the US Geological Survey wrote in 1998: "effective land management requires a clear understanding of the linkages between ground water and surface water as it applies to any given hydrologic setting ... Effective policies and management practices must be built on a foundation that recognizes that surface water and ground water are simply manifestations of*

Comment Information	Comment	Comments and Responses
		a single integrated resource" (US Geological Survey Circular 1139 Ground Water and Surface Water, A Single Resource). **Response #1032-9:** Please see the response to Comment ID 1307. ***Comment #1032-5*** *(ID 1305)**:*** *The Fraser/Colorado River corridor floodplain possesses significant natural values that carry out numerous functions important to the public interest (See 33 CFR Part 320.4 [l]) including a) water resource values, b) living resource values, c) cultural resource values, and d) cultivated resource values. Our concern is that the DEIS presents the indirect effects of further dewatering of our floodplains by the proposed Moffat Project as constituting minor changes when in fact the project can lead to significant degradation of floodplain values and functions and increased potential harm for downstream activities (see Presidential Executive Order 11988).* **Response #1032-5:** The Presidential Executive Order 11988 states: “The term ‘floodplain’ shall mean the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.” Because annual peak flows do not change for the wettest years of the study period, the 100-year floodplain would not change. Furthermore, there would be no Project activity in the floodplain. ***Comment #1032-12*** *(ID 1306)**:*** *In fact, we already see the dramatic effects of trans-mountain diversions. We can only expect the continued and increased trans-mountain diversions will drain additional riparian areas and other valley*

Comment Information	Comment	Comments and Responses
		bottom areas including local hay fields. Yet the DEIS minimizes these effects with no technical reasons, analysis or substantiations. Here the DEIS borders on being flippant! (DEIS page 4-77). ToHSS residents and neighbors including 4th generation ranchers with senior water rights deserve to know how the project will affect their day-to-day operations (see concern #2 Water Rights above). We know that recent studies show that even small changes in groundwater elevations could dewater root zones of wetland vegetation and hay fields, the latter of which would require additional irrigation to maintain vegetative health and possibly trigger additional cumulative effects. **Response #1032-12:** The statement that the DEIS did not include technical analysis of effects to riparian areas is not correct. The DEIS analyzed impacts to riparian and wetland areas along the river segments using modeling of 2-year flow changes at study sites and evaluation of groundwater changes. The FEIS includes additional analysis of groundwater, and evaluation of changes in flood flows at greater than 2 year intervals. The analysis of impacts in the FEIS has been reorganized, and includes both an analysis of total environmental effects including effects of past actions (Section 4.6.8), and an analysis of Project effects (Section 5.8). We agree that small changes in groundwater elevations can affect vegetation composition in wetlands and hay fields. Information provided in the DEIS indicates there would be, at most, very small changes in the water table (groundwater level) directly beneath potentially affected stream segments. The amount of the water table changes would be similar to but less than the changes in stream levels caused by the Moffat Project. The largest changes in stream levels attributable to the

Comment Information	Comment	Comments and Responses
		Project would be very small, and would be in the upper parts of the Fraser River and the upper part of the Williams Fork watersheds directly downstream of the existing diversion structures. Further downstream along the Colorado River, changes in stream levels due to the Project would be even smaller. For the Colorado River below Hot Sulphur Springs, the Proposed Action is expected to result in flow decreases of 18% for average conditions and 13% for wet conditions when compared to Current Conditions (2006), and 0% for dry years. The proposed diversions would take place during the snowmelt runoff period in average and wet years; there would be not additional diversions in low flow seasons or during dry years. River level declines would be relatively small, and would occur during high runoff periods. In areas along the Colorado River and its tributaries in Grand County, the level of the water table is naturally supported by infiltration of precipitation and snowmelt in areas directly up gradient (uphill) from the river, as well as percolation of water through the streambeds where the surface water level is above the groundwater level. Irrigation water pumped from the Colorado and applied on hay meadows along the river also recharges the water table beneath those areas. Where groundwater levels are above the stream level, groundwater flows into the stream. Along the Colorado River downstream of the Fraser River confluence, groundwater flows toward and into the river. Local exceptions to this pattern exist where irrigation well pumping causes drawdown of the water table surrounding the pumping wells. Large capacity irrigation wells near the river have the potential to cause drawdown of groundwater levels next to the river, in which case this would remove some water from the river. Seasonal pumping of irrigation wells

Comment Information	Comment	Comments and Responses
		would continue to be a factor affecting the groundwater levels in that area. Drought conditions like in 2002 and prior years would also reduce groundwater levels throughout the region because there is much less recharge to the groundwater flow system during dry years. In summary, there would be no discernable effect on the water table in agricultural lands near the river caused by the Moffat Project because the river level declines would be limited to the high-runoff periods when snowmelt runoff flows are high in the West Slope streams. ***Comment #1032-8*** *(ID 1307)**:*** *The next EIS version must include detailed studies of surface water - groundwater interactions throughout the Fraser-Colorado River corridor from at least the Denver Water diversions near Winter Park to the downstream boundary of Grand County. • The next EIS version must present a clear model showing groundwater-surface water interactions.* **Response #1032-8:** The FEIS includes additional analyses of stream flow changes (including a conceptual model showing the relationships between groundwater and streams) in all of the potentially affected stream segments and tributaries to clarify the effects of the Moffat Project and other RFFAs. Additional groundwater data collected in the fall of 2010 was provided and described to further clarify the groundwater-surface water relationships downstream of Denver Water diversion points. The additional stream flow analyses were used with the new groundwater data to further assess the Project effects on groundwater, stream flow, wetlands, and wells along the Fraser River in FEIS Sections 4.6.4, 4.6.8, 5.4 and 5.8. ***Comment #1032-25*** *(ID 1308)**:*** *The next EIS version must analyze the cumulative effects of reduced river flows on all valley floor*

Comment Information	Comment	Comments and Responses
		habitats, including Pioneer Park, as far as flows are expected to be measurable (Kremmling? Radium?). **Response #1032-25:** The FEIS includes a general analysis of cumulative and Project effects of river flow changes on riparian and wetland areas along the river segments. The analysis area along the Colorado River includes Pioneer Park. Riparian areas are dynamic environments and changes in habitats over time can result from both natural and human causes. Natural events include movement of the river within its floodplain and natural succession. Human-caused changes, in addition to changes in river flows and floods from diversions, can occur from roads that may affect surface and shallow groundwater movement, changes in irrigation practices and ditch management, drainage and conversion of land from one use to another. ***Comment #1032-10*** *(ID 1309)**:*** *The next EIS version must map and model groundwater in three dimensions throughout the project area (Winter Park to Kremmling) and identify areas predicted to experience various drops in groundwater elevation. Which areas would no longer support wetland vegetation? Which areas would no longer support hay grasses? Which areas will require additional irrigation to support a viable hay crop? • The next EIS version must offer enough groundwater mapping detail to support an assessment of socioeconomic effects upon our already stressed local ranching community who rely on irrigation for their livelihood. Many of these neighbors hold senior water rights to Denver Water.* **Response #1032-10:** Please see the responses to Comment IDs 1304 and 1307.

Comment Information	Comment	Comments and Responses
		The conceptual hydrogeologic model of the groundwater and stream interactions includes areas expected to show declines in groundwater levels near Winter Park and downstream. Data from these detailed groundwater study sites show the elevations of groundwater levels relative to the stream levels and wetlands, and define flow directions between the groundwater and streams. Based on these data, FEIS Section 5.8 further evaluates the potential impacts of the Project to wetland vegetation and hay meadows along the river. ***Comment #1032-26*** *(ID 1310)**:*** *The next EIS version must analyze the cumulative effect of ranchers having to divert more water from the rivers in order to make up for these groundwater losses.* **Response #1032-26:** Minor reductions in stream levels attributable to the Project would likely cause only minor reductions in groundwater levels, which would be limited to areas immediately adjacent to the streams, downstream of the Denver Water diversion points in the upper Fraser River watershed. Effects on stream levels and groundwater levels would diminish with distance downstream of those points. Therefore, it is not anticipated that ranchers would need to divert more water as a result of the Moffat Project. Information provided in the DEIS indicates there would be, at most, very small changes in the water table (groundwater level) directly beneath potentially affected stream segments. The amount of the water table changes would be similar to but less than the changes in stream levels caused by the Moffat Project. Monitoring well data collected by the USGS from several wells in the Fraser River Valley show that groundwater levels have not declined, but rather have increased, since 1996. The largest changes in

Comment Information	Comment	Comments and Responses
		stream levels attributable to the Project would be very small, and would be in the upper parts of the Fraser River and the upper part of the Williams Fork watersheds directly downstream of the existing diversion structures. Further downstream along the Colorado River, changes in stream levels due to the Project would be even smaller. Streamflow changes and methodology used to estimate those changes are presented in DEIS Section 4.1. Along the Colorado River downstream of the Fraser River confluence, groundwater flows toward and into the river. Local exceptions to this pattern exist where irrigation well pumping causes drawdown of the water table surrounding the pumping wells. Large capacity irrigation wells near the river have the potential to cause drawdown of groundwater levels next to the river, in which case this would remove some water from the river. Seasonal pumping of irrigation wells would continue to be a factor affecting the groundwater levels in that area. Drought conditions like in 2002 and prior years would also reduce groundwater levels throughout the region because there is much less recharge to the groundwater flow system during dry years. In summary, there would be no discernible effect on the water table in agricultural lands near the river caused by the Moffat Project because the river level declines would be limited to the high-runoff periods when snowmelt runoff flows are high in the West Slope streams. ***Comment #1032-13*** *(ID 1311)**:*** *The next EIS version must also analyze the effects on river bank vegetation from reduced groundwater elevations. What would this do to riverbank stability? How many more banks will begin caving into the river with lost riparian vegetation?*

Comment Information	Comment	Comments and Responses
		Response #1032-13: The Project is not expected to have adverse effects to bank vegetation from groundwater declines. Information provided in DEIS Section 4.2 indicates there would be, at most, very small changes in the water table (groundwater level) directly beneath potentially affected stream segments. The amount of the water table changes would be similar to but less than the changes in stream levels caused by the Moffat Project. The largest changes in stream levels attributable to the Project would be very small, and would be in the upper parts of the Fraser River and the upper part of the Williams Fork watersheds directly downstream of the existing diversion structures. Further downstream along the Colorado River, changes in stream levels due to the Project would be even smaller. ***Comment #1032-7*** *(ID 1312)**:*** *The USACE should deny any Moffat project alternatives that do not honor Presidential Executive Order 11988 by evaluating practicable alternatives to dewatering our floodplains.* **Response #1032-7:** The Presidential Executive Order 11988 states: “The term ‘floodplain’ shall mean the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.” Because annual peak flows do not change for the wettest years of the study period, the 100-year floodplain would not change. Furthermore, there would be no Project activity in the floodplain. ***Comment #1032-14*** *(ID 1313)**:*** *Riparian Vegetation Including Wetlands The Fraser/Colorado River riparian corridor includes wetlands with important functions important to the*

Comment Information	Comment	Comments and Responses
		public interest including a) wetlands that offer natural biological functions, b) wetlands that offer valuable storage areas for flood waters, groundwater rechargeldischarge, and maintain minimum base flows, c) wetlands that offer significant water purification, and d) wetlands that are increasingly scarce in this region (See 33 CFR Part 320.4 (b). This river corridor already shows evidence of wetland loss. Extensive areas that were once wetlands (hydric soils) are now perched and dry above depleted groundwater elevations. Vegetation patters in our Pioneer Park show old river channel paths, now perched, support only mesic vegetation. Other areas that were once productive agricultural land are now dry, supporting only sage and sparse grasses. We are particularly concerned for the health of our majestic cottonwood gallery woodland and flanking wetland areas. Although the DEIS presents the Moffat Project as a minor alteration with minor changes to our rivers, the cumulative effect of this and other piecemeal changes could result in a major impairment of wetland resources. • The next EIS version must re-evaluate the conclusion of only minor project impacts to a few acres of wetland at Gross Reservoir (DEIS Page ES-28). In fact we believe the indirect affects could include loss of hundreds of acres of wetlands in the Fraser-Colorado River headwaters in addition to thousands of acres already lost due to 60% diversions on-going now. • The next EIS version must evaluate the effects of reduced flows and groundwater elevations on specific plant communities including wetlands, especially the 833 acres of Riparian Herbaceous Vegetation along the Colorado River that would be predicted to become partially dewatered (Table 3.6-7 on DEIS page 3-141). How much of this wetland community would be forced from obligate/perennially saturated species toward facultative/seasonally saturated species? What about facultative wetland species that would become toward mesic uplands? • The next EIS

Comment Information	Comment	Comments and Responses
		version must include determination of "Significant Nexus" for all adjacent wetlands to better understand the project impacts to waters of the US (see USACE Jurisdictional Determination Form Instructional Handbook dated 30 May 07). • The next EIS version must make a reasonable estimate of actual wetland losses due to indirect and cumulative effects and include these wetland losses in the permitted totals to be fully mitigated under Clean Water Act Section 404 regulations. • The next EIS version must direct West Slope wetland losses to be fully mitigated along the Fraser and Colorado Rivers in such a way as to restore river-riparian health, in particular groundwater recharge and water quality functions. • The next EIS version must evaluate the wildlife habitat losses associated with indirect and cumulative wetland losses and evaluate these loses in context of CDOW wildlife goals for viability and connectivity. **Response #1032-14:** A discussion of the functions of riparian areas has been added to FEIS Sections 3.8.5 and 5.8.1.2. Project-related changes in flows are expected to have minor effects on riparian zone functions. The FEIS includes a general analysis of cumulative and Project effects of river flow changes on riparian and wetland areas along the river segments. The analysis area along the Colorado River includes Pioneer Park. Riparian areas are dynamic environments and changes in habitats over time can result from both natural and human causes. Natural events include movement of the river within its floodplain and natural succession. Human-caused changes, in addition to changes in river flows and floods from diversions, can occur from roads that may affect surface and shallow groundwater, changes in irrigation practices and ditch management, drainage and conversion of land from one use to another.

Comment Information	Comment	Comments and Responses
		The analysis of impacts to riparian habitat included both direct losses of habitat from construction and inundation at Gross Reservoir (DEIS Section 4.6.1.1), and discussion of indirect impacts due to stream flow changes along the Fraser River and other rivers (DEIS Section 4.6.1.2). Impacts from lower flow levels cannot be measured in the same way as the direct impacts shown in Tables 4.6-1 and 4.6-3 of the DEIS and in most cases would involve a shift in vegetation type rather than loss or full conversion to upland. In the DEIS, impacts were evaluated based on changes in two year flows and changes in groundwater. The FEIS includes additional analysis of impacts to riparian vegetation from flow events of greater than 2 year return period. These results support a conclusion that impacts to riparian and wetland areas would generally be minor. Additional information has been added to FEIS Section 5.8 to address impacts to the riparian herbaceous vegetation communities along the Colorado River. The Project would have minor effects to these areas. A specific determination of “significant nexus” is not needed. Wetlands adjacent to perennial streams would be under the jurisdiction of Section 404 of the CWA, for the types of dredge and fill activities that are regulated. Changes in flow are not specifically regulated under the CWA. The analysis of wildlife habitats and wildlife species and groups along the river segments has been expanded in FEIS Section 5.9. The Corps conducted analysis in the Fall of 2010 to further evaluate the interactions of stream flow and groundwater on riparian and wetland areas in the Fraser Valley. The results of this analysis are included in FEIS Section 5.8.1.2. FEIS Section 5.8.1.2 also includes an expanded evaluation of the effects of changes in

Comment Information	Comment	Comments and Responses
		stream flows, including peak flows, on riparian and wetland areas. In general, new analysis conducted by the Corps in Fall 2010 concluded that the riparian zones in the Project area would experience negligible to minor effects. ***Comment #1032-15*** *(ID 1314)**:*** *The next EIS version must evaluate the effects to the Colorado River Flyway including migratory songbirds, waterfowl, birds of prey, and bald eagles. What are the programmatic implications of these losses? What about the international implications?* **Response #1032-15:** An analysis of impacts to these groups of species along the river segments has been added to the wildlife analysis in FEIS Section 5.9. Small reductions in the availability of habitat would not have programmatic or international implications to the flyway. ***Comment #1032-17*** *(ID 1315)**:*** *Fishing and Other Outdoor Recreation ToHSS has made significant investments in the Colorado River at our Pioneer Park in partnership with Great Outdoors Colorado, USEPA/Colorado Department of Public Health and Environment, National Fish and Wildlife Foundation, Colorado Division of Wildlife, USACE, Natural Resources Conservation Services, and the Grand County Board of County Commissioners, among others. Our obvious concern is that the proposed reduced flows will affect our local fishery habitat value but we were unable to find information about our local fishery even though extensive data is available at our local office of the Colorado Division of Wildlife just outside ToHSS. Study area CR1 may not have any deep pools but our Pioneer Park does. We see that the DEIS models reduced river flows but we are unable to find any usable extrapolation toward actual effects upon our local fishery both in terms of*

Comment Information	Comment	Comments and Responses
		water quality (temperature, nutrients, etc.) and habitat availability (especially riffle/pool depth, shading, and connectivity). Instead we are offered unsubstantiated arguments of "no changes to water quality or channel geomorphology ... that would affect fish or other aquatic biological resources" (DEIS page ES-32-33). The DEIS states that "habitat relationships [in the Colorado River] indicate the highest habitat availability for most life stages of trout at flows from approximately 200 to 600 cfs" (DEIS pg 3-240) yet flows in the Colorado River in Pioneer park are below these numbers for most of the year and the proposed action will result in even lower flows. How can this support negligible affects? • The next EIS must re-evaluate the conclusion of no impacts upon fishing in the Colorado River at Pioneer Park. Most reasonable people would expect the cumulative effects to be significant, even disastrous. What do we know about an ecosystem crash in the Colorado River? • The next EIS must evaluate riffle-pool characteristics in our river reach and predict changes in water depths and temperatures at different time of the year. Such information could then be used to predict changes in fishery habitat and loss of fishery value including our 2002-2009 river restoration areas. • The next EIS must give us enough clear detail for a reasonable prediction of changes to existing habitat. Which pools would become disconnected by shallower riffles? How many children will lose their favorite fishing holes? • The next EIS must predict the extent of channel bed that will become choked with algae and other water plants due to shallow flows. We have seen that channel areas less than 18 inches deep tend to be covered in vegetation, covering aquatic macroinvertebrate habitat. **Response #1032-17:** The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the

Comment Information	Comment	Comments and Responses
		resources listed in this comment were unlikely. However, the FEIS has been modified to include the Colorado River as a focus reach with expanded discussion of existing conditions and impacts evaluation in Sections 3.11, 4.6.11, and 5.11. This includes discussions of habitat and high water temperatures. The FEIS does not discuss some of the details of the river in this comment, such as the connectivity between riffles and pools and depth in pools and fishing holes. The magnitude of flow changes with the Project indicates that there would likely be little change in these characteristics of the river in the vicinity of Hot Sulphur Springs. ***Comment #1032-32*** *(ID 1316)**:*** *The next EIS must provide guidelines for restoration of a viable river channel with normal C3 characteristics critical to a quality fishery including off channel habitat, overbank flows, food chain support, riffle-pool spacing and ratios, cover, and instream structure.* **Response #1032-32:** As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. ***Comment #1032-16*** *(ID 1317)**:*** *The next EIS must provide a realistic evaluation of the fishery in Pioneer Park and risks from the proposed action upon the fishery. Will we be forced to return grant funding because we failed to protect our river project areas?*

Comment Information	Comment	Comments and Responses
		Response #1032-16: Please see the response to Comment ID 1315. It is unknown whether any changes to habitat and to the fishery resulting from the Project would change grant funding status. ***Comment #1032-18*** *(ID 1318)**:*** *Socioeconomics The DEIS rightly points to the importance of water-based recreation on our local economy (page 3-330) including fishing, camping, and other outdoor recreation in the riparian corridor. This is of course one of the reasons we and our agency partners have invested so heavily in Pioneer Park. The DEIS presents a convoluted argument of no socioeconomic impacts based upon conclusions of no impacts upon boating and fishing in the Colorado River. We would be pleased if this were the case but, as discussed above, have no confidence in the technical merits of the argument. Tourism is critical to our small town and our residents are concerned that the Moffat project will devastate local businesses. In addition, we believe that the cost of a new wastewater treatment plant would be crippling for our small town. We believe that the Moffat project would have unacceptable adverse effects on our municipal water supplies, fishery areas, and recreational areas (See 33 CFR Part 230.2 (f) and 40 CFR Part 230). • The next EIS version must re-evaluate the conclusion that there will be no socioeconomic impacts upon boating and fishing and related businesses here in ToHSS. Most reasonable people see that lowering the flows in the Colorado River will have impacts upon boating, rafting, and fishing as well as other day uses and camping. • The next EIS version must evaluate the project costs of reduced flows and water quality on our newly installed water intake system and soon-to-be installed water filter. • The next EIS version must evaluate the project costs of reduced flows and water quality upon our wastewater system*

Comment Information	Comment	Comments and Responses
		including dilution factors in the Colorado River. We should have a realistic idea of how often we will be forced into violation of our CDPHE permit and the cost of remedying the low-flow situations. • The next EIS version must make realistic predictions of water quality at various times of Moffat project buildout so that we can begin engineering and financing additional wastewater treatment. • The next EIS version must analysis the costs of restoring river and riparian habitats lost in Pioneer Park, including jurisdictional wetlands. • The next EIS version must analyze the loss of business and employment due to reduced fishing opportunities, day use, and camping in Pioneer Park. **Response #1032-18:** The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the resources listed in this comment were unlikely. However, the FEIS has been modified to include the Colorado River as a focus reach with expanded discussion of existing conditions and impacts evaluation in Sections 3.11, 4.6.11, and 5.11. This includes discussions of fish habitat and high water temperatures. The magnitude of flow changes with the Project indicates that there would likely be little change in these characteristics of the river in the vicinity of Hot Sulphur Springs. The FEIS has been modified for inclusion of Hot Sulphur springs water and wastewater. Additional water quality analysis has been performed for the Colorado River. Please refer to Sections 4.6.2 and 5.2 of the FEIS. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall

Comment Information	Comment	Comments and Responses
		tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate for the FEIS to support the socioeconomic conclusions. Section 4.6.19 addresses impacts to Grand County, including impacts to water and wastewater providers. FEIS Section 5.19 addresses the impacts resulting strictly from Moffat Project alternatives. ***Comment #1032-19*** *(ID 1319)**:*** *Environmental Justice ToHSS is a small town of 625 residents, many of whom are blue-collar workers commuting to work in larger towns. Our water/wastewater rate structure has been raised 50% in the last few years in order to catch up on infrastructure needs including paying off debt. We do not have the resources to pay attorneys and Front-Range consultants to press our arguments in this NEPA process. We are deeply concerned that we will be held responsible under our CDPHE permits for the reduction in dilutions and temperature-stabilizing flows. The cost of remedying these impacts, imposed upon us by larger more affluent Front-Range communities, would be enormous for our small town. We are also deeply concerned for our local ranching community, many of whom live in our town. The cumulative effects of reduced flows and groundwater elevations could have a crippling effect on irrigation needs and operations.* • *The next EIS version must make a full analysis of the comparative economic effects between Front Range beneficiaries and those of us in Grand County who will bear the cost burdens. • The next EIS version must evaluate the specific cost ratios to Denver Water customers versus our local water/wastewater customers. The Moffat Project gives Denver Water an unfair engineering and*

Comment Information	Comment	Comments and Responses
		legal advantage over Grand County water users. • *The next EIS version must evaluate the cost-benefits of East Slope recreational opportunities versus our local losses in recreational opportunities.* • *Finally, the next EIS version must evaluate the costs to our local ranching community in terms of needed infrastructure (headgates and diversions that will need modification to honor their senior water rights) and additional time that would be needed to irrigate fields. Why should 4th generation ranchers pay for Front Range convenience? Why is Denver bluegrass more important than Grand County hay?* **Response #1032-19:** Section 4.6.19 addresses impacts to Grand County, including impacts to agriculture and water and wastewater providers. FEIS Section 5.19 addresses the impacts resulting strictly from Moffat Project alternatives. Cost-benefit analyses or comparative impacts between East and West Slope are outside the scope of NEPA and are not included in the EIS. Several water rights that pump water from the Colorado River were granted senior status in relation to C-BT Project water rights per Senate Document 80. While these rights were granted senior status with respect to the C-BT Project, they are operated in strict priority in relation to Denver Water's water rights. The physical ability for some of these water rights to pump water from the Colorado River can be limited during dry years and late in the summer when flows in the Colorado River are low. The proposed Moffat Project would not affect low flows because there would be no additional diversions in dry years due to the Moffat Project. In dry years and late in the summer, Denver Water already diverts the maximum amount physically and legally available under their existing

Comment Information	Comment	Comments and Responses
		water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the proposed Moffat Project. In addition, Denver Water's out-of-priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no change in Colorado River flows below the confluence with the Williams Fork River due to Denver Water's out-of-priority diversions. In summary, there would be little to no impact on the ability of these water rights to pump from the Colorado River due to the proposed Moffat Project. ***Comment #1032-33*** *(ID 1320)**:*** *Mitigation The DEIS mitigation plan reflects a fatal underestimate of project impacts. We believe that an honest assessment of project impacts will drive vastly increased mitigation for the numerous impacts to flows, water quality, water temperature, groundwater, wetlands, ranching, fishing, boating, socioeconomics, and environmental justice. We agree to the need for water quality monitoring and reasonable bypass during times of exceedences (DEIS page M4), but we question the focus on worst case situations such as extreme low flows, temperatures warm enough to kill trout and species of concern. This supports our fears that increased trans-mountain diversions will push conditions past certain unpredictable thresholds and devastate us with massive fish kill and septic river conditions.* • *The next EIS version must present realistic mitigation plans that help the proponent meet legal requirement to avoid, minimize, rectify, reduce, and compensate for lost resource values (40CFR 1508.20).* • *The next EIS version must include a practicable mitigation plan to replace lost aquatic resource functions with a minimum 1:1 ratio for all wetlands*

Comment Information	Comment	Comments and Responses
		lost by indirect affects (40 CFR Part 230 Section 332.3 (f)). • *The next EIS version must place high priority on restoring and rehabilitating aquatic functions the river channels and riparian wetlands (40 CFR Part 230 Section 332.3 (a) (l)), using a watershed approach (40 CFR Part 230 Section 332.2 (b) (4)).* • *The next EIS version Mitigation Plan must include the real cost of fully mitigating cumulative effects upon the Fraser and Colorado Rivers. Since the primary river impacts are from historic and ongoing trans-mountain depletions, it is only reasonable that these newly proposed diversions are mitigated to such an extent that the rivers are restored to full viable equilibrium, especially water quality functions.* • *The next EIS version must include monitoring in perpetuity and contingency plans paid for in advance in an escrow account placed in a local Grand County bank.* • *The next EIS version Mitigation Plan must present a detailed summary of all impact costs that would be forced upon ToHSS and how those costs would be fully borne by the project proponent, including contingencies in an escrow account.* • *The next EIS version Mitigation Plan must include contingencies and monitoring milestones that clearly alert West Slope water providers when mitigation efforts are not reaching goals and leaving ToHSS at increased risk.* • *Finally, the next EIS version Mitigation Plan must present, in plain language, how the mitigations will reduce project impacts upon ToHSS.*

Comment Information	Comment	Comments and Responses
		Response #1032-33: FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. ***Comment #1032-2*** *(ID 1321)**:*** *It is possible that we have missed key data in the DEIS due to its ponderous size, encyclopedic presentation, and lack of clear analysis. If so we apologize and ask you to point us toward some of the answers we seek. Looking forward, we would be pleased to work with USACE and Denver Water to address these concerns and suggest you contact our local NEPA consultant Grand Environmental Services (970-627-5464) for further discussion.* **Response #1032-2:** The Corps notes the comment.

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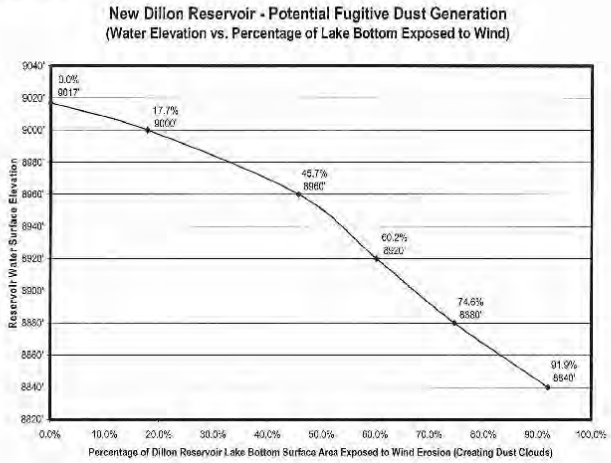
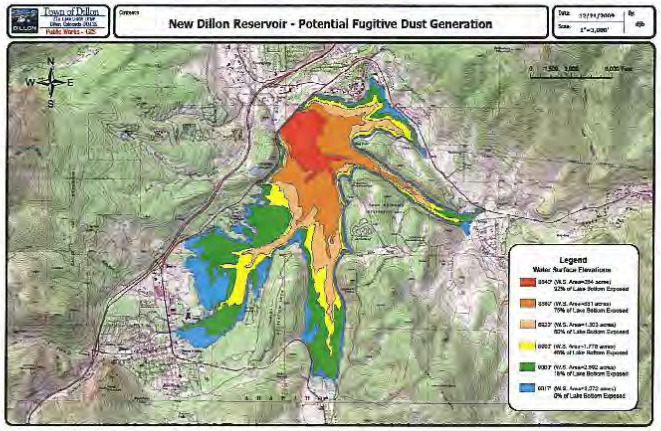
Jurisdictions/Municipalities Part E

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
JURISDICTIONS/MUNICIPALITIES PART E		
Comment #1170 Mike Bittner, Chairman Summit Water Quality Committee P.O. Box 2308, 249 Warren Avenue Silverthorne, CO 80498	SUMMIT WATER QUALITY COMMITTEE PO Box 2308 249 Warren Ave Silverthorne, CO 80498 970-468-0295 Ext 116 Fax 970-468-1208 RECEIVED MAR 2010 March 11, 2010 Mr. Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Ref: SWQC Comments on Moffat Collection System DEIS Dear Mr. Franklin The Summit Water Quality Committee ("SWQC") is comprised of the local governments and major municipal dischargers in Summit County, Colorado. The organization is formalized by intergovernmental agreement and has been actively involved in water quality monitoring and assessments and the implementation water quality improvement projects in the Blue River watershed since the early 1980's. In particular, SWQC developed and administers a successful and renowned water quality management program for Dillon Reservoir. Denver Water assists the Committee with routine monitoring costs and participates in most Committee meetings. The SWQC has discussed the Draft EIS for the Moffat Collection System Project ("Project"). Rather than take a position in favor or against the proposed Project, SWQC has identify potential impacts the Project may have on water quality or SWQC members in hopes that 404 permit conditions will be imposed to mitigate these impacts. Following is a list of issues SWQC has identified for your consideration. 1. The DEIS identifies average monthly releases from Dillon Reservoir in Appendix H, Table H-3.35. In this table monthly average releases rarely go below 50 cfs and the DEIS text implies that Denver Water does not intend to reduce flows below that 50 cfs level although they have the ability to do so in some circumstances (page 4-81). As you know, a monthly average may include flows below that value. When releases below Dillon Reservoir drop below 50 cfs it has the potential for significant impacts to the Silverthorne Joint Sewer Authority's Blue River WWTP ("JSA"). The JSA's discharge permit limits are tied by the Colorado Department of Public Health and Environment ("CDPHE") to the 50 cfs release from Dillon Reservoir and intervening inflows. Any reduction from the 50 cfs release even for a few days could be a problem, in spite of the fact that the monthly average release is still 50 cfs. For example, the JSA estimates that a flow of 35 cfs for three days would result in permit changes	***Comment #1170-1*** *(ID 4095)**:*** *The Summit Water Quality Committee ("SWQC) is comprised of the local governments and major municipal dischargers in Summit County, Colorado. The organization is formalized by intergovernmental agreement and has been actively involved in water quality monitoring and assessments and the implementation water quality improvement projects in the Blue River watershed since the early 1980's. In particular, SWQC developed and administers a successful and renowned water quality management program for Dillon Reservoir. Denver Water assists the Committee with routine monitoring costs and participates in most Committee meetings.* *The SWQC has discussed the Draft EIS for the Moffat Collection System Project ("Project"). Rather than take a position in favor or against the proposed Project, SWQC has identify potential impacts the Project may have on water quality or SWQC members in hopes that 404 permit conditions will be imposed to mitigate these impacts. Following is a list of issues SWQC has identified for your consideration.* **Response #1170-1:** The U.S. Army Corps of Engineers (Corps) notes the comment. ***Comment #1170-4*** *(ID 4096)**:*** *The DEIS identifies average monthly releases from Dillon Reservoir in Appendix H, Table H-3.35. In this table monthly average releases rarely go below 50 cfs and the DEIS text implies that Denver Water does not intend to reduce flows below that .50 cfs level although they have the ability to do so in some circumstances (page 4-81).*

Comment Information	Comment	Comments and Responses
	mandating approximately $5M in capital costs for new metals removal processes, plus operation and maintenance costs into perpetuity. We note that the DEIS did not consider the potential impact of increased metals concentrations on the JSA. Since the DEIS concludes that impacts to the JSA will be negligible (page 4-84), SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that daily releases from Dillon Reservoir do not drop below 50 cfs 2. The DEIS screens analysis of impacts to wastewater treatment facilities to those where the proportion of effluent to low flow in the receiving water increases by 15% or more. This approach fails to recognize impacts that result from loss of dilution that does not meet this criterion. For example, EPA Region 8 Guidance for Whole Effluent Toxicity testing (August 1997) mandates additional bio-monitoring in situations where the ratio of effluent to stream flow dilution is greater than 10%. This will be the case for the JSA as a result of reduced flows in the Blue River and will require substantial additional costs. Since the DEIS concludes that impacts to the JSA will be negligible (page 4-84), SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that these new permitting costs be paid for by the beneficiary of the Project. 3. SWQC and member jurisdictions have implemented extensive measures to protect Dillon Reservoir from fine sediment and phosphorus bound to particulate that result from erosion. This includes an award winning construction site inspection and education project and stringent landuse regulations for the protection of water quality from erosion and sedimentation. The DEIS indicates that Dillon Reservoir will be drawn down more from May to September (page 4-28 and Table H-2.5) which would expose more of the shoreline during runoff and rainfall season. SWQC is concerned that concentrated stormwater discharged at drainage outfall points at numerous points around the lake will create gullies and generally degrade the fragile exposed shoreline carrying sediment into the reservoir. This is both a new source of pollution and a problem of murky water adjacent to the Town of Dillon's and Town of Frisco's marinas. Since the DEIS concludes that water quality in Dillon Reservoir is not expected to change due to the Project, SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that a stabilized channel be constructed from the point where each stormwater pipe outfall or natural drainage enters into Dillon Reservoir; to the reservoir's lowest anticipated water's edge over time as the shoreline gets more exposed during summers. 4. Neither the water quality or the air quality sections of the DEIS recognize the potential for increased fugitive dust. One of the largest contributors of phosphorus loading to Dillon Reservoir is associated with precipitation (see Dillon Clean Lakes Study, Final Report, August 1983, Western Environmental Analysts, Inc.). Precipitation carries phosphorus bound to fine particulate matter into the reservoir.	*As you know, a monthly average may include flows below that value. When releases below Dillon Reservoir drop below 50 cfs it has the potential for significant impacts to the Silverthorne Joint Sewer Authority's Blue River WWTP ("JSA"). The JSA's discharge permit limits are tied by the Colorado Department of Public Health and Environment ("CDPHE) to the 50 cfs release from Dillon Reservoir and intervening inflows. Any reduction from the 50 cfs release even for a few days could be a problem, in spite of the fact that the monthly average release is still 50 cfs. For example, the JSA estimates that a flow of 35 cfs for three days would result in permit changes mandating approximately $5M in capital costs for new metals removal processes, plus operation and maintenance costs into perpetuity. We note that the DEIS did not consider the potential impact of increased metals concentrations on the JSA.* **Response #1170-4:** Daily flows below Dillon Dam were evaluated with respect to the joint sewer authority (JSA) for the Final Environmental Impact Statement (FEIS). Please refer to FEIS Sections 4.6.2 and 5.2. The proposed Project would not change the existing 50 cubic feet per second (cfs) minimum flow from Dillon Dam. ***Comment #1170-6*** *(ID 4097)**:*** *Since the DEIS concludes that impacts to the JSA will be negligible (page 4-84), SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that daily releases from Dillon Reservoir do not drop below 50 cfs.* **Response #1170-6:** Additional analyses of flows below Dillon Dam with respect to the JSA were performed. Discharge permits for those entities discharging into Dillon

Comment Information	Comment	Comments and Responses
	The DEIS indicates the end of September reservoir elevation would be reduced by 3 feet on average; with a maximum monthly reduction of 16 feet (page 4-28). SWQC is concerned that increased shoreline exposure will result in an increase in fugitive dust. Increased fugitive dust would result in increased phosphorus loading through precipitation as the concentration of particulates in the air increases. Figures 1 and 2 below show how the reduction in reservoir level translates into increased exposed surface area with the potential for dust generation. This impact was seen in 2002 during the drought when there was a significant increase in shoreline exposure. The DEIS does recognize that the Eagles Nest Wilderness Area, which virtually abuts Dillon Reservoir, is managed under the Clean Air Act as a Class I area suitable for the most stringent level of protection (page 3-262). The DEIS fails to recognize the potential for increased air and water pollution from fugitive dust. SWQC requests a 404 permit condition requiring the development of a fugitive dust control plan for the increasingly exposed shoreline area that will occur in the future as a result of the project. Figure 1  	Reservoir were reviewed with respect to projected reservoir levels. Please refer to FEIS Sections 4.6.2 and 5.2. In addition, the proposed Project would not change Board of Water Commissioner's (Denver Water's) requirement to release 50 cfs from Dillon Reservoir. ***Comment #1170-7*** *(ID 4098)**:*** *The DEIS screens analysis of impacts to wastewater treatment facilities to those where the proportion of effluent to low flow in the receiving water increases by 15% or more. This approach fails to recognize impacts that result from loss of dilution that does not meet this criterion. For example, EPA Region 8 Guidance for Whole Effluent Toxicity testing (August 1997) mandates additional bio-monitoring in situations where the ratio of effluent to stream flow dilution is greater than 10%. This will be the case for the JSA as a result of reduced flows in the Blue River and will require substantial additional costs.* *Since the DEIS concludes that impacts to the JSA will be negligible (page 4-84), SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that these new permitting costs be paid for by the beneficiary of the Project.* **Response #1170-7:** The level and method of evaluation is appropriate for an Environmental Impact Statement (EIS) because the screening method included multiple criteria, including 15 percent (%) flow reduction, but also stream segments listed on the Section 303(d) or Monitoring and Evaluation lists, or having constituents at or near regulatory limits. ***Comment #1170-2*** *(ID 4099)**:*** *SWQC and member jurisdictions have implemented extensive measures to protect Dillon*

Comment Information	Comment	Comments and Responses
	Figure 2  5. The DEIS states that there would be no changes to WWTP discharge permits due to the Project. However, the only WWTP evaluated in the Blue River watershed is the JSA. There are three major municipal discharges into Dillon Reservoir. These facilities could be affected by the increasingly fluctuating reservoir level associated with the Project. Dischargers to Dillon Reservoir must meet permit limits at the edge of their mixing zone. Increasingly fluctuating reservoir levels make the definition of this mixing zone ambiguous. In order stay in compliance with their permit limits dischargers may be required to modify their facilities to utilize the mixing zone, or to upgrade their treatment plants to be capable of treating to a level that complies with permit limits at the end of pipe. For example, the Snake River Sewer Treatment Plant ("SRWWTP") discharges into the Snake River arm of Dillon Reservoir. If their mixing zone changed as a result of fluctuation in Dillon reservoir the SRWWTP has estimated that it would cost $400k to $1.5M to extend their discharge pipe out ½ to 2 miles into the reservoir to chase their mixing zone. Their other alternative would be to construct metals removal facilities (estimated cost in 2004 was over $14M plus annual O&M, see Figure 3 below). Since the DEIS does not disclose impacts to WWTPs discharging into Dillon Reservoir one is left to conclude there are no impacts. SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that the applicant, the Project beneficiary, offset any costs to wastewater dischargers as a result of changes in	*Reservoir from fine sediment and phosphorus bound to particulate that result from erosion. This includes an award winning construction site inspection and education project and stringent land use regulations for the protection of water quality from erosion and sedimentation.* *The DEIS indicates that Dillon Reservoir will be drawn down more from May to September (page 4-28 and Table H-2.5) which would expose more of the shoreline during runoff and rainfall season. SWQC is concerned that concentrated stormwater discharged at drainage outfall points at numerous points around the lake will create gullies and generally degrade the fragile exposed shoreline carrying sediment into the reservoir. This is both a new source of pollution and a problem of murky water adjacent to the Town of Dillon's and Town of Frisco's marinas.* *Since the DEIS concludes that water quality in Dillon Reservoir is not expected to change due to the Project, SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that a stabilized channel be constructed from the point where each stormwater pipe outfall or natural drainage enters into Dillon Reservoir; to the reservoir's lowest anticipated water's edge over time as the shoreline gets more exposed during summers.* **Response #1170-2:** Dillon Reservoir has been drawn down repeatedly during its historical operation, as would be expected of any water supply reservoir. Potential erosion from stormwater discharges or shoreline exposure is not a new condition of either the Moffat Collection System Project (Moffat Project or Project) or the No Action Alternative. Regardless of any changes in other portions of the Denver Water's system, continued reservoir level variation

Comment Information	Comment	Comments and Responses
	discharge permit conditions as a result of increasing fluctuations in the reservoir, such as the example provided for SRWWTP. SWQC members take water quality very seriously. Several of the members mentioned above are in the process of permitting their own water storage facility, Old Dillon Reservoir. In this case, the applicants have agreed with CDPHE to ongoing monitoring to evaluate additional phosphorus loading to Dillon Reservoir, and then to mitigate that on a pound for pound basis (draft 401 Certification attached as Figure 4 below). We would hope that the Moffat Project will be held to the same high standard of water quality protection as our own project. Thank you for the opportunity to comment. Sincerely, Mike Bittner, Chairman, SWQC Operations Superintendent, JSA CC: CDPHE Steve Gunderson and John Hranac	would be expected due to the nature of Dillon Reservoir being a water supply reservoir. ***Comment #1170-3*** *(ID 4100)**:*** *Neither the water quality nor the air quality sections of the DEIS recognize the potential for increased fugitive dust. One of the largest contributors of phosphorus loading to Dillon Reservoir is associated with precipitation (see Dillon Clean Lakes Study, Final Report, August 1983, Western Environmental Analysts, Inc.). Precipitation carries phosphorus bound to fine particulate matter into the reservoir.* *The DEIS indicates the end of September reservoir elevation would be reduced by 3 feet on average; with a maximum monthly reduction of 16 feet (page 4-28). SWQC is concerned that increased shoreline exposure will result in an increase in fugitive dust. Increased fugitive dust would result in increased phosphorus loading through precipitation as the concentration of particulates in the air increases. Figures 1 and 2 below show how the reduction in reservoir level translates into increased exposed surface area with the potential for dust generation. This impact was seen in 2002 during the drought when there was a significant increase in shoreline exposure.* *FIGURE 1 AND 2 DID NOT TRANSLATE* **Response #1170-3:** The EIS provides estimates of emissions from Project construction activities and increased traffic due to construction, for each Project alternative. These calculations include direct and indirect emissions of fugitive dust that would occur at the areas of Project activities. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, will require that construction activities conform to Colorado State Air Quality standards.

Comment Information	Comment	Comments and Responses
	Figure 3 - Costs of Metals Removal at SRWWTP Table 4-2 Capital Cost Opinion for Metals Removal at the Snake River WWTP[1] Item / Cost Membrane system (including pump station, MF and NFI membranes, and chemical feed system) — $6,000,000 Building to house membrane facilities (at $200/sq ft) — $2,000,000 Lime precipitation facilities (including lime storage facilities, slurry tank, rapid mix tank and mixer, flocculation tank, clarifier, sludge holding tank and pump and frame press) — $1,000,000 Building to house lime precipitation facilities (at $200/sq ft) — $500,000 *Cost of Project Components* — $9,500,000 *Contingency (25%)* — $2,375,000 *Total Construction Costs* — $11,875,000 *Engineering, Legal, and Administration Costs (20%)* — $2,375,000 Total Project Cost — $14,250,000 [1] Based on the December 2004 Engineering News Record Construction Cost Index (ENR CCI) of 7308. Table 4-3 O&M Cost Opinion for Metals Removal at the Snake River WWTP Item / Cost Per Year Additional labor — $70,000 Power — $113,000 Chemicals — $66,000 Residuals disposal — $4,000 Membrane replacement budget (replacement every five years) — $63,000 Total Annual O&M Cost — $316,000 2	Unavoidable adverse impacts are discussed in Section 5.13.8: "With regard to long-term impacts, the Moffat Project would cause relatively small increases in fugitive dust and personal vehicle emissions. Fugitive dust emissions are largely unavoidable because they depend, in part, on the extent of bare soil exposed by fluctuation of the water level in the reservoir. Constant revegetation would not be feasible." ***Comment #1170-8*** *(ID 4101)**:*** *The DEIS does recognize that the Eagles Nest Wilderness Area, which virtually abuts Dillon Reservoir, is managed under the Clean Air Act as a Class I area suitable for the most stringent level of protection (page 3-262). The DEIS fails to recognize the potential for increased air and water pollution from fugitive dust. SWQC requests a 404 permit condition requiring the development of a fugitive dust control plan for the increasingly exposed shoreline area that will occur in the future as a result of the project.* **Response #1170-8:** The Colorado Department of Public Health and Environment (CDPHE) is required to protect Class I areas, and in its Air Quality Control Commission Report to the Public 2008-2009 (CDPHE 2008), this issue is addressed as follows: "We [i.e., CDPHE] are also working to develop and adopt plans to reduce air pollutant emissions that obscure visibility in our National Parks and Wilderness Areas and have adopted several measures to improve visibility under the requirements of the Federal regional haze program. Emission reductions from major sources of sulfur dioxide and oxides of nitrogen will be considered next year to help achieve this goal. Impaired visibility is a regional air quality issue that

Comment Information	Comment	Comments and Responses
	DRAFT **Old Dillon Reservoir** **401 Water Quality Certification Special Conditions** The applicant will monitor discharges from Old Dillon Reservoir to determine any water quality impacts associated with the development of the "new" Old Dillon Reservoir. Initial monitoring includes water quality parameters associated with the water quality standards for Salt Lick Gulch and Dillon Reservoir and the concentration of phosphorous and quantity of water discharged to Dillon Reservoir. Water quality monitoring of Salt Lick Gulch will be at a site below the mixing zone of the discharge from Old Dillon Reservoir. This sampling location is intended to capture the water quality of Salt Lick Gulch after water from Old Dillon Reservoir is returned to the stream or brought from Dillon Reservoir as proposed under the reservoir operations plan. Monthly monitoring at this site will begin as soon as possible to capture pre-construction baseline information and then will be sampled monthly for a period of three years from the completion of the reservoir reconstruction. Sampling parameters are indentified below on Table 1. Sampling of the discharge from Old Dillon Reservoir to Dillon Reservoir for phosphorous will be weekly. This sampling frequency is intended to accurately determine the phosphorus concentration used to calculate a phosphorus load. Monthly monitoring of the discharge for other parameters identified on Table 1 will be used to identify any water quality concerns with the reconstruction of Old Dillon Reservoir. Sampling this discharge for a period of three years from the end of the reservoir reconstruction is expected to be adequate time to allow for the reservoir to stabilize and the applicant time to collect sufficient phosphorus data to calculate a phosphorus load. The results of this sampling will be submitted in electronic format to the Water Quality Control Division (Division). The submittal of the data will coincide with the Division's annual data call. The measured phosphorus concentration in addition to the measured volume discharged to Dillon Reservoir will be used to determine a phosphorus load for Old Dillon Reservoir to Dillon Reservoir. This load will then be used to determine a phosphorus wasteload allocation per Water Quality Control Commission, 5 CCR 1002-71, Regulation 71, Dillon Reservoir Control Regulation. At this time it is not known if the applicant will receive allocation from the reserve pool or from reduced current allocations. It is expected that the applicant will work with the Summit Water Quality Committee and other stakeholders to determine an Old Dillon Reservoir phosphorus wasteload allocation and modify the control regulation as necessary and as soon as possible. Old Dillon Reservoir -401 WQC Special Conditions Page 1 Figure 4 - Draft 401 Certification, Old Dillon Reservoir Project	will require emission reductions from numerous sources across broad regions of the country. We are working within the state as well as with other western states to reach this objective." For stationary sources, the Clean Air Act (CAA) provides for protection of Class I areas through the New Source Review preconstruction permitting programs (CAA Section 160-173). The air quality permit requirements and pollutant control measures that the Project would need to comply with are addressed in FEIS Section 5.13.7. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, would require that construction activities conform to Colorado State Air Quality standards. Dillon Reservoir has been drawn down repeatedly over its history, as would be expected for the operation of a water supply reservoir. Potential shoreline exposure is not a new condition of either the Moffat Project or the No Action Alternative. Continued reservoir level variation would be expected due to the nature of Dillon Reservoir being a water supply reservoir. ***Comment #1170-5*** *(ID 4102)**:*** *The DEIS states that there would be no changes to WWTP discharge permits due to the Project. However, the only WWTP evaluated in the Blue River watershed is the JSA. There are three major municipal discharges into Dillon Reservoir. These facilities could be affected by the increasingly fluctuating reservoir level associated with the Project.* *Dischargers to Dillon Reservoir must meet permit limits at the edge of their mixing zone. Increasingly fluctuating reservoir levels make the definition of this mixing zone ambiguous. In order stay in*

Comment Information	Comment	Comments and Responses
		compliance with their permit limits dischargers may be required to modify their facilities to utilize the mixing zone, or to upgrade their treatment plants to be capable of treating to a level that complies with permit limits at the end of pipe. For example, the Snake River Sewer Treatment Plant ("SRWWTP") discharges into the Snake River arm of Dillon Reservoir. If their mixing zone changed as a result of fluctuation in Dillon reservoir the SRWWTP has estimated that it would cost $400k to $1.5M to extend their discharge pipe out ½ to 2 miles into the reservoir to chase their mixing zone. Their other alternative would be to construct metals removal facilities (estimated cost in 2004 was over $14M plus annual O&M, see Figure 3 below). *Since the DEIS does not disclose impacts to WWTPs discharging into Dillon Reservoir one is left to conclude there are no impacts. SWQC requests a 404 permit condition that would hold the project to that conclusion by requiring that the applicant, the Project beneficiary, offset any costs to wastewater dischargers as a result of changes in discharge permit conditions as a result of increasing fluctuations in the reservoir, such as the example provided for SRWWTP.* *SWQC members take water quality very seriously. Several of the members mentioned above are in the process of permitting their own water storage facility, Old Dillon Reservoir. In this case, the applicants have agreed with CDPHE to ongoing monitoring to evaluate additional phosphorus loading to Dillon Reservoir, and then to mitigate that on a pound for pound basis (draft 401 Certification attached as Figure 4 below). We would hope that the Moffat Project will be held to the same high standard of water quality protection as our own project. Thank you for the opportunity to comment.*

Comment Information	Comment	Comments and Responses
		Response #1170-5: National Pollution Discharge Elimination System (NPDES) discharge permits for facilities that discharge into Dillon Reservoir were reviewed for the FEIS. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
Comment #1172 Jane S. Brautigam, City Manager City of Boulder P.O. Box 791 Boulder, CO 80306-0791	**CITY OF BOULDER** **OFFICE OF THE CITY MANAGER** RECEIVED MAR 2010 March 16, 2010 Mr. Scott Franklin Moffat EIS Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 S. Wadsworth Blvd. Littleton, CO 80128 Subject: City of Boulder Comments on the Denver Water Moffat Collection System Project Draft EIS Dear Mr. Franklin: The City of Boulder (Boulder) appreciates the opportunity to review and comment upon the U.S. Corps of Engineers (Corps) Moffat Collection System Project Draft EIS (Draft EIS). The Draft EIS document indicates that widespread impacts to Boulder, its residents and the local environment will occur regardless of the action alternative the Corps selects for permitting. Taken as a whole, the project will result in extensive and irreversible changes within Boulder County. These impacts directly affect Boulder and its residents. Since Boulder must live with the consequences of any of the action alternatives that Denver Water constructs under the authority of the Corps permit, it is particularly important that the Corps incorporate the mitigation strategies that Boulder believes is necessary to protect local resources. Boulder previously submitted scoping comments to the Corps on November 7, 2003. Boulder also submitted comments to the FERC regarding the preapplication documents on September 24, 2008. Boulder is committed to working with the Corps to ensure that its citizens' long standing interests on South Boulder Creek are protected. Please accept the following comments regarding the Draft EIS. **COMMENT 1** South Boulder Creek flows below Eldorado Springs would decrease about 2% in all action alternatives. Flows in South Boulder Creek above Gross Reservoir and from Gross Reservoir to the South Boulder Diversion Canal would increase. Inundation of portions of South Boulder Creek will occur with an enlargement of Gross Reservoir. In addition, the Executive Summary (p. 45, among other locations in the draft) describes cumulative impacts from some of these changes and concludes that adverse impacts to fish and invertebrates will occur in South Boulder Creek. Taken as a whole, the impacts from enlarging Gross Reservoir affect the entire South Boulder Creek watershed. These flow and inundation related aquatic impacts require comprehensive attention. Because of the complexity and interrelated nature of the impacts, Boulder does not believe that impact for impact mitigation can offset the totality of watershed wide impacts. Rather, by targeting the chronic low flow problem on South Boulder Creek as described below, it is possible to offset the aquatic impacts from this project. P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	***Comment #1172-2*** *(ID 4295)**:*** *The City of Boulder (Boulder) appreciates the opportunity to review and comment upon the U.S. Corps of Engineers (Corps) Moffat Collection System Project Draft EIS (Draft EIS). The Draft EIS document indicates that widespread impacts to Boulder, its residents and the local environment will occur regardless of the action alternative the Corps selects for permitting. Taken as a whole, the project will result in extensive and irreversible changes within Boulder County. These impacts directly affect Boulder and its residents. Since Boulder must live with the consequences of any of the action alternatives that Denver Water constructs under the authority of the Corps permit, it is particularly important that the Corps incorporate the mitigation strategies that Boulder believes is necessary to protect local resources. Boulder previously submitted scoping comments to the Corps on November 7, 2003. Boulder also submitted comments to the FERC regarding the preapplication documents on September 24, 2008. Boulder is committed to working with the Corps to ensure that its citizens' long standing interests on South Boulder Creek are protected. Please accept the following comments regarding the Draft EIS.* **Response #1172-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to the National Environmental Policy Act of 1969, as amended (NEPA). ***Comment #1172-4*** *(ID 4296)**:*** *South Boulder Creek flows below Eldorado Springs would decrease about 2% in all action alternatives. Flows in South Boulder Creek above Gross Reservoir and from Gross Reservoir to the South Boulder Diversion Canal would increase.*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 2 To comprehensively address adverse impacts to fish and invertebrates in South Boulder Creek, the City of Boulder, Denver Water, and the City of Lafayette (Lafayette) have worked to develop an aquatic mitigation plan that offsets the aquatic impacts by addressing the chronic low flow problem on South Boulder Creek that exists during the late summer, fall, and winter. Because of the seriousness of the low flow problem, Boulder and Lafayette have put significant resources into this aquatic mitigation plan to ensure its success. Central to the aquatic mitigation plan is the creation and operation of an enlarged Environmental Pool in an expanded Gross Reservoir. Boulder believes the aquatic mitigation plan as set forth in the attached IGA will adequately address the impacts to aquatic resources in the South Boulder Creek basin from the Moffat Project. The background to the problem and the mitigation plan that Boulder is jointly proposing with Denver Water and Lafayette is described below. **South Boulder Creek Instream Flow Problem** Municipal, industrial, and agricultural diversions have dewatered portions of South Boulder Creek since the nineteenth century. The City of Boulder has been trying to solve this late-summer/fall/winter low-flow problem on South Boulder Creek since the late 1970s. With Boulder's support, the Colorado Water Conservation Board (CWCB) applied for and received an instream flow right for South Boulder Creek in 1980. Currently, flows on South Boulder Creek during these seasons range between zero and about two cubic feet per second (cfs) from below Eldorado Springs to South Boulder Road, and about zero and one-half cfs from below South Boulder Road to its confluence with Boulder Creek. The CWCB instream flow right is for 2 cfs winter and 15 cfs summer for the reach above South Boulder Road. However, the CWCB's instream flow decree recognizes that the winter right for 2 cfs "is less than that required to preserve the natural environment to a reasonable degree, but represents the amount of water available for appropriation." Winter stream flows are frequently less than 1/3 the recommended minimum needed to support healthy aquatic life. Below South Boulder Road, so little water is available that no minimum instream flow right was ever decreed. To solve the instream flow problem, both the water itself and a place to store and release it is needed. Boulder does not have storage on South Boulder Creek or sufficient amounts of water rights to store and release to address the instream flow problem. In the past decade Boulder has investigated various projects to make water available, however, all were found infeasible for a variety reasons including cost, lack of storage, environmental issues with the dry up of wetlands, legal impediments, and other technical issues. Because of these constraints, Boulder has continued to seek opportunities for cooperation and coordination with other cities to leverage money and resources to solve this problem. Boulder's 1998 IGA with Denver Water accomplished a first step in establishing an instream flow program for South Boulder Creek. It did this by creating an "environmental pool" in Gross Reservoir that can be filled with water during the irrigation season for release later in the winter as instream flow. The environmental pool is similar to an empty bucket, because it must be paired with water rights that provide water to fill it. Under the 1998 IGA, Boulder is to provide the necessary water; unfortunately, storage is only accessible on an "as available" basis and Boulder has not been able to purchase the necessary water rights. Consequently, although the existing environmental pool has never become operational, it did establish a framework for future efforts. P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*Inundation of portions of South Boulder Creek will occur with an enlargement of Gross Reservoir. In addition, the Executive Summary (p. 45, among other locations in the draft) describes cumulative impacts from some of these changes and concludes that adverse impacts to fish and invertebrates will occur in South Boulder Creek. Taken as a whole, the impacts from enlarging Gross Reservoir affect the entire South Boulder Creek watershed. These flow and inundation related aquatic impacts require comprehensive attention. Because of the complexity and interrelated nature of the impacts, Boulder does not believe that impact for impact mitigation can offset the totality of watershed wide impacts. Rather, by targeting the chronic low flow problem on South Boulder Creek as described below, it is possible to offset the aquatic impacts from this project.* *To comprehensively address adverse impacts to fish and invertebrates in South Boulder Creek, the City of Boulder, Denver Water, and the City of Lafayette (Lafayette) have worked to develop an aquatic mitigation plan that offsets the aquatic impacts by addressing the chronic low flow problem on South Boulder Creek that exists during the late summer, fall, and winter. Because of the seriousness of the low flow problem, Boulder and Lafayette have put significant resources into this aquatic mitigation plan to ensure its success. Central to the aquatic mitigation plan is the creation and operation of an enlarged Environmental Pool in an expanded Gross Reservoir.* *Boulder believes the aquatic mitigation plan as set forth in the attached IGA will adequately address the impacts to aquatic resources in the South Boulder Creek basin from the Moffat Project. The background to the problem and the mitigation plan that Boulder is jointly proposing with Denver Water and Lafayette is described below.*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 3 **Intergovernmental Agreements to Address South Boulder Creek Low Flows** When the Corps began scoping changes to Denver Water's Moffat Tunnel Collection System, Boulder took the opportunity to begin negotiating a three-way Intergovernmental Agreement (IGA) between Lafayette, Boulder, and Denver Water to coordinate resources to address the South Boulder Creek instream flow problem as a way of mitigating aquatic impacts from Moffat Collection System Project. The City Councils of Boulder and Lafayette each approved the IGA on February 16, 2010 and the Denver Board of Water Commissioners approved the IGA at its February 24, 2010 meeting. A copy of the approved IGA is attached. Please note that the attached IGA is complete, however Boulder had not yet received the document that includes all of the signatures in time to attach it to this letter and still meet the comment deadline. The three entities ask the Corps to incorporate the IGA as the mitigation plan to address aquatic impacts in the South Boulder Creek basin from the Gross Reservoir expansion. A second IGA between Boulder and Lafayette (also approved on February 16, 2010) details operations within the Environmental Pool to meet instream flow target flows. The new IGAs supersede the October 29, 1998 IGA between Boulder and Denver Water that established a smaller 2500 AF Environmental Pool. The IGA between Boulder, Lafayette and Denver Water requires Denver Water to enlarge Gross reservoir by an additional 5,000 AF to create an Environmental Pool to store water rights owned by Boulder and Lafayette. To cover the cost of this additional enlargement, Denver Water will contribute approximately $4 million while Boulder and Lafayette will each contribute $2 million. The monies will be used to construct the dam about six-feet higher to create the Environmental Pool. In addition, Boulder and Lafayette will spend approximately $200,000 each for structures and measurement devices to assure the delivery of the instream flow water through all downstream reaches of South Boulder Creek. Diversions of water from west of the continental divide for east slope uses is a major concern to Boulder, environmentalists, and communities on the west slope. To address this concern, the program has been crafted so that no new west slope water will be used to solve an east slope stream flow problem. For this reason, Denver Water is not contributing water to the environmental pool. Also, Denver Water is not allowed to store water in the environmental pool. Once created, the environmental pool is for the exclusive use of Boulder and Lafayette to provide flows in South Boulder Creek. Most of the water needed to fill the environmental pool will be provided by Lafayette which owns numerous South Boulder Creek water rights already decreed for storage in Gross Reservoir as an alternate point of diversion. Under the IGAs, Lafayette will fill the environmental pool to the extent its water rights permit and will release its water to meet instream flow targets on South Boulder Creek. Lafayette will recapture some of its releases from the environmental pool at South Boulder Road, and will allow some of its releases to flow down lower South Boulder Creek to Boulder Creek to its diversion at 75th Street. Lafayette and Boulder will jointly file for a new junior water right on South Boulder Creek to fill a portion of the Environmental Pool during high streamflow periods in average to wet years. Boulder will provide the remainder of the water supply to fill the Environmental Pool from Colorado-Big Thompson (CBT) units, Windy Gap units or reusable effluent from Windy Gap units or other sources, Boulder Creek instream flow reusable water, or other Boulder Creek basin water rights that the city might acquire or change in use to allow storage in Gross Reservoir and use for instream flow purposes. Boulder will use CBT and Windy Gap units that it already owns and uses for municipal purposes or leases to agricultural users. Boulder's use of CBT and Windy Gap units will add a use to water it already owns, not create a new demand on the west slope. P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*South Boulder Creek Instream Flow Problem* *Municipal, industrial, and agricultural diversions have dewatered portions of South Boulder Creek since the nineteenth century. The City of Boulder has been trying to solve this late-summer/fall/winter low-flow problem on South Boulder Creek since the late 1970s. With Boulder's support, the Colorado Water Conservation Board (CWCB) applied for and received an instream flow right for South Boulder Creek in 1980. Currently, flows on South Boulder Creek during these seasons range between zero and about two cubic feet per second (cfs) from below Eldorado Springs to South Boulder Road, and about zero and one-half cfs from below South Boulder Road to its confluence with Boulder Creek. The CWCB instream flow right is for 2 cfs winter and 15 cfs summer for the reach above South Boulder Road. However, the CWCB's instream flow decree recognizes that the winter right for 2 cfs "is less than that required to preserve the natural environment to a reasonable degree, but represents the amount of water available for appropriation." Winter stream flows are frequently less than 113 the recommended minimum needed to support healthy aquatic life. Below South Boulder Road, so little water is available that no minimum instream flow right was ever decreed.* *To solve the instream flow problem, both the water itself and a place to store and release it is needed. Boulder does not have storage on South Boulder Creek or sufficient amounts of water rights to store and release to address the instream flow problem. In the past decade Boulder has investigated various projects to make water available, however, all were found infeasible for a variety reasons including cost, lack of storage, environmental issues with the dry up of wetlands, legal impediments, and other technical issues. Because of these constraints, Boulder has continued to seek*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 4 In summary, if a Moffat Collection System Project expansion is approved, Boulder supports the inclusion of an environmental pool of 5,000 AF to be administered by the Cities of Boulder and Lafayette for instream flow purposes in South Boulder Creek. Boulder requests that the Corps include the aquatic mitigation plan as set forth in the approved IGA (attached) as a permit condition to address the impacts to aquatic resources in the South Boulder Creek basin from the Moffat Project. **COMMENT 2** Boulder does not support the construction of Leyden Gulch reservoir as a solution to Denver's northern system water supply problem under any circumstances. Boulder has worked for many years to preserve the Highway 93 corridor as open space and to protect wildlife, prairie ecosystems, and the mountain views visible from that road. Boulder has significant environmental concerns about the use of the Leyden Gulch site as part of the Moffat Collection System Project. As stated in the *Front Range Mountain Backdrop Phase 2 Final Report*[*]: "The Front Range Mountain Backdrop represents a unique ecological system not found elsewhere in Colorado. In ecological terms, the Backdrop is a regional ecotone or transition area where plant and animal communities of the Great Plains meet the foothills of the Rocky Mountains. The result is a diverse assemblage of plants, animals, geologic features, and scenic beauty near the rapidly growing Front Range urban corridor." The 1998 Intergovernmental Agreement by and between the City of Arvada and Denver Board of Water Commissioners for the Purchase of Certain Lands and the Delivery of Water Under Current and Future Nonpotable Water Leases Water resulted in the acquisition by Arvada and Denver Water of the Leyden Gulch reservoir site. In that Intergovernmental Agreement Denver Water and Arvada agreed that if no reservoir is constructed that they would sell the land to Jefferson County if possible for open space. If the Moffat Collection System Project is constructed, the project would use much of Denver Water's excess yield currently available to it from the Moffat Collection System. Consequently it appears that Denver Water would have no further need for the site for future water supply purposes. Boulder believes that the Leyden Gulch site should be protected permanently as open space. In the event that the Leyden Gulch site is not used as a reservoir site, Boulder is willing to work with Denver Water, Arvada, and Jefferson County to identify options that preserve Leyden Gulch as open space. For example, Boulder would consider acquiring a conservation easement (or other protective deed) alone or jointly with others to help preserve that site. **COMMENT 3** The Draft EIS identifies Highway 72 as the access road for construction. Boulder agrees with that designation. However, Boulder believes that it is inappropriate to route construction traffic along State Highway 128 west of McCaslin Boulevard or along any portion of Highway 93 north of State Highway 72. Construction traffic on Highway 128 and Highway 93 will increase congestion on those roads and create noise impacts to surrounding open space lands. Boulder residents who commute along Highway 93 should not have to deal with the inconveniences of construction traffic along that road. The City of Arvada is a major [*] Funded by Great Outdoors Colorado, the Front Range Mountain Backdrop Project was a collaborative effort of Boulder, Douglas, El Paso, Jefferson, and Larimer counties. P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*opportunities for cooperation and coordination with other cities to leverage money and resources to solve this problem.* *Boulder's 1998 IGA with Denver Water accomplished a first step in establishing an instream flow program for South Boulder Creek. It did this by creating an "environmental pool" in Gross Reservoir that can be filled with water during the irrigation season for release later in the winter as instream flow. The environmental pool is similar to an empty bucket, because it must be paired with water rights that provide water to fill it. Under the 1998 IGA, Boulder is to provide the necessary water; unfortunately, storage is only accessible on an "as available" basis and Boulder has not been able to purchase the necessary water rights. Consequently, although the existing environmental pool has never become operational, it did establish a framework for future efforts.* *Intergovernmental Agreements to Address South Boulder Creek Low Flows* *When the Corps began scoping changes to Denver Water's Moffat Tunnel Collection System, Boulder took the opportunity to begin negotiating a three-way Intergovernmental Agreement (IGA) between Lafayette, Boulder, and Denver Water to coordinate resources to address the South Boulder Creek instream flow problem as a way of mitigating aquatic impacts from Moffat Collection System Project. The City Councils of Boulder and Lafayette each approved the IGA on February 16,201 0 and the Denver Board of Water Commissioners approved the IGA at its February 24,201 0 meeting. A copy of the approved IGA is attached. Please note that the attached IGA is complete, however Boulder had not yet received the document that includes all of the signatures in time to attach it to this letter and still meet the comment*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 5 beneficiary of the Moffat Collection System Project. Because the City of Arvada is a major beneficiary, designation of haul traffic through Arvada via Indiana Ave to Highway 72 is appropriate and necessary. Consequently, State Highway 128 west of McCaslin Boulevard or along any portion of Highway 93 north of State Highway 72 should be specifically prohibited as an access route for the project within the general conditions of the project permit. **COMMENT 4** The Draft EIS does not identify Flagstaff Road, Magnolia road, or Colorado 119 for any construction, haul or forestry related traffic. Boulder appreciates that no designation is identified along these roads. However, the explicit exclusion of construction traffic on these roads is necessary. Flagstaff Road is a potential access route to Gross Reservoir. Access to Flagstaff Road requires travel on Baseline Road in Boulder through a residential neighborhood and past a school and park. Because of the steep grades, tight turns and large amount of residential and recreational traffic, the use of Flagstaff Mountain Road from Walker Ranch to the city limits of Boulder should be specifically prohibited as an access route for the project. Similarly, Colorado 119 connects to Magnolia Road and could provide access to Gross Reservoir. Magnolia Road in particular is steep and winding and therefore unsuitable for construction access or forestry activities related to project. Consequently, Magnolia road and Colorado 119 should be specifically prohibited as an access route for the project within the general conditions of the project permit. **COMMENT 5** The tree removal plan details activities around Gross Reservoir and places special attention to access in the Winiger Ridge area. Under the preferred alternative Denver Water intends to remove approximately 430 acres of trees and other debris between the existing lake elevation and ten feet above the elevation for the enlarged reservoir. Under the proposed tree removal plan, some temporary roads will need to be constructed to remove the trees. Several recreation developments will need to be removed or relocated as part of this process. Boulder supports the utilization of removed trees to the maximum amount practicable to minimize the need for land filling or burning of removed material. All temporary roads will need to be fully restored and replanted at the completion of the tree removal, and provisions for prevention of weeds to become established in those areas will be necessary. Existing forest roads impacted by the tree removal activities will need to be regraded and repaired upon the completion of tree removal activities. Post forestry activities to restore roads after tree removal and to remove/restore access points need further detail. Boulder can not support using Flagstaff Mountain Road for any purposes related to the tree removal plan. Boulder supports Boulder County efforts to manage projects impacts related to the tree removal plan. **COMMENT 6** Boulder supports Denver Water's efforts to conserve water. Water conservation has and continues to be an important aspect in water supply planning and management. Further reductions in per capita water use are possible within the Denver Water service area. Boulder has recently adopted tiered pricing for water to better manage demand and conserve additional water. This program has been successful for Boulder, and adoption P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*deadline. The three entities ask the Corps to incorporate the IGA as the mitigation plan to address aquatic impacts in the South Boulder Creek basin from the Gross Reservoir expansion. A second IGA between Boulder and Lafayette (also approved on February 16,201 0) details operations within the Environmental Pool to meet instream flow target flows. The new IGAs supersede the October 29, 1998 IGA between Boulder and Denver Water that established a smaller 2500 AF Environmental Pool.* *The IGA between Boulder, Lafayette and Denver Water requires Denver Water to enlarge Gross reservoir by an additional 5,000 AF to create an Environmental Pool to store water rights owned by Boulder and Lafayette. To cover the cost of this additional enlargement, Denver Water will contribute approximately $4 million while Boulder and Lafayette will each contribute $2 million. The monies will be used to construct the dam about six-feet higher to create the Environmental Pool. In addition, Boulder and Lafayette will spend approximately $200,000 each for structures and measurement devices to assure the delivery of the instream flow water through all downstream reaches of South Boulder Creek.* *Diversions of water from west of the continental divide for east slope uses is a major concern to Boulder, environmentalists, and communities on the west slope. To address this concern, the program has been crafted so that no new west slope water will be used to solve an east slope stream flow problem. For this reason, Denver Water is not contributing water to the environmental pool. Also, Denver Water is not allowed to store water in the environmental pool. Once created, the environmental pool is for the exclusive use of Boulder and Lafayette to provide*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 6 of similar programs by utilities such as Denver Water would further extend the availability of water using existing infrastructure. Further steps to reduce both indoor and outdoor water use within the Denver Water service area should go hand in hand with structural solutions to generate greater supply. More aggressive water conservation by Denver would go a long way toward enhancing public support for infrastructure projects such as the Moffat Expansion Project. Denver Water helped lead the region with its innovative water conservation programs such as xeriscaping. Now is the time to redouble those efforts. Boulder encourages Denver Water to take more aggressive steps to further conserve water than it currently does or projects for the future to further reduce the need for additional structural solutions to water supply shortfalls. **COMMENT 7** Many Boulder residents own second homes in Grand County or regularly take advantage of recreation opportunities there. A number of Boulder residents have expressed concern about potential west slope impacts to the Moffat Expansion Project. Boulder is aware of the likely impacts to streams on the west slope of the Continental Divide from diversions of water that will occur from the Moffat Collection System Project. Impacts from the project will result in flow and sedimentation changes in various streams, including the Fraser River. The flow changes have the potential to alter water quality and aquatic habitat. Depletion impacts will likely occur. Boulder encourages Denver Water and the Corps to work closely with Grand County and communities on the west slope to identify and implement programs to mitigate impacts related to the project. Boulder supports the efforts of Grand County to identify and implement appropriate mitigation measures should the Corps select one of the action alternatives for permitting. **COMMENT 8** Boulder believes in maximizing the use of existing water utility infrastructure to generate hydroelectricity to the greatest extent practicable. Boulder encourages Denver Water to investigate how to maximize the generation of clean hydroelectric power within its system to help offset carbon emissions within Colorado. Full utilization of Gross Reservoir now or after enlargement for hydroelectric power generation consistent with sound water supply and environmental management practices is in the interest of all Colorado residents. **COMMENT 9** Boulder County is examining impacts from the Moffat Expansion Project that affect Boulder residents. Boulder generally supports the efforts of Boulder County to ensure that impacts from the Moffat Collection system Project are fully mitigated. P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*flows in South Boulder Creek. Most of the water needed to fill the environmental pool will be provided by Lafayette which owns numerous South Boulder Creek water rights already decreed for storage in Gross Reservoir as an alternate point of diversion. Under the IGAs, Lafayette will fill the environmental pool to the extent its water rights permit and will release its water to meet instream flow targets on South Boulder Creek. Lafayette will recapture some of its releases from the environmental pool at South Boulder Road, and will allow some of its releases to flow down lower South Boulder Creek to Boulder Creek to its diversion at 75th Street. Lafayette and Boulder will jointly file for a new junior water right on South Boulder Creek to fill a portion of the Environmental Pool during high streamflow periods in average to wet years. Boulder will provide the remainder of the water supply to fill the Environmental Pool from Colorado- Big Thompson (CBT) units, Windy Gap units or reusable effluent from Windy Gap units or other sources, Boulder Creek instream flow reusable water, or other Boulder Creek basin water rights that the city might acquire or change in use to allow storage in Gross Reservoir and use for instream flow purposes. Boulder will use CBT and Windy Gap units that it already owns and uses for municipal purposes or leases to agricultural users. Boulder's use of CBT and Windy Gap units will add a use to water it already owns, not create a new demand on the west slope.* *In summary, if a Moffat Collection System Project expansion is approved, Boulder supports the inclusion of an environmental pool of 5,000 AF to be administered by the Cities of Boulder and Lafayette for instream flow purposes in South Boulder Creek. Boulder requests that the Corps include the aquatic mitigation plan as set forth in the approved IGA (attached) as a permit condition*

Comment Information	Comment	Comments and Responses
	Mr. Scott Franklin March 16, 2010 Page 7 Thank you for considering Boulder's comments regarding the Moffat Collection System Project. As more is learned about the impacts and consequences, Boulder will provide additional comments and input to the Corps regarding this project. Sincerely, Jane S. Brautigam City Manager Attachment: Copy of IGA between Denver Water, City of Boulder and City of Lafayette cc: Chips Barry, Denver Water David P. Boergers, FERC Project Permit 2035 Boulder County Commissioners City of Lafayette P.O. Box 791 · Boulder, Colorado 80306-0791 · www.bouldercolorado.gov · (303)441-3090 · Fax (303)441-4478	*to address the impacts to aquatic resources in the South Boulder Creek basin from the Moffat Project.* **Response #1172-4:** Through an Intergovernmental Agreement (IGA) with the cities of Boulder and Lafayette, only those entities may store their water rights in the Environmental Pool. The IGA was signed by all parties in February 2010. Water stored by Boulder and Lafayette would include flow rights on South Boulder Creek or exchanged to Gross Reservoir from other locations in the South Platte River Basin. These exchanges would not change existing depletions from the Colorado River Basin. ***Comment #1172-8*** *(ID 4297)**:*** *Boulder does not support the construction of Leyden Gulch reservoir as a solution to Denver's northern system water supply problem under any circumstances. Boulder has worked for many years to preserve the Highway 93 corridor as open space and to protect wildlife, prairie ecosystems, and the mountain views visible from that road. Boulder has significant environmental concerns about the use of the Leyden Gulch site as part of the Moffat Collection System Project. As stated in the Front Range Mountain Backdrop Phase 2 Final Report*:* *"The Front Range Mountain Backdrop represents a unique ecological system not found elsewhere in Colorado. In ecological terms, the Backdrop is a regional ecotone or transition area where plant and animal communities of the Great Plains meet the foothills of the Rocky Mountains. The result is a diverse assemblage of plants, animals, geologic features, and scenic beauty near the rapidly growing Front Range urban corridor."* *The 1998 Intergovernmental Agreement by and between the City of Arvada and Denver Board of*

Comment Information	Comment	Comments and Responses
		Water Commissioners for the Purchase of Certain Lands and the Delivery of Water Under Current and Future Nonpotable Water Leases Water resulted in the acquisition by Arvada and Denver Water of the Leyden Gulch reservoir site. In that Intergovernmental Agreement Denver Water and Arvada agreed that if no reservoir is constructed that they would sell the land to Jefferson County if possible for open space. If the Moffat Collection System Project is constructed, the project would use much of Denver Water's excess yield currently available to it from the Moffat Collection System. Consequently it appears that Denver Water would have no further need for the site for future water supply purposes. Boulder believes that the Leyden Gulch site should be protected permanently as open space. In the event that the Leyden Gulch site is not used as a reservoir site, Boulder is willing to work with Denver Water, Arvada, and Jefferson County to identify options that preserve Leyden Gulch as open space. For example, Boulder would consider acquiring a conservation easement (or other protective deed) alone or jointly with others to help preserve that site. *START FOOTNOTE * Funded by Great Outdoors Colorado, the Front Range Mountain Backdrop Project was a collaborative effort of Boulder, Douglas, El Paso, Jefferson, and Larimer counties. END FOOTNOTE* **Response #1172-8:** The Corps notes the comment. The Corps considered the effect of the alternatives on the visual setting and overall landscape (see Draft Environmental Impact Statement [DEIS] Section 4.15). Visual impacts as a result of a proposed Leyden Gulch Reservoir under Alternative 1c are disclosed in Section 4.15.2 of the DEIS. Visual impacts were evaluated based on the change in

Comment Information	Comment	Comments and Responses
		visual setting and context at the proposed reservoir site, and user sensitivity to visual change. ***Comment #1172-5*** *(ID 4298)**:*** *The Draft EIS identifies Highway 72 as the access road for construction. Boulder agrees with that designation. However, Boulder believes that it is inappropriate to route construction traffic along State Highway 128 west of McCaslin Boulevard or along any portion of Highway 93 north of State Highway 72. Construction traffic on Highway 128 and Highway 93 will increase congestion on those roads and create noise impacts to surrounding open space lands. Boulder residents who commute along Highway 93 should not have to deal with the inconveniences of construction traffic along that road. The City of Arvada is a major beneficiary of the Moffat Collection System Project. Because the City of Arvada is a major beneficiary, designation of haul traffic through Arvada via Indiana Ave to Highway 72 is appropriate and necessary. Consequently, State Highway 128 west of McCaslin Boulevard or along any portion of Highway 93 north of State Highway 72 should be specifically prohibited as an access route for the project within the general conditions of the project permit.* **Response #1172-5:** Denver Water has agreed with Boulder County not to use Flagstaff Road for hauling construction materials. Regarding use of other roads, Denver Water and its contractor would discuss the specific roads, restrictions and traffic management agreements after final design and prior to construction when the details about the material needs and locations are known. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns.

Comment Information	Comment	Comments and Responses
		Comment #1172-6 *(ID 4299)**:*** *The Draft EIS does not identify Flagstaff Road, Magnolia road, or Colorado 1 19 for any construction, haul or forestry related traffic. Boulder appreciates that no designation is identified along these roads. However, the explicit exclusion of construction traffic on these roads is necessary. Flagstaff Road is a potential access route to Gross Reservoir. Access to Flagstaff Road requires travel on Baseline Road in Boulder through a residential neighborhood and past a school and park. Because of the steep grades, tight turns and large amount of residential and recreational traffic, the use of Flagstaff Mountain Road from Walker Ranch to the city limits of Boulder should be specifically prohibited as an access route for the project. Similarly, Colorado 119 connects to Magnolia Road and could provide access to Gross Reservoir. Magnolia Road in particular is steep and winding and therefore unsuitable for construction access or forestry activities related to project. Consequently, Magnolia road and Colorado 119 should be specifically prohibited as an access route for the project within the general conditions of the project permit.* **Response #1172-6:** Winiger Ridge would be used as a staging area for tree removal. The main access points would include State Highway 72, Gross Dam Road, and across Winiger Ridge using Forest Road (FR) 359 and County Road (CR) 68. Tree removal would be concurrent with other construction activities and would not take place during winter months. Denver Water has agreed with Boulder County not to use Flagstaff Road for hauling construction materials. Regarding use of other roads, Denver Water and its contractor would discuss the specific roads, restrictions and traffic management

Comment Information	Comment	Comments and Responses
		agreements after final design and prior to construction when the details about the material needs and locations are known. Denver Water would work with Jefferson and Boulder counties to address local traffic concerns. ***Comment #1172-3*** *(ID 4300)**:*** *The tree removal plan details activities around Gross Reservoir and places special attention to access in the Winiger Ridge area. Under the preferred alternative Denver Water intends to remove approximately 430 acres of trees and other debris between the existing lake elevation and ten feet above the elevation for the enlarged reservoir. Under the proposed tree removal plan, some temporary roads will need to be constructed to remove the trees. Several recreation developments will need to be removed or relocated as part of this process. Boulder supports the utilization of removed trees to the maximum amount practicable to minimize the need for land filling or burning of removed material.* *All temporary roads will need to be fully restored and replanted at the completion of the tree removal, and provisions for prevention of weeds to become established in those areas will be necessary. Existing forest roads impacted by the tree removal activities will need to be regraded and repaired upon the completion of tree removal activities. Post forestry activities to restore roads after tree removal and to remove/restore access points need further detail. Boulder can not support using Flagstaff Mountain Road for any purposes related to the tree removal plan. Boulder supports Boulder County efforts to manage projects impacts related to the tree removal plan.*

Comment Information	Comment	Comments and Responses
		Response #1172-3: As part of Denver Water's existing Federal Energy Regulatory Commission (FERC) hydropower license for Gross Reservoir (Article 406 – Conditions 107 and 108), Denver Water is required to submit an annual monitoring report for noxious plants. This report includes a list of the priority species and plans to eradicate these species from the FERC project area (which includes lands owned by the U.S. Forest Service [USFS] and Denver Water). These weed control efforts involve the cooperation of the USFS and Denver Water, and are based on a list of noxious weeds developed by the USFS and the Colorado Department of Agriculture. As currently proposed, the temporary roads associated with tree removal would be below the new high water line for Gross Reservoir and would not be re-vegetated. If roads are constructed above the new high water line, a reclamation plan would be developed for the USFS. Denver Water would work closely with the USFS to ensure tree removal and restoration efforts are consistent with National Forest standards. Winiger Ridge would be used as a staging area for tree removal. The main access points would include State Highway (SH) 72, Gross Dam Road, and across Winiger Ridge using FR 359 and CR 68. Tree removal would be concurrent with other construction activities and would not take place during winter months. Denver Water agreed with Boulder County to not use Flagstaff Road for hauling construction materials. Regarding use of other roads, Denver Water and its contractor would discuss the specific roads, restrictions and traffic management agreements after final design and prior to

Comment Information	Comment	Comments and Responses
		construction when the details about the material needs and locations are known. Denver Water would work with Jefferson and Boulder counties to address local traffic concerns. ***Comment #1172-9*** *(ID 4301)**:*** *Boulder supports Denver Water's efforts to conserve water. Water conservation has and continues to be an important aspect in water supply planning and management. Further reductions in per capita water use are possible within the Denver Water service area. Boulder has recently adopted tiered pricing for water to better manage demand and conserve additional water. This program has been successful for Boulder, and adoption of similar programs by utilities such as Denver Water would further extend the availability of water using existing infrastructure.* *Further steps to reduce both indoor and outdoor water use within the Denver Water service area should go hand in hand with structural solutions to generate greater supply. More aggressive water conservation by Denver would go a long way toward enhancing public support for infrastructure projects such as the Moffat Expansion Project. Denver Water helped lead the region with its innovative water conservation programs such as xeriscaping. Now is the time to redouble those efforts. Boulder encourages Denver Water to take more aggressive steps to further conserve water than it currently does or projects for the future to further reduce the need for additional structural solutions to water supply shortfalls.* **Response #1172-9:** All Denver Water customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis

Comment Information	Comment	Comments and Responses
		comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #1172-10*** *(ID 4302)**:*** *Many Boulder residents own second homes in Grand County or regularly take advantage of recreation opportunities there. A number of Boulder residents have expressed concern about potential west slope impacts to the Moffat Expansion Project. Boulder is aware of the likely impacts to streams on the west slope of the Continental Divide from diversions of water that will occur from the Moffat Collection System Project. Impacts from the project will result in flow and sedimentation changes in various streams, including the Fraser River. The flow changes have the potential to alter water quality and aquatic habitat. Depletion impacts will likely occur.* *Boulder encourages Denver Water and the Corps to work closely with Grand County and communities on the west slope to identify and implement programs to mitigate impacts related to the project. Boulder supports the efforts of Grand County to identify and implement appropriate*

Comment Information	Comment	Comments and Responses
		mitigation measures should the Corps select one of the action alternatives for permitting. **Response #1172-10:** The Corps notes the comment. ***Comment #1172-7*** *(ID 4293)**:*** *Boulder believes in maximizing the use of existing water utility infrastructure to generate hydroelectricity to the greatest extent practicable. Boulder encourages Denver Water to investigate how to maximize the generation of clean hydroelectric power within its system to help offset carbon emissions within Colorado. Full utilization of Gross Reservoir now or after enlargement for hydroelectric power generation consistent with sound water supply and environmental management practices is in the interest of all Colorado residents.* **Response #1172-7:** According to Denver Water, it is currently undergoing a review of all facilities to determine the potential for hydroelectric generation. The "Hydroelectric Visionary Plan" identified 29 potential sites on Denver Water's treated and raw water systems that might be suitable for hydroelectric power. Each site was evaluated and 14 of these hydroelectric projects were evaluated in more detail. Of these 14 hydroelectric projects, two are currently in Denver Water's Capital Plan and would be designed and constructed over the next several years, three were determined not to be economically viable, three have viability studies currently underway, and the remaining six would have a viability study when the associated facility is scheduled for capital improvement work. However, it is important to note that the primary purpose of Denver Water is to provide water to the Combined Service Area. Hydropower is an ancillary benefit

Comment Information	Comment	Comments and Responses
		and hydropower facilities are only constructed when it is economically feasible and would not interfere with operations. ***Comment #1172-1*** *(ID 4294)**:*** *Boulder County is examining impacts from the Moffat Expansion Project that affect Boulder residents. Boulder generally supports the efforts of Boulder County to ensure that impacts from the Moffat Collection system Project are fully mitigated.* *Thank you for considering Boulder's comments regarding the Moffat Collection System Project. As more is learned about the impacts and consequences, Boulder will provide additional comments and input to the Corps regarding this project.* **Response #1172-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #1178 Kathy Hartman, Chairman Jefferson County 100 Jefferson County Parkway Golden, CO 80419 and Faye Griffin Jefferson County 100 Jefferson County Parkway Golden, CO 80419 and J. Kevin McCasky Jefferson County 100 Jefferson County Parkway Golden, CO 80419	Board of County Commissioners Faye Griffin District No. 1 J. Kevin McCasky District No. 2 Kathy Hartman District No. 3 March 12, 2010 RECEIVED MAR 2010 Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, Colorado 80128 Subject: Comments on the Moffat Collection System Project and Expansion of Gross Reservoir Dear Mr. Franklin: The Jefferson County Board of Commissioners strongly supports the Moffat Collection System (MCS) Project and the expansion of Gross Reservoir. Expansion of Gross Reservoir would provide a reliable and adequate water supply for existing and future residents. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System, which includes many residents of Jefferson County. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre-feet by 2030. A reliable water supply is extremely important to Jefferson County residents' quality of life. Although Denver Water has had an aggressive conservation program, which has resulted in significant water savings, and has plans to conserve even more, the MCS has existing water demands that can exceed available supplies during a drought. We understand that the Moffat system came close to running out of water during the severe drought of 2002. Future droughts of that severity could put our communities at considerable risk. Unfortunately, the careful analysis and need to protect water supplies is being overlooked by many opponents who are ultimately interested in stopping all growth in general; and in particular, Jefferson Parkway, which is the critical remaining unconstructed portion of the beltway that encircles the Denver metropolitan area. We encourage your team to continue its focus on the provision and management of water infrastructure and not on local land use and regional transportation decisions that have been planned for over 40 years. 100 Jefferson County Parkway, Golden, Colorado 80419 (303) 279-6511 http://jeffco.us	***Comment #1178-1*** *(ID 4394)**:*** *The Jefferson County Board of Commissioners strongly supports the Moffat Collection System (MCS) Project and the expansion of Gross Reservoir.* *Expansion of Gross Reservoir would provide a reliable and adequate water supply for existing and future residents. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System, which includes many residents of Jefferson County. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre feet by 2030.* *A reliable water supply is extremely important to Jefferson County residents' quality of life. Although Denver Water has had an aggressive conservation program, which has resulted in significant water savings, and has plans to conserve even more, the MCS has existing water demands that can exceed available supplies during a drought. We understand that the Moffat system came close to running out of water during the severe drought of 2002. Future droughts of that severity could put our communities at considerable risk.* *Unfortunately, the careful analysis and need to protect water supplies is being overlooked by many opponents who are ultimately interested in stopping all growth in general; and in particular, Jefferson Parkway, which is the critical remaining*

Comment Information	Comment	Comments and Responses
	Scott Franklin March 12, 2010 Page Two Thank you for the opportunity to comment on this critical project. Sincerely, BOARD OF COUNTY COMMISSIONERS Kathy Hartman Chairman Faye Griffin J. Kevin McCasky BCC/mm cc: Denver Water Board Tom Gougeon, Continuum Partners, LLC	*unconstructed portion of the beltway that encircles the Denver metropolitan area. We encourage your team to continue its focus on the provision and management of water infrastructure and not on local land use and regional transportation decisions that have been planned for over 40 years.* **Response #1178-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1181 David W. Lighthart, President and Chairman Bear Creek Water and Sanitation District 2517 South Flower Street Lakewood, CO 80227-2912	**Bear Creek Water and Sanitation District** 2517 South Flower Street • Lakewood, Colorado 80227-2912 March 8, 2010 RECEIVED MAR 2010 Mr. Scott Franklin Moffat EIS Project Manager U.S. Army Corps of Engineers 9307 South Wadsworth Boulevard Littleton, Colorado 80128 Re: Moffat Collection System Project Dear Mr. Franklin: The Board of Directors of the Bear Creek Water and Sanitation District supports the Moffat Collection System Project and requests that the 404 permit for the Project be issued. Our District is entirely dependent upon Denver Water in providing water to our citizens. Great strides have been made in conservation, but those efforts alone cannot address the future supply demands on the Denver system. Denver Water has projected a need for an additional 34,000 acre-feet of water by 2030. The Moffat Collection System Project is designed to meet much of that requirement. Of equal concern is the need to increase the capacity of Denver's system to deal with source and distribution disruptions from both natural and unnatural causes, particularly on the north end of Denver's system. We support the Moffat Collection System Project not only because it will help us continue to provide the water our customers need, but also because of the benefit of the increased safety and security of the water supply to the entire Denver metropolitan area. Very truly yours, David W. Lighthart President and Chairman cc: Brian Gogas, Denver Water Patrick J. Fitzgerald, Denver Distributor Forum Phone: 303/986-3442 • • www.bearcreekwater.org • FAX: 303/986-8213	***Comment #1181-1*** *(ID 4395)**:*** *The Board of Directors of the Bear Creek Water and Sanitation District supports the Moffat Collection System Project and requests that the 404 permit for the Project be issued.* *Our District is entirely dependent upon Denver Water in providing water to our citizens. Great strides have been made in conservation, but those efforts alone cannot address the future supply demands on the Denver system. Denver Water has projected a need for an additional 34,000 acre-feet of water by 2030. The Moffat Collection System Project is designed to meet much of that requirement.* *Of equal concern is the need to increase the capacity of Denver's system to deal with source and distribution disruptions from both natural and unnatural causes, particularly on the north end of Denver's system.* *We support the Moffat Collection System Project not only because it will help us continue to provide the water our customers need, but also because of the benefit of the increased safety and security of the water supply to the entire Denver metropolitan area.* **Response #1181-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1183 Patrick Fitzgerald, District Manager, Board of Directors Southwest Metropolitan Water and Sanitation District 8739 West Coal Mine Avenue Littleton, CO 80123	Southwest Metropolitan Water and Sanitation District www.swmetrowater.org 8739 W. Coal Mine Ave. • Littleton, Colorado 80123 • (303) 979-2333 • Fax (303) 933-1769 March 4, 2010 RECEIVED MAR 2010 Mr. Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 7307 S. Wadsworth Blvd. Littleton, CO 80128 Re: Moffat Collection System Project Dear Mr. Franklin; The Board of Directors of Southwest Metropolitan Water and Sanitation District (Board) strongly supports the Moffat Collection System Project Alternative 1A calling for a 72,000 acre-foot expansion of Gross Reservoir. The Board is responsible for water supply for approximately 12,000 residential, commercial, industrial and public customers in Arapahoe, Jefferson, and Douglas Counties. The District's single source for water supply is Denver Water. No other groundwater or surface water supplies are available to the District. For over 50 years Southwest Metropolitan has supported and taken an active interest in Denver Water's development of water resources. The District's involvement has been focused on the assurance of an adequate and reliable water supply to serve the needs of District and Metropolitan Denver area users. Gross Reservoir Enlargement supports these critical goals Adequacy of water supply will be enhanced by the addition of 18,000 acre-feet of firm annual yield. This is critically important to the District as it continues to experience population and employment growth that will soon strain the ability of current water supplies to meet future needs. In addition to adequate water supplies, preservation of public health and welfare, as well as vibrant economic development, demands a continuous and reliable water supply. The proposed Moffat project will reduce the vulnerability on the north side of the Denver Water system from drought, potential man made disasters and natural disasters and pressures such as climate change. Strengthening the northern portion of the Denver Water's system protects the southern portion of the system through which Southwest Metropolitan draws its water supply.	***Comment #1183-5*** *(ID 4339)**:*** *The Board of Directors of Southwest Metropolitan Water and Sanitation District (Board) strongly supports the Moffat Collection System Project Alternative 1A calling for a 72,000 acre-foot expansion of Gross Reservoir. The Board is responsible for water supply for approximately 12,000 residential, commercial, industrial and public customers in Arapahoe, Jefferson, and Douglas Counties. The District's single source for water supply is Denver Water. No other groundwater or surface water supplies are available to the District.* **Response #1183-5:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1183-4*** *(ID 4340)**:*** *For over 50 years Southwest Metropolitan has supported and taken an active interest in Denver Water's development of water resources. The District's involvement has been focused on the assurance of an adequate and reliable water supply to serve the needs of District and Metropolitan Denver area users. Gross Reservoir Enlargement supports these critical goals Adequacy of water supply will be enhanced by the addition of 18,000 acre-feet of firm annual yield. This is critically important to the District as it continues to experience population and employment growth that will soon strain the ability of current water supplies to meet future needs.* **Response #1183-4:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
	Scott Franklin SWM March 4, 2010 Page 2 In addition to Southwest Metropolitan's involvement in Denver Water resource development issues, the District has been an active supporter of its efforts to fully protect and utilize existing water supplies to the maximum extend possible. The District has participated in and supported Denver Water's renowned water conservation and reuse programs. Water demand in Southwest Metropolitan has been stable over the last ten years despite significant increases in population and employment. This is the result of an ever increasing focus on water conservation across all customer types and for all uses within each customer category. The Southwest Metropolitan Board will continue to emphasize promotion of water use efficiencies but realizes that population and employment growth will exceed the ability of these efforts to provide the adequacy and reliability that our existing and future customers demand. The Southwest Metropolitan Board supports and endorses the environmental mitigation package which has been thoughtfully crafted by Denver Water and other participating entities to fully address environmental impacts associated with Gross Reservoir enlargement. Not only does the mitigation plan address environmental impacts, it proposes a number of environmental enhancements that go well beyond the requirements of the National Environmental Policy Act. While the Southwest Metropolitan Board has a duty and responsibility to provide an adequate and reliable water supply for our customers, we fully support Denver Water's efforts to accomplish this goal in an environmentally sensitive and protective manner. The proposed project mitigation plan ensures that our objectives will be realized. On behalf of our existing 12,000 customers, and those that choose to reside and work in the District in the future, the Board of Directors of Southwest Metropolitan encourage you to approve and issue all necessary permits for the Moffat Collection System Project Alternative 1A, 72,000 acre-foot Expansion of Gross Reservoir. Yours sincerely, Patrick Fitzgerald, District Manager For the Board of Directors of Southwest Metropolitan Water and Sanitation District J:\data\WPDOCS\LETTER\Word Files\Franklin SWM.pjf.030410.doc	***Comment #1183-3*** *(ID 4341)**:*** *In addition to adequate water supplies, preservation of public health and welfare, as well as vibrant economic development, demands a continuous and reliable water supply. The proposed Moffat project will reduce the vulnerability on the north side of the Denver Water system from drought, potential man-made disasters and natural disasters and pressures such as climate change. Strengthening the northern portion of the Denver Water's system protects the southern portion of the system through which Southwest Metropolitan draws its water supply.* **Response #1183-3:** The Corps notes the comment. ***Comment #1183-2*** *(ID 4342)**:*** *In addition to Southwest Metropolitan's involvement in Denver Water resource development issues, the District has been an active supporter of its efforts to fully protect and utilize existing water supplies to the maximum extent possible. The District has participated in and supported Denver Water's renowned water conservation and reuse programs. Water demand in Southwest Metropolitan has been stable over the last ten years despite significant increases in population and employment. This is the result of an ever increasing focus on water conservation across all customer types and for all uses within each customer category. The Southwest Metropolitan Board will continue to emphasize promotion of water use efficiencies but realizes that population and employment growth will exceed the ability of these efforts to provide the adequacy and reliability that our existing and future customers demand.* **Response #1183-2:** The Corps notes the comment.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
		Comment #1183-1 *(ID 4343)**:*** *The Southwest Metropolitan Board supports and endorses the environmental mitigation package which has been thoughtfully crafted by Denver Water and other participating entities to fully address environmental impacts associated with Gross Reservoir enlargement. Not only does the mitigation plan address environmental impacts, it proposes a number of environmental enhancements that go well beyond the requirements of the National Environmental Policy Act. While the Southwest Metropolitan Board has a duty and responsibility to provide an adequate and reliable water supply for our customers, we fully support Denver Water's efforts to accomplish this goal in an environmentally sensitive and protective manner. The proposed project mitigation plan ensures that our objectives will be realized.* **Response #1183-1:** The support of the Moffat Project is noted. ***Comment #1183-6*** *(ID 4338)**:*** *On behalf of our existing 12,000 customers, and those that choose to reside and work in the District in the future, the Board of Directors of Southwest Metropolitan encourage you to approve and issue all necessary permits for the Moffat Collection System Project Alternative 1 A, 72,000 acre-foot Expansion of Gross Reservoir.* **Response #1183-6:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1188 Mike Smith, Director City of Westminster, Department of Public Works and Utilities 4800 West 92nd Avenue Westminster, CO 80031	WESTMINSTER March 11, 2010 Denver Water Attn: Brian Gogas Mail Code 415 1600 West 12th Avenue Denver, CO 80204 Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 City of Westminster Department of Public Works and Utilities 4800 West 92nd Avenue Westminster, Colorado 80031 303-658-2400 FAX 303-706-3927 Re: Comments on Moffat Collection System Project Dear Gentlemen: The City of Westminster (City) currently provides water to almost 130,000 people in the metropolitan area and is anticipating additional growth in the future. The City and Denver Water have a long history of collaboration on water supply and water supply issues. The City has agreements with Denver Water, dated January, 1984 and September 1993, by which Denver Water delivers raw water from their Moffat Collection System to the City. The City relies on the Moffat deliveries as an essential part of our Comprehensive Water Supply Plan. At buildout, the Moffat deliveries are anticipated to provide approximately 12% of the City's firm yield, a crucial portion of the City's supply. The Moffat Collection System Expansion project is critical to ensuring the dependability of Denver Water's deliveries to the City under the above-mentioned agreements. As the City's water supply is heavily dependent on the Clear Creek watershed, the Moffat deliveries are seen as an essential vulnerability reduction to the City's system since they derive from the West Slope and provide diversification to the City's water supply system. Sincerely, Mike Smith Director of Public Works and Utilities Printed on recycled paper	***Comment #1188-1*** *(ID 4333)**:*** *The City of Westminster (City) currently provides water to almost 130,000 people in the metropolitan area and is anticipating additional growth in the future. The City and Denver Water have a long history of collaboration on water supply and water supply issues. The City has agreements with Denver Water, dated January, 1984 and September 1993, by which Denver Water delivers raw water from their Moffat Collection System to the City. The City relies on the Moffat deliveries as an essential part of our Comprehensive Water Supply Plan.* *At buildout, the Moffat deliveries are anticipated to provide approximately 12% of the City's firm yield, a crucial portion of the City's supply. The Moffat Collection System Expansion project is critical to ensuring the dependability of Denver Water's deliveries to the City under the above-mentioned agreements.* *As the City's water supply is heavily dependent on the Clear Creek watershed, the Moffat deliveries are seen as an essential vulnerability reduction to the City's system since they derive from the West Slope and provide diversification to the City's water supply system.* **Response #1188-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1193 B.A. Wyatt, President, Board of Directors Valley Water District 12101 West 52nd Avenue Wheat Ridge, CO 80033	VALLEY WATER DISTRICT 12101 WEST 52ND AVENUE WHEAT RIDGE, COLORADO 80033 TELEPHONE 303-424-9661 FAX 303-424-0828 RECEIVED MAR 2010 March 12, 2010 Mr. Scott Franklin U.S. Army Corps of Engineers 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: The Valley Water District would like to take this opportunity to voice our support of the Moffat Collection System project and subsequent Gross Reservoir project. The Valley Water District receives its water through a distributor's contract with the Denver Water Department and the District's citizens rely upon the system carefully built by the Denver Board of Water Commissioners over the last century. Through the judicious planning on the part of the Denver Water Board, the metro area has enjoyed a consistent, reliable water supply. The Denver Water Board has a proven track record of foresight which has anticipated many demands including growth, drought and environmental challenges. In order for our District to continue to provide reliable water service to its customers, we are encouraging the U.S. Army Corps of Engineers to issue the 404 permit for the project. Along with the Denver Water Board, our District remains committed to protecting future water supplies with a diversified approach which includes education and conservation along with supporting this expansion of available storage. Thank you for your consideration of this project and its tremendous importance to the existing and future citizens of this great metropolitan area which relies upon the water supplied by the Denver Water Board. Sincerely, B.A. Wyatt President Valley Water District Board of Directors	***Comment #1193-1*** *(ID 4392)**:*** *The Valley Water District would like to take this opportunity to voice our support of the Moffat Collection System Project and subsequent Gross Reservoir project.* *The Valley Water District receives its water through a distributor's contract with the Denver Water Department and the District's citizens rely upon the system carefully built by the Denver Board of Water Commissioners over the last century. Through the judicious planning on the part of the Denver Water Board, the metro area has enjoyed a consistent, reliable water supply. The Denver Water Board has a proven track record of foresight which has anticipated many demands including growth, drought and environmental challenges.* *In order for our District to continue to provide reliable water service to its customers, we are encouraging the U.S. Army Corps of Engineers to issue the 404 permit for the project.* *Along with the Denver Water Board, our District remains committed to protecting future water supplies with a diversified approach which includes education and conservation along with supporting this expansion of available storage.* *Thank you for your consideration of this project and its tremendous importance to the existing and future citizens of this great metropolitan area which relies upon the water supplied by the Denver Water Board.* **Response #1193-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1241 Patrick Fitzgerald, District Manager, Board of Directors Platte Canyon Water & Sanitation District 8739 West Coal Mine Avenue Littleton, CO 80123	water & sanitation district Platte Canyon RECEIVED MAR 2010 March 4, 2010 Mr. Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 7307 S. Wadsworth Blvd. Littleton, CO 80128 Re: Gross Reservoir Enlargement Project Dear Mr. Franklin: Platte Canyon Water and Sanitation District (District) supplies potable water to approximately 6,000 residential, commercial and public customers in Jefferson and Arapahoe Counties. The District receives 100 percent of its water supply from Denver Water and has access to no other groundwater or surface water resources. Because of this, the District is ever vigilant and supportive of Denver Water's efforts to ensure delivery of adequate and reliable water supplies. The proposed Moffat Collection System Project not only increases available water supplies to the bulk of the Metropolitan Denver area including Platte Canyon, it increases the current system's reliability and safety by enhancing the capacity of the northern segment of Denver Water's service area. This in turn supports the public welfare and economic vitality of the entire metropolitan area. Platte Canyon supports and fully participates in Denver Water's water conservation and water reuse efforts. These vital programs are integral to the ability of the Denver Water Integrated Water System's ability to meet its present and future water supply needs while minimizing the environmental and economic impacts associated with other water development projects. However, these water efficiency enhancing programs will not fully provide for the inevitable growth within the Denver Water service area. Water demands within Platte Canyon and the collective Denver service area have been stable since 2002 despite significant population and employment growth. Water efficiency efforts have largely met the need during this period and will undoubtedly help meet future demands. They will not, however, be capable of meeting all of the future needs and must be supplemented with responsible water storage projects developed in an environmentally sensitive manner. The Moffat Collection System Project achieves this objective. 8739 W. Coal Mine Ave. Littleton, Colorado 80123 (303) 979-2333 Fax (303) 933-1769 www.plattecanyon.org	***Comment #1241-2*** *(ID 4337)**:*** *Platte Canyon Water and Sanitation District (District) supplies potable water to approximately 6,000 residential, commercial and public customers in Jefferson and Arapahoe Counties. The District receives 100 percent of its water supply from Denver Water and has access to no other groundwater or surface water resources. Because of this, the District is ever vigilant and supportive of Denver Water's efforts to ensure delivery of adequate and reliable water supplies. The proposed Moffat Collection System Project not only increases available water supplies to the bulk of the Metropolitan Denver area including Platte Canyon, it increases the current system's reliability and safety by enhancing the capacity of the northern segment of Denver Water's service area. This in turn supports the public welfare and economic vitality of the entire metropolitan area.* **Response #1241-2:** The support of the Moffat Project is noted. ***Comment #1241-1*** *(ID 4336)**:*** *Platte Canyon supports and fully participates in Denver Water's water conservation and water reuse efforts. These vital programs are integral to the ability of the Denver Water Integrated Water System's ability to meet its present and future water supply needs while minimizing the environmental and economic impacts associated with other water development projects. However, these water efficiency enhancing programs will not fully provide for the inevitable growth within the Denver Water service area. Water demands within Platte Canyon and the collective Denver service area have been stable since 2002 despite significant population and employment growth. Water efficiency efforts have largely met the need during this period and will undoubtedly help meet*

Comment Information	Comment	Comments and Responses
	Scott Franklin March 4, 2010 Page 2 The environmental mitigation package proposed by Denver Water exceeds the requirements of the National Environmental Policy Act and provides significant enhancements to areas and entities impacted by the project. Included in these enhancements are: • An agreement with Boulder and Lafayette to provide 5,000 acre-feet of storage space in the enlarged Gross Reservoir to assist those entities in enhancing aquatic habitat in South Boulder Creek. • Dedication of $2.0 million for stream modifications to improve aquatic habitats in Grand County. • Dedication of $2.0 million for improvements to water quality in Grand County. • commitment to provide up to 2,000 acre-feet of water for augmentation of streamflow in Grand County. These and other mitigation measures, including continuing commitments to pursue additional water efficiencies and reuse of existing water resources, confirm Denver Water's commitment to preservation of environmental values. These values are an integral component of the Moffat Collection System Project and support the issuance of a Record of Decision in favor of the project as proposed and evaluated. Thank you for your consideration of these comments. Yours sincerely, Patrick Fitzgerald, District Manager For the Board of Directors of Platte Canyon Water and Sanitation District [illegible]	*future demands. They will not, however, be capable of meeting all of the future needs and must be supplemented with responsible water storage projects developed in an environmentally sensitive manner. The Moffat Collection System Project achieves this objective.* **Response #1241-1:** The support of the Moffat Project is noted. ***Comment #1241-4*** *(ID 4335)**:*** *The environmental mitigation package proposed by Denver Water exceeds the requirements of the National Environmental Policy Act and provides significant enhancements to areas and entities impacted by the project. Included in these enhancements are:* • *An agreement with Boulder and Lafayette to provide 5,000 acre-feet of storage space in the enlarged Gross Reservoir to assist those entities in enhancing aquatic habitat in South Boulder Creek.* • *Dedication of $2.0 million for stream modifications to improve aquatic habitats in Grand County.* • *Dedication of $2.0 million for improvements to water quality in Grand County.* • *Commitment to provide up to 2,000 acre-feet of water for augmentation of streamflow in Grand County.* **Response #1241-4:** The Corps notes the comment. ***Comment #1241-3*** *(ID 4334)**:*** *These and other mitigation measures, including continuing commitments to pursue additional water efficiencies and reuse of existing water resources,*

Comment Information	Comment	Comments and Responses
		confirm Denver Water's commitment to preservation of environmental values. These values are an integral component of the Moffat Collection System Project and support the issuance of a Record of Decision in favor of the project as proposed and evaluated. **Response #1241-3:** The support of the Moffat Project is noted.

Comment Information	Comment	Comments and Responses
Comment #1548 Michael R. Wageck, District Manager Winter Park Water & Sanitation District P.O. Box 7 Winter Park, CO 80482	**Winter Park Water & Sanitation District** **P.O. Box 7, Winter Park, CO 80482** Administration 970.887.2970 Water Plant 970.726.9221 Wastewater Plant 970.726.5041 February 12, 2010 RECEIVED MAR 2010 Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: The Winter Park Water and Sanitation District (WPWSD) appreciates the opportunity to provide comments to the Corps of Engineers on the Draft EIS for the Moffat Collection System Project (DEIS). The WPWSD serves the Winter Park Ski Area, several resorts and residential developments near the ski area base. The Winter Park Water and Sanitation District diverts water from the Fraser River just below Denver Water's Moffat Collection system diversion (see attached General Location Map). Stream flows in the river below Denver's diversion is the District's only source of water. The WPWSD is totally dependent on there being flows in the river at all times of the year. Any changes to stream flows on this stretch of river is of a major concern to the WPWSD . **Impacts of the Moffat Project** The DEIS explores impacts to large geographic areas and numerous stream reaches using 30 year averages. Impacts should be determined on a much more site specific basis. Chapter 3, section 3.1.5, River Segments, explains the Fraser River consists of 30 tributaries covering 93 stream miles in length. The hydrology section 3.1.5.1 Fraser River uses average stream flow covering 30 years. The use of averages covering 30 years serves to reduce the significance of any impacts. Averages covering only the driest years should be considered to be able to determine the extent of any potential impact.	***Comment #1548-3*** *(ID 1409)**:*** *The Winter Park Water and Sanitation District (WPWSD) appreciates the opportunity to provide comments to the Corps of Engineers on the Draft EIS for the Moffat Collection System Project (DEIS). The WPWSD serves the Winter Park Ski Area, several resorts and residential developments near the ski area base. The Winter Park Water and Sanitation District diverts water from the Fraser River just below Denver Water's Moffat Collection system diversion (see attached General Location Map). Stream flows in the river below Denver's diversion is the District's only source of water. The WPWSD is totally dependent on there being flows in the river at all times of the year. Any changes to stream flows on this stretch of river is of a major concern to the WPWSD.* **Response #1548-3:** Please see the response to Comment Identification (ID) 1411. ***Comment #1548-1*** *(ID 1410)**:*** *The DEIS explores impacts to large geographic areas and numerous stream reaches using 30 year averages. Impacts should be determined on a much more site specific basis. Chapter 3, section 3.1.5, River Segments, explains the Fraser River consists of 30 tributaries covering 93 stream miles in length. The hydrology section 3.1.5.1 Fraser River uses average stream flow covering 30 years. The use of averages covering 30 years serves to reduce the significance of any impacts. Averages covering only the driest years should be considered to be able to determine the extent of any potential impact.* *The DEIS does not look at the relative importance of individual stream reaches. Attributes like population centers and commercial activities*

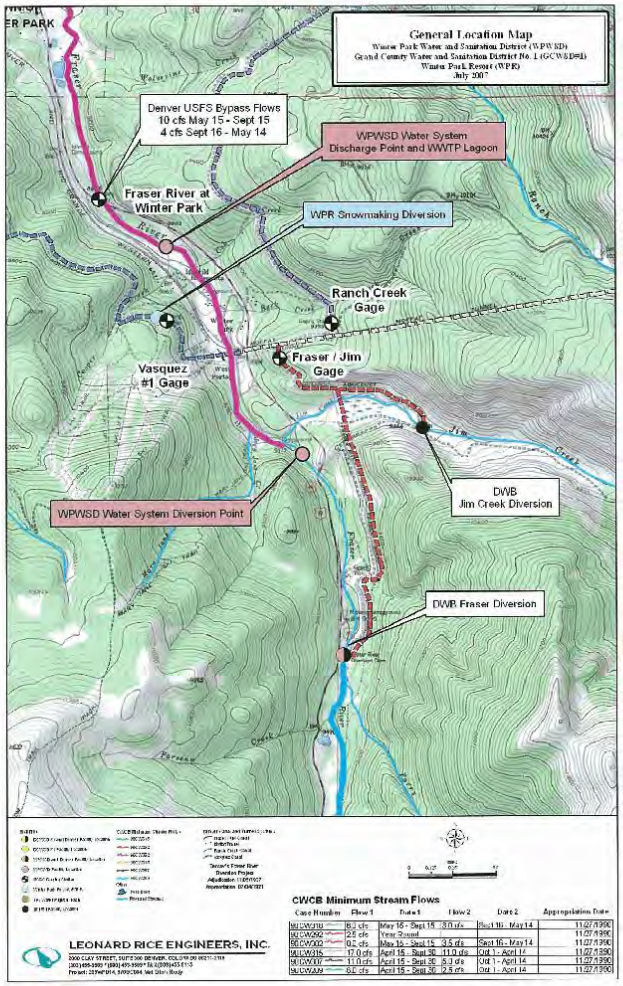
Comment Information	Comment	Comments and Responses
	The DEIS does not look at the relative importance of individual stream reaches. Attributes like population centers and commercial activities supported by the individual reaches should be considered. Environmental and recreational attributes should be determined and prioritized for each stream reach. These important stream reaches should be prioritized and impacts to these reaches should be determined individually. WPWSD is located on the 3.3 miles of the Fraser River between the Moffat Collection system Fraser River Diversion and the USGS 09024000 Fraser River at Winter Park Gage (General Location Map attached). WPWSD currently serves approximately 1,600 single family equivalents including the Winter Park Ski Resort. More than 10,000 skiers visit the ski area on any given weekend. WPWSD water supply diversion is less than a mile below the Moffat system diversion. This small stream reach provides for the major economic force in the region. Stream flow conditions in this reach should have a high priority. The DEIS should look at this reach very closely. The DEIS hydrology section looks at flows some three miles further downstream. Several small tributaries add to the flows between the WPWSD diversion and the USGS gage. Stream flows at the WPWSD diversion are significantly lower than flows reported at the gage for this reach. Stream flows for this reach have been extensively studied by WPWSD as reported in a Leonard Rice Engineers Study from July 2005. This draft report entitled "Feasibility Study: Evaluation of Water Supply Alternatives" July 2005, (Inclusion) indicates in dry years flows in the Fraser are not enough to support the water demands of WPWSD at build out. Any reductions to the stream flows could have significant effects on our ability to serve our customers and limit growth envisioned by the Town of Winter Park and WPWSD . The DEIS needs to determine the impacts of the Moffat Collection System Project (Project) on this specific stream reach. Increased diversions as a result of the Project and the WPWSD's own growth needs will make it very difficult to maintain environmental flows and water quality in this stream reach. Ninety seven percent of water diverted by the WPWSD is returned to the river within 1.8 miles maintaining streamflows and water quality. Water diverted by Denver Water is never returned to the river system and is considered 100% consumptive. Streamflows and water quality are permanently affected by Moffat Collection System diversions. Chapter 3 discusses the 31 primary diversion points on the Moffat Collection system. Through an agreement with the United States Forest Service (USFS) from 1972, only 10 of these diversions have bypass flow requirements, 21 of these diversions take all available water and are dry below the diversion. That means a significant portion of the environment has been dried up and has already been severely impacted. The Fraser River is	*supported by the individual reaches should be considered. Environmental and recreational attributes should be determined and prioritized for each stream reach. These important stream reaches should be prioritized and impacts to these reaches should be determined individually.* *WPWSD is located on the 3.3 miles of the Fraser River between the Moffat Collection system Fraser River Diversion and the USGS 09024000 Fraser River at Winter Park Gage (SEE ATTACHED GENERAL LOCATION MAP). WPWSD currently serves approximately 1,600 single family equivalents including the Winter Park Ski Resort. More than 10,000 skiers visit the ski area on any given weekend. WPWSD water supply diversion is less than a mile below the Moffat system diversion. This small stream reach provides for the major economic force in the region. Stream flow conditions in this reach should have a high priority. The DEIS should look at this reach very closely. The DEIS hydrology section looks at flows some three miles further downstream. Several small tributaries add to the flows between the WPWSD diversion and the USGS gage. Stream flows at the WPWSD diversion are significantly lower than flows reported at the gage for this reach. Stream flows for this reach have been extensively studied by WPWSD as reported in a Leonard Rice Engineers Study from July 2005. This draft report entitled "Feasibility Study: Evaluation of Water Supply Alternatives" July 2005, (Inclusion) indicates in dry years flows in the Fraser are not enough to support the water demands of WPWSD at build out. Any reductions to the stream flows could have significant effects on our ability to serve our customers and limit growth envisioned by the Town of Winter Park and WPWSD. The DEIS needs to determine the impacts of the Moffat Collection System Project (Project) on this specific stream reach.*

Comment Information	Comment	Comments and Responses
	one of these diversions that have a bypass flow requirement. These bypass flows are the WPWSD's entire water supply. These bypass flows are dilution flows for our wastewater treatment plants. These bypass flows are our recreation and environmental flows. Chapter 3 reports Denver Water has agreements that allow the reductions of these bypass flows in dry years. These dry year flow reductions could significantly impair the WPWSD's ability to serve its' customers. The DEIS also indicates impacts to stream flow of less than 10% are not significant. Stream flows at the WPWSD's point of diversion are so low that any reduction in flow could significantly impair our ability to serve. The DEIS indicates that Denver Water anticipates reducing the USFS Bypass Flows in the Fraser basin much more in the future than has historically occurred. Denver Water has historically reduced the bypass flows twice since they were established in 1970; in 2002 and 2003. The DEIS indicates that under the full Use Existing System, they would reduce the bypass flows eight years out of the 45 year study period; or approximately one out of every six years (Table H-1.51). During dry months and dry years, minor changes in stream flows in these areas have critical significance to the area's water supply needs. The DEIS does not provide any detail about the time of year these bypasses would be reduced. Therefore it is impossible to understand the impacts to water providers in this area from any future bypass reductions. Further, the DEIS does not contain *any* information regarding additional bypass reductions in terms of frequency, duration or volume for any of the future alternatives. Due to the critical importance of bypass flows on the local aquatic environment and local water supply needs, it is impossible to ascertain the impact from the Project. Bypass Flow Reductions Should be Eliminated. The Gross Reservoir enlargement portion of the Project requires a new USFS Special Use Permit. The Army Corps of Engineers (Corps) should request the Forest Service review all USFS agreements associated with the Moffat Collection system as a part of this new Special Use Permit. This review of the bypass flow requirements is necessary to determine if the resource (the forest) is being protected for the people of the United States. Bypass Flows are so critical to the source basin, the Corps should require as a condition of the permit that the *first* benefit of the project is to provide sufficient storage to eliminate the need for Bypass Flow reductions. The dewatering of the basin should not be allowed to continue just to allow for additional expansion of Denver Water's yield to new customers. Use of Future "Baseline" The DEIS analyzes the effects of the project by comparing the PACSM modeled "Full Use Existing system" (2016) and the PACSM modeled "Alternative 1a": (preferred alternative, 2030). There is	*Increased diversions as a result of the Project and the WPWSD's own growth needs will make it very difficult to maintain environmental flows and water quality in this stream reach. Ninety seven percent of water diverted by the WPWSD is returned to the river within 1.8 miles maintaining streamflows and water quality. Water diverted by Denver Water is never returned to the river system and is considered 100% consumptive. Streamflows and water quality are permanently affected by Moffat Collection System diversions. Chapter 3 discusses the 31 primary diversion points on the Moffat Collection system. Through an agreement with the United States Forest Service (USFS) from 1972, only 10 of these diversions have bypass flow requirements, 21 of these diversions take all available water and are dry below the diversion. That means a significant portion of the environment has been dried up and has already been severely impacted. The Fraser River is one of these diversions that have a bypass flow requirement. These bypass flows are the WPWSD's entire water supply. These bypass flows are dilution flows for our wastewater treatment plants. These bypass flows are our recreation and environmental flows. Chapter 3 reports Denver Water has agreements that allow the reductions of these bypass flows in dry years. These dry year flow reductions could significantly impair the WPWSD's ability to serve its' customers. The DEIS also indicates impacts to stream flow of less than 10% are not significant. Stream flows at the WPWSD's point of diversion are so low that any reduction in flow could significantly impair our ability to serve. The DEIS indicates that Denver Water anticipates reducing the USFS Bypass Flows in the Fraser basin much more in the future than has historically occurred. Denver Water has historically reduced the bypass flows twice since they were established in 1970; in 2002 and 2003. The DEIS indicates that under the*

Comment Information	Comment	Comments and Responses
	limited information in the DEIS to compare the consequences of project alternatives to existing conditions. The analysis neglects the large changes that occur between the current scenario (2010) and the Full Use Existing System Scenario (2016). Changes that occur before the Alternative 1a diversions begin can stress the stream systems to the point that even very small incremental changes become detrimental. Tables in Appendix II-1 of the DEIS show that between the current conditions and full use of existing system significant diversion and reductions in streamflows in dry years occur in all west slope locations except 4. So much so, that between Full Use of Existing (2016) and Alternative 1a (preferred alternative, (2030) there are no significant additional diversions. The DESI should contain a plot or table to illustrate that the effects to the stream system are not linear and that small reductions in flow can have a big impact on a stream system that is already highly degraded. Adaptive management Demands used to develop the new firm yield requirement should be reevaluated given the recent downturn in the economy. Predicted growth may not occur by 2016. The Corps should require a review of water demands in the year 2016 to determine if the projected need has developed, if not diversions for this project should not occur. The Corps should require periodic review of conditions on the west slope that have developed as a result of this project. The result of this review should allow for changes in streamflows as necessary to protect the Fraser River in the Project area. Proposed Mitigation. Appendix M of the DEIS indicates that Denver Water proposes to increase the elevation of Gross Reservoir enlargement by six feet to create a 5,000 af "Environmental Pool" for the benefit of streamflows on 17 miles of South Boulder Creek. This proposed mitigation is completely flawed in that it proposes to increase the environmental condition of a stream that is already improved by additional flows from the Project. Whereas there is no reported mitigation to improve the environmental conditions of a source area that is already depleted of 60,000 af/yr of natural streamflow along approximately 57 miles of impacted stream within the Project study area. Denver Water has offered s series of "enhancements or mitigation measures" that would serve to significantly improve stream flow conditions. The most important of these is the certainty of the bypass flows. The result would be that Denver Water would not cut into the bypass flows. Another of these enhancements is the offer to leave 1,000 acft of this project's yield in the Fraser River. This water would serve to enhance flow throughout the stream reaches. This water could also be used in	*full Use Existing System, they would reduce the bypass flows eight years out of the 45 year study period; or approximately one out of every six years (Table H-1.5 1). During dry months and dry years, minor changes in stream flows in these areas have critical significance to the area's water supply needs. The DEIS does not provide any detail about the time of year these bypasses would be reduced. Therefore it is impossible to understand the impacts to water providers in this area from any future bypass reductions. Further, the DEIS does not contain any information regarding additional bypass reductions in terms of frequency, duration or volume for any of the future alternatives. Due to the critical importance of bypass flows on the local aquatic environment and local water supply needs, it is impossible to ascertain the impact from the Project.* **Response #1548-1:** Streamflow data is presented in multiple formats (daily, monthly, and annual) in DEIS Section 3.1 to accurately describe existing flow conditions. Streamflow data included in DEIS Section 4.1 is also presented in multiple formats (daily, monthly and annual) to display the frequency, magnitude and timing of flow changes anticipated with the Moffat Project on-line. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average,

Comment Information	Comment	Comments and Responses
	conjunction with the Grand County Stream Management Plan that would use the water to provide a more natural seasonal hydrograph. The Grand County Water Users have asked Denver Water to move the measuring point of the bypass flows to their diversion on the Fraser River rather than 3.3 miles downstream. This would result in significantly higher flows at the WPWSD's point of diversion and virtually reduce any projected shortages. Denver Water has offered to use the Moffat Collection system to the extent possible to move water around the system for deliveries where needed. Denver Water has offered several other "enhancements" that would help improve conditions in the upper Fraser valley. Unfortunately, the DEIS does not recognize any impacts to the Fraser River and mitigation will not required as a condition of the permit. The WPWSD requests the Corps require an agreement between Denver Water and Grand County on these "enhancements" as a condition of the permit. The Moffat project will have significant impacts on water quantity, water quality, and environmental resources and local economies throughout the Fraser River Valley. Thank you for your careful consideration of these concerns. Michael R. Wageck, District Manager enclosures: General Location Map Feasibility Study cc: WPWSD Board of Directors Town of Winter Park Grand County, Board of County Commissioners Grand County Water and Sanitation District #1 Winter Park Recreation Association	wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading, Use of Daily and Monthly Platte and Colorado Simulation Model (PACSM) Data for Resource Evaluations in Section 4.1). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5, and H-6). PACSM, which is the model that was used to estimate flow changes for each of the proposed Moffat Project alternatives, contains over 400 nodes. While hydrologic data is available at every node in the model, it was impractical to present and evaluate data at each node in each individual sub-reach of every affected stream. Locations where hydrologic data is presented and evaluated were selected throughout the study area and were based on areas that would experience the greatest flow change and potentially the greatest resource impacts. The relative importance of individual stream reaches with respect to attributes like municipal diversions and recreational use was considered in the selection of these locations. In the Fraser River Basin, hydrologic data was evaluated at over 20 locations. DEIS Section 3.0 presents information on the selection of focus river segments and sampling sites where resource evaluations were conducted. The DEIS evaluated flow changes at the upstream and downstream ends of the reach between Denver Water's Fraser River diversion and the

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
		U.S. Geological Survey (USGS) Fraser River at Winter Park gage (see Section 4.6.1 and Tables H-3.2 and H-3.6). PACSM includes additional nodes in the stream reach referenced in the comment including Node 2130-Winter Park Recreational Association and Winter Park Water and Sanitation District Diversion (WPW&SD) and 2145-Winter Park Wastewater Treatment Plant (WWTP). Small tributaries to the Fraser River within this reach are also modeled including Node 2160-Jim Creek at Denver Water's diversion, Node 2540-Cub and Buck creeks at Denver Water's diversions, and 2380-Cooper Creek (this node includes Denver Water's diversion and Winter Park Recreational Association's diversion). PACSM was used to simulate the effects of the Moffat Project at each of the nodes listed above. The DEIS evaluates and presents streamflow data at 5 of the 7 nodes within this reach, which is sufficiently detailed to adequately evaluate resource impacts and effects on WPW&SD. As shown in DEIS Table 5-4, WPW&SD would incur a shortage of 6 acre-feet per year (AF/yr) (approximately 1%) based on a build-out demand of 500 AF/yr under Full Use of Denver Water's Existing System as compared to Current Conditions. However, this shortage would be incurred due to Denver Water's additional diversions as their demand increases from Current Conditions to Full Use of their Existing System. Additional diversions under the Moffat Project would not increase shortages to WPW&SD because Denver Water's additional diversions would occur in average and wet years when there are sufficient supplies for WPW&SD. Additional water quality analyses were performed for the Fraser River. Daily flows were evaluated with regards to potential changes at WWTP discharge locations. Please see FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Similar to other water right holders, Denver Water diverts water that is physically and legally available at their diversion points based on their decreed water rights subject to minimum bypass flows and calls from downstream senior water rights. As a result, Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River Basin that do not have minimum bypasses. This is how Denver Water has operated in the past and plans to operate in the future. Bypass flows were historically reduced several times during the PACSM study period including 1975, 1977, 1980, 2002, 2003, and 2004. Additional information was included in FEIS Sections 3.1 on historical bypass flow reductions. The analysis of the effects of bypass flow reductions anticipated between Current Conditions and Full Use of Denver Water's Existing System has been expanded and is presented in FEIS Section 4.6.1. Additional information was included on the frequency, duration and volume of bypass flow reductions, and the increased frequency and duration that streamflows would be reduced to minimum USFS bypass flows and tributaries without bypass requirements would be dried up. A screening criterion of 10% was developed to provide focus on stream segments within the overall study area that would experience a flow increase or decrease of greater than 10% based on average annual flow. The purpose of identifying these river segments was to focus the selection of sample sites, data collection and field work in areas that experience the greatest flow change. Because the study area covers several river basins, it was impractical to collect data on each individual sub-reach of every affected stream. Representative river reaches were identified within the Focus River Segments for detailed data collection and evaluation. A variety of

Comment Information	Comment	Comments and Responses
		representative river reaches were selected that were examples of or statistically representative of different resource conditions encountered in the study area. Data for the representative river reaches was evaluated and extrapolated to the overall study area. Identifying Focus River Segments may suggest that other river segments within the overall study area were not evaluated, however, that is incorrect. The only river segments that were not identified as Focus River Reaches were the Blue River below Green Mountain Reservoir, Colorado River below the confluence with Williams Fork River, Williams Fork River below Williams Fork Reservoir, and Muddy Creek below Wolford Mountain Reservoir. Flow changes for all of these river segments are discussed in FEIS Section 4.6.1. Impacts on resources in these river segments were also assessed, however, because they were not identified as focus segments, resource analyses relied on existing, available data. ***Comment #1548-4*** *(ID 1411)**:*** *Bypass Flow Reductions Should be Eliminated. The Gross Reservoir enlargement portion of the Project requires a new USFS Special Use Permit. The Army Corps of Engineers (Corps) should request the Forest Service review all USFS agreements associated with the Moffat Collection system as a part of this new Special Use Permit. This review of the bypass flow requirements is necessary to determine if the resource (the forest) is being protected for the people of the United States. Bypass Flows are so critical to the source basin, the Corps should require as a condition of the permit that the first benefit of the project is to provide sufficient storage to eliminate the need for Bypass Flow reductions. The dewatering of the basin should not be allowed to continue just to allow for additional expansion of Denver Water's yield to new customers.*

Comment Information	Comment	Comments and Responses
		Response #1548-4: The Corps received abundant comments from the USFS regarding the Moffat Project. In light of these USFS comments, it is assumed that the USFS would perform their appropriate review of current USFS agreements as part of the preparation of any new USFS Special Use Permit, if required. The Corps would therefore not specifically request additional review of all USFS agreements by the USFS. Denver Water's ability to reduce bypass flows in accordance with the severity of restrictions it places on its customers is provided under the 1970 Bureau of Sport Fisheries Stipulation and the 1992 Clinton Agreement. This agreement is a component of Denver Water's existing system and operations, not the proposed Moffat Project. Paragraph 5 of the Stipulations to the 1970 Amendatory Decision allows the Denver Water Board to reduce bypasses at each of the subject streams (Fraser River, Vasquez Creek, St. Louis Creek, and Ranch Creek) whenever it becomes necessary for the Board to impose restrictions due to insufficient water supplies. The 1992 Clinton Agreement modified the Stipulations to the 1970 Amendatory Decision, such that Denver Water would only reduce bypass flows if mandatory restrictions were imposed on its customers, provided the reduced bypass flows would not result in mandatory restrictions on indoor use to Grand County water users or if mandatory restrictions on indoor use were placed on Denver Water customers. Since the Proposed Action increases Denver Water's firm yield, system reliability and flexibility, the frequency and magnitude of bypass flow reductions, if needed, could potentially decrease. Additional bypass reductions are not anticipated as a result of the proposed Moffat Project.

Comment Information	Comment	Comments and Responses
		Comment #1548-5 *(ID 1412)**:*** *Use of Future "Baseline"* *The DEIS analyzes the effects of the project by comparing the PACSM modeled "Full Use Existing system" (201 6) and the PACSM modeled "Alternative la": (preferred alternative, 2030). There is limited information in the DEIS to compare the consequences of project alternatives to existing conditions. The analysis neglects the large changes that occur between the current scenario (2010) and the Full Use Existing System Scenario (2016). Changes that occur before the Alternative la diversions begin can stress the stream systems to the point that even very small incremental changes become detrimental. Tables in Appendix H-1 of the DEIS show that between the current conditions and full use of existing system significant diversion and reductions in streamflows in dry years occur in all west slope locations except 4. So much so, that between Full Use of Existing (2016) and Alternative la (preferred alternative, (2030) there are no significant additional diversions. The DEIS should contain a plot or table to illustrate that the effects to the stream system are not linear and that small reductions in flow can have a big impact on a stream system that is already highly degraded.* **Response #1548-5:** The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other reasonably foreseeable future actions based on a comparison of the following scenarios.

Comment Information	Comment	Comments and Responses
		• Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other reasonably foreseeable future actions. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of the Existing System includes reasonably foreseeable future actions including growth in Denver Water's average annual demand to 345,000 AF/yr, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr; therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative (2032).

Comment Information	Comment	Comments and Responses
		Comment #1548-2 *(ID 1413)**:*** *Adaptive Management* *Demands used to develop the new firm yield requirement should be reevaluated given the recent downturn in the economy. Predicted growth may not occur by 2016. The Corps should require a review of water demands in the year 2016 to determine if the projected need has developed, if not diversions for this project should not occur. The Corps should require periodic review of conditions on the west slope that have developed as a result of this project. The result of this review should allow for changes in streamflows as necessary to protect the Fraser River in the Project area.* **Response #1548-2:** Recent Denver Regional Council of Governments (DRCOG) projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the U.S. Environmental Protection Agency (EPA) result in average annual growth of 1.76% for the Denver Primary Metropolitan Statistical Area between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics and is presented in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, the Colorado Department of Local Affairs or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data.

Comment Information	Comment	Comments and Responses
		The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. ***Comment #1548-6*** *(ID 1414)**:*** *Proposed Mitigation.* *Appendix M of the DEIS indicates that Denver Water proposes to increase the elevation of Gross Reservoir enlargement by six feet to create a 5,000 af "Environmental Pool" for the benefit of streamflows on 17 miles of South Boulder Creek. This proposed mitigation is completely flawed in that it proposes to increase the environmental condition of a stream that is already improved by additional flows from the Project. Whereas there is no reported mitigation to improve the environmental conditions of a source area that is already depleted of 60,000 af/yr of natural streamflow along approximately 57 miles of impacted stream within the Project study area.* *Denver Water has offered s series of "enhancements or mitigation measures" that would serve to significantly improve stream flow conditions. The most important of these is the certainty of the bypass flows. The result would be that Denver Water would not cut into the bypass flows. Another of these enhancements is the offer to leave 1,000 ac-ft of this project's yield in the Fraser River. This water would serve to enhance*

Comment Information	Comment	Comments and Responses
		flow throughout the stream reaches. This water could also be used in conjunction with the Grand County Stream Management Plan that would use the water to provide a more natural seasonal hydrograph. The Grand County Water Users have asked Denver Water to move the measuring point of the bypass flows to their diversion on the Fraser River rather than 3.3 miles downstream. This would result in significantly higher flows at the WPWSD's point of diversion and virtually reduce any projected shortages. Denver Water has offered to use the Moffat Collection system to the extent possible to move water around the system for deliveries where needed. Denver Water has offered several other "enhancements" that would help improve conditions in the upper Fraser valley. Unfortunately, the DEIS does not recognize any impacts to the Fraser River and mitigation will not be required as a condition of the permit. The WPWSD requests the Corps require an agreement between Denver Water and Grand County on these "enhancements" as a condition of the permit. **Response #1548-6:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. U. S. Fish and Wildlife Service (USFWS) will include specific requirements to protect threatened and endangered species that are enforceable through a Biological Opinion. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: Colorado River Cooperative Agreement (CRCA), Learning by Doing (LBD) Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be

Comment Information	Comment	Comments and Responses
		implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #1548-7*** *(ID 1415)**:*** *The Moffat project will have significant impacts on water quantity, water quality, and environmental resources and local economies throughout the Fraser River Valley.* *Thank you for your careful consideration of these concerns.* **Response #1548-7:** The Corps applied rigorous and scientifically acceptable methodologies for each resource analyzed for the Moffat Project in compliance with the Clean Water Act (CWA) Section 404 guidelines and NEPA. The direct, indirect, and cumulative effects of the Proposed Action were evaluated for each resource in DEIS and FEIS Chapter 4. Additionally, impact thresholds (no impact, negligible, minor, moderate, major) were applied to each resource to allow for comparison of impacts between alternatives.

Comment Information	Comment	Comments and Responses
Comment #1683 AJ Beckman, District Manager Jefferson Center Metropolitan District No. 2 141 Union Boulevard, Suite 150 Lakewood, CO 80228-1898	JEFFERSON CENTER METROPOLITAN DISTRICT NO. 2 141 Union Boulevard, Suite 150 Lakewood, Colorado 80228-1898 Tel: 303-987-0835 800-741-3254 Fax: 303-987-2032 March 5, 2010 U.S. Army Corps of Engineers Attn: Scott Franklin 9307 S. Wadsworth Blvd. Littleton, CO 80128 Denver Water Board Brian Gogas Mail Code 415, 1600 W. 12th Ave. Denver, CO 80204 FERC Attn: Sec. Kimberly Bose 888 First St, NE Washington, DC 20426 Re: Gross Reservoir Expansion in Arvada, Colorado Dear Mr. Franklin, Mr. Gogas & Ms. Bose, I am writing this letter on behalf of the Board of Directors of the Jefferson Center Metropolitan District. The District strongly supports the Gross Reservoir expansion. Expanding this reservoir will increase the water storage for the area and will have the least amount of impact to the environment. This expansion should be a top priority for Denver Water. Thank you, AJ Beckman District Manager CC: Board of Directors Kristin Bowers, Esq.	***Comment #1683-1*** *(ID 2081)**:*** *I am writing this letter on behalf of the Board of Directors of the Jefferson Center Metropolitan District. The District strongly supports the Gross Reservoir expansion. Expanding this reservoir will increase the water storage for the area and will have the least amount of impact to the environment. This expansion should be a top priority for Denver Water.* **Response #1683-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1687 Judy M. Burke, Mayor Town of Grand Lake P.O. Box 99 Grand Lake, CO 80447-0099	TOWN OF GRAND LAKE RECEIVED MAR 2010 March 11, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, Co. 80128 RE: Moffat Tunnel DEIS Dear Mr. Franklin: General Comments These comments are being submitted to highlight the concerns and the strong objections of the Town of Grand Lake to the narrow-scope and sorely incomplete analysis done in the DEIS for the Moffat Collection System Project. There are many issues and data of great importance to the Colorado River Basin that were not addressed in the DEIS and should be considered, including: the Colorado River segments considered suitable for Wild and Scenic designation, climate change studies, mountain bark beetle, Colorado Compact call impacts, the Colorado River Availability Study, and water quality impacts on agricultural yields and treatment plants. The DEIS only examines incremental impacts, and provides no evaluation of cumulative impacts on the natural ecosystems as required under NEPA. The Town of Grand Lake recognizes the need to plan for growth, and respects the fact that Denver Water is attempting to ensure that its users have adequate water supplies in the future. However, the Town believes that there is an avenue to work cooperatively to help ensure that Denver Water meets future water demands, without asking such a sacrifice from the citizens and visitors of Grand Lake and Grand County. The Town understands that Grand County is currently working with Denver Water to discuss past, present and future impacts of trans-mountain diversions, but thus far the specific impacts to the Moffat Project have not been thoroughly addressed. The Public Hearing on December 2nd in Granby helped to showcase many of the challenges that the citizens of Grand County have with the Moffat Collection System DEIS. The Public Hearings in Boulder, Denver and Summit County also helped to bring to light the legitimate concerns that citizens on both sides of the continental divide share about many of the elements of the DEIS. P.O. BOX 99, GRAND LAKE, COLORADO 80447-0099 PH. 970/627-3435 FAX 970/627-9290 E-MAIL town@townofgrandlake.com	***Comment #1687-14*** *(ID 2437)**:*** *These comments are being submitted to highlight the concerns and the strong objections of the Town of Grand Lake to the narrow-scope and sorely incomplete analysis done in the DEIS for the Moffat Collection System Project. There are many issues and data of great importance to the Colorado River Basin that were not addressed in the DEIS and should be considered, including: the Colorado River segments considered suitable for Wild and Scenic designation, climate change studies, mountain bark beetle, Colorado Compact call impacts, the Colorado River Availability Study, and water quality impacts on agricultural yields and treatment plants.* **Response #1687-14:** Wild and Scenic Rivers The Corps coordinated with the Bureau of Land Management (BLM) regarding the Wild and Scenic River designation process throughout the NEPA process. Sections of the Colorado River within the Project area considered eligible for Wild and Scenic River designation are described in DEIS Sections 3.13.5 and 3.13.5.3. Pine Beetle DEIS Section 4.1 (subheading, Sediment Supply) explains qualitatively how pine beetle infestations could impact the system. Additional information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in FEIS Section 5.7. In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five-year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health.

Comment Information	Comment	Comments and Responses
	Project Impacts and Mitigation Generally, the applicant alleges that there will not be significant new impacts based upon modeling projections; if this is the case, then any approvals should be conditioned so that any new impacts will be addressed. For example, the DEIS claims that because water will only be diverted during runoff months, there are little to no impacts related to this project. This conclusion fails to consider the long-term benefits of flushing flows to aquatic life and to channel maintenance. The Proposed Action also calls for water to be diverted in wet years following dry years, which would deny the watershed the opportunity to replenish water from the preceding dry year, exacerbating the bad conditions. Each of these Pollyannaish leaps of faith ignores the very real fact that biology can have cascading effects that take years or decades to unfold, and no one can know for certain what the long-term effects of this project will be for years to come. The impacts could push the river environments over the tipping point, from which it will be difficult if not impossible to recover. Locking in mitigation, (or lack of mitigation in this case) into the Final EIS and Record of Decision, without some ability to address mistaken assumptions, miss-calculations and anticipated minor or negligible impacts that turn out to be major would be a great mistake. It must be required in the Record of Decision that there is a mechanism in place through which any impacts caused by the project must, can, and will be appropriately addressed. A regular monitoring system and clearly defined terms and conditions that will protect this resource when the unforeseen impacts do occur should be placed directly into the 404 Permit. The watershed is already far too stressed to be able to endure any additional impacts without real mitigation. The Colorado River Basin Roundtable is currently working with the Colorado Water Conservation Board to develop a Watershed Flow Evaluation Tool. This tool can be used to get an indication of flows and flow regimes that may be needed to maintain a healthy environment for both the Fraser and the upper Colorado, and should be considered by Denver when calculating and estimating the impacts from reduced stream flows. Additionally, Grand County has spent over $1 million, working on a scientifically based Stream Flow Management Plan that is nearly complete. Once done, it will outline the necessary stream flows needed for domestic, agricultural, recreational, in-stream and other uses. It is premature to grant any approvals prior to its completion; the Stream Flow Management Plan should be the mitigation for the Moffat Collection System Project. No-Action Alternative The comparison of the no-action alternative to the other alternatives is neither a fair nor an accurate comparison due to the fact that the no-action alternative uses the 30,000 acre-foot "strategic water reserve" to meet its demand, while the analysis of the other alternatives did not include using this resource. According to the Purpose and Need of	This partnership will accelerate and expand the USFS' ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks, and maintain habitat for fish and wildlife. Compact Calls It is not possible to determine impacts of a Compact Call that are attributable to this individual Project even considering two general studies that are getting underway to evaluate compact call issues. The Colorado Water Conservation Board (CWCB) is conducting a study, Development of Colorado River Compact Compliance Strategies which will: (1) identify issues associated with the administration of State water rights in the Colorado River Basin under the terms of the Colorado River Compact and Upper Colorado River Basin Compact, (2) develop and evaluate options to avoid, minimize or delay a Compact curtailment of uses if at all possible, and (3) identify, develop and evaluate (pros and cons) concepts for curtailing water uses in Colorado in the event curtailments are required to comply with a Compact call. A joint study titled "Evaluation of a Water Bank to Mitigate a Colorado River Compact Curtailment for State of Colorado Water Users" is also being conducted by the Colorado River Water Conservation District, CWCB, Front Range Water Council, the Southwestern Water Conservation District and the Nature Conservancy. The study will investigate the concept of a "Water Bank" that may help prevent a compact curtailment or allow continued water use in the event of a compact curtailment.

Comment Information	Comment	Comments and Responses
	the DEIS, the reserve "is not included in the total system supply because it is not considered available for meeting the total system demand under normal operating conditions…" This statement is consistent with the long-standing policy of the Denver Water Board to only use this water to respond to catastrophic events, so it is all the more baffling to discover that this reserve was used in the no-action alternative. Including this 30,000 acre-feet of water distorts the environmental impact baseline, resulting in a comparison that is not fair between the alternatives and the no-action alternative. The no-action alternative does not realistically depict the impacts of Denver's operations on the Blue River and Dillon Reservoir that would occur after 2016 if the Moffat Project is not permitted. It is unrealistic to assume that Denver wouldn't take some other action to increase the supply to its system if the Moffat Project was not permitted. For example, the 2002 Integrated Resource Plan called for incentives to create 39,000 acre feet of demand reduction by 2045 from "natural replacement" of more efficient fixtures—it is reasonable to assume that this plan would be accelerated to realize these water savings sooner if the Moffat Project were not approved. The DEIS should also include other water conservation methods in the no-action alternative, or at least incorporate the Water Board's current commitment to achieving 29,000 acre feet of conservation savings by 2016, which is not mentioned, leading to an overstatement of demand by 13,000 acre feet. This analysis also includes and overstates the demand by an additional 3,000 acre-feet for the City of Arvada, which Denver Water would not be legally obligated to provide if the Moffat Project wasn't built as this requirement is only triggered if Denver Water is able to develop addition firm yield for its Northern System. Cumulative Impacts The DEIS simply does not consider cumulative effects or impacts in any reasonable or required manor whatsoever, not even considering the impacts of the original Moffat diversions as a "past action". The Cumulative Effects analysis uses 2006 flows and conditions as a "current" baseline, implying that these flow rates are somehow indicative of native base flows. It then projects 2016 conditions as the baseline for impacts caused by the proposed action—this is a direct violation of NEPA requirements. This analysis completely ignores the impacts of diversions that have systematically and cumulatively diverted as much as 65% of the native flows from the Fraser and upper Colorado River from the existing Moffat diversions, Colorado-Big Thompson project, Windy Gap and Grand Ditch diversions. The impacts from the various in-basin diversions should also be considered in this analysis. This DEIS also ignores the depletions from native flows by the existing Windy Gap, Colorado-Big Thompson, their own Moffat diversions and even the Grand Ditch. A supplemental DEIS should be required to correct this inept analysis. To assume that any past actions and environmental consequences are not valid is simply an attempt to side step the intent and required analysis by NEPA.	These studies will consider various demand scenarios, but will not assess the effects of individual water rights or projects on Colorado's Compact compliance. It is unlikely that either effort will provide detailed information on potential administration of a Compact Call in relation to whether it is caused in part by Moffat Project diversions or whether a call could alter the conclusions of the Moffat Project direct or cumulative effects analyses. The potential for a Compact Call exists when the Colorado River system is stressed and, in these periods, additional Moffat Project diversions are not planned in these dry years. Given that the Colorado River Compact has the 10-year cumulative flow provision, it is possible that diversions, whether by the Moffat Project or any other in-basin or inter-basin water user, in the earlier, wetter years of any 10-year period could affect Compact accounting in the later years. Attempting to assess the effects of the Moffat Project, or any other single water use, is unlikely to yield additional clarity in relation to the Moffat Project's direct or cumulative effects. Colorado River Availability Study Consideration was given to the draft Phase I results of the Colorado River Water Availability Study and other potential sources of information regarding the effects of potential climate change on native flow hydrology of the upper Colorado River basin and on the management of water in the entire Colorado River Basin. Potential climate changes may affect Colorado's water administration in relation to the Colorado River Compact and the Upper Colorado River Compact, however, the analyses available for use in the Moffat Project EIS are still in draft form, present a wide range of preliminary results, and consider only current water uses and demand levels without taking into account likely adjustments in these uses and demands as a result of potential climate change.

Comment Information	Comment	Comments and Responses
	Despite the fact that there is another major trans-mountain diversion project occurring simultaneously with this project, the Windy Gap Firming Project (WGFP), the applicant only mentions it once in the entire report under the "Future Water-Based Actions" and does not consider it as a contributing event to this DEIS. If these two projects were to go online as proposed, total diversions from the upper Colorado River to the Front Range would reach approximately 75% of native flows, if not more. Ignoring the Windy Gap Firming Project doesn't change the fact that 30,000 a.f. of additional water is proposed to be diverted out of Grand County annually, and the combined impacts of both projects should be thoughtfully and deliberately considered under a combined Corps of Engineers and Bureau of Reclamation EIS. Clean Water Act Compliance The Corps of Engineers needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized or adequately mitigated. Because the cumulative impacts aren't being considered in this DEIS, there is no opportunity to avoid, minimize or to mitigate those impacts. By failing to acknowledge and consider the environmental damage that has already been caused by the Moffat Tunnel project, and by the many other trans-mountain diversion projects throughout the 20TH century, this DEIS is sorely out of compliance with the CWA. The challenges with this project and those that preceded it should be honestly identified, so real avoidance, minimization and mitigation can be considered and implemented. Grand Lake The Moffat Collection System Project DEIS also fails to consider the impacts to Grand Lake, even though the heavier phosphorus laden sediment water will end up in Windy Gap and then will be pumped into Grand Lake, which has been plagued with water quality issues that are unmistakably traceable to the Colorado Big-Thompson (CBT) project. To wit, the time that Denver Water proposes to pump (May-July), are the same months that Windy Gap is pumping into the CBT project. All-the-while, six wastewater treatment plants on the Fraser River have high discharge due to infiltration, and agricultural lands are flushing a years worth of nutrients from cattle into the river. Thus, when these two projects are considered together, it is apparent that Northern Water is proposing to increase pumping, while Denver Water will be leaving Northern with even more phosphorus-laden water than it has previously. Current CBT operations have had disastrous effects on Grand Lake, and these two projects promise a one-two punch that will only serve to exacerbate a true environmental disaster. Socioeconomic Impacts The financial implications of this project have been severely ignored or at best underscored. No consideration is given to tourists that come to Grand County to hike, ice-fish, site-see, bike or to kayak. While there is a brief qualitative mention of some	Water Quality Additional evaluation of the discharge permits for WWTPs has been performed. Please refer to FEIS Sections 4.6.2 and 5.2. Regarding water quality impacts to agricultural yield, salinity levels in the Colorado River are a result of many factors including evaporation, natural deposits, irrigation return flows, municipal/industrial discharges, and loss of dilution water from out-of-basin exports. Of these factors, the Moffat Project affects only out-of-basin exports. According to the EPA (2008 Review - Water Quality Standards for Salinity - Colorado River System, Colorado River Basin Salinity Control Forum, October 2008), less than 3% of the salt concentration in the lower Colorado River is a result of all of the existing out-of-basin exports combined. The additional out-of-basin exports associated with the Proposed Action would result in a decrease of 2% annually on average at the Kremmling gage between Full Use of the Existing System and Project. Thus, significant increases in salinity that would impact irrigated agriculture as a result of the Proposed Action are not anticipated. ***Comment #1687-12*** *(ID 2436)**:*** *The DEIS only examines incremental impacts, and provides no evaluation of cumulative impacts on the natural ecosystems as required under NEPA.*

Comment Information	Comment	Comments and Responses
	public access locations and observation of number of anglers visible at one time, there is no baseline data on fishing. Furthermore, there is no attempt to measure tourist spending on lodging, restaurants, entertainment, shopping or fuel. Finally, there is no measurement attempt for the possible impacts to the housing industry, even though 2/3 of the homes in Grand County are second homes. Grand County is a tourist-driven economy, followed in short order by the housing industry, so the true financial impacts of this project should include these two major economic drivers. Mountain Bark Beetle Epidemic The whole of Grand County has been overrun by the Mountain Pine Beetle epidemic, and the Fraser Valley has experienced nearly complete Lodgepole Pine mortality in its mature tree stands due to this tiny yet persistent bug. There was no attempt to analyze what the effects will be on an already overly stressed forest when even more water is taken from this watershed. Will there be losses in the Spruce and Aspen when the water table drops? Will this area have a higher fire danger? When a fire does go through the Fraser Valley, will it take longer to recover with even less flushing flows to address the Haymen-like conditions? The DEIS is sorely, and possibly gravely incomplete in this analysis. Conservation While it is positive that Denver Water is proposing to meet part of its 2030 water shortfall by conserving 16,000 a.f. of water per year, the conservation plan is far too meek, equaling only 4.4% out of the 363,000 a.f. of projected 2030 demand. By ignoring outdoor lawn watering, Denver Water fails to consider nearly half of its current demand. Contrast this effort with that of the Southern Nevada Water Authority, which pays customers to remove Kentucky bluegrass, and has dropped its usage by 30%. A far less aggressive conservation plan by Denver Water could reap the 34,000 a.f. of their forecasted "shortage" and much more, without taking another drop of water from Grand County and what was once referred to as mighty upper Colorado River. Taking more water out of the Colorado River basin prior to exhausting more aggressive conservation measures is unfair to Grand County. Conclusion In its current draft, the DEIS doesn't consider issues and data of great importance. The Moffat Project DEIS is insufficient in its scope; the Corps should hold the applicant to a high standard since the ramifications of implementation of this project are far reaching and could be extremely detrimental to a premier watershed and the communities that host it. The DEIS concludes that there will be little to no impacts caused by the Moffat Collection System Project. If the same conclusions are drawn in the Final EIS, then monitoring system should be put in place to ensure there are no impacts occurring and	**Response #1687-12:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 Code of Federal Regulations [CFR] 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions. The Section 404 regulations state that "cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1]). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment.

Comment Information	Comment	Comments and Responses
	when and if they do the Corps should include enforceable mitigation in the Record of Decision. The Stream Flow Management Plan should be the mitigation for this project. Grand County has spent over $1 million working on this plan that will outline the necessary stream flows needed for domestic, agricultural, recreational, in-stream and other uses. It is premature to grant any approvals prior to its completion; the Stream Flow Management Plan should be the mitigation for the Moffat Collection System Project. The No-Action alternative relies upon unfair and inaccurate information, which distorts the environmental impact baseline and results in a comparison between it and other alternatives that is neither fair nor accurate. A supplemental analysis needs to examine the cumulative impacts on the natural ecosystems as compared to a fair and accurate no-action alternative, which will also bring this project into compliance with the Clean Water Act. The impacts of this project to the West Slope have not been adequately analyzed in the DEIS, and conclusions were drawn based on questionable modeling. The Town of Grand Lake requests the Corps to issue a supplemental DEIS to address all of the impacts and include permit conditions such that any impact is fully mitigated. Given the timing of the Windy Gap DEIS, this DEIS should be the combined effort of the Corps and the Bureau of Reclamation to insure that the cumulative effect of both projects are fully vetted and considered. As proposed, this project falls well short of being in the public interest as required under Section 404 of the Clean Water Act, and the Corps should not issue a 404 permit until the DEIS can support that determination. I appreciate the possibility to comment on this project, and look forward to working with the Corps of Engineers and Denver Water in the future towards a result that benefits everyone. On behalf of the Town and its Lake, Judy M. Burke Mayor cc: The Honorable Michael Bennet, U.S. Senator The Honorable Mark Udall, U.S. Senator The Honorable Jared Polis, U.S. Congressman The Honorable Bill Ritter, Governor The Honorable Dan Gibbs, Senator The Honorable Randy Baumgardner, Representative The Honorable James Newberry, Grand County BOCC Chair Mr. Larry Svoboda, Director; NEPA Compliance and Review, U.S. EPA	For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions. ***Comment #1687-4*** *(ID 2435)**:*** *The Town of Grand Lake recognizes the need to plan for growth, and respects the fact that Denver Water is attempting to ensure that its users have adequate water supplies in the future. However, the Town believes that there is an avenue to work cooperatively to help ensure that Denver Water meets future water demands, without asking such a sacrifice from the citizens and visitors of Grand Lake and Grand County. The Town understands that Grand County is currently working with Denver Water to discuss past, present and future impacts of trans- mountain diversions, but thus far the specific impacts to the Moffat Project have not been thoroughly addressed.* **Response #1687-4:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1687-3*** *(ID 2434)**:*** *The Public Hearing on December 2nd in Granby helped to showcase many of the challenges that the citizens of Grand County have with the Moffat Collection System DEIS. The Public Hearings in Boulder, Denver and Summit County also helped to bring to light the legitimate concerns that citizens on both sides of the continental divide share about many of the elements of the DEIS.* **Response #1687-3:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
	The Town of Winter Park The Town of Fraser The Town of Granby The Town of Kremmling NWCCOG-QQ	***Comment #1687-7*** *(ID 2433)**:*** *Generally, the applicant alleges that there will not be significant new impacts based upon modeling projections; if this is the case, then any approvals should be conditioned so that any new impacts will be addressed. For example, the DEIS claims that because water will only be diverted during runoff months, there are little to no impacts related to this project. This conclusion fails to consider the long-term benefits of flushing flows to aquatic life and to channel maintenance. The Proposed Action also calls for water to be diverted in wet years following dry years, which would deny the watershed the opportunity to replenish water from the preceding dry year, exacerbating the bad conditions.* *Each of these Pollyannaish leaps of faith ignores the very real fact that biology can have cascading effects that take years or decades to unfold, and no one can know for certain what the long-term effects of this project will be for years to come. The impacts could push the river environments over the tipping point, from which it will be difficult if not impossible to recover.* **Response #1687-7:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%.

Comment Information	Comment	Comments and Responses
		At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, Indicators of Hydrologic Alteration (IHA) was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations.

Comment Information	Comment	Comments and Responses
		IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify

Comment Information	Comment	Comments and Responses
		the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. Information was added to FEIS Sections 4.6.1 and 5.1 on the increased frequency and duration of dry year conditions and the associated effects on resources. For some resources, there is not a known scientific threshold or "tipping point" at which negative impacts occur nor is the Corps aware of specific models or techniques available to conduct "threshold" analyses. The magnitude of impact depends on the current state of that resource and factors that influence that resource. Tipping point issues were addressed for aquatic resources in FEIS Sections 3.11, 4.6.11 and 5.11. The Grand County Stream Management Plan (GCSMP) has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), Physical Habitat Simulation (PHABSIM) data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including adaptive management for mitigation. ***Comment #1687-21*** *(ID 2432)**:*** *Locking in mitigation, (or lack of mitigation in this case) into the Final EIS and Record of Decision, without some ability to address mistaken*

Comment Information	Comment	Comments and Responses
		assumptions, miss-calculations and anticipated minor or negligible impacts that turn out to be major would be a great mistake. It must be required in the Record of Decision that there is a mechanism in place through which any impacts caused by the project must, can, and will be appropriately addressed. A regular monitoring system and clearly defined terms and conditions that will protect this resource when the unforeseen impacts do occur should be placed directly into the 404 Permit. The watershed is already far too stressed to be able to endure any additional impacts without real mitigation. **Response #1687-21:** Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #1687-6*** *(ID 2431)**:*** *The Colorado River Basin Roundtable is currently working with the Colorado Water Conservation Board to develop a Watershed Flow Evaluation Tool. This tool can be used to get an indication of flows and flow regimes that may be needed to maintain a healthy environment for both the Fraser and the upper Colorado, and should be considered by Denver when calculating and estimating the impacts from reduced stream flows.* **Response #1687-6:** Phase I of the non-consumptive needs assessments of environmental and recreational water needs throughout the State of Colorado included a pilot study of the Watershed Flow Evaluation Tool (WFET). WFET is an application of the Ecological Limits of Hydrologic Alteration. WFET allows stakeholders to characterize the ecological or recreational risk that a given attribute

Comment Information	Comment	Comments and Responses
		may or may not be degraded based on flow conditions. The Colorado River Roundtable continues to explore the use and application WFET. The Colorado and Yampa-White basins have received grants to continue development of the WFET. These efforts would include improvement and refinement of recreation flow relationships for kayaking and rafting, additional validation of WFET results using site-specific studies, and refinement of riparian ecology relationship. Due to the limited use of WFET to date, the limitations and applicability of WFET are not well defined. The use of WFET for the Moffat EIS is not recommended since the development of WFET for use in the Colorado River Basin is part of an on-going study, which is not yet completed. ***Comment #1687-23*** *(ID 2430)**:*** *Additionally, Grand County has spent over $1 million, working on a scientifically based Stream Flow Management Plan that is nearly complete. Once done, it will outline the necessary stream flows needed for domestic, agricultural, recreational, in-stream and other uses. It is premature to grant any approvals prior to its completion; the Stream Flow Management Plan should be the mitigation for the Moffat Collection System Project.* **Response #1687-23:** Please see the response to Comment ID 2420. ***Comment #1687-16*** *(ID 2429)**:*** *The comparison of the no-action alternative to the other alternatives is neither a fair nor an accurate comparison due to the fact that the no-action alternative uses the 30,000 acre-foot "strategic water reserve" to meet its demand, while the analysis of the other alternatives did not include using this resource. According to the Purpose and*

Comment Information	Comment	Comments and Responses
		Need of the DEIS, the reserve "is not included in the total system supply because it is not considered available for meeting the total system demand under normal operating conditions…" This statement is consistent with the long-standing policy of the Denver Water Board to only use this water to respond to catastrophic events, so it is all the more baffling to discover that this reserve was used in the no-action alternative. Including this 30,000 acre-feet of water distorts the environmental impact baseline, resulting in a comparison that is not fair between the alternatives and the no-action alternative. *The no-action alternative does not realistically depict the impacts of Denver's operations on the Blue River and Dillon Reservoir that would occur after 2016 if the Moffat Project is not permitted. It is unrealistic to assume that Denver wouldn't take some other action to increase the supply to its system if the Moffat Project was not permitted. For example, the 2002 Integrated Resource Plan called for incentives to create 39,000 acre feet of demand reduction by 2045 from "natural replacement" of more efficient fixtures-it is reasonable to assume that this plan would be accelerated to realize these water savings sooner if the Moffat Project were not approved.* *The DEIS should also include other water conservation methods in the no-action alternative, or at least incorporate the Water Board's current commitment to achieving 29,000 acre feet of conservation savings by 2016, which is not mentioned, leading to an overstatement of demand by 13,000 acre feet. This analysis also includes and overstates the demand by an additional 3,000 acre-feet for the City of Arvada, which Denver Water would not be legally obligated to provide if the Moffat Project wasn't built as this requirement*

Comment Information	Comment	Comments and Responses
		is only triggered if Denver Water is able to develop addition firm yield for its Northern System. **Response #1687-16:** The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by: (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps, or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14[d]) and Section 404 Regulations (33 CFR 325 Appendix B.9.b[5][b]).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. Conservation As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated

Comment Information	Comment	Comments and Responses
		conservation changes would be achieved. The Moffat Project identified a 34,000 acre-feet (AF) deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF of additional conservation and the 18,000 AF proposed Project (72,000 AF enlargement of Gross Reservoir). Denver Water is implementing a conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. Arvada The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. With a new Project, the need is for an additional 15,000 AF/yr of water supply for Denver Water's customers plus 3,000 AF/yr for Arvada. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water supply for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr.

Comment Information	Comment	Comments and Responses
		Comment #1687-11 *(ID 2428)**:*** *The DEIS simply does not consider cumulative effects or impacts in any reasonable or required manor whatsoever, not even considering the impacts of the original Moffat diversions as a "past action". The Cumulative Effects analysis uses 2006 flows and conditions as a "current" baseline, implying that these flow rates are somehow indicative of native base flows. It then projects 2016 conditions as the baseline for impacts cawed by the proposed action-this is a direct violation of NEPA requirements.* *This analysis completely ignores the impacts of diversions that have systematically and cumulatively diverted as much as 65% of the native flows from the Fraser and upper Colorado River from the existing Moffat diversions, Colorado-Big Thompson Project, Windy Gap and Grand Ditch diversions. The impacts from the various in-basin diversions should also be considered in this analysis. This DEIS also ignores the depletions from native flows by the existing Windy Gap, Colorado-Big Thompson, their own Moffat diversions and even the Grand Ditch. A supplemental DEIS should be required to correct this inept analysis. To assume that any past actions and environmental consequences are not valid is simply an attempt to side step the intent and required analysis by NEPA.* *Despite the fact that there is another major trans-mountain diversion project occurring simultaneously with this project, the Windy Gap Firming Project (WGFP), the applicant only mentions it once in the entire report under the "Future Water-Based Actions" and does not consider it as a contributing event to this DEIS. If these two projects were to go online as proposed, total diversions from the upper Colorado River to*

Comment Information	Comment	Comments and Responses
		the Front Range would reach approximately 75% of native flows, if not more. Ignoring the Windy Gap Firming Project doesn't change the fact that 30,000 a.f. of additional water is proposed to be diverted out of Grand County annually, and the combined impacts of both projects should be thoughtfully and deliberately considered under a combined Corps of Engineers and Bureau of Reclamation EIS. **Response #1687-11:** Past Actions The Council on Environmental Quality (CEQ) interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the

Comment Information	Comment	Comments and Responses
		environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. Baseline and Re-structured Document Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Windy Gap Firming Project The DEIS includes the Windy Gap Firming Project (WGFP) as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts

Comment Information	Comment	Comments and Responses
		associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the Colorado-Big Thompson (C-BT) system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Supplemental DEIS Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a supplemental document will not be prepared for the Moffat Project. It would be inappropriate to combine the EIS documents for the Moffat Project and WGFP since the projects consist of two different applicants with distinct project purposes and two different lead regulatory agencies. The WGFP is included in the cumulative effects analysis for the Moffat Project. Additionally, the Corps and the U.S. Department of the Interior, Bureau of Reclamation have coordinated closely with regards to the cumulative effects and mitigation of both projects on the western slope.

Comment Information	Comment	Comments and Responses
		Comment #1687-10 *(ID 2427)**:*** *The Corps of Engineers needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized or adequately mitigated. Because the cumulative impacts aren't being considered in this DEIS, there is no opportunity to avoid, minimize or to mitigate those impacts. By failing to acknowledge and consider the environmental damage that has already been caused by the Moffat Tunnel project, and by the many other trans-mountain diversion projects throughout the 20th century, this DEIS is sorely out of compliance with the CWA. The challenges with this project and those that preceded it should be honestly identified, so real avoidance, minimization and mitigation can be considered and implemented.* **Response #1687-10:** Please see the response to Comment ID 2428. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1687-19*** *(ID 2426)**:*** *The Moffat Collection System Project DEIS also fails to consider the impacts to Grand Lake, even though the heavier phosphorus laden sediment water will end up in Windy Gap and then will be pumped into Grand Lake, which has been plagued with water quality issues that are unmistakably traceable to the Colorado Big-Thompson (CBT) project. To wit, the time that Denver Water proposes to pump (May-July), are the same months that Windy Gap is pumping into the CBT project. All- he-while, six wastewater treatment plants on the Fraser River have high discharge due*

Comment Information	Comment	Comments and Responses
		to infiltration, and agricultural lands are flushing a years worth of nutrients from cattle into the river. *Thus, when these two projects are considered together, it is apparent that Northern Water is proposing to increase pumping, while Denver Water will be leaving Northern with even more phosphorus-laden water than it has previously. Current CBT operations have had disastrous effects on Grand Lake, and these two projects promise a one-two punch that will only serve to exacerbate a true environmental disaster.* **Response #1687-19:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1687-8*** *(ID 2425)**:*** *The financial implications of this project have been severely ignored or at best underscored. No consideration is given to tourists that come to Grand County to hike, ice-fish, site-see, bike or to kayak. While there is a brief qualitative mention of some public access locations and observation of number of anglers visible at one time, there is no baseline data on fishing.* *Furthermore, there is no attempt to measure tourist spending on lodging, restaurants, entertainment, shopping or fuel. Finally, there is no measurement attempt for the possible impacts to the housing industry, even though 213 of the homes in Grand County are second homes. Grand County is a tourist-driven economy, followed in short order by the housing industry, so the true financial impacts of this project should include these two major economic drivers.*

Comment Information	Comment	Comments and Responses
		Response #1687-8: FEIS Sections 3.11 and 3.15 describe the aquatic resources and recreational fishing in the Project area. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal status of the reaches on the Colorado River are expected to be unaffected by the Moffat Project. FEIS Section 3.17.5.6 describes current tourist activity in Grand County, including sales and tax receipts. Data on tourism related business establishments and employment is also included. Section 5.19 of the FEIS, which addresses effects solely resulting from the Moffat Project alternatives, concludes that tourism and recreation activity in Grand County would not be impacted by any Moffat Project alternatives; related spending would also be unaffected. The text in that section provides detailed information supporting that conclusion, including data and analysis provided by other resources, such as recreation and visual resources. Section 4.6.19 of the FEIS discusses the cumulative impacts of all past, present and reasonably foreseeable future actions, including the Moffat Project, on the Grand County tourism economy, including the housing industry. ***Comment #1687-5*** *(ID 2424)**:*** *The whole of Grand County has been overrun by the Mountain Pine Beetle epidemic, and the Fraser Valley has experienced nearly complete Lodgepole Pine mortality in its mature tree stands due to this tiny yet persistent bug. There was no attempt to analyze what the effects will be on an already overly stressed forest when even more water is taken from this watershed. Will there be losses in the Spruce and Aspen when the water table drops? Will this area have a higher fire danger? When a*

Comment Information	Comment	Comments and Responses
		fire does go through the Fraser Valley, will it take longer to recover with even less flushing flows to address the Haymen-like conditions? The DEIS is sorely, and possibly gravely incomplete in this analysis. **Response #1687-5:** The effects as a result of pine beetle infestation alone would not impact channel morphology, however forest lost and vegetation community changes from the beetle could potentially have several impacts. Pine beetle kills could result in decreased sediment supply as dying forests decrease overhead shading resulting in increased groundcover and mid-story vegetation, therefore decreasing erosion potential. Pine beetle could also result in increased sediment supply if a large fire were to occur, fueled by the killed timber increasing erosion potential. Impacts of both pine beetle infestation coupled with large scale fires are speculative and resulting channel morphological responses were not quantified, however, in the event of a large scale fire, sediment supply would likely significantly increase for a finite amount of time. Sediment deposition from increased erosion would be expected to occur in streams during this time. As groundcover and the forest regenerates, sediment supply would be reduced and likely return to levels near Current Conditions. As revegetation occurs, sediment supply would decrease and at some point during the revegetation process sediment supply would once again drop below sediment transport capacity. When sediment transport capacity exceeds sediment supply, sediment that had been deposited as a result of the fire would begin to erode and transport downstream. The system would continue along this erosional process until it returned to its equilibrium.

Comment Information	Comment	Comments and Responses
		The proposed Project would result in decreased sediment transport capacity. Following a major fire it can therefore be predicted that either with or without the Project, the river system would eventually return to the same dynamic state. The duration of time required for the stream to return to equilibrium would likely be greater with the proposed Project. Lodgepole pine, the principal species that is being affected by mountain pine beetle, is an upland species and is the dominant species on many mountain slopes. It is not dependent on stream flows, floods or groundwater, therefore, increased diversions of water from streams in the Fraser Valley would have no effect on the mountain pine beetle epidemic. Minor reductions in stream levels attributable to the Project would likely cause only minor reductions in groundwater levels, which would be limited to areas immediately adjacent to the streams, downstream of the Denver Water diversion points in the upper Fraser River watershed. Effects on stream levels and groundwater levels would diminish with distance downstream of those points. Increased diversions are very unlikely to result in loss of blue spruce or aspen or to increase fire danger. ***Comment #1687-17*** *(ID 2423)**:*** *While it is positive that Denver Water is proposing to meet part of its 2030 water shortfall by conserving 16,000 a.f. of water per year, the conservation plan is far too meek, equaling only 4.4% out of the 363,000 a.f. of projected 2030 demand. By ignoring outdoor lawn watering, Denver Water fails to consider nearly half of its current demand. Contrast this effort with that of the Southern Nevada Water Authority, which pays customers to remove Kentucky bluegrass, and has*

Comment Information	Comment	Comments and Responses
		dropped its usage by 30%. A far less aggressive conservation plan by Denver Water could reap the 34,000 a.f. of their forecasted "shortage" and much more, without taking another drop of water from Grand County and what was once referred to as mighty upper Colorado River. Taking more water out of the Colorado River basin prior to exhausting more aggressive conservation measures is unfair to Grand County. **Response #1687-17:** Denver Water explored a "Cash for Grass" program. In 2008, Denver Water held several focus groups and found that there was little interest in participating in this type of program. Therefore, Denver Water pursued other conservation measures that were more cost effective and that would have higher customer participation. Part of the issue with offering a program of this type to single family residential customers is that the majority of those customers already irrigate at a level that is below the efficiency level for turf. Replacing this turf with water efficient landscaping (that still requires irrigation) nets the utility very little water savings. This is compounded by the cost of this landscaping compared to the cost of water. The net result to the customer is that it is a costly endeavor, that even when offset by a utility rebate would take years to pay back the investment. Denver Water has concentrated its outdoor water conservation program as follows: "Use Only What You Need" – a nationally recognized conservation marketing campaign, and xeriscape – a term developed by Denver Water to describe landscaping that has little to no watering needs. Denver Water does have a program in place which provides incentives to remove bluegrass from large landscapes including park systems and those owned by business parks and homeowners associations.

Comment Information	Comment	Comments and Responses
		As shown in FEIS Table 1-1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also

Comment Information	Comment	Comments and Responses
		educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #1687-2*** *(ID 2422)**:*** *In its current draft, the DEIS doesn't consider issues and data of great importance. The Moffat Project DEIS is insufficient in its scope; the Corps should hold the applicant to a high standard since the ramifications of implementation of this project are far reaching and could be extremely detrimental to a premier watershed and the communities that host it.* **Response #1687-2:** Prior to releasing a FEIS on the proposed Project, the Corps will evaluate and consider comments on the Project's environmental effects according to NEPA. ***Comment #1687-20*** *(ID 2421)**:*** *The DEIS concludes that there will be little to no impacts caused by the Moffat Collection System Project. If the same conclusions are drawn in the Final EIS, then monitoring system should be put in place to ensure there are no impacts occurring – and when and if they do the Corps should include enforceable mitigation in the Record of Decision.* **Response #1687-20:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.

Comment Information	Comment	Comments and Responses
		Comment #1687-22 *(ID 2420)**:*** *The Stream Flow Management Plan should be the mitigation for this project. Grand County has spent over $1 million working on this plan that will outline the necessary stream flows needed for domestic, agricultural, recreational, in- stream and other uses. It is premature to grant any approvals prior to its completion; the Stream Flow Management Plan should be the mitigation for the Moffat Collection System Project* **Response #1687-22:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #1687-15*** *(ID 2419)**:*** *The No-Action alternative relies upon unfair and inaccurate information, which distorts the environmental impact baseline and results in a comparison between it and other alternatives that is neither fair nor accurate. A supplemental analysis needs to examine the cumulative impacts on the natural ecosystems as compared to a fair and accurate no-action alternative, which will also bring this project into compliance with the Clean Water Act.*

Comment Information	Comment	Comments and Responses
		Response #1687-15: Please see the response to Comment ID 2429. ***Comment #1687-18*** *(ID 2418)**:*** *The impacts of this project to the West Slope have not been adequately analyzed in the DEIS, and conclusions were drawn based on questionable modeling. The Town of Grand Lake requests the Corps to issue a supplemental DEIS to address all of the impacts and include permit conditions such that any impact is fully mitigated.* **Response #1687-18:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a supplemental document will not be prepared for the Moffat Project. As a result of comments received on the DEIS, however, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle 2003, 2004). As a component of the Upper Colorado River Study (UPCO), an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water

Comment Information	Comment	Comments and Responses
		rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities in Grand and Summit counties (UPCO PACSM Review Committee 1999). ***Comment #1687-9*** *(ID 2417)**:*** *Given the timing of the Windy Gap DEIS, this DEIS should be the combined effort of the Corps and the Bureau of Reclamation to insure that the cumulative effect of both projects are fully vetted and considered.* **Response #1687-9:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the

Comment Information	Comment	Comments and Responses
		Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #1687-13*** *(ID 2416)**:*** *As proposed, this project falls well short of being in the public interest as required under Section 404 of the Clean Water Act, and the Corps should not issue a 404 permit until the DEIS can support that determination.* **Response #1687-13:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document was not prepared for the Moffat Project. As a result of comments received on the DEIS, new analyses were conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetland and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), sensitive species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). ***Comment #1687-1*** *(ID 2415)**:*** *I appreciate the possibility to comment on this project, and look forward to working with the Corps of Engineers and Denver Water in the future towards a result that benefits everyone.* **Response #1687-1:** The Corps notes the comment.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1692 Fran Cook, Mayor Town of Fraser 153 Fraser Avenue, P.O. Box 120 Fraser, CO 80442 and Jeffrey L. Durbin, Town Manager Town of Fraser 153 Fraser Avenue, P.O. Box 120 Fraser, CO 80442	FRASER COLORADO 153 FRASER AVE PO Box 120 80442 RECEIVED MAR 2010 March 10, 2010 Mr. Scott Franklin, Moffat EIS Project Manager U.S. Army Corps of Engineers 9307 South Wadsworth Boulevard Littleton, CO 80128 **RE: Moffat Collection System Project Draft Environmental Impact Statement Comments** Dear Mr. Franklin: We are writing on behalf of the Town of Fraser and the Fraser Town Board to provide our comments regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS"). **General** • The Moffat Project will have significant impacts on water, water quality, environmental resources, and the economy throughout the Colorado River Basin and the Moffat DEIS does not adequately disclose, identify, and address project impacts. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA (40 C.F.R. 1500.1 (b)) and the Moffat DEIS falls short of this standard which makes it a very difficult document to analyze and leaves us questioning many of the conclusions. • The cumulative impacts of the Moffat Project, prior Denver Water projects that divert water from the Colorado River Basin, and the Northern Windy Gap Firming Project must be considered given the magnitude and scale of the projects and their impacts. Independent review of each project fails to identify the real social, economic, and environmental impacts resulting from implementation of these projects. • Throughout the document the Moffat DEIS states that there will be little to no impact caused by the project; however, there is very little factual basis presented for these statements. Additional information and analysis is necessary to confirm these positions and the Corps of Engineers should consider conditioning any approvals with enforceable assurances that such statements prove true. • We all choose to live in Colorado for quality of life and economic reasons that are all tied directly to our water resources. While we are concerned about the impacts to our local tourism based economy, it is important to note that the environmental health of west slope rivers is of critical importance to the economic health of our entire state.	***Comment #1692-3*** *(ID 2406)**:*** *We are writing on behalf of the Town of Fraser and the Fraser Town Board to provide our comments regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS").* **Response #1692-3:** The Corps notes the comment. ***Comment #1692-2*** *(ID 2405)**:*** *General* *The Moffat Project will have significant impacts on water, water quality, environmental resources, and the economy throughout the Colorado River Basin and the Moffat DEIS does not adequately disclose, identify, and address project impacts. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA (40 C.F.R. 1500.1 (b)) and the Moffat DEIS falls short of this standard which makes it a very difficult document to analyze and leaves us questioning many of the conclusions.* **Response #1692-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1692-16*** *(ID 2404)**:*** *The cumulative impacts of the Moffat Project, prior Denver Water projects that divert water from the Colorado River Basin, and the Northern Windy Gap Firming Project must be considered given the magnitude and scale of the projects and their impacts. Independent review of each project fails to identify the real social, economic, and environmental impacts resulting from implementation of these projects.*

Comment Information	Comment	Comments and Responses
	Impacts • The Moffat DEIS does not examine the ongoing cumulative impacts on the natural ecosystem due to Denver's current operations. In 2006 we completed aquatic habitat enhancements in the Fraser River that were necessary due to Denver's current operations, the proposed operations will only increase the scope and magnitude of impacts. • The Moffat DEIS suggests that the impacts from the project are negligible; however, the Upper Colorado River basin – and especially the Fraser River – is already severely stressed. Even a minor impact can result in severe impacts to the ecosystem when all cumulative impacts (existing diversions as well as future ones) are considered. The scientific basis for the numerous suggestions regarding negligible impacts should all be disclosed. • The Moffat DEIS acknowledges there are fragile environmental conditions in 2016 (low flows, substantial effluent, etc.); however, the Moffat DEIS concludes that past water-related projects may have had an adverse effect but future water projects would have limited new effects. NEPA guidelines say that the EIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions in the Fraser River may be at such a seriously compromised condition that any further impacts could prevent the river from returning to any reasonably healthy state. • The Moffat DEIS claims that additional water will only be diverted during runoff months and the impact to be negligible to the existing ecosystem. However, annual high water flows which naturally occur with runoff are necessary to clear sediment from spawning beds and maintain stream channel structure. If unmitigated, increased water diversions may prevent such "flushing flows" from occurring, and this in turn causes negative impacts to aquatic life and to the natural function of wetlands in mountain areas. A natural hydrograph (high spring flows) is necessary to allow wetlands to serve as natural reservoirs and to filter and recharge alluvial aquifers. This project removes the natural hydrograph, and the Moffat DEIS ignores the important ecological services that flushing flows and channel maintenance flows provide to the ecosystem. • The Moffat DEIS states that only 1.95 acres of wetlands will be impacted by new diversions (specifically around Gross Reservoir). This understates the potential wetland impacts of the Moffat Project. At no time does the Moffat DEIS contemplate the existing degradation of wetlands caused by existing diversions, nor the degradation and loss of existing wetlands that would result from additional diversions that remove of the semi-natural but still impacted hydrograph that currently occurs in the Fraser River. The loss of this wetland habitat has significant environmental, cultural, and water quality impacts to the residents of Grand County. • The Moffat DEIS Proposed Action calls for water to be diverted in wet years following dry years, specifically in the spring and early summer months. Under this scenario, water will be diverted exactly when the overall environment (both aquatic and terrestrial habitat) has an opportunity to replenish water from the previous dry year(s). This only extends dry conditions when the impacted habitat is already severely stressed, which may create a tipping point beyond which no habitat may be able to recover. Further, the Moffat DEIS fails to consider the impacts on expected yield should changes in climate result in earlier and more-concentrated spring runoff as well as reduced water supplies in the Colorado River basin.	**Response #1692-16:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #1692-4**: (ID 2403)* *Throughout the document the Moffat DEIS states that there will be little to no impact caused by the project; however, there is very little factual basis presented for these statements. Additional information and analysis is necessary to confirm these positions and the Corps of Engineers should consider conditioning any approvals with enforceable assurances that such statements prove true.*

Comment Information	Comment	Comments and Responses
	• Our local communities rely on recreation-based economies, and the riparian habitat is integral to our local businesses. Our local economies rely on fishing, rafting, kayaking, and alpine skiing (snow-making), and may all be significantly impacted by reductions in flows in the Colorado River, and, every drop of water in the river has a significant financial benefit. The Moffat DEIS states that no impact to sales-tax collection would occur; however, it is clear that if these industries cannot operate (or must reduce operations as a result of lower flows) then a significant impact is felt in our local communities that are dependent on water resources for environmental and aesthetic (and not consumptive) purposes. • The natural ecosystem and economy of the Fraser Valley is integral to the economic health of the entire State of Colorado. Yet the socioeconomic impacts to Grand County communities have not been given serious and thorough consideration in the Moffat DEIS. **Water Quality** • For municipal water providers on the Western Slope, the impact of increased diversions is two-fold: it impacts drinking water treatment systems and wastewater treatment facilities. Decreased flows combined with changes to state and federal requirements have resulted in requirements for system improvements, the cost of which have been exclusively borne by local communities. The Corps has an obligation to take into account the total impacts of the project on the public, and therefore should consider the entire costs of the Moffat Project, including those costs on the local communities that would be affected by the Moffat Project – not just the monetary cost to the Denver Water Board. • Additional depletions of quality water from the Fraser River and its tributaries will tend to lower the quality of water pumped at Windy Gap, which will tend to decrease the quality and clarity of water in Grand Lake. This was not addressed in the Moffat DEIS even though conditions in Grand Lake are already visibly stressed. • The Fraser River already faces significantly elevated water temperatures seasonally, and removal of flows will only exacerbate the river's ability to sustain itself ecologically during the seasonal fluctuation of temperature. Stretches of the Fraser River and the Colorado River below Windy Gap have been listed as a 303(d) impaired stream requiring Total Maximum Daily Load (TMDL) regulations. It is easy to correlate the impairment with the existing diversions of Denver Water, and the Moffat DEIS needs to include mitigation for further impairment that will surely occur due to increased diversions. The Moffat DEIS should be modified to analyze this listing and the additional impacts that will be created by the proposed actions of Denver Water. • Approval of the Moffat DEIS would result in the depletion of flushing flows, which significantly improve the Fraser River's ecosystem (as identified in Grand County's Stream Management Plan). Removal of flushing flows will also result in an increase in deposits of additional materials in the river from traction materials placed on local roads and highways. The Moffat DEIS fails to provide for any mitigation of this impact. Any new diversions should be limited to prevent further long-term degradation in these demanding periods.	**Response #1692-4:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a supplemental document will not be prepared for the Moffat Project. As a result of comments received on the DEIS, however, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). ***Comment #1692-13*** *(ID 2402)**:*** *We all choose to live in Colorado for quality of life and economic reasons that are all tied directly to our water resources. While we are concerned about the impacts to our local tourism based economy, it is important to note that the environmental health of west slope rivers is of critical importance to the economic health of our entire state.* **Response #1692-13:** The DEIS recognizes the relationship of environmental well-being to economic health of the potentially affected West Slope areas. The socioeconomic impacts are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in the FEIS Section 5.19 to revise or support the socioeconomic conclusions.

Comment Information	Comment	Comments and Responses
	Mitigation • The Moffat DEIS needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized, or adequately mitigated. None of these requirements are addressed in the Moffat DEIS. It is difficult to avoid, minimize, or truly mitigate when the real past actions and cumulative impacts are not identified or disclosed. • The Moffat DEIS provides little information on potential mitigation of increased diversions and no mitigation for existing diversions. All diversions should be offset by effective mitigation. • The Moffat DEIS does not consider Grand County's Stream Management Plan. Grand County and its municipal water providers have been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in our area. The Stream Management Plan takes into consideration the concerns of cumulative impact and looks at the river system and various project operations as a whole. The Moffat DEIS should include information from the Stream Management Plan, and mitigation needs to be based on the findings in the Plan. • Denver Water has discussed an opportunity to include bypass flows as part of mitigation for increased diversions as part of the Moffat DEIS. The bypass flows would undoubtedly provide great relief for municipalities in Grand County that struggle to treat wastewater during times of low flows. Any mitigation proposed or approved as part of the permit process should include bypass flow usage for Grand County municipalities. • The Moffat DEIS considers the impact of population growth and need only until 2030. Denver Water's charter requires that any need be met for any required amount with no concern for where the water comes from. The Moffat DEIS should contemplate a solution where a realistic limitation on Denver's growth that relies on Diversions of Colorado River Basin water is put in place to reflect that this water resource is finite. • Denver Water has not adequately considered the opportunities for reuse of existing water resources, which Denver is required to implement under the Blue River Decree. • The Moffat DEIS process should identify a plan for enforcement to ensure the provisions in the permit or any other Intergovernmental Agreement (IGA) that may be procured as part of this process. Enforcement needs to be a requirement of all of the participants in this process as it is simply not fair or sustainable for Grand County to solely protect the water resources that are owned and enjoyed by all residents and guests of the state of Colorado (including the Front Range). Active management by the Corps of Engineers, beyond just the permitting process, is essential to a sustainable solution.	***Comment #1692-15*** *(ID 2401)**:*** *Impacts* *The Moffat DEIS does not examine the ongoing cumulative impacts on the natural ecosystem due to Denver's current operations. In 2006 we completed aquatic habitat enhancements in the Fraser River that were necessary due to Denver's current operations, the proposed operations will only increase the scope and magnitude of impacts.* **Response #1692-15:** CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology.

Comment Information	Comment	Comments and Responses
	Thank you for this opportunity to comment on the Moffat Collection System Project Draft Environmental Impact Statement. Our community is concerned about the significant potential impacts of this project, and would appreciate your consideration of this letter. Thank you for your time in this matter. Sincerely, Fran Cook Mayor Jeffrey L. Durbin Town Manager CC: Grand County Board of County Commissioners Town of Grand Lake Board of Trustees Town of Granby Board of Trustees Town of Kremmling Board of Trustees Town of Hot Sulphur Springs Board of Trustees Town of Winter Park Town Council Grand County Water and Sanitation District No. 1 Winter Park Water and Sanitation District Winter Park Ranch Water and Sanitation District	The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. ***Comment #1692-14*** *(ID 2400)**:*** *The Moffat DEIS suggests that the impacts from the project are negligible; however, the Upper Colorado River basin - and especially the Fraser River - is already severely stressed. Even a minor impact can result in severe impacts to the ecosystem when all cumulative impacts (existing diversions as well as future ones) are considered. The scientific basis for the numerous suggestions regarding negligible impacts should all be disclosed.* **Response #1692-14:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
		Comment #1692-9 *(ID 2399)**:*** *The Moffat DEIS acknowledges there are fragile environmental conditions in 2016 (low flows, substantial effluent, etc.); however, the Moffat DEIS concludes that past water-related projects may have had an adverse effect but future water projects would have limited new effects. NEPA guidelines say that the EIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions in the Fraser River may be at such a seriously compromised condition that any further impacts could prevent the river from returning to any reasonably healthy state.* **Response #1692-9:** There is not a known scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic biological resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic biological resources considered the current state of that resource, including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. The direct impact discussion for aquatic biological resources (DEIS Section 4.9) indicated minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years.

Comment Information	Comment	Comments and Responses
		Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. ***Comment #1692-8*** *(ID 2398)**:*** *The Moffat DEIS claims that additional water will only be diverted during runoff months and the impact to be negligible to the existing ecosystem. However, annual high water flows which naturally occur with runoff are necessary to clear sediment from spawning beds and maintain stream channel structure. If unmitigated, increased water diversions may prevent such "flushing flows" from occurring, and this in turn causes negative impacts to aquatic life and to the natural function of wetlands in mountain areas. A natural hydrograph (high spring flows) is necessary to allow wetlands to serve as natural reservoirs and to filter and recharge alluvial aquifers. This project removes the natural hydrograph, and the Moffat DEIS ignores the important ecological services that flushing flows and channel maintenance flows provide to the ecosystem.* **Response #1692-8:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser

Comment Information	Comment	Comments and Responses
		River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes.

Comment Information	Comment	Comments and Responses
		Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way agreements with USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		Comment #1692-10 *(ID 2397)**:*** *The Moffat DEIS states that only 1.95 acres of wetlands will be impacted by new diversions (specifically around Gross Reservoir). This understates the potential wetland impacts of the Moffat Project. At no time does the Moffat DEIS contemplate the existing degradation of wetlands caused by existing diversions, nor the degradation and loss of existing wetlands that would result from additional diversions that remove of the semi-natural but still impacted hydrograph that currently occurs in the Fraser River. The loss of this wetland habitat has significant environmental, cultural, and water quality impacts to the residents of Grand County.* **Response #1692-10:** The analysis of impacts to riparian habitat included both direct losses of habitat from construction and inundation at Gross Reservoir (DEIS Section 4.6.1.1), and discussion of indirect impacts due to stream flow changes along the Fraser River and other rivers (DEIS Section 4.6.1.2). The DEIS did address the existing diversions in DEIS Section 4.6.1.2. Impacts from lower flow levels cannot be measured in the same way as the direct impacts shown in Tables 4.6-1 and 4.6-3 of the DEIS and in most cases would involve a shift in vegetation type rather than loss or full conversion to upland. An accurate quantitative summary of acres of indirect impacts in a format like Table 4.6-3 is not possible and would be misleading if it were presented. The DEIS did not address the water quality functions of wetlands and riparian areas, and an analysis of this topic has been added to FEIS 5.8.1.2.

Comment Information	Comment	Comments and Responses
		Comment #1692-7 *(ID 2396)**:*** *The Moffat DEIS Proposed Action calls for water to be diverted in wet years following dry years, specifically in the spring and early summer months. Under this scenario, water will be diverted exactly when the overall environment (both aquatic and terrestrial habitat) has an opportunity to replenish water from the previous dry year(s). This only extends dry conditions when the impacted habitat is already severely stressed, which may create a tipping point beyond which no habitat may be able to recover. Further, the Moffat DEIS fails to consider the impacts on expected yield should changes in climate result in earlier and more-concentrated spring runoff as well as reduced water supplies in the Colorado River basin.* **Response #1692-7:** Information was added to FEIS Sections 4.6.1 and 5.1 on the increased frequency and duration of dry year conditions and the associated effects on resources. The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment

Comment Information	Comment	Comments and Responses
		2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights are in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation will increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many

Comment Information	Comment	Comments and Responses
		sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: (1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and (2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated FEIS Section 4.4 with more recent technical documentation. ***Comment #1692-12*** *(ID 2395)**:*** *Our local communities rely on recreation-based economies, and the riparian habitat is integral to our local businesses. Our local economies rely on fishing, rafting, kayaking, and alpine skiing (snow-making), and may all be significantly impacted by reductions in flows in the Colorado River, and, every drop of water in the river has a significant financial benefit. The Moffat DEIS states that no impact to sales-tax collection would occur; however, it is clear that if these industries cannot operate (or must reduce operations as a result of lower flows) then a significant impact is felt in our local communities that are dependent on water resources for environmental and aesthetic (and not consumptive) purposes.*

Comment Information	Comment	Comments and Responses
		Response #1692-12: As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in Section 5.15. The analysis of socioeconomic impacts in Grand County considers the conclusions reached in other resource sections, such as recreation. If the impacts upon recreation are insufficient to change visitation or related expenditures, there would be no associated socioeconomic effect. For example, recreational impacts must be placed in the context of the level of participation in various recreational activities as well as the degree of impact of those activities on local economies. The basis for the conclusions of socioeconomic impacts in Grand County are explained in DEIS Section 4.17, which refers to the specific text of other resource sections. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in Section 4.6.19 and 5.19 of the FEIS. ***Comment #1692-11*** *(ID 2394)**:*** *The natural ecosystem and economy of the Fraser Valley is integral to the economic health of the entire State of Colorado. Yet the socioeconomic impacts to Grand County communities have not been given serious and thorough consideration in the Moffat DEIS.* **Response #1692-11:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
		Comment #1692-21 *(ID 2393)**:*** *For municipal water providers on the Western Slope, the impact of increased diversions is twofold: it impacts drinking water treatment systems and wastewater treatment facilities. Decreased flows combined with changes to state and federal requirements have resulted in requirements for system improvements, the cost of which have been exclusively borne by local communities. The Corps has an obligation to take into account the total impacts of the project on the public, and therefore should consider the entire costs of the Moffat Project, including those costs on the local communities that would be affected by the Moffat Project - not just the monetary cost to the Denver Water Board.* **Response #1692-21:** Concentrations of regulated drinking water contaminants are well within drinking water standards on the Fraser River and no impacts are anticipated to drinking water providers under current regulations. Further evaluation of wastewater treatment discharge permits was performed and is presented in FEIS Sections 4.6.2 and 5.2. ***Comment #1692-20*** *(ID 2392)**:*** *Additional depletions of quality water from the Fraser River and its tributaries will tend to lower the quality of water pumped at Windy Gap, which will tend to decrease the quality and clarity of water in Grand Lake. This was not addressed in the Moffat DEIS even though conditions in Grand Lake are already visibly stressed.* **Response #1692-20:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #1692-19 *(ID 2391)**:*** *The Fraser River already faces significantly elevated water temperatures seasonally, and removal of flows will only exacerbate the river's ability to sustain itself ecologically during the seasonal fluctuation of temperature. Stretches of the Fraser River and the Colorado River below Windy Gap have been listed as a 303(d) impaired stream requiring Total Maximum Daily Load (TMDL) regulations. It is easy to correlate the impairment with the existing diversions of Denver Water, and the Moffat DEIS needs to include mitigation for further impairment that will surely occur due to increased diversions. The Moffat DEIS should be modified to analyze this listing and the additional impacts that will be created by the proposed actions of Denver Water.* **Response #1692-19:** The 2012 303(d) and Monitoring and Evaluation lists per CDPHE Regulation 93 are used in the FEIS. Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1692-6*** *(ID 2390)**:*** *Approval of the Moffat DEIS would result in the depletion of flushing flows, which significantly improve the Fraser River's ecosystem (as identified in Grand County's Stream Management Plan). Removal of flushing flows will also result in an increase in deposits of additional materials in the river from traction materials placed on local roads and highways. The Moffat DEIS fails to provide for any mitigation of this impact. Any new diversions should be limited to prevent further long-term degradation in these demanding periods.*

Comment Information	Comment	Comments and Responses
		Response #1692-6: High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line.

Comment Information	Comment	Comments and Responses
		Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. The analysis of stream morphology was expanded to include a Phase 2 sediment transport evaluation. As part of this assessment, flows required to mobilize different particle sizes were quantified and the flow at which stream bed mobilization occurs was estimated. Impacts of traction sand were evaluated as part of a sediment supply sensitivity analysis. Results of this analysis were incorporated into an evaluation to quantify the duration, frequency and magnitude of flows exceeding the Phase 2 sediment transport threshold as well as changes to other high magnitude flood events. Changes resulting from the proposed Project were quantified. Results are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #1692-17*** *(ID 2389)**:*** *The Moffat DEIS needs to comply with the requirements of the Clean Water Act (CWA). The CWA has a substantive requirement that impacts must be avoided, minimized, or adequately mitigated. None of these requirements are addressed in the Moffat DEIS. It is difficult to avoid, minimize, or truly mitigate when the real past actions and cumulative impacts are not identified or disclosed.*

Comment Information	Comment	Comments and Responses
		Response #1692-17: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. Under the CWA Section 404 regulations, the Corps is required to select the least environmentally damaging practicable alternative. Impacts to the aquatic environment, including wetlands, must first be avoided or minimized. Mitigation is used to compensate for residual impacts after impacts have been reduced through avoidance and minimization. Denver Water's Conceptual Mitigation Plan for Project-related impacts that cannot be avoided or further minimized is provided in FEIS Appendix M. ***Comment #1692-23*** *(ID 2388)**:*** *The Moffat DEIS provides little information on potential mitigation of increased diversions and no mitigation for existing diversions. All diversions should be offset by effective mitigation.* **Response #1692-23:** FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures would be specified by the Corps as Section 404 Permit conditions, if a permit is issued. ***Comment #1692-25*** *(ID 2387)**:*** *The Moffat DEIS does not consider Grand County's Stream Management Plan. Grand County and its municipal water providers have been involved in an ongoing effort to provide a scientific study for the analysis and recommendation for preferred flow regimen for streams and rivers in our area. The Stream Management Plan takes into consideration the concerns of cumulative impact*

Comment Information	Comment	Comments and Responses
		and looks at the river system and various project operations as a whole. The Moffat DEIS should include information from the Stream Management Plan, and mitigation needs to be based on the findings in the Plan. **Response #1692-25:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11, and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #1692-22*** *(ID 2386)**:*** *Denver Water has discussed an opportunity to include bypass flows as part of mitigation for increased diversions as part of the Moffat DEIS. The bypass flows would undoubtedly provide great relief for municipalities in Grand County that struggle to treat wastewater during times of low flows. Any mitigation proposed or approved as part of the permit process should include bypass flow usage for Grand County municipalities.* **Response #1692-22:** Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in

Comment Information	Comment	Comments and Responses
		FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #1692-5**: (ID 2385)*: *The Moffat DEIS considers the impact of population growth and need only until 2030. Denver Water's charter requires that any need be met for any required amount with no concern for where the water comes from. The Moffat DEIS should contemplate a solution where a realistic limitation on Denver's growth that relies on Diversions of Colorado River Basin water is put in place to reflect that this water resource is finite.* **Response #1692-5:** Denver Water segmented its planning horizon into the near-term timeframe (1997 to 2032) and the long-term timeframe (2032 and beyond). Denver Water is a public utility, under the Public Utilities Commission, that is obligated to supply water to customers inside and outside of Denver's territorial limits. In order to address the projected demands on and need for developing additional water supplies, Denver Water has applied for a Department of the Army Permit (Section 404 Permit) to construct its preferred alternative (as described in DEIS Section 1.2). The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. The proposed

Comment Information	Comment	Comments and Responses
		Project is predicted to meet a total demand of 363,000 AF/yr. How Denver Water meets these future demands is not an action considered in this EIS. Although Denver Water does not have authority over growth management or land development policy and procedures, Denver Water is still obligated to respond to increased demand in providing water to its customers. Denver Water has implemented a reasonably aggressive conservation program to partially address the projected future shortfall. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr. of additional conservation and the 18,000 AF/yr. proposed Project (72,000 AF enlargement of Gross Reservoir). ***Comment #1692-18*** *(ID 2384)**:*** *Denver Water has not adequately considered the opportunities for reuse of existing water resources, which Denver is required to implement under the Blue River Decree.* **Response #1692-18:** Denver Water would continue to fully comply with the requirements of the Blue River Decrees. Denver Water currently uses their reusable

Comment Information	Comment	Comments and Responses
		supplies for exchanges, augmentation, contract deliveries, and their non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro Wastewater Treatment Plant (Metro WWTP) and the Littleton–Englewood (Bi-City) Wastewater Treatment Plant (Bi-City WWTP) are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (subheading, Non-Potable Recycling Facility).

Comment Information	Comment	Comments and Responses
		Denver Water is in the process of completing a Recycling Project that will use reusable supplies to meet an annual demand of 17,500 AF. Denver Water is also in the process of constructing 30,000 AF of gravel pit reservoir storage downstream of Denver. The storage facilities would be used to manage reusable supplies by storing excess reusable supplies in time of surplus, and releasing the stored reusable supplies at times of shortage. The gravel pits would be used for the following purposes: 1. Perform exchanges to upstream facilities. In an exchange, reusable water is added to a stream at a downstream location to enable diversion of a like amount of water at an upstream location. 2. Deliver the reusable water to the Recycling Plant, treat the water, and distribute it for non-potable uses. The recycling plant requires gravel pit storage to supply reusable water to the Recycle Plant, via exchange, when reusable water is not available at Metro or Bi-City. 3. Deliver an annual supply of 5,000 AF of reusable water to South Adams County Water and Sanitation District (per agreements). 4. Use reusable water to augment raw water systems in the metro area (e.g., augment the wells used to supply water to Denver parks). The reusable water needed to support these projects was included in the PACSM simulations and therefore less reusable water is available for a new project. These projects were not on-line in from 1998 to 2008 as noted in the comment, but once these projects are completed, the average annual available unused reusable effluent is estimated to be approximately 7,600 AF. This is an

Comment Information	Comment	Comments and Responses
		example of why it is inappropriate to simply rely on historical values to draw conclusions. As shown in the DEIS Table 2-9, the estimated 7,600 AF of average annual unused reusable water ranges from to zero AF some years, to as high as approximately 37,500 AF in one year. The highest year of unused return flows does occur in a dry year, but many other dry years and periods have less than the 6,700 AF average. Project alternatives that included 5,000 AF of yield using the reusable return flows were analyzed. Alternative that included more than 5,000 AF would have been even more expensive on a cost per AF basis. Also note that with PACSM, Denver Water's unused reusable return flows are used and reused to extinction. ***Comment #1692-24*** *(ID 2383)**:*** *The Moffat DEIS process should identify a plan for enforcement to ensure the provisions in the permit or any other Intergovernmental Agreement (IGA) that may be procured as part of this process. Enforcement needs to be a requirement of all of the participants in this process as it is simply not fair or sustainable for Grand County to solely protect the water resources that are owned and enjoyed by all residents and guests of the state of Colorado (including the Front Range). Active management by the Corps of Engineers, beyond just the permitting process, is essential to a sustainable solution.* **Response #1692-24:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened

Comment Information	Comment	Comments and Responses
		and endangered species that are enforceable through a Biological Opinion. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #1692-1*** *(ID 2382)**:*** *Thank you for this opportunity to comment on the Moffat Collection System Project Draft Environmental Impact Statement. Our community is concerned about the significant potential impacts of this project, and would appreciate your consideration of this letter. Thank you for your time in this matter.* **Response #1692-1:** The Corps notes the comment.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1709 Dave Hartkopf, District Manager Green Mountain Water and Sanitation District 13919 West Utah Avenue Lakewood, CO 80228	GREEN MOUNTAIN WATER AND SANITATION DISTRICT 13919 W. Utah Avenue Lakewood Colorado 80228 www.greenmountainwater.org Phone: 303 985 1581 Fax: 303 985 0680 E-mail: gmwsd@greenmountainwater.org March 10, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 moffat.eis@usace.army.mil RECEIVED MAR 2010 Dear Mr. Franklin, Green Mountain Water & Sanitation District serves over 25,000 customers in the Green Mountain area of Southwest Lakewood. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. We have seen a decline in per household water usage of six percent per year over the past several years (2006 to 2009). However, even with significant conservation efforts, we still need additional water supply. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Stronita Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not *if* we will need this water; it's *when*. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.	***Comment #1709-1*** *(ID 2353)**:*** *Green Mountain Water & Sanitation District serves over 25,000 customers in the Green Mountain area of Southwest Lakewood. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. We have seen a decline in per household water usage of six percent per year over the past several years (2006 to 2009). However, even with significant conservation efforts, we still need additional water supply.* *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system.* *If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System.* *Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project.*

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
	We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. Sincerely, Dave Hartkopf, District Manager Representing Green Mountain Water and Sanitation District 13919 W Utah Avenue Lakewood, CO 80228 303-985-1581 Ext. 202 gmwsd@greenmountainwater.org	*It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water.* *Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.* *We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.* **Response #1709-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1723 Lee E. Schiller, President Columbine Water & Sanitation District 8739 West Coal Mine Avenue Littleton, CO 80123	COLUMBINE WATER & SANITATION DISTRICT C/O PATRICK FITZGERALD, DISTRICT MANAGER 8739 WEST COAL MINE AVENUE LITTLETON, CO 80123 TELEPHONE: (303) 979 2333 FACSIMILE: (303) 933-1769 **Scott Franklin, Moffat EIS Project Manager** **Corps Denver Regulatory Office** **9307 S. Wadsworth Blvd.** **Littleton, CO 80128** **moffat.eis@usace.army.mil** **Name:** Lee E. Schiller **Address:** See above **Representing:** Columbine Water & Sanitation District **Date:** March 5, 2010 **Comments:** Columbine Water & Sanitation District serves 609 customers in the area located east and west of Platte Canyon Road, south of Bowles Avenue and north of Fairway Lane. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. However, even with significant conservation efforts, we still need additional water supply. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water from the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not *if* we will need this water; it's *when*. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.	***Comment #1723-1*** *(ID 2329)**:*** *Columbine Water & Sanitation District serves 609 customers in the area located east and west of Platte Canyon Road, south of Bowles Avenue and north of Fairway Lane. Our district is a distributor of Denver Water. Our service area has participated with all of Denver Water's conservation efforts. However, even with significant conservation efforts, we still need additional water supply.* *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water from the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system.* *If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System.* *Our District is charged with providing water to all customers in our service area. While there is debate about growth issues, those debates are best handled by the legislative process and not by water utilities. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project.*

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
	Scott Franklin March 5, 2010 Page 2 of 2 We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County. Sincerely, Lee H. Schiller President	*It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water.* *Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.* *We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.* **Response #1723-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #1726 Jynnifer Pierro, Mayor Town of Granby Zero Jasper Avenue, P.O. Box 440 Granby, CO 80446-0440	TOWN OF GRANBY Jynnifer Pierro Mayor ZERO JASPER AVENUE, P.O. Box 440 GRANBY, COLORADO 80446-0440 970-887-2501 ext. 212 970-887-9347 (fax) RECEIVED MAR 2010 March 10, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Moffat Collection System Project. The Town of Granby is at the downstream end of the Fraser River Valley and will be affected by the proposed additional diversions. We are deeply concerned about the effects this will have on our ability to provide water to the residents of our community. The Town treats water from the Fraser River for culinary purposes and distributes this water to the people who live in Granby. This past year we saw higher than average flows in the Fraser River through June and July, but typical low flows in August and September as the flow in the Fraser subsided significantly. This occurs annually as the snow melt decreases and higher elevation runoff declines. These low flow times make it extremely difficult to adequately supply water as needed. Proposed additional Moffat diversions will increase the negative impacts and the ability of Granby to supply water to the Town's residents. Mitigations proposed in the DEIS for the impact on the Town of Granby are woefully inadequate. These proposed mitigations do not properly address increased concentrations of run-off nutrients and pollutants and the increased water temperatures that will occur should the flow during the summer months be decreased. It appears that water temperatures will be allowed to exceed State standards for a quality stream. These factors have a significant impact on the Town's ability to treat water for culinary consumption. The Town's treatment facility is 26 years old and we will have increased difficulty treating potable water to meet EPA and Colorado Department of Public Health and Environment requirements for drinking water. The DEIS does not offer an adequate consideration of alternatives, partly based upon the extremely narrow definition of "purpose and need." The suggested range of alternatives is nearly identical to the definition of "purpose and need." We understand that the additional diversions could be diverted during a wet year following a drought. This procedure does not address the problem of depleting ground and alluvial water that occurs during a drought year, it only exacerbates the effects of a dry year on the surrounding	***Comment #1726-8*** *(ID 2327)**:*** *Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Moffat Collection System Project. The Town of Granby is at the downstream end of the Fraser River Valley and will be affected by the proposed additional diversions. We are deeply concerned about the effects this will have on our ability to provide water to the residents of our community. The Town treats water from the Fraser River for culinary purposes and distributes this water to the people who live in Granby.* **Response #1726-8:** It is not anticipated that the Project would affect water supply or water quality with regards to meeting drinking water regulations. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1726-3*** *(ID 2326)**:*** *This past year we saw higher than average flows in the Fraser River through June and July, but typical low flows in August and September as the flow in the Fraser subsided significantly. This occurs annually as the snow melt decreases and higher elevation runoff declines. These low flow times make it extremely difficult to adequately supply water as needed. Proposed additional Moffat diversions will increase the negative impacts and the ability of Granby to supply water to the Town's residents.* **Response #1726-3:** Current problems in the Fraser River caused by low flow conditions during the late summer and in dry years are partially due to diversions by the existing Moffat Project as well as other upstream diversions for in-basin water uses. The proposed Moffat Project would have little to no impact on flows during the late summer and in dry years

Comment Information	Comment	Comments and Responses
	Scott Franklin Page 2 riparian environment. More often than not, it takes three to four years following a drought to replenish the surrounding riparian environment. Acknowledgement is made in the DEIS that there are fragile environmental conditions projected in 2016 (i.e. low flows substantial effluent, etc), but the report does not address the NEPA guidelines that say the DEIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions as they now stand may be at such a seriously compromised condition that the environment is at a tipping point and "future water projects [that] would have limited new effects" would create a situation from which the Fraser River environment would be unable to recover. Cumulative effects of this project and the Windy Gap Firming Project are not adequately addressed for our reach of the Fraser River and there are no real mitigation measures for these cumulative impacts that will most certainly occur. We are of the opinion that these two projects need to be adequately and completely analyzed with appropriate mitigation measures to the impacts to the Colorado River below the Windy Gap diversion structure and to Granby Lake, Shadow Mountain Lake and Grand Lake. Our community, as with other communities along the Fraser/Colorado Rivers drainage, depends upon tourism to remain sustainable. Fishing is a big part of the tourism that occurs throughout the region. Impacts to fishing on the Fraser River or its tributaries have not been properly addressed and no quantitative conclusions were made. The DEIS states there would be no impacts to fishing on Williams Fork and the Colorado Rivers. However, the DEIS does not provide a baseline or identify current conditions regarding fishing other than a qualitative mention of some public access location and observation of the number of anglers visible at one time. The document provides no information about the relationships between fishing and lower stream flows, higher water temperatures and degraded water quality conditions. These are merely a few of the immediate concerns we have with the draft environmental impact statement. These issues directly affect the Town of Granby but have not been adequately addressed and the mitigations proposed are woefully inadequate. We would urge you to reject this draft completely and send it back to Denver Water to correct the deficiencies prior to any further consideration of a US Army Corps of Engineers permit being issued. Very truly yours, Jynnifer Pierro Mayor Cc: Town Board Grand County Commissioners Towns of Winter Park, Fraser, Grand Lake, Hot Sulfur Springs	because Denver Water would have already diverted the maximum amount physically and legally available under their existing water rights without additional storage on-line. Table H-3.1 in DEIS Appendix H shows additional diversions through the Moffat Tunnel would occur primarily during the months of May, June and July in average and wet years. During other months, there would be little to no additional water diverted. Therefore, the ability of the Town of Granby to supply water during August and September would not be impacted by the proposed Moffat Project. ***Comment #1726-9*** *(ID 2325)**:*** *Mitigations proposed in the DEIS for the impact on the Town of Granby are woefully inadequate. These proposed mitigations do not properly address increased concentrations of runoff nutrients and pollutants and the increased water temperatures that will occur should the flow during the summer months be decreased. It appears that water temperatures will be allowed to exceed State standards for a quality stream. These factors have a significant impact on the Town's ability to treat water for culinary consumption. The Town's treatment facility is 26 years old and we will have increased difficulty treating potable water to meet EPA and Colorado Department of Public Health and Environment requirements for drinking water.* **Response #1726-9:** Additional water quality analysis has been performed on the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. The Project would not compromise the operation or effectiveness of the Current Conditions water treatment in the town of Granby. Denver Water has committed to monitoring temperature in the Fraser and Colorado rivers.

Comment Information	Comment	Comments and Responses
		Comment #1726-1 *(ID 2324)**:*** *The DEIS does not offer an adequate consideration of alternatives, partly based upon the extremely narrow definition of "purpose and need." The suggested range of alternatives is nearly identical to the definition of "purpose and need."* **Response #1726-1:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the four issues would jeopardize Denver Water's ability to meet projected demand needs. Therefore, supplying water to the Moffat Collection System was appropriately used as a criterion for alternative screening.

Comment Information	Comment	Comments and Responses
		Comment #1726-5 *(ID 2323)**:*** *We understand that the additional diversions could be diverted during a wet year following a drought. This procedure does not address the problem of depleting ground and alluvial water that occurs during a drought year, it only exacerbates the effects of a dry year on the surrounding riparian environment. More often than not, it takes three to four years following a drought to replenish the surrounding riparian environment.* **Response #1726-5:** As described in DEIS Section 2.2, additional diversions would be greatest in wet years, including wet years following dry year sequences. Drought conditions such as 2002 and prior years would reduce groundwater levels throughout the region because there is much less recharge to the groundwater flow system during dry years. The proposed Project would not cause additional depletions during dry years. However, groundwater levels would not decline so much that they could change the groundwater flow pattern within the watershed. Groundwater would continue to flow from upland areas toward the principal streams in the watershed. In the riparian areas, the drought would have only a relatively small effect on groundwater levels throughout the watershed. Even during the drought, groundwater levels would not drop below the adjacent stream level. Groundwater discharge would contribute to the stream base flows. After the drought, regional groundwater levels would rise toward pre-drought levels because of increasing infiltration of snowmelt. When stream levels are higher than the groundwater levels during the high-runoff season, there would also be localized groundwater recharge due to overbank flooding immediately adjacent to and beneath the streams. After seasonal floodwaters recede, groundwater levels

Comment Information	Comment	Comments and Responses
		adjacent to the streams would be above the adjacent stream levels and thus groundwater would flow into the streams. Overall, the relatively steady groundwater flow into the riparian areas during drought conditions would minimize the effects of the drought on riparian vegetation. ***Comment #1726-4*** *(ID 2322)**:*** *Acknowledgement is made in the DEIS that there are fragile environmental conditions projected in 2016 (i.e. low flows substantial effluent, etc.), but the report does not address the NEPA guidelines that say the DEIS should state whether resources are healthy, deteriorating or considerably compromised. Conditions as they now stand may be at such a seriously compromised condition that the environment is at a tipping point and "future water projects [that] would have limited new effects" would create a situation from which the Fraser River environment would be unable to recover.* **Response #1726-4:** There is not a known scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic biological resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic biological resources considered the current state of that resource, including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact.

Comment Information	Comment	Comments and Responses
		The direct impact discussion for aquatic biological resources (DEIS Section 4.9) identified minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. ***Comment #1726-7*** *(ID 2321)**:*** *Cumulative effects of this project and the Windy Gap Firming Project are not adequately addressed for our reach of the Fraser River and there are no real mitigation measures for these cumulative impacts that will most certainly occur. We are of the opinion that these two projects need to be adequately and completely analyzed with appropriate mitigation measures to the impacts to the Colorado River below the Windy Gap diversion structure and to Granby Lake, Shadow Mountain Lake and Grand Lake.* **Response #1726-7:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor.

Comment Information	Comment	Comments and Responses
		DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1726-6*** *(ID 2320)**:*** Our *community, as with other communities along the Fraser/Colorado Rivers drainage, depends upon tourism to remain sustainable. Fishing is a big part of the tourism that occurs throughout the region. Impacts to fishing on the Fraser River or its tributaries have not been properly addressed and no quantitative conclusions were made. The DEIS states there would be no impacts to fishing on Williams Fork and the Colorado Rivers. However, the DEIS does not provide a baseline or identify current conditions regarding fishing other than a qualitative mention of some public access location and observation of the number of anglers visible at one time. The document provides no information about the relationships between fishing and lower stream flows, higher water temperatures and degraded water quality conditions.* **Response #1726-6:** Impacts to the quality of the fishing experience primarily depends on the quality and health of the

Comment Information	Comment	Comments and Responses
		fisheries, which are addressed in DEIS Section 4.9.1. At most locations, the analysis of aquatic biological resources concluded that impacts to the health of the fishery would be minor or negligible. Therefore, impacts to the recreational experience would also be minor. The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. Impacts to the local economy of the area are addressed in FEIS Section 5.19. ***Comment #1726-2*** *(ID 2319)**:*** *These are merely a few of the immediate concerns we have with the draft environmental impact statement. These issues directly affect the Town of Granby but have not been adequately addressed and the mitigations proposed are woefully inadequate.* *We would urge you to reject this draft completely and send it back to Denver Water to correct the deficiencies prior to any further consideration of a US Army Corps of Engineers permit being issued.* **Response #1726-2:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a supplemental document will not be prepared for the Moffat Project.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #1741 Dave Johnson, President Granby Sanitation District P.O. Box 560, 3493 Grand County Road 57 Granby, CO 80446-0560 and John D. Walker, Attorney for Granby Sanitation District Cazier, McGowan & Walker	GRANBY SANITATION DISTRICT P.O. Box 560 3493 Grand County Road 57 Granby, CO 80446-0560 Phone (970) 887-2052 Fax (970) 887-9574 RECEIVED MAR 2010 March 10, 2010 Mr. Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 RE: Denver-Moffat Collection System Draft Environmental Impact Statement Dear Mr. Franklin: Granby Sanitation District ("GSD") provides the following comments to the Denver-Moffat Collection System Draft Environmental Impact Statement ("Moffat DEIS" or "DEIS"). By way of introduction, GSD was formed in 1954 to provide wastewater treatment services to the inhabitants of the Town of Granby, Colorado. Since its initial formation, the service area of GSD has grown as the Town of Granby has grown. In addition to serving the historic Town of Granby, GSD has agreed to provide wastewater treatment services to areas which lie outside of GSD's boundaries. GSD serves the areas surrounding the historic Town of Granby commonly known as Innsbruck Val-Moritz, Granby Ranch, Silversage, Shorefox and Grand Elk. In total, GSD currently provides wastewater treatment services to approximately 2,796 single family equivalents (sfe), with the expectancy that by 2034 it will serve 10,550 sfe's. (1)	***Comment #1741-1*** *(ID 2270)**:*** *Granby Sanitation District ("GSD") provides the following comments to the Denver- Moffat Collection System Draft Environmental Impact Statement ("Moffat DEIS" or "DEIS").* *By way of introduction, GSD was formed in 1954 to provide wastewater treatment services to the inhabitants of the Town of Granby, Colorado. Since its initial formation, the service area of GSD has grown as the Town of Granby has grown. In addition to serving the historic Town of Granby, GSD has agreed to provide wastewater treatment services to areas which lie outside of GSD's boundaries. GSD serves the areas surrounding the historic Town of Granby commonly known as Innsbruck Val-Moritz, Granby Ranch, Silversage, Shorefox and Grand Elk. In total, GSD currently provides wastewater treatment services to approximately 2,796 single family equivalents (sfe), with the expectancy that by 2034 it will serve 10,550 sfe's.* *The GSD Wastewater Treatment Plant ("WWTP") is located on the Fraser River approximately one mile upstream of the confluence of the Fraser River with the Colorado River and approximately one and one-half miles upstream of Windy Gap Reservoir. The GSD WWTP is the last treatment facility on the Fraser River. Accordingly, GSD is in an unique position of being directly impacted from both the Windy Gap Firming Project and Denver Water's Moffat Collection System Enlargement.* **Response #1741-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
	The GSD Wastewater Treatment Plant ("WWTP") is located on the Fraser River approximately one mile upstream of the confluence of the Fraser River with the Colorado River and approximately one and one-half miles upstream of Windy Gap Reservoir. The GSD WWTP is the last treatment facility on the Fraser River. Accordingly, GSD is in an unique position of being directly impacted from both the Windy Gap Firming Project and Denver Water's Moffat Collection System Enlargement. Section 102(2)(C) of the National Environmental Policy Act ("NEPA") invokes the requirement to perform an environmental impact statement for the Moffat Enlargement. Under NEPA, the Corps of Engineers must consider (a) the environmental impact of the proposed action, (b) any adverse environmental effects which cannot be avoided should the proposal be implemented, (c) alternatives to the proposed action, (d) the relationship between local and short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (e) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. In summary, an environmental impact statement is to serve as check against the environmental costs of an identified project. The DEIS fails to adhere to these guiding principles. Impacts to the environment, both present and future, are neither adequately disclosed nor mitigated. The subjective tendencies of the DEIS from the prospective of the project proponent does not fully notify the public of the ultimate environmental consequences should this project be permitted. (2)	***Comment #1741-2*** *(ID 2269)**:*** *Section 102(2)(C) of the National Environmental Policy Act ("NEPA") invokes the requirement to perform an environmental impact statement for the Moffat Enlargement. Under NEPA, the Corps of Engineers must consider (a) the environmental impact of the proposed action, (b) any adverse environmental effects which cannot be avoided should the proposal be implemented,* *(c) alternatives to the proposed action, (d) the relationship between local and short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (e) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. In summary, an environmental impact statement is to serve as check against the environmental costs of an identified project.* *The DEIS fails to adhere to these guiding principles. Impacts to the environment, both present and future, are neither adequately disclosed nor mitigated. The subjective tendencies of the DEIS from the prospective of the project proponent does not fully notify the public of the ultimate environmental consequences should this project be permitted.* **Response #1741-2:** The Corps applied rigorous and scientifically acceptable methodologies for each resource analyzed for the Moffat Project in compliance with the CWA Section 404 guidelines and NEPA. The short-term, long-term, direct, indirect, and cumulative effects of the Proposed Action were evaluated for each resource in DEIS Chapter 4 and FEIS Chapter 5.

Comment Information	Comment	Comments and Responses
	POTENTIAL IMPACTS The DEIS fails to appropriately identify and mitigate the environment impacts associated with the Moffat Enlargement. The DEIS concludes that there are negligible to no impacts in the Upper Colorado River as a result of the Moffat Collection System, and only minor impacts to temperature in the Fraser River. However, it is rudimentary that increased diversions will negatively affect the water quality in both the Fraser River watershed and the Colorado River watershed. Simply put, less water in the river affects water quality, and not in a good way. While it may seem trivial, it is essential to point out that all the water diverted to the East Slope from the Colorado River basin results in an 100% consumptive use water loss to the West Slope ecosystem. In other words, for every drop of water diverted to the East Slope there is a corresponding water loss on the West Slope. Without adequate mitigation, every drop removed injures the already depleted ecosystem. As summarized on Table 1, below, if the Preferred Alternative is selected, only 19% of the native flow in the Fraser River will remain. ***Table 1*** ***Fraser River near Winter Park Streamflow*** | | Streamflow Volume (af) | Percent of Native Flow Remaining | |---|---|---| | Prior to Moffat Project (1911 - 1935) | 32,094 | | | Berthoud Pass Ditch (725 af/yr) | 31,369 | 98% | | Post Moffat (1936-2006) | 12,785 | 40% | | DEIS Current Conditions (2006)* | 8,529 | 27% | | DEIS Full Use Existing Conditions (2016)* | 7,971 | 25% | | DEIS Build out (Preferred Alternative, 2030)* | 6,053 | 19% | * DEIS information from Table H-7.1 (3)	Additionally, impact thresholds (no impact, negligible, minor, moderate, major) were applied to each resource to allow for comparison of impacts between alternatives. Irreversible and irretrievable commitments of resources affected by the Moffat Project are described in FEIS Section 5.21. ***Comment #1741-9*** *(ID 2293)**:*** *The DEIS fails to appropriately identify and mitigate the environment impacts associated with the Moffat Enlargement. The DEIS concludes that there are negligible to no impacts in the Upper Colorado River as a result of the Moffat Collection System, and only minor impacts to temperature in the Fraser River. However, it is rudimentary that increased diversions will negatively affect the water quality in both the Fraser River watershed and the Colorado River watershed. Simply put, less water in the river affects water quality, and not in a good way. While it may seem trivial, it is essential to point out that all the water diverted to the East Slope from the Colorado River basin results in an 100% consumptive use water loss to the West Slope ecosystem. In other words, for every drop of water diverted to the East Slope there is a corresponding water loss on the West Slope. Without adequate mitigation, every drop removed injures the already depleted ecosystem.* *As summarized on Table 1, below, if the Preferred Alternative is selected, only 19% of the native flow in the Fraser River will remain.* *[SEE ATTACHMENT FOR TABLE I, FRASER RIVER NEAR WINTER PARK STREAMFLOW.]*

Comment Information	Comment	Comments and Responses
	Clearly, the fact that only 19% of the native flow will remain in the Fraser River if the Preferred Alternative is selected has drastic environmental consequences. A prime example is water temperature. Recently, the Colorado Department of Public Health and Environment's Water Quality Control Division held a public hearing to consider listing the Fraser River (from approximately the Town of Fraser to Windy Gap Reservoir) as an impaired stream for temperature under the 303(d) process. The result of this rule making process was that the Fraser River will be listed as an impaired stream for temperature. With this temperature listing comes the potential for TMDL's within the Fraser River Basin. The commonsense consequence of a decreased flow in the Fraser River will be increased water temperature. Higher water temperature has the potential to harm the native fish population and may likely cause wastewater treatment providers like GSD to offset the increased temperature through additional treatment processes. Temperature impacts are not considered in any detail in the DEIS and no reasonable mitigation is offered. The responsibility for increased temperature resulting from the Moffat Enlargement should not be placed exclusively on the shoulders of the wastewater treatment facilities located on the Fraser River; Denver Water must be required to mitigate this impact. The only mitigation offered to address the temperature problem is limited to monitoring the issue in the Colorado River mainstream (where flows are greater) and by reducing only a portion of the diversions that are projected to occur in August. This is in spite of the fact that temperature exceedances are already occurring in the Fraser River and its tributaries at times other than August. While additional monitoring may be a good first step, more monitoring must be required on the Fraser River and additional permit terms and conditions must be added. If (4)	**Response #1741-9:** Additional water quality evaluation for the Fraser River was performed. Additional water quality evaluation for the Three Lakes area was also performed. Please see FEIS Sections 4.6.2 and 5.2. To provide more information on the impacts of past and current operations on stream channels, FEIS Section 3.1 was revised to provide a discussion of the natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver Water is estimated to divert under Current Conditions (2006), Full Use of the Existing System, and each of the Moffat Project alternatives. ***Comment #1741-0*** *(ID 2292)**:*** *Clearly, the fact that only 19% of the native flow will remain in the Fraser River if the Preferred Alternative is selected has drastic environmental consequences. A prime example is water temperature. Recently, the Colorado Department of Public Health and Environment's Water Quality Control Division held a public hearing to consider listing the Fraser River (from approximately the Town of Fraser to Windy Gap Reservoir) as an impaired stream for temperature under the 303(d) process. The result of this rule making process was that the Fraser River will be listed as an impaired stream for temperature. With this temperature listing comes the potential for TMDL's within the Fraser River Basin.* *The commonsense consequence of a decreased flow in the Fraser River will be increased water temperature. Higher water temperature has the potential to harm the native fish population and may likely cause wastewater treatment providers like GSD to offset the increased temperature through additional treatment processes.*

Comment Information	Comment	Comments and Responses
	the temperature monitoring indicates an exceedance in temperature of a protective water quality standard downstream of a Denver Water West Slope diversion, diversions must be curtailed, regardless of what month it is. Also, if additional treatment at any Fraser River WWTP is required in the future in order to cool the effluent before it is returned to the river system, Denver Water must be required to bear the financial burden of any required treatment. These should be conditions in any permit. In the same Water Quality Control Division process identified above, the Fraser River was included on the Monitoring and Evaluation List for copper. Copper is toxic to trout and other aquatic life, but the DEIS fails to evaluate the effects of copper levels in the Fraser River as a result of the decreased flow. The listing of copper may result in additional copper limits in a discharge permit. Limits will most likely be based on the diluting capability of the Fraser River. Less water in the river, the more stringent the discharge permit. Treatment processes to remove metals would be a significant expense and can be attributable to the fact that there will be less dilution water available if the preferred alternative is selected. Moreover, as the native flow decreases in the Fraser River basin, a larger percentage of the Fraser River will be made up of wastewater effluent. As a natural consequence, decreased dilution flow will result in increased nutrients in the river. It is common knowledge that the levels of total nitrogen and total phosphorous increase when there is less dilution water flowing in the river. Dilution can be characterized as nature's way of performing water treatment to the waters that lie within. With less dilution water available, it is anticipated that future discharge permits will require more stringent treatment levels for both nitrogen and phosphorous removal. Additional treatment to meet future removal requirements will be costly. The DEIS fails to (3)	*Temperature impacts are not considered in any detail in the DEIS and no reasonable mitigation is offered. The responsibility for increased temperature resulting from the Moffat Enlargement should not be placed exclusively on the shoulders of the wastewater treatment facilities located on the Fraser River; Denver Water must be required to mitigate this impact.* **Response #1741-0:** The 2012 303(d) and Monitoring and Evaluation lists per CDPHE Regulation 93 are used in the FEIS. Additional water quality analysis was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1741-25*** *(ID 2291)**:*** *The only mitigation offered to address the temperature problem is limited to monitoring the issue in the Colorado River mainstream (where flows are greater) and by reducing only a portion of the diversions that are projected to occur in August. This is in spite of the fact that temperature exceedances are already occurring in the Fraser River and its tributaries at times other than August. While additional monitoring may be a good first step, more monitoring must be required on the Fraser River and additional permit terms and conditions must be added. If the temperature monitoring indicates an exceedance in temperature of a protective water quality standard downstream of a Denver Water West Slope diversion, diversions must be curtailed, regardless of what month it is. Also, if additional treatment at any Fraser River WWTP is required in the future in order to cool the effluent before it is returned to the river system, Denver Water must be required to bear the financial burden of any required treatment. These should be conditions in any permit.*

Comment Information	Comment	Comments and Responses
	adequately address the effect of increased nutrients in the Fraser River, nor does it offer any mitigation resulting from Denver Water's past, present and future operations. GSD recently completed major renovations and improvements to its WWTP. These improvements were completed in 2008 at total cost of $8,203,727.78. While this expense may be considered small to a large metropolitan wastewater treatment provider, it is an enormous cost for GSD and its customers. Any increased treatment costs (whether now or in the future) resulting from the proposed project must be the responsibility of Denver Water. It is neither fair nor equitable to leave the local inhabitants with the environmental burden of providing a clean, healthy stream where stream degradation is linked almost exclusively to transmountain diverters such as Denver Water. While the DEIS concludes that there will be "none to negligible" impacts to the WWTPs on the Fraser River, Denver Water must be, at a minimum, be held to these conclusions. A condition must be added to any permit that will require (a) curtailment of diversions if the Fraser River drops below the acute and chronic flows listed in any Fraser River WWTPs discharge permits, and (b) Denver Water to pay for any new expense (new permitting, additional treatment, plant expansion, increased operation and maintenance) as a result of any additional discharge requirements resulting from its diversions. While the above comments focus on water quality from a wastewater treatment provider's perspective, there are other environmental interests on the river that will likely be degraded by increased transmountain diversions. The effect on fish resulting from less water and higher water temperatures should not be taken lightly. In addition, less water in the river has dramatic effects on activities like recreational floatboating and other river related activities. (6)	**Response #1741-25:** A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (see Sections 4.6.2 and 5.2). In addition to monitoring stream temperatures, Denver Water has proposed to bypass additional water when stream temperatures reach a certain level. ***Comment #1741-20*** *(ID 2290)**:*** *In the same Water Quality Control Division process identified above, the Fraser River was included on the Monitoring and Evaluation List for copper. Copper is toxic to trout and other aquatic life, but the DEIS fails to evaluate the effects of copper levels in the Fraser River as a result of the decreased flow. The listing of copper may result in additional copper limits in a discharge permit. Limits will most likely be based on the diluting capability of the Fraser River. Less water in the river, the more stringent the discharge permit. Treatment processes to remove metals would be a significant expense and can be attributable to the fact that there will be less dilution water available if the preferred alternative is selected.* **Response #1741-20:** The 2012 303(d) and Monitoring and Evaluation lists per CDPHE Regulation 93 are used in the FEIS. Additional water quality analysis was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1741-19*** *(ID 2289)**:*** *Moreover, as the native flow decreases in the Fraser River basin, a larger percentage of the Fraser River will be made up of wastewater effluent.*

Comment Information	Comment	Comments and Responses
	CUMULATIVE IMPACTS 40 C.F.R. § 1508.7 defines cumulative impact as follows: *Cumulative impact* is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The DEIS fails to consider cumulative impacts in any sensible manner. The cumulative impact analysis found in the DEIS analyzes 2006 flows and conditions as the current baseline. Using this approach suggests that the native flow of the Fraser River is somehow related to the 2006 baseline. To the contrary, as the above Table 1 indicates, the 2006 baseline represents a Fraser River with 73% of the native flow already removed. The projected impacts from the Moffat Enlargement are then analyzed using the 2006 baseline. Using this suggested methodology does not comply with the definition of cumulative impacts. At the minimum, the combined impact from the existing Moffat System diversions should be considered, as it is astonishing that the past operations of Denver Water's Fraser Collection System are not considered a contributing factor to the cumulative impact of the proposed project. As an example, Page 3-23 of the DEIS states that: Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversions. This is how Denver Water has operated in the past and plans to operate in the future. (7)	*As a natural consequence, decreased dilution flow will result in increased nutrients in the river. It is common knowledge that the levels of total nitrogen and total phosphorous increase when there is less dilution water flowing in the river. Dilution can be characterized as nature's way of performing water treatment to the waters that lie within. With less dilution water available, it is anticipated that future discharge permits will require more stringent treatment levels for both nitrogen and phosphorous removal. Additional treatment to meet future removal requirements will be costly. The DEIS fails to adequately address the effect of increased nutrients in the Fraser River, nor does it offer any mitigation resulting from Denver Water's past, present and future operations.* **Response #1741-19:** Additional water quality analysis was performed for the Fraser River, including examination of nutrients. Please refer to FEIS Sections 4.6.2 and 5.2. CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the Proposed Action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the Proposed Action.

Comment Information	Comment	Comments and Responses
	In other words, it is Denver Water's existing practice to completely dewater stream reaches. This in an example of an existing condition that must be considered in the cumulative impact of this project. It is also a good example of environmental irresponsibility. In addition, the impact of other diversions and projects must be considered when looking at cumulative impacts on both the Fraser River and the Colorado River. Denver Water must be held accountable for the environmental impacts the proposed project will cause, after adding in the impacts of all other past, present, and reasonably foreseeable future actions. While Denver Water's past projects are discussed above, the DEIS must consider other projects that, *in toto*, impact the Fraser and Colorado Rivers. These would include, amongst others, the Colorado-Big Thompson Project, Windy Gap and Windy Gap Firming Project, the Grand Ditch, and various other in-basin diversions. The Fraser and Colorado River systems are already so depleted from existing diversions that any additional water depletion without the appropriate mitigation may result in irreversible injury to the delicate ecosystem. Failure to recognize the effect of prior diversions and projects, and in particular, transmountain diversion projects such as the Colorado-Big Thompson Project and the existing Windy Gap defeats the underlying requirements of an environmental impact statement. These past projects play an invaluable role in establishing the baseline environmental status of the river. The DEIS acts as if these projects and their impacts are either nonexistent or of minimal importance to a cumulative impact analysis. This is an erroneous oversight that must be corrected. The DEIS also fails to pay homage to the future development of conditional transmountain diversion water rights. The impacts associated with conditional transmountain (8)	The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. DEIS Section 5.2 catalogued a list of past projects. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in DEIS Chapter 3, specifically, Section 3.1. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversion locations modeled in PACSM. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. Minimum flows and Denver Water operations are part of the discussion.

Comment Information	Comment	Comments and Responses
	diversion water rights must also be given deference in evaluating the cumulative impacts of the proposed project. Under Colorado water law, a conditional right is defined as "a ***right*** to perfect a water right with a certain priority upon the completion with reasonable diligence of the appropriation upon which such water right is to be based." C.R.S. § 37-92-103(6)(emphasis added). In other words, a conditional water right is an unperfected water right that has yet to ripen. *Natural Energy Resources Co. v. Upper Gunnison River Water Conservancy Dist.*, 142 P.3d 1265, 1277 (2006). In order to maintain a conditional water right, the holder must show continued intent and progress toward finalizing the conditionally decreed appropriation and applying said conditional right to beneficial use. *Id.* This is done through a water court proceeding every six years and assumes that at some point the conditional water rights will be developed. As such, in the examination of the cumulative impacts resulting from this project, conditional transmountain diversion water rights must be considered reasonably foreseeable and analyzed. Denver Water continues to pursue diligence on its conditional water rights. This indicates Denver Water's intent that ultimately its conditional water rights may be placed into use. If these conditional water rights are ever placed to beneficial use, the result would be increased transmountain diversions and increased depletions to the Fraser and Colorado Rivers. Unless Denver Water agrees to vacate/abandon its conditional water rights, they must be considered in any cumulative impact analysis for this project. Other transmountain diverters, such as Northern Colorado Water Conservancy District (and its municipal subdistrict), Colorado Springs, and Aurora, also maintain conditional water rights on the West Slope streams and rivers. If any additional conditional transmountain (9)	***Comment #1741-24*** *(ID 2288)**:*** *GSD recently completed major renovations and improvements to its WWTP. These improvements were completed in 2008 at total cost of $8,203,727.78. While this expense may be considered small to a large metropolitan wastewater treatment provider, it is an enormous cost for GSD and its customers. Any increased treatment costs (whether now or in the future) resulting from the proposed project must be the responsibility of Denver Water. It is neither fair nor equitable to leave the local inhabitants with the environmental burden of providing a clean, healthy stream where stream degradation is linked almost exclusively to transmountain diverters such as Denver Water. While the DEIS concludes that there will be "none to negligible" impacts to the WWTPs on the Fraser River, Denver Water must be, at a minimum, be held to these conclusions. A condition must be added to any permit that will require (a) curtailment of diversions if the Fraser River drops below the acute and chronic flows listed in any Fraser River WWTPs discharge permits, and (b) Denver Water to pay for any new expense (new permitting, additional treatment, plant expansion, increased operation and maintenance) as a result of any additional discharge requirements resulting from its diversions.* **Response #1741-24:** The Corps notes the comment. ***Comment #1741-11*** *(ID 2287)**:*** *While the above comments focus on water quality from a wastewater treatment provider's perspective, there are other environmental interests on the river that will likely be degraded by increased transmountain diversions.*

Comment Information	Comment	Comments and Responses
	diversion water rights are perfected, the result will be less water in the West Slope streams. As already discussed, less water has drastic environmental effects on an already depleted system. Accordingly, all conditional transmountain diversion water rights must be considered in a cumulative impact analysis. The DEIS is also deficient in its analysis of the cumulative impacts resulting from the Windy Gap Firming Project. In a separate, but contemporaneous process, the Windy Gap Firming Project is being considered by a different Federal agency. Insomuch, the Windy Gap Firming Project must be treated as a reasonably foreseeable project. The DEIS must consider the impacts resulting from the Windy Gap Firming Project. Analysis of the impact of the Moffat Enlargement without taking into account the impact of the Windy Gap Firming Project is an inexcusable omission. Since both the Windy Gap Firming Project and the Moffat Enlargement will directly impact the Colorado River system, the combined cumulative impact should be addressed and mitigated in order to receive any required federal permitting. Narrowly reviewing each project separately will result in a more positive, albeit incorrect, conclusion of how the respective projects will affect water quality, water quantity, and the environment in general. The totality of the past, present and reasonably foreseeable future projects must be analyzed to determine the environmental impacts of the proposed project and to determine the appropriate level of mitigation that should be required. (10)	*The effect on fish resulting from less water and higher water temperatures should not be taken lightly. In addition, less water in the river has dramatic effects on activities like recreational floatboating and other river related activities.* **Response #1741-11:** Impacts to the quality of the fishing experience primarily depends on the quality and health of the fisheries, which are addressed in DEIS Section 4.9.1. At most locations, the analysis of aquatic biological resources concluded that impacts to the health of the fishery would be minor or negligible. Therefore, impacts to the recreational experience would also be minor. The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. ***Comment #1741-15*** *(ID 2286)**:*** *40 C.F.R. 5 1508.7 defines cumulative impact as follows:* *Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.* *The DEIS fails to consider cumulative impacts in any sensible manner.*

Comment Information	Comment	Comments and Responses
	PURPOSE AND NEED The DEIS identifies four needs for the Moffat Enlargement: (1) reliability, (2) vulnerability, (3) flexibility, and (4) firm yield. The need for additional firm yield is distinguishable from the other listed needs. Additional firm yield can be accomplished through a number of alternatives, only one of which is the preferred alternative. Denver Water has an entire system comprising of both West Slope and East Slope diversions in which to satisfy its perceived need for additional firm yield. Denver Water can reduce its water demand through increased conservation efforts. Instead of looking within to address its water issues, Denver Water has prepared a purpose and need for the Moffat Enlargement in such a way that any alternative must accomplish the stated needs through a distinct project. In placing all of its proverbial eggs in one basket, Denver Water narrowed the scope of the DEIS and failed to evaluate all reasonable alternatives. Denver Water's collection system is large and complex and provides many ways to satisfy the needs of its customers. The focus on a single project as the only solution is simply too restrictive. A combination of projects should be considered in order to meet Denver Water's firm yield goals. Among other things, the ability of Denver Water to conserve additional water and/or reuse the water it already diverts from the West Slope should be studied in greater detail. Since a primary purpose of NEPA is to evaluate the environmental consequences of a given project, it is error to not consider a range of smaller projects that may accomplish the listed needs, but which also may result in less significant environmental impacts. (11)	*The cumulative impact analysis found in the DEIS analyzes 2006 flows and conditions as the current baseline. Using this approach suggests that the native flow of the Fraser River is somehow related to the 2006 baseline. To the contrary, as the above Table 1 indicates, the 2006 baseline represents a Fraser River with 73% of the native flow already removed. The projected impacts from the Moffat Enlargement are then analyzed using the 2006 baseline.* *Using this suggested methodology does not comply with the definition of cumulative impacts. At the minimum, the combined impact from the existing Moffat System diversions should be considered, as it is astonishing that the past operations of Denver Water's Fraser Collection System are not considered a contributing factor to the cumulative impact of the proposed project. As an example, Page 3-23 of the DEIS states that:* • *Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversions. This is how Denver Water has operated in the past and plans to operate in the future.* • *In other words, it is Denver Water's existing practice to completely dewater stream reaches. This in an example of an existing condition that must be considered in the cumulative impact of this project. It is also a good example of environmental irresponsibility.*

Comment Information	Comment	Comments and Responses
	CONSERVATION AND REUSE: The DEIS ignores conservation and reuse as a reasonable means to satisfy Denver Water's future water needs. While Denver Water may be considered a leader for its water conservation efforts, their efforts remain focused on indoor water conservation. Outdoor water use conservation, however, is painfully deficient. Outdoor water use (lawns and landscaping) makes up, more or less, half of the total water use in the Denver Water service area. The DEIS estimates that Denver Water will need 34,000 acre feet of additional water supply by 2030. It further states that 16,000 acre feet of this total will be accomplished through "aggressive conservation". Any conservation system which does not focus on outdoor use cannot be classified as aggressive. Water used indoors is 5 to 10 percent consumptively used, while water used outdoors (typically lawn irrigation) is consumptively used at a rate of 80 to 95 percent. In other words, for every one acre foot of water used indoors, 0.9 to 0.95 acre feet is returned to the system for subsequent use. On the other hand, for every one acre foot of water used outdoors, only 0.05 to 0.2 acre feet is returned to the system. Simple math concludes that less outdoor water use will result in more water being available for other more conventional uses. As approximately one-half of all residential use water is used for lawns and landscaping, Denver could gain the additional water needed (or at least a large portion) through outdoor water conservation. Such conservation efforts must be considered before additional diversions from the West Slope are tolerated. With regard to reuse, the DEIS does not adequately consider the opportunities for reuse of the water originally diverted from the West Slope. In fact, Denver Water fails to live up to the (12)	**Response #1741-15:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #1741-13*** *(ID 2285)**:*** *In addition, the impact of other diversions and projects must be considered when looking at cumulative impacts on both the Fraser River and the Colorado River. Denver Water must be held accountable for the environmental impacts the proposed project will cause, after adding in the impacts of all other past, present, and reasonably foreseeable future actions. While Denver Water's past projects are discussed above, the DEIS must consider other projects that, in total, impact the Fraser and Colorado Rivers. These would include, amongst others, the Colorado-Big Thompson Project, Windy Gap and Windy Gap Firming Project, the Grand Ditch, and various other in-basin diversions.* *The Fraser and Colorado River systems are already so depleted from existing diversions that any additional water depletion without the appropriate mitigation may result in irreversible injury to the delicate ecosystem. Failure to recognize the effect of prior diversions and projects, and in particular, transmountain diversion projects such as the Colorado-Big Thompson Project and the existing Windy Gap defeats the underlying requirements of an environmental impact statement.*

Comment Information	Comment	Comments and Responses
	terms of the Blue River Decree which requires considerable reuse of the Blue River water. While reuse may be an expensive alternative, it has much less environmental consequences. One must always bear in mind that once water leaves the West Slope it is gone forever. More West Slope diversions instead of focusing on reuse is environmentally irresponsible. Denver Water must be required to reuse the West Slope water it already takes before taking any more. **ADAPTIVE MANAGEMENT/ GRAND COUNTY STREAM MANAGEMENT PLAN** In matters involving water temperature and quality the DEIS claims that anticipated impacts to WWTPs will be negligible, minor or insignificant. Such claims are made, in part, on subjective assumptions. Since the environment, as a whole, and the river ecosystem, in particular, are vulnerable if these assumptions prove wrong, any permit issued in this matter should use an adaptive management approach. Conditions and proposed mitigations should be reopened and reevaluated if the impact resulting from the preferred alternative turns out to be something other than negligible, minor or insignificant. Determining final mitigations (or lack thereof) without the capacity to correct inaccurate assumptions is too nearsighted. Adaptive management must be incorporated to protect the environment and to serve as a check should the assumptions posited in the DEIS are ultimately determined to be wrong. There is only one Fraser River. To close the book on the potential environmental impacts resulting from the preferred alternative without the ability to reopen the matter to redress oversights or erroneous assumptions shows a complete lack of environmental stewardship. In addition, the Grand County Stream Management Plan ("GCSMP") must be incorporated into any permit condition. The GCSMP takes a more holistic approach to the (13)	*These past projects play an invaluable role in establishing the baseline environmental status of the river. The DEIS acts as if these projects and their impacts are either nonexistent or of minimal importance to a cumulative impact analysis. This is an erroneous oversight that must be corrected.* **Response #1741-13:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions. The Section 404 regulations state that "cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1]).

Comment Information	Comment	Comments and Responses
	environmental soundness of the Fraser and Colorado River systems in Grand County, Colorado. That is, the GCSMP focuses on the environmental needs of the community. It establishes, among other things, needed flows, acceptable water temperature, sedimentary deposits, gravel movement and water quality that is acceptable in the Fraser and Colorado basins. As part of the adaptive management approach discussed above, the GCSMP must be used as a basis for establishing impact, mitigation and to provide oversight. **OTHER DEFICIENCIES IN THE DEIS** In review of draft comments to the DEIS provided by others, GSD provides the following partial summary list of other items that are deficient in the DEIS: • The DEIS fails to provide an adequate explanation of the operating assumptions used in Denver Water's water modeling. The model itself is not subject to public scrutiny. Full disclosure must be required. • The PACSM model operates on data only through 1992. Adding data from 1992 to present would result in a more accurate portrayal of the water system. Especially essential would be the years in the past decade. During this decade Colorado has experienced historic water lows and extreme drought conditions. • The DEIS fails to consider any impacts to those segments of the Colorado River that are being considered for findings of suitability and potential designation through the Wild and Scenic River Act. • The DEIS fails to consider the impacts to other sections of the Colorado River. In particular, the DEIS fails to consider impacts to the Lower Colorado River. (14)	The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1741-14*** *(ID 2284)**:*** *The DEIS also fails to pay homage to the future development of conditional transmountain diversion water rights. The impacts associated with conditional transmountain diversion water rights must also be given deference in evaluating the cumulative impacts of the proposed project. Under Colorado water law, a conditional right is defined as "a right to perfect a water right with a certain priority upon the completion with reasonable diligence of the appropriation upon which such water right is to be based." C.R.S. 5 37-92-103(6)(emphasis added). In other words, a conditional water right is an unperfected water right that has yet to ripen. Natural Energy Resources Co. v. Upper Gunnison River Water Conservancy Dist., 142 P.3d 1265, 1277 (2006). In order to maintain a conditional water right, the holder must show continued intent and progress toward finalizing the conditionally decreed appropriation and applying said conditional right to beneficial use. Id.*

Comment Information	Comment	Comments and Responses
	• The DEIS fails to consider the impacts of the project to existing and future West Slope users. • The DEIS fails to consider the circumstances and environmental consequences resulting from the project should there be a Colorado River Compact call. **CONCLUSION** The impacts of this project to the West Slope have not been adequately disclosed or addressed in the DEIS. In addition, the impacts resulting from the project are not sufficiently mitigated. A supplemental DEIS must be required in order to address the inadequacies of the DEIS and to comply with NEPA. Any supplemental DEIS must address all impacts resulting from this project and include permit conditions and sufficient reopener provisions to ensure that the impacts from the proposed alternative are fully mitigated. Respectfully submitted, Dave Johnson, President CAZIER, McGOWAN & WALKER BY: John D. Walker Attorneys for GSD (15)	*This is done through a water court proceeding every six years and assumes that at some point the conditional water rights will be developed. As such, in the examination of the cumulative impacts resulting from this project, conditional transmountain diversion water rights must be considered reasonably foreseeable and analyzed.* *Denver Water continues to pursue diligence on its conditional water rights. This indicates Denver Water's intent that ultimately its conditional water rights may be placed into use. If these conditional water rights are ever placed to beneficial use, the result would be increased transmountain diversions and increased depletions to the Fraser and Colorado Rivers. Unless Denver Water agrees to vacate/abandon its conditional water rights, they must be considered in any cumulative impact analysis for this project.* *Other transmountain diverters, such as Northern Colorado Water Conservancy District (and its municipal subdistrict), Colorado Springs, and Aurora, also maintain conditional water rights on the West Slope streams and rivers. If any additional conditional transmountain diversion water rights are perfected, the result will be less water in the West Slope streams. As already discussed, less water has drastic environmental effects on an already depleted system. Accordingly, all conditional transmountain diversion water rights must be considered in a cumulative impact analysis.*

Comment Information	Comment	Comments and Responses
		Response #1741-14: The Corps relies on administration and enforcement of the State water laws with regards to water rights and defers to the State to resolve water law issues. A Section 404 Permit would not impose conditions on the operation of the Project that are within the jurisdiction of Colorado Water Law. The Corps' analysis for the EIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership will not be a factor in the Corps public interest decision." 33 CFR Part 320.4(g). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR Part 230.10. The Corps may issue a Section 404 Permit even if other Federal, State, or local authorizations have not been obtained before the applicant has applied for a permit. The Corps cannot predict with any certainty the amount of water that may be developed in the future, therefore this component was not included in the cumulative effects analysis for the EIS. Furthermore, if the development of these conditional water rights were to require a Federal action, an independent assessment of the associated impacts would be completed prior to authorization of the Project. ***Comment #1741-12*** *(ID 2283)**:*** *The DEIS is also deficient in its analysis of the cumulative impacts resulting from the Windy Gap Firming Project. In a separate, but contemporaneous process, the Windy Gap Firming Project is being considered by a different Federal agency. Insomuch, the Windy Gap Firming Project*

Comment Information	Comment	Comments and Responses
		must be treated as a reasonably foreseeable project. The DEIS must consider the impacts resulting from the Windy Gap Firming Project. Analysis of the impact of the Moffat Enlargement without taking into account the impact of the Windy Gap Firming Project is an inexcusable omission. Since both the Windy Gap Firming Project and the Moffat Enlargement will directly impact the Colorado River system, the combined cumulative impact should be addressed and mitigated in order to receive any required federal permitting. Narrowly reviewing each project separately will result in a more positive, albeit incorrect, conclusion of now the respective projects will affect water quality, water quantity, and the environment in general. *The totality of the past, present and reasonably foreseeable future projects must be analyzed to determine the environmental impacts of the proposed project and to determine the appropriate level of mitigation that should be required.* **Response #1741-12:** The DEIS includes the WGFP) as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor.

Comment Information	Comment	Comments and Responses
		DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1741-5*** *(ID 2282)**:*** *The DEIS identifies four needs for the Moffat Enlargement: (1) reliability, (2) vulnerability, (3) flexibility, and (4) firm yield. The need for additional firm yield is distinguishable from the other listed needs.* *Additional firm yield can be accomplished through a number of alternatives, only one of which is the preferred alternative. Denver Water has an entire system comprising of both West Slope and East Slope diversions in which to satisfy its perceived need for additional firm yield. Denver Water can reduce its water demand through increased conservation efforts. Instead of looking within to address its water issues, Denver Water has prepared a purpose and need for the Moffat Enlargement in such a way that any alternative must accomplish the stated needs through a distinct project. In placing all of its proverbial eggs in one basket, Denver Water narrowed the scope of the DEIS and failed to evaluate all reasonable alternatives.*

Comment Information	Comment	Comments and Responses
		Response #1741-5: The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. ***Comment #1741-4*** *(ID 2281)**:*** *Denver Water's collection system is large and complex and provides many ways to satisfy the needs of its customers. The focus on a single project as the only solution is simply too restrictive. A combination of projects should be considered in order to meet Denver Water's firm yield goals. Among other things, the ability of Denver Water to conserve additional water and/or reuse the water it already diverts from the West Slope should be studied in greater detail. Since a primary purpose of NEPA is to evaluate the environmental consequences of a given project, it is error to not consider a range of smaller projects that may accomplish the listed needs, but which also may result in less significant environmental impacts.*

Comment Information	Comment	Comments and Responses
		Response #1741-4: Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 20% less water than they were before the 2002 drought. A thorough and detailed alternative screening analysis of all reasonable alternatives was conducted for the proposed Moffat Project. Please see the Moffat Project EIS, Denver Water, Alternatives Screening Report (Corps 2007).

Comment Information	Comment	Comments and Responses
		Alternatives that were initially formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated include some component of reuse (see Moffat Project EIS, Denver Water, Alternatives Screening Report, Corps 2007). These alternatives were configured to meet a portion or the entire new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston, or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat Water Treatment Plant. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would

Comment Information	Comment	Comments and Responses
		be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in Alternatives 8a and 10a was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. Approximately 7,600 AF/yr on average of unused reusable water would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. Alternatives 8a and 10a, which provide 5,000 AF/yr of the new firm yield requirement from reusable supplies were considered reasonable and achievable given the variability in timing and amount of unused reusable supplies available. ***Comment #1741-18*** *(ID 2280)**:*** *The DEIS ignores conservation and reuse as a reasonable means to satisfy Denver Water's future water needs.* *While Denver Water may be considered a leader for its water conservation efforts, their efforts remain focused on indoor water conservation. Outdoor water use conservation, however, is painfully deficient. Outdoor water use (lawns and landscaping) makes up, more or less, half of the total water use in the Denver Water service area. The DEIS estimates that Denver Water will need 34,000 acre feet of additional water supply by 2030. It further states that 16,000 acre feet of this total will be accomplished through "aggressive conservation". Any conservation system which does not focus on outdoor use cannot be classified as aggressive.* *Water used indoors is 5 to 10 percent consumptively used, while water used outdoors*

Comment Information	Comment	Comments and Responses
		(typically lawn irrigation) is consumptively used at a rate of 80 to 95 percent. In other words, for every one acre foot of water used indoors, 0.9 to 0.95 acre feet is returned to the system for subsequent use. On the other hand, for every one acre foot of water used outdoors, only 0.05 to 0.2 acre feet is returned to the system. Simple math concludes that less outdoor water use will result in more water being available for other more conventional uses. As approximately one-half of all residential use water is used for lawns and landscaping, Denver could gain the additional water needed (or at least a large portion) through outdoor water conservation. Such conservation efforts must be considered before additional diversions from the West Slope are tolerated. **Response #1741-18:** Denver Water has focused conservation efforts on indoor and outdoor uses and set an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. These savings are evenly split between outdoor and indoor reductions in use. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred

Comment Information	Comment	Comments and Responses
		agricultural water rights on the East Slope. The Metro WWTP and the Bi-City WWTP are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for s non-potable recycling project. As shown in FEIS Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (subheading, Non-Potable Recycling Facility). Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #1741-17*** *(ID 2279)**:*** *With regard to reuse, the DEIS does not adequately consider the opportunities for reuse of the water originally diverted from the West Slope. In fact, Denver Water fails to live up to the terms of the Blue River Decree which requires considerable reuse of the Blue River water. While reuse may be an expensive alternative, it has much less environmental consequences. One must always bear in mind that once water leaves the West Slope it is gone forever. More West Slope diversions instead of focusing on reuse is environmentally irresponsible. Denver Water must be required to reuse the West Slope water it already takes before taking any more.* **Response #1741-17:** All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City WWTP are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river

Comment Information	Comment	Comments and Responses
		exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (subheading, Non-Potable Recycling Facility). Denver Water is in the process of completing a Recycling Project that will use reusable supplies to meet an annual demand of 17,500 AF. Denver Water is also in the process of constructing 30,000 AF of gravel pit reservoir storage downstream of Denver. The storage facilities would be used to manage reusable supplies by storing excess reusable supplies in time of surplus, and releasing the stored reusable supplies at times of shortage. The gravel pits would be used for the following purposes: 1. Perform exchanges to upstream facilities. In an exchange, reusable water is added to a stream at a downstream location to enable diversion of a like amount of water at an upstream location. 2. Deliver the reusable water to the Recycling Plant, treat the water, and distribute it for non-potable uses. The recycling plant requires gravel pit storage to supply reusable water to the Recycle Plant, via exchange, when reusable water is not available at Metro or Bi-City. 3. Deliver an annual supply of 5,000 AF of reusable water to South Adams County Water and Sanitation District (per agreements).

Comment Information	Comment	Comments and Responses
		4. Use reusable water to augment raw water systems in the metro area (e.g., augment the wells used to supply water to Denver parks). The reusable water needed to support these projects was included in the PACSM simulations and therefore less reusable water is available for a new project. These projects were not on-line in from 1998 to 2008 as noted in the comment, but once these projects are completed, the average annual available unused reusable effluent is estimated to be approximately 7,600 AF. This is an example of why it is inappropriate to simply rely on historical values to draw conclusions. As shown in the DEIS Table 2-9, the estimated 7,600 AF of average annual unused reusable water ranges from to zero AF some years, to as high as approximately 37,500 AF in one year. The highest year of unused return flows does occur in a dry year, but many other dry years and periods have less than the 6,700 AF average. Project alternatives that included 5,000 AF of yield using the reusable return flows were analyzed. Alternative that included more than 5,000 AF would have been even more expensive on a cost per AF basis. Also note that with PACSM, Denver Water's unused reusable return flows are used and reused to extinction. On average, Denver Water has 8,000 AF of excess reusable effluent – this is the amount used when developing Alternatives 8a and 10a for the DEIS. ***Comment #1741-23*** *(ID 2278)**:*** *In matters involving water temperature and quality the DEIS claims that anticipated impacts to WWTPs will be negligible, minor or insignificant. Such claims are made, in part, on subjective assumptions. Since the environment, as a whole, and the river ecosystem, in particular, are*

Comment Information	Comment	Comments and Responses
		vulnerable if these assumptions prove wrong, any permit issued in this matter should use an adaptive management approach. Conditions and proposed mitigations should be reopened and reevaluated if the impact resulting from the preferred alternative turns out to be something other than negligible, minor or insignificant. Determining final mitigations (or lack thereof) without the capacity to correct inaccurate assumptions is too nearsighted. Adaptive management must be incorporated to protect the environment and to serve as a check should the assumptions posited in the DEIS are ultimately determined to be wrong. There is only one Fraser River. To close the book on the potential environmental impacts resulting from the preferred alternative without the ability to reopen the matter to redress oversights or erroneous assumptions shows a complete lack of environmental stewardship. **Response #1741-23:** Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #1741-22*** *(ID 2277)**:*** *In addition, the Grand County Stream Management Plan ("GCSMP") must be incorporated into any permit condition. The GCSMP takes a more holistic approach to the environmental soundness of the Fraser and Colorado River systems in Grand County, Colorado. That is, the GCSMP focuses on the environmental needs of the community. It establishes, among other things, needed flows, acceptable water temperature, sedimentary deposits, gravel movement and water quality that is acceptable in the Fraser and Colorado basins. As part of the adaptive management approach discussed above, the GCSMP must be used as a*

Comment Information	Comment	Comments and Responses
		basis for establishing impact, mitigation and to provide oversight. **Response #1741-22:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), channel morphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #1741-6*** *(ID 2276)**:*** *In review of draft comments to the DEIS provided by others, GSD provides the following partial summary list of other items that are deficient in the DEIS:* • *The DEIS fails to provide an adequate explanation of the operating assumptions used in Denver Water's water modeling. The model itself is not subject to public scrutiny. Full disclosure must be required.* • *The PACSM model operates on data only through 1992. Adding data from 1992 to present would result in a more accurate portrayal of the water system. Especially essential would be the years in the past decade. During this decade Colorado has experienced historic water lows and extreme drought conditions.*

Comment Information	Comment	Comments and Responses
		Response #1741-6: The following PACSM-related documents disclose operating assumptions used in PACSM to reflect the operations of Denver Water's existing system as well as the Moffat Project alternatives. • Memo dated December 30, 2003, re: Summary of Phase 1-Task 3, Moffat Project • Memo dated March 11, 2004, re: Final Review of PACSM Modifications • Memo data May 8, 2006, re: Review of Lower South Platte River Extension to PACSM • Memo dated November 29, 2006, re: Review of Modifications Made to PACSM to Reflect the Baseline Scenario and EIS Alternatives In addition to the documents listed above, Grand County provided comments for the Moffat Collection System EIS on several PACSM-related documents in a letter dated May 18, 2009. The Corps response to that letter dated July 19th included electronic copies of numerous documents and operating memoranda provided by Denver Water, which addressed specific requests for information by Grand County. These documents are part of the Administrative Record and are available to Granby Sanitation District. The public may come to Denver Water and use PACSM within the terms and conditions of a disclaimer, therefore, the Corps does not require Denver Water to release an executable version of PACSM to the public. An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle 2003, 2004).

Comment Information	Comment	Comments and Responses
		The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the DEIS study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years.

Comment Information	Comment	Comments and Responses
		The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period to include additional dry years would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. In summary, modifications to the modeled study period is not warranted. ***Comment #1741-10*** *(ID 2275)**:*** *The DEIS fails to consider any impacts to those segments of the Colorado River that are being considered for findings of suitability and potential designation through the Wild and Scenic River Act.* **Response #1741-10:** The most recent and updated version of the Upper Colorado River Wild and Scenic Stakeholder Group Management Plan, dated January 2012, was reviewed and included as a consulted resource in the FEIS. In 2006, the Kremmling and Glenwood Springs field offices of the BLM began the eligibility phase of a Wild and Scenic Rivers evaluation as part of their Resource Management Plan (RMP) revision process. The Wild and Scenic Rivers study process is composed of two main components: the eligibility phase and the suitability phase. The eligibility phase involves identifying eligible rivers and stream segments, and determining a tentative classification (i.e., Wild, Scenic, or Recreational). To be eligible for designation, a river must be free flowing and contain at least one Outstandingly Remarkable Value that is scenic, recreational, geological, fish-related, wildlife-related, historic,

Comment Information	Comment	Comments and Responses
		cultural, botanical, hydrological, paleontological, or scientific. Upon conclusion of the eligibility phase, the BLM prepared a Wild and Scenic Eligibility Report that identified five river segments within the Moffat Project EIS study area (portions of the Colorado and the Blue rivers) that were eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS) (BLM 2007). The Wild and Scenic Suitability Report followed in April 2010. In the report, the BLM states: "The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection." Those segments of the Colorado River between Kremmling and Glenwood Springs were determined to be eligible. The Kremmling and Glenwood Springs field offices of the BLM addressed this issue in separate Draft RMPs/EISs that were released in 2011. The preferred alternative in both RMPs includes a determination that much of the Colorado River between Kremmling and Glenwood Springs is suitable for inclusion in the Wild and Scenic Rivers Act. A variation of the preferred alternative in both field offices would defer designation by adopting and implementing the Stakeholder Group Management Plan. If monitoring indicates that the Stakeholder Group Management Plan was not providing an adequate level of protection, BLM would initiate a process to evaluate suitability at a future date. The recreation analysis in the EIS did evaluate effects of the Project alternatives on the Colorado River below Kremmling (see DEIS Section 4.13.1.2). The Corps coordinated with the BLM regarding the Wild and Scenic River designation

Comment Information	Comment	Comments and Responses
		process throughout the NEPA process. However, the Corps does not use its authorities to protect those segments under the BLM study for determination in a greater capacity than it does all waterways under its jurisdiction. The Corps' direct and cumulative impact analysis shows that minor impacts would result from implementation of the action alternatives. These results were then interpreted to find that the alternatives would likely not affect the suitability of the eligible segments for inclusion in the NWSRS. This conclusion was added to the FEIS. The Corps coordinated with the BLM regarding the Wild and Scenic River designation process throughout the NEPA process. Sections of the Colorado and Blue rivers within the Project area considered eligible for Wild and Scenic Rivers designation are described in DEIS Section 3.13.5 and FEIS Section 3.15.5. ***Comment #1741-8*** *(ID 2274)**:*** *The DEIS fails to consider the impacts to other sections of the Colorado River. In particular, the DEIS fails to consider impacts to the Lower Colorado River.* **Response #1741-8:** The downstream extent of the study area was initially based on the location where average monthly flow changes under the Moffat Project alternatives would be less than 10% compared to Full Use of the Existing System. Resource evaluations were conducted to determine impacts at the Colorado River near Kremmling gage and assess the validity of the downstream study area extent. Results of the resource evaluations based on a comparison against Full Use of the Existing System indicate effects due to the Moffat Project would be negligible to minor along the Colorado

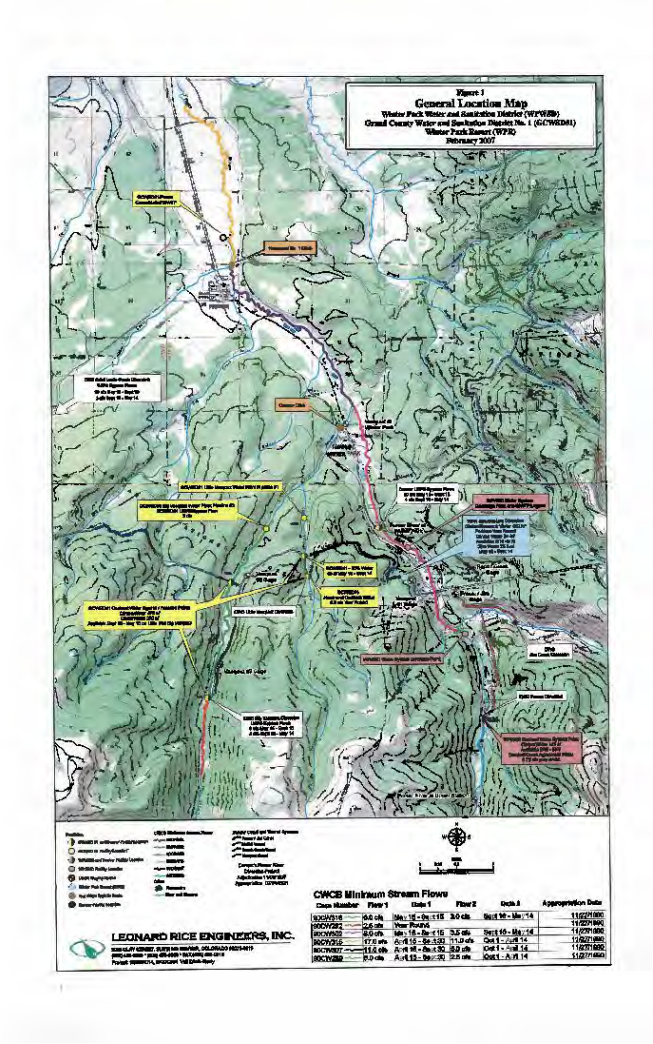
Comment Information	Comment	Comments and Responses
		River at the Kremmling gage and would continue to diminish downstream with tributary inflows. The exception to the downstream extent includes evaluation of recreation and special status species in the 15-Mile Reach. Extension of the study area further downstream was not warranted based on the results of the resource evaluations. The resource evaluations were relied on to justify the downstream extent of the study area. The study area was re-evaluated in the FEIS on a resource by resource basis to determine whether extension of the area was warranted based on the total environmental effects of the Moffat Project in combination with other reasonably foreseeable future actions. ***Comment #1741-7*** *(ID 2273)**:*** *The DEIS fails to consider the impacts of the project to existing and future West Slope users*. **Response #1741-7:** PACSM was used to evaluate the impacts of the Moffat Project on West Slope water users. PACSM reflects existing West Slope water users, including their water rights (decreed amounts and administration number) and demands. PACSM also reflects future water demands on the West Slope due to urban growth in Grand and Summit Counties. PACSM determines whether water users are in or out of priority based on the amount of water physically and legally available to each right. The socioeconomic impacts of the proposed Moffat Project on existing West Slope users were considered in DEIS Sections 4.17 and 5.6.17. Shortages to existing and future uses of water that are caused by the Moffat Project and other reasonably foreseeable actions are presented in DEIS Table 5-4.

Comment Information	Comment	Comments and Responses
		Comment #1741-16 *(ID 2272)**:*** *The DEIS fails to consider the circumstances and environmental consequences resulting from the project should there be a Colorado River Compact call.* **Response #1741-16:** The Corps does not administer water rights or compact calls, which are under the administration of the Office of the State Engineer. For the proposed Project, the Colorado Office of the State Engineer would also administer water rights and any compact curtailments. Presently, the State of Colorado does not have a plan for how water rights would be curtailed in the event of a Colorado River Compact call. ***Comment #1741-3*** *(ID 2271)**:*** *CONCLUSION* *The impacts of this project to the West Slope have not been adequately disclosed or addressed in the DEIS. In addition, the impacts resulting from the project are not sufficiently mitigated. A supplemental DEIS must be required in order to address the inadequacies of the DEIS and to comply with NEPA. Any supplemental DEIS must address all impacts resulting from this project and include permit conditions and sufficient reopener provisions to ensure that the impacts from the proposed alternative are fully mitigated.* **Response #1741-3:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a supplemental document will not be prepared for the Moffat Project. As a result of comments received

Comment Information	Comment	Comments and Responses
		on the DEIS, however, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19).

Comment Information	Comment	Comments and Responses
Comment #1768 Bruce Hutchins, District Manager Grand County Water & Sanitation District #1 P.O. Box 3077 Winter Park, CO 80482	Grand County Water & Sanitation District #1 RECEIVED MAR 2010 P. O. Box 3077 Winter Park, CO 80482-3077 970.726.5583 Phone 970.726.5636 Fax February 9, 2010 Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 9307 S, Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: The Grand County Water and Sanitation District #1 (GCWSD#1) appreciates the opportunity to provide comments to the Army Corps of Engineers on the Moffat Collection System Project Draft Environmental Impact Statement (Moffat DEIS). GCWSD#1 serves the majority of the Town of Winter Park and some of the surrounding area. Domestic water is provided from surface water diversion on Vasquez Creek and Little Vasquez Creek in the Arapaho National Forest below Denver Water Board Moffat Collection System diversions. Wastewater flows are returned at a point on the Fraser River below the confluence with St. Louis Creek at a facility that is shared with the Town of Fraser and the Winter Park Ranch Water and Sanitation District. These locations are depicted on the General Location Map that is attached. GCWSD#1 is entirely dependent upon the stream flows below Denver's collection system. Any impacts on stream flows are two fold in that it affects the ability to treat water at water treatment plants and at wastewater treatment facilities. Decreased flows along with existing state and federal regulations have resulted in public entities in the Fraser Valley having to spend tens of millions of dollars on both water and wastewater treatment systems. Some of these were a direct result of past and present impacts from Denver Water Board diversions. Future increase in diversions will cause further impacts that will result in more money having to be spent on treatment by these same entities. The Fraser River has seasonal elevated water temperatures as a result of existing diversions and has been listed as a 303(d) impaired stream for temperature. Any further reduction of flows will only increase the frequency of elevated stream temperature violations. These violations will then be passed to the point source dischargers for mitigation. The dischargers are not the cause of the violation and should not be expected to pay for them.	***Comment #1768-1*** *(ID 4472)**:*** *The Grand County Water and Sanitation District #I (GCWSD#I) appreciates the opportunity to provide comments to the Army Corps of Engineers on the Moffat Collection System Project Draft Environmental Impact Statement (Moffat DEIS).* *GCWSD#I serves the majority of the Town of Winter Park and some of the surrounding area. Domestic water is provided from surface water diversion on Vasquez Creek and Little Vasquez Creek in the Arapaho National Forest below Denver Water Board Moffat Collection System diversions. Wastewater flows are returned at a point on the Fraser River below the confluence with St. Louis Creek at a facility that is shared with the Town of Fraser and the Winter Park Ranch Water and Sanitation District. These locations are depicted on the General Location Map that is attached.* **Response #1768-1:** The Corps notes the comment. ***Comment #1768-2*** *(ID 4471)**:*** *GCWSD#I is entirely dependent upon the stream flows below Denver's collection system. Any impacts on stream flows are two fold in that it affects the ability to treat water at water treatment plants and at wastewater treatment facilities. Decreased flows along with existing state and federal regulations have resulted in public entities in the Fraser Valley having to spend tens of millions of dollars on both water and wastewater treatment systems. Some of these were a direct result of past and present impacts from Denver Water Board diversions. Future increase in diversions will cause further impacts that will result in more money having to be spent on treatment by these same entities.*

Comment Information	Comment	Comments and Responses
	The cumulative impacts of the Moffat Collection System Project and the Northern Windy Gap Firming Project must be considered. Singular review of these projects falls short of the real impacts associated and magnified by the approval of these projects as one. The Moffat DEIS suggests that impacts from the project are negligible. However, the upper Colorado River Basin, especially the Fraser River, is already heavily impacted. Even a minor impact can result in severe impacts to the ecosystem when all the cumulative impacts, existing as well as future, are considered. The Moffat DEIS claims that additional water will only be diverted during times of high flows (runoff) and the impact to be negligible. In doing so, this project removes the natural hydrograph and the services that flushing flows and channel maintenance flows provide. The Proposed Action will divert water in wet years following dry years to restore reservoir levels. This only extends the dry conditions in the Fraser River. Under these scenarios every year will be an average to dry year. The Moffat DEIS does not look beyond 2030 and the need for water. Denver Water is required to meet any demand for water with no idea as to where that water will come from. A solution should be in place that has a realistic limitation to growth in relation to the diversion of West Slope water, not only for Denver Water, but for the entire East Slope. The Moffat DEIS does not include potential mitigation for increased diversions or for existing diversions. All existing and future diversion should be mitigated. If mitigations do occur they should be reviewed on a timely basis to insure their effectiveness. The Moffat DEIS needs a plan of enforcement for any and all provisions of the permit or agreements that may come about as part of this process. The West Slope cannot be expected to protect the water resources that are used by all. Grand County Water and Sanitation District #1 is very concerned as to how the Moffat Collection System Project could affect the ability to serve their customers with a reliable, and affordable, domestic water supply and wastewater treatment. We appreciate the consideration of these comments. Sincerely Bruce Hutchins District Manager	**Response #1768-2:** Additional water quality analysis, including examining nutrients and reviewing NPDES permits for WWTPs discharging into the Fraser, was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1768-3*** *(ID 4470)**:*** *The Fraser River has seasonal elevated water temperatures as a result of existing diversions and has been listed as a 303(d) impaired stream for temperature. Any further reduction of flows will only increase the frequency of elevated stream temperature violations. These violations will then be passed to the point source dischargers for mitigation. The dischargers are not the cause of the violation and should not be expected to pay for them.* **Response #1768-3:** The 2012 303(d) and Monitoring and Evaluation lists per CDPHE Regulation 93 are used in the FEIS. Additional water quality analysis was performed for the Fraser River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1768-4*** *(ID 4469)**:*** *The cumulative impacts of the Moffat Collection System Project and the Northern Windy Gap Firming Project must be considered. Singular review of these projects falls short of the real impacts associated and magnified by the approval of these projects as one.* *The Moffat DEIS suggests that impacts from the project are negligible. However, the upper Colorado River Basin, especially the Fraser River, is already heavily impacted. Even a minor impact can result in severe impacts to the ecosystem when all the cumulative impacts, existing as well as future, are considered.*

Comment Information	Comment	Comments and Responses
		**Response #1768-4:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #1768-5*** *(ID 4468)*: *The Moffat DEIS claims that additional water will only be diverted during times of high flows (runoff) and the impact to be negligible. In doing so, this project removes the natural hydrograph and the services that flushing flows and channel maintenance flows provide. The Proposed Action will divert water in wet years following dry years to restore reservoir levels. This only extends the dry conditions in the Fraser River. Under these*

Comment Information	Comment	Comments and Responses
		scenarios every year will be an average to dry year. **Response #1768-5:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would

Comment Information	Comment	Comments and Responses
		still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in

Comment Information	Comment	Comments and Responses
		FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. Information was added to FEIS Sections 4.6.1 and 5.1 on the increased frequency and duration of dry year conditions and the associated effects on resources. ***Comment #1768-6*** *(ID 4467)**:*** *The Moffat DEIS does not look beyond 2030 and the need for water. Denver Water is required to meet any demand for water with no idea as to where that water will come from. A solution should be in place that has a realistic limitation to growth in relation to the diversion of West Slope water, not only for Denver Water, but for the entire East Slope.* **Response #1768-6:** Denver Water segmented its planning horizon into the near-term timeframe (1997 to 2032) and the long-term timeframe (2032 to system build-out). Denver Water is a public utility, under the Public Utilities Commission, that is obligated to supply water to customers inside and outside of Denver's

Comment Information	Comment	Comments and Responses
		territorial limits. In order to address the projected demands on and need for developing additional water supplies, Denver Water has applied for a Department of the Army Permit (Section 404 Permit) to construct their preferred alternative (as described in DEIS Section 1.2). The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. The proposed Project is predicted to meet a total demand of 363,000 AF/yr. Denver Water's estimated 2032 demand is 379,000 AF/yr after accounting for Natural Replacement and Conservation Savings since 1980 and prior to 2002 (as well as 3,000 AF for the Arvada contract). After backing out the 16,000 AF/yr. for additional Conservation, Denver Water's estimated 2032 demand is 363,000 AF/yr. How Denver Water meets these future demands is not an action considered in this EIS. Although Denver Water does not have authority over growth management or land development policy and procedures, Denver Water is still obligated to respond to increased demand in providing water to its customers. Denver Water has implemented a reasonably aggressive conservation program to partially address the projected future shortfall. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a

Comment Information	Comment	Comments and Responses
		34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr. of additional conservation and the 18,000 AF/yr. proposed Project (72,000 AF enlargement of Gross Reservoir). ***Comment #1768-7*** *(ID 4466)**:*** *The Moffat DEIS does not include potential mitigation for increased diversions or for existing diversions. All existing and future diversion should be mitigated. If mitigations do occur they should be reviewed on a timely basis to insure their effectiveness. The Moffat DEIS needs a plan of enforcement for any and all provisions of the permit or agreements that may come about as part of this process. The West Slope cannot be expected to protect the water resources that are used by all.* **Response #1768-7:** The Corps considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions (2006). DEIS Section 5.2 catalogues a list of past projects. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in DEIS Chapter 3, specifically, Section 3.1. The Corps provides additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim

Comment Information	Comment	Comments and Responses
		Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. Although Denver Water does not have authority over growth management or land development policy and procedures, Denver Water is still obligated to respond to increased demand in providing water to its customers. Denver Water has implemented a reasonably aggressive conservation program to partially address the projected future shortfall. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings will occur. However, monitoring and program adjustment can help assure anticipated conservation changes will be achieved. The Moffat Project identified a 34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr of additional conservation and 18,000 AF/yr from the proposed Project (72,000 AF enlargement of Gross Reservoir). ***Comment #1768-8*** *(ID 4465)**:*** *Grand County Water and Sanitation District #I is very concerned as to how the Moffat Collection*

Comment Information	Comment	Comments and Responses
		System Project could affect the ability to serve their customers with a reliable, and affordable, domestic water supply and wastewater treatment. We appreciate the consideration of these comments. **Response #1768-8:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA .

Comment-Response Report (Jurisdictions/Municipalities Part E)

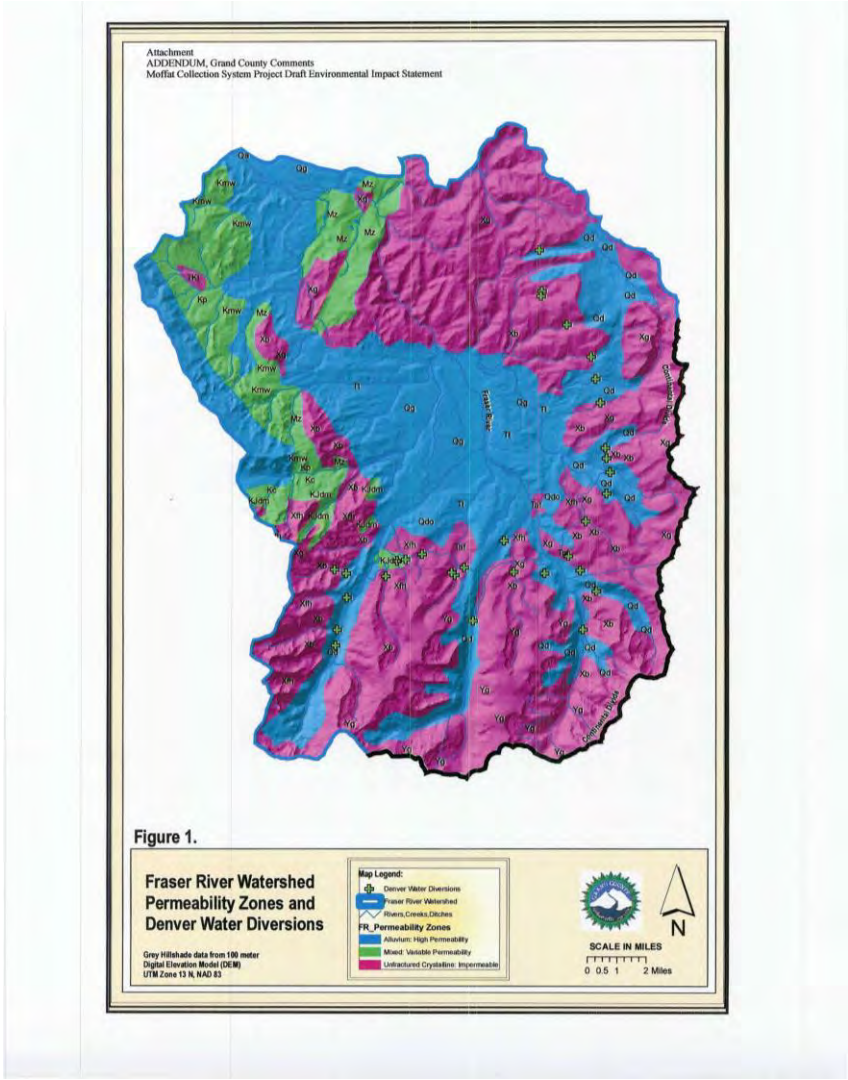
Comment Information	Comment	Comments and Responses
Comment #1772 Mark J. Wagner, Attorney Hill & Robbins, P.C., Representing the Town of Silverthorne 1441 18th Street, 100 Black Street Building Denver, CO 80202	HILL & ROBBINS, P.C. ATTORNEYS AT LAW 100 BLAKE STREET BUILDING 1441 EIGHTEENTH STREET DENVER, COLORADO 80202-1256 DAVID W. ROBBINS ROBERT F. HILL DENNIS M. MONTGOMERY RONALD L. WILCOX JOHN H. EVANS MARK J. WAGNER JOHN S. WALSH JENNIFER H. HUNT INGRID C. BARKER NATHAN B. FLYNN TELEPHONE 303 296-8100 FAX 303 296-2388 E-MAIL webmaster@hillandrobbins.com WEBSITE www.hillandrobbins.com RECEIVED MAR 2010 March 29, 2010 Mr. Scott Franklin Moffat EIS Project Manager U.S. Army Corps of Engineers 9307 South Wadsworth Blvd Littleton, CO 80128 Re: **MOFFAT COLLECTION SYSTEM PROJECT; Public Comments Concerning the Draft Environmental Impact Statement dated October 30, 2009** Dear Mr. Franklin: This firm represents the Town of Silverthorne. We recently received a copy of a letter to you dated March 17, 2010, providing comments on the referenced project from the law firm representing the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company. That letter indicates that it was written on behalf of the "principle shareholders and the boards of directors" of those companies. The purpose of this letter is to clarify that although Silverthorne owns shares in the Clinton Ditch and Reservoir Company, Silverthorne is not a "principle shareholder" in that Company, and its views are not expressed by the March 17, 2010 letter. Instead, Silverthorne's comments were provided at the January 7, 2010 public hearing on this matter held in Breckenridge. Silverthorne does not endorse the comments of Clinton Ditch and Reservoir Company or any other entity where those comments deviate from those submitted by Silverthorne. Very truly yours, Mark J. Wagner cc: Town Administrator Glenn Porzak, Esq.	***Comment #1772-1*** *(ID 4473)**:*** *This firm represents the Town of Silverthorne. We recently received a copy of a letter to you dated March 17, 2010, providing comments on the referenced project from the law firm representing the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company. That letter indicates that it was written on behalf of the "principle shareholders and the boards of directors" of those companies.* *The purpose of this letter is to clarify that although Silverthorne owns shares in the Clinton Ditch and Reservoir Company, Silverthorne is not a "principle shareholder" in that Company, and its views are not expressed by the March 17, 2010 letter.* *Instead, Silverthorne's comments were provided at the January 7, 2010 public hearing on this matter held in Breckenridge. Silverthorne does not endorse the comments of Clinton Ditch and Reservoir Company or any other entity where those comments deviate from those submitted by Silverthorne.* **Response #1772-1:** The Corps notes the clarification.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #2819 Barbara J.B. Green SullivanGreenSeavy LLC for the Board of County Commissioners of Grand County 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303 and Mary Keyes SullivanGreenSeavy LLC 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303	From: mary keyes [mailto:[redacted] Sent: Tuesday, June 15, 2010 6:46 PM To: Franklin, J Scott NWO Cc: Lurline Underbrink Curran; Cindy Derby; Barbara Green Subject: Moffat DEIS Hi Scott - attached is an Addendum to Grand County's comments re: the Moffat DEIS. Please contact me if you have any problems with this transmittal. -- Mary Mary Keyes SullivanGreenSeavy LLC [redacted] direct: 303-763-7362 MoffatDEISCommentAddendumGrandCounty061510.pdf	***Comment #2819-1*** *(ID 5379)**:*** *Please accept this Addendum to Grand County's comments regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS") that were submitted to the Corps in a letter dated March 17, 2010 ("Grand County Comment Letter"). This Addendum supports the County's comments on Appendix H-11, beginning at page 101 of the Grand County Comment Letter.* *Appendix H-11* *Comment.* *The following comment refers to Scott Franklin's letter of September 11, 2009 to Wes Wilson of the EPA regarding impacts to groundwater:* *Paragraph 4. Figure 1 explains that throughout the blue area, groundwater recharge rates remain the same in spite of the proposed project. While this may be true, the blue area is all above 10,000 feet-9,300 feet in altitude, tends to be very steep, and is composed primarily of crystalline rock (granite, biotite and gneiss) per Figure 2, all of which will tend to minimize any recharge. There is a fraction of glacial drift in this zone where recharge may occur, but it will likely be very shallow or localized, and may be largely intercepted at Denver Water's diversion dams. There may be some recharge to fractures in the crystalline rock, but this may be very minimal, and it cannot be said with certainly if these fractures will discharge in the Fraser basin. Instead of substantial recharge occurring in this zone, the more likely outcome is that these high altitude rocks will shed water to the tributaries and via sheet flow, all of which is collected by the Moffat and Williams Fork collection systems as they were designed to do. As the letter notes, the blue area in Figure 1 includes the largest precipitation rates and snowpack depths in the*

Comment Information	Comment	Comments and Responses
	Attachment: SULLIVAN GREEN SEAVY LLC **Barbara J.B. Green** 3223 Arapahoe Avenue, Suite 300 Boulder, CO 80303 direct: 303-355-4405 lawgreen@earthlink.net June 15, 2010 **VIA EMAIL:** j.scott.franklin@usace.army.mil Mr. J. Scott Franklin, P.E. Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Re: ADDENDUM, Grand County Comments Moffat Collection System Project Draft Environmental Impact Statement Dear Scott: Please accept this Addendum to Grand County's comments regarding the Moffat Collection System Project Draft Environmental Impact Statement ("Moffat DEIS") that were submitted to the Corps in a letter dated March 17, 2010 ("Grand County Comment Letter"). This Addendum supports the County's comments on Appendix H-11, beginning at page 101 of the Grand County Comment Letter. **Appendix H-11** **Comment.** The following comment refers to Scott Franklin's letter of September 11, 2009 to Wes Wilson of the EPA regarding impacts to groundwater: Paragraph 4. Figure 1 explains that throughout the blue area, groundwater recharge rates remain the same in spite of the proposed project. While this may be true, the blue area is all above 10,000 feet-9,300 feet in altitude, tends to be very steep, and is composed primarily of crystalline rock (granite, biotite and gneiss) per Figure 2, all of which will tend to minimize any recharge. There is a fraction of glacial drift in this zone where recharge may occur, but it will likely be very shallow or localized, and may be largely intercepted at Denver Water's diversion dams. There may be some recharge to fractures in the crystalline rock, but this may be very minimal, and it cannot be said with certainly if these fractures will discharge in the Fraser basin. Instead of substantial recharge occurring in this zone, the more likely outcome is that these high altitude rocks will shed water to the tributaries and via sheet flow, all of which is collected by the Moffat and Williams Fork collection systems as they were designed to do. As the letter notes,	*watershed; in fact it covers all of the zones of annual precipitation in excess of 30 and 40 inches.* *Paragraph 6. The letter asserts that the recharge rates for the brown area in Figure 1 will not change as a result of the project. While this is not technically true due to the changes that may be caused by lower instream flows and reduced frequency of flooding events, note that the brown area consists primarily of lower elevation lands that receive less than 20 inches of annual precipitation, and just a portion that receives between 20 and 30 inches. This is significant because this region cannot produce nearly the recharge that the areas of high elevation, high precipitation accumulation can.* *The discussion about the effects of stream flow reductions on groundwater recharge for the Fraser and Williams Fork drainage basins misses the most important point: By intercepting and diverting the high elevation, high accumulation runoff, this water is not allowed to flow overland or through creeks to recharge zones, which generally occur lower in the basins.* *Grand County has prepared Figure 1 (Fraser River Watershed Permeability Zones and Denver Water Diversions) and Table 1, attached to this letter, to illustrate the County's concerns regarding the conclusions about impacts to groundwater. Figure 1 illustrates three generalized zones of permeability in the Fraser Basin in relation to the locations of Denver Water diversions. These zones include 1) alluvial zones of relatively high permeability, 2) mixed zones of variable permeability, and 3) crystalline zones which would be impermeable or have low-permeability if fractured. The permeability of a geologic formation will affect aquifer recharge.*

Comment Information	Comment	Comments and Responses
	ADDENDUM, Grand County Comments Moffat Collection System Project Draft Environmental Impact Statement June 15, 2010 Page 2 the blue area in Figure 1 includes the largest precipitation rates and snowpack depths in the watershed; in fact it covers all of the zones of annual precipitation in excess of 30 and 40 inches. Paragraph 6. The letter asserts that the recharge rates for the brown area in Figure 1 will not change as a result of the project. While this is not technically true due to the changes that may be caused by lower instream flows and reduced frequency of flooding events, note that the brown area consists primarily of lower elevation lands that receive less than 20 inches of annual precipitation, and just a portion that receives between 20 and 30 inches. This is significant because this region cannot produce nearly the recharge that the areas of high elevation, high precipitation accumulation can. The discussion about the effects of stream flow reductions on groundwater recharge for the Fraser and Williams Fork drainage basins misses the most important point: By intercepting and diverting the high elevation, high accumulation runoff, this water is not allowed to flow overland or through creeks to recharge zones, which generally occur lower in the basins. Grand County has prepared Figure 1 (Fraser River Watershed Permeabiliy Zones and Denver Water Diversions) and Table 1, attached to this letter, to illustrate the County's concerns regarding the conclusions about impacts to groundwater. Figure 1 illustrates three generalized zones of permeability in the Fraser Basin in relation to the locations of Denver Water diversions. These zones include 1) alluvial zones of relatively high permeability, 2) mixed zones of variable permeability, and 3) crystalline zones which would be impermeable or have low-permeability if fractured. The permeability of a geologic formation will affect aquifer recharge. While many of Denver Water's diversion structures appear to be located on alluvium of the Qd formation (glacial drift of Pinedale and Bull Lake Glaciations), this formation thins with increasing elevation, and concrete diversion structures built directly upon the crystalline subsurface have the effect disconnecting and intercepting the water above from the alluvial aquifer below. With the exception of one or two diversion structures, the structures are located on crystalline rock and disconnect runoff from any groundwater recharge zones. Thank you in advance for your consideration of this Addendum. If you have any questions, please feel free to contact me or Lurline Underbrink Curran directly at Grand County so that we can go through this information with you in more detail. Sincerely, Barbara J.B. Green SULLIVAN GREEN SEAVY LLC for Board of County Commissioners of Grand County	*While many of Denver Water's diversion structures appear to be located on alluvium of the Qd formation (glacial drift of Pinedale and Bull Lake Glaciations), this formation thins with increasing elevation, and concrete diversion structures built directly upon the crystalline subsurface have the effect disconnecting and intercepting the water above from the alluvial aquifer below. With the exception of one or two diversion structures, the structures are located on crystalline rock and disconnect runoff from any groundwater recharge zones.* *[See Figure 1, FRASER RIVER WATERSHED PERMEABILITY ZONES AND DENVER WATER DIVERSIONS, in source file.]* *[See Table 1, FRASER RIVER WATERSHED, COLORADO – ASSESSMENT OF AVAILABLE WATER-QUANTITY AND WATER-QUALITY DATA THROUGH WATER YEAR 1997, in source file.]* **Response #2819-1:** Overall, the comment reflects a lack of understanding of the recharge potential and groundwater transmitting properties of the soils and rocks in the Fraser River watershed. Moreover, the comment draws erroneous conclusions about the effects of the Denver Water diversion structures related to stream runoff and groundwater recharge. The comment suggests that there may be "very minimal" groundwater recharge in this watershed. While it is true that some of the characteristics in the blue area of Figure 1 in the letter from the Corps to the EPA (DEIS Appendix H-11) may cause lower recharge rates, it is also true that other hydrogeologic factors contribute to higher recharge rates there. The map attached to the comment

Comment Information	Comment	Comments and Responses
		letter (Figure 1 prepared by Grand County) represents much of the upper watershed as "unfractured crystalline: impermeable." This map is misleading because it is simply not true that the area of crystalline rock on the map is unfractured or impermeable. In fact, there is substantial groundwater recharge in the upper Fraser River watershed because permeable materials and heavy snow packs are present in that area. In many parts of the upper watershed, permeable glacial deposits or soils overlie the crystalline Precambrian rocks. Also the crystalline rocks are permeable because they are fractured and weathered. As for other mountain watersheds of the East Slope, numerous extensive fracture zones occur throughout these crystalline rocks because of regional faulting and tectonics. These facts have been well documented by a number of USGS studies in Colorado. For instance, USGS reports on the Harold D. Roberts Tunnel (USGS Professional Papers 831-C and 831-D) describe groundwater conditions encountered during tunneling through crystalline rocks of the same types and ages as those present in the upper Fraser watershed: "Additional water flows, amounting in places to as much as 500 gallons per minute, were encountered in feeler holes… The water flows were associated with minor faults and fracture zones in the biotite gneiss. The association of high-pressure water in this segment of the Roberts Tunnel with fractured competent rock layers (microcline gneiss) enclosed in less competent rock (biotite gneiss) suggest that such layers may behave as artesian aquifers in crystalline basement rocks of otherwise low permeability. Apparently the water is contained in an irregular interconnecting system of fractures…

Comment Information	Comment	Comments and Responses
	Attachment ADDENDUM, Grand County Comments Moffat Collection System Project Draft Environmental Impact Statement **Table 1** **High Permeability** *Unconsolidated surficial deposits of Quaternary age* Qa Modern alluvium Qg Gravels and alluviums Qd Glacial drift of Pinedale and Bull Lake Glaciations Qdo Older glacial drift (pre-Bull Lake age) Tt Troublesome Formation - Siltstone, sandstone, and conglomerate **Variable Permeability** *Sedimentary rocks of Cretaceous age* Kmw Windy Gap Member of Middle Park Formation Kp Pierre Shale, undivided Kc Colorado Group *Sedimentary Rocks of Cretaceous and Jurassic age* KJdm Dakota and Morrison Formations *Sedimentary rocks broadly classified* Mz Mesozoic rocks - Mainly early Cretaceous, Jurassic, and Triassic Age **Low - Impermeable** *Igneous rocks of Tertiary and/or Cretaceous age* TKi Laramide intrusive rocks Taf Ash flow tuff of main volcanic sequence *Igneous and metamorphic rocks of Precambrian age* Yg Granitic rock of 1,400 Ma Xg Granitic rock of 1,700 Ma Xb Biotite gneiss, schist, and migmatite **Table 1 Adapted from Apodaca. L.E. and J.B. Bails. 1999. Fraser River Watershed, Colorado – Assessment of Available Water-Quantity and Water-Quality Data Through Water Year 1997, USGS WRIR 98-4255.**	Such fractured layers may contain enormous quantities of water (probably recharged along major faults extending to the surface.)..." The comment erroneously states that it is not technically true that recharge rates in the brown area of Figure 1 (DEIS Appendix H-11) would not change as a result of the Project, since all of the brown area on Figure 1 (DEIS Appendix H-11) is not downstream of any Denver Water diversion. Therefore, it is impossible for any "lower instream flows and reduced frequency of flooding events" to be caused by the Moffat Project anywhere within that brown area of Figure 1 (DEIS Appendix H-11). In other words, groundwater recharge does occur in both the blue and brown areas, and the recharge rates in those areas would not be affected in any way by the current Denver Water diversions or the Project. Moreover, because the Project involves capturing some stream runoff (not groundwater) during the seasonal high runoff period, the Project would not change the rate of groundwater flow (and mass flux) from those recharge areas toward and into the Fraser River drainages lower in the watershed. The comment also incorrectly states: "With the exception of one or two diversion structures, the structures are located on crystalline rock and disconnect runoff from any groundwater recharge zones." First of all, the diversion structures capture only stream runoff, not groundwater. Secondly, in capturing stream runoff during the seasonal snowmelt period, the diversions do not "disconnect runoff from any groundwater recharge zones." Instead, runoff is a totally different component of the hydrologic system. Runoff into streams is disconnected from groundwater recharge not by the diversion structures, but rather is "disconnected" only by the natural process of water

Comment Information	Comment	Comments and Responses
		infiltrating deep into the land surface to the regional groundwater flow system. Groundwater recharge in the upper portions of the watershed flows within the groundwater flow system (below the ground surface, not as stream runoff) toward the streams at lower elevations in the watershed. Below the diversion points, groundwater flow generally discharges into the streams rather than vice versa. Data available from the groundwater monitor wells in the Fraser Valley shows groundwater levels are higher than the adjacent stream levels, which indicates that groundwater flows into the Fraser River, even during the seasonal snowmelt period of high runoff. These groundwater-stream relationships were further clarified in FEIS Section 5.4 based on the monitor well installation and field data collection activities conducted by the Corps in the fall of 2010. The additional groundwater data and stream flow analyses was provided in the FEIS to further assess the Project effects on groundwater, streamflow, tributaries and wetlands in Sections 4.6.4, 4.6.8, 5.4 and 5.8.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #2820 Kathleen E. Hodgson, City Manager City of Lakewood 480 South Allison Parkway Lakewood, CO 80226-3127	City of Lakewood Office of the City Manager Kathleen Hodgson 480 South Allison Parkway Lakewood, Colorado 80226-3127 303-987-7050 Voice 303-987-7057 TDD 303-987-7063 FAX December 13, 2010 Mr. Travis Bray Denver Water 1600 West 12th Avenue Denver, CO 80204 RE: Moffat Collection System Project Dear Mr. Bray: The City of Lakewood, as a master meter distributor of Denver Water and as a community served by multiple special districts that purchase and distribute water from Denver Water, endorses the Moffat Collection System Project. Lakewood water distributors are served most efficiently and effectively from the Moffat Collection System and insuring that a secure, reliable water delivery system is in place is clearly in the City of Lakewood's best interest. We understand that the Moffat Collection System came close to running out of water in the severe drought of 2002. Future droughts of that severity could put the City of Lakewood at risk. The City of Lakewood fully supports the planned Moffat Collection System improvements. Sincerely, Kathleen E. Hodgson Kathleen E. Hodgson City Manager ** Alternative formats of this document are available upon request**	***Comment #2820-1*** *(ID 5380)**:*** *The City of Lakewood, as a master meter distributor of Denver Water and as a community served by multiple special districts that purchase and distribute water from Denver Water, endorses the Moffat Collection System Project. Lakewood water distributors are served most efficiently and effectively from the Moffat Collection System and insuring that a secure, reliable water delivery system is in place is clearly in the City of Lakewood's best interest.* *We understand that the Moffat Collection system came close to running out of water in the severe drought of 2002. Future droughts of that severity could put the City of Lakewood at risk.* *The City of Lakewood fully supports the planned Moffat Collection System improvements.* **Response #2820-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Jurisdictions/Municipalities Part E)

Comment Information	Comment	Comments and Responses
Comment #2821 Timothy J. Flynn Collins Cockrel & Cole on Behalf of the Cherry Creek Village Water District and the Holly Hills Water and Sanitation District 390 Union Boulevard, Suite 400 Denver, CO 80228	**From:** Tim Flynn [mailto:tflynn@CCCFIRM.COM] **Sent:** Thursday, February 24, 2011 3:07 PM **To:** Bray, Travis J. **Subject:** Moffat Expansion Project - Cherry Creek Village and Holly Hills Hi Travis: At its February Board meeting the Cherry Creek Village Water District announced its support of Denver Water's Moffat Expansion Project and authorized the use of its name as a supporter of the Project. The Holly Hills Water and Sanitation District have also expressed its support of the Moffat Expansion Project. If you have any questions, please don't hesitate to contact me. Sincerely yours, Timothy J. Flynn Collins Cockrel & Cole 390 Union Boulevard, Suite 400 Denver, Colorado 80228-1556 303-986-1551 Telephone 303-218-7198 Direct Dial 800-354-5941 Toll Free 303-986-1755 Facsimile tflynn@cccfirm.com Email PRIVILEGED COMMUNICATION. This email may contain attorney-client or otherwise privileged and confidential information intended only for the use of the individual or entity named above. Dissemination, distribution or copying of this communication is strictly prohibited. If you are an attorney or law firm, consult Title I of the federal Electronic Communications Privacy Act of 1986. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error and delete this email. ATTACHMENTS. Although this email and any attachments are believed to be free of any virus, the files should be virus scanned before opening them.	***Comment #2821-1*** *(ID 5382)**:*** *At its February Board meeting the Cherry Creek Village Water District announced its support of Denver Water's Moffat Expansion Project and authorized the use of its name as a supporter of the Project.* **Response #2821-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #2821-2*** *(ID 5381)**:*** *The Holly Hills Water and Sanitation District have also expressed its support of the Moffat Expansion Project.* **Response #2821-2:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

List of References

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Not Adequately Form Letters

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
NOT ADEQUATELY FORM LETTER — STANDARD		
[The Not Adequately Standard Form Letter shown here on pages 1 and 2 was submitted by all the commenters listed below.] Comment #352 Bonnie M. Hammel Comment #363 Vicki Moran Comment #982 Donald P. Holub Comment #983 Barbara Holub Comment #984 William Meuser Comment #985 Renee Wolford Comment #986 Dolores J. Wolford Comment #987 Larry Fowler Comment #988 Brittany A. Strode Comment #990 Barbara Waldron	**TO: FERC, Attn. Sec. Kimberly Bose, 888 First St. NE, Washington, DC 20426 and send a *copy to* Denver Water, Brian Gogas, Mail Code 415, 1600 W. 12th Ave., Denver, CO 80204 – Email: moffatproject@denverwater.org** **(Print) FROM:** **Date:** _____ _____ _____ **REGARDING: Project #2035** **Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.** NOT adequately addressed in the DEIS – There is not the need for additional water supply, either now or in the future; Possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminents that action would bring into the existing supply. Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: - poor air quality - 24x7 noise pollution - dangerous construction traffic - destroying road damage - any destruction of wildlife habitat - any loss of recreational usage - probable pressure on volunteer firefighters - delay of emergency medical for residents Property values could be adversely affected for several years. All outdoor activities could be restricted by compromised air and noise quality. The DEIS does not assess the negative impacts on the local human population. The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. Diminished air quality and high decibel noise pollution 24x7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS.	***Form Letter Comment #965-3*** *(ID 2810)**:*** *Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.* **Response #965-3:** Prior to making decisions on the proposed Moffat Collection System Project (Moffat Project or Project), the U.S. Army Corps of Engineers (Corps) will evaluate and consider the Project's environmental effects according to National Environmental Policy Act of 1969, as amended (NEPA). ***Form Letter Comment #965-1*** *(ID 2809)**:*** *NOT adequately addressed in the DEIS – There is not the need for additional water supply, either now or in the future; Possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply.* **Response #965-1:** Board of Water Commissioners (Denver Water) serves customers within the City and County of Denver as well as a number of suburban distributors in surrounding counties (portions of Adams, Arapahoe, Broomfield, Douglas and Jefferson counties) in addition to special contracts. Denver Water's customers are described in Section 1.3.3. Figure 1-4 shows Denver Water's Combined Service Area (CSA), which includes the City and County of Denver as well as the portions of other counties served by Denver Water. Denver Water also has a number of contracts with entities outside the CSA, which are perpetual obligations. Although Denver Water does not have authority over growth management or land development policy and procedures, Denver Water is still obligated to

Comment Information	Comment	Comments and Responses
Comment #992 Debbie and Steve Anderson Comment #993 Kathryn Rudasill Comment #994 Lauribeth Roemer Comment #995 Jan Kramer Comment #996 Scott D. Sanders Comment #997 Deborah Riccioli Comment #998 Sharene Owen	The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. - urban sprawl and unwarranted commercial development downwater from the area - additional air pollution from expected urbanization in the area - increased traffic congestion on all existing Highway's surrounding the area - lowered quality of life for canyon residents as their rural community becomes urban - projected tool for proponents of the ByPass to promote its unwanted construction Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice. Signature:	respond to increased demand in providing water to its customers within its CSA. ***Form Letter Comment #965-4*** *(ID 2808)**:*** *Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminants that action would bring into the existing supply.* **Response #965-4:** Every water supply has the risk of contamination. This is a known source that would continue to be used with or without the Project. ***Form Letter Comment #965-5*** *(ID 5392)**:*** *Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project:* *- poor air quality* *- 24x7 noise pollution* *- dangerous construction traffic* *- destroying road damage* *- any destruction of wildlife habitat* *- any loss of recreational usage* *- probable pressure on volunteer firefighters* *- delay of emergency medical for residents.* **Response #965-5:** Air and Noise The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the National Ambient Air Quality Standards (NAAQS). Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
		to endanger public health and welfare. For purposes of the Environmental Impact Statement (EIS) analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. The Corps may include a permit condition for noise abatement as part of the Public Interest Review for a Section 404 Permit. Denver Water would comply with all applicable noise ordinances and work with Boulder County to identify reasonable and feasible noise abatement measures for the Project construction period. Traffic The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on County Road (CR) 77S, State Highways (SHs) 72, 93, 128, U.S. Highway (US) 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water met with Colorado Department of Transportation (CDOT) to discuss the best way to use SH 72 during construction. Denver Water is also evaluating

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
		alternatives for reducing construction traffic delays. Road Maintenance CDOT is responsible for maintenance of State highways such as SH 72. Boulder County is responsible for maintenance of county roads such as CR 77S, CR 132, etc. Boulder County maintains Gross Dam Road (CR 77S) from SH 72 to the railroad tracks. Denver Water currently maintains Gross Dam Road from the railroad track crossing to Flagstaff Road. During construction, Denver Water or its contractor would be responsible for maintaining all of Gross Dam Road. Wildlife Habitat Project impacts to wildlife at Gross Reservoir are characterized as minor to moderate for the various species and groups. The analysis of wildlife habitats and wildlife species and groups along the river segments was expanded in Final Environmental Impact Statement (FEIS) Section 5.9. The Corps conducted an analysis in the fall of 2010 to further evaluate the interactions of stream flow and groundwater on riparian and wetland areas in the Fraser Valley. The results of this analysis are included in FEIS Section 5.8. Recreation Recreational facilities at Gross Reservoir would be replaced in-kind above the high water line. The daily and seasonal operations of Gross Reservoir should not change during construction, as the reservoir would fluctuate based on water demand, not construction activities. Denver Water is preparing a recreation plan to keep recreational facilities open as much as possible without compromising public safety or construction progress. Certain areas would be restricted or temporarily closed during construction.

Comment Information	Comment	Comments and Responses
		Firefighters As described in Draft Environmental Impact Statement (DEIS) Section 3.17, a number of different police and fire departments currently have responsibilities at Gross Reservoir and the surrounding areas. DEIS Section 4.17 concludes that these departments should be able to respond to potential emergencies and meet any additional demands based on the assumption that the number of increased incidents would be small. Emergency Vehicles Emergency vehicles would have access to the same response routes during construction that currently exist. Additionally, construction contractors would pull over to allow emergency response vehicles to pass as needed. If an emergency vehicle needed access to a closed road, access would be granted. ***Form Letter Comment #965-2*** *(ID 2807)**:*** *Property values could be adversely affected for several years.* **Response #965-2:** An expanded analysis of impacts to communities surrounding Gross Reservoir was included in FEIS Section 5.19, including an evaluation of impacts to property values. ***Form Letter Comment #965-6*** *(ID 5391)**:*** *All outdoor activities could be restricted by compromised air and noise quality.* **Response #965-6:** Please see the response to Comment ID 5388. ***Form Letter Comment #965-7*** *(ID 5390)**:*** *The DEIS does not assess the negative impacts on the local human population.*

Comment Information	Comment	Comments and Responses
		Response #965-7: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects – including those to the human environment - according to NEPA. ***Form Letter Comment #965-8*** *(ID 5389)**:*** *The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS.* **Response #965-8:** There are no ground-disturbing activities occurring in alpine environments as part of the Moffat Project. ***Form Letter Comment #965-9*** *(ID 5388)**:*** *Diminished air quality and high decibel noise pollution 24x7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS.* **Response #965-9:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. For purposes of the EIS analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. The Corps may include a permit condition for noise abatement as part of the Public Interest Review for a Section

Comment Information	Comment	Comments and Responses
		404 Permit. Denver Water would comply with all applicable noise ordinances and work with Boulder County to identify reasonable and feasible noise abatement measures for the Project construction period. ***Form Letter Comment #965-10*** *(ID 5387)**:*** *The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified.* • *urban sprawl and unwarranted commercial development down water from the area* • *additional air pollution from expected urbanization in the area* • *increased traffic congestion on all existing Highway's surrounding the area* • *lowered quality of life for canyon residents as their rural community becomes urban* • *projected tool for proponents of the bypass to promote its unwanted construction.* **Response #965-10:** Sprawl DEIS Section 4.14 provides a detailed description and substantiation of why water development projects do not cause development ("sprawl") to occur. The feasibility of a specific land development proposal, absent specific Moffat-related connectivity, cannot be reasonably tied to the Moffat Project. The Corps analyzed demand in the Project area based on demographic projections from various federal and local sources. The Corps also independently evaluated the demand projections stated in Denver Water's Integrated Resource Plan, which will help guide water management over the next 40 years. As stated in DEIS Section 4.14 and

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
		FEIS Section 5.16: “Several recent studies have suggested that there is no substantive causal relationship between population growth and the development of water, or vice versa.” One such study is summarized as follows: The relationship between water and growth in the modern West is often misunderstood. Historically, it has been assumed that water development was a necessary precursor to growth and, similarly, that a lack of water development could act as a deterrent to growth. While these premises may have been true at one time, recent experience in Colorado and other western states shows both ideas are now unsupportable. To the contrary, many of the regions showing the highest rates of growth in the West – from Douglas County, Colorado to Las Vegas, Nevada – show the opposite trend; that is, growth is actually highest in some of the driest regions. Similarly the veto of the proposed Two Forks Dam on the Front Range by the U.S. Environmental Protection Agency (EPA) in 1990 certainly did not deter growth in the Denver Metropolitan area. Examples also suggest that an abundance of water is often insufficient to stimulate growth. The experience of Pueblo is illustrative (Nichols et al. 2001). Numerous other studies analyzing the relationship between growth and water reach similar conclusions, such as Western Land Use Trends and Policy: Implications for Water Resources (Riebsame 1997); Atlas of the New West (Center of the American West 1997); and Water in the West: The Challenge for the Next Century (Western Water Policy Review Advisory Commission 1998). This growth issue was evaluated and dismissed by the Corps during the NEPA analysis of the Two Forks Dam and Reservoir Project in 1988 – “As a result of including the No Federal Action scenario, the Corps

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
		was able to answer a major question then being asked – would growth continue in the Denver Metropolitan area without Federal approval of a major water supply project. The evaluation of the No Federal Action scenario determined that growth would occur regardless of Federal action" (Corps 1998, page 3-3 of the FEIS Metropolitan Denver Water Supply EIS, Volume 1). Independent studies, such as the state-wide Water Supply Initiative, commissioned by the State of Colorado, anticipate high growth rates for Colorado, including the Front Range. These high growth rates are certainly not independent of water supply, but are likely to occur regardless of what water projects are constructed. Air The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. Traffic The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on CR 77S, SHs 72, 93, 128, US 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about

Comment Information	Comment	Comments and Responses
		35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water met with the CDOT to discuss the best way to use SH 72 during construction. Denver Water is also evaluating alternatives for reducing construction traffic delays. Lowered Quality of Life The areas around Gross Reservoir would not become urbanized as a result of the Moffat Project. No new or proposed residential development is projected in the area and private development opportunities are limited since the reservoir is primarily surrounded by U.S. Forest Service (USFS) land and Boulder County Open Space. Bypass Please see the response related to Sprawl. ***Form Letter Comment #965-11*** *(ID 5386)**:*** *Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice.* **Response #965-11:** Per 40 Code of Federal Regulations (CFR) 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns and there are no significant new circumstances or information relevant to environmental concerns and bearing on

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
		the Proposed Action or its impacts, a supplemental draft document was not prepared for the Moffat Project. However, additional data was collected and analyzed for the following resources in the FEIS: water quality (Section 5.2), channel morphology (Section 5.3), groundwater (Section 5.4), aquatic biological resources (Section 5.11), wetland and riparian areas (Section 5.8), wildlife (Section 5.9), special status species (Section 5.10), air quality (Section 5.13), and socioeconomics (Section 5.19). The No Action Alternative is an alternative which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA regulations (40 CFR 1502.14[d]) and Section 404 regulations (33 CFR 325 Appendix B.9.b[5][b]). Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
NOT ADEQUATELY FORM LETTERS — UNIQUE		
Comment #153 Janette Calebaugh	From: Jan Calebaugh [mailto:[redacted] Sent: Tuesday, February 09, 2010 11:12 AM To: MOFFAT.EIS@usace.army.mil Subject: Protest of the Proposed Expansion of Gross Reservoir and Dam. February 9, 2010. RE: PROJECT #2035 ADDITIONAL COMMENT: This email is to PROTEST the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied. 1. NOT adequately addressed in the DEIS - there is not the need for additional water supply, either now or in the future; possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. 2. Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminants that action would bring into the existing supply. 3. Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: * poor air quality * 24 x 7 noise pollution * dangerous construction traffic * destroying road damage * any destruction of wildlife habitat * any loss of recreational usage * probable pressure on volunteer firefighters * delay of emergency medical for residents 4. Property values could be adversely affected for several years. 5. All outdoor activities could be restricted by compromised air and noise quality. 6. The DEIS does not assess the negative impacts on the local human population. 7. The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. 8. Diminished air quality and high decibel noise pollution 24 x 7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS. 9. The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. * urban sprawl and unwarranted commercial development down water from the area. * additional air pollution from expected urbanization in the area. * increased traffic congestion on all existing highways surrounding the area. * lowered quality of life for canyon residents as their rural community becomes urban. * projected tool for proponents of the ByPass to promote its unwanted construction. 10. Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice.	***Unique Comment #153-5*** *(ID 2811)**:*** *This email is to PROTEST the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.* **Response #153-5:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
	Janette Calebaugh [redacted]	

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
Comment #367 Jack Moran	From: [redacted] Sent: Wednesday, February 17, 2010 9:21 AM To: MOFFAT.EIS@usace.army.mil Subject: Gross Dam Expansion Project RE: PROJECT #2035 Respectfully, this email is to PROTEST the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied. 1. NOT adequately addressed in the DEIS - there is not the need for additional water supply, either now or in the future; possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. 2. Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminants that action would bring into the existing supply. 3. Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: * poor air quality * 24 x 7 noise pollution ADDITIONAL COMMENT BEGINNING: * dangerous construction traffic - Over the last few years, Hwy 72 has become and "unfortunate bicycle riding venue". The narrow road with a multitude of sharp curves puts everyone at risk when numerous riders are meandering up and down the hills. As it is, the dangerous and life threatening situation can only get worse by adding how many over-sized vehicles a day to the traffic pattern. END ADDITIONAL COMMENT. * destroying road damage * any destruction of wildlife habitat * any loss of recreational usage * probable pressure on volunteer firefighters * delay of emergency medical for residents 4. Property values could be adversely affected for several years. 5. All outdoor activities could be restricted by compromised air and noise quality. 6. The DEIS does not assess the negative impacts on the local human population. 7. The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. 8. Diminished air quality and high decibel noise pollution 24 x 7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS. 9. The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. * urban sprawl and unwarranted commercial development down water from the area. * additional air pollution from expected urbanization in the area. * increased traffic congestion on all existing highways surrounding the area.	***Unique Comment #367-5*** *(ID 2816)**:*** *Dangerous construction traffic - Over the last few years, Hwy 72 has become an "unfortunate bicycle riding venue". The narrow road with a multitude of sharp curves puts everyone at risk when numerous riders are meandering up and down the hills. As it is, the dangerous and life threatening situation can only get worse by adding how many over-sized vehicles a day to the traffic pattern.* **Response #367-5:** Denver Water met with the CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
	* lowered quality of life for canyon residents as their rural community becomes urban. * projected tool for proponents of the ByPass to promote its unwanted construction. 10. Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice. Thanks for your consideration, Jack Moran [redacted]	

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1165 Jennifer Strode	Denver Water, Brian Gogas, Mail Code 415, 1600 W. 12th Ave., Denver, CO 80204 - Email: moffatproject@denverwater.org and send a *copy to* (Print) FROM: Jennifer Strode [redacted] Date: 2-27-2010 REGARDING: Project #2035 **Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.** • NOT adequaely addressed in the DEIS- There is not the need for additional water supply, either now or in the future; Possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. • Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminents that action would bring into the existing supply. • Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: • poor air quality • 24x7 noise pollution • dangerous construction traffic • destroying road damage • any destruction of wildlife habitat • any loss of recreational usage • probable pressure on volunteer firefighters • delay of emergency medical for residents • Property values could be adversely affected for several years. • All outdoor activites could be restricted by compromised air and noise quality. • The DEIS does not assess the negative impacts on the local human population. • The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. • Dimished air quality and high decibel noise pollution 24x7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS. • The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. • urban sprawl and unwarranted commercial development downwater from the area • additional air pollution from expected urbanization in the area • increased traffic congestion on all existing Highway's surrounding the area • lowered quality of life for canyon residents as their rural community becomes urban • projected tool for proponents of the ByPass to promote its unwanted construction • Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice. Signature: Jennifer Russell Strode February 2010 PAGE 35 Please drive these canyon roads yourself, think about the many trucks that would be traveling to the reservour. We have no paved shoulders, we have many bicyclists sharing our 'shoulderless' roads in warm weather Currently our roads are not	***Unique Comment #1165-5*** *(ID 5141)**:*** *Please drive these canyons roads yourself, think about the many trucks that would be traveling to the reservoir. We have no paved shoulders, we have many bicyclists sharing our 'shoulderless' roads in warm weather. Currently our roads are not constructed for this volume of traffic. We would need 2 lanes roads up & down the canyon (4 lanes all together) accommodate trucks. And Gross Dam Road would need to be improved – paved. Otherwise the air quality, due to dust in the air would be totally unacceptable. Think about who would want to live in the mountains & deal with poor air quality, constant construction noise & truck traffic. Those are some of the reasons we do not live in the Suburbs!* **Response #1165-5:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. Denver Water conducted a detailed haul route study in 2009 as part of the Federal Energy Regulatory Commission re-licensing application process. As part of this study, Denver Water evaluated industry criteria as defined by the American Association of State Highway and Transportation Officials (AASHTO) for adding a climbing lane to SH 72. Although implementing climbing lanes on SH 72 may not be warranted, AASHTO does provide alternatives for increased passing opportunities such as turnouts and shoulder use sections. Turnouts are more frequently used on low volume roads in difficult terrain with steep grades, such as SH 72.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
	constructed for this volume of traffic. We would need 2 lanes roads up & down the canyon (4 lanes all together) to accomidate trucks. And Gross Dam Road would need to be improved → paved. Other wise the air quality, due to dust in the air would be totally unacceptable. Think about who would want to live in the mountains & deal with poor air quality, constant construction noise & truck traffic. Those are some of the reasons we do not live in the Suburbs! Please you have the power to help preserve our community - find another way to supply water. Thank you. Again. Jennifer Strede Oh - and consider trucks on the road in winter conditions - ice & snow are super common for our roads, That is why we drive with 4 studded snow tires on ALL wheel drive vehicles. These roads are way more dangerous than I70 for instance - in snowy conditions. Please drive our canyon in snow. I speak truth	Developing new turn-outs or improving existing turn-outs is more feasible given the existing conditions along the stretch of SH 72 that would be used for construction access to Gross Reservoir. Denver Water met with CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns. ***Unique Comment #1165-6*** *(ID 5140)**:*** *Please you have the power to help preserve our community – find another way to supply water.* **Response #1165-6:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Unique Comment #1165-7*** *(ID 5139)**:*** *Oh – and consider trucks on the road in winter conditions – ice & snow are super common for our roads. That is why we drive with 4 studded snow tires on ALL wheel drive vehicles. These roads are way more dangerous that I70 for instance – in snowy conditions. Please drive our canyon in snow. I speak truth.* **Response #1165-7:** Denver Water would continue implementing their currently policy on snow removal on Gross Dam Road during construction.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1166 Nancy M. Gordon	[illegible]: FERC, Attn. Sec. Kimberly Bos., 888 First St. NE, Washington, DC 20426 and send a copy to Denver Water, Brian Gogas, Mail Code 415, 1600 W. 12th Ave., Denver, CO 80204 - Email: moffatproject@denverwater.org (Print) FROM: Nancy M. Gordon [redacted] Date: Feb 2, 2010 RECEIVED FEB 2010 REGARDING: Project #2035 **Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.** • NOT adequaely addressed in the DEIS- There is not the need for additional water supply, either now or in the future; Possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. • Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminents that action would bring into the existing supply. • Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: • poor air quality • any destruction of wildlife habitat • 24x7 noise pollution • any loss of recreational usage • dangerous construction traffic • probable pressure on volunteer firefighters • destroying road damage • delay of emergency medical for residents • Property values could be adversely affected for several years. • All outdoor activites could be restricted by compromised air and noise quality. • The DEIS does not assess the negative impacts on the local human population. • The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. • Dimished air quality and high decibel noise pollution 24x7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS. • The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. • urban sprawl and unwarranted commercial development downwater from the area • additional air pollution from expected urbanization in the area • increased traffic congestion on all existing Highway's surrounding the area • lowered quality of life for canyon residents as their rural community becomes urban • projected tool for proponents of the ByPass to promote its unwanted construction • Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice. Signature: Nancy M. Gordon February 2010 PAGE 35	***Unique Comment #1166-5*** *(ID 5143)**:*** *I would also like to express my concern as to the property values being greatly affected at the time you would be under construction. I live on [redacted] and that's where all the trucks would be driving to Gross Damn. If I were to put my home up for sale, due to the higher taxes and the loss of our senior tax break, the chance of someone even looking at a home on [redacted] would be 0 to none.* **Response #1166-5:** An expanded analysis of impacts to communities surrounding Gross Reservoir was included in FEIS Section 5.19, including an evaluation of impacts to property values. ***Unique Comment #1166-6*** *(ID 5142)**:*** *I will never understand why we here in Coal Creek Canyon have to give up our mountain living so people down below can build houses the size of hotels with lawns the size of Golf courses and speaking of Golf courses, I don't give a darn if they are called Browns instead of Greens. Most of what I feel is in the form letter that one of our articulate residents was kind enough to supply.* **Response #1166-6:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
	RECEIVED FEB 2010 N. M Gordon [redacted] Dear Mr. Franklin' I would also like to express my concern as to the property values being greatly affected at the time you would be under construction. I live on [redacted] and that's where all the trucks would be driving to Gross Damn. If I were to put my home up for sale, due to the higher taxes and the loss of our senior tax break, the chance of someone even looking at a home on [redacted] would be 0 to none. I will never understand why we here in Coal Creek Canyon have to give up our mountain living so people down below can build houses the size of hotels with lawns the size of Golf courses and speaking of Golf courses, I don't give a darn if they are called Browns instead of Greens. Most of what I feel is in the form letter that one of our articulate residents was kind enough to supply. Sincerely, Nancy M. Gordon 02/02/10	

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1168 Frank Skibinski	TO: FERC, Attn. Sec. Kimberly Bose, 888 First St. NE, Washington, DC 20426 and send a copy to Denver Water, Brian Gogas, Mail Code 415, 1600 W. 12th Ave., Denver, CO 80204 - Email: moffatproject@denverwater.org (Print) FROM: FRANK SKIBINSKI [redacted] Date: 2/15/2010 RECEIVED FEB 2010 REGARDING: Project #2035 **Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Here are just a few of the many important reasons this project should be denied.** • NOT adequacly addressed in the DEIS- There is not the need for additional water supply, either now or in the future; Possible urban sprawl, as justification for projected water shortages is not conclusive. One project will not serve to balance out the entire metro water supply. • Not justified in the DEIS is the depletion of the western rivers with the projected and unknown contaminents that action would bring into the existing supply. • Thousands of people will be impacted negatively and their personal safety will be put in jeopardy during this proposed Dam expansion project: • poor air quality • 24x7 noise pollution • dangerous construction traffic • destroying road damage • any destruction of wildlife habitat • any loss of recreational usage • probable pressure on volunteer firefighters • delay of emergency medical for residents • Property values could be adversely affected for several years. • All outdoor activites could be restricted by compromised air and noise quality. • The DEIS does not assess the negative impacts on the local human population. • The DEIS ignores the length of time an alpine environment takes to recover from any significant disturbance. The fragile nature of the high altitude ecosystems are dismissed and undervalued in the DEIS. • Dimished air quality and high decibel noise pollution 24x7 is projected in the DEIS, but deemed acceptable for the length of the project. This is yet another major flaw in the DEIS. • The long-term impacts of the project are not evaluated in the DEIS and therefore the proposed project cannot be properly assessed until those impacts are identified. • urban sprawl and unwarranted commercial development downwater from the area • additional air pollution from expected urbanization in the area • increased traffic congestion on all existing Highway's surrounding the area • lowered quality of life for canyon residents as their rural community becomes urban • projected tool for proponents of the ByPass to promote its unwanted construction • Unless and until a lawful and adequate DEIS is prepared and submitted for acceptance by the public, all action on this project should be stopped. The NO ACTION alternative is the only responsible and logical choice. Signature: Frank Skibinski February 2010 PAGE 35	***Unique Comment #1168-0*** *(ID 5144)**:*** *I am particularly concerned with the diminished air quality that this project will exacerbate. The increase in urbanization will increase pollution. The toll road that is certainly linked to this project in the mind of leadership in Jefferson County and Arvada will only add to that pollution. The geography of the area will concentrate the pollution. When there is an inversion of air mass over the front range, pollution sky rockets. It becomes trapped against the foothills. Think, Los Angeles basin! The Federal standards for ozone levels are exceeded every summer.* **Response #1168-0:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. A Corps' Section 404 Permit, if issued for one of the Moffat Environmental Impact Statement alternatives, will require that construction activities conform to Colorado State Air Quality standards.

Comment-Response Report (Not Adequately Form Letters)

Comment Information	Comment	Comments and Responses
	I am particularly concerned with the diminished air quality that this project will exacerbate. The increase in urbanization will increase pollution. The toll road that is certainly linked to this project in the mind of leadership in Jefferson County and Arvada will only add to that pollution. The geography of the area will concentrate the pollution. When there is an inversion of air masses over the front range, pollution sky rockets. It becomes trapped against the foothills. Think, Los Angeles basin! The Federal standards for ozone levels are exceeded every summer. Frank Skibinski	

References

Center of the American West. 1997. *Atlas of the New West*. A Project of the Center of the American West, University of Colorado. W. Riebsame, General Editor.

Nichols, P., M. Murphy, and D. Kenney. 2001. Summary Report: Water and Growth in Colorado, A Review of Legal and Policy Issues, and Most Frequently Asked Questions About Water in Growth in Colorado. Natural Resources Law Center, University of Colorado School of Law.

Riebsame, W.E. 1997. Western Land Use Trends and Policy: Implications for Water Resources. A Report to the Western Water Policy Review Advisory Commission.

United States Army Corps of Engineers (Corps). 1998. Final Environmental Impact Statement: Metropolitan Denver Water Supply EIS. Volume 1, p. 3-3. Omaha District.

Western Water Policy Review Advisory Commission. 1998. *Water in the West*: The Challenge for the Next Century. Prepared by A.D. Tarlock.

Not Adequately Modified Form Letters

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
NOT ADEQUATELY MODIFIED FORM LETTER — STANDARD		
[The Not Adequately Modified Standard Form Letter shown here on pages 1 and 2 was submitted by all the commenters listed below.] Comment #1713 Patti Kaminski	**REGARDING: Moffat Collection System Project #2035** **Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam.** **Below are just a few of the many important reasons this project should be denied.** Traffic Issues Traffic issues are a major issue and have not been adequately addressed and evaluated. All Semi-trailer trucks will experience crossing over the double yellow line into on-coming traffic at every hair pin turn or switchback. CDOT has no funds to modify the roadways sufficiently to eliminate this public risk. Road safety issues were deemed negligible in the DEIS, but even with the proposed mitigation-public fatalities could be expected, according to the report. Until traffic safety issues are addressed and mitigation plans created, FERC and the US Army Corps of Engineers should not grant the permit to Denver water. Topography of the landscape provides the natural barriers for adequate mitigation to be achieved, both on Hwy 72 and Gross Dam Road. Tree Removal The loss of 30,000 trees is a major, permanent impact that is not addressed in the DEIS. Tree removal is a major concern. The three tree removal options (helicopter, chipping and hauling, and incineration) have not been properly evaluated. From an environmental point of view, the fact that the land will be inundated with water is irrelevant. The destruction of 30,000 trees eliminates a huge "carbon sink." The "carbon footprint" of the entire project is ignored in the draft Environmental Impact Statement. The Army Corps of Engineers and FERC should reject Denver Water's application for permits until this is addressed. Noise Pollution: Diesel engines, rock crushing, a cement plant, a quarry, earth moving equipment, dynamite blasting, day and night at times, for 4 or more years. Noise pollution will be impossible to mitigate for miles surrounding the entire area and the statement by the Corps does not address mitigation of the noise impact. Long Term Impacts The entire project is contrary to the goals of FERC, Boulder County, and the National Forest Plan to maintain the land as "forested" and natural. FERC states that "The overall landscape characteristics around the reservoir should remain natural appearing, with limited human intervention." Fact: 30 acres will be permanently destroyed, above water level, plus the permanent quarry. According to Denver Water, the project will cause "major adverse long term impacts" to the surrounding area. The quarry at the edge of reservoir, which will not be reclaimed, is currently described as permanent and major. Western Slopes Rivers The river basins of the western slope that feed Gross Reservoir are already being depleted. The current DEIS as written fails to adequately address potential impacts to water quality on the	***Form Letter Comment #1740-1*** *(ID 2267)**:*** *Respectfully, this letter is to protest the proposed expansion of Gross Reservoir and Dam. Below are just a few of the many reasons this project should be denied.* **Response #1740-1:** Prior to making decisions on the proposed Moffat Collection System Project (Moffat Project or Project), the U.S. Army Corps of Engineers (Corps) will evaluate and consider the Project's environmental effects according to National Environmental Policy Act of 1969, as amended (NEPA). ***Form Letter Comment #1740-2*** *(ID 2266)**:*** *Traffic issues are a major issue and have not been adequately addressed and evaluated. All Semi-trailer trucks will experience crossing over the double yellow line into on-coming traffic at every hair pin turn or switchback. CDOT has no funds to modify the roadways sufficiently to eliminate this public risk. Road safety issues were deemed negligible in the DEIS, but even with the proposed mitigation-public fatalities could be expected, according to the report. Until traffic safety issues are addressed and mitigation plans created, FERC and the US Army Corps of Engineers should not grant the permit to Denver water. Topography of the landscape provides the natural barriers for adequate mitigation to be achieved, both on Hwy 72 and Gross Dam Road.* **Response #1740-2:** The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and the Board of Water Commissioners (Denver Water). A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction.

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
	Fraser River and throughout the Colorado River Basin. In assessing the impacts of the proposed project, the DEIS does NOT consider the impacts existing projects are already having on the streams and their resources. The Fraser River, one of the streams affected, is already showing signs of deterioration. If this project is allowed to be completed, 80% of the Fraser River will be diverted. This negative impact is expected to be permanent. It is the responsibility of the Army Corp of Engineers to ensure that effective mitigation is in place to protect the natural environmental and local communities who rely on the Upper Colorado Basin streams. Increasing the amount of water diverted from Colorado's already depleted streams and rivers without improving efficiency is a temporary fix for a serious long term problem. The Army Corp of Engineers should not permit the reservoir; it should make Denver Water go back to the drawing board with a plan to eliminate the shortfall through conservation. Conservation There is no need for additional water supply, either now or in the future as actual aggressive conservation efforts would eliminate any shortage, even in drought years. Denver Water customers have demonstrated in times of drought that they are capable of conserving water much more effectively then they are today. The shortfall is based on speculation models. The Corps should require that the data be updated in light of the current economic situation and current growth rate. The Army Corps of Engineers is mandated to examine reasonable, practical and common sense alternatives to the problem, including no action. The corps failed to do this because if failed to consider good conservation as an alternative, therefore the conclusion, that the best alternative is the maximum expansion of Gross reservoir, is invalid. The destructive and antiquated "build a bigger dam" approach to water supply is invalid. The Army Corps of Engineers should not permit the reservoir; it should make Denver Water go back to the drawing board with a plan to eliminate the shortfall through conservation. The No Action or Leyden Reservoir alternative should be chosen over expanding the Gross Dam Reservoir. Thank you for your time,	The Draft Environmental Impact Statements (DEIS) does not state that "CDOT has no funds to modify the roadways sufficiently to eliminate this public risk" and that fatalities are deemed as a negligible impact. DEIS Section 4.17.1.5 states: "The CDOT is responsible for maintenance of state highways. Total expenditures in CDOT's proposed 2008-2009 budget amount to about $1.3 billon (CDOT 2007). Over $382 million of that amount is allocated to system quality, which includes activities, programs and projects that maintain the function and aesthetics of the existing transportation infrastructure (CDOT 2007). This includes road surface treatments, local bridge maintenance, and other road maintenance. In addition to system quality expenditures, an additional $51 million is allocated to maintenance expenditures as part of safety and mobility expenditures. The Proposed Action would have a negligible effect on CDOT expenditures." Boulder County maintains Gross Dam Road (County Road 77S) from State Highway 73 to the railroad tracks. Denver Water currently maintains Gross Dam Road from the railroad track crossing to Flagstaff Road. During construction, Denver Water or its contractor would be responsible for maintaining all of Gross Dam Road. Denver Water would work with Jefferson and Boulder counties to address local traffic concerns. ***Form Letter Comment #1740-3*** *(ID 2265)**:*** *The loss of 30,000 trees is a major, permanent impact that is not addressed in the DEIS. Tree removal is a major concern. The three tree removal options (helicopter, chipping and hauling, and incineration) have not been properly evaluated. From an environmental point of view, the fact that the land will be inundated with water is irrelevant. The destruction of 30,000 trees eliminates a huge "carbon sink." The "carbon footprint" of the entire project is ignored in the*

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		draft Environmental Impact Statement. The Army Corps of Engineers and FERC should reject Denver Water's application for permits until this is addressed. **Response #1740-3:** Impacts from tree removal were addressed in the DEIS for transportation, air quality, noise, and visual resources, as well as for soils and biological resources. The effects of tree removal on noise were analyzed in DEIS Section 4.12.1. Impacts were assessed as temporary and moderate, and would be similar to other construction noise. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the U.S. Forest Service (USFS), Colorado State Forest Service, and Boulder County. Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of the Federal Energy Regulatory Commission (FERC) in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC.

Comment Information	Comment	Comments and Responses
		Greenhouse gas emissions from the Project have been estimated and incorporated in the summary tables of construction emissions presented in the Final Environmental Impact Statement (FEIS) Section 5.13. The calculations include on-road exhaust emissions from worker commuter vehicles, delivery trucks, and all other Project construction equipment. Detailed emission calculation spreadsheets and references are presented in FEIS Appendix I. Information about the carbon value of the trees at Gross Reservoir has been added to the vegetation analysis in FEIS Section 5.7. ***Form Letter Comment #1740-4*** *(ID 2264)**:*** *Diesel engines, rock crushing, a cement plant, a quarry, earth moving equipment, dynamite blasting, day and night at times, for 4 or more years. Noise pollution will be impossible to mitigate for miles surrounding the entire area and the statement by the Corps does not address mitigation of the noise impact.* **Response #1740-4:** All Gross Reservoir construction and operation activity would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the U.S. Environmental Protection Agency, as summarized in FEIS Table 5.14-1. Construction activities (e.g., tree removal, helicopters, concrete batch plant, and gravel pit) would not operate every day for 5 years. For example, tree removal is expected to take 6 to 8 months (DEIS Section 2.3.2.1), a majority of the quarry activity would take place prior to construction (DEIS Section 2.3.2.1), and blasting would likely take place at the end of the day. ***Form Letter Comment #1740-5*** *(ID 2263)**:*** *The entire project is contrary to the goals of FERC, Boulder County, and the National Forest Plan to*

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		maintain the land as "forested" and natural. FERC states that "The overall landscape characteristics around the reservoir should remain natural appearing, with limited human intervention." Fact: 30 acres will be permanently destroyed, above water level, plus the permanent quarry. According to Denver Water, the project will cause "major adverse long term impacts" to the surrounding area. The quarry at the edge of reservoir, which will not be reclaimed, is currently described as permanent and major. **Response #1740-5:** An additional mitigation measure has been added to FEIS Section 5.17.7 to address reclamation of the quarry site. The proposed quarry site would be primarily located on USFS land and therefore Denver Water would work closely with the USFS to ensure appropriate reclamation of this site and any alternative quarry sites. The Moffat Project is not contrary to FERC's regulations. Instead, the FERC's role is to license these very projects. As explained on the FERC website, "the Commission's responsibilities include: Issuance of licenses for the construction of a new project; Issuance of licenses for the continuance of an existing project (relicensing); and oversight of all ongoing project operations, including dam safety inspections and environmental monitoring." As part of Denver Water's FERC license, the USFS required and approved a Visual Resource Protection Plan (Article 414) and Recreation Management Plan (Article 416) to ensure for consistency with their objectives through long-term management and monitoring of the facilities and activities at Gross Reservoir. The USFS would review these Plans as part of the FERC license amendment process and can required additional mitigation, if needed, for the Moffat Project.

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		The Moffat Project is not contrary to Boulder County regulations. The land use contemplated by the Moffat Project is included in Boulder County's current zoning at and around Gross reservoir. One of the uses contemplated under a "forestry" zoning is "water reservoirs." The Moffat Project is also not contrary to the overall goals of the USFS Forest Plan. Gross Reservoir is recognized in the Arapaho & Roosevelt National Forests Resource Management Plan within the Thorodin Geographic Area. The Moffat Project is consistent with the overall management objectives in this area (refer to DEIS Section 4.14.1.1). ***Form Letter Comment #1740-6*** *(ID 2262)**:*** *The river basins of the western slope that feed Gross Reservoir are already being depleted. The current DEIS as written fails to adequately address potential impacts to water quality on the Fraser River and throughout the Colorado River Basin. In assessing the impacts of the proposed project, the DEIS does NOT consider the impacts existing projects are already having on the streams and their resources. The Fraser River, one of the streams affected, is already showing signs of deterioration. If this project is allowed to be completed, 80% of the Fraser River will be diverted. This negative impact is expected to be permanent. It is the responsibility of the Army Corp of Engineers to ensure that effective mitigation is in place to protect the natural environmental and local communities who rely on the Upper Colorado Basin streams. Increasing the amount of water diverted from Colorado's already depleted streams and rivers without improving efficiency is a temporary fix for a serious long term problem. The Army Corp of Engineers should not permit the reservoir; it should make Denver Water go back to the drawing board with a plan to eliminate the shortfall through conservation.*

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		Response #1740-6: The DEIS considered the impacts of existing projects on streams and resources in the presentation of the affected environment in DEIS Chapter 3. The current state of resources within the affected study area, including to water quality and temperature, aquatic biological resources, geomorphology, etc., are a function of existing diversions, infrastructure, operations and river administration, not the proposed Moffat Project. For example, data on fish specifies and populations, habitat, and benthic macroinvertebrate population and density presented in DEIS Section 3.9 is a reflection of impacts of the existing Moffat Collection System on aquatic biological resources in the Fraser River Basin. The environmental effects of diversions due to the Moffat Project are presented in FEIS Chapters 4 and 5. Additional water quality analysis was performed for the Fraser River and Colorado River. Please see FEIS Sections 4.6.2 and 5.2. Additional diversions attributable to the proposed Moffat Project were evaluated and the associated environmental effects were generally determined to be minimal to moderate depending on the resource. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. Denver Water is not responsible for mitigating for the effects of reasonably foreseeable future actions since they are not caused by the Moffat Project. Water conservation is part of the solution for meeting Denver Water's near time water supply shortfall. Almost half (i.e., 16,000 acre-feet per year [AF/yr]) of the identified supply short-fall would be met with additional conservation savings. Denver Water plans to reduce its demand by 16,000 AF/yr by 2032 with additional conservation measures, which are anticipated to achieve long-term sustainable reductions in water use. An independent review of the

Comment Information	Comment	Comments and Responses
		projected conservation savings of 16,000 AF/yr was conducted as part of the Environmental Impact Statement analysis. Even though Denver Water is not required by any regulations to implement conservation, Denver Water is relying upon these future savings in its demand projections to calculate the need for 18,000 AF/yr of new yield. Refer to FEIS Sections 1.4.1.2 and 1.4.3.1 and Appendix A for a discussion of Denver Water's conservation efforts. ***Form Letter Comment #1740-7*** *(ID 2261)**:*** *There is no need for additional water supply, either now or in the future as actual aggressive conservation efforts would eliminate any shortage, even in drought years. Denver Water customers have demonstrated in times of drought that they are capable of conserving water much more effectively than they are today. The shortfall is based on speculation models. The Corps should require that the data be updated in light of the current economic situation and current growth rate. The Army Corps of Engineers is mandated to examine reasonable, practical and common sense alternatives to the problem, including no action. The corps failed to do this because if failed to consider good conservation as an alternative, therefore the conclusion, that the best alternative is the maximum expansion of Gross reservoir, is invalid. The destructive and antiquated "build a bigger dam" approach to water supply is invalid. The Army Corps of Engineers should not permit the reservoir; it should make Denver Water go back to the drawing board with a plan to eliminate the shortfall through conservation.* **Response #1740-7:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in the DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 acre-feet (AF) of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings.

Comment-Response Report (Not Adequately Modified Form Letters)

Comment Information	Comment	Comments and Responses
		Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22 percent (%) by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Water Supply Demand Changes Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from Denver Regional Council of Governments, Colorado Department of Local Affairs, or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Form Letter Comment #1740-8*** *(ID 2260)**:*** *The No Action or Leyden Reservoir alternative should be chosen over expanding the Gross Dam Reservoir.* **Response #1740-8:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

References

Colorado Department of Transportation (CDOT). 2007. Proposed Budget for Fiscal Year 2008-2009. November 14.

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Online Petition Form Letters

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
ONLINE PETITION FORM LETTER — STANDARD		
[The Online Petition Standard Form Letter shown here on pages 1 through 64 was signed by all the commenters listed below.] Comment #1780 Joel DeJong Comment #1782 Matt Debus Comment #1785 Camille Egdorf Comment #1787 Jessica Helsley Comment #1788 Craig Oberlink Comment #1790 Kaitlyn Parsons Comment #1794 Stephanie Wippel Comment #1795 Meredith Switzer Comment #1796 Andrew Maddox Comment #1797 Lisa Reaves Comment #1798 Sunny Bourdon	Scott Franklin, US Army Corps of Engineers I am writing to you because I am concerned about the potential impacts of the proposed Moffat Collection System Project on water quality, fisheries, and the overall health of the Upper Colorado River Basin. The Colorado River and its tributaries, such as the Fraser River, provide valuable habitat and recreational opportunities that are central to Colorado's economy and quality of life. The current DEIS (Draft Environmental Impact Statement), as written, fails to: - Adequately address potential impacts to water quality on the Fraser River and throughout the Colorado River Basin; - Include an analysis of the impacts that will result from diminished flushing and channel maintenance flows. If the project is to move forward, periodic peak flows that mimic those flows that normally result from spring runoff must be a condition of the permit; - Fully consider and recognize the cumulative impacts of the Moffat system's existing and proposed diversions and expansions that alter flow regimes throughout the Upper Colorado Basin. For example, in assessing the impacts of the proposed project, the DEIS does not consider the impacts existing projects are already having on the streams and their resources. Some of the streams affected, including the Fraser River, are already showing signs of deterioration. Will the additional diversions push the stream to a point where it can no longer sustain its fisheries? The DEIS does not ask the question, much less analyze or provide contingencies for that possibility; - Use data that provides an accurate baseline from which to measure real impacts rather than a projected baseline several years into the future that may not reflect real-world conditions; - Provide adequate mitigation requirements as conditions of any approved permit; - Ensure that Denver Water and its customers exhaust all measures to improve water conservation and efficient use of existing resources, including better integration of water deliveries throughout the area served by Denver water and an adequate program to reduce residential outdoor use. *Page 3*	***Form Letter Comment #1776-7*** *(ID 3648)**:*** *I am writing to you because I am concerned about the potential impacts of the proposed Moffat Collection System Project on water quality, fisheries, and the overall health of the Upper Colorado River Basin.* **Response #1776-7:** Prior to making decisions on the proposed Moffat Collection System Project (Moffat Project or Project), the U.S. Army Corps of Engineers (Corps) will evaluate and consider the Project's environmental effects according to National Environmental Policy Act of 1969, as amended (NEPA). ***Form Letter Comment #1776-6*** *(ID 3647)**:*** *The Colorado River and its tributaries, such as the Fraser River, provide valuable habitat and recreational opportunities that are central to Colorado's economy and quality of life. The current DEIS (Draft Environmental Impact Statement), as written, fails to: Adequately address potential impacts to water quality on the Fraser River and throughout the Colorado River Basin.* **Response #1776-6:** Additional water quality analysis was performed for the Fraser River and the Colorado River. Please refer to Final Environmental Impact Statement (FEIS) Sections 4.6.2 and 5.2. ***Form Letter Comment #1776-5*** *(ID 3646)**:*** *Include an analysis of the impacts that will result from diminished flushing and channel maintenance flows. If the project is to move forward, periodic peak flows that mimic those flows that normally result from spring runoff must*

Comment Information	Comment	Comments and Responses
Comment #1799 Christen Ibarra Comment #1800 Kevin Lewis Comment #1802 Lisa Connell Comment #1806 Mervi Rantala Comment #1811 Craig Crumbliss Comment #1812 Alex Doherty Comment #1813 Carol McNamee Comment #1815 Cathy Stahl Comment #1816 John Bradley Comment #1818 April Storm Comment #1819 Justin Storm Comment #1820 Brenda Bolei Comment #1821 Michelle Petersen	It is the responsibility of the US Army Corps of Engineers to ensure that effective mitigation is in place to protect the habitat, wildlife and local communities that rely on the Upper Colorado Basin streams. Increasing the amount of water diverted from Colorado's already depleted streams and rivers without improving efficiency is at best a temporary fix for a serious long-term problem. I urge you to work, in partnership with Denver Water and community stakeholders, to find a solution that will both allow the city to meet its municipal needs and ensure the continued existence of one of our most beloved rivers. **Name** **From** **Comments** 1. Sinjin Eberle [redacted] To whom it may concern: Further reducing the Frasier and Upper Colorado's flows is unacceptable, especially without further Front Range conservation efforts. The cities of Broomfield, Loveland, and Longmont must come to grips with conservation as part of their broad water use planning - conservation can easily offset the amount of water that this project would supply. I strongly encourage you to choose conservation over a dry Colorado River! Sincerely, Sinjin Eberle Denver 2. Travis Rummel [redacted] Please educate Front Range Water Users on the huge capacity of conservation for our water supply BEFORE draining west slope rivers. 3. Justin Clifton [redacted] Rather than continuing to drain our rivers, more stringent water conservation measures must be enacted on the front range and the rest of the Western US. Without an eye toward conservation, no further water development rights should be granted by the citizens of Colorado. Justin Clifton, Telluride, CO 4. Joel DeJong [redacted] 5. Julia Kintsch [redacted] Water is not an unlimited resource and users in the Front Range and elsewhere must be educated, provided with conservation incentives, and pay the real cost of the water being piped diretly to our homes and businesses. Short-term fixes that deplete West Slope flows without such measures do not address the problem and are destructive both ecologically and economically. Please be sure to recognize the full-impacts of any plan being *(continues on next page)* *Page 4 - Signatures 1 - 5*	*be a condition of the permit.* **Response #1776-5:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cubic feet per second (cfs) versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7 percent (%). At the Fraser River below the confluence with Crooked Creek, which is downstream of all Board of Water Commissioner's (Denver Water's) diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1823 Janet Hickox Comment #1824 Richard Steineck Comment #1825 Heather Green Comment #1826 David E. Harris Comment #1827 Jessica Dunn Comment #1829 Shawna Yaussi Comment #1830 Valerie Steineck Comment #1831 Guy Larson Comment #1833 Lauren Burton Comment #1835 Keith Fuqua Comment #1840 Martin Lade Comment #1841 Rewalt Rakestraw Comment #1842 Diane Howell		the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, Indicators of Hydrologic Alteration (IHA) was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way (ROW) agreements with the U.S. Forest Service (USFS). FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity

	Name	From	Comments
5.	Julia Kintsch	[redacted]	*(continued from previous page)* considered and integrate conservation measures at every opportunity.
6.	matt debus		
7.	Karen Sanchez		I feel it is very important not to continue throwing water at one problem and not looking at the problem that will cause down river. The front range needs to have trees, plants and grass that are natural to the area and stop using so much water.
8.	Tim Cleaver		Why don't you meet the 18,000 acre-foot shortfall by cracking down on water waste instead of destroying the one thing that I love the most about Colorado.
10.	Camille Egdorf		
11.	Andrea West		I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado River Basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.
12.	Jessica Helsley		
13.	Craig Oberlink		
14.	David Konigsberg		We need to protect our rivers for the future generation.
15.	Kaitlyn Parsons		
16.	Christopher Jeans		As an outdoors man who enjoys spending time in the mountains, I oppose putting streams at risk. As a Denver resident, I realize that there is much that can be done on the conservation front that will reduce the need in Denver and other growing front range cities.
17.	Phil gamache		I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado River Basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.
18.	Candy Bening		Let's protect our rivers for our children
19.	Stephanie Wippel		
20.	Meredith Switzer		
21.	Andrew Maddox		
22.	Lisa Reaves		
23.	Sunny Bourdon		
24.	Christen Ibarra		
25.	Kevin Lewis		

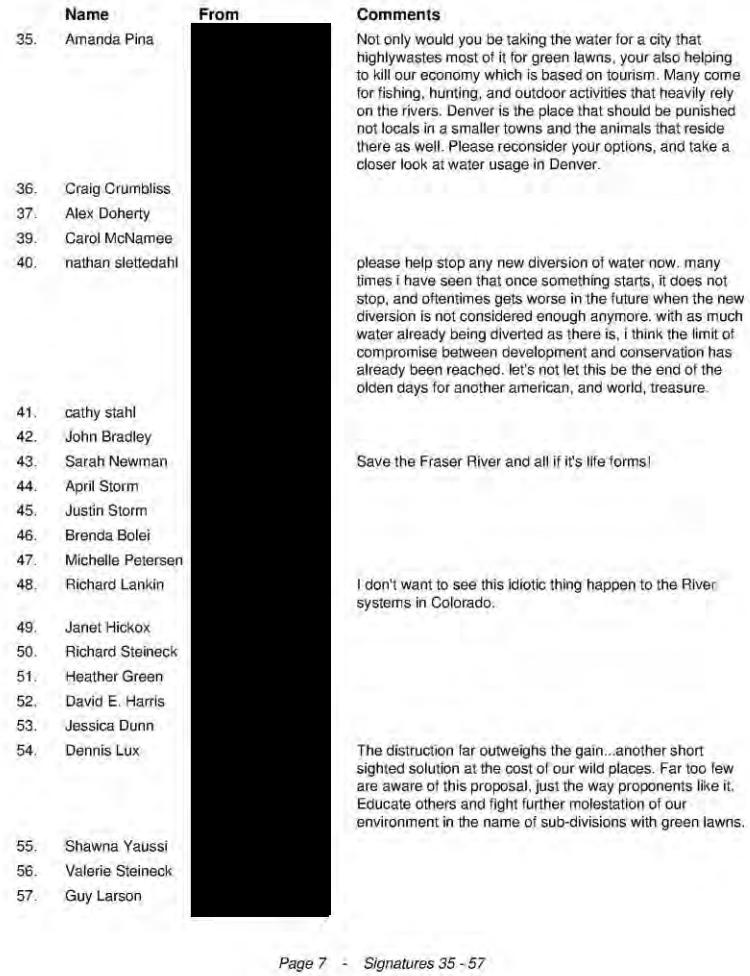
Page 5 - Signatures 5 - 25

Comment Information	Comment	Comments and Responses
Comment #1845 Gary Key Comment #1848 Carol Ann Thompson Comment #1849 Cathy O'She Comment #1852 Angela Viola Comment #1858 James Wardzinski Comment #1859 Alyson Oliver Comment #1861 Joy Elliott Comment #1862 Richard McReynolds Comment #1864 Kajsa Wiberg Comment #1865 Betsy deVries Comment #1867 Michelle Russell Comment #1868 Stephen Cormey Comment #1870 Morgan Mallard		analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the Draft Environmental Impact Statement (DEIS) and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the preferred alternative. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Form Letter Comment #1776-4*** *(ID 3645)**:*** *Fully consider and recognize the cumulative impacts of the Moffat system's existing and proposed diversions and expansions that alter flow regimes throughout the Upper Colorado Basin. For example, in assessing the impacts of the proposed project, the DEIS does not consider the impacts existing projects are already having on the streams and their resources. Some of the streams affected, including the Fraser River, are already showing signs of deterioration. Will the additional diversions push the stream to a point where it can no longer sustain its fisheries? The DEIS does not ask the question, much less analyze or provide contingencies for that possibility.*

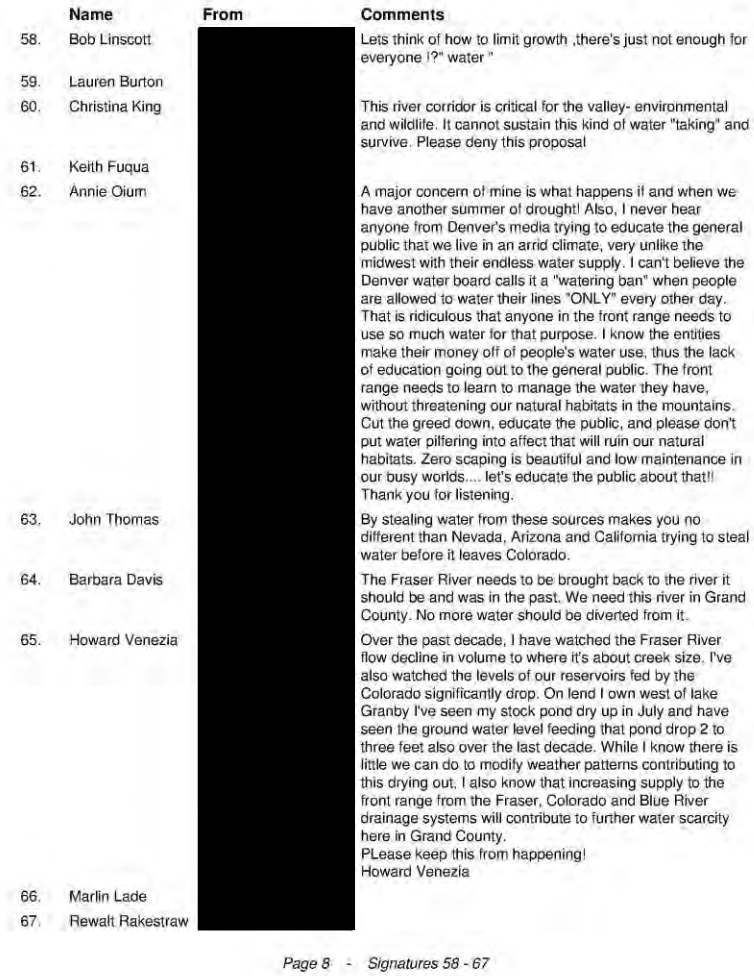
	Name	From	Comments
26.	kevin fantz	[redacted]	I visit Colorado every year to enjoy the beautiful scenery and recreational opportunities of the rivers from may to september. Flatlining the Fraser will result in habitat destruction as well as a loss of eco-tourism in the continental divide communities. Conservation and education must supercede this terrible plan to divert even more water out of its native drainage and into the moffat tunnel. Mahalo, Kevin Fantz
27.	Lisa Connell		
28.	Michael Kirkpatrick		As a resident of the Front Range, I will do all in my power to reduce the usage of water in my household.
29.	Marrtin Elmore		You must abandon this project until: Denver and other Front Range cities remove and replace their ancient metering systems; alter their pricing structures for water; and, establish a meaningful, enforceable fine system for those people who think sprinkled water actually soaks into the ground and stays there in our climate.
30.	Evan Jones		I was born and raised in Colorado (5th generation) and spent all but the last two years of my life there. As an avid angler and outdoorsman, I am outraged that green lawns in Denver take precedence over healthy native ecosystems. Don't let the misguided wants of a few trump the needs of the rest.
31.	Mervi Rantala		
32.	Brock McCormick		I do not believe that Denver Water and front range communities have thoroughly explored options involving water conservation that not only encourage, but require smart and efficient water use. Water conservation is a common sense solution that will not jeopardize the health of our west slope rivers.
33.	Nancy Orr		Water conservation should be the first step in accommodating the water needs of an expanding population. No diversion projects should even be considered until water pricing is altered to reflect the true cost of water use.
34.	Andrew Brachle		The Colorado River is the most important river in the Western United States. We need this river for the health and prosperity of the West. The Colorado River provides recreation, wildlife, tourism, life, power, water, economic, and multiple other positive, tangible benefits for everyone as a mostly free flowing river. Lets keep it as natural as possible.

Page 6 - Signatures 26 - 34

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1871 Melinda Lorens Comment #1872 Angeline Crowder Comment #1873 Kathy Jameson Comment #1875 Kathe Brenay Comment #1876 Sharon Gill Comment #1877 Ian Morlock Comment #1878 John Monkouski Comment #1879 Sue Stratton Comment #1880 Mary Pilbin Comment #1882 A. Warren Floyd Comment #1883 Scott Brooks Comment #1884 Steve Etten Comment #1885 Barton Combs	 Name / From / Comments 35. Amanda Pina — Not only would you be taking the water for a city that highlywastes most of it for green lawns, your also helping to kill our economy which is based on tourism. Many come for fishing, hunting, and outdoor activities that heavily rely on the rivers. Denver is the place that should be punished not locals in a smaller towns and the animals that reside there as well. Please reconsider your options, and take a closer look at water usage in Denver. 36. Craig Crumbliss 37. Alex Doherty 39. Carol McNamee 40. nathan slettedahl — please help stop any new diversion of water now. many times i have seen that once something starts, it does not stop, and oftentimes gets worse in the future when the new diversion is not considered enough anymore. with as much water already being diverted as there is, i think the limit of compromise between development and conservation has already been reached. let's not let this be the end of the olden days for another american, and world, treasure. 41. cathy stahl 42. John Bradley 43. Sarah Newman — Save the Fraser River and all if it's life forms! 44. April Storm 45. Justin Storm 46. Brenda Bolei 47. Michelle Petersen 48. Richard Lankin — I don't want to see this idiotic thing happen to the River systems in Colorado. 49. Janet Hickox 50. Richard Steineck 51. Heather Green 52. David E. Harris 53. Jessica Dunn 54. Dennis Lux — The distruction far outweighs the gain...another short sighted solution at the cost of our wild places. Far too few are aware of this proposal, just the way proponents like it. Educate others and fight further molestation of our environment in the name of sub-divisions with green lawns. 55. Shawna Yaussi 56. Valerie Steineck 57. Guy Larson *Page 7 - Signatures 35 - 57*	**Response #1776-4:** Past Actions The Council on Environmental Quality interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the Platte and Colorado Simulation Model (PACSM) to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1886 Steven Stratton Comment #1887 Jim MacDonald Comment #1889 Sam Talbert Comment #1891 Amy Miller Comment #1892 James Cartwright Comment #1893 Gloria Mallard Comment #1894 Jesse McWilliams Comment #1895 Yaniv Salzberg Comment #1896 Jefferson Bailey Comment #1898 William Soles Comment #1899 Lynn Kendall Comment #1900 Lisa Nagy Comment #1901 Gertie Okan	 Name / From / Comments 58. Bob Linscott — Lets think of how to limit growth ,there's just not enough for everyone !?" water " 59. Lauren Burton 60. Christina King — This river corridor is critical for the valley- environmental and wildlife. It cannot sustain this kind of water "taking" and survive. Please deny this proposal 61. Keith Fuqua 62. Annie Oium — A major concern of mine is what happens if and when we have another summer of drought! Also, I never hear anyone from Denver's media trying to educate the general public that we live in an arrid climate, very unlike the midwest with their endless water supply. I can't believe the Denver water board calls it a "watering ban" when people are allowed to water their lines "ONLY" every other day. That is ridiculous that anyone in the front range needs to use so much water for that purpose. I know the entities make their money off of people's water use, thus the lack of education going out to the general public. The front range needs to learn to manage the water they have, without threatening our natural habitats in the mountains. Cut the greed down, educate the public, and please don't put water pilfering into affect that will ruin our natural habitats. Zero scaping is beautiful and low maintenance in our busy worlds.... let's educate the public about that!! Thank you for listening. 63. John Thomas — By stealing water from these sources makes you no different than Nevada, Arizona and California trying to steal water before it leaves Colorado. 64. Barbara Davis — The Fraser River needs to be brought back to the river it should be and was in the past. We need this river in Grand County. No more water should be diverted from it. 65. Howard Venezia — Over the past decade, I have watched the Fraser River flow decline in volume to where it's about creek size. I've also watched the levels of our reservoirs fed by the Colorado significantly drop. On lend I own west of lake Granby I've seen my stock pond dry up in July and have seen the ground water level feeding that pond drop 2 to three feet also over the last decade. While I know there is little we can do to modify weather patterns contributing to this drying out, I also know that increasing supply to the front range from the Fraser, Colorado and Blue River drainage systems will contribute to further water scarcity here in Grand County. PLease keep this from happening! Howard Venezia 66. Marlin Lade 67. Rewalt Rakestraw *Page 8 - Signatures 58 - 67*	Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. Tipping Point The Corps is not aware of a scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. The direct impact discussion for aquatic resources (DEIS Section 4.9) identifies minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the

Comment Information	Comment	Comments and Responses
Comment #1903 Cindie Drake Comment #1904 Sarah Sutherland Comment #1905 Vickye Fischer Comment #1906 Terry Tompkins Comment #1907 Stacey Parker Comment #1909 Joan Newhouse Comment #1910 Cindy McAdow Comment #1911 Sheila Ducharme Comment #1912 Eibhlhin Mahoney Comment #1913 Colette McDonald Comment #1914 Marian Waldron Comment #1915 Alyssa Vance Comment #1917 Nell Weisbach		average winter flows and always higher than the minimum flow. ***Form Letter Comment #1776-8*** *(ID 5383)**:*** *Use data that provides an accurate baseline from which to measure real impacts rather than a projected baseline several years into the future that may not reflect real-world conditions.* **Response #1776-8:** The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other reasonably foreseeable future actions based on a comparison of the following scenarios. • Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 acre-feet per year (AF/yr). • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other reasonably foreseeable future actions. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of the Existing System reflects the best

	Name	From	Comments
68.	Diane Howell	[redacted]	
69.	Jeffrey L. Browne		The water that the Denver Water Board is currently taking from the Fraser Valley has done irreparable damage. To take more water is unconscionable. Transbasin diversions came about around the 1920's. It's time that thinking people decide upon new regulations that will not destroy the West Slope environment.
70.	Hugh Auchincloss		Once again, special interest groups fail to see the big picture, hence the name "special interest". It is in everyone's interest to recognize that all living organisms belong to something called an eco-system. All eco-systems are made up of realtionships between these organisms. Our species must stop pretending that we have the right to manipulate and exploit these relationships for the sake selfish and greedy agendas. Please leave what is left of the Fraser River eco-system intact. We must all learn to do more with less, not only for our sake, but especially for future generations.
71.	Gary Key		
72.	Cheryl Key		Please do not do this! The impact would be horrific to our environment, economics and tourism! Thank you
73.	Richard Talley		The scenic and recreational attractivenss of Grand County has already been compromised by the mountain pine beetle infestation. To further deplete the Fraser and Colorado rivers for the needless watering of high maintenance lawns and water attractions along the front range is unconscionable.
74.	Carol Ann Thompson		
75.	Cathy O'She		
76.	Kevin Davlin		
77.	Angela Viola		
78.	Robert King		The flow levels are already low!!
79.	Lucinda Carpenter		Please pay close attention to my and everyone else's voice pleading for our rivers. Please do not divert!!
80.	Kelvin Harding		Some of the reasons for visiting the area are the amenities offered by the Fraser River and the Upper Colorado. To syphon this off to feed lawn sprinklers is both wasteful and, arguably, is nothing short of criminal. Denverites should conserve rainfall, snow melt waters, and "grey" waters to supply their needs.
81.	Marianne Minor		Please encourage water conservation on the front range so our pristine mountain environments are not altered due to taking water.

Page 9 - Signatures 68 - 81

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1919 Juanita Madole Comment #1921 Richard Samuelson Comment #1922 Sarah Chabot Comment #1923 Neal Sands Comment #1924 Susan Stone Comment #1925 Lance Gutersohn Comment #1926 Jessica Waldron Comment #1927 Neili Tibbs Comment #1928 Robert Williams Comment #1930 Kim Rees Comment #1932 James Hogan Comment #1933 Gale Delphia Comment #1934 Monica Anderson	**Name** / **From** / **Comments** 82. Lisa Wehunt — [redacted] — Robbing the natural resource that feed an environmental system is not acceptable. Managing our uses and downstream conservation will help to preserve the sources that ecosystems rely on. This watershed is not ours to squander. We expect more intelligence and foresight. 83. James Wardzinski 84. Alyson Oliver 85. Wm. Bruce Laurie — Having lived in the Fraser Vally for many years and still frequent the area often, I believe it is imperative to maintain water flows not only for the sake of fish and animal conservation but to help protect the natural beauty of the area. Sincerely, Dr. W. Bruce Laurie 86. Joy Elliott 87. richard mcreynolds 88. Colleen Nance — There is enough water for all - if we are thoughtful of each other and don't just think of our own immediate wants (which aren't always our needs). We are the keepers of our eco system. We can't fall down on our job. Each of us needs to do our part. 89. Kajsa Wiberg 90. Betsy deVries 91. maura mcknight — we all need to start thinking globally and responsibly...if you live in the arid west, you need to be a leader in water conservation, whether or not we are in a drought period. americans are well known for our wasteful practices, let's change that!!! 92. Michelle Russell 93. Stephen Cormey 94. Dena Jones — There needs to be more focus on conservation - the Fraser River has already been diverted too much!!! In the 18 years I have lived in the Fraser Valley, I have seen very detrimental changes to this valuable resource. The depletion of this resource needs to be stopped. 95. Morgan Mallard 96. Melinda Lorens 97. angeline crowder 98. Kathy Jameson 99. Rick White — The Fraser River is already on an endangered river list and taking more water could make it even worse. Several groups in Grand County have come up with good ideas on water mitigation. If Denver Water works with these groups *(continues on next page)* 	available projections of demand and supply consistent with current standards of water resource planning. Full Use of the Existing System includes reasonably foreseeable future actions including growth in Denver Water's average annual demand to 345,000 AF/year, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Form Letter Comment #1776-3*** *(ID 3643)**:*** *Provide adequate mitigation requirements as conditions of any approved permit.* **Response #1776-3:** Please see the response to Comment Identification (ID) 3641. ***Form Letter Comment #1776-2*** *(ID 3642)**:*** *Ensure that Denver Water and its customers exhaust all measures to improve water conservation and efficient use of existing resources, including better integration of water deliveries throughout the area served by Denver water and an adequate program to reduce residential outdoor use.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1935 Lynn Bellatty Comment #1936 Ryan Anderson Comment #1937 Doug Bellatty Comment #1938 Glo Cowan-Starks Comment #1940 Maggie Keller Comment #1942 Courtney Peterson Comment #1945 Emily Mallard Comment #1946 Robert Dillon Comment #1948 Derek Miller Comment #1951 John Young Comment #1954 Justin Bridge Comment #1955 Joni Wyse Comment #1956 John Zander		**Response #1776-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to

	Name	From	Comments
99.	Rick White	[redacted]	*(continued from previous page)* instead of just doing as they please everyone is a winner. If they take the easy way out and take the water with no mitigation the people and wild life of Grand County lose big.
100.	Kathe Brenay		
101.	sharon gill		
102.	ian morlock		
103.	John Monkouski		
104.	sue stratton stratton		
105.	Mary Pilbin		
106.	David Clark		This needs top be resolved in an equitable manner for both sides!!
107.	A Warren Floyd		
108.	scott brooks		
109.	Steve Etten		
110.	BARTON COMBS		
111.	steven stratton		
112.	Jim MacDonald		
113.	Kay Rhoads Don Rhoads		The Fraser River is one of the greatest assets to Grand County. Please so nothing else to decrease its impact on the lives of those who live here. Don and Kay Rhoads
114.	Sam Talbert		
115.	michael sussman		Neither the Frasier river nor any of the other feeder rivers of the Colorado, shold be considered an endless resource for the city of Denver.
116.	Amy Miller		
117.	James Cartwright		
118.	Gloria Mallard		
119.	jesse mcwilliams		
120.	Yaniv Salzberg		
121.	Jefferspn Bailey		For more impact, add a personal comment here
122.	Tracie Martin		Need to restrict landscaping to natural grasses and flowers found in Colorado (most are drought tolerant). Need to change laws for golf courses to eliminate the use of high watering grasses like kentucky blue grass.
123.	william soles		william soles
124.	Lynn Kendall		
125.	Lisa Nagy		

Page 11 - Signatures 99 - 125

Comment Information	Comment	Comments and Responses
Comment #1957 Denise Zander Comment #1958 Vicki Key Comment #1959 Dan Heinze Comment #1960 Craig Kobe Comment #1961 Mara Pacyga Comment #1963 Meara Michel Comment #1964 Hal Jaeke Comment #1965 Laurie Hedgecock Comment #1966 Mike Sherman Comment #1967 Nancy Groswold Comment #1968 Laura Cleveland Comment #1971 Mike Lohman Comment #1972 Connie Grandinetti		fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Form Letter Comment #1776-1*** *(ID 3641)**:*** *It is the responsibility of the US Army Corps of Engineers to ensure that effective mitigation is in place to protect the habitat, wildlife and local communities that rely on the Upper Colorado Basin streams. Increasing the amount of water diverted from Colorado's already depleted streams and rivers without improving efficiency is at best a temporary fix for a serious long-term problem. I urge you to work, in partnership with Denver Water and community stakeholders, to find a solution that will both allow the city to meet its municipal needs and ensure the continued existence of one of our most beloved rivers.* **Response #1776-1:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.

	Name	From	Comments
126.	Gertie Okan	[redacted]	
127.	David Hajicek		This problem is only going to get worse. Long term thinking is needed, not fancy lawns.
128.	Cindie Drake		
129.	Sarah Sutherland		
130.	vickye fischer		
131.	Terry Tompkins		
132.	Stacey Parker		
133.	Mary Ann Groswold		The Fraser River is very important to those of us who live up here. It is also very important to the local economy. PLEASE DO NOT TAKE ANY MORE WATER FROM THE FRASER RIVER!
134.	Joan Newhouse		
135.	Cindy McAdow		
136.	sheila ducharme		
137.	Eibhlhin Mahoney		
138.	colette McDonald		
139.	Marian Waldron		
140.	Alyssa Vance		
141.	Bruce Walker		Please do not squander our resources.
142.	Nell Weisbach		
143.	Chris Braaf		Front range communities need to actively conserve water. We, on the west slope do conserve with what little water we have now. Please help us.
144.	Juanita Madole		
145.	Mara Erlandson		Take the money it would cost you to do this project and educate all of the people in Colorado on how to conserve water. This is not a problem that will go away but only continue to get worse if we as a people do not change our habits.
146.	Richard Samuelson		
147.	Sarah Chabot		
148.	Neal Sands		
149.	Susan Stone		
150.	lance gutersohn		
151.	Jessica Waldron		
152.	Neili Tibbs		
153.	Robert Williams		

Page 12 - Signatures 126 - 153

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1976 Denise OConnell Comment #1977 Betsy Lyle Comment #1978 Robert Borberg Comment #1980 Adam Sand Comment #1981 Sybil Miller Comment #1982 Jill Tallal Comment #1983 Tim Carter Comment #1984 Dave Turner Comment #1985 Janie Barillari Comment #1986 Kristina Nesbitt Comment #1987 Kari O'Connor Comment #1988 Amy Fox Comment #1989 Simon Levett		

	Name	From	Comments
154.	Rudy Perez	[redacted]	Any further drain of these tributaries will seriously impact the entire life of the river, STOP NOW!
155.	kim rees		
156.	Patricia Alander		People on the Front Range have a long way to go with water conservation before there should be any thought of taking more water from the Fraser River. I live on the North Fork of the Colorado River and have seen fish stranded after the call for water - there's not enough water left in the river for them to swim.
157.	James Hogan		
158.	Gale Delphia		
159.	Monica Anderson		
160.	Lynn Bellatty		
161.	Ryan Anderson		
162.	Doug Bellatty		
163.	Glo Cowan - Starks		
164.	Dennis Saffell		I have lived in the Fraser River Valley for 28 years. The river continues to be abused by Denver Water. It is affecting our economy, our ecology and our ability to live in the Fraser River Valley. Plain old common sense says that if you dry up a river you will destroy the life around it. STOP TAKING WATER OUT OF THE FRASER RIVER!
165.	Maggie Keller		
166.	David Garamella		please save the Fraser....it's worth it!
167.	Courtney Peterson		
168.	Doug Smith		Please stop taking water out of our valley!
169.	Zia Koch		Water is life
170.	Emily Mallard		
171.	Robert Dillon		
172.	Dede Fay		Time to re-think how we treat water flows in Colorado
173.	Derek Miller		
174.	Kerri Smith		Please save our water supply. People who live in Denver do not need lawns. Conservation is crucial next to population control of humans and our pets. Thank you, Kerri Smth
175.	Cyndie Saffell		Denver Water Board MUST set an expample for other entities in Colorado by leading in water conservation within the city. By executing laws that establish size of lawn to be watered based on homesite size or square footage of *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1991 Tim Flaherty Comment #1992 Carrie Valan Comment #1993 Phuong Cronin Comment #1995 Debra DeRee Comment #1996 Sonja Braun-Sand Comment #1999 BJ Duffy Comment #2001 David Sanders Comment #2004 Michael Penney Comment #2006 Evan Deis Comment #2007 William Hardardt Comment #2009 Shelby White Comment #2011 Adrianne Potter Comment #2012 Shari Burkhalter		

	Name	From	Comments
175.	Cyndie Saffell	[redacted]	*(continued from previous page)* home and requiring the balance to be xeriscaped would saves millions of gallons for now and the future. Denver Water Board MUST repair the leaking water canals and MUST cover them which would considerably reduce evaporation. Get a clue Denver!! The west can no longer WASTE it's valuable water systems. Sure hope none of you like to fly fish, boat raft or have a home on Grand Lake. Say good bye to your investment and to a slice of the tourism pie!!
176.	John Young		
177.	jeffrey reinhard		Have some sense
178.	Marty Tod		When will it stop?? The front range needs to get serious about water conservation and stopping growth and development. The Fraser River is barely sustainable now. It is not a junkie fix.
179.	justin bridge		
180.	Joni Wyse		
181.	John Zander		
182.	Denise Zander		
183.	Vicki Key		
184.	Dan Heinze		
185.	Craig Kobe		
186.	Mara Pacyga		
187.	Marie Johannes		I am a landscape painter and I know that many people thrill at seeing paintings with water in them. The beauty of a clear running stream or lake touches the hearts of all. Who was not thrilled by the sight of a fish swimming below the water's surface as we stood on a dock over a lake as a kid? Do NOT let our rivers and lakes cloud up, kill our fish and dry out. Where will you get more water when this is gone? A hearty program of conservation MUST be part of the answer!
188.	Meara Michel		
189.	Hal Jaeke		
190.	Laurie Hedgecock		
191.	Mike Sherman		
192.	Nancy groswold		
193.	Laura Cleveland		
194.	Lucinda Elicker		Say it's not true! Denver wants more water to take care of landscape vanity? And they want to take it from the already low flowing Fraser River so that we can watch more silt and algae build up? And Northern Water Conservancy *(continues on next page)*

Page 14 - Signatures 175 - 194

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2013 Jennifer Mitchell Comment #2019 Kari Van Horn Comment #2021 Eric R. Mowrey Comment #2022 Sara Turner Comment #2023 Benjamin West Comment #2024 Melanie Bender Comment #2026 Tracey Yoo Comment #2028 Amanda Stoltz Comment #2030 Ashley Jardine Comment #2031 Ashley Bobo Comment #2032 Steve McAlpine Comment #2033 Daniel Heitkamp Comment #2036 Christopher Kulpa	**Name** **From** **Comments** 194. Lucinda Elicker [redacted] *(continued from previous page)* District wants to take more of the degraded Fraser River into Grand Lake and through Adams Tunnel! Who will stop the Front Range from drying up Grand County? Denver Water already diverts 60% of the Fraser River to the Front Range and at least 50% of that is used for outdoor lawn watering. There has been no real effort to conserve or reduce this usage. Really! How much suffering has to take place, before we learn we are all affected and affecting much more than just the Fraser River. The Denver EIS has not addressed the combined impact of the Moffat Firming Project and the Windy Gap Project on Grand County's rivers, streams and economy. My husband and I made a life choice 13 years ago to live a life of quality instead of quantity. We choose Grand County, Colorado due to its riches in the Great Outdoors. After all it was good enough for our late President Eisenhower. Fresh air, fishing, camping, boating, hiking, biking, snowmobile and skiing to name a few of the riches are all in my backyard. In the past 13 years, we have watched as many problems have affected the County's natural riches: increased development, drought, beetle and mussel infestations, to name a few. We have seen lower stream flows and increased water temperatures in our Fraser River along with increased silt and algae, not to mention the reduced clarity of our natural lake. We fear that the beauty and riches we see today will be gone before our children can enjoy them. Grand County's economy will also suffer. All of these problems have not been adequately addressed in the Denver Water EIS. For our future generations and for all who have not had the opportunity to experience Grand County I ask for HELP from Corps Denver Regulatory Office. To avoid further permanent damage to the Fraser River, Colorado and Williams Fork System, please require Denver Water to work with the Grand County Stream Management Plan. Please help us preserve what's left of our native waters. Sincerely, Lucinda Elicker 195. mike lohman 196. connie grandinetti 197. karen toyne [redacted] We need minimal water flows to keep the river a living ecosystem, and the vitality of the mountain valleys. It isn't just the wastefulness of Kentucky bluegrass and washing cars and driveways with the hose, it's the greed of the Denver Water Board who lost money during the successful water restrictions. *Page 15 - Signatures 194 - 197*	

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2037 Karissa Gagnon Comment #2038 Stephen Travers Comment #2041 Thomas Camillo Comment #2043 Michelle Neibauer Comment #2044 Dane Ruttenberg Comment #2045 Heidi McNinch Comment #2046 Joy McCoy Comment #2047 Amy Kaplanis Comment #2048 Kenneth J. Fisher Comment #2049 Kristi O'Shea Comment #2050 Brian Peeters Comment #2052 Jenna OKeefe Comment #2056 David Strong		

	Name	From	Comments
198.	Richard Heitkamp	[redacted]	A river that doesn't flow for a grass species that doesn't belong!!!!
199.	Bill Galioto		Keep the fish thriving
200.	Denise OConnell		
201.	Betsy Lyle		
202.	Robert Borberg		
203.	Andrew Tomchek		Keep the river alive.
204.	Adam Sand		
205.	Sybil Miller		
206.	Jill Tallal		For more impact, add a personal comment here
207.	Tim Carter		
208.	Dave Turner		
209.	Janie Barillari		
210.	Kristina Nesbitt		
211.	kari o'connor		
212.	Amy Fox		
213.	simon levett		
214.	josh brown		crazy that this is even on the table for an endangered river
215.	Tim Flaherty		
216.	Carrie Valan		
217.	Phuong Cronin		
218.	Debra DeRee		
219.	Sonja Braun-Sand		
220.	Marianne Klancke		The Moffat Tunnel Firming Project must be formulated to require the recognition of current waterway conditions, the establishemnt of baseline standards, the efficient monitoring of conditions for perpetuity, and the responsibility of mitigation by Denver Water wherever the taking of water drops the waterway/environment conditions below viable standards.
221.	BJ Duffy		
222.	Karen Elliott		This issue angers me so much. We need to leave nature as it is. I fully back anything that will keep our water ways natural, free flowing, clean and not pumped out.
223.	David Sanders		
224.	David Ross		Once again, we are stripping resources rather than controlling and managing our growth. Put the pressure where it belongs: on the growth that is not cotrolling it's water use and building/planting whatever it wants. I have owned property in the Frasier Valley for a long time and I'd hate to see it destryoed.

Page 16 - Signatures 198 - 224

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2057 Jessica Buttery Comment #2059 Steve Rohl Comment #2060 Carol Winder Comment #2065 Jery L. Ulrich Comment #2066 Bob Barnes Comment #2067 Philippe Ducreux Comment #2070 Shelly Kilgas Comment #2071 Anita Entz Comment #2072 Jill Kohlwey Comment #2073 Helen Evans Comment #2074 Heather Boomer Comment #2075 Kelly McVeigh Stanley Comment #2076 Doug Draper		

	Name	From	Comments
225.	Kristine Meyer	[redacted]	I am extremely concerned that the spawning habitat for our native fish will be destroyed.
226.	Evan Deis		
227.	Justina Carney		This method of diverting natural water sources to the front range can not continue. Colorado wasn't meant to support this many people on the little water resources we have. Our animals and plant life should not take the burden of our people's wasteful ways. Please find another way. Justina
228.	Rob Peeters		Our water is a precious resource for many people. The Front range needs to conserve more and realize what is more important, a fresh glass of drinking water or a green lawn!!
229.	Shari Burkhalter		
230.	Russ Mallard		It's not beyond USACE's charge to support or even purey reclaimed or recycled water infrastructure in Denver as long as it supports their overall goals. Go purple!
231.	Michael Thompson		The days of unlimited water are coming to an end. There has to be better conservation methods to help protect proper water flows in the Fraser and Colorado rivers. Taking more water from ranchers that have older water rights makes it harder to irrigate and is just wrong. Ranchers return most of the water they use back to the river by using sound conservation practices. When the water tables lower, we will have to use more water to get the job done. The more water we use affects others down stream and the fisheries which we do not want to see happen.
232.	AUREL BURTIS		If we don't do something about the plight of our rivers soon, it will be too late.
233.	Karl Van Horn		
234.	Roger Shaw		The front range has plenty of water, if only they would use it wisely. A semi-arid climate is no place to grow Kentucky bluegrass!!
235.	Sara Turner		
236.	Benjamin West		
237.	Irene Jans		Please allow us to use our own precious water!
238.	Tracey Yoo		
239.	John O'Hanlon		Coloroado must take a long view when it comes to solving water shortages on the Front Range. As the decades pass, I see the same short sighted solutions being proposed and all too often, approved. Water politics as usual will cost us a lot more money in the long run. This is just another area where we refuse to live within our means as we off-load expensive problems on to our children!

Page 17 - Signatures 225 - 239

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2077 Cinde Porter Comment #2078 Kristen Cahalane Comment #2079 Sharon Brenner Comment #2080 Lisa Jenkins Comment #2084 Lynn Crandall Comment #2085 Roger Krichbaum Comment #2086 Liz Brown-Pickren Comment #2087 Steven O'Brien Comment #2088 Seth Henry Comment #2089 Joesph Grindon Comment #2090 Rita Pech Comment #2091 Bryan Phillips Comment #2093 Meredith Carson		

	Name	From	Comments
240.	Steve McAlpine	[redacted]	
241.	Daniel Heitkamp		
242.	NEVIN RUDLOFF		SAVE OUR RIVER!!
243.	Christopher Kulpa		
244.	Karissa Gagnon		
245.	Stephen Travers		
246.	WILLIAM SWIFT		Our Family owns a significant amount of land in the Fraser Valley between [redacted] and [redacted]. The Fraser River runs thru the property and we enjoy the fishing in the river during the summer months and reducing the flow of water has a detremental affect upon the wildlife along the river. Please look at all the alternatives before reducing the water flow in the Fraser River.
247.	Walter Holland		Taking water from elsewhere will not solve Denver's water problem. It's only a quick fix ban-aid that procrastinates coming up with a real solution.
248.	Thomas Camillo		
249.	Jessica Smolleck		As a community member of Grand County I am very concerned about the useage of our water supply. We enjoy so many sports and recreation in this valley, including fly fishing on the rivers. It is very disturbing that the Fraser River has been affected as it has and I'm very concerned about it's life cycle and span.
250.	Michelle Neibauer		For more impact, add a personal comment here
251.	Dane Ruttenberg		For more impact, add a personal comment here
252.	HEIDI MCNINCH		
253.	Joy McCoy		
254.	Amy Kaplanis		
255.	ken fisher		Kenneth J. Fisher
256.	Kristi O'Shea		
257.	Brian Peeters		
258.	Teresa Hill		Please help us protect our river!! We fish, swim, boat and ues our water for more things than watering grass for a big city.
259.	Jenna OKeefe		
260.	Den vM		many happy days on both these rivers. perhaps the solution is not in reeducating the river but the people consuming it.
261.	Darcy MacGregor		To consider the Moffat Firming Project is as archaic as considering climate change with carbon studies as not man made. This is about the environment and we must change our demands on the environment if our earth is to continue

(continues on next page)

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2094 Ryan Blizzard Comment #2096 Benner Hartnett Comment #2099 Philip Naill Comment #2100 Debbie Erwin Comment #2101 Joan Grant Comment #2102 Ronnie Crawford Comment #2105 Gary Salberg Comment #2107 Rick Miller Comment #2109 John Amen Comment #2110 Andrew Jensen Comment #2111 Devonna Wolfe Comment #2112 Betsy Glavin Comment #2113 Steve Dawes		

	Name	From	Comments
261.	Darcy MacGregor	[redacted]	*(continued from previous page)* as a living planet. We possess the knowledge of man's impact. It is a time for conservation, the only solution to our declining resources. Allowing the Moffat Firming Project is a waste of money and resources as it will only temporarily make a dent in the water shortages of the Front Range, but would ruin the ecosystem of the Colorado River Headwaters, the Fraser River.
262.	Denise Peeters		Our son lives in Fraser and he is very concerned about their water reservoirs and fish life.
263.	David Strong		
264.	steve rohl		
265.	Susie Hyer		The water being used for Denvers lawns should be criminalized--please enact some kind of legislation to make bluegrass lawn (or lawns of a certain size) illegal in CO or something that provides incentives for people to rip up their lawn(how about a program that pays people to grow food plants or xeric landsacpes in their yards instead/) Or just outlaw them all together, they suck up most of the states water. I burns my butt that in the past I have not been allowed to collect rainwater off my roof in the mountains in Clear Creek County, but Denver residents are allowed to suck dry the existing water supply to water their freakin lawns to keep them green !!!!
266.	art ferrari		Protecting our natural environment is extremely important. Conservation of water on the Front Range and in the mountains should be the primary goal of all involved. Using more of the water from the Fraser River basin to support growth and irrisponsible use of water on the front range will not solve the long term problems of Water use. At most, extra use of the Fraser resources will only postpone the inevitable crisis during low water years and or permanent crisis as a result of over population.
267.	Jery L. Ulrich		
268.	Bob Barnes		
269.	Jim Cervenka		Please also consider the Windy Gap Firming Project in the combined impacts. By diverting more water to the Front Range at the confluence of the Fraser and Colorado Rivers, the Colorado downstream of Windy Gap will be even more depleted. This affects all of Grand County and all downstream users (e.g. Arizona, California, Mexico).
270.	Shelly Kilgas		
271.	Jill Kohlwey		
272.	Heather Boomer		

Page 19 - Signatures 261 - 272

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2114 DeAna Durbin Comment #2116 Raymond Lucas, Jr. Comment #2117 Rex Emmons Comment #2118 Pam Boland Comment #2119 Ashley Sifers Comment #2121 Kris Gibson Comment #2123 Nancy Juskowich Comment #2124 Marshall Weeden Comment #2125 Kimberly Sherry Comment #2127 Lynda Troccoli Comment #2129 Cindy Southway Comment #2130 Tina Wilson Comment #2131 John Wermers		

	Name	From	Comments
273.	Kelly McVeigh Stanley	[redacted]	
274.	Cinde Porter		
275.	Sharon Brenner		
276.	Andrea Cox		Please help us preseve the rivers and wildlife.
277.	Barbara Parker		This is a more than worthy cause that will support wildlife as well as our only industry here in the Fraser Valley....tourism.
278.	Liz Brown-Pickren		
279.	Steven O'Brien, MD		
280.	Joesph Grindon		
281.	Bryan Phillips		
282.	Meredith Carson		
283.	Marie Hedrick		I live in the Fraser Valley because of the natural beauty that exists here. The rivers are key to the delicate balance of nature and population. Please don't take the waters from our great valley to use for watering lawns and the increasing the population on the front range. It will be devastating to ALL Colorado residents and visitors to this great state. Let's come up with a compromise that works for everyone.
284.	Tracy Foster		Please don't do this. It will forever be lost.
285.	Philip Naill		
286.	Joan Grant		
287.	Bernadette Smith		Water conservation is crucial to the existence of our planet. Let us set an example for the world: protect the Colorado and Fraser rivers.
288.	Thomas Mazzarisi		I have plans to one day in the not too distant future to fish these waters with my two grandaughters. I would rather see stronger conservation measures on the front range than diverting more flows away from these rivers.
289.	Devonna Wolfe		
290.	Steve Dawes		
291.	Ashley Sifers		
292.	Kris Gibson		
293.	Walter Rockwell		I completely agree with the reasonable and logical aproach taken by Colorado Trout Unlimited.
294.	Corey Beck		water rocks!
295.	Becky Martinek		As a Landscape Architect in the front range area, I know that much more can be done to conserve our water resources.

Page 20 - Signatures 273 - 295

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2132 Todd Lansing Comment #2134 Isabel Conger Comment #2135 Millie Boyd Comment #2136 William Fanning Comment #2137 Mark Volt Comment #2138 David Claypool Comment #2142 Jeremy Sebestyen Comment #2145 Penne Pojar Comment #2146 Shmuel Bergman Comment #2147 Greg Hood Comment #2148 Jack Pottle Comment #2150 Danny Hendershott Comment #2153 Cameron Taussig		

	Name	From	Comments
296.	Rosemary Knerr	[redacted]	
297.	Claudia Anderson		
298.	Clifford Anderson		
299.	Jennifer Badewitz		
300.	chris popovich		
301.	Sara Bellamy		
302.	Suzi Maki		It is very important for the survival of our community and the health of the Fraser river, that you do not take any more water.
303.	Megan Ledin		
304.	Karin Conrad		
305.	Ian Pearson MS Hydrogeo		
306.	Eric Van Herwaarden		Save The Fraser River!!
307.	Todd Holzwarth		
308.	Dan Gretz		Reduce demand first before impacting the environment.
309.	cassidi brickner		Our rivers are not replacable. Colorado is known for its beauty and outdoor activities. Without our rivers, Colorado will loose its calling. The front range needs to learn how to conserve water, not use more. You can see our rivers already suffer from the water being pulled from them. If we pull more, you might as well call them extinct. Please conserve, don't abuse.
310.	Randall Castle		Please do not negatively impact the Frazer and Colorado River watersheds with the proposed Moffet Expansion Project. Trout habitat is a national trasure of the United States and Colorado in paricular. Thank you.
311.	Gail Wells		I live on the front range and raft on the upper (and lower) Colorado. I am very much in favor of restricting outdoor water use on the front range before we pump more water out of the Fraser basin and send it to Denver. We don't need bluegrass lawns in Denver. Rate structures can be easily and effectively used to encourage xeriscape. Let's save the outdoor water for playing fields, swimming pools and golf courses. And, let's work with the agricultural community to reduce irrigation on marginal cropland, and move toward less water intensive crops in areas that don't have the natural rainfall to support what's currently grown.
312.	Kathe Morck		For more impact, add a personal comment here

Page 21 - Signatures 296 - 312

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2155 Gillian Classen Comment #2156 Nicholas Farkouh Comment #2157 Danielle Wantuck Comment #2162 Krissy Morrow Comment #2163 Debra Karl Comment #2165 Juliana Cyman Comment #2167 Alexey Davies Comment #2168 Robert Gotto Comment #2169 Rusty Pinkerton Comment #2171 Brian Courtney Comment #2172 James Espinosa Comment #2174 Richard Johnson Comment #2175 Robert Pearson		

	Name	From	Comments
313.	Helena Powell	[redacted]	Not only does the Moffat Firming Project negatively impact the trout and boreal toad habitat, but decreasing the flows in the Colorado River impacts COLORADO'S TOURISM ECONOMY! Rafting brings in over $140 million to the sate of Colorado and the headwaters of the Colorado River employs many workers in rural areas. THINK COLORADO AND OUR ECONOMY FIRST!
314.	Nichole Fuqua		
315.	Tod Bloxham		
316.	Roger Williams		I spent 12 years of my life living and recreating around Fraser,CO. It is an absolutely wonderful and beautiful place - please keep the Fraser and Colorado River's full of water!! Thanks!!
317.	mike raczynski		
318.	Leonard Aitken		Diverting water for the purpose of watering lawns or spurring the real estate market is a vacuous pursuit.
319.	Justin Jordan		I have a fire pit next to a large creek that run off the Fraser river that is so beautiful. I would be very upset to lose it!! Denver should find alternate water sources!!!!
320.	Janet Day		
321.	Melynda Slaughter		
322.	Mara Kohler		Let's avoid permanently jeopardizing the natural environment on the West Slope to create a short-term, unnatural, unsustainable environment on the East Slope. Thank you for putting the environment first in these tough decisions.
323.	Daniel McMurray		
324.	Kelsey Cruickshank		
325.	Stu Findley		Please strongly consider the negative impacts of reducing stream flows for the Fraser and Colorado rivers in Grand County. Further reduction of the stream flows will cause irreversible damage to both river systems and we will feel the impact for generations to come. Please consider strong conservation actions in the front range before draining any more of our precious life blood.
326.	todd cizek		
327.	case kennedy		
328.	Tom Beckwith		
329.	Jon Kuhns		
330.	Nicole Robinson		From rafting to fishing, we spend most of our summer on the Colorao or Fraser river with our family. Please don't take this a way!

Page 22 - Signatures 313 - 330

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2176 Toni Telander Comment #2177 Sylvia Hites Comment #2178 Mary Bissell Comment #2179 Craig Cahalane Comment #2180 Patty Godbey Comment #2181 Nancy Pace Comment #2182 Melaine Hendershott Comment #2183 Jennifer Hake Comment #2184 Jonas Pearson Comment #2186 Marylane Packer Comment #2187 Julie Krueger Comment #2189 Kim Morisset Comment #2190 D. Billiet		

	Name	From	Comments
331.	Jerry Sadler	[redacted]	Please let the water of the Fraser River and the Colorado River flow where God intended them to flow.
332.	Doug Finnman		The Upper Colorado and Fraser river are natural treasures of this state, and sufficient flows must be maintained to support healthy fisheries, wildlife and recreation. I speak for current and future generations that we must be good stewards of these natural treasures and not allow them to be compromised by short-sighted water projects.
333.	Meg Dubosky		
334.	Toby Davis		Save the Fraser!
335.	Pam Alexander		More education needs to be done to wake people up to the fact that we are an arid climate and that we need to be aware of what we are doing in regards to water. Things need to be kept in balance and that includes the balance of the fish/animals life as well. They depend on water too.
336.	Jeff Ramsey		I lived for 9 years in Fraser Colorado and I'll have to say that enough waste of water for Kentucky Blue Grass lawns is enough. Wasting water so corporations can make profits is just plain wrong. What ever happened to our morality?
337.	Mark Hanson		Please keep the Fraser River alive. We need to maintain it's current levels to support wildlife. We don't need to divert more water for lawns and golf courses. We need to use our water resources responsibly and prioritize its use. Maintaining healthy rivers and streams should always take priority over manicured lawns and golf courses. Thank you.
338.	sherry rohl		Look at what's happened in Florida. That should be a clue as to how to proceed or rather how NOT proceed with this really short sighted, ultimately stupid, project.
339.	Ariel Friedman		Sometimes in life, one has to think of generations to come instead of an added beauty. I understand why people want a beautiful lawn, a clean car, etc. Not allowing the Moffat Project is one small step towards saving what we have for our children, grandchildren, etc. -Ariel Friedman
340.	Josh Holleb		
341.	Marykay Buckner		Please save our rivers!
342.	Kevin Jardine		
343.	James Good		Please find a balance that protects our fish and wildlife. I think the communities that are calling for more water from the Fraser and Colorado Rivers need to develop a good measureable and inforceable water conservation plan before any new water is diverted.
344.	John Simmons		A river is the life blood of an ecological community and ecosystem, not to mention that of a human community. The Fraser River feeds the Colorado River, which already

(continues on next page)

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2191 Caren Welcome Comment #2192 Margo Jacobs Comment #2193 John Uren Comment #2194 Danielle Smith Comment #2195 Travis Powell Comment #2196 Jesse Albertini Comment #2198 Meredith Lipscomb Comment #2199 Rodney Berry Comment #2201 Tracey Ross-Shannon Comment #2202 Charles Caldwell Comment #2204 Brandi Gutierrez Comment #2205 Gerald Russell Comment #2206 Steven Irving		

	Name	From	Comments
344.	John Simmons	[redacted]	*(continued from previous page)* has much of its water pulled away. It's not only the people and ecosystems in the US that need the water, but also our neighbors of Mexico, who need the water so badly. Unless we live in direct contact to the Fraser, we may not know the extent of its importance. Those making the decision about the Fraser river need to consider the whole of its biology. Study the scientific research on this and other rivers, and make the sound decision.
345.	Jim Dolbier		I strongly urge all involved to preserve the Fraser River.
346.	Christian Smolleck		
347.	k walker		
348.	Ann Dolbier		Communities along the front range need to be more responsible for water consumption. It is too easy for them to demand more water and not consider the damage it does to the environment. We need to be more responsible consumers rather than continue to look for more sources of water.
349.	Wendy Christensen		
350.	Susie Walsh		
351.	Thai Nguyen		
352.	Dorri Penny		
353.	michael callas		
354.	Darlene Nolting		Just moved from Granby and I miss it! I love the Valley!
355.	William Morck		There is no long range plan for the front range of Colorado to grow in a sustainable fashion. This is not California's "Cadillac" desert. The Kentucky Bluegrass lawns, car washes, swimming pools, etc must disappear before we can consider destroying the entire ecosystem/ stream of life of Grand County. The steams and waterways are our life blood and they are already compromised to the max by the Denver water board. There is no blood left to squeeze from the turnip!
356.	Adrianna Winkel		Now that I live in Denver, I see the lack of understanding that most people have about where their water comes from. Just because you increase the capacity of a reservoir does not mean that the water to fill that reservoir isn't taken from a different ecosystem. Please don't drain the Fraser River Valley--try educating our residents on proper water use and conservation.
357.	Kristi Alder		
358.	Kathy Frey		

Page 24 - Signatures 344 - 358

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2207 Joan Vosburg Comment #2208 Alex Ciancaglini Comment #2209 Andy Birch Comment #2210 Zach Jackel Comment #2213 Jerry Hawkinson Comment #2214 Elliot Lauber Comment #2215 Zeb Williams Comment #2216 Laura Herndon Comment #2217 Amy Boyce Comment #2218 Renee Wilson Comment #2220 Sue Baldwin Comment #2221 Maureen Bosshard Comment #2222 Paul Bruchez		

	Name	From	Comments
359.	Jean Wolter	[redacted]	
360.	Allison Garson		
361.	Abby Fountain		
362.	Rick Miller		I lived in the Fraser Valley for 6 years and I believe to touch these sacred waters by diverting them in any way is a grave sin against God and nature
363.	Wes Bernstein		Grand County's vitality depends on the Fraser, please stop the diversion of more water.
364.	Oakley Van Oss		Please save the Fraser!!!
365.	Elizabeth Marx		This plan is inexcusable. It is time we stop and think of our sustainable future, and not the short-term 'need.' Rather than allowing green grass to grow in the desert, lets try to educate, conserve, and retool our creativity. There is a way, but this certainly is not it.
366.	joel alamo		Get your own water, Denver.
367.	Casey Keene		
368.	E. Louise S. Robinson		Please do not destroy the natural beauty of the Fraiser River and the valley. The impact on the people who depend on the River for their livelihood would be devasting as well as destroying more of our country's natural beauty.
369.	Rick Edelson		Denver should be able to save a larger amount of water just by conserving, not watering their lawns.
370.	Mark Malone		Please don't get rid of this incredible waterway. Conservation can work, people downstream need to realize that there green lawns and golf courses are an unneeded luxury.
371.	Keith Sanders		Denver Water needs to be pro active about responsible water use. Failure to do that is much similar to a drug dealer getting their "clients" hooked on the drug-water in this case- and then control the supply and costs. As is evident the supply is limited but the use remains unchecked. Destroying an eco system is not the answer to the problem.
372.	bobby schneider		
373.	Holly Heighberger		For more impact, add a personal comment here
374.	Joe Giardiello		
375.	Kip Findley		
376.	Leslie Morgan		
377.	Cindy Eubank		Do your part to conserve water and save our beautiful spaces --- the Fraser River Valley being one of the most beautiful of all -- xeriscape, discourage overwatering of lawns (esp. those with non-native, thirsty grasses), buy efficient appliances, raise awareness, etc.

Page 25 - Signatures 359 - 377

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2224 Patrick Crosby Comment #2226 Deana Harms Comment #2230 Shelly Heckerson Comment #2231 Tim Miller Comment #2232 John Ehlen Comment #2233 Arnie Green Comment #2234 Bob Heimos Comment #2236 Jake Royall Comment #2237 Rama Davis Comment #2240 James Dietrich Comment #2241 Donald Holmes Comment #2242 Jeanne Nicholson Comment #2246 Rod Kauber		

	Name	From	Comments
378.	Michele Murray Hedlund	[redacted]	
379.	Christine Smith		Please consider future impacts on the rivers that run through our county.
380.	Jill Stoffels		
381.	Antoinette McVeigh		Don't Flat line the Fraser River. As a resident of Grand County for 15 years I see the river as part of my home. It provides beauty and a living for many. Keep our river alive and healthy.
382.	Kara Fanning		
383.	Mel Walz		
384.	Kati Mayfield		
385.	Dan Rountree		A person needs a minimum 50 liters of water a day. That includes consumption, hygiene, waste removal, cooking, and food production ect. Americans on average use 100 gallons per day. What are our priorities?
386.	RICHARD SLY		
387.	Jessica Haucke		A quote I found is applicable to this situation. Sustainability is defined as "The development and use of water resources in a manner that can be maintained for an infinite time without causing unacceptable environmental, economic, or social consequences." It doesn't sound like water resources in the Fraser valley are being managed sustainably.
388.	Jenny Harris		
389.	Paul Kranzler		
390.	Scott Hutchinson		
391.	Steven Mark Thompson		
392.	SCOTT WOODROW		
393.	Emily Horan		
394.	Karen Norberg		We are very concerned about the water usage in Denver, Colorado when we feel that the water is not being used wisely. Please consider stronger regulation on vegetation plantings and large green spaces. The front range would be wise to consider amount of water needed to provide enough water per person for personal use and limit the building on the front range until they have water usage under better control in Denver proper. Our lakes and rivers are showing damage with the strong pull of water from the eastern range and not leaving the rivers and lakes with adequate supply to function at a level required to maintain wild life. Please reconsider the amount of water needed for Denver and surrounding areas. Thanks, Karen Norberg

Page 26 - Signatures 378 - 394

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2249 Dawn Reed Comment #2251 Patricia Mesec Comment #2253 Emilie Hoeg Hagen Comment #2254 Sam Bacon Comment #2255 Lee Fowler Comment #2259 Leyla Scott Comment #2260 Lindy Bambrough Comment #2261 Steve Paul Comment #2262 Brad Ross-Shannon Comment #2263 Rosemary Knerr Comment #2264 Claudia Anderson Comment #2265 Clifford Anderson Comment #2266 Jennifer Badewitz		

	Name	From	Comments
395.	Lisa Jonas	[redacted]	
396.	Dana Denney		
397.	Jill Ryall		THE FRASER RIVER IS AN IMPORTANT PART OF GRAND COUNTY AND SHOULD NOT BE DIVERTED TO MEET THE NEEDS OF THOSE OUTSIDE OF THE COUNTY.
398.	Shari Donnermeyer		
399.	Joe Horan		Removing more water from the Fraser/Colorado River watershed will in the long run reduce tourist revenue for the state of Colorado. Saving the water will save the fisheries for years to come.
400.	Chas McConnell		Conservation is the key word. If Denver Water made it's end users conserve their water we would have to divert.
401.	Tim Greenlaw		
402.	Jancie Hughes		Water - every drop of it matters - the west was built on aridity. Wallace Stegner Please do not turn the Fraser River Valley into an arid valley without a river running through it.
403.	Molly Henry		
404.	Daniel Phillips		I find it very disturbing that it is even being considered to further reduce the flow from the Colorado and Fraser Rivers. I think talks should start in the other direction as to how to increase these rivers flows.
405.	Pam Leland		We must conserve our natural water resources before it's too late. Water used to keep lawns green in an arid climate is insane.
406.	Douglas Oury		
407.	Nancy Bjerken		
408.	Beth Sands		
409.	Katherine Mowrey		Conservation by all Colorado residents is key to sharing our resources and sustaining our water supplies. It is appalling how low the Fraser river flows are in the summer time.
410.	Patricia Murphy		
411.	tim delphia		
412.	Ron Hert		
413.	shane trost		
414.	Bryan Huseboe		
415.	Terry Peterson		I have been a Fly Fishing Guide for 17 years and have seen first hand what the Denver Water Board is all about. The Fraser River is currently # 3 on the United Stated most *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2267 Chris Popovich Comment #2268 Sara Bellamy Comment #2270 Megan Ledin Comment #2271 Karin Conrad Comment #2272 Ian Pearson Comment #2274 Todd Holzwarth Comment #2277 Joe Malone Comment #2278 Jack Marshall Comment #2280 Theresa Scholl Comment #2287 Kathe Morck Comment #2288 Diane Zaitz Comment #2289 Jamie Kerr Comment #2290 Justin Kerr	**Name** **From** **Comments** 415. Terry Peterson [redacted] *(continued from previous page)* endangered rivers. Denver Water is currently taking water from the Fraser and wants to take even more water to the Front Range. I have been guiding client on the Fraser for 5 years now and I can tell you the every year from Mid July through August and sometimes into September I have to close the river to my clients as the water temperature is too hot to fish with out killing those you catch. The Clean Water Act requires Denver Water to avoid, minimize, and mitigate all identified impacts. In my personal opinion they have fallen short. I have also been on the river when the tunnel is back flushed and seen the river turn red with algae, very Biblical and never a good sign of a healthy river. Denver Water is in the business of making Money. It is not in the best interest of Denver Water to conform to any of the regulations, impact statements or to provide a sustainable river system on the Fraser, or any other river they cull water from. It is up to the Citizens of Colorado and the United States to tell them when enough is enough. Those same people must also change the ways they consume water. Only through the conservation of water will the Front Range also reach sustainability. The Front Range pays very low rates for water in comparison to other areas of the United States and continues to plant Kentucky Blue grass instead of zero scrapping or planting a drought tolerant species. This fight begins with us the consumers of the water and ends with us demanding change to The Denver Water Board who needs to be forced to stop diverting our water and damaging our eco systems. Owning a water right doe not give Denver Water the right to divert water, it only has the right to apply for the permit to do so. If the Front Range conserves 10% of the water they currently use, the 34,000 acre feet intended to be developed would not be needed. Other communities have done this and seen as much as 38% of the water conserved. Though this would eliminate the need to do these Firming projects at this time the communities would need to formulate a storage program that would allow for growth over time and not impact the Fraser and other water systems. The Fraser will have permanent damage to the eco system if it can not sustain adequate flushing and channel maintenance flows. This need to be in the permit or it gives Denver Water a license to kill the River. Denver Water must be required to maintain baseline flows that will sustain all rivers at temperatures equal or better than state standards. The Environmental Impact Statement (ESI) must encompass and mitigate the combined effects of the Moffat Firming Project and the Windy Gap Firming Project. The Northern Colorado Water Conservancy District has documented a significantly higher concentration of run-off *(continues on next page)* *Page 28 - Signature 415*	

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2293 Stephen Boehmer Comment #2294 Susan Valente Comment #2295 Korina Cotter Comment #2296 Nichole Fuqua Comment #2297 Kristen McGuan Comment #2298 Edna Anderson Comment #2299 Tod Bloxham Comment #2301 Mike Raczynski Comment #2304 Janet Day Comment #2305 Melynda Slaughter Comment #2307 Daniel McMurray Comment #2308 Kelsey Cruickshank Comment #2310 Todd Cizek		

	Name	From	Comments
415.	Terry Peterson	[redacted]	*(continued from previous page)* nutrients increasing algae and causing diminished water clarity of Lake Granby. The Grand County Stream Management Plan must be added to the Permit as well as a mid course correction. The only way to answer this questions to the Firming Projects is "No". The best way to reach a good end is though conservation from the Front Range. In doing so Gross Reservoir needs to be built larger and new reservoirs need to be built to store water. The Front Range will not get smaller any time soon, and we will be hear once again but next time there may not be time to build a sustainable future with out wiping out our river systems.
416.	Brad LaRochelle	[redacted]	
417.	Julie White		
418.	Donna Barnes		For more impact, add a personal comment here
419.	Brian Dornbusch		
420.	Chris Hill		
421.	Kara Delay		
422.	Carrie Guthrie		
423.	Dale Dirks		
424.	Jonathan Reynolds		Stop ruining our premier fishing water to benefit the green lawns of Denver!!! Perhaps a more cohesive strategy is in order?
425.	Dorothy Howe		We have a son and many friends in the Fraser Valley and vacation there several times a year. The Colorado River is very important to us. Please do not jeopardize the river, which we and many others enjoy so much. We want to continue to spend money in the area! Thank you.
426.	Vickie Simpson		For more impact, add a personal comment here
427.	Kevin Schovan		As a native Coloradoan and a home owner in Highlands Ranch currently residing in the Dallas Fort Worth metropolitan area. I understand the demand for water along the front range. If the price of water rises usage will fall. This has got to be a potential solution... a simple free market principal of supply and demand. Xeroscaping and water conservation techniques will become the norm for residents along the front range if the price is high enough. The State of Colorado and the Denver Water Board should learn from the mistakes of California not repeat them. In nearly every way the State of California is a shining example of what can go wrong. To this point the impact to the Owens Valley in California by the city of Los Angeles is a small example of the environmental impact. We all know that taking more water from the Colorado and Fraser *(continues on next page)*

Page 29 - Signatures 415 - 427

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2311 Case Kennedy Comment #2312 Tom Beckwith Comment #2313 Jon Kuhns Comment #2317 Meg Dubosky Comment #2324 Josh Holleb Comment #2326 Kevin Jardine Comment #2330 Christian Smolleck Comment #2331 K. Walker Comment #2333 Wendy Christensen Comment #2334 Susie Walsh Comment #2335 Thai Nguyen Comment #2336 Dorri Penny Comment #2337 Michael Callas		

	Name	From	Comments
427.	Kevin Schovan	[redacted]	*(continued from previous page)* doesn't solve the unending thirst of the front range. This is a stopgap for later further water removal. The front range of Colorado is growing without end in sight. Please deal with the growth, conservation, and water reclaimation without potentially permanently harming the Grand Valley and many other unknown downstream repercussions.
428.	Shelbi Amichaux		
429.	Michael Davison		As a long time Boulder resident, I am always confused by our lax attitude toward water conservation and the needless waste of this resource
430.	Elizabeth Allen		The Fraser is such a vital part of this community. Please consider ALL of the impact it will have on us!
431.	Connor Barnes		For more impact, add a personal comment here
432.	Michael Allen		Please don't destroy our river!
433.	Wayne Taylor		
434.	Cori Anderson		
435.	Michelle Fournier		
436.	IDavid Stowell		
437.	susan keck		
438.	Klaus Ullrich		
439.	Betsy Cook		
440.	Wendy Reynolds		
441.	Joanne Cummins		
442.	D.K. Tibbetts		
443.	Kris Lee		
444.	David Fowler		
445.	Greg Speer		
446.	Walter Wilson		
447.	Paul Renfro		It is not right to steal one area of Colorado's water & economy to move it to another, period! Especially when conservation efforts have not even been implemented. The rivers, mountains, fishing, rafting, kayaking, are the reasons why people live in Colorado and why they visit with out water in our streams and rivers this will all change.
448.	Marilyn Orr		
449.	Elaine Dieterle		Please save the Fraser River and better fund Colorado Schools.
450.	christopher stephan		As a property owner in Grand County I am deeply concerned that further diversion of flows from the Colorado and Fraser will have devastating consequences for our *(continues on next page)*

Page 30 - Signatures 427 - 450

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2341 Kristi Alder Comment #2342 Kathy Frey Comment #2343 Jean Wolter Comment #2344 Allison Garson Comment #2345 Abby Fountain Comment #2351 Casey Keene Comment #2356 Bobby Schneider Comment #2357 Holly Heighberger Comment #2358 Joe Giardiello Comment #2359 Kip Findley Comment #2360 Leslie Morgan Comment #2362 Michele Murray Hedlun Comment #2364 Jill Stoffels		

	Name	From	Comments
450.	christopher stephan	[redacted]	*(continued from previous page)* property values, our livelihoods, our quality of life and -- most important -- our precious and fragile environment. Further growth of the the Denver metro area must not be accomplished at the expenses of our natural resourses.
451.	Mary Russell		
452.	Valerie Jacobson		We all know that Colorado's water is a precious resource- I grew up there and have no trouble remembering our constant droughts over the years. Anything that can be done to make sure we aren't destroying natural ecosystems any more than we have is important. Please consider this in your decisions.
453.	beth Saffell-Romero		
454.	Matt Saunders		
455.	nathan simmonds		
456.	Jan and Greg Roman		The Fraser River is our natural resouce - a lifeline in this valley. We raft it when we can - each year we are afraid it will be the last because of lack of water. Denver Water Board just seems to keep taking - trading water in another water shed doesn't keep a river alive.
457.	Cindy Lavoie		
458.	Mercy Rome		
459.	Carol Cahalane		
460.	Susan Bernardy		
461.	Mariko wilcox		
462.	Todd Hultgren		
463.	Damion Frasier		Tough to spend my tourism money on fishing in Colorado if there are is no water for the fish to live.
464.	Patricia McCarthy		
465.	Peter M. aol.com		
466.	David Michel		The water that Denver Water is looking to take will have a far greater environmental impact on the Fraser River then the benefit that Denver Water's customers/constituents will receive. Denver Water needs to implement water conservation policies and prohibit outdoor irrigation. Draining the Fraser River to water Denver lawns will have disastrous impacts to the Fraser River. I live at the base of Winter Park and my back deck is on the Fraser river. I have an intimate understanding of the effect that the flows have on the Fraser River. Every year from summer to winter garbage, traction sand and other sedimentation pile up in the river bottom and along its banks. The spring flows when Denver water stops taking water are sometimes *(continues on next page)*

Page 31 - Signatures 450 - 466

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2366 Kara Fanning Comment #2367 Mel Walz Comment #2368 Kati Mayfield Comment #2370 Richard Sly Comment #2372 Jenny Harris Comment #2373 Paul Kranzler Comment #2374 Scott Hutchinson Comment #2375 Steven Mark Thompson Comment #2376 Scott Woodrow Comment #2377 Emily Horan Comment #2379 Lisa Jonas Comment #2380 Dana Denney Comment #2382 Shari Donnermeyer		

	Name	From	Comments
466.	David Michel	[redacted]	*(continued from previous page)* heavy enough to clear/rinse out the sedimentation and debris. This process does not occur every spring due to the amount of water that Denver Water currently takes. I shudder to think about how the river will function if Denver Water takes the proposed amount of water and the semi-annual flush of the river does not occur in the spring. I can not reiterate how strong I feel that Denver needs to implement water conservation measures rather than feeding the poor stewardship practices that have caused suburban sprawl to explode in an area that does not have the water to sustain its own population and uncontrolled growth. We will regret the decision to allow Denver Water to draw more water from the Fraser River for future generations to come.
467.	Summer Harrison	[redacted]	I grew up in the Fraser Valley, and the water levels have drastically decreased over the last 20 years. When we used to be able to run the fathers day race down the river, now there is not enough water even in June for us to enjoy, and I know this has to be impacting the wildlife in and around the river as the summer goes by. Water is such a necessity, especially at the headwaters that to keep draining the water to fulfill selfish city dwellers needs means draining the life out of the wildlife, and nature at the most delicate part of our ecosystem in the mountains. Let the water flow naturally.
468.	Pat Campanello	[redacted]	
469.	Sharon Manning		
470.	Robert Shoop		We bought a home in Tabernash because it was near the Fraser River. The beauty as well as the economic impact of tourists will be significantly diminished if the planed water diversion is put in place.
471.	Shannon Brunett		
472.	Kamie Fillatrault		I have lived in the Fraser Valley for 20 years and have seen the impact on the county because of lack of rain and low water levels. Summer businesses depend on water to make a living and how are they going to survive if more water is taken? We are already receiving less precipitation then normal, consistently over the past ten years. I feel that more education about conservation is the way to go. Why take water from someplace that is getting less and less every year?
473.	chris morris		Please understand the long long term implications of your actions on one of the most pristine valleys in Colorado.
475.	Stephanie Vidergar		
476.	Patty Peterson		

Page 32 - Signatures 466 - 476

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2385 Tim Greenlaw Comment #2387 Molly Henry Comment #2390 Douglas Oury Comment #2391 Nancy Bjerken Comment #2392 Beth Sands Comment #2394 Patricia Murphy Comment #2395 Tim Delphia Comment #2396 Ron Hert Comment #2397 Shane Trost Comment #2398 Bryan Huseboe Comment #2400 Brad LaRochelle Comment #2401 Julie White Comment #2402 Donna Barnes		

	Name	From	Comments
477.	Greg Mazu	[redacted]	
478.	howard blumenfeld		
479.	Lewis Lamm		
480.	Christian Campton		
481.	Ann Frame		
482.	Angie Ochsner		Not only does the Fraser River need a flow desirable for trout, rafting and paddling groups also need a reasonable amount of flow. The front range needs to act as though they know they are living on high desert plains and begin to conserve water. The more they use, the more they want from the western slope. Left to the Denver Water Board, we could lose our natural water supply.
483.	fran womack		
484.	Cyril Vidergar		In-stream flows are essential to the preservation of the natural systems which rely on the Fraser River. Grand County has vigorously fought to protect those flows, as the integrity of the Fraser Valley and the quality of water flowing into the Colorado River require consideration of issues greater than simple water rights allocation. Environmental impact assessments are to consider these broader impacts and the Corp of Engineers is charged with stewarding the protection of water systems like that in the Fraser Valley. Please recognize these impacts and the damage they have caused in recent years, including algae blooms and the introduction of predatory fish and paracites into Grand County waterways.
485.	Mark Warren	[redacted]	The Denver metropolitan area does not need more water - it needs to learn to use less. Huge green lawns are a dinosaur in this day and age of global warming and eco-consciousness. Look around the Fraser Valley - you don't see house after house with huge thirsty lawns. If we can do without, so can the Front Range. Please preserve the Fraser River and its fragile ecosystems.
486.	Adam Grasch	[redacted]	Please carefully consider the impacts to Western Slope economies and recreation oppotunities.
487.	Susan Volk		Please protect the waters of the United States and DO NOT protect the special interests of unregulated growth.
488.	susan Reed		
489.	Jared Veenstra		
490.	dylan moffitt		
491.	Susan Leahy		
492.	Tom Reichert		
493.	Susan Wilder		

Page 33 - Signatures 477 - 493

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2403 Brian Dornbusch Comment #2404 Chris Hill Comment #2405 Kara Delay Comment #2406 Carrie Guthrie Comment #2407 Dale Dirks Comment #2410 Vickie Simpson Comment #2412 Shelbi Amichaux Comment #2415 Connor Barnes Comment #2417 Wayne Taylor Comment #2418 Cori Anderson Comment #2419 IDavid Stowell Comment #2420 Susan Keck Comment #2421 Klaus Ulrich		

	Name	From	Comments
494.	Robert Fine	[redacted]	
495.	Damon Howard		
496.	Linda Cummings		
497.	Margaret Strom		
498.	Tricia Downing		
499.	Leslie Dines		
500.	Julie Bennett Brown		
501.	Nancy Godwin		Please don't allow any more water to be diverted, it will spoil the area and wildlife. The Fraser River is so pretty, but is awfully low from all the diverted water.
502.	Lisa Bornfriend		Please don't let any more water be taken from the Fraser River or any other water system in Grand County. It makes me feel like crying when I think of how much of our water we never get to see and our land will never get to benefit from. This is a precious resource that needs to be protected. We need to be fighting to get water rights back to the river!
503.	Linda Hattenbach		
504.	victor bergman		
505.	Andrea Dance		
506.	Ann Renninger		
507.	kelli johns		
508.	David Buchler		Keep the colorado river, alive!!!
509.	Richard Czoski		We have owned property in the Fraser River Valley for 11 years and previously lived in Denver for 23 years. We have seen the impacts of population on the entire Front Range and the valley. The river is a valuable asset to the people of Colorado as well as an economic driver for the Frase Valley. Denver must come to grips with its semi arid environment. Please do not allow Denver to take any more wtaer form the mountains.
510.	Kelly Dee		Quit taking water from th West Slope to water lawns on the East Slope!!
511.	Al Wilder		
512.	Rhonda Gilkey		We love the Fraser River and so enjoy it as a recreational draw. Don't threaten it's existence, please!
513.	Martin Curry		
514.	George Negley		
515.	Dee Curry		
516.	John Keeler		

Page 34 - Signatures 494 - 516

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2422 Betsy Cook Comment #2423 Wendy Reynolds Comment #2424 Joanne Cummins Comment #2425 D.K. Tibbetts Comment #2426 Kris Lee Comment #2427 David Fowler Comment #2428 Greg Speer Comment #2429 Walter Wilson Comment #2431 Marilyn Orr Comment #2434 Mary Russell Comment #2436 Beth Saffell-Romero Comment #2437 Matt Saunders Comment #2438 Nathan Simmonds		

	Name	From	Comments
517.	Jack Gerstein	[redacted]	take care of my valley. do not taek more water. Denver is abusive to water use.
518.	Ashley Ogden		
519.	Barbara Jarosz		
520.	John J. Snedeker		
521.	Jessica Hernandez		Please look to ways to reduce water use in the Front Range, rather than increase the water supply.
522.	Jacqueline Moore		
523.	Barbara Keller		
524.	Ellen Horan		
525.	William Kelly		
526.	Jeff Ehlert		How can you steal more water from a natural eco system to foster Kentucky Blue Grass in a desert. More than half the water that Denver steals is used for lawns. These people pay less for their water than people in Minnesota (The Land of 10,000 Lakes) pay for their water. I see the current draw of water from the west slope as criminal and don't see how any intelligent person could come to any other conclusion.
527.	Kaye Piper		
528.	gregory gunn		do not give them an gallon they will take a whole rivei
529.	Tanya Garrett		
530.	Jennifer Gilbert		
531.	Annette Dugwyler		
532.	Morgan Roberts		
533.	Erynne backer		
534.	clint roberts		
535.	Sarka Ruzickova		
536.	Laulima Lyman		
537.	George Sowards		
538.	Kelly Schweitzer		You must encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.
539.	Catherine Barker		We have lived in Grand County for 17yrs. We love the Fraser. We want to keep the water.
540.	Meredith Bryant Parks		
541.	Mike Leiser		This water doesn't belong to us, it belongs to the Pacific Ocean and we should care for it as it passes through. We need to reverse planet damaging water laws. Denver does was never supposed to be this green.

Page 35 - Signatures 517 - 541

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2440 Cindy Lavoie Comment #2441 Mercy Rome Comment #2442 Carol Cahalane Comment #2443 Susan Bernardy Comment #2444 Mariko Wilcox Comment #2445 Todd Hutgren Comment #2447 Patricia McCarthy Comment #2448 Peter M. Comment #2451 Pat Campanello Comment #2452 Sharon Manning Comment #2454 Shannon Brunett Comment #2457 Stephanie Vidergar Comment #2458 Patty Peterson		

	Name	From	Comments
542.	Cheryl Stimson	[redacted]	
543.	maria mendez		
544.	Marie Jackson		
545.	Giesie Mike		
546.	Mauricio Diogo		
547.	mark mitan		
548.	Amelia Hamilton		
549.	Derrick Hamilton		
550.	David A Yeats		
551.	Christine Wysmyk		
552.	Ann Mahony		
553.	Hollis ONeill		
554.	jaidee finn		
555.	Jill Suffin		
556.	Jon Grayson		I live right next to Gross Reservoir and understand part of this planning by Denver H2O includes raising level of Gross Reservoir 120' from its present level. The number of 24/7 cement trucks that will travel Coal Creek are projected to destroy the road, not to mention the residents. The impact on this area I have lived in for the past 20 years will be great. Thus this entire project will affect SOOO many people, animals, plants, life...just for a bit of H2O for grass that belongs in...well...Kentucky, not the front range of Colorado.
557.	Cat Petersen	[redacted]	
558.	Thad Heroux		One of the reasons I live in this community is for the natural resources.
559.	Lydia Castiello		
560.	Kassi Kielley		
561.	Joseph Dorwart		
562.	Mazie Smith		
563.	becky shaw		
564.	Barbara Masoner		
565.	Kristin Sullivan		
566.	Will Smith		
567.	Marissa Workowski		
568.	Barbara Manguso		
569.	Steve Wisecup		

Page 36 - Signatures 542 - 569

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2459 Greg Mazu Comment #2460 Howard Blumenfeld Comment #2461 Lewis Lamm Comment #2462 Christian Campton Comment #2463 Ann Frame Comment #2465 Fran Womack Comment #2470 Susan Reed Comment #2471 Jared Veenstra Comment #2472 Dylan Moffitt Comment #2473 Susan Leahy Comment #2474 Tom Reichert Comment #2475 Susan Wilder Comment #2476 Robert Fine		

	Name	From	Comments
570.	A'ala Lyman	[redacted]	It's time for America to start protecting it's natural resources. Please don't make this another environmental travesty. Thank you, A'ala
571.	Susan Roushey		
572.	Denise Cook		
573.	Tim Schowalter		For more impact, add a personal comment here
574.	Leesa Phaneuf-Reynolds		
575.	Mary Bernard		
576.	Jeremy Kennell		
577.	Jon Cobble		
578.	Asha Wolf		
579.	Byron Hughes		Please save our river - our wildlife and natural resorces are being destroyed without any concern for the long term effect.
580.	Andrew Currie		
581.	Lynn Patrick		
582.	Laura Sugaski		Help us keep the Fraser River Valley pristine and life giving! Please require of the Denver Water to add these conservation measures to their Moffat project!
583.	Koby Chapman		
584.	John Suter		It is critical that the powers to be carefully review all of the options available as well as looking into additional storage on the front range with "Free Water" from the South Platte River which is NOT over appropriated when over 425,000 AF of free water leaves the state annually.
585.	Rebecca Handelsman		
586.	Sue Haith		
587.	Tajna Smith		
588.	Geoff Jurgensen		
589.	Emilie McKittrick		
590.	Florice Lietzke John Lietzke		
591.	kara southwell		
592.	Zoe Courville		
593.	Megan Svoboda		

Page 37 - Signatures 570 - 593

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2477 Damon Howard Comment #2478 Linda Cummings Comment #2479 Margaret Strom Comment #2480 Tricia Downing Comment #2481 Leslie Dines Comment #2482 Julie Bennett Brown Comment #2485 Linda Hattenbach Comment #2486 Victor Bergman Comment #2487 Andrea Dance Comment #2488 Ann Renninger Comment #2489 Kelli Johns Comment #2493 Al Wilder Comment #2495 Martin Curry		

	Name	From	Comments
594.	Greg Perry	[redacted]	The Fraser valley has been sacrificing its water for years. Its time the Front Range came to the table with a plan for reducing their unnecessary use before they come asking for more water. You can all have green lawns... that's what public parks are for.
595.	William Freeman		Please stop the effort to divert water from the Fraser River. This is one of the most beautiful rivers in the West, and it would be a tragedy to diminish that beauty in an effort to merely ammeliorate the shortsightedness of the City of Denver. Respectfully, W. Thomas Freeman
596.	Darin McCrea		
597.	Kellie Stone		
598.	Jan Freeman		
599.	David Barworth		
600.	Brian Hoskins		
601.	ralph michel		
602.	Karin Sroka		
603.	Ann Thompson		
604.	Joseph Camillo		
605.	Jon Chrysler		
606.	Traci Maddox		As a resident of Grand County, I have watched the devastation of the Fraser River and the Colorado River by those who want to water their Kentucky Bluegrass in Denver. While I don't mind people having grass in Denver, I believe they should take the affect on the rivers into consideration before trying to take even more of our water. As a major playground for Front Range residents, I wonder how they would feel if they could no longer fish or play in these rivers? We must ensure the rivers are healthy for future generations and can handle the flushing required after every winter. Conserve more--and we can all enjoy these beautiful rivers for generations!
607.	Dorothy Hooks		Save the River! Save the beauty that remains. Free nature!
608.	katie heard		
609.	Jason Jung		
610.	Bill Sroka		You don't know what you've got till it's gone!
611.	Jeanne LeFils		
612.	Marshall M. Haith		Don't destroy the character and recreational value of this river.
613.	william gardner		

Page 38 - Signatures 594 - 613

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2496 George Negley Comment #2497 Dee Curry Comment #2498 John Keeler Comment #2500 Ashley Ogden Comment #2501 Barbara Jarosz Comment #2502 John J. Snedeker Comment #2504 Jacqueline Moore Comment #2505 Barbara Keller Comment #2506 Ellen Horan Comment #2507 William Kelly Comment #2509 Kaye Piper Comment #2511 Tanya Garrett Comment #2512 Jennifer Gilbert		

	Name	From	Comments
614.	Mary Shoop	[redacted]	Why would any sane person want to destroy an integral part of our environment? Please act responsibly and keep the Frasier River Valley and the ecosystem that is sustained by the river intact.
615.	Emma Spurgin Hussey		
616.	Alison Thayer		
617.	Marcia Walker		Can you be so blind to realize that someday our Grand County residents will have to find water somewhere else because of your actions of taking such a large percentage of our water? Then, will you give it back?
618.	Barry Kroneberger		
619.	John Pelaez		My family just built a home in Frasier and we all enjoy the rivers. Please help keep the rivers and wildlife thriving!
620.	Bill Boecklen		
621.	Edward Jenest		Rather than try to take more, institute some mandatory water conservation programs so less water is required.
622.	Charmian Fournier		
623.	Stele Ely		
624.	Jessica Graves		
625.	Linda Mark		
626.	julee hughes		
627.	Lynn Stevenson		
628.	Frank and Jane Watts		Before more water is taken from the Fraser River the Denver Water Board needs to get serious (really serious) about increasing costs and penalties for excessive water use, waste, and blue-grass lawns. They should oversee the recirculation of waste water. Only then should more water be taken from the Fraser.
629.	Julie Ehmann		
630.	Angela Johnson		For more impact, add a personal comment here
631.	Carolyn Manly		
632.	Glenn McCoy		
633.	Sarah Wilderman		Once a river water level is lowered so fish and wildlife can not survive it is almost impossible for it to recover. Cities use water for lawns and pretty medians with grasses not suited for their climate. Denver needs to conserve water not take water from another town. Please deny Denver's permit to take more water from the Fraser River.
634.	Cynthia McCoy		
635.	Gabor Gardonyi		

Page 39 - Signatures 614 - 635

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2513 Annette Dugwyler Comment #2514 Morgan Roberts Comment #2515 Erynne Backer Comment #2516 Clint Roberts Comment #2517 Sarka Ruzickova Comment #2518 Laulima Lyman Comment #2519 George Sowards Comment #2522 Meredith Bryant Parks Comment #2524 Cheryl Stimson Comment #2525 Maria Mendez Comment #2526 Marie Jackson Comment #2527 Giesie Mike Comment #2528 Mauricio Diogo		

	Name	From	Comments
636.	jennifer bach	[redacted]	we nlive in a desert-stop acting as though your green lawns and such are natural. make do w/ the state and it's terrain that it has been givin. otherwise reep the depletion of all the wilderness and what it has to offer us, and has given us in the past. it may go away for good!
637.	Amy Visconti		We own a [redacted] now, but we used to live in WP and Fraser for about 8 years. My husband was a volunteer for the [redacted] for several years and we both worked at the resort. While we lived there we spent much of our time outdoors enjoying the natural playground the valley has to offer. Although we are currently living in the Denver area, we still visit as often as we can with our 2 young sons. Like many home owners, we rely on the tourism to keep our condo afloat during both winter and summer seasons. Without it we could not afford to keep that condo and we would probably not be able to visit as often as we do. Our visits put money back into the Valley's economy. While we are just one family, our condo brings many more families up to WP where they spend money on fishing, rafting, skiing, food, and other recreational activities. WP and the Fraser valley have a hard enough time trying to compete with the bigger resorts in the winter, it needs to remain as is to continue to bring in those summer visitors. Losing the Fraser River will just send money into the economy of other communities and this is something WP simply can not afford.
638.	David Holsinger	[redacted]	
639.	David McLaughry		
640.	Nora Stevenson		I support saving of the Colorado and Fraser Rivers. I have been out west and our natural environment is important to keep it as it is.
641.	G Law Thyne		
642.	Cass Kotrba		
643.	Joyce Burford		
644.	Colbert Cushing		Enough is enough!
645.	Dennis Troutman		
646.	Becky Freeman		
647.	Kelly Conner		
648.	Elizabeth Teitsma		Please let our Grand County rivers return to their natural state that nature intended. Instead of taking more water from the stressed waterways, consider the fact that the front range is a high desert and the people who choose to live there should not be planting and endlessly watering the Kentucky Blue grass that is used extensively in landscaping and which uses approximately 60% of the Grand County water that is diverted to the front range. EJT

Page 40 - Signatures 636 - 648

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2529 Mark Mitan Comment #2530 Amelia Hamilton Comment #2531 Derrick Hamilton Comment #2532 David A. Yeats Comment #2533 Christine Wysmyk Comment #2534 Ann Mahony Comment #2535 Hollis ONeill Comment #2536 Jaidee Finn Comment #2537 Jill Suffin Comment #2539 Cat Petersen Comment #2541 Lydia Castiello Comment #2542 Kassi Kielley Comment #2543 Joseph Dorwart		

	Name	From	Comments
649.	Matt Jungmann	[redacted]	
650.	Rebecca Giesie		
651.	Erik Schweitzer		
652.	Ken Slack		I have enjoyed the Fraser and Colorado rivers for many years. We must come up with a way to stop sucking them dry. There has to be a method of reducing water usuage on the front range.
653.	Debra Ruttenberg		
654.	Kathleen Nelson		
655.	Lori Anderson		
656.	Cindy Carter		Colorado is a nataional treasure for life and the good living of it! It would be a shame to stunt the area by drying up the rivers and not leaving enough water for everyone to enjoy!
657.	Mary Beth Corrigan		
659.	Robin Dresen		
660.	Tiffany Collette		The Fraser River is important to the ecosystem and tourism, which is really important to the economy of the Fraser Vally. Please don't give Denver more of our water to waste on GRASS. Please leave the river at current levels which is still already 60% depleted.
661.	Mary Ann Degginger		
662.	Roxanne Singler		
663.	Melisa LaFon		
664.	Sean P. Richardson		Much of Grand County's economy is based on tourist traffic, if we bleed the Fraser River dry it will be one less reason for people to come to such a beautiful part of our great nation. There must be other alternatives to Denver's water needs, I urge you to examine them.
665.	Lyle R Cordova		I have lived in Colorado all my life and am increasingly concerned about the negative impacts our water-guzzling way of life is having on rivers and streams. The Fraser River is just one more example. It's time to get serious about conservation in order to maintain quality waters and fisheries. Trout Unlimited's points need to be incorporated into the EIS.
666.	JoLynn Jarboe		
667.	Robert Beals		I'm really not sure what will be done next once the Fraser and Colorado become creeks. Conservation speaks volumes and I have a general Idea that this is only a short term fix, a bandaid on a situation *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2544 Mazie Smith Comment #2545 Becky Shaw Comment #2546 Barbara Masoner Comment #2547 Kristin Sullivan Comment #2549 Will Smith Comment #2550 Marissa Workowski Comment #2551 Barbara Manguso Comment #2552 Steve Wisecup Comment #2555 Susan Roushey Comment #2556 Denise Cook Comment #2557 Tim Schowalter Comment #2559 Leesa Phaneuf-Reynolds Comment #2560 Mary Bernard		

	Name	From	Comments
667.	Robert Beals	[redacted]	*(continued from previous page)* that will not go away without serious thoughts of everyone involved. Water useage is only going to get worse over the years,maybe we haven't been stringent enough before now. I for one enjoy a peaceful day on the river and to think someone would consider potentially making a river into a creek is unheard of. Please be wise in making a decision of this magnitude as I know you will. Thanks for listening Robert Beals
668.	Hildreth Wold	[redacted]	We need to protect our watersheds from over development, abuse and misuse. The sprawling growth on the eastern slope should be taking only the amount of water available in a desert climate rather than diverting and purchasing water from alternative sources. Remember, that the eastern slope is classified as a desert. Be wise, and take care of our Colorado wildlife and fisheries and watersheds for future generations.
669.	Corinne Lively	[redacted]	
670.	mark mirabito	[redacted]	
671.	Priscilla Longfield	[redacted]	
672.	Patricia Thomas	[redacted]	I have visited your beautiful valley at different times of the year & know how important the water is. Without out at least the level they have now, tourism would be greatly harmed & the valley's economy distroyed!
673.	Marie Huston	[redacted]	
674.	paul walker	[redacted]	
675.	Michael Johnson	[redacted]	
676.	Patricia Marshall	[redacted]	Enough water is diverted already. The front range communities need to show some respect and pass laws to restrict the use of water for irrigation in any new developments. Such restrictions are imposed in other growing areas such as Scottsdale Arizona and it is the responsible thing to do. Only after such restrictions are in place should any attempt to divert additional water be proposed or considered.
677.	Alvin Loong	[redacted]	
678.	David Burrows	[redacted]	
679.	Don't mess with	[redacted]	Texas also says! Don't mess with Colorado either!
680.	Jennifer Giacomini	[redacted]	Front Range communities need to consider restricting water consumption for outdoor landscaping. The front range is a high altitude desert, and its inhabitants should *(continues on next page)*

Page 42 - Signatures 667 - 680

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2561 Jennifer Mace Comment #2562 Jeremy Kennell Comment #2563 Jon Cobble Comment #2564 Janice Giacomini Comment #2565 Asha Wolf Comment #2568 Andrew Currie Comment #2570 Lynn Patrick Comment #2572 Christy Cutler Comment #2573 Koby Chapman Comment #2577 Rebecca Handelsman Comment #2578 Gretchen Healey Comment #2579 Sue Haith Comment #2580 Tajna Smith		

	Name	From	Comments
680.	Jennifer Giacomini	[redacted]	*(continued from previous page)* conduct their landscaping projects and maintenance as such. Xeroscaping regulations put into effect in front range communities would significantly reduce water consumption.
681.	William Roushey		
682.	Thomas Konrad		
683.	Jenna Sonntag		you can't have our water for green grass and clean cars
684.	Allison Wold		
685.	Holly Gager Glick		
686.	Alice Lecinski		The fish suffer – as does every other species that depends on the availability of water and established water tables. Colorado tourism depends on wildlife. Diverting too much water to Denver lawns creates a detrimental domino effect to Colorado's economy.
687.	Cullen Wold		
688.	James O'Connor		
689.	Sherry L. Olson, Ph.D.		The need for water to be moved from one watershed to another has to be questioned. Denver Water and municipal providers could diversify rebate programs that encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.
690.	Candice Johnson		
691.	Chester Reed		
692.	Ann Hill		
693.	Eric Olson		River good.
694.	Louise Parker		
695.	Ruth Chapman		
696.	silvina nussbaum cordts		
697.	Melanie Parent		
698.	George Jurgensen		
699.	Valeria Bonfiglio		
700.	keith schilhab		This is old thinking. Why continue to sacrifice our landscape and national treasures when we ask almost nothing of the intended recipients of this sacrifice. Until Denver imposes smart guildelines for the construction of ALL new residences and office buildings, and until they start charging what water actually costs, then I say No to this expansion.

Page 43 - Signatures 680 - 700

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2581 Peter Gach Comment #2582 Geoff Jurgensen Comment #2584 Emilie McKittrick Comment #2585 Carol Wolf Comment #2586 Florice and John Lietzke Comment #2587 Xondra Merrill Comment #2588 Kara Southwell Comment #2589 Zoe Courville Comment #2590 Linda Milanovich Comment #2591 Megan Svoboda Comment #2592 Georgia Garnsey Comment #2593 Pennie Page Comment #2594 William Edelstein		

	Name	From	Comments
701.	Shawna DePlata	[redacted]	If Denver Water takes water from this area they should have to follow the same rules as everyone else. What you take from the rivers you should have to put back. So if they are diverting the water they should have to pump it back after it has been used!
702.	katherine dines		PLEASE protect the waters from the Fraser and Colorado rivers in Grand County that are so essential for the habitats there. If we work together, we can find more inventive solutions!
703.	Jennifer Mace		
704.	Janice Giacomini		
705.	Robert Boxwell		Thank you for all of your efforts; I support them 100%. Robert Boxwell
706.	James Stratis		I am opposed to increasing water supply to the over irrigated front range Denver area at the expense of the health of the Frasier and Upper Colorado river systems.
707.	Christy Cutler		
708.	Larry Jamison		I have been in the valley for 14 yrs and the Fraser River is a vital part of the life of the valley. Not only for drinking water but also for recreation. Please consider the many mitigaation ideas in your decision. We all realize that Denver and the residents need water to sustain life but the excessive amount of water that is used to keep lawns green is not sustainalbe.
709.	William McCarthy		Colorado #1 resource is recreation. Take away recreation such as natural rivers and you deleat the purpose of living here.
710.	Gretchen Healey		
711.	peter gach		For more impact, add a personal comment here
712.	Susan Edelstein		We live in the COlorado River Basin, as do many people. Please follow the suggestions of this petition to ensure water quality and quantity. Thank you.
713.	Carol Wolf		
714.	Xondra Merrill		
715.	Linda Milanovich		
716.	georgia garnsey		
717.	Pennie Page		
718.	William Edelstein		
719.	Tracy Mailloux		For the last 10 years, a group of friends and I travel to Colorado to White Water Raft. We have rafted many sections of the Colorado River, and have always had a wonderful time; this is why it has become an annual *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2597 Danielle Dresch Comment #2599 R.K. VanMeter Comment #2604 Bill Milek Comment #2607 Susan Cahill Comment #2609 Ann Musman Quigley Comment #2610 Darin McCrea Comment #2611 Kellie Stone Comment #2612 Kristin Davis Comment #2613 Guillermo Ferla Comment #2614 Jan Freeman Comment #2615 Hollis Wold Comment #2616 David Barworth Comment #2618 David Litten		

	Name	From	Comments
719.	Tracy Mailloux	[redacted]	*(continued from previous page)* vacation. It would be a shame to see the rivers dwindle. It would be economic disaster for many businesses that depend on tourism, in addition to another man-made disaster. It would also be just a bandaid for the problem to supply water to the Denver area; and an expensive one at that. I think that other, less destructive, and less expensive options are available.
720.	Mark Radlauer		I am very interested in seeing mtn rivers protected, and do not support any expansion of use of these river basins by Denver
721.	danielle dresch		
722.	Bill Spence		I think that it is critical to help the zone of interest to have sufficient water for it to approach its natural state before the major diversions to the Front Range were put into place. I think that there needs to be a balance between the needs of various population groups, with a weighting in favor of seniority of use. I would like to know who in the Grand County area benefited by selling various water rights and what recourse exists.
723.	R.K. VanMeter		
724.	Andrew Kane		Respect the source of the watershed.
725.	Peg Thompson		It seems imperative to me that people on the Front Range (including me) be forced to conserve water BEFORE we take more water from Western Slope streams. This could be done by rate structure, construction guidelines, public education, etc. The amount of water wasted is unbelievable.
726.	timothy Davis		we must not continue the taking of fraser and colorado river water...the valley and the resource are already suffering from this practice and removing additional water will have catastrophic consequences.
727.	Eric Russell		At one time the Colorado River flowed all the way to the Ocean. It was considered a great source of water and life to many species along it's banks. Now it barely makes it's way through Arizona. Many people and animals are deprived of it's life giving resource. The Fraser River Valley is the Head Waters of the Colorado River Basin. If you take water from this valley, you take water from the Colorado River, which in turn takes more water away from the life down stream. Denver and the Eastern Plains of Colorado were not meant to recieve this water as a natural flow. Why is it that you now feel entitled to recieve this water? There are other river systems which naturally feed directly into Denver and it's surrounding areas. Is there something wrong with the water in the Poudre River, Cherry Creek, or *(continues on next page)*

Page 45 - Signatures 719 - 727

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2619 Leslie Geiser Comment #2620 Victoria Heffington Comment #2621 Carrie McManigal Comment #2622 Patrick Moran Comment #2623 Peter Nyvall Comment #2624 Julia Grace Watson Comment #2625 Julie Pelaez Comment #2626 Thom Evans Comment #2627 Brian Hoskins Comment #2628 Michael Kunkel Comment #2629 Ralph Michel Comment #2630 Steve Welter Comment #2631 Karin Sroka		

	Name	From	Comments
727.	Eric Russell	[redacted]	*(continued from previous page)* the St. Vrain? With very low snow pack this current winter season, the Fraser and the Colorado are hurting enough as it is. Leave these rivers be and use the ones you have at your own two feet.
728.	bill milek		
729.	Mark Van Cleave		we also own a condo in Granby and visit numberous times a year
730.	Susan Cahill		
731.	Ann Musman Quigley		
732.	Kristin Davis		
733.	Guillermo Ferla		
734.	Hollis Wold		
735.	Glen Girard		There should be more focus directed towards reduction of water demand in the metro area.
736.	David Litten		
737.	Leslie Geiser		
738.	Victoria Heffington		
739.	Carrie McManigal		
740.	Patrick Moran		
741.	Peter Nyvall		
742.	Julia Grace Watson		
743.	Julie Pelaez		
744.	Thom Evans		
745.	Michael Kunkel		
746.	Steve Welter		
747.	Joe O'Neil		
748.	David Farris		The Fraser River is an important recreational and public welfare resource that indirectly supports important economic activity in areas such as tourism. Reducing the flow will make the valley more vulnerable to economic downturns by reducing the number af viable industries.
749.	Stellina Giannitsi		
750.	LAURIE GRIFFIN		
751.	Brian Young		Removing +65% of the Upper Colorado River basin's water borders on catastrophic today. Increasing that level significantly, and giving the water to towns with little or no conservation measures in place is beyond absurd.
752.	Jennifer Aronson		

Page 46 - Signatures 727 - 752

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2632 Joe O'Neil Comment #2633 Ann Thompson Comment #2634 Joseph Camillo Comment #2636 Jon Chrysler Comment #2637 Stellina Giannitsi Comment #2639 Laurie Griffin Comment #2642 Katie Heard Comment #2643 Jennifer Aronson Comment #2644 Laura Langen Comment #2645 Jason Jung Comment #2648 Jeanne LeFils Comment #2652 William Gardner Comment #2655 Emma Spurgin Hussey		

	Name	From	Comments
753.	Laura Langen	[redacted]	
754.	Sidney Logemann		Our rivers are among the reasons people want to live in the metro area in the first place. We should be diverting less, rather than more, water from them. These plans are akin to killing the goose to get a golden egg for short-term, selfish gain.
755.	Nick Mitchell		In my efforts to conserve water I only shower twice a week, once to start off the work week and once to start off the weekend.
756.	Dustin Seitz		Rip some lips.
757.	david cloninger III		PLEASE DON'T KILL THE FRASER RIVER!!!!
758.	Bev Friesen		
759.	Thomas Jones		We need our water for tourist $$$ in our county. The aquatic creatures; Trout, salmon, salamanders, boreal toads. Just to name a few. Place tighter water restrictions on towns and cities and golf courses down stream; ie Grand Junction, town is Utah and in Arizona and the biggest sucker of them all Las Vegas!!!!!!
760.	Judith Cloninger		I believe that the Front Range people and the people who are bleeding the Colorado River dry, need to learn to conserve their water or before long there won't be ANY water! Please stop this Moffat Project. Judi Cloninger
761.	David B. Cloninger, Jr.		Stop this project immediately before everyone suffers
762.	Joe Wold		
763.	Bob Peterson		The Fraser River cannot be comprised any more than it has already. The Front Range should find water somewhere else.
764.	Ian Dance		
765.	richard lucas		Increased draining of the Fraser River will not solve Denvers problems and only increase the danage that has already been noted to the River
766.	Janie Dalton		How can we possibly allow diverting our beautiful rivers because of selfish people's landscaping and lawn maintenance! We should never be in a position to lose any part of our beautiful outdoors...that EVERYONE can enjoy...for a select few. Shame on whomever even allowed this to be a possibility!!!!!!!!!
767.	Aja Wyatt		
768.	John Erwin		
769.	M. Kalendovsky		There is not an infinite supply of water available...conservation efforts will have to be enacted eventually, no matter what. Focus on conservation now *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2656 Bev Friesen Comment #2657 Alison Thayer Comment #2661 Barry Kroneberger Comment #2664 Joe Wold Comment #2665 Bill Boecklen Comment #2668 Charmian Fournier Comment #2669 Ian Dance Comment #2670 Stele Ely Comment #2672 Jessica Graves Comment #2674 Linda Mark Comment #2675 Aja Wyatt Comment #2676 Julee Hughes Comment #2677 John Erwin		

	Name	From	Comments
769.	M. Kalendovsky	[redacted]	*(continued from previous page)* while the environmental impacts can still be mitigated, rather than waiting until the water supply has run out!
770.	Adam Schlanger		
771.	Lewis Black		
772.	CHUCK WICHTOSKI		
773.	Cassidy Elizabeth Cloninger		PLEASE DO NOT DO THIS! This is the most beautiful place and to divert water to the greedy front range is not right. Hundreds of people FROM the front range comes to Winter Park to enjoy it's beauty YEAR ROUND! You take the water and everything will go. I love Colorado and DON'T want Fraser Valley ruined. PLEASE STOP!
774.	Sandra Wade		
775.	Kathy Heuerman		
776.	Ei Strain		This is beautiful Country..God's Country...Ruined by Humans down in Denver Who refuse to admit this is a semi-desert climate. ENOUGH with the GREEN LAWNS PEOPLE!!! That goes out to all the HOA"s that ridiculously water morning noon and night even if it is raining and cool. Denver water needs to get a grip and bettereducate on water conservation not just during a drought but for infinity. There are no trees here it is dry and the summers are hot..rock it and plant it. :)
777.	Melinda McWilliams		Denver Water should implement more stringent conservation measures, particularly prohibiting Kentucky Bluegrass, which takes lots of water to stay green in the summer. About 50% of Fraser River waters diverted to Denver are used to water lawns. Outrageous!
778.	Debra Lucero		
779.	Bob Sheldon		
780.	Deborah Duke		
781.	Camillo Coogan		
782.	Laura Terpenning		Please put the health of our mountainous ecosystems above green lawns on the Front Range. A lot more can be done to decrease irrigation needs. I live on the Front Range and love my xeriscaped front yard.
783.	jonas hadley		
784.	Jane Brown		
785.	Thomas Baumgarten		
786.	Larry Cato		

Page 48 - Signatures 769 - 786

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2678 Lynn Stevenson Comment #2681 Julie Ehmann Comment #2682 Adam Schlanger Comment #2683 Angela Johnson Comment #2684 Chuck Wichtoski Comment #2685 Carolyn Manly Comment #2686 Glenn McCoy Comment #2689 Sandra Wade Comment #2690 Cynthia McCoy Comment #2691 Kathy Heuerman Comment #2692 Gabor Gardonyi Comment #2696 Debra Lucero Comment #2698 Bob Sheldon		

	Name	From	Comments
787.	Scot Stier	[redacted]	Let's not destroy everything please. The human foot print on Earth has made an irreversible dent on the planet as is. Technology makes life easier for people now, while destroying natural resource for the future. If we can't live in an area without drastically impacting our surroundings, then it's not meant to be inhabited.
788.	Jennifer Marschall		
789.	ann loveless		
790.	Jerry & marilyn flynn		
791.	sandra geiser		
793.	Michael Davlin		The Fraser is a treasure that is already been sacrificed and cannot afford to be further diluted for lawns and car washes on the front range.
794.	Marsha Williams		
795.	Layne Hovey		We must preserve our natural waters for the use of all and for our future generations. Save the trout!
796.	Alicia Englund		
797.	Becky Buist		
798.	Peter Zalocha		I used to work for the Parks Dept. In a Front Range community, and I've witnessed first hand the excesses in water use for landscaping and golf courses.
799.	Margaret Murray		
800.	Kelly Salling-Davies		Please don't divert any more of the precious Colorado!
801.	Jessica Blagen		We all live downstream.
802.	Laura Hagar		The bulk of the water that begins here needs to stay here. Since when is a city's need more important than our mountain community's need?
803.	Anne Vondracek		
804.	Martha Blevins		
805.	Christy Hegstrom		
806.	Holly Harrison		
807.	Dawn Estenor		
808.	Amalie McCarthy		
809.	Linda Erickson		The Fraser River has been a special place for us in the past...picnics year-round, fishing, and snow-shoeing...let's keep it special!
810.	Paul Covey		To Scott Franklin and US Army Corps of Engineers. As a native Coloradoan who has grown up in many parts of the State I know how difficult and complex many of the *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2699 David Holsinger Comment #2700 Deborah Duke Comment #2701 David McLaughry Comment #2702 Camillo Coogan Comment #2705 G. Law Thyne Comment #2706 Jonas Hadley Comment #2707 Cass Kotrba Comment #2708 Jane Brown Comment #2709 Joyce Burford Comment #2710 Thomas Baumgarten Comment #2711 Larry Cato Comment #2714 Dennis Troutman Comment #2715 Becky Freeman	**Name** / **From** / **Comments** 810. Paul Covey [redacted] *(continued from previous page)* issues surrounding Water and the west can be. The Fraser river at one time was proposed to be the head waters of our mighty Colorado River. Although Grand Lake to North won that battle in history it hints at the importance the Fraser has in many people's mind, both then and now. As a child, I attended Fraser Elementary and hand caught trout in one of its tributaries next to the old pole mill by our school. Over the years I have noticed the reduced spring run-off that used to flood the valley. Where before the river kissed the road berms, now it is only a trickle. This I attribute to an increased diversion at the Moffet Tunnel for the city of Denver's water supply. Please stop diverting water essential for the health of the Fraser and Colorado Rivers. We're also wasting our money in the construction of infrastructure for these water projects and also wasting money on the maintenance of these infrastructures that have been shown to become obsolete of their intended goals. We could better use that money to build up education of the populous to conserve the water we already have available and build up the main economic industry in the state, tourism, which relies heavily on our native water ways. Thanks for your time and consideration, Paul Covey 811. Jim Jamison 812. Tara Jamison 813. Henry Covey 814. Carolyn Hartsog [redacted] Headwaters are important to protect and sustain. I grew up in Denver and spent every summer weekend fishing at Twin Lakes, Williams Fork, the Fraser River, Grand Lake and Shadow Mountain. Even though I have lived in Montana for over 30 years, I still think the Colorado Rockies are more beautiful than any place on earth. It angers me to see Denver homes, country clubs, golf courses, and parks using so much water. While I love the grass as much as anyone, the lawns and expansive green landscaping needs to change with the changing environment and climate. Please do not distroy the beauty of the Colorado Mountains. The pine beetle is already distroying so much, and Montana's forests are not far behind. At least leave the water in its native source and let Denver and the front range adapt to its changing environment by limiting it's water supply for more important uses. 815. Theresa Ayre 816. Lorraine Jurgensen [redacted] *Page 50 - Signatures 810 - 816*	

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2716 Jennifer Marschall Comment #2717 Kelly Conner Comment #2718 Ann Loveless Comment #2720 Jerry and Marilyn Flynn Comment #2722 Sandra Geiser Comment #2723 Matt Jungmann Comment #2724 Rebecca Giesie Comment #2725 Erik Schweitzer Comment #2728 Marsha Williams Comment #2729 Debra Ruttenberg Comment #2731 Kathleen Nelson Comment #2732 Alicia Englund Comment #2733 Lori Anderson		

	Name	From	Comments
817.	David Steele	[redacted]	I will be more supportive of further water diversion when comprehensive conservation a awareness is a prat to main stream culture. When local news broadcasts routinely mention conservation tips, like they do about being safe in extreme cold, when school children are taught about conservation as a matter of course, and especially when it becomes socially unacceptable to grow blue grass lawns, I will be open to more water diversion. In addition, I want to see more awareness about the massive amounts of water used in mining and agro-business and consideration impact cost to environments and down stream water users. The scramble for water is only going to intensify over the next few decades and I would rather see creative communal problem solving than lengthy contentions court battles and unsustainable environmental decimation.
818.	Jessica Hennesy		
819.	Bruce Spurgiesz		
820.	Marc Hager		I do not condone any further nor future water diversions to the eastern slope. If you want to live in an alpine desert area then don't grow grass. If you want to mow lawns so badly then move to Kentucky and your more than welcome to mow mine as well. Quit killing the real reason why people live and visit Colorado in the first place (the outdoors). Colorado has too few excellent fisheries as is and the Fraser/Upper Colorado is one of those precious few that I have had the pleasure to enjoy.
821.	Brandi Kelley		
822.	D and A Kane		I would like to see the shortfall of water for the front range be mitigated with stricter water conservation measures. We know we are effecting the Western slope with our increase in population and water consumption. I think we could all do more here on the Front Range.
823.	shawn nohl		Please save our river!!!! We need it to keep our community as beautiful as it always has been. I am the head gardener of the Town of Winter Park and we need our water to keep our flowers and parks a place were home owners and tourist alike want to come back again and again. Thank you so much!!! Shawn M Nohl
824.	Kimberley Jensen		
825.	Karl Kharas		
826.	Rexanne Emigh		
827.	Kathy Fleming		
828.	Lisa Smith		Please keep the Colorado river alive!
829.	Ben Sittig		My livelihood depends on a healthy Fraser River. Keep the water in the river!
830.	Honor Ulveling		

Page 51 - Signatures 817 - 830

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2734 Becky Buist Comment #2737 Mary Beth Corrigan Comment #2738 Margaret Murray Comment #2739 Robin Dresen Comment #2743 Mary Ann Degginger Comment #2744 Roxanne Singler Comment #2746 Melisa LaFon Comment #2747 Anne Vondracek Comment #2748 Martha Blevins Comment #2750 Christy Hegstrom Comment #2752 Holly Harrison Comment #2753 JoLynn Jarboe Comment #2754 Dawn Estenor		

	Name	From	Comments
831.	Melissa Maier	[redacted]	I love the Fraser river. I walk my dog next to it everyday. Perfect for fishing in the summer... I wouldn't know how to live in the valley without it!
832.	Carol Holzworth-Moore		Use only the water that does not deplete the river! If it is too much - then stop!!!!! You can not use the water for one community if it harms another. We all will be hurt if this continues.
833.	Joseph Jameson		I love the Fraser River!
834.	Lauren Cowart		The Faser River Rocks! I just don't want it to be all rocks.
835.	Michael Penney		
836.	William Hardardt		
837.	Shelby White		
838.	adrianne potter		
839.	jennifer mitchell		
840.	Bruce Dines		Conservation is more affordable to the State. People in the front range will step up and do the right thing (i.e. conserve), if the need for conservation is well positioned, and they are informed...
841.	Bob Getz		I have already emailed Mr Franklin my concerns. Having spent nearly 25 years in the back country areas of Colorado - including the Fraser Valley RMNP, Steamboat, etc. I must say that the Fraser Valley is a weak ecosystem as its most important resource is already being siphoned to Denver . Removing more water from the area is not the answer. We in the Denver Area proved we can make improvements in conservation and are willing to do far more. When the "Red Forest" catches fire, huge water resources will be necessary to protect people and property in the area. How can we deprive residents of their property when over 50% of water used in the Denver Area is for watering lawns?
842.	Eric R Mowrey		
843.	Melanie Bender		
844.	brendana delaney		keep the water on the west slope! save the fraser
845.	Amanda Stoltz		
846.	Ashley Jardine		
847.	Ashley Bobo		
848.	nicholas covey		The more removed I become from home, or the woods in general, the more I slip into a life of superficial, concrete routines. In childhood my happiness was based around what, essentially, the rivers and lakes provided. We didn't have the typical urban distractions, so our attention was

(continues on next page)

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2756 Amalie McCarthy Comment #2760 Jim Jamison Comment #2761 Tara Jamison Comment #2763 Corinne Lively Comment #2765 Mark Mirabito Comment #2766 Theresa Ayre Comment #2767 Priscilla Longfield Comment #2768 Lorraine Jurgensen Comment #2771 Marie Huston Comment #2772 Jessica Hennesy Comment #2773 Bruce Spurgiesz Comment #2775 Brandi Kelley Comment #2778 Kimberley Jensen		

	Name	From	Comments
848.	nicholas covey	[redacted]	*(continued from previous page)* directed to nature. The lessons and morals I've learned are directly related to my environment, and I consider myself to be a reasonable and relatively good person. I want my children and their peers to have the same chance to learn about what's important in life.
849.	jessica buttery		
850.	Jenny Beltman		I am a longtime Fraser valley resisdent I do not want to see more of our presious water diverted to Denver when there are other ways to conserve and meet water needs
851.	Carol Winder		
852.	shawn combs		Please listen to me and thousands of others, find a better solution than draining the river. Keep Denver Brown!
853.	Ray Samuelson		I was raised in Granby and fished the Frazer and upper Colorado basin. These rivers a just a shadow of what they used to be. We must conserve what is left.
854.	Philippe Ducreux		
855.	Jerry Harris		As a prior resident of the Fraser River Valley I am very concerned that the stream flow be restored and sustained. This is a very important natural resourcethat must be preserved.
856.	Anita Entz		
857.	Helen Evans		
858.	Doug draper		
859.	Kristen Cahalane		
860.	Lisa Jenkins		
861.	Dale E Qualls		Save the Colorado
862.	Lynn Crandall		
863.	Roger Krichbaum		
864.	Seth Henry		
865.	Rita Pech		
866.	Walker Williams		The time to take a responsible stance on water usage and river diversion is now, before shortages and deterioration become full-blown disasters.
867.	Ryan Blizzard		
868.	benner hartnett		
869.	Edith Strate		Water resources must be managed in such a way that waste is reduced and healthy ecosystems are maintained. Keep the Fraser River healthy and flowing!
870.	Debbie Erwin		

Page 53 - Signatures 848 - 870

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2779 Karl Kharas Comment #2780 Rexanne Emigh Comment #2781 Kathy Fleming Comment #2782 Paul Walker Comment #2784 Michael Johnston Comment #2786 Honor Ulveling Comment #2788 Alvin Loong Comment #2789 David Burrows Comment #2792 William Roushey Comment #2793 Thomas Konrad Comment #2795 Alison Wold Comment #2796 Holly Gager Glick Comment #2798 Cullen Wold		

	Name	From	Comments
871.	Ronnie Crawford	[redacted]	
872.	Bradley Hilton		Keep the GC beautiful!
873.	Gary Salberg		
874.	David Salberg		Leave our Natural Resources alone!
875.	Rick Miller		
876.	John Amen		
877.	Andrew Jensen		
878.	Betsy Glavin		
879.	DeAna Durbin		
880.	Brene Belew-LaDue		What affects the Colorado also affects The Fraser River, Grand Lake and all the other surrounding water systems in Grand County. Please look at the eco-system as a whole not just in pieces.
881.	Raymond Lucas, Jr		
882.	Rex Emmons		
883.	Pam Boland		
884.	Petra Recor		Please talk and listen till a solution is found for all and for the future. Do NOT let our rivers die!!!
885.	Nancy Juskowich		
886.	Marshall Weeden		
887.	Kimberly Sherry		
888.	Lynda Troccoli		
889.	Cindy Southway		
890.	Tina Wilson		
891.	John Wermers		
892.	Todd Lansing		
893.	Fred Brothers		Beautiful area where the river runs through it. Must keep it runnin through it.
894.	Isabel Conger		
895.	MILLIE BOYD		
896.	William Fanning		
897.	David Claypool		
898.	Mark Volt		
899.	Bonnie Koblitz		I am against Denver Water's taking any more water from the Fraser River for municipal use or any other use on the Front Range. Taking more water will damage the river too much and damage aquatic life and especialy fishery habitat.

Page 54 - Signatures 871 - 899

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2799 James O'Connor Comment #2801 Candice Johnson Comment #2802 Chester Reed Comment #2803 Ann Hill Comment #2805 Louise Parker Comment #2806 Ruth Chapman Comment #2807 Silvina Nussbaum Cordts Comment #2808 Melanie Parent Comment #2809 George Jurgensen Comment #2810 Valeria Bonfiglio Comment #2813 Kevin Davlin Comment #2814 Michelle Fournier Comment #2818 Lewis Black		

	Name	From	Comments
900.	Susan Bergman	[redacted]	We need the Fraser River and Colorado River to flow strong in our Fraser valley to preserve our resources and lifestyle in the mountains.
901.	Gayle Knorr		Water is always a concern. I am a 4th generation native of Colorado, and a 33 year resident of Summit County. Please consider what is best for the entire community of Colorado - CONSERVE!
902.	Jeremy Sebestyen		
903.	Bob Fanch		The Fraser River is the lifeblood for Grand County and is being depleted by Denver and other cities who have not, in my opinion, done what they can do to address the waste and regulations within their control. The easy thing is to use more water. That is not the long-term solution for users or those who wish to protect the rivers.
904.	Deborah Buhayar		I HAVE RECENTLY RETIRED TO GRAND COUNTY, FULFILLING MY DREAMS TO LIVE IN THIS BEAUTIFUL COUNTY THAT OUR FAMILY HAS ENJOYED FOR YEARS. I AM SADDENED THAT OUR WATERWAYS ARE SO THREATENED BY INADEQUATE CONSERVATION MEASURES AND UNFETTERED GROWTH. PLEASE INCORPORATE REQUIREMENTS INTO THE DEIS SO WE CAN ASSURE THE CONTINUED HEATH OF OUR RIVERS.
905.	Penne Pojar		
906.	Shmuel Bergman		
907.	Greg Hood		
908.	Jack Pottle		
909.	Sam Doyle		Even though there is apparently an agreement in place, continuing to pull water out of the Fraser River will impact the habitat throughout that region. I would suggest that an independent analysis be performed to determine precisely what that impact is. Denver Water customers should be focused on conservation as opposed to draining our beautiful rivers. The most important consideration must be: What are we leaving for our children and their children when there aren't rivers or habitats in our mountains for future generations to visit and enjoy? We must be able to look at ourselves, and at our children, and say that we have done our best for the environment not just for our lifetime, but for future generations.
910.	danny hendershott		

Page 55 - Signatures 900 - 910

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
911.	Miles B. Miller	[redacted]	Please protect our fisheries and prevent further degradation of water quality in Grand County by rejecting the proposed action from Denver Water. Removal of more water from both the Fraser and Colorado Rivers from the proposed action will irrepairably impact both rivers by reducing flow levels and increasing water teperatures.The cumulative effects from this proposal have not been adequately analyzed or mitigated in this proposal and the long term affects to both streams would be catastrophic.
912.	T Hartmann		Save the Fraser River and educate the Front Range
913.	Cameron Taussig		
914.	Chris Sammons		My family has over 100 yrs. of ranching along the Colorado River south of Kremming. Ask me what happens when more water is diverted from the Fraser River. Ask about loss of habitat/species. Loss of productive agricultural land due to low water tables. Loss of native species of trees/grass/willows. Losses to our tourist business structure because a once clean, clear, cold fast flowing river basin with a HUGE spring runoff flood has now become a mirky, warm, slow moving cesspool of moss and death! I say NOT ONE MORE DROP!!!! NOT ONE MORE DROP!!! NOT ONE MORE DROP!!! There are some things that can not ever be "mitigated"; trans-basin diversion of water is one of those things. You are severely delusional if you think "man" can replace what NATURE has in place; and no, a couple acre feet of late season "fish flush" does not a spring runoff make. Denver Water customers, whether they know it or not, are destroying one of their favorite recreational areas, the beautiful Fraser Valley and everything else down stream. Someone please wake these people up, and start an aggressive mandatory conservation program NOW, before it is too late for all of us.
915.	Gillian Classen		
916.	Nicholas Farkouh		
917.	Danielle Wantuck		
918.	jeff Poole		good luck howdy guys
919.	Luanne Kay		It is a lesson for our young(the future) we speak so freely of learning that our world is not for the taking or plundering at whim. It is more of protecting our truest depleting resource , water not oil.
920.	Donna Huff		God Bless you Chris Sammons! We need more ranchers like you! I echo your feelings. Stop diverting water.
921.	Ken Gillis		As a resident of Denver, a property owner in Grand County and a fisherman that loves the Grand Valley and all of its natural beauty, I urge you to require Denver Water to *(continues on next page)*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
921.	Ken Gillis	[redacted]	*(continued from previous page)* include in its Moffat Firming Project Draft Environmental Impact Statement more emphasis on conservation and minimum flows to sustain a healthy fish population in the upper Colorado and Fraser Rivers, and to also include flushing flows to keep the streams from clogging with sediment. As a resident of Denver, I am willing to use less water by adopting smart conservation measures and I hope that Denver Water will encourage its other customers to do the same if this will help maintain the great natural resources of the upper Colorado River and its tributaries.
922.	Krissy Morrow		
923.	Debra Karl		
924.	Jeff Rozean		There is far more information on thi type of impact than is currently being considered. The Fraser river is only a fraction of what it used to be.
925.	Juliana Cyman		
926.	Therron Hofsetz		Stop letting Denver, Ft. Collins and Colorado Springs take the water out of our mountain rivers and streams.
927.	Alexey Davies		
928.	Robert Gotto		
929.	Rusty Pinkerton		
930.	Lynna Mustapha		Recite the Sutra of Golden Light for Peace and Global Harmony What is the Sutra of Golden Light? It's an ancient teaching given by the Buddha to empower the kings of his time to govern with wisdom and compassion. Even today, reciting the Sutra creates the cause for wise and compassionate leadership. You can see it in the contents of this beautiful sutra. Kyabje Zopa Rinpoche has repeatedly requested us, from the bottom of his heart, to recite this Sutra due to the grave situation - violence, oppression, corporate greed, environmental catastrophe - facing us on this planet today. "The holy Golden Light Sutra is the king of the sutras. It is extremely powerful and fulfills all one's wishes, as well as bringing peace and happiness for all sentient beings, up to enlightenment. It is also extremely powerful for world peace, for your own protection, and for the protection of the country and the world. Also, it has great healing power for people in the country. ... Anyone can read this text, Buddhists and even non-Buddhists who desire world peace. This also protects individuals and the country from what are labeled natural disasters of the wind element, fire element, earth element, and water element, such as earthquakes, floods, cyclones, fires, tornadoes, etc. They are not natural because they come from causes and *(continues on next page)*

Page 57 - Signatures 921 - 930

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	Name **From** **Comments** 930. Lynna Mustapha [redacted] *(continued from previous page)* conditions that make dangers happen. They come from past inner negative thoughts and actions of people, and from external conditions. The benefits of reading this sutra are immeasurable ... reciting just a few lines of the Sutra of Golden Light creates more merit than making ... immeasurable offerings to the Buddha. Reciting this sutra directs one's life towards enlightenment. There is so much merit ... one's life becomes so easy, whatever one wishes for one receives ... there is unbelievable purification ... one liberates numberless sentient beings from the oceans of samsaric suffering and brings them to enlightenment." Benefits of Sutra of Golden Light http://sutraofgoldenlight.michaeljohnparker.com/sutra-golden-light- Lama Zopa Rinpoche says:This sutra is inconceivable, For its ocean of virtue is without end; It frees every being From countless oceans of suffering. This King of Glorious Sutras Fully destroys external enemies, Turns back legions of foreign armies, Removes the fear of the terrified and poor And causes supreme virtue. For beings without merit, The store of their merit Will grow into a limitless, incalculable, inconceivable mass. 'This text is very precious; it brings peace and happiness and is very powerful to stop violence. It gives incredible protection to the country from violence etc. By hearing this text, one's karma gets purified. This text increases success and, especially for leaders like kings or presidents, brings success in guiding in virtue, the path to happiness. If anyone has problems-if one is dying or dead; if the devas have turned against one and nothing is working; if, merely by expressing oneself, one's friends, loved ones, husband, wife, family members and even servants get angry with one; if one's wealth declines or if one has harm from black magic or spirits, with bad dreams or fearful things happening-then one should wash, put on clean clothes and with a peaceful mind listen to the transmission of this text. Then all will be pacified. Anyone who hears it creates much merit and is highly admired by the buddhas. http://www.fpmt.org/teachers/zopa/advice/goldenlight.asp In whichever country this is taught, the whole country benefits. The king of that country doesn't get attacked and disease is eliminated, everyone is happy and the country becomes harmonious; there are no quarrels. The king gives religious freedom and is always protected by the devas. It is especially good to be read in places where there is a lot of fighting. As well, there is prosperity and rains come at the right time. Anyone who keeps, memorizes or contributes to this text exceeds the eight worldly beings and all their wishes get *(continues on next page)* *Page 58 - Signature 930*	

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
930.	Lynna Mustapha	[redacted]	*(continued from previous page)* fulfilled. Buddha told the four guardians to make offerings and serve this text, and always protect the people who memorize or even just read it. The four guardians acknowledged they would protect those who read it and would help and fulfill all their wishes. Memorizing or making offerings to this text is like making inconceivable offerings to Buddha. Enlightenment will never be reversed within anyone in whose ear these holy words are spoken; the life will always be directed toward enlightenment and one will never fall back. There is no question if you memorize the text. The deva, Hamachiwa Pala, told Buddha that she will protect the bhikshu who recites this text and he will receive all that is needed: property, a stable mind and so forth. Whoever even tries to read or understand this text will experience the comfort and happiness of devas and humans for 100 billion eons; fame and perfect crops; and will become a buddha. The earth goddess definitely will help even if only one chapter or one bodhisattva's name is mentioned; she will protect those sentient beings who even read and try to understand one verse (four words), and will fulfill their wishes. Those sentient beings who hear only one verse will never go to the lower realms. The Buddha told the earth goddess that even if a person hears only one verse, they will be born in the deva realm. Further, the Buddha told the earth goddess the non-virtuous karma of the person who hears even one verse will be eliminated and they will achieve enlightenment.'
931.	Brian Courtney	[redacted]	
932.	James Espinosa		
933.	Brendon Hofsetz		Keep the water in the river!
934.	Richard Johnson		
935.	Robert Pearson		
936.	Toni Telander		
937.	Sylvia Hites		
938.	Mary Bissell		
939.	Craig Cahalane		
940.	Patty Godbey		
941.	Nancy Pace		
942.	Melaine Hendershott		
943.	Jennifer Hake		
944.	Jonas Pearson		

Page 59 - Signatures 930 - 944

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
945.	Marge Dowell	[redacted]	Do not let Grand County get railroaded by Denver Water. Nothing infuriates me more that looking at the lush green lawns in the dead of summer in Denver because I know they are sucking the water out of Grand County and other mountain communities. They live in a very arid climate and they need to landscape accordingly. Considering the lack of snow here this winter, I wonder why they aren't already discussing water conservation with their customers.
946.	Marylane Packer		
947.	Julie Krueger		
948.	Kent Zaitz		The Fraser River is alreday running to low that the fish are being stressed because of the warm water temperatures. I live on the front range and make a living marketing new home subdivisions, but I am tired of the taking of water from the mountain communities for the use of lush lawns of subdivisions built on an arid plain. If the cities don't have enough water then rock in the lawns instead of taking from others.
949.	Kim Morisset		
950.	D Billiet		
951.	Caren Welcome		
952.	Margo Jacobs		
953.	John Uren		
954.	Danielle Smith		
955.	Travis Powell		
956.	Jesse albertini		
957.	Dane De Voy		I enjoy rafting the Fraser for the few short weeks we can now and cant imagine what the river will be like if they divert any more water!
958.	meredith lipscomb		
959.	Rodney Berry		
960.	Alex Georgas		SAVE THE RIVER!!
961.	tracey ross-shannon		
962.	charles caldwell		
963.	Jason Saunders		I fully support keeping our wildlife intact. I believe we can have brown grass if that means beautiful mountains. Please let the mountains live!
964.	Brandi Gutierrez		
965.	Gerald Russell		
966.	Steven Irving		
967.	Joan Vosburg		

Page 60 - Signatures 945 - 967

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
968.	Alex Ciancaglini	[redacted]	
969.	Andy Birch		
970.	Zach Jackel		
971.	Julie Martin		Please save our rivers!!! Don't let the front range water their lawns with the water we need to survive in our agricultural and tourism based economy.
972.	Hayley Crosby		It is time to stop searching for short term solutions to more water demands. Look to the root cause-population centers not wildlands!
973.	jerry hawkinson		
974.	Elliot Lauber		
975.	zeb williams		
976.	Laura Herndon		
977.	Amy Boyce		
978.	Renee Wilson		
979.	Nicholas Rader		Keep the Colorado River Alive-Don't Flatline the Fraser
980.	Sue Baldwin		
981.	Maureen Bosshard		
982.	Paul Bruchez		
983.	James Slattery		While living in Winter Park for three years, I only had one chance to kayak the Fraser River. The flow was always too low as the water was diverted to Denver. Now when I hear that Denver water wants more diversions, I feel the need to act. The city of Denver and the front range need to focus more on water conservation and not on green lawns, etc. More diversions will be nothing but devastating to the Fraser.
984.	Patrick Crosby		
985.	Amanda Cluck		As an educated wildlife biologist, the amount of water being diverted from the Fraser River (and the Colorado River as well) will have devastating long term effects on the environment. If this water is indeed being used merely to water lawns or other short term influences on the front range, these practices should be immediately ceased and should never have been allowed to take place in the first place. This water originated here and should stay here for the sake of the natural resources that require it.
986.	Deana Harms		
987.	shannon straney		please help

Page 61 - Signatures 968 - 987

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

	Name	From	Comments
988.	Matt Bahm	[redacted]	While increasing drinkable water supplies is necessary for people, the diversion of this water for most municipal uses is unjustified. Water conservation measures would do much more to ensure adequate water supplies than diverting even more water without practicing conservation. The poor practices of irrigating lawns, including parks, and other unnecessary uses are irresponsible and endanger the future of the region. Wildlands should be allowed to remain so, including the rivers that support them. Education of the public to true water conservation would go much further in reducing future strains on the water supply than would simply supporting the public's bad habits.
989.	Susan Johnson		Save the Fraser River, our local economy depends on this water! How can Denver Water justify taking more water from already endangered waterways while imposing NO restrictions on their front range customers who face no penelties for watering their lawns in the middle of a hot summer day! No more diversion until the front range is made to act more responsibly about their water usage!
990.	Shelly Heckerson		
991.	Tim Miller		
992.	JOHN EHLEN		
993.	Arnie Green		
994.	Bob Heimos		
995.	Currie Bechtol		I have fished the Fraser for the past 3 years, since we purchased a cbin in Rendezvous. It has been fantastic, and every effort possible should be made to SAVE THE FRASER RIVER and preserve it for our children and grand children.Currie Bechtol
996.	jake royall		
997.	Rama Davis		
998.	steve kauber		JUST THINK OUR LAW MAKERS WOULD RATHER KEEP THE FRONT RANGE VOTERS LAWN GREEN THAN MAKE A POSITIVE IMPACT ON OUR ENVIRONMENT.
999.	Mike Miles		Destroying the Fraser River so those in Denver can water their non-native grasses is unacceptable and should be made cost prohibitive, if not illegal.
1,000.	James Dietrich		
1,001.	Donald Holmes		
1,002.	Jeanne Nicholson		

Page 62 - Signatures 988 - 1,002

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

Name	From	Comments
1,003. Peter LaDue	[redacted]	As a 25 year resident of Grand County, a life long fly fisherman, fishing guide, and father who is educating my own daughter in enviromental issues, clean streams, and to become a flyfisher I oppose any more de-watering of the Fraser and Colorado rivers. Thank you, Peter LaDue
1,004. Bill Ikler		Denver has made great progress with water conservation, but can do much more. It would be a tragedy to keep drying up the Fraser River and the Colorado to water lawns and fuel growth.
1,005. Nicole Bailey		Please consider adding these concepts eo the draft EIS.
1,006. Rod Kauber		
1,007. Nancy Bacon		I have seen the health of the Fraser River decline over the past decade due to lower flows. Please include the petitions' suggestions in your EIS.
1,008. Todd Bacon		I am a second home-owner in Tabernash and was attracted to the Fraser River Valley because of the fishing on the Fraser River. I have fished it for 35 years. In recent years, the river has mossed up badly as the flows lessen and the water warms up in August. It seems to stay that way through the rest of the summer and the fall. The quality of the fishing deteriorates badly. I tell my friends to fish it from the end of run-off through July and then forget about it. In my experience, the big trout disappear once the water levels drop. There is simply no cover for them. I don't know where they go (I suspect down into Windy Gap), but I am certain they are not there. Flows are already at a ridiculous minimum. Any changes would exacerbate an already bad situation. The river would also benefit greatly from enhanced run-off. Thank you.
1,009. Dawn Reed		
1,010. David Mullen		I think we need to leave the Fraser River as close as possible to the way Nature provided it.
1,011. Patricia Mesec		
1,012. Jon Westmark		I am a prevoius second home owner in Fraser. It is very sadening to think that there is even a THOUGHT of using waters from the Fraser River to supply ANYTHING in Denver or surrounding suburbs thereof! It is one of the last natural beauties of the area and should be left alone for the mountain community to enjoy!!!
1,013. Emilie Høeg Hagen		
1,014. Sam Bacon		
1,015. Lee Fowler		

Page 63 - Signatures 1,003 - 1,015

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

Name	From	Comments
1,016. Melissa Giberson	[redacted]	Wake up!!!! Kentucky Bluegrass is not "green". There is only so much water to go around & depleting the lively hood of the Fraser River is not the answer. We must act now to save our rivers. Esp one that is already on the most endangered list!!!! Those of us who live in this beautiful valley we call home conserve water on a daily basis. It's time for other citizens, esp in the metro area and down river to do the same. If not for us for our families and generations to come!!!! Thank you.
1,017. Kimberly Frayne	[redacted]	To Whom it may Concern, I believe that we as residents of Grand County have the right to voice our opinions regarding the rivers in Grand County. I do not feel that it is fair to divert our water in Grand County to those who reside in Denver. If our rivers in Grand County are low, so is the economy during the spring and summer seasons. The economy is already a difficult struggle for all of us so why would the city of Denver want to see any one struggle more? So many individuals count on high water levels to support their jobs and other recreational activities, why would any one take that away? It just doesn't seem fair, we should be working together to create more opportunity for individuals not the other way around!!! Thank you in advance for taking the time to listen to the voices of those who will be directly impacted if the water in Grand County is diverted to the city of Denver. Sincerely, Kimberly Frayne
1,018. David Covey	[redacted]	I am amazed, no, angered by the arrogance that Denver Water brings to the table. DW suggests that the DEIS for the two projects can be done seperately. My old math teachers taught that the sum of the parts are added together and I believe them even though DW seems to want to play with the "New" math. Run back to one of the Corps' engineers and ask about that. Please require and recognize the cumulative impacts of these 2 projects. Conservastion of the water in the Colorado Basin is the responsibility of all of the users, from the front range, those of us who live in the valley and those downstream.
1,019. Leyla Scott 1,020. lindy bambrough 1,021. steve paul 1,022. Brad Ross-Shannon	[redacted]	

Page 64 - Signatures 1,016 - 1,022

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses

Name	From	Comments
1,023. Ingrid Karlstrom	[redacted]	Enough has been said about all the proscribed talking points to save the Fraser River. I am writing, rather, to emphasize Mother Nature's rights to have her creations protected and survive. The aesthetics and love of our valley must be respected and the river is the basis for nature's Grand Scheme and the survival of all that lives downstream. How many rivers must be destroyed before we destroy ourselves? In the end, Mother Nature is the bottom line.
1,024. Joe Malone		
1,025. Jack Marshall		
1,026. Thad Scholl		The proposed plan would be detrimental to this county and our community and must be defeated. Save our river and our county!!!
1,027. Theresa Scholl		
1,028. Trever Garfield		The Fraser is one of the last great small trout fisheries in the Winter Park area. I have watched the river become impacted over the years by the Denver water issue and believe that we need to save the wild and scenic fraser river from turning into a ghost town of fish.
1,029. Liz McIntyre		Dear Scott, I can walk up on my hill and look down on the Fraser river as it exits the Fraser Canyon in Granby. Over the years the flushing flows have altered the the river path leaving old oxbows rich with willows, cottonwoods, and a spruce or two. This area is habitat for all sorts of wildlife. However it is extremely rare that the river runs out of its banks anymore. What will happen to this area if no new oxbows are created? What will happen if the water levels decline and the wetlands dry up? What are the flows necessary to mainatain the fisheries and also the rest of the riparian ecosystem? These flows should be established and the health of this ecosystem must be assured before the granting of a permit. Thank-you, Liz McIntyre
1,030. virginia pizzella bierig		we love our valley. the Fraser River is a big part of the beauty here...we believe there are ways to be smart about water use that we are not being implemented state wide..much rides on your decision..much needs to be considered!
1,031. Diane Zaitz		
1,032. Jamie Kerr		
1,033. Justin Kerr		
1,034. Kevin Nicol		It's disgusting that this plan even came to mind.

Page 65 - Signatures 1,023 - 1,034

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	Name / From / Comments 1,035. Stephen Boehmer [redacted] 1,036. Susan Valente 1,037. Korina Cotter 1,038. Kristen McGuan 1,039. Edna Anderson *Page 66 - Signatures 1,035 - 1,039*	

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
ONLINE PETITION FORM LETTERS — UNIQUE		
Comment #1777 Sinjin Eberle	[See the Online Petition Standard Form Letter, Petition Signer #1 Entry.] Further reducing the Frasier and Upper Colorado's flows is unacceptable, especially without further Front Range conservation efforts. The cities of Broomfield, Loveland, and Longmont must come to grips with conservation as part of their broad water use planning - conservation can easily offset the amount of water that this project would supply. I strongly encourage you to choose conservation over a dry Colorado River!	***Unique Comment #1777-10*** *(ID 3649)**:*** *Further reducing the Frasier and Upper Colorado's flows is unacceptable, especially without further Front Range conservation efforts. The cities of Broomfield, Loveland, and Longmont must come to grips with conservation as part of their broad water use planning - conservation can easily offset the amount of water that this project would supply. I strongly encourage you to choose conservation over a dry Colorado River!* **Response #1777-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		As a point of clarification, the proposed Project would not provide water for the cities of Loveland or Longmont.
Comment #1778 Travis Rummel	[See the Online Petition Standard Form Letter, Petition Signer #2 Entry.] Please educate Front Range Water Users on the huge capacity of conservation for our water supply BEFORE draining west slope rivers.	***Unique Comment #1778-10*** *(ID 3676)**:*** *Please educate Front Range Water Users on the huge capacity of conservation for our water supply BEFORE draining west slope rivers.* **Response #1778-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1779 Justin Clifton	[See the Online Petition Standard Form Letter, Petition Signer #3 Entry.] Rather than continuing to drain our rivers, more stringent water conservation measures must be enacted on the front range and the rest of the Western US. Without an eye toward conservation, no further water development rights should be granted by the citizens of Colorado.	***Unique Comment #1779-10*** *(ID 3677)**:*** *Rather than continuing to drain our rivers, more stringent water conservation measures must be enacted on the front range and the rest of the Western US. Without an eye toward conservation, no further water development rights should be granted by the citizens of Colorado.* **Response #1779-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system

Comment Information	Comment	Comments and Responses
		outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1781 Julia Kintsch	[See the Online Petition Standard Form Letter, Petition Signer #5 Entry.] Water is not an unlimited resource and users in the Front Range and elsewhere must be educated, provided with conservation incentives, and pay the real cost of the water being piped directly to our homes and businesses. Short-term fixes that deplete West Slope flows without such measures do not address the problem and are destructive both ecologically and economically. Please be sure to recognize the full-impacts of any plan being considered and integrate conservation measures at every opportunity.	***Unique Comment #1781-10*** *(ID 3678)**:*** *Water is not an unlimited resource and users in the Front Range and elsewhere must be educated, provided with conservation incentives, and pay the real cost of the water being piped directly to our homes and businesses. Short-term fixes that deplete West Slope flows without such measures do not address the problem and are destructive both ecologically and economically. Please be sure to recognize the full-impacts of any plan being considered and integrate conservation measures at every opportunity.* **Response #1781-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system

Comment Information	Comment	Comments and Responses
		outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1783 Karen Sanchez	[See the Online Petition Standard Form Letter, Petition Signer #7 Entry.] I feel it is very important not to continue throwing water at one problem and not looking at the problem that will cause down river. The front range needs to have trees, plants and grass that are natural to the area and stop using so much water.	***Unique Comment #1783-10*** *(ID 3679)**:*** *I feel it is very important not to continue throwing water at one problem and not looking at the problem that will cause down river. The front range needs to have trees, plants and grass that are natural to the area and stop using so much water.* **Response #1783-10:** The Corps notes the comment.
Comment #1784 Tim Cleaver	[See the Online Petition Standard Form Letter, Petition Signer #8 Entry.] Why don't you meet the 18,000 acre-foot shortfall by cracking down on water waste instead of destroying the one thing that I love the most about Colorado.	***Unique Comment #1784-10*** *(ID 3680)**:*** *Why don't you meet the 18,000 acre-foot shortfall by cracking down on water waste instead of destroying the one thing that I love the most about Colorado.* **Response #1784-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection

Comment Information	Comment	Comments and Responses
		System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1786 Andrea West	[See the Online Petition Standard Form Letter, Petition Signer #11 Entry.] I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado river basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.	***Unique Comment #1786-1*** *(ID 3681)**:*** *I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado river basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.* **Response #1786-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new,

Comment Information	Comment	Comments and Responses
		annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1789 David Konigsberg	[See the Online Petition Standard Form Letter, Petition Signer #14 Entry.] We need to protect our rivers for the future generation.	***Unique Comment #1789-10*** *(ID 3682)**:*** *We need to protect our rivers for the future generation.* **Response #1789-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1791 Christopher Jeans	[See the Online Petition Standard Form Letter, Petition Signer #16 Entry.] As an outdoors man who enjoys spending time in the mountains, I oppose putting streams at risk. As a Denver resident, I realize that there is much that can be done on the conservation front that will reduce the need in Denver and other growing front range cities.	***Unique Comment #1791-10*** *(ID 3683)**:*** *As an outdoors man who enjoys spending time in the mountains, I oppose putting streams at risk. As a Denver resident, I realize that there is much that can be done on the conservation front that will reduce the need in Denver and other growing front range cities.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #1791-10: Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1792 Phil Gamache	[See the Online Petition Standard Form Letter, Petition Signer #17 Entry.] I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado river basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.	***Unique Comment #1792-10*** *(ID 3684)**:*** *I treasure the scenic beauty, water quality, and wildlife habitat provided by the Fraser and Upper Colorado river basins. Denver Water must not be allowed to divert any more flows from these spectacular and already-threatened rivers. Please, implement conservation and efficiency measures on the Front Range before you further imperil our West Slope ecosystems.* **Response #1792-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all

Comment Information	Comment	Comments and Responses
		alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1793 Candy Bening	[See the Online Petition Standard Form Letter, Petition Signer #18 Entry.] Let's protect our rivers for our children.	***Unique Comment #1793-10*** *(ID 3685)**:*** *Let's protect our rivers for our children.* **Response #1793-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1801 Kevin Fantz	[See the Online Petition Standard Form Letter, Petition Signer #26 Entry.] I visit Colorado every year to enjoy the beautiful scenery and recreational opportunities of the rivers from May to September. Flatlining the Fraser will result in habitat destruction as well as a loss of eco-tourism in the continental divide communities. Conservation and education must supersede this terrible plan to divert even more water out of its native drainage and into the Moffat tunnel.	***Unique Comment #1801-10*** *(ID 3686)**:*** *I visit Colorado every year to enjoy the beautiful scenery and recreational opportunities of the rivers from May to September. Flatlining the Fraser will result in habitat destruction as well as a loss of eco-tourism in the continental divide communities. Conservation and education must supercede this terrible plan to divert even more water out of its native drainage and into the Moffat tunnel.* **Response #1801-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat

Comment Information	Comment	Comments and Responses
		Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1803 Michael Kirkpatrick	[See the Online Petition Standard Form Letter, Petition Signer #28 Entry.] As a resident of the Front Range, I will do all in my power to reduce the usage of water in my household.	***Unique Comment #1803-10*** *(ID 3687)**:*** *As a resident of the Front Range, I will do all in my power to reduce the usage of water in my household.* **Response #1803-10:** The Corps notes the comment.
Comment #1804 Marrtin Elmore	[See the Online Petition Standard Form Letter, Petition Signer #29 Entry.] You must abandon this project until: Denver and other Front Range cities remove and replace their ancient metering systems; alter their pricing structures for water; and, establish a meaningful, enforceable fine system for those people who think sprinkled water actually soaks into the ground and stays there in our climate.	***Unique Comment #1804-10*** *(ID 3688)**:*** *You must abandon this project until: Denver and other Front Range cities remove and replace their ancient metering systems; alter their pricing structures for water; and, establish a meaningful, enforceable fine system for those people who think sprinkled water actually soaks into the ground and stays there in our climate.* **Response #1804-10:** Denver Water implemented Automated Meter Reading in the early 2000s, which required

Comment Information	Comment	Comments and Responses
		nearly all meters in the Denver Water service area to be replaced. Denver Water charges its residential customers on an increasing block rate schedule. The higher the use, the higher the rate charged. Commercial, industrial, and institutional customers are charged on a seasonal rate schedule where rates are higher in the summer months. Denver Water's Operating Rules prohibit water waste, which includes among other things watering during the day, watering more than three times per week, and watering during the rain or high winds. Denver Water enforces its water waste rules with a dedicated enforcement staff.
Comment #1805 Evan Jones	[See the Online Petition Standard Form Letter, Petition Signer #30 Entry.] I was born and raised in Colorado (5th generation) and spent all but the last two years of my life there. As an avid angler and outdoorsman, I am outraged that green lawns, in Denver take precedence over healthy native ecosystems. Don't let the misguided wants of a few trump the needs of the rest.	***Unique Comment #1805-10*** *(ID 3689)**:*** *I was born and raised in Colorado (5th generation) and spent all but the last two years of my life there. As an avid angler and outdoorsman, I am outraged that green lawns, in Denver take precedence over healthy native ecosystems. Don't let the "misguided wants of a few trump the needs of the rest.* **Response #1805-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1807 Brock McCormick	[See the Online Petition Standard Form Letter, Petition Signer #32 Entry.] I do not believe that Denver Water and front range communities have thoroughly explored options involving water conservation that not only encourage, but require smart and efficient water use. Water conservation is a common sense solution that will not jeopardize the health of our west slope rivers.	***Unique Comment #1807-10*** *(ID 3690)**:*** *I do not believe that Denver Water and front range communities have thoroughly explored options involving water conservation that not only encourage, but require smart and efficient water use. Water conservation is a common sense solution that will not jeopardize the health of our west slope rivers.* **Response #1807-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 acre-feet (AF) of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water

Comment Information	Comment	Comments and Responses
		would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1808 Nancy Orr	[See the Online Petition Standard Form Letter, Petition Signer #33 Entry.] Water conservation should be the first step in accommodating the water needs of an expanding population. No diversion projects should even be considered until water pricing is altered to reflect the true cost of water use.	***Unique Comment #1808-10*** *(ID 3691)**:*** *Water conservation should be the first step in accommodating the water needs of an expanding population. No diversion projects should even be considered until water pricing is altered to reflect the true cost of water use.* **Response #1808-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the

Comment Information	Comment	Comments and Responses
		Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1809 Andrew Brachle	[See the Online Petition Standard Form Letter, Petition Signer #34 Entry.] The Colorado River is the most important river in the Western United States. We need this river for the health and prosperity of the West. The Colorado River provides recreation, wildlife, tourism, life, power, water, economic, and multiple other positive, tangible benefits for everyone as a mostly free flowing river. Let's keep it as natural as possible.	***Unique Comment #1809-10*** *(ID 3692)**:*** *The Colorado River is the most important river in the Western United States. We need this river for the health and prosperity of the West. The Colorado River provides recreation, wildlife, tourism, life, power, water, economic, and multiple other positive, tangible benefits for everyone as a mostly free flowing river. Let's keep it as natural as possible.* **Response #1809-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1810 Amanda Pina	[See the Online Petition Standard Form Letter, Petition Signer #35 Entry.] Not only would you be taking the water for a city that highly wastes most of it for green lawns, you're also helping to kill our economy which is based on tourism. Many come for fishing, hunting, and outdoor activities that heavily rely on the rivers. Denver is the place that should be punished not locals in a smaller town and the animals that reside there as well. Please reconsider your options, and take a closer look at water usage in Denver.	***Unique Comment #1810-10*** *(ID 3693)**:*** *Not only would you be taking the water for a city that highly wastes most of it for green lawns, you're also helping to kill our economy which is based on tourism. Many come for fishing, hunting, and outdoor activities that heavily rely on the rivers. Denver is the place that should be punished not locals in smaller towns and the animals that reside there as well. Please reconsider your options, and take a closer look at water usage in Denver.* **Response #1810-10:** As stated in 33 Code of Federal Regulations (CFR) Part 320, which is, in part, the Federal regulations governing the Corps' review of Section 404 of the Clean Water Act (CWA), the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. In other words, the Corps will conduct a public interest review weighing the impacts and benefits of the Project as part of its Section 404 Permit evaluation.
Comment #1814 Nathan Slettedahl	[See the Online Petition Standard Form Letter, Petition Signer #40 Entry.] Please help stop any new diversion of water now. Many times I have seen that once something starts, it does not stop, and oftentimes gets worse in the future when the new diversion is not considered enough anymore. With as much water already being diverted as there is, I think the limit of compromise between development and conservation has already been reached. Let's not let this be the end of the olden days for another American, and world, treasure.	***Unique Comment #1814-10*** *(ID 3694)**:*** *Please help stop any new diversion of water now. Many times i have seen that once something starts, it does not stop, and oftentimes gets worse in the future when the new diversion is not considered enough anymore. with as much water already being diverted as there is, i think the limit of compromise between development and conservation has already been reached. let's not let this be the end of the olden days for another american, and world, treasure.* **Response #1814-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1817 Sarah Newman	[See the Online Petition Standard Form Letter, Petition Signer #43 Entry.] Save the Fraser River and all of its life forms!	***Unique Comment #1817-10*** *(ID 3695)**:*** *Save the Fraser River and all if its life forms!* **Response #1817-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1822 Richard Lankin	[See the Online Petition Standard Form Letter, Petition Signer #48 Entry.] I don't want to see this idiotic thing happen to the River systems in Colorado.	***Unique Comment #1822-10*** *(ID 3696)**:*** *I don't want to see this idiotic thing happen to the River systems in Colorado.* **Response #1822-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1828 Dennis Lux	[See the Online Petition Standard Form Letter, Petition Signer #54 Entry.] The destruction far outweighs the gain...another short sighted solution at the cost of our wild places. Far too few are aware of this proposal, just the way proponents like it. Educate others and fight further molestation of our environment in the name of sub-divisions with green lawns.	***Unique Comment #1828-10*** *(ID 3697)**:*** *The destruction far outweighs the gain...another short sighted solution at the cost of our wild places. Far too few are aware of this proposal, just the way proponents like it. Educate others and fight further molestation of our environment in the name of sub-divisions with green lawns.* **Response #1828-10:** The Corps notes the comment.
Comment #1832 Bob Linscott	[See the Online Petition Standard Form Letter, Petition Signer #58 Entry.] Let's think of how to limit growth, there's just not enough for everyone!? "Water."	***Unique Comment #1832-10*** *(ID 3698)**:*** *Lets think of how to limit growth, there's just not enough for everyone!?" water."* **Response #1832-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1834 Christina King	[See the Online Petition Standard Form Letter, Petition Signer #60 Entry.] This river corridor is critical for the valley- environmental and wildlife. It cannot sustain this kind of water "taking" and survive. Please deny this proposal.	***Unique Comment #1834-10*** *(ID 3699)**:*** *This river corridor is critical for the valley- environmental and wildlife. It cannot sustain this kind of water "taking" and survive. Please deny this proposal.* **Response #1834-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1836 Annie Oium	[See the Online Petition Standard Form Letter, Petition Signer #62 Entry.] A major concern of mine is what happens if and when we have another summer of drought! Also, I never hear anyone from Denver's media trying to educate the general public that we live in an arid climate, very unlike the Midwest with their endless water supply. I can't believe the Denver water board calls it a "watering ban" when people are allowed to water their lines "ONLY" every other day. That is ridiculous that anyone in the front range needs to use so much water for that purpose. I know the entities make their money off of people's water use, thus the lack of education going out to the general public. The front range needs to learn to manage the water they have, without threatening our natural habitats in the mountains. Cut the greed down, educate the public, and please don't put water pilfering into affect that will ruin our natural habitats. Zero scaping is beautiful and low maintenance in our busy worlds.... let's educate the public about that!! Thank you for listening.	***Unique Comment #1836-10*** *(ID 3700)**:*** *A major concern of mine is what happens if and when we have another summer of drought! Also, I never hear anyone from Denver's media trying to educate the general public that we live in an arid climate, very unlike the midwest with their endless water supply. I can't believe the Denver water board calls it a "watering ban" when people are allowed to water their lines "ONLY" every other day. That is ridiculous that anyone in the front range needs to use so much water for that purpose. I know the entities make their money off of people's water use, thus the lack of education going out to the general public. The front range needs to learn to manage the water they have, without threatening our natural habitats in the mountains. Cut the greed down, educate the public, and please don't put water pilfering into affect that will ruin our natural habitats. Zero scaping is beautiful and low maintenance in our busy worlds.... let's educate the public about that!! Thank you for listening.* **Response #1836-10:** Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in

Comment Information	Comment	Comments and Responses
		order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the Environmental Impact Statement (EIS). Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1837 John Thomas	[See the Online Petition Standard Form Letter, Petition Signer #63 Entry.] By stealing water from these sources makes you no different than Nevada, Arizona and California trying to steal water before it leaves Colorado.	***Unique Comment #1837-10*** *(ID 3701)**:*** *By stealing water from these sources makes you no different than Nevada, Arizona and California trying to steal water before it leaves Colorado.* **Response #1837-10:** The Corps notes the comment.
Comment #1838 Barbara Davis	[See the Online Petition Standard Form Letter, Petition Signer #64 Entry.] The Fraser River needs to be brought back to the river it should be and was in the past. We need this river in Grand County. No more water should be diverted from it.	***Unique Comment #1838-10*** *(ID 3702)**:*** *The Fraser River needs to be brought back to the river it should be and was in the past. We need this river in Grand County. No more water should be diverted from it.* **Response #1838-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1839 Howard Venezia	[See the Online Petition Standard Form Letter, Petition Signer #65 Entry.] Over the past decade, I have watched the Fraser River flow decline in volume to where it's about creek size. I've also watched the levels of our reservoirs fed by the Colorado significantly drop. On lend I own west of lake Granby I've seen my stock pond dry up in July and have seen the ground water level feeding that pond drop 2 to three feet also over the last decade. While I know there is little we can do to modify weather patterns contributing to this drying out, I also know that increasing supply to the front range from the Fraser, Colorado and Blue River drainage systems will contribute to further water scarcity here in Grand County. Please keep this from happening!	***Unique Comment #1839-10*** *(ID 3703)**:*** *Over the past decade, I have watched the Fraser River flow decline in volume to where it's about creek size. I've also watched the levels of our reservoirs fed by the Colorado significantly drop. On lend I own west of lake Granby I've seen my stock pond dry up in July and have seen the ground water level feeding that pond drop 2 to three feet also over the last decade. While I know there is little we can do to modify weather patterns contributing to this drying out, I also know that increasing supply to the front range from the Fraser, Colorado and Blue River drainage systems will contribute to further water scarcity here in Grand County. Please keep this from happening!* **Response #1839-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1843 Jeffrey L. Browne	[See the Online Petition Standard Form Letter, Petition Signer #69 Entry.] The water that the Denver Water Board is currently taking from the Fraser Valley has done irreparable damage. To take more water is unconscionable. Transbasin diversions came about around the 1920's. It's time that thinking people decide upon new regulations that will not destroy the West Slope environment.	***Unique Comment #1843-10*** *(ID 3704)**:*** *The water that the Denver Water Board is currently taking from the Fraser Valley has done irreparable damage. To take more water is unconscionable. Transbasin diversions came about around the 1920's. It's time that thinking people decide upon new regulations that will not destroy the West Slope environment.* **Response #1843-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1844 Hugh Auchincloss	[See the Online Petition Standard Form Letter, Petition Signer #70 Entry.] Once again, special interest groups fail to see the big picture, hence the name "special interest". It is in everyone's interest to recognize that all living organisms belong to something called an eco-system. All eco-systems are made up of relationships between these organisms. Our species must stop pretending that we have the right to manipulate and exploit these relationships for the sake selfish and greedy agendas. Please leave what is left of the Fraser River eco-system intact. We must all learn to do more with less, not only for our sake, but especially for future generations.	***Unique Comment #1844-10*** *(ID 3705)**:*** *Once again, special interest groups fail to see the big picture, hence the name "special interest". It is in everyone's interest to recognize that all living organisms belong to something called an eco-system. All eco-systems are made up of relationships between these organisms. Our species must stop pretending that we have the right to manipulate and exploit these relationships for the sake selfish and greedy agendas. Please leave what is left of the Fraser River eco-system intact. We must all learn to do more with less, not only for our sake, but especially for future generations.* **Response #1844-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1846 Cheryl Key	[See the Online Petition Standard Form Letter, Petition Signer #72 Entry.] Please do not do this! The impact would be horrific to our environment, economics and tourism! Thank you.	***Unique Comment #1846-10*** *(ID 4103)**:*** *Please do not do this! The impact would be horrific to our environment, economics and tourism! Thank you.* **Response #1846-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1847 Richard Talley	[See the Online Petition Standard Form Letter, Petition Signer #73 Entry.] The scenic and recreational attractiveness of Grand County has already been compromised by the mountain pine beetle infestation. To further deplete the Fraser and Colorado rivers for the needless watering of high maintenance lawns and water attractions along the front range is unconscionable.	***Unique Comment #1847-10*** *(ID 3706)**:*** *The scenic and recreational attractiveness of Grand County has already been compromised by the mountain pine beetle infestation. To further deplete the Fraser and Colorado rivers for the needless watering of high maintenance lawns and water attractions along the front range is unconscionable.* **Response #1847-10:** The Corps notes the comment.
Comment #1853 Robert King	[See the Online Petition Standard Form Letter, Petition Signer #78 Entry.] The flow levels are already low!!	***Unique Comment #1853-10*** *(ID 3707)**:*** *The flow levels are already low!!* **Response #1853-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1854 Lucinda Carpenter	[See the Online Petition Standard Form Letter, Petition Signer #79 Entry.] Please pay close attention to my and everyone else's voice pleading for our rivers. Please do not divert!!	***Unique Comment #1854-10*** *(ID 3708)**:*** *Please pay close attention to my and everyone else's voice pleading for our rivers. Please do not divert!!* **Response #1854-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1855 Kelvin Harding	[See the Online Petition Standard Form Letter, Petition Signer #80 Entry.] Some of the reasons for visiting the area are the amenities offered by the Fraser River and the Upper Colorado. To siphon this off to feed law sprinklers is both wasteful and, arguably, is nothing short of criminal. Denver-ites should conserve rainfall, snow melt waters, and "grey" waters to supply their needs.	***Unique Comment #1855-10*** *(ID 3709)**:*** *Some of the reasons for visiting the area are the amenities offered by the Fraser River and the Upper Colorado. To syphon this off to feed law sprinklers is both wasteful and, arguably, is nothing short of criminal. Denverites should conserve rainfall, snow melt waters, and "grey" waters to supply their needs.* **Response #1855-10:** In the State of Colorado it is illegal to have a "grey water" system for a number of reasons.

Comment Information	Comment	Comments and Responses
		Therefore, Denver Water has looked for other ways to reuse water when legally allowable. Denver Water is presently constructing several gravel pits adjacent to the South Platte River to capture re-useable water in addition to the recycling plant, which would meet 17,500 AF of demand. Refer to DEIS Section 1.3.1.4 for a discussion of Denver Water's non-potable recycling facility. Denver Water has a long history of evaluating recycled water options, beginning with the Successive Use and Potable Reuse Demonstration projects spanning from the late 1960s to the early 1990s. Denver Water has been distributing recycled water since 2004 for industrial, commercial and outdoor irrigation uses and is continuing to expand the recycled water system to ultimately free up enough potable water to serve almost 43,000 households. Refer to DEIS Section 1.3.1.4 for more information. The distribution system includes more than 50 miles of purple pipe with two major pump stations and dedicated storage facilities. In 2010, Denver Water expanded the recycled water system to serve irrigation customers, including: • East High School grounds • Fifth and Sixth Avenue medians, parks and playing fields in Lowry • Westerly Creek School grounds and Stapleton Central Park Recreation Center In 2011, Denver Water constructed a major pipeline that will provide recycled water to the Rocky Mountain Arsenal National Wildlife Refuge as well as numerous parks and other green spaces in the Montbello and Gateway Park areas. The Arsenal, now a natural area, needs the water to fill lakes and to mitigate wetlands.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		The Denver Zoo also expanded its recycled water use in 2011 to provide water for animal exhibits and irrigation in the new Asian Tropics exhibit. However, “grey water” and recycled water are not the only ways to make use of Denver Water’s reusable water supplies. Denver Water’s primary use of reusable water is done by exchanges (53%) and the second largest use is through Denver Water’s recycled water plant (33%). As Denver Water continues to grow into its existing supplies, the amount of reusable water reused from these two sources, on average, will increase from 87% to 89%.
Comment #1856 Marianne Minor	[See the Online Petition Standard Form Letter, Petition Signer #81 Entry.] Please encourage water conservation on the front range so our pristine mountain environments are not altered due to taking water.	***Unique Comment #1856-10*** *(ID 3710)**:*** *Please encourage water conservation on the front range so our pristine mountain environments are not altered due to taking water.* **Response #1856-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1857 Lisa Wehunt	[See the Online Petition Standard Form Letter, Petition Signer #82 Entry.] Robbing the natural resource that feed an environmental system is not acceptable. Managing our uses and downstream conservation will help to preserve the sources that ecosystems rely on. This watershed is not ours to squander. We expect more intelligence and foresight.	***Unique Comment #1857-10*** *(ID 3711)**:*** *Robbing the natural resource that feed an environmental system is not acceptable. Managing our uses and downstream conservation will help to preserve the sources that ecosystems rely on. This watershed is not ours to squander. We expect more intelligence and foresight.* **Response #1857-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1860 Wm. Bruce Laurie	[See the Online Petition Standard Form Letter, Petition Signer #85 Entry.] Having lived in the Fraser Valley for many years and still frequent the area often, I believe it is imperative to maintain water flows not only for the sake of fish and animal conservation but to help protect the natural beauty of the area.	***Unique Comment #1860-10*** *(ID 3712)**:*** *Having lived in the Fraser Valley for many years and still frequent the area often, I believe it is imperative to maintain water flows not only for the sake of fish and animal conservation but to help protect the natural beauty of the area.* **Response #1860-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1863 Colleen Nance	[See the Online Petition Standard Form Letter, Petition Signer #88 Entry.] There is enough water for all - if we are thoughtful of each other and don't just think of our own immediate wants (which aren't always our needs). We are the keepers of our eco system. We can't fall down on our job. Each of us needs to do our part.	***Unique Comment #1863-10*** *(ID 3713)**:*** *There is enough water for all - if we are thoughtful of each other and don't just think of our own immediate wants (which aren't always our needs). We are the keepers of our eco system. We can't fall down on our job. Each of us needs to do our part.* **Response #1863-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1866 Maura McKnight	[See the Online Petition Standard Form Letter, Petition Signer #91 Entry.] We all need to start thinking globally and responsibly...if you live in the arid west, you need to be a leader in water conservation, whether or not we are in a drought period. Americans are well known for our wasteful practices, let's change that!!!	***Unique Comment #1866-10*** *(ID 3714)**:*** *We all need to start thinking globally and responsibly...if you live in the arid west, you need to be a leader in water conservation, whether or not we are in a drought period. americans are well known for our wasteful practices, let's change that!!!* **Response #1866-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1869 Dena Jones	[See the Online Petition Standard Form Letter, Petition Signer #94 Entry.] There needs to be more focus on conservation - the Fraser River has already been diverted too much!!! In the 18 years I have lived in the Fraser Valley, I have seen very detrimental changes to this valuable resource. The depletion of this resource needs to be stopped.	***Unique Comment #1869-10*** *(ID 3715)**:*** *There needs to be more focus on conservation - the Fraser River has already been diverted too much!!! In the 18 years I have lived in the Fraser Valley, I have seen very detrimental changes to this valuable resource. The depletion of this resource needs to be stopped.* **Response #1869-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1874 Rick White	[See the Online Petition Standard Form Letter, Petition Signer #99 Entry.] The Fraser River is already on an endangered river list and taking more water could make it even worse. Several groups in Grand County have come up with good ideas on water mitigation. If Denver Water works with these groups instead of just doing as they please everyone is a winner. If they take the easy way out and take the water with no mitigation the people and wild life of Grand County lose big.	***Unique Comment #1874-10*** *(ID 3716)**:*** *The Fraser River is already on an endangered river list and taking more water could make it even worse. Several groups in Grand County have come up with good ideas on water mitigation. If Denver Water works with these groups instead of just doing as they please everyone is a winner. If they take the easy way out and take the water with no mitigation the people and wild life of Grand County lose big.* **Response #1874-10:** Information gained from www.americanrivers.org indicates that American Rivers reviews nominations for the "America's Most Endangered Rivers" report from river groups and concerned citizens across the country. Per the website, the report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers facing management decisions. Since it appears that American Rivers' criteria for evaluation of river condition is subjective, that portion of the comment is simply noted. Denver Water has committed to a future stream restoration project in Grand County through the cooperative effort called Learning by Doing (LBD) as part of the Colorado River Cooperative Agreement (see FEIS Section 4.3.1 and Appendix M). Portions of this plan and agreement may be incorporated into Section 404 permitted requirements by the Corps, if a permit is issued.
Comment #1881 David Clark	[See the Online Petition Standard Form Letter, Petition Signer #106 Entry.] This needs to be resolved in an equitable manner for both sides!!	***Unique Comment #1881-10*** *(ID 3717)**:*** *This needs to be resolved in an equitable manner for both sides!!* **Response #1881-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1888 Don and Kay Rhoads	[See the Online Petition Standard Form Letter, Petition Signer #113 Entry.] The Fraser River is one of the greatest assets to Grand County. Please do nothing else to decrease its impact on the lives of those who live here.	***Unique Comment #1888-10*** *(ID 4104)**:*** *The Fraser River is one of the greatest assets to Grand County. Please do nothing else to decrease its impact on the lives of those who live here.* **Response #1888-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1890 Michael Sussman	[See the Online Petition Standard Form Letter, Petition Signer #115 Entry.] Neither the Frasier river nor any of the other feeder rivers of the Colorado should be considered an endless resource for the city of Denver.	***Unique Comment #1890-10*** *(ID 3718)**:*** *Neither the Frasier river nor any of the other feeder rivers of the Colorado should be considered an endless resource for the city of Denver.* **Response #1890-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1897 Tracie Martin	[See the Online Petition Standard Form Letter, Petition Signer #122 Entry.] Need to restrict landscaping to natural grasses and flowers found in Colorado (most are drought tolerant). Need to change laws for golf courses to eliminate the use of high watering grasses like Kentucky blue grass.	***Unique Comment #1897-10*** *(ID 3719)**:*** *Need to restrict landscaping to natural grasses and flowers found in Colorado (most are drought tolerant). Need to change laws for golf courses to eliminate the use of high watering grasses like Kentucky blue grass.* **Response #1897-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs

Comment Information	Comment	Comments and Responses
		water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #1902 David Hajicek	[See the Online Petition Standard Form Letter, Petition Signer #127 Entry.] This problem is only going to get worse. Long term thinking is needed, not fancy lawns.	***Unique Comment #1902-10*** *(ID 3720)**:*** *This problem is only going to get worse. Long term thinking is needed, not fancy lawns.* **Response #1902-10:** The Corps notes the comment.
Comment #1908 Mary Ann Groswold	[See the Online Petition Standard Form Letter, Petition Signer #133 Entry.] The Fraser River is very important to those of us who live up here. It is also very important to the local economy. PLEASE DO NOT TAKE ANY MORE WATER FROM THE FRASER RIVER!	***Unique Comment #1908-10*** *(ID 3721)**:*** *The Fraser River is very important to those of us who live up here. It is also very important to the local economy. PLEASE DO NOT TAKE ANY MORE WATER FROM THE FRASER RIVER!* **Response #1908-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1916 Bruce Walker	[See the Online Petition Standard Form Letter, Petition Signer #141 Entry.] Please do not squander our resources.	***Unique Comment #1916-10*** *(ID 3722)**:*** *Please do not squander our resources.* **Response #1916-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1918 Chris Braaf	[See the Online Petition Standard Form Letter, Petition Signer #143 Entry.] Front range communities need to actively conserve water. We, on the west slope do conserve with what little water we have now. Please help us.	***Unique Comment #1918-10*** *(ID 3723)**:*** *Front range communities need to actively conserve water. We, on the west slope do conserve with what little water we have now. Please help us.* **Response #1918-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1920 Mara Erlandson	[See the Online Petition Standard Form Letter, Petition Signer #145 Entry.] Take the money it would cost you to do this project and educate all of the people in Colorado on how to conserve water. This is not a problem that will go away but only continue to get worse if we as a people do not change our habits.	***Unique Comment #1920-10*** *(ID 3724)**:*** *Take the money it would cost you to do this project and educate all of the people in Colorado on how to conserve water. This is not a problem that will go away but only continue to get worse if we as a people do not change our habits.* **Response #1920-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #1929 Rudy Perez	[See the Online Petition Standard Form Letter, Petition Signer #154 Entry.] Any further drain of these tributaries will seriously impact the entire life of the river, STOP NOW!	***Unique Comment #1929-10*** *(ID 3725)**:*** *Any further drain of these tributaries will seriously impact the entire life of the river, STOP NOW!* **Response #1929-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1931 Patricia Alander	[See the Online Petition Standard Form Letter, Petition Signer #156 Entry.] People on the Front Range have a long way to go with water conservation before there should be any thought of taking more water from the Fraser River. I live on the North Fork of the Colorado River and have seen fish stranded after the call for water - there's not enough water left in the river for them to swim.	***Unique Comment #1931-10*** *(ID 3726)**:*** *People on the Front Range have a long way to go with water conservation before there should be any thought of taking more water from the Fraser River. I live on the North Fork of the Colorado River and have seen fish stranded after the call for water - there's not enough water left in the river for them to swim.* **Response #1931-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1939 Dennis Saffell	[See the Online Petition Standard Form Letter, Petition Signer #164 Entry.] I have lived in the Fraser River Valley for 28 years. The river continues to be abused by Denver Water. It is affecting our economy, our ecology and our ability to live in the Fraser River Valley. Plain old common sense says that if you dry up a river you will destroy the life around it. STOP TAKING WATER OUT OF THE FRASER RIVER!	***Unique Comment #1939-10*** *(ID 3727)**:*** *I have lived in the Fraser River Valley for 28 years. The river continues to be abused by Denver Water. It is affecting our economy, our ecology and our ability to live in the Fraser River Valley. Plain old common sense says that if you dry up a river you will destroy the life around it. STOP TAKING WATER OUT OF THE FRASER RIVER!* **Response #1939-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1941 David Garamella	[See the Online Petition Standard Form Letter, Petition Signer #166 Entry.] Please save the Fraser...it's worth it!	***Unique Comment #1941-10*** *(ID 3728)**:*** *Please save the Fraser...it's worth it!* **Response #1941-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1943 Doug Smith	[See the Online Petition Standard Form Letter, Petition Signer #168 Entry.] Please stop taking water out of our valley!	***Unique Comment #1943-10*** *(ID 3729)**:*** *Please stop taking water out of our valley!* **Response #1943-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1944 Zia Koch	[See the Online Petition Standard Form Letter, Petition Signer #169 Entry.] Water is life.	***Unique Comment #1944-10*** *(ID 3730)**:*** *Water is life.* **Response #1944-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1947 Dede Fay	[See the Online Petition Standard Form Letter, Petition Signer #172 Entry.] Time to re-think how we treat water flows in Colorado.	***Unique Comment #1947-10*** *(ID 3731)**:*** *Time to re-think how we treat water flows in Colorado.* **Response #1947-10:** The Corps notes the comment.
Comment #1949 Kerri Smith	[See the Online Petition Standard Form Letter, Petition Signer #174 Entry.] Please save our water supply. People who live in Denver do not need lawns. Conservation is crucial next to population control of humans and our pets.	***Unique Comment #1949-1*** *(ID 4105)**:*** *Please save our water supply. People who live in Denver do not need lawns. Conservation is crucial next to population control of humans and our pets.* **Response #1949-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1950 Cyndie Saffell	[See the Online Petition Standard Form Letter, Petition Signer #175 Entry.] Denver Water Board MUST set an example for other entities in Colorado by leading in water conservation within the city. By executing laws that establish size of lawn to be watered based on home site size or square footage of home and requiring the balance to be xeriscaped would saves millions of gallons for now and the future. Denver Water Board MUST repair the leaking water canals and MUST cover them which would considerably reduce evaporation. Get a clue Denver!! The west can no longer WASTE its valuable water systems. Sure hope none of you like to fly fish, boat raft or have a home on Grand Lake. Say good bye to your investment and to a slice of the tourism pie!!	***Unique Comment #1950-10*** *(ID 3732)**:*** *Denver Water Board MUST set an example for other entities in Colorado by leading in water conservation within the city. By executing laws that establish size of lawn to be watered based on homesite size or square footage of home and requiring the balance to be xeriscaped would saves millions of gallons for now and the future. Denver Water Board MUST repair the leaking water canals and MUST cover them which would considerably reduce evaporation. Get a clue Denver!! The west can no longer WASTE its valuable water systems. Sure hope none of you like to fly fish, boat raft or have a home on Grand Lake. Say good bye to your investment and to a slice of the tourism pie!!* **Response #1950-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Conservation is part of the solution for water

Comment Information	Comment	Comments and Responses
		supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Denver Water also has a leak detection program that identifies small leaks and develops a list for repairs. This, accompanied with Denver Water's main

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		replacement program, has resulted in a treated water loss rate of less than 5% for Denver Water, which is among the lowest loss rates in the nation.
Comment #1952 Jeffrey Reinhard	[See the Online Petition Standard Form Letter, Petition Signer #177 Entry.] Have some sense.	***Unique Comment #1952-10*** *(ID 3733)**:*** *Have some sense.* **Response #1952-10:** The Corps notes the comment.
Comment #1953 Marty Tod	[See the Online Petition Standard Form Letter, Petition Signer #178 Entry.] When will it stop?? The front range needs to get serious about water conservation and stopping growth and development. The Fraser River is barely sustainable now. It is not a junkie fix.	***Unique Comment #1953-10*** *(ID 3734)**:*** *When will it stop?? The front range needs to get serious about water conservation and stopping growth and development. The Fraser River is barely sustainable now. It is not a junkie fix.* **Response #1953-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #1962 Marie Johannes	[See the Online Petition Standard Form Letter, Petition Signer #187 Entry.] I am a landscape painter and I know that many people thrill at seeing paintings with water in them. The beauty of a clear running stream or lake touches the hearts of all. Who was not thrilled by the sight of a fish swimming below the water's surface as we stood on a dock over a lake as a kid? Do NOT let our rivers and lakes cloud up, kill our fish and dry out. Where will you get more water when this is gone? A hearty program of conservation MUST be part of the answer!	***Unique Comment #1962-10*** *(ID 3735)**:*** *I am a landscape painter and I know that many people thrill at seeing paintings with water in them. The beauty of a clear running stream or lake touches the hearts of all. Who was not thrilled by the sight of a fish swimming below the water's surface as we stood on a dock over a lake as a kid? Do NOT let our rivers and lakes cloud up, kill our fish and dry out. Where will you get more water when this is gone? A hearty program of conservation MUST be part of the answer!* **Response #1962-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1969 Lucinda Elicker	[See the Online Petition Standard Form Letter, Petition Signer #194 Entry.] Say it's not true! Denver wants more water to take care of landscape vanity? And they want to take it from the already low flowing Fraser River so that we can watch more silt and algae build up? And Northern Water Conservancy District wants to take more of the degraded Fraser River into Grand Lake and through Adams Tunnel! Who will stop the Front Range from drying up Grand County? Denver Water already diverts 60% of the Fraser River to the Front Range and at least 50% of that is used for outdoor lawn watering. There has been no real effort to conserve or reduce this usage. Really! How much suffering has to take place, before we learn we are all affected and affecting much more than just the Fraser River. The Denver EIS has not addressed the combined impact of the Moffat Firming Project and the Windy Gap Project on Grand County's rivers, streams and economy. My husband and I made a life choice 13 years ago to live a life of quality instead of quantity. We choose Grand County, Colorado due to its riches in the Great Outdoors. After all it was good enough for our late President Eisenhower. Fresh air, fishing, camping, boating, hiking, biking, snowmobile and skiing to name a few of the riches are all in my backyard. In the past 13 years, we have watched as many problems have affected the County's natural riches: increased development, drought, beetle and mussel infestations, to name a few. We have seen lower stream flows and increased water temperatures in our Fraser River along with increased silt and algae, not to mention the reduced clarity of our natural lake. We fear that the beauty and riches we see today will be gone before our children can enjoy them. Grand County's economy will also suffer. All of these problems have not been adequately addressed in the Denver Water EIS. For our future generations and for all who have not had the opportunity to experience Grand County I ask for HELP from Corps Denver Regulatory Office. To avoid further permanent damage to the Fraser River, Colorado and Williams Fork System, please require Denver Water to work with the Grand County Stream Management Plan. Please help us preserve what's left of our native waters.	***Unique Comment #1969-10*** *(ID 3739)**:*** *Say it's not true! Denver wants more water to take care of landscape vanity? And they want to take it from the already low flowing Fraser River so that we can watch more silt and algae build up? And Northern Water Conservancy District wants to take more of the degraded Fraser River into Grand Lake and through Adams Tunnel! Who will stop the Front Range from drying up Grand County? Denver Water already diverts 60% of the Fraser River to the Front Range and at least 50% of that is used for outdoor lawn watering. There has been no real effort to conserve or reduce this usage. Really! How much suffering has to take place, before we learn we are all affected and affecting much more than just the Fraser River. The Denver EIS has not addressed the combined impact of the Moffat Firming Project and the Windy Gap Project on Grand County's rivers, streams and economy.* **Response #1969-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The DEIS includes the Windy Gap Firming Project (WGFP) as part of the analysis because the WGFP is assumed to be on-line under the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2, under the sub-heading, Colorado River Water Quality, acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of Front Range entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson (C-BT) Project, and the Windy Gap

Comment Information	Comment	Comments and Responses
		Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the Colorado Big-Thompson (C-BT) system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Both projects would have mitigation plans that would address the impacts of the respective projects. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, detailed mitigation will be included as a condition of a Section 404 Permit. The West Slope agricultural and recreational economies are further addressed in FEIS Section 5.19. **Unique Comment #1969-11** (ID 3738)**:** *My husband and I made a life choice 13 years ago to live a life of quality instead of quantity. We choose Grand County, Colorado due to its riches in the Great Outdoors. After all it was good enough for our late President Eisenhower. Fresh air, fishing, camping, boating, hiking, biking, snowmobile and skiing to name a few of the riches are all in my backyard.* **Response #1969-11:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. **Unique Comment #1969-12** (ID 3737)**:** *In the past 13 years, we have watched as many problems have affected the County's natural riches: increased development, drought, beetle and mussel infestations, to name a few. We have seen lower stream flows and increased water temperatures in our Fraser River along with*

Comment Information	Comment	Comments and Responses
		increased silt and algae, not to mention the reduced clarity of our natural lake. We fear that the beauty and riches we see today will be gone before our children can enjoy them. Grand County's economy will also suffer. All of these problems have not been adequately addressed in the Denver Water EIS. **Response #1969-12:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. **Unique Comment #1969-13** (ID 3736)**:** *For our future generations and for all who have not had the opportunity to experience Grand County I ask for HELP from Corps Denver Regulatory Office. To avoid further permanent damage to the Fraser River, Colorado and Williams Fork System, please require Denver Water to work with the Grand County Stream Management Plan. Please help us preserve what's left of our native waters.* **Response #1969-13:** The Grand County Stream Management Plan has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), Physical Habitat Simulation (PHABSIM) data for analysis of aquatic biological resources (Sections 3.11, 4.6.11, and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Denver Water, in collaboration with the Municipal Subdistrict Northern Colorado Water

Comment Information	Comment	Comments and Responses
		Conservancy District, developed a voluntary Fish and Wildlife Enhancement Plan to improve the existing aquatic habitat in approximately 14 miles of the upper Colorado River from Windy Gap to the Kemp-Breeze State Wildlife Area. The Fish and Wildlife Enhancement Plan would be implemented through an Intergovernmental Agreement with Colorado Parks and Wildlife (previously called Colorado Division of Wildlife) (see FEIS Section 4.3.1 and Appendix M). Denver Water also committed to a future stream restoration project in Grand County through the cooperative effort called LBD as part of the Colorado River Cooperative Agreement (see FEIS Section 4.3.1 and Appendix M). Portions of these plans and agreements may be incorporated into Section 404 Permit requirements by the Corps.
Comment #1970 Melissa Maier	[See the Online Petition Standard Form Letter, Petition Signer #831 Entry.] I love the Fraser river. I walk my dog next to it everyday. Perfect for fishing in the summer...I wouldn't know how to live in the valley without it!	***Unique Comment #1970-10*** *(ID 4220)**:*** *I love the Fraser river. I walk my dog next to it every day. Perfect for fishing in the summer... I wouldn't know how to live in the valley without it!* **Response #1970-10:** The Corps notes the comment.
Comment #1973 Karen Toyne	[See the Online Petition Standard Form Letter, Petition Signer #197 Entry.] We need minimal water flows to keep the river a living ecosystem, and the vitality of the mountain valleys. It isn't just the wastefulness of Kentucky bluegrass and washing cars and driveways with the hose, it's the greed of the Denver Water Board who lost money during the successful water restrictions.	***Unique Comment #1973-10*** *(ID 3740)**:*** *We need minimal water flows to keep the river a living ecosystem, and the vitality of the mountain valleys. It isn't just the wastefulness of Kentucky bluegrass and washing cars and driveways with the hose, it's the greed of the Denver Water Board who lost money during the successful water restrictions.* **Response #1973-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1974 Richard Heitkamp	[See the Online Petition Standard Form Letter, Petition Signer #198 Entry.] A river that doesn't flow for a grass species that doesn't belong!!!!	***Unique Comment #1974-10*** *(ID 3741)**:*** *A river that doesn't flow for a grass species that doesn't belong!!!!* **Response #1974-10:** The Corps notes the comment.
Comment #1975 Bill Galioto	[See the Online Petition Standard Form Letter, Petition Signer #199 Entry.] Keep the fish thriving.	***Unique Comment #1975-10*** *(ID 3742)**:*** *Keep the fish thriving.* **Response #1975-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1979 Andrew Tomchek	[See the Online Petition Standard Form Letter, Petition Signer #203 Entry.] Keep the river alive.	***Unique Comment #1979-10*** *(ID 3743)**:*** *Keep the river alive.* **Response #1979-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1990 Josh Brown	[See the Online Petition Standard Form Letter, Petition Signer #214 Entry.] Crazy that this is even on the table for an endangered river.	***Unique Comment #1990-10*** *(ID 3744)**:*** *Crazy that this is even on the table for an endangered river.* **Response #1990-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. Information gained from www.americanrivers.org indicates that American Rivers reviews nominations for the "America's Most Endangered Rivers" report from river groups and concerned citizens across the country. Per the website, the report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers facing management decisions. Since it appears that American Rivers' criteria for evaluation of river condition is subjective, the comment is simply noted.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #1994 Carol Holzworth-Moore	[See the Online Petition Standard Form Letter, Petition Signer #832 Entry.] Use only the water that does not deplete the river! If it is too much - then stop!!!!! You can not use the water for one community if it harms another. We all will be hurt if this continues.	***Unique Comment #1994-10*** *(ID 4221)**:*** *Use only the water that does not deplete the river! If it is too much - then stop!!!!! You can not use the water for one community if it harms another. We all will be hurt if this continues.* **Response #1994-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #1997 Joseph Jameson	[See the Online Petition Standard Form Letter, Petition Signer #833 Entry.] I love the Fraser River!	***Unique Comment #1997-10*** *(ID 4222)**:*** *I love the Fraser River!* **Response #1997-10:** The Corps notes the comment.
Comment #1998 Marianne Klancke	[See the Online Petition Standard Form Letter, Petition Signer #220 Entry.] The Moffat Tunnel Firming Project must be formulated to require the recognition of current waterway conditions, the establishment of baseline standards, the efficient monitoring of conditions for perpetuity, and the responsibility of mitigation by Denver Water wherever the taking of water drops the waterway/environment conditions below viable standards.	***Unique Comment #1998-10*** *(ID 3745)**:*** *The Moffat Tunnel Firming Project must be formulated to require the recognition of current waterway conditions, the establishment of baseline standards, the efficient monitoring of conditions for perpetuity, and the responsibility of mitigation by Denver Water wherever the taking of water drops the waterway/environment conditions below viable standards.* **Response #1998-10:** The Corps notes the comment.
Comment #2000 Karen Elliott	[See the Online Petition Standard Form Letter, Petition Signer #222 Entry.] This issue angers me so much. We need to leave nature as it is. I fully back anything that will keep our water ways natural, free flowing, clean and not pumped out.	***Unique Comment #2000-10*** *(ID 3746)**:*** *This issue angers me so much. We need to leave nature as it is. I fully back anything that will keep our water ways natural, free flowing, clean and not pumped out.* **Response #2000-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2002 Lauren Cowart	[See the Online Petition Standard Form Letter, Petition Signer #834 Entry.] The Fraser River Rocks! I just don't want it to be all rocks.	***Unique Comment #2002-10*** *(ID 4223)**:*** *The Fraser River Rocks! I just don't want it to be all rocks.* **Response #2002-10:** The Corps notes the comment.
Comment #2003 David Ross	[See the Online Petition Standard Form Letter, Petition Signer #224 Entry.] Once again, we are stripping resources rather than controlling and managing our growth. Put the pressure where it belongs: on the growth that is not controlling its water use and building/planting whatever it wants. I have owned property in the Frasier Valley for a long time and I'd hate to see it destroyed.	***Unique Comment #2003-10*** *(ID 3747)**:*** *Once again, we are stripping resources rather than controlling and managing our growth. Put the pressure where it belongs: on the growth that is not controlling its water use and building/planting whatever it wants. I have owned property in the Frasier Valley for a long time and I'd hate to see it destroyed.* **Response #2003-10:** The Corps notes the comment.
Comment #2005 Kristine Meyer	[See the Online Petition Standard Form Letter, Petition Signer #225 Entry.] I am extremely concerned that the spawning habitat for our native fish will be destroyed.	***Unique Comment #2005-10*** *(ID 3748)**:*** *I am extremely concerned that the spawning habitat for our native fish will be destroyed.* **Response #2005-10:** Spawning habitat and habitat for other life stages of fish are evaluated in the DEIS and FEIS. There are no indications that spawning habitat would be destroyed. Mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7.
Comment #2008 Justina Carney	[See the Online Petition Standard Form Letter, Petition Signer #227 Entry.] This method of diverting natural water sources to the front range can not continue. Colorado wasn't meant to support this many people on the little water resources we have. Our animals and plant life should not take the burden of our people's wasteful ways. Please find another way.	***Unique Comment #2008-10*** *(ID 3749)**:*** *This method of diverting natural water sources to the front range can not continue. Colorado wasn't meant to support this many people on the little water resources we have. Our animals and plant life should not take the burden of our people's wasteful ways. Please find another way.* **Response #2008-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2010 Rob Peeters	[See the Online Petition Standard Form Letter, Petition Signer #228 Entry.] Our water is a precious resource for many people, The Front range needs to conserve more and realize what is more important, a fresh glass of drinking water or a green lawn!!	***Unique Comment #2010-10*** *(ID 3750)**:*** *Our water is a precious resource for many people, The Front range needs to conserve more and realize what is more important, a fresh glass of drinking water or a green lawn!!* **Response #2010-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2014 Russ Mallard	[See the Online Petition Standard Form Letter, Petition Signer #230 Entry.] It's not beyond USACE's charge to support or even purey reclaimed or recycled water infrastructure in Denver as long as it supports their overall goals. Go purple!	***Unique Comment #2014-10*** *(ID 3751)**:*** *It's not beyond USACE's charge to support or even purey reclaimed or recycled water infrastructure in Denver as long as it supports their overall goals. Go purple!* **Response #2014-10:** The Corps understands that Denver Water's recycled water system is the largest in Colorado and began delivering water in 2004. Denver Water distributes billions of gallons of recycled water for industrial, commercial and outdoor irrigation uses and is continuing to expand the recycled water system to ultimately free up enough potable water to serve almost 43,000 households. Refer to DEIS Section 1.3.1.4 for more information. The distribution system includes more than 50 miles of purple pipe with two major pump stations and dedicated storage facilities. Additionally, one of the Reasonable Foreseeable Future Actions discussed in FEIS Section 4.3.1. Water Infrastructure and Supply Efficiency, describes an arrangement between several metropolitan entities to make more use of Denver Water’s unused reusable water.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2015 Bruce Dines	[See the Online Petition Standard Form Letter, Petition Signer #840 Entry.] Conservation is more affordable to the State. People in the front range will step up and do the right thing (i.e. conserve), if the need for conservation is well positioned, and they are informed...	***Unique Comment #2015-1*** *(ID 4224)**:*** *Conservation is more affordable to the State. People in the front range will step up and do the right thing (i.e. conserve), if the need for conservation is well positioned, and they are informed...* **Response #2015-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers'

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2016 Michael Thompson	[See the Online Petition Standard Form Letter, Petition Signer #231 Entry.] The days of unlimited water are coming to an end. There has to be better conservation methods to help protect proper water flows in the Fraser and Colorado rivers. Taking more water from ranchers that have older water rights makes it harder to irrigate and is just wrong. Ranchers return most of the water they use back to the river by using sound conservation practices. When the water tables lower, we will have to use more water to get the job done. The more water we use affects others downstream and the fisheries which we do not want to see happen.	***Unique Comment #2016-1*** *(ID 3752)**:*** *The days of unlimited water are coming to an end. There has to be better conservation methods to help protect proper water flows in the Fraser and Colorado rivers. Taking more water from ranchers that have older water rights makes it harder to irrigate and is just wrong. Ranchers return most of the water they use back to the river by using sound conservation practices. When the water tables lower, we will have to use more water to get the job done. The more water we use affects others downstream and the fisheries which we do not want to see happen.* **Response #2016-1:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2017 Aurel Burtis	[See the Online Petition Standard Form Letter, Petition Signer #232 Entry.] If we don't do something about the plight of our rivers soon, it will be too late.	***Unique Comment #2017-10*** *(ID 3753)**:*** *If we don't do something about the plight of our rivers soon, it will be too late.* **Response #2017-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2018 Bob Getz	[See the Online Petition Standard Form Letter, Petition Signer #841 Entry.] I have already emailed Mr. Franklin my concerns. Having spent nearly 25 years in the back country areas of Colorado - including the Fraser Valley RMNP, Steamboat, etc. I must say that the Fraser Valley is a weak ecosystem as its most important resource is already being siphoned to Denver. Removing more water from the area is not the answer. We in the Denver Area proved we can make improvements in conservation and are willing to do far more. When the "Red Forest" catches fire, huge water resources will be necessary to	***Unique Comment #2018-10*** *(ID 4227)**:*** *I have already emailed Mr. Franklin my concerns. Having spent nearly 25 years in the back country areas of Colorado - including the Fraser Valley RMNP, Steamboat, etc. I must say that the Fraser Valley is a weak ecosystem as its most important resource is already being siphoned to Denver. Removing more water from the area is not the answer. We in the Denver Area proved we can make improvements in conservation and are willing to do far more.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	protect people and property in the area. How can we deprive residents of their property when over 50% of water used in the Denver Area is for watering lawns?	**Response #2018-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Unique Comment #2018-11*** *(ID 4226)**:*** *When the "Red Forest" catches fire, huge water resources will be necessary to protect people and property in the area. How can we deprive residents of their property when over 50% of water used in the Denver Area is for watering lawns?* **Response #2018-11:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new,

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		annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2020 Roger Shaw	[See the Online Petition Standard Form Letter, Petition Signer #234 Entry.] The front range has plenty of water, if only they would use it wisely. A semi-arid climate is no place to grow Kentucky bluegrass!!	***Unique Comment #2020-10*** *(ID 3754)**:*** *The front range has plenty of water, if only they would use it wisely. A semi-arid climate is no place to grow Kentucky bluegrass!!* **Response #2020-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2025 Irene Jans	[See the Online Petition Standard Form Letter, Petition Signer #237 Entry.] Please allow us to use our own precious water!	***Unique Comment #2025-10*** *(ID 3755)**:*** *Please allow us to use our own precious water!* **Response #2025-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2027 Brendana Delaney	[See the Online Petition Standard Form Letter, Petition Signer #844 Entry.] Keep the water on the west slope! Save the Fraser.	***Unique Comment #2027-10*** *(ID 4228)**:*** *Keep the water on the west slope! Save the Fraser.* **Response #2027-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2029 John O'Hanlon	[See the Online Petition Standard Form Letter, Petition Signer #239 Entry.] Colorado must take a long view when it comes to solving water shortages on the Front Range. As the decades pass, I see the same short sighted solutions being proposed and all too often, approved. Water politics as usual will cost us a lot more money in the long run. This is just another area where we refuse to live within our means as we off-load expensive problems on to our children!	***Unique Comment #2029-10*** *(ID 3756)**:*** *Colorado must take a long view when it comes to solving water shortages on the Front Range. As the decades pass, I see the same short sighted solutions being proposed and all too often, approved. Water politics as usual will cost us a lot more money in the long run. This is just another area where we refuse to live within our means as we off-load expensive problems on to our children!* **Response #2029-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2034 Nicholas Covey	[See the Online Petition Standard Form Letter, Petition Signer #848 Entry.] The more removed I become from home, or the woods in general, the more I slip into a life of superficial, concrete routines. In childhood my happiness was based around what, essentially, the rivers and lakes provided. We didn't have the typical urban distractions, so our attention was directed to nature. The lessons and morals I've learned are directly related to my environment, and I consider myself to be a reasonable and relatively good person. I want my children and their peers to have the same chance to learn about what's important in life.	***Unique Comment #2034-10*** *(ID 4229)**:*** *The more removed I become from home, or the woods in general, the more I slip into a life of superficial, concrete routines. In childhood my happiness was based around what, essentially, the rivers and lakes provided. We didn't have the typical urban distractions, so our attention was directed to nature. The lessons and morals I've learned are directly related to my environment, and I consider myself to be a reasonable and relatively good person. I want my children and their peers to have the same chance to learn about what's important in life.* **Response #2034-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2035 Nevine Rudloff	[See the Online Petition Standard Form Letter, Petition Signer #242 Entry.] SAVE OUR RIVER!!	***Unique Comment #2035-10*** *(ID 3757)**:*** *SAVE OUR RIVER!!* **Response #2035-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2039 William Swift	[See the Online Petition Standard Form Letter, Petition Signer #246 Entry.] Our Family owns a significant amount of land in the Fraser Valley between [redacted] and [redacted]. The Fraser River runs thru the property and we enjoy the fishing in the river during the summer months and reducing the flow of water has a detrimental affect upon the wildlife along the river. Please look at all the alternatives before reducing the water flow in the Fraser River.	***Unique Comment #2039-10*** *(ID 3758)**:*** *Our Family owns a significant amount of land in the Fraser Valley between [redacted] and [redacted]. The Fraser River runs thru the property and we enjoy the fishing in the river during the summer months and reducing the flow of water has a detrimental affect upon the wildlife along the river. Please look at all the alternatives before reducing the water flow in the Fraser River.* **Response #2039-10:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2040 Walter Holland	[See the Online Petition Standard Form Letter, Petition Signer #247 Entry.] Taking water from elsewhere will not solve Denver's water problem. It's only a quick fix ban-aid that procrastinates coming up with a real solution.	***Unique Comment #2040-10*** *(ID 3759)**:*** *Taking water from elsewhere will not solve Denver's water problem. It's only a quick fix ban-aid that procrastinates coming up with a real solution.* **Response #2040-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2042 Jessica Smolleck	[See the Online Petition Standard Form Letter, Petition Signer #249 Entry.] As a community member of Grand County I am very concerned about the usage of our water supply. We enjoy so many sports and recreation in this valley, including fly fishing on the rivers. It is very disturbing that the Fraser River has been affected as it has and I'm very concerned about its life cycle and span.	***Unique Comment #2042-10*** *(ID 3760)**:*** *As a community member of Grand County I am very concerned about the usage of our water supply. We enjoy so many sports and recreation in this valley, including fly fishing on the rivers. It is very disturbing that the Fraser River has been affected as it has and I'm very concerned about its life cycle and span.* **Response #2042-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2051 Teresa Hill	[See the Online Petition Standard Form Letter, Petition Signer #258 Entry.] Please help us protect our river!! We fish, swim, boat and uses our water for more things than watering grass for a big city.	***Unique Comment #2051-10*** *(ID 3761)**:*** *Please help us protect our river!! We fish, swim, boat and use our water for more things than watering grass for a big city.* **Response #2051-10:** The Corps notes the comment.
Comment #2053 Den vM	[See the Online Petition Standard Form Letter, Petition Signer #260 Entry.] Many happy days on both these rivers. Perhaps the solution is not in reeducating the river but the people consuming it.	***Unique Comment #2053-10*** *(ID 3762)**:*** *Many happy days on both these rivers. perhaps the solution is not in reeducating the river but the people consuming it.* **Response #2053-10:** The Corps notes the comment.
Comment #2054 Darcy MacGregor	[See the Online Petition Standard Form Letter, Petition Signer #261 Entry.] To consider the Moffat Firming Project is as archaic as considering climate change with carbon studies as not man made. This is about the environment and we must change our demands on the environment if our earth is to continue as a living planet. We possess the knowledge of man's impact. It is a time for conservation, the only solution to our declining resources. Allowing the Moffat Firming Project is a waste of money and resources as it will only temporarily make a dent in the water shortages of the Front Range, but would ruin the ecosystem of the Colorado River Headwaters, the Fraser River.	***Unique Comment #2054-10*** *(ID 3763)**:*** *To consider the Moffat Firming Project is as archaic as considering climate change with carbon studies as not man made. This is about the environment and we must change our demands on the environment if our earth is to continue as a living planet. We possess the knowledge of man's impact. It is a time for conservation, the only solution to our declining resources. Allowing the Moffat Firming Project is a waste of money and resources as it will only temporarily make a dent in the water shortages*

Comment Information	Comment	Comments and Responses
		of the Front Range, but would ruin the ecosystem of the Colorado River Headwaters, the Fraser River. **Response #2054-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2055 Denise Peeters	[See the Online Petition Standard Form Letter, Petition Signer #262 Entry.] Our son lives in Fraser and he is very concerned about their water reservoirs and fish life.	***Unique Comment #2055-10*** *(ID 3764)**:*** *Our son lives in Fraser and he is very concerned about their water reservoirs and fish life.* **Response #2055-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2058 Jenny Beltman	[See the Online Petition Standard Form Letter, Petition Signer #850 Entry.] I am a longtime Fraser valley resident I do not want to see more of our precious water diverted to Denver when there are other ways to conserve and meet water needs.	***Unique Comment #2058-1*** *(ID 4230)**:*** *I am a longtime Fraser valley resident. I do not want to see more of our precious water diverted to Denver when there are other ways to conserve and meet water needs* **Response #2058-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2061 Susie Hyer	[See the Online Petition Standard Form Letter, Petition Signer #265 Entry.] The water being used for Denver's lawns should be criminalized--please enact some kind of legislation to make bluegrass lawn (or lawns of a certain size) illegal in CO or something that provides incentives for people to rip up their lawn (how about a program that pays people to grow food plants or xeric landscapes in their yards instead/) Or just outlaw them all together, they suck up most of the states	***Unique Comment #2061-10*** *(ID 3765)**:*** *The water being used for Denver's lawns should be criminalized--please enact some kind of legislation to make bluegrass lawn (or lawns of a certain size) illegal in CO or something that provides incentives for people to rip up their lawn (how about a program that pays people to grow*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	water. I burns my butt that in the past I have not been allowed to collect rainwater off my roof in the mountains in Clear Creek County, but Denver residents are allowed to suck dry the existing water supply to water their freaking lawns to keep them green!!!!	*food plants or xeric landscapes in their yards instead/) Or just outlaw them all together, they suck up most of the state's water. I burns my butt that in the past I have not been allowed to collect rainwater off my roof in the mountains in Clear Creek County, but Denver residents are allowed to suck dry the existing water supply to water their freakin lawns to keep them green !!!!* **Response #2061-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2062 Shawn Combs	[See the Online Petition Standard Form Letter, Petition Signer #852 Entry.] Please listen to me and thousands of others, find a better solution than draining the river. Keep Denver Brown!	***Unique Comment #2062-10*** *(ID 4232)**:*** *Please listen to me and thousands of others, find a better solution than draining the river. Keep Denver Brown!* **Response #2062-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2063 Art Ferrari	[See the Online Petition Standard Form Letter, Petition Signer #266 Entry.] Protecting our natural environment is extremely important. Conservation of water on the Front Range and in the mountains should be the primary goal of all involved. Using more of the water from the Fraser River basin to support growth and irresponsible use of water on the front range will not solve the long term problems of Water use. At most, extra use of the Fraser resources will only postpone the inevitable crisis during low water years and or permanent crisis as a result of over population.	***Unique Comment #2063-10*** *(ID 3766)**:*** *Protecting our natural environment is extremely important. Conservation of water on the Front Range and in the mountains should be the primary goal of all involved. Using more of the water from the Fraser River basin to support growth and irresponsible use of water on the front range will not solve the long term problems of Water use. At most, extra use of the Fraser resources will only postpone the inevitable crisis during low water years and or permanent crisis as a result of over population.* **Response #2063-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the

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		Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2064 Ray Samuelson	[See the Online Petition Standard Form Letter, Petition Signer #853 Entry.] I was raised in Granby and fished the Frazer and upper Colorado basin. These rivers a just a shadow of what they used to be. We must conserve what is left.	***Unique Comment #2064-10*** *(ID 4233)**:*** *I was raised in Granby and fished the Frazer and upper Colorado basin. These rivers a just a shadow of what they used to be. We must conserve what is left.* **Response #2064-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2068 Jim Cervenka	[See the Online Petition Standard Form Letter, Petition Signer #269 Entry.] Please also consider the Windy Gap Firming Project in the combined impacts. By diverting more water to the Front Range at the confluence of the Fraser and Colorado Rivers, the Colorado downstream of Windy Gap will be even more depleted. This affects all of Grand County and all downstream users (e.g., Arizona, California, and Mexico).	***Unique Comment #2068-10*** *(ID 3767)**:*** *Please also consider the Windy Gap Firming Project in the combined impacts. By diverting more water to the Front Range at the confluence of the Fraser and Colorado Rivers, the Colorado downstream of Windy Gap will be even more depleted. This affects all of Grand County and all downstream users (e.g., Arizona, California, and Mexico).* **Response #2068-10:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow

Comment Information	Comment	Comments and Responses
		changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of Front Range entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.
Comment #2069 Jerry Harris	[See the Online Petition Standard Form Letter, Petition Signer #855 Entry.] As a prior resident of the Fraser River Valley I am very concerned that the stream flow be restored and sustained. This is a very important natural resource that must be preserved.	***Unique Comment #2069-10*** *(ID 4234)**:*** *As a prior resident of the Fraser River Valley I am very concerned that the stream flow be restored and sustained. This is a very important natural resource that must be preserved.* **Response #2069-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2081 Andrea Cox	[See the Online Petition Standard Form Letter, Petition Signer #276 Entry.] Please help us preserve the rivers and wildlife.	***Unique Comment #2081-10*** *(ID 3768)**:*** *Please help us preserve the rivers and wildlife.* **Response #2081-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2082 Dale E. Qualls	[See the Online Petition Standard Form Letter, Petition Signer #861 Entry.] Save the Colorado.	***Unique Comment #2082-10*** *(ID 4235)**:*** *Save the Colorado* **Response #2082-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2083 Barbara Parker	[See the Online Petition Standard Form Letter, Petition Signer #277 Entry.] This is a more than worthy cause that will support wildlife as well as our only industry here in the Fraser Valley....tourism.	***Unique Comment #2083-10*** *(ID 3769)**:*** *This is a more than worthy cause that will support wildlife as well as our only industry here in the Fraser Valley....tourism.* **Response #2083-10:** The Corps notes the comment.
Comment #2092 Walker Williams	[See the Online Petition Standard Form Letter, Petition Signer #866 Entry.] The time to take a responsible stance on water usage and river diversion is now, before shortages and deterioration become full-blown disasters.	***Unique Comment #2092-10*** *(ID 4236)**:*** *The time to take a responsible stance on water usage and river diversion is now, before shortages and deterioration become full-blown disasters.* **Response #2092-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2095 Marie Hedrick	[See the Online Petition Standard Form Letter, Petition Signer #283 Entry.] I live in the Fraser Valley because of the natural beauty that exists here. The rivers are key to the delicate balance of nature and population. Please don't take the waters from our great valley to use for watering lawns and the increasing the population on the front range. It will be devastating to ALL Colorado residents and visitors to this great state. Let's come up with a compromise that works for everyone.	***Unique Comment #2095-10*** *(ID 3770)**:*** *I live in the Fraser Valley because of the natural beauty that exists here. The rivers are key to the delicate balance of nature and population. Please don't take the waters from our great valley to use for watering lawns and the increasing the population on the front range. It will be devastating to ALL Colorado residents and visitors to this great state. Let's come up with a compromise that works for everyone.* **Response #2095-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2097 Tracy Foster	[See the Online Petition Standard Form Letter, Petition Signer #284 Entry.] Please don't do this. It will forever be lost.	***Unique Comment #2097-10*** *(ID 3771)**:*** *Please don't do this. It will forever be lost.* **Response #2097-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2098 Edith Strate	[See the Online Petition Standard Form Letter, Petition Signer #869 Entry.] Water resources must be managed in such a way that waste is reduced and healthy ecosystems are maintained. Keep the Fraser River healthy and flowing!	***Unique Comment #2098-10*** *(ID 4237)**:*** *Water resources must be managed in such a way that waste is reduced and healthy ecosystems are maintained. Keep the Fraser River healthy and flowing!* **Response #2098-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2103 Bernadette Smith	[See the Online Petition Standard Form Letter, Petition Signer #287 Entry.] Water conservation is crucial to the existence of our planet. Let us set an example for the world: protect the Colorado and Fraser rivers.	***Unique Comment #2103-10*** *(ID 3772)**:*** *Water conservation is crucial to the existence of our planet. Let us set an example for the world: protect the Colorado and Fraser rivers.* **Response #2103-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2104 Bradley Hilton	[See the Online Petition Standard Form Letter, Petition Signer #872 Entry.] Keep the GC beautiful!	***Unique Comment #2104-10*** *(ID 4238)**:*** *Keep the GC beautiful!* **Response #2104-10:** The Corps notes the comment.
Comment #2106 David Salberg	[See the Online Petition Standard Form Letter, Petition Signer #874 Entry.] Leave our Natural Resources alone!	***Unique Comment #2106-10*** *(ID 4239)**:*** *Leave our Natural Resources alone!* **Response #2106-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2108 Thomas Mazzarisi	[See the Online Petition Standard Form Letter, Petition Signer #288 Entry.] I have plans to one day in the not too distant future to fish these waters with my two granddaughters. I would rather see stronger conservation measures on the front range than diverting more flows away from these rivers.	***Unique Comment #2108-10*** *(ID 3773)**:*** *I have plans to one day in the not too distant future to fish these waters with my two granddaughters. I would rather see stronger conservation measures on the front range than diverting more flows away from these rivers.* **Response #2108-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2115 Brene Belew-LaDue	[See the Online Petition Standard Form Letter, Petition Signer #880 Entry.] What affects the Colorado also affects The Fraser River, Grand Lake and all the other surrounding water systems in Grand County. Please look at the eco-system as a whole not just in pieces.	***Unique Comment #2115-10*** *(ID 4240)**:*** *What affects the Colorado also affects The Fraser River, Grand Lake and all the other surrounding water systems in Grand County. Please look at the eco-system as a whole not just in pieces.* **Response #2115-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2120 Petra Recor	[See the Online Petition Standard Form Letter, Petition Signer #884 Entry.] Please talk and listen till a solution is found for all and for the future. Do NOT let our rivers die!!!	***Unique Comment #2120-10*** *(ID 4241)**:*** *Please talk and listen till a solution is found for all and for the future. Do NOT let our rivers die!!!* **Response #2120-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2122 Walter Rockwell	[See the Online Petition Standard Form Letter, Petition Signer #293 Entry.] I completely agree with the reasonable and logical approach taken by Colorado Trout Unlimited.	***Unique Comment #2122-10*** *(ID 3774)**:*** *I completely agree with the reasonable and logical approach taken by Colorado Trout Unlimited.* **Response #2122-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2126 Corey Beck	[See the Online Petition Standard Form Letter, Petition Signer #294 Entry.] Water rocks!	***Unique Comment #2126-10*** *(ID 3775)**:*** *Water rocks!* **Response #2126-10:** The Corps notes the comment.
Comment #2128 Becky Martinek	[See the Online Petition Standard Form Letter, Petition Signer #295 Entry.] As a Landscape Architect in the front range area, I know that much more can be done to conserve our water resources.	***Unique Comment #2128-10*** *(ID 3776)**:*** *As a Landscape Architect in the front range area, I know that much more can be done to conserve our water resources.* **Response #2128-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2133 Fred Brothers	[See the Online Petition Standard Form Letter, Petition Signer #893 Entry.] Beautiful area where the river runs through it. Must keep it running through it.	***Unique Comment #2133-10*** *(ID 4242)**:*** *Beautiful area where the river runs through it. Must keep it running through it.* **Response #2133-10:** The Corps notes the comment.
Comment #2139 Bonnie Koblitz	[See the Online Petition Standard Form Letter, Petition Signer #899 Entry.] I am against Denver Water's taking any more water from the Fraser River for municipal use or any other use on the Front Range. Taking more water will damage the river too much and damage aquatic life and especially fishery habitat.	***Unique Comment #2139-10*** *(ID 4243)**:*** *I am against Denver Water's taking any more water from the Fraser River for municipal use or any other use on the Front Range. Taking more water will damage the river too much and damage aquatic life and especially fishery habitat.* **Response #2139-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2140 Susan Bergman	[See the Online Petition Standard Form Letter, Petition Signer #900 Entry.] We need the Fraser River and Colorado River to flow strong in our Fraser valley to preserve our resources and lifestyle in the mountains.	***Unique Comment #2140-10*** *(ID 4244)**:*** *We need the Fraser River and Colorado River to flow strong in our Fraser valley to preserve our resources and lifestyle in the mountains.* **Response #2140-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2141 Gayle Knorr	[See the Online Petition Standard Form Letter, Petition Signer #901 Entry.] Water is always a concern. I am a 4th generation native of Colorado, and a 33 year resident of Summit County. Please consider what is best for the entire community of Colorado -- CONSERVE!	***Unique Comment #2141-10*** *(ID 4245)**:*** *Water is always a concern. I am a 4th generation native of Colorado, and a 33 year resident of Summit County. Please consider what is best for the entire community of Colorado - CONSERVE!* **Response #2141-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2143 Bob Fanch	[See the Online Petition Standard Form Letter, Petition Signer #903 Entry.] The Fraser River is the lifeblood for Grand County and is being depleted by Denver and other cities that have not, in my opinion, done what they can do to address the waste and regulations within their control. The easy thing is to use more water. That is not the long-term solution for users or those who wish to protect the rivers.	***Unique Comment #2143-10*** *(ID 4246)**:*** *The Fraser River is the lifeblood for Grand County and is being depleted by Denver and other cities that have not, in my opinion, done what they can do to address the waste and regulations within their control. The easy thing is to use more water. That is not the long-term solution for users or those who wish to protect the rivers.* **Response #2143-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2144 Deborah Buhayar	[See the Online Petition Standard Form Letter, Petition Signer #904 Entry.] I HAVE RECENTLY RETIRED TO GRAND COUNTY, FULFILLING MY DREAMS TO LIVE IN THIS BEAUTIFUL COUNTY THAT OUR FAMILY HAS ENJOYED FOR YEARS. I AM SADDENED THAT OUR WATERWAYS ARE SO THREATENED BY INADEQUATE CONSERVATION MEASURES AND UNFETTERED GROWTH. PLEASE INCORPORATE REQUIREMENTS INTO THE DEIS SO WE CAN ASSURE THE CONTINUED HEATH OF OUR RIVERS.	***Unique Comment #2144-10*** *(ID 4247)**:*** *I HAVE RECENTLY RETIRED TO GRAND COUNTY, FULFILLING MY DREAMS TO LIVE IN THIS BEAUTIFUL COUNTY THAT OUR FAMILY HAS ENJOYED FOR YEARS. I AM SADDENED THAT OUR WATERWAYS ARE SO THREATENED BY INADEQUATE CONSERVATION MEASURES AND UNFETTERED GROWTH. PLEASE INCORPORATE REQUIREMENTS INTO THE DEIS SO WE CAN ASSURE THE CONTINUED HEATH OF OUR RIVERS.* **Response #2144-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection system. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the 34,000 AF/yr water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment Information	Comment	Comments and Responses
		Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.
Comment #2149 Sam Doyle	[See the Online Petition Standard Form Letter, Petition Signer #909 Entry.] Even though there is apparently an agreement in place, continuing to pull water out of the Fraser River will impact the habitat throughout that region. I would suggest that an independent analysis be performed to determine precisely what that impact is. Denver Water customers should be focused on conservation as opposed to draining our beautiful rivers. The most important consideration must be: What are we leaving for our children and their children when there aren't rivers or habitats in our mountains for future generations to visit and enjoy? We must be able to look at ourselves, and at our children, and say that we have done our best for the environment not just for our lifetime, but for future generations.	***Unique Comment #2149-10*** *(ID 4249)**:*** *Even though there is apparently an agreement in place, continuing to pull water out of the Fraser River will impact the habitat throughout that region. I would suggest that an independent analysis be performed to determine precisely what that impact is.* **Response #2149-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Unique Comment #2149-11*** *(ID 4248)**:*** *Denver Water customers should be focused on conservation as opposed to draining our beautiful rivers. The most important consideration must be: What are we leaving for our children and their children when there aren't rivers or habitats in our mountains for future generations to visit and enjoy? We must be able to look at ourselves, and at our children, and say that we have done our best for the environment not just for our lifetime, but for future generations.* **Response #2149-11:** The Corps notes the comment.
Comment #2151 Miles B. Miller	[See the Online Petition Standard Form Letter, Petition Signer #911 Entry.] Please protect our fisheries and prevent further degradation of water quality in Grand County by rejecting the proposed action from Denver Water. Removal of more water from both the Fraser and Colorado Rivers from the proposed action will irreparably impact both rivers by reducing flow levels and increasing water temperatures. The cumulative effects from this proposal have not been adequately analyzed or mitigated in this proposal and the long term affects to both streams	***Unique Comment #2151-10*** *(ID 4250)**:*** *Please protect our fisheries and prevent further degradation of water quality in Grand County by rejecting the proposed action from Denver Water. Removal of more water from both the Fraser and Colorado Rivers from the proposed action will irreparably impact both rivers by reducing flow levels and increasing water temperatures. The*

Comment Information	Comment	Comments and Responses
	would be catastrophic.	*cumulative effects from this proposal have not been adequately analyzed or mitigated in this proposal and the long term affects to both streams would be catastrophic.* **Response #2151-10:** Additional water quality analysis was performed for the Fraser River and the Colorado River. Please refer to FEIS Sections 4.6.2 and 5.2.
Comment #2152 T. Hartmann	[See the Online Petition Standard Form Letter, Petition Signer #912 Entry.] Save the Fraser River and educate the Front Range.	***Unique Comment #2152-10*** *(ID 4251)**:*** *Save the Fraser River and educate the Front Range.* **Response #2152-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2154 Chris Sammons	[See the Online Petition Standard Form Letter, Petition Signer #914 Entry.] My family has over 100 yrs. of ranching along the Colorado River south of Kremmling. Ask me what happens when more water is diverted from the Fraser River. Ask about loss of habitat/species. Loss of productive agricultural land due to low water tables. Loss of native species of trees/grass/willows. Losses to our tourist business structure because a once clean, clear, cold fast flowing river basin with a HUGE spring runoff flood has now become a murky, warm, slow moving cesspool of moss and death! I say NOT ONE MORE DROP!!!! NOT ONE MORE DROP!!! NOT ONE MORE DROP!!! There are some things that can not ever be "mitigated"; trans-basin diversion of water is one of those things. You are severely delusional if you think "man" can replace what NATURE has in place; and no, a couple acre feet of late season "fish flush" does not a spring runoff make. Denver Water customers', whether they know it or not, are destroying one of their favorite recreational areas, the beautiful Fraser Valley and everything else downstream. Someone please wake these people up, and start an aggressive mandatory conservation program NOW, before it is too late for all of us.	***Unique Comment #2154-10*** *(ID 4252)**:*** *My family has over 100 yrs. of ranching along the Colorado River south of Kremmling. Ask me what happens when more water is diverted from the Fraser River. Ask about loss of habitat/species. Loss of productive agricultural land due to low water tables. Loss of native species of trees/grass/willows. Losses to our tourist business structure because a once clean, clear, cold fast flowing river basin with a HUGE spring runoff flood has now become a murky, warm, slow moving cesspool of moss and death! I say NOT ONE MORE DROP!!!! NOT ONE MORE DROP!!! NOT ONE MORE DROP!!! There are some things that cannot ever be "mitigated"; trans-basin diversion of water is one of those things. You are severely delusional if you think "man" can replace what NATURE has in place; and no, a couple acre feet of late season "fish flush" does not a spring runoff make. Denver Water customers', whether they know it or not, are destroying one of their favorite recreational*

Comment Information	Comment	Comments and Responses
		areas, the beautiful Fraser Valley and everything else downstream. Someone please wake these people up, and start an aggressive mandatory conservation program NOW, before it is too late for all of us. **Response #2154-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2158 Jeff Poole	[See the Online Petition Standard Form Letter, Petition Signer #918 Entry.] Good luck howdy guys.	***Unique Comment #2158-1*** *(ID 5384)**:*** *Good luck howdy guys.* **Response #2158-1:** The Corps notes the comment.
Comment #2159 Luanne Kay	[See the Online Petition Standard Form Letter, Petition Signer #919 Entry.] It is a lesson for our young (the future) we speak so freely of learning that our world is not for the taking or plundering at whim. It is more of protecting our truest depleting resource, water not oil.	***Unique Comment #2159-10*** *(ID 4254)**:*** *It is a lesson for our young (the future) we speak so freely of learning that our world is not for the taking or plundering at whim. It is more of protecting our truest depleting resource, water not oil.* **Response #2159-10:** The Corps notes the comment.
Comment #2160 Donna Huff	[See the Online Petition Standard Form Letter, Petition Signer #920 Entry.] God Bless you Chris Sammons! We need more ranchers like you! I echo your feelings. Stop diverting water.	***Unique Comment #2160-10*** *(ID 4255)**:*** *God Bless you Chris Sammons! We need more ranchers like you! I echo your feelings. Stop diverting water.* **Response #2160-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2161 Ken Gillis	[See the Online Petition Standard Form Letter, Petition Signer #921 Entry.] As a resident of Denver, a property owner in Grand County and a fisherman that loves the Grand Valley and all of its natural beauty, I urge you to require Denver Water to include in its Moffat Firming Project Draft Environmental Impact Statement more emphasis on conservation and minimum flows to sustain a healthy fish population in the upper Colorado and Fraser Rivers, and to also include flushing flows to keep the streams from clogging with sediment. As a resident of Denver, I am willing to use less water by adopting smart conservation measures and I hope that Denver Water will encourage its other customers to do the same if this will help maintain the great natural resources of the upper Colorado River and its tributaries.	***Unique Comment #2161-10*** *(ID 4257)**:*** *As a resident of Denver, a property owner in Grand County and a fisherman that loves the Grand Valley and all of its natural beauty, I urge you to require Denver Water to include in its Moffat Firming Project Draft Environmental Impact Statement more emphasis on conservation and minimum flows to sustain a healthy fish population in the upper Colorado and Fraser Rivers, and to also include flushing flows to keep the streams from clogging with sediment.* **Response #2161-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the 34,000 AF/yr water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment Information	Comment	Comments and Responses
		Denver Water has committed to provide flushing flows in the Fraser River, St. Louis Creek, Vasquez Creek, and Ranch Creek. Denver Water has also committed to forgo diversions when stream temperatures associated with low flow conditions are elevated. Refer to FEIS Appendix M for a description of the proposed mitigation measures. ***Unique Comment #2161-11*** *(ID 4256)**:*** *As a resident of Denver, I am willing to use less water by adopting smart conservation measures and I hope that Denver Water will encourage its other customers to do the same if this will help maintain the great natural resources of the upper Colorado River and its tributaries.* **Response #2161-11:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2164 Jeff Rozean	[See the Online Petition Standard Form Letter, Petition Signer #924 Entry.] There is far more information on this type of impact than is currently being considered. The Fraser river is only a fraction of what it used to be.	***Unique Comment #2164-10*** *(ID 4258)**:*** *There is far more information on this type of impact than is currently being considered. The Fraser river is only a fraction of what it used to be.* **Response #2164-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2166 Therron Hofsetz	[See the Online Petition Standard Form Letter, Petition Signer #926 Entry.] Stop letting Denver, Ft. Collins and Colorado Springs take the water out of our mountain rivers and streams.	***Unique Comment #2166-10*** *(ID 4259)**:*** *Stop letting Denver, Ft. Collins and Colorado Springs take the water out of our mountain rivers and streams.* **Response #2166-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2170 Lynna Mustapha	[See the Online Petition Standard Form Letter, Petition Signer #930 Entry.] Recite the Sutra of Golden Light for Peace and Global Harmony What is the Sutra of Golden Light? It's an ancient teaching given by the Buddha to empower the kings of his time to govern with wisdom and compassion. Even today, reciting the Sutra creates the cause for wise and compassionate leadership. You can see it in the contents of this beautiful sutra. Kyabje Zopa Rinpoche has repeatedly requested us, from the bottom of his heart, to recite this Sutra due to the grave situation - violence, oppression, corporate greed, environmental catastrophe - facing us on this planet today. "The holy Golden Light Sutra is the king of the sutras. It is extremely powerful and fulfills all one's wishes, as well as bringing peace and happiness for all sentient beings, up to enlightenment. It is also extremely powerful for world peace, for your own protection, and for the protection of the country and the world. Also, it has great healing power for people in the country.... Anyone can read this text, Buddhists and even non-Buddhists who desire world peace. This also protects individuals and the country from what are labeled natural disasters of the wind element, fire element, earth element, and water element, such as earthquakes, floods, cyclones, fires, tornadoes, etc. They are not natural because they come from causes and conditions that make dangers happen. They come from past inner negative thoughts and actions of people, and from external conditions. The benefits of reading this sutra are immeasurable ... reciting just a few lines of the Sutra of Golden Light creates more merit than making ... immeasurable offerings to the Buddha. Reciting this sutra directs one's life towards enlightenment. There is so much merit ... one's life becomes so easy, whatever one wishes for one receives ... there is unbelievable purification ... one liberates numberless sentient beings from the oceans of samsaric suffering and brings them to enlightenment." Benefits of Sutra of Golden Light http://sutraofgoldenlight.michaeljohnparker.com/sutra-golden-light-Lama Zopa Rinpoche says: This sutra is inconceivable, For its ocean of virtue is without end; It frees every being From countless oceans of suffering. This King of Glorious Sutras	***Unique Comment #2170-10*** *(ID 4260)**:*** *Recite the Sutra of Golden Light for Peace and Global Harmony What is the Sutra of Golden Light? It's an ancient teaching given by the Buddha to empower the kings of his time to govern with wisdom and compassion. Even today, reciting the Sutra creates the cause for wise and compassionate leadership. You can see it in the contents of this beautiful sutra. Kyabje Zopa Rinpoche has repeatedly requested us, from the bottom of his heart, to recite this Sutra due to the grave situation - violence, oppression, corporate greed, environmental catastrophe - facing us on this planet today. "The holy Golden Light Sutra is the king of the sutras. It is extremely powerful and fulfills all one's wishes, as well as bringing peace and happiness for all sentient beings, up to enlightenment. It is also extremely powerful for world peace, for your own protection, and for the protection of the country and the world. Also, it has great healing power for people in the country.... Anyone can read this text, Buddhists and even non-Buddhists who desire world peace. This also protects individuals and the country from what are labeled natural disasters of the wind element, fire element, earth element, and water element, such as earthquakes, floods, cyclones, fires, tornadoes, etc. They are not natural because they come from causes and conditions that make*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	Fully destroys external enemies, Turns back legions of foreign armies, Removes the fear of the terrified and poor And causes supreme virtue. For beings without merit, The store of their merit Will grow into a limitless, incalculable, inconceivable mass. 'This text is very precious; it brings peace and happiness and is very powerful to stop violence. It gives incredible protection to the country from violence etc. By hearing this text, one's karma gets purified. This text increases success and, especially for leaders like kings or presidents, brings success in guiding in virtue, the path to happiness. If anyone has problems-if one is dying or dead; if the devas have turned against one and nothing is working; if, merely by expressing oneself, one's friends, loved ones, husband, wife, family members and even servants get angry with one; if one's wealth declines or if one has harm from black magic or spirits, with bad dreams or fearful things happening-then one should wash, put on clean clothes and with a peaceful mind listen to the transmission of this text. Then all will be pacified. Anyone who hears it creates much merit and is highly admired by the buddhas. http://www.fpmt.org/teachers/zopaladvice/goldenlight.asp In whichever country this is taught, the whole country benefits. The king of that country doesn't get attacked and disease is eliminated, everyone is happy and the country becomes harmonious; there are no quarrels. The king gives religious freedom and is always protected by the devas. It is especially good to be read in places where there is a lot of fighting. As well, there is prosperity and rains come at the right time. Anyone who keeps, memorizes or contributes to this text exceeds the eight worldly beings and all their wishes get fulfilled. Buddha told the four guardians to make offerings and serve this text, and always protect the people who memorize or even just read it. The four guardians acknowledged they would protect those who read it and would help and fulfill all their wishes. Memorizing or making offerings to this text is like making inconceivable offerings to Buddha. Enlightenment will never be reversed within anyone in whose ear these holy words are spoken; the life will always be directed toward enlightenment and one will never fall back. There is no question if you memorize the text. The deva, Hamachiwa Pala, told Buddha that she will protect the bhikshu who recites this text and he will receive all that is needed: property, a stable mind and so forth. Whoever even tries to read or understand this text will experience the comfort and happiness of devas and humans for 100 billion eons; fame and perfect crops; and will become a buddha. The earth goddess definitely will help even if only one chapter or one bodhisattva's name is mentioned; she will protect those sentient beings who even read and try to	*dangers happen. They come from past inner negative thoughts and actions of people, and from external conditions. The benefits of reading this sutra are immeasurable ... reciting just a few lines of the Sutra of Golden Light creates more merit than making ... immeasurable offerings to the Buddha. Reciting this sutra directs one's life towards enlightenment. There is so much merit ... one's life becomes so easy, whatever one wishes for one receives ... there is unbelievable purification ... one liberates numberless sentient beings from the oceans of samsaric suffering and brings them to enlightenment." Benefits of Sutra of Golden Light http://sutraofgoldenlight.michaeljohnparker.com/sutra-golden-light-Lama Zopa Rinpoche says:This sutra is inconceivable, For its ocean of virtue is without end; It frees every being From countless oceans of suffering. This King of Glorious Sutras Fully destroys external enemies, Turns back legions of foreign armies, Removes the fear of the terrified and poor And causes supreme virtue. For beings without merit, The store of their merit Will grow into a limitless, incalculable, inconceivable mass.* *This text is very precious; it brings peace and happiness and is very powerful to stop violence. It gives incredible protection to the country from violence etc. By hearing this text, one's karma gets purified.* *This text increases success and, especially for leaders like kings or presidents, brings success in guiding in virtue, the path to happiness. If anyone has problems-if one is dying or dead; if the devas have turned against one and nothing is working; if, merely by expressing oneself, one's friends, loved ones, husband, wife, family members and even servants get angry with one;*

Comment Information	Comment	Comments and Responses
	understand one verse (four words), and will fulfill their wishes. Those sentient beings who hear only one verse will never go to the lower realms. The Buddha told the earth goddess that even if a person hears only one verse, they will be born in the deva realm. Further, the Buddha told the earth goddess the non-virtuous karma of the person who hears even one verse will be eliminated and they will achieve enlightenment.'	*if one's wealth declines or if one has harm from black magic or spirits, with bad dreams or fearful things happening-then one should wash, put on clean clothes and with a peaceful mind listen to the transmission of this text. Then all will be pacified. Anyone who hears it creates much merit and is highly admired by the buddhas. http://www.fpmt.org/teachers/zopaladvice/goldenlight.asp In whichever country this is taught, the whole country benefits. The king of that country doesn't get attacked and disease is eliminated, everyone is happy and the country becomes harmonious; there are no quarrels. The king gives religious freedom and is always protected by the devas. It is especially good to be read in places where there is a lot of fighting. As well, there is prosperity and rains come at the right time.* *Anyone who keeps, memorizes or contributes to this text exceeds the eight worldly beings and all their wishes get fulfilled. Buddha told the four guardians to make offerings and serve this text, and always protect the people who memorize or even just read it. The four guardians acknowledged they would protect those who read it and would help and fulfill all their wishes. Memorizing or making offerings to this text is like making inconceivable offerings to Buddha. Enlightenment will never be reversed within anyone in whose ear these holy words are spoken; the life will always be directed toward enlightenment and one will never fall back. There is no question if you memorize the text. The deva, Hamachiwa Pala, told Buddha that she will protect the bhikshu who recites this text and he will receive all that is needed: property, a stable mind and so forth. Whoever even tries to read or understand this text will experience the comfort and happiness of devas and humans for 100*

Comment Information	Comment	Comments and Responses
		billion eons; fame and perfect crops; and will become a buddha. The earth goddess definitely will help even if only one chapter or one bodhisattva's name is mentioned; she will protect those sentient beings who even read and try to understand one verse (four words), and will fulfill their wishes. Those sentient beings who hear only one verse will never go to the lower realms. The Buddha told the earth goddess that even if a person hears only one verse, they will be born in the deva realm. Further, the Buddha told the earth goddess the non-virtuous karma of the person who hears even one verse will be eliminated and they will achieve enlightenment.' **Response #2170-10:** The Corps notes the comment.
Comment #2173 Brendon Hofsetz	[See the Online Petition Standard Form Letter, Petition Signer #933 Entry.] Keep the water in the river!	***Unique Comment #2173-10*** *(ID 4261)**:*** *Keep the water in the river!* **Response #2173-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2185 Marge Dowell	[See the Online Petition Standard Form Letter, Petition Signer #945 Entry.] Do not let Grand County get railroaded by Denver Water. Nothing infuriates me more that looking at the lush green lawns in the dead of summer in Denver because I know they are sucking the water out of Grand County and other mountain communities. They live in a very arid climate and they need to landscape accordingly. Considering the lack of snow here this winter, I wonder why they aren't already discussing water conservation with their customers.	***Unique Comment #2185-10*** *(ID 4262)**:*** *Do not let Grand County get railroaded by Denver Water. Nothing infuriates me more that looking at the lush green lawns in the dead of summer in Denver because I know they are sucking the water out of Grand County and other mountain communities. They live in a very arid climate and they need to landscape accordingly. Considering the lack of snow here this winter, I wonder why they aren't already discussing water conservation with their customers.* **Response #2185-10:** Denver Water does not have the legal authority to direct land-use decisions, including

Comment Information	Comment	Comments and Responses
		landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2188 Kent Zaitz	[See the Online Petition Standard Form Letter, Petition Signer #948 Entry.] The Fraser River is already running to low that the fish are being stressed because of the warm water temperatures. I live on the front range and make a living marketing new home subdivisions, but I am tired of the taking of water from the mountain communities for the use of lush lawns of subdivisions built on an arid plain. If the cities don't have enough water then rock in the lawns instead of taking from others.	***Unique Comment #2188-10*** *(ID 4263)**:*** *The Fraser River is already running to low that the fish are being stressed because of the warm water temperatures. I live on the front range and make a living marketing new home subdivisions, but I am tired of the taking of water from the mountain communities for the use of lush lawns of subdivisions built on an arid plain. If the cities don't have enough water then rock in the lawns instead of taking from others.* **Response #2188-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory

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		restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2197 Dane De Voy	[See the Online Petition Standard Form Letter, Petition Signer #957 Entry.] I enjoy rafting the Fraser for the few short weeks we can now and can't imagine what the river will be like if they divert any more water!	***Unique Comment #2197-10*** *(ID 4264)**:*** *I enjoy rafting the Fraser for the few short weeks we can now and can't imagine what the river will be like if they divert any more water!* **Response #2197-10:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2200 Alex Georgas	[See the Online Petition Standard Form Letter, Petition Signer #960 Entry.] SAVE THE RIVER!!	***Unique Comment #2200-10*** *(ID 4265)**:*** *SAVE THE RIVER!!* **Response #2200-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2203 Jason Saunders	[See the Online Petition Standard Form Letter, Petition Signer #963 Entry.] I fully support keeping our wildlife intact. I believe we can have brown grass if that means beautiful mountains. Please let the mountains live!	***Unique Comment #2203-10*** *(ID 4266)**:*** *I fully support keeping our wildlife intact. I believe we can have brown grass if that means beautiful mountains. Please let the mountains live!* **Response #2203-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2211 Julie Martin	[See the Online Petition Standard Form Letter, Petition Signer #971 Entry.] Please save our rivers!!! Don't let the front range water their lawns with the water we need to survive in our agricultural and tourism based economy.	***Unique Comment #2211-10*** *(ID 4267)**:*** *Please save our rivers!!! Don't let the front range water their lawns with the water we need to survive in our agricultural and tourism based economy.* **Response #2211-10:** The Corps notes the comment.
Comment #2212 Hayley Crosby	[See the Online Petition Standard Form Letter, Petition Signer #972 Entry.] It is time to stop searching for short term solutions to more water demands. Look to the root cause-population centers not wildlands!	***Unique Comment #2212-10*** *(ID 4268)**:*** *It is time to stop searching for short term solutions to more water demands. Look to the root cause-population centers not wildlands!* **Response #2212-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2219 Nicholas Rader	[See the Online Petition Standard Form Letter, Petition Signer #979 Entry.] Keep the Colorado River Alive-Don't Flatline the Fraser.	***Unique Comment #2219-10*** *(ID 4269)**:*** *Keep the Colorado River Alive-Don't Flatline the Fraser* **Response #2219-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2223 James Slattery	[See the Online Petition Standard Form Letter, Petition Signer #983 Entry.] While living in Winter Park for three years, I only had one chance to kayak the Fraser River. The flow was always too low as the water was diverted to Denver. Now when I hear that Denver water wants more diversions, I feel the need to act. The city of Denver and the front range need to focus more on water conservation and not on green lawns, etc. More diversions will be nothing but devastating to the Fraser.	***Unique Comment #2223-10*** *(ID 4270)**:*** *While living in Winter Park for three years, I only had one chance to kayak the Fraser River. The flow was always too low as the water was diverted to Denver. Now when I hear that Denver water wants more diversions, I feel the need to act. The city of Denver and the front range need to focus more on water conservation and not on green lawns, etc. More diversions will be nothing but devastating to the Fraser.* **Response #2223-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year

Comment Information	Comment	Comments and Responses
		conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2225 Amanda Cluck	[See the Online Petition Standard Form Letter, Petition Signer #985 Entry.] As an educated wildlife biologist, the amount of water being diverted from the Fraser River (and the Colorado River as well) will have devastating long term effects on the environment. If this water is indeed being used merely to water lawns or other short term influences on the front range, these practices should be immediately ceased and should never have been allowed to take place in the first place. This water originated here and should stay here for the sake of the natural resources that require it.	***Unique Comment #2225-10*** *(ID 4271)**:*** *As an educated wildlife biologist, the amount of water being diverted from the Fraser River (and the Colorado River as well) will have devastating long term effects on the environment. If this water is indeed being used merely to water lawns or other short term influences on the front range, these practices should be immediately ceased and should never have been allowed to take place in the first place. This water originated here and should stay here for the sake of the natural resources that require it.* **Response #2225-10:** The Corps notes the comment.
Comment #2227 Shannon Straney	[See the Online Petition Standard Form Letter, Petition Signer #987 Entry.] Please help.	***Unique Comment #2227-10*** *(ID 4272)**:*** *please help* **Response #2227-10:** The Corps notes the comment.
Comment #2228 Matt Bahm	[See the Online Petition Standard Form Letter, Petition Signer #988 Entry.] While increasing drinkable water supplies is necessary for people, the diversion of this water for most municipal uses is unjustified. Water conservation measures would do much more to ensure adequate water supplies than diverting even more water without practicing conservation. The poor practices of irrigating lawns, including parks, and other unnecessary uses are irresponsible and endanger the future of the region. Wildlands should be allowed to remain so, including the rivers that support them. Education of the public to true water conservation would go much further in reducing future strains on the water supply than would simply supporting the public's bad habits.	***Unique Comment #2228-10*** *(ID 4273)**:*** *While increasing drinkable water supplies is necessary for people, the diversion of this water for most municipal uses is unjustified. Water conservation measures would do much more to ensure adequate water supplies than diverting even more water without practicing conservation. The poor practices of irrigating lawns, including parks, and other unnecessary uses are irresponsible and endanger the future of the region. Wildlands should be allowed to remain so, including the rivers that support them. Education of the public to true water*

Comment Information	Comment	Comments and Responses
		conservation would go much further in reducing future strains on the water supply than would simply supporting the public's bad habits. **Response #2228-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2229 Susan Johnson	[See the Online Petition Standard Form Letter, Petition Signer #989 Entry.] Save the Fraser River, our local economy depends on this water! How can Denver Water justify taking more water from already endangered waterways while imposing NO restrictions on their front range customers who face no penalties for watering their lawns in the middle of a hot summer day! No more diversion until the front range is made to act more responsibly about their water usage!	***Unique Comment #2229-10*** *(ID 4274)**:*** *Save the Fraser River, our local economy depends on this water! How can Denver Water justify taking more water from already endangered waterways while imposing NO restrictions on their front range customers who face no penalties for watering their lawns in the middle of a hot summer day! No more diversion until the front range is made to act more*

Comment Information	Comment	Comments and Responses
		responsibly about their water usage! **Response #2229-10:** Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal

Comment Information	Comment	Comments and Responses
		measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2235 Currie Bechtol	[See the Online Petition Standard Form Letter, Petition Signer #995 Entry.] I have fished the Fraser for the past 3 years, since we purchased a cabin in Rendezvous. It has been fantastic, and every effort possible should be made to SAVE THE FRASER RIVER and preserve it for our children and grandchildren.	***Unique Comment #2235-10*** *(ID 4275)**:*** *I have fished the Fraser for the past 3 years, since we purchased a cabin in Rendezvous. It has been fantastic, and every effort possible should be made to SAVE THE FRASER RIVER and preserve it for our children and grandchildren.* **Response #2235-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2238 Steve Kauber	[See the Online Petition Standard Form Letter, Petition Signer #998 Entry.] JUST THINK OUR LAW MAKERS WOULD RATHER KEEP THE FRONT RANGE VOTERS LAWN GREEN THAN MAKE A POSITIVE IMPACT ON OUR ENVIRONMENT.	***Unique Comment #2238-10*** *(ID 4276)**:*** *JUST THINK OUR LAW MAKERS WOULD RATHER KEEP THE FRONT RANGE VOTERS LAWN GREEN THAN MAKE A POSITIVE IMPACT ON OUR ENVIRONMENT.* **Response #2238-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2239 Mike Miles	[See the Online Petition Standard Form Letter, Petition Signer #999 Entry.] Destroying the Fraser River so those in Denver can water their non-native grasses is unacceptable and should be made cost prohibitive, if not illegal.	***Unique Comment #2239-10*** *(ID 4277)**:*** *Destroying the Fraser River so those in Denver can water their non-native grasses is unacceptable and should be made cost prohibitive, if not illegal.* **Response #2239-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		(10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2243 Peter LaDue	[See the Online Petition Standard Form Letter, Petition Signer #1,003 Entry.] As a 25 year resident of Grand County, a life long fly fisherman, fishing guide, and father who is educating my own daughter in environmental issues, clean streams, and to become a fly fisher I oppose any more de-watering of the Fraser and Colorado rivers. Thank you.	***Unique Comment #2243-10*** *(ID 4278)**:*** *As a 25 year resident of Grand County, a lifelong fly fisherman, fishing guide, and father who is educating my own daughter in environmental issues, clean streams, and to become a fly fisher I oppose any more de-watering of the Fraser and Colorado rivers.* **Response #2243-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2244 Bill Ikler	[See the Online Petition Standard Form Letter, Petition Signer #1,004 Entry.] Denver has made great progress with water conservation, but can do much more. It would be a tragedy to keep drying up the Fraser River and the Colorado to water lawns and fuel growth.	***Unique Comment #2244-10*** *(ID 4279)**:*** *Denver has made great progress with water conservation, but can do much more. It would be a tragedy to keep drying up the Fraser River and the Colorado to water lawns and fuel growth.* **Response #2244-10:** The Corps notes the comment.
Comment #2245 Nicole Bailey	[See the Online Petition Standard Form Letter, Petition Signer #1,005 Entry.] Please consider adding these concepts to the draft EIS.	***Unique Comment #2245-10*** *(ID 4280)**:*** *Please consider adding these concepts to the draft EIS.* **Response #2245-10:** The Corps notes the comment.
Comment #2247 Nancy Bacon	[See the Online Petition Standard Form Letter, Petition Signer #1,007 Entry.] I have seen the health of the Fraser River decline over the past decade due to lower flows. Please include the petitions' suggestions in your EIS.	***Unique Comment #2247-10*** *(ID 4281)**:*** *I have seen the health of the Fraser River decline over the past decade due to lower flows. Please include the petitions' suggestions in your EIS.* **Response #2247-10:** The Corps notes the comment.
Comment #2248 Todd Bacon	[See the Online Petition Standard Form Letter, Petition Signer #1,008 Entry.] I am a second home-owner in Tabernash and was attracted to the Fraser River Valley because of the fishing on the Fraser River. I have fished it for 35 years. In recent years, the river has mossed up badly as the flows lessen and the water warms up in August. It seems to stay that way through the rest of the summer and the fall. The quality of the fishing deteriorates badly. I tell my friends to fish it from the end of run-off through July and then forget about it. In my experience, the big trout disappear once the water levels drop. There is simply no cover for them. I don't know where they go (I suspect down into Windy Gap), but I am certain they are not there. Flows are already at a ridiculous minimum. Any changes would exacerbate an already bad situation. The river would also benefit greatly from enhanced run-off. Thank you.	***Unique Comment #2248-10*** *(ID 4282)**:*** *I am a second home-owner in Tabernash and was attracted to the Fraser River Valley because of the fishing on the Fraser River. I have fished it for 35 years. In recent years, the river has mossed up badly as the flows lessen and the water warms up in August. It seems to stay that way through the rest of the summer and the fall. The quality of the fishing deteriorates badly. I tell my friends to fish it from the end of run-off through July and then forget about it. In my experience, the big trout disappear once the water levels drop. There is simply no cover for them. I don't know where they go (I suspect down into Windy Gap), but I am certain they are not there. Flows are already at a ridiculous minimum. Any changes would exacerbate an already bad situation. The river would also benefit greatly from enhanced run-off.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2248-10: The DEIS (Section 3.9) and the FEIS in Section 3.11 discuss the status of fish in the Fraser River and present data from 1985 through 2007. As discussed in the FEIS, the data do not indicate a decline in fish populations in the last 10-20 years. Also, the amount of water being diverted has not shown an increasing trend over the last 10-20 years, as claimed in this comment. FEIS Sections 3.11, 4.6.11, and 5.11 have been updated to include revised discussions of these issues including low flows and water temperatures in summer.
Comment #2252 Jon Westmark	[See the Online Petition Standard Form Letter, Petition Signer #1,012 Entry.] I am a previous second home owner in Fraser. It is very saddening to think that there is even a THOUGHT of using waters from the Fraser River to supply ANYTHING in Denver or surrounding suburbs thereof! It is one of the last natural beauties of the area and should be left alone for the mountain community to enjoy!!!	***Unique Comment #2252-10*** *(ID 4283)**:*** *I am a previous second home owner in Fraser. It is very saddening to think that there is even a THOUGHT of using waters from the Fraser River to supply ANYTHING in Denver or surrounding suburbs thereof! It is one of the last natural beauties of the area and should be left alone for the mountain community to enjoy!!!* **Response #2252-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2256 Melissa Giberson	[See the Online Petition Standard Form Letter, Petition Signer #1,016 Entry.] Wake up!!!! Kentucky Bluegrass is not "green". There is only so much water to go around & depleting the lively hood of the Fraser River is not the answer. We must act now to save our rivers. Especially one that is already on the most endangered list!!!! Those of us who live in this beautiful valley we call home conserve water on a daily basis. It's time for other citizens, especially in the metro area and down river to do the same. If not for us for our families and generations to come!!!! Thank you.	***Unique Comment #2256-10*** *(ID 4284)**:*** *Wake up!!!! Kentucky Bluegrass is not "green". There is only so much water to go around & depleting the lively hood of the Fraser River is not the answer. We must act now to save our rivers. Esp one that is already on the most endangered list!!!! Those of us who live in this beautiful valley we call home conserve water on a daily basis. It's time for other citizens, esp in the metro area and down river to do the same. If not for us for our families and generations to come!!!! Thank you.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2256-10: Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. Information gained from www.americanrivers.org indicates that American Rivers reviews nominations for the "America's Most Endangered Rivers" report from river groups and concerned citizens across the country. Per the website, the report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers facing management decisions. Since it appears that American Rivers' criteria for evaluation of river condition is subjective, the comment is simply noted.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2257 Kimberly Frayne	[See the Online Petition Standard Form Letter, Petition Signer #1,017 Entry.] To Whom it may Concern, I believe that we as residents of Grand County have the right to voice our opinions regarding the rivers in Grand County. I do not feel that it is fair to divert our water in Grand County to those who reside in Denver. If our rivers in Grand County are low, so is the economy during the spring and summer seasons. The economy is already a difficult struggle for all of us so why would the city of Denver want to see anyone struggle more? So many individuals count on high water levels to support their jobs and other recreational activities, why would anyone take that away? It just doesn't seem fair, we should be working together to create more opportunity for individuals not the other way around!!! Thank you in advance for taking the time to listen to the voices of those who will be directly impacted if the water in Grand County is diverted to the city of Denver.	***Unique Comment #2257-10*** *(ID 4285)**:*** *To Whom it may Concern, I believe that we as residents of Grand County have the right to voice our opinions regarding the rivers in Grand County. I do not feel that it is fair to divert our water in Grand County to those who reside in Denver. If our rivers in Grand County are low, so is the economy during the spring and summer seasons. The economy is already a difficult struggle for all of us so why would the city of Denver want to see anyone struggle more? So many individuals count on high water levels to support their jobs and other recreational activities, why would anyone take that away? It just doesn't seem fair, we should be working together to create more opportunity for individuals not the other way around!!! Thank you in advance for taking the time to listen to the voices of those who will be directly impacted if the water in Grand County is diverted to the city of Denver.* **Response #2257-10:** Under NEPA, the public has a right and is afforded the opportunity to voice an opinion. As a property right, the surface water which flows through Grand County is owned by diverse parties, including Denver Water. The EIS recognizes the relationship of surface water flows to Grand County economic activity. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2258 David Covey	[See the Online Petition Standard Form Letter, Petition Signer #1,018 Entry.] I am amazed, no, angered by the arrogance that Denver Water brings to the table. DW suggests that the DEIS for the two projects can be done separately. My old math teachers taught that the sums of the parts are added together and I believe them even though DW seems to want to play with the "New" math. Run back to one of the Corps' engineers and ask about that. Please require and recognize the cumulative impacts of these 2 projects. Conservation of the water in the Colorado Basin is the responsibility of all of the users, from the front range, those of us who live in the valley and those downstream.	***Unique Comment #2258-10*** *(ID 4286)**:*** *I am amazed, no, angered by the arrogance that Denver Water brings to the table. DW suggests that the DEIS for the two projects can be done separately. My old math teachers taught that the sum of the parts is added together and I believe them even though DW seems to want to play with the "New" math. Run back to one of the Corps' engineers and ask about that. Please require and recognize the cumulative impacts of these 2 projects. Conservation of the water in the Colorado Basin is the responsibility of all of the users, from the front range, those of us who live in the valley and those downstream.* **Response #2258-10:** It would be inappropriate to combine the EIS documents for the Moffat Project and WGFP since the projects consist of two different applicants with distinct project purposes and two different lead regulatory agencies. The WGFP is included in the cumulative effects analysis for the Moffat Project. Additionally, the Corps and the U.S. Department of the Interior, Bureau of Reclamation have coordinated closely with regards to the cumulative effects and mitigation of both projects on the West Slope. The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		morphology, are anticipated to be negligible to minor. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, detailed mitigation will be included as a condition of the Section 404 Permit. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2269 Suzi Maki	[See the Online Petition Standard Form Letter, Petition Signer #302 Entry.] It is very important for the survival of our community and the health of the Fraser river, that you do not take any more water.	***Unique Comment #2269-10*** *(ID 3803)**:*** *It is very important for the survival of our community and the health of the Fraser river, that you do not take any more water.* **Response #2269-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2273 Eric Van Herwaarden	[See the Online Petition Standard Form Letter, Petition Signer #306 Entry.] Save The Fraser River!!	***Unique Comment #2273-10*** *(ID 3804)**:*** *Save The Fraser River!!* **Response #2273-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2275 Dan Gretz	[See the Online Petition Standard Form Letter, Petition Signer #308 Entry.] Reduce demand first before impacting the environment.	***Unique Comment #2275-10*** *(ID 3805)**:*** *Reduce demand first before impacting the environment.* **Response #2275-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2276 Ingrid Karlstrom	[See the Online Petition Standard Form Letter, Petition Signer #1,023 Entry.] Enough has been said about all the proscribed talking points to save the Fraser River. I am writing, rather, to emphasize Mother Nature's rights to have her creations protected and survive. The aesthetics and love of our valley must be respected and the river is the basis for nature's Grand Scheme and the survival of all that lives downstream. How many rivers must be destroyed before we destroy ourselves? In the end, Mother Nature is the bottom line.	***Unique Comment #2276-10*** *(ID 4287)**:*** *Enough has been said about all the proscribed talking points to save the Fraser River. I am writing, rather, to emphasize Mother Nature's rights to have her creations protected and survive. The aesthetics and love of our valley must be respected and the river is the basis for nature's Grand Scheme and the survival of all that lives downstream. How many rivers must be*

Comment Information	Comment	Comments and Responses
		destroyed before we destroy ourselves? In the end, Mother Nature is the bottom line. **Response #2276-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2279 Thad Scholl	[See the Online Petition Standard Form Letter, Petition Signer #1,026 Entry.] The proposed plan would be detrimental to this county and our community and must be defeated. Save our river and our county!!!	***Unique Comment #2279-10*** *(ID 4288)**:*** *The proposed plan would be detrimental to this county and our community and must be defeated. Save our river and our county!!!* **Response #2279-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2281 Cassidi Brickner	[See the Online Petition Standard Form Letter, Petition Signer #309 Entry.] Our rivers are not replaceable. Colorado is known for its beauty and outdoor activities. Without our rivers, Colorado will lose its calling. The front range needs to learn how to conserve water, not use more. You can see our rivers already suffer from the water being pulled from them. If we pull more, you might as well call them extinct. Please conserve, don't abuse.	***Unique Comment #2281-10*** *(ID 3806)**:*** *Our rivers are not replaceable. Colorado is known for its beauty and outdoor activities. Without our rivers, Colorado will lose its calling. The front range needs to learn how to conserve water, not use more. You can see our rivers already suffer from the water being pulled from them. If we pull more, you might as well call them extinct. Please conserve, don't abuse.* **Response #2281-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2282 Trever Garfield	[See the Online Petition Standard Form Letter, Petition Signer #1,028 Entry.] The Fraser is one of the last great small trout fisheries in the Winter Park area. I have watched the river become impacted over the years by the Denver water issue and believe that we need to save the wild and scenic Fraser River from turning into a ghost town of fish.	***Unique Comment #2282-10*** *(ID 4289)**:*** *The Fraser is one of the last great small trout fisheries in the Winter Park area. I have watched the river become impacted over the years by the Denver water issue and believe that we need to save the wild and scenic Fraser River from turning into a ghost town of fish.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2282-10: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2283 Randall Castle	[See the Online Petition Standard Form Letter, Petition Signer #310 Entry.] Please do not negatively impact the Frazer and Colorado River watersheds with the proposed Moffat Expansion Project. Trout habitat is a national treasure of the United States and Colorado in particular.	***Unique Comment #2283-10*** *(ID 3807)**:*** *Please do not negatively impact the Frazer and Colorado River watersheds with the proposed Moffat Expansion Project. Trout habitat is a national treasure of the United States and Colorado in particular.* **Response #2283-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2284 Liz McIntyre	[See the Online Petition Standard Form Letter, Petition Signer #1,029 Entry.] I can walk up on my hill and look down on the Fraser river as it exits the Fraser Canyon in Granby. Over the years the flushing flows have altered the river path leaving old oxbows rich with willows, cottonwoods, and a spruce or two. This area is habitat for all sorts of wildlife. However it is extremely rare that the river runs out of its banks anymore. What will happen to this area if no new oxbows are created? What will happen if the water levels decline and the wetlands dry up? What are the flows necessary to maintain the fisheries and also the rest of the riparian ecosystem? These flows should be established and the health of this ecosystem must be assured before the granting of a permit. Thank you.	***Unique Comment #2284-10*** *(ID 4290)**:*** *I can walk up on my hill and look down on the Fraser river as it exits the Fraser Canyon in Granby. Over the years the flushing flows have altered the river path leaving old oxbows rich with willows, cottonwoods, and a spruce or two. This area is habitat for all sorts of wildlife. However it is extremely rare that the river runs out of its banks anymore. What will happen to this area if no new oxbows are created? What will happen if the water levels decline and the wetlands dry up? What are the flows necessary to maintain the fisheries and also the rest of the riparian ecosystem? These flows should be established and the health of this ecosystem must be assured before the granting of a permit.* **Response #2284-10:** High spring flows would still occur with the Moffat Project on-line. FEIS Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in

Comment Information	Comment	Comments and Responses
		average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all of Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years; however, the figures in FEIS Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.6.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high-flow pulses, small floods (2-year flood) and large floods (10-year floods) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic biological resources in the Project area. Appropriate mitigation for predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, a review of historic photos, a sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed

Comment Information	Comment	Comments and Responses
		to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analyses that were performed to quantify the ability of the streams to transport their sediment load. This information is included in FEIS Sections 4.6.3 and 5.3. Under the proposed Moffat Project, additional diversions through the Moffat Tunnel would occur primarily during runoff months in May, June and July in average and wet years (see DEIS Table H-3.1). The effects of additional diversions attributable to the Moffat Project on channel morphology, groundwater levels, wetlands, aquatic biological resources and other resources were evaluated and determined to be minimal to moderate depending on the resource. Denver Water's Conceptual Mitigation Plans is included in FEIS Appendix M. Where required, detailed mitigation will be prepared as part of a Section 404 Permit.
Comment #2285 Gail Wells	[See the Online Petition Standard Form Letter, Petition Signer #311 Entry.] I live on the front range and raft on the upper (and lower) Colorado. I am very much in favor of restricting outdoor water use on the front range before we pump more water out of the Fraser basin and send it to Denver. We don't need bluegrass lawns in Denver. Rate structures can be easily and effectively used to encourage xeriscape. Let's save the outdoor water for playing fields, swimming pools and golf courses. And, let's work with the agricultural community to reduce irrigation on marginal cropland, and move toward less water intensive crops in areas that don't have the natural rainfall to support what's currently grown.	***Unique Comment #2285-10*** *(ID 3809)**:*** *I live on the front range and raft on the upper (and lower) Colorado. I am very much in favor of restricting outdoor water use on the front range before we pump more water out of the Fraser basin and send it to Denver. We don't need bluegrass lawns in Denver. Rate structures can be easily and effectively used to encourage xeriscape. Let's save the outdoor water for playing fields, swimming pools and golf courses.* **Response #2285-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other

Comment Information	Comment	Comments and Responses
		unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed at a fixed, per account service charge. ***Unique Comment #2285-11*** *(ID 3808)**:*** *And, let's work with the agricultural community to reduce irrigation on marginal cropland, and move toward less water intensive crops in areas that don't have the natural rainfall to support what's currently grown.* **Response #2285-11:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2286 Virginia Pizzella Bierig	[See the Online Petition Standard Form Letter, Petition Signer #1,030 Entry.] We love our valley. the Fraser River is a big part of the beauty here...we believe there are ways to be smart about water use that we are not being implemented state wide…much rides on your decision…much needs to be considered!	***Unique Comment #2286-10*** *(ID 4291)**:*** *We love our valley. the Fraser River is a big part of the beauty here...we believe there are ways to be smart about water use that we are not being implemented state wide..much rides on your decision..much needs to be considered!* **Response #2286-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2291 Helena Powell	[See the Online Petition Standard Form Letter, Petition Signer #313 Entry.] Not only does the Moffat Firming Project negatively impact the trout and boreal toad habitat, but decreasing the flows in the Colorado River impacts COLORADO'S TOURISM ECONOMY! Rafting brings in over $140 million to the sate of Colorado and the headwaters of the Colorado River employs many workers in rural areas. THINK COLORADO AND OUR ECONOMY FIRST!	***Unique Comment #2291-10*** *(ID 3810)**:*** *Not only does the Moffat Firming Project negatively impact the trout and boreal toad habitat, but decreasing the flows in the Colorado River impacts COLORADO'S TOURISM ECONOMY! Rafting brings in over $140 million to the state of Colorado and the headwaters of the Colorado River employs many workers in rural areas. THINK COLORADO AND OUR ECONOMY FIRST!* **Response #2291-10:** As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Per consultation with the USFS, surveys were conducted for boreal toad in the fall of 2010. The results of the surveys along with the additional plant species have been added to the list of species in Appendix Table G-5 and are assessed where relevant in the text of the FEIS Section 5.10. Additional information is provided in the Special Status Species Technical Report (Appendix G).

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions.
Comment #2292 Kevin Nicol	[See the Online Petition Standard Form Letter, Petition Signer #1,034 Entry.] It's disgusting that this plan even came to mind.	***Unique Comment #2292-10*** *(ID 4292)**:*** *It's disgusting that this plan even came to mind.* **Response #2292-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2300 Roger Williams	[See the Online Petition Standard Form Letter, Petition Signer #316 Entry.] I spent 12 years of my life living and recreating around Fraser, CO. It is an absolutely wonderful and beautiful place - please keep the Fraser and Colorado River's full of water!! Thanks!!	**Unique Comment #2300-10** (ID 3811)**:** *I spent 12 years of my life living and recreating around Fraser, CO. It is an absolutely wonderful and beautiful place - please keep the Fraser and Colorado River's full of water!! Thanks!!* **Response #2300-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2302 Leonard Aitken	[See the Online Petition Standard Form Letter, Petition Signer #318 Entry.] Diverting water for the purpose of watering lawns or spurring the real estate market is a vacuous pursuit.	***Unique Comment #2302-10*** *(ID 3812)**:*** *Diverting water for the purpose of watering lawns or spurring the real estate market is a vacuous pursuit.* **Response #2302-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2303 Justin Jordan	[See the Online Petition Standard Form Letter, Petition Signer #319 Entry.] I have a fire pit next to a large creek that run off the Fraser river that is so beautiful. I would be very upset to lose it!! Denver should find alternate water sources!!!!	***Unique Comment #2303-10*** *(ID 3813)**:*** *I have a fire pit next to a large creek that run off the Fraser river that is so beautiful. I would be very upset to lose it!! Denver should find alternate water sources!!!!* **Response #2303-10:** The Corps notes the comment.
Comment #2306 Mara Kohler	[See the Online Petition Standard Form Letter, Petition Signer #322 Entry.] Let's avoid permanently jeopardizing the natural environment on the West Slope to create a short-term, unnatural, unsustainable environment on the East Slope. Thank you for putting the environment first in these tough decisions.	***Unique Comment #2306-10*** *(ID 3814)**:*** *Let's avoid permanently jeopardizing the natural environment on the West Slope to create a short-term, unnatural, unsustainable environment on the East Slope. Thank you for putting the environment first in these tough decisions.* **Response #2306-10:** The Corps notes the comment.
Comment #2309 Stu Findley	[See the Online Petition Standard Form Letter, Petition Signer #325 Entry.] Please strongly consider the negative impacts of reducing stream flows for the Fraser and Colorado rivers in Grand County. Further reduction of the stream flows will cause irreversible damage to both river systems and we will feel the impact for generations to come. Please consider strong conservation actions in the front range before draining any more of our precious life blood.	***Unique Comment #2309-10*** *(ID 3815)**:*** *Please strongly consider the negative impacts of reducing stream flows for the Fraser and Colorado rivers in Grand County. Further reduction of the stream flows will cause irreversible damage to both river systems and we will feel the impact for generations to come. Please consider strong conservation actions in the front range before draining any more of our precious life blood.* **Response #2309-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational

Comment Information	Comment	Comments and Responses
		flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2314 Nicole Robinson	[See the Online Petition Standard Form Letter, Petition Signer #330 Entry.] From rafting to fishing, we spend most of our summer on the Colorado or Fraser river with our family. Please don't take this a way!	***Unique Comment #2314-10*** *(ID 3816)**:*** *From rafting to fishing, we spend most of our summer on the Colorado or Fraser river with our family. Please don't take this a way!* **Response #2314-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2315 Jerry Sadler	[See the Online Petition Standard Form Letter, Petition Signer #331 Entry.] Please let the water of the Fraser River and the Colorado River flow where God intended them to flow.	***Unique Comment #2315-10*** *(ID 3817)**:*** *Please let the water of the Fraser River and the Colorado River flow where God intended them to flow.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2315-10: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2316 Doug Finnman	[See the Online Petition Standard Form Letter, Petition Signer #332 Entry.] The Upper Colorado and Fraser river are natural treasures of this state, and sufficient flows must be maintained to support healthy fisheries, wildlife and recreation. I speak for current and future generations that we must be good stewards of these natural treasures and not allow them to be compromised by short-sighted water projects.	***Unique Comment #2316-10*** *(ID 3818)**:*** *The Upper Colorado and Fraser river are natural treasures of this state, and sufficient flows must be maintained to support healthy fisheries, wildlife and recreation. I speak for current and future generations that we must be good stewards of these natural treasures and not allow them to be compromised by short-sighted water projects.* **Response #2316-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2318 Toby Davis	[See the Online Petition Standard Form Letter, Petition Signer #334 Entry.] Save the Fraser!	***Unique Comment #2318-10*** *(ID 3819)**:*** *Save the Fraser!* **Response #2318-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2319 Pam Alexander	[See the Online Petition Standard Form Letter, Petition Signer #335 Entry.] More education needs to be done to wake people up to the fact that we are an arid climate and that we need to be aware of what we are doing in regards to water. Things need to be kept in balance and that includes the balance of the fish/animals life as well. They depend on water, too.	***Unique Comment #2319-10*** *(ID 3820)**:*** *More education needs to be done to wake people up to the fact that we are an arid climate and that we need to be aware of what we are doing in regards to water. Things need to be kept in balance and that includes the balance of the fish/animals life as well. They depend on water too.* **Response #2319-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2320 Jeff Ramsey	[See the Online Petition Standard Form Letter, Petition Signer #336 Entry.] I lived for 9 years in Fraser Colorado and I'll have to say that enough waste of water for Kentucky Blue Grass lawns is enough. Wasting water so corporations can make profits is just plain wrong. What ever happened to our morality?	***Unique Comment #2320-10*** *(ID 3862)**:*** *I lived for 9 years in Fraser Colorado and I'll have to say that enough waste of water for Kentucky Blue Grass lawns is enough. Wasting water so corporations can make profits is just plain wrong. What ever happened to our morality?* **Response #2320-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water is a not-profit public utility that is governed by the Denver City Charter, and a significant portion of Denver Water's annual costs do not vary with the amount of water sold. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2321 Mark Hanson	[See the Online Petition Standard Form Letter, Petition Signer #337 Entry.] Please keep the Fraser River alive. We need to maintain its current levels to support wildlife. We don't need to divert more water for lawns and golf courses. We need to use our water resources responsibly and prioritize its use. Maintaining healthy rivers and streams should always take priority over manicured lawns and golf courses. Thank you.	***Unique Comment #2321-10*** *(ID 3863)**:*** *Please keep the Fraser River alive. We need to maintain its current levels to support wildlife. We don't need to divert more water for lawns and golf courses. We need to use our water resources responsibly and prioritize its use. Maintaining healthy rivers and streams should always take priority over manicured lawns and golf courses. Thank you.* **Response #2321-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2322 Sherry Rohl	[See the Online Petition Standard Form Letter, Petition Signer #338 Entry.] Look at what's happened in Florida. That should be a clue as to how to proceed or rather how NOT proceed with this really short sighted, ultimately stupid, project.	***Unique Comment #2322-10*** *(ID 3864)**:*** *Look at what's happened in Florida. That should be a clue as to how to proceed or rather how NOT proceed with this really short sighted, ultimately stupid, project.* **Response #2322-10:** The Corps notes the comment.
Comment #2323 Ariel Friedman	[See the Online Petition Standard Form Letter, Petition Signer #339 Entry.] Sometimes in life, one has to think of generations to come instead of an added beauty. I understand why people want a beautiful lawn, a clean car, etc. Not allowing the Moffat Project is one small step towards saving what we have for our children, grandchildren, etc.	***Unique Comment #2323-10*** *(ID 3865)**:*** *Sometimes in life, one has to think of generations to come instead of an added beauty. I understand why people want a beautiful lawn, a clean car, etc. Not allowing the Moffat Project is one small step towards saving what we have for our children, grandchildren, etc.* **Response #2323-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2325 Marykay Buckner	[See the Online Petition Standard Form Letter, Petition Signer #341 Entry.] Please save our rivers!	***Unique Comment #2325-10*** *(ID 3866)**:*** *Please save our rivers!* **Response #2325-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2327 James Good	[See the Online Petition Standard Form Letter, Petition Signer #343 Entry.] Please find a balance that protects our fish and wildlife. I think the communities that are calling for more water from the Fraser and Colorado Rivers need to develop a good measurable and enforceable water conservation plan before any new water is diverted.	***Unique Comment #2327-10*** *(ID 3867)**:*** *Please find a balance that protects our fish and wildlife. I think the communities that are calling for more water from the Fraser and Colorado Rivers need to develop good measureable and enforceable water conservation plan before any new water is diverted.* **Response #2327-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new,

Comment Information	Comment	Comments and Responses
		annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2328 John Simmons	[See the Online Petition Standard Form Letter, Petition Signer #344 Entry.] A river is the life blood of an ecological community and ecosystem, not to mention that of a human community. The Fraser River feeds the Colorado River, which already has much of its water pulled away. It's not only the people and ecosystems in the US that need the water, but also our neighbors of Mexico, who need the water so badly. Unless we live in direct contact to the Fraser, we may not know the extent of its importance. Those making the decision about the Fraser river need to consider the whole of its biology. Study the scientific research on this and other rivers, and make the sound decision.	***Unique Comment #2328-10*** *(ID 3868)**:*** *A river is the life blood of an ecological community and ecosystem, not to mention that of a human community. The Fraser River feeds the Colorado River, which already has much of its water pulled away. It's not only the people and ecosystems in the US that need the water, but also our neighbors of Mexico, who need the water so badly. Unless we live in direct contact to the Fraser, we may not know the extent of its importance. Those making the decision about the Fraser river need to consider the whole of its biology. Study the scientific research on this and other rivers, and make the sound decision.* **Response #2328-10:** The Corps notes the comment. Prior to making

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2329 Jim Dolbier	[See the Online Petition Standard Form Letter, Petition Signer #345 Entry.] I strongly urge all involved to preserve the Fraser River.	***Unique Comment #2329-10*** *(ID 3869)**:*** *I strongly urge all involved to preserve the Fraser River.* **Response #2329-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2332 Ann Dolbier	[See the Online Petition Standard Form Letter, Petition Signer #348 Entry.] Communities along the front range need to be more responsible for water consumption. It is too easy for them to demand more water and not consider the damage it does to the environment. We need to be more responsible consumers rather than continue to look for more sources of water.	***Unique Comment #2332-10*** *(ID 3870)**:*** *Communities along the front range need to be more responsible for water consumption. It is too easy for them to demand more water and not consider the damage it does to the environment. We need to be more responsible consumers rather than continue to look for more sources of water.* **Response #2332-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2338 Darlene Nolting	[See the Online Petition Standard Form Letter, Petition Signer #354 Entry.] Just moved from Granby and I miss it! I love the Valley!	***Unique Comment #2338-10*** *(ID 3871)**:*** *Just moved from Granby and I miss it! I love the Valley!* **Response #2338-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2339 William Morck	[See the Online Petition Standard Form Letter, Petition Signer #355 Entry.] There is no long range plan for the front range of Colorado to grow in a sustainable fashion. This is not California's "Cadillac" desert. The Kentucky Bluegrass lawns, car washes, swimming pools, etc. must disappear before we can consider destroying the entire ecosystem/ stream of life of Grand County. The steams and waterways are our life blood and they are already compromised to the max by the Denver water board. There is no blood left to squeeze from the turnip!	***Unique Comment #2339-10*** *(ID 3872)**:*** *There is no long range plan for the front range of Colorado to grow in a sustainable fashion. This is not California's "Cadillac" desert. The Kentucky Bluegrass lawns, car washes, swimming pools, etc. must disappear before we can consider destroying the entire ecosystem/ stream of life of Grand County. The steams and waterways are our life blood and they are already compromised to the max by the Denver water board. There is no blood left to squeeze from the turnip!* **Response #2339-10:** The Corps notes the comment.
Comment #2340 Adrianna Winkel	[See the Online Petition Standard Form Letter, Petition Signer #356 Entry.] Now that I live in Denver, I see the lack of understanding that most people have about where their water comes from. Just because you increase the capacity of a reservoir does not mean that the water to fill that reservoir isn't taken from a different ecosystem. Please don't drain the Fraser River Valley -- try educating our residents on proper water use and conservation.	***Unique Comment #2340-10*** *(ID 3873)**:*** *Now that I live in Denver, I see the lack of understanding that most people have about where their water comes from. Just because you increase the capacity of a reservoir does not mean that the water to fill that reservoir isn't taken from a different ecosystem. Please don't drain the Fraser River Valley--try educating our residents on proper water use and conservation.* **Response #2340-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option

Comment Information	Comment	Comments and Responses
		would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2346 Rick Miller	[See the Online Petition Standard Form Letter, Petition Signer #362 Entry.] I lived in the Fraser Valley for 6 years and I believe to touch these sacred waters by diverting them in any way is a grave sin against God and nature.	***Unique Comment #2346-10*** *(ID 3890)**:*** *I lived in the Fraser Valley for 6 years and I believe to touch these sacred waters by diverting them in any way is a grave sin against God and nature.* **Response #2346-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2347 Wes Bernstein	[See the Online Petition Standard Form Letter, Petition Signer #363 Entry.] Grand County's vitality depends on the Fraser, please stop the diversion of more water.	***Unique Comment #2347-10*** *(ID 4106)**:*** *Grand County's vitality depends on the Fraser, please stop the diversion of more water.* **Response #2347-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2348 Oakley Van Oss	[See the Online Petition Standard Form Letter, Petition Signer #364 Entry.] Please save the Fraser!!!	***Unique Comment #2348-10*** *(ID 3891)**:*** *Please save the Fraser!!!* **Response #2348-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2349 Elizabeth Marx	[See the Online Petition Standard Form Letter, Petition Signer #365 Entry.] This plan is inexcusable. It is time we stop and think of our sustainable future, and not the short-term 'need.' Rather than allowing green grass to grow in the desert, let's try to educate, conserve, and retool our creativity. There is a way, but this certainly is not it.	***Unique Comment #2349-10*** *(ID 3892)**:*** *This plan is inexcusable. It is time we stop and think of our sustainable future, and not the short-term 'need.' Rather than allowing green grass to grow in the desert, let's try to educate, conserve, and retool our creativity. There is a way, but this certainly is not it.* **Response #2349-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2350 Joel Alamo	[See the Online Petition Standard Form Letter, Petition Signer #366 Entry.] Get your own water, Denver.	***Unique Comment #2350-10*** *(ID 3893)**:*** *Get your own water, Denver.* **Response #2350-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2352 E. Louise S. Robinson	[See the Online Petition Standard Form Letter, Petition Signer #368 Entry.] Please do not destroy the natural beauty of the Fraser River and the valley. The impact on the people who depend on the River for their livelihood would be devastating as well as destroying more of our country's natural beauty.	***Unique Comment #2352-10*** *(ID 3894)**:*** *Please do not destroy the natural beauty of the Fraser River and the valley. The impact on the people who depend on the River for their livelihood would be devastating as well as destroying more of our country's natural beauty.* **Response #2352-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2353 Rick Edelson	[See the Online Petition Standard Form Letter, Petition Signer #369 Entry.] Denver should be able to save a larger amount of water just by conserving, not watering their lawns.	***Unique Comment #2353-10*** *(ID 3895)**:*** *Denver should be able to save a larger amount of water just by conserving, not watering their lawns.* **Response #2353-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2354 Mark Malone	[See the Online Petition Standard Form Letter, Petition Signer #370 Entry.] Please don't get rid of this incredible waterway. Conservation can work, people downstream need to realize that there green lawns and golf courses are an unneeded luxury.	***Unique Comment #2354-10*** *(ID 3896)**:*** *Please don't get rid of this incredible waterway. Conservation can work, people downstream need to realize that there green lawns and golf courses are an unneeded luxury.* **Response #2354-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2355 Keith Sanders	[See the Online Petition Standard Form Letter, Petition Signer #371 Entry.] Denver Water needs to be proactive about responsible water use. Failure to do that is much similar to a drug dealer getting their "clients" hooked on the drug-water in this case- and then control the supply and costs. As is evident the supply is limited but the use remains unchecked. Destroying an ecosystem is not the answer to the problem.	***Unique Comment #2355-10*** *(ID 3897)**:*** *Denver Water needs to be proactive about responsible water use. Failure to do that is much similar to a drug dealer getting their "clients" hooked on the drug-water in this case- and then control the supply and costs. As is evident the supply is limited but the use remains unchecked. Destroying an ecosystem is not the answer to the problem.* **Response #2355-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2361 Cindy Eubank	[See the Online Petition Standard Form Letter, Petition Signer #377 Entry.] Do your part to conserve water and save our beautiful spaces --- the Fraser River Valley being one of the most beautiful of all -- xeriscape, discourage over watering of lawns (esp. those with non-native, thirsty grasses), buy efficient appliances, raise awareness, etc.	***Unique Comment #2361-10*** *(ID 3898)**:*** *Do your part to conserve water and save our beautiful spaces --- the Fraser River Valley being one of the most beautiful of all -- xeriscape, discourage overwatering of lawns (esp. those with non-native, thirsty grasses), buy efficient appliances, raise awareness, etc.* **Response #2361-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2363 Christine Smith	[See the Online Petition Standard Form Letter, Petition Signer #379 Entry.] Please consider future impacts on the rivers that run through our county.	***Unique Comment #2363-10*** *(ID 3899)**:*** *Please consider future impacts on the rivers that run through our county.* **Response #2363-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2365 Antoinette McVeigh	[See the Online Petition Standard Form Letter, Petition Signer #381 Entry.] Don't flat line the Fraser River. As a resident of Grand County for 15 years I see the river as part of my home. It provides beauty and a living for many. Keep our river alive and healthy.	***Unique Comment #2365-10*** *(ID 3900)**:*** *Don't flat line the Fraser River. As a resident of Grand County for 15 years I see the river as part of my home. It provides beauty and a living for many. Keep our river alive and healthy.* **Response #2365-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2369 Dan Rountree	[See the Online Petition Standard Form Letter, Petition Signer #385 Entry.] A person needs a minimum 50 liters of water a day. That includes consumption, hygiene, waste removal, cooking, and food production, etc. Americans on average use 100 gallons per day. What are our priorities?	***Unique Comment #2369-10*** *(ID 3901)**:*** *A person needs a minimum 50 liters of water a day. That includes consumption, hygiene, waste removal, cooking, and food production etc. Americans on average use 100 gallons per day. What are our priorities?* **Response #2369-10:** The Corps notes the comment.
Comment #2371 Jessica Haucke	[See the Online Petition Standard Form Letter, Petition Signer #387 Entry.] A quote I found is applicable to this situation. Sustainability is defined as "The development and use of water resources in a manner that can be maintained for an infinite time without causing unacceptable environmental, economic, or social consequences." It doesn't sound like water resources in the Fraser valley are being managed sustainably.	***Unique Comment #2371-10*** *(ID 3902)**:*** *A quote I found is applicable to this situation. Sustainability is defined as "The development and use of water resources in a manner that can be maintained for an infinite time without causing unacceptable environmental, economic, or social consequences." It doesn't sound like water resources in the Fraser valley are being managed sustainably.* **Response #2371-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2378 Karen Norberg	[See the Online Petition Standard Form Letter, Petition Signer #394 Entry.] We are very concerned about the water usage in Denver, Colorado when we feel that the water is not being used wisely. Please consider stronger regulation on vegetation plantings and large green spaces. The front range would be wise to consider amount of water needed to provide enough water per person for personal use and limit the building on the front range until they have water usage under better control in Denver proper. Our lakes and rivers are showing damage with the strong pull of water from the eastern range and not leaving the rivers and lakes with adequate supply to function at a level required to maintain wild life. Please reconsider the amount of water needed for Denver and surrounding areas.	***Unique Comment #2378-10*** *(ID 3903)**:*** *We are very concerned about the water usage in Denver, Colorado when we feel that the water is not being used wisely. Please consider stronger regulation on vegetation plantings and large green spaces. The front range would be wise to consider amount of water needed to provide enough water per person for personal use and limit the building on the front range until they have water usage under better control in Denver proper. Our lakes and rivers are showing damage with the strong pull of water from the eastern range and not leaving the rivers and lakes with adequate supply to function at a level required to maintain wild life. Please reconsider the amount of water needed for Denver and surrounding areas.* **Response #2378-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2381 Jill Ryall	[See the Online Petition Standard Form Letter, Petition Signer #397 Entry.] THE FRASER RIVER IS AN IMPORTANT PART OF GRAND COUNTY AND SHOULD NOT BE DIVERTED TO MEET THE NEEDS OF THOSE OUTSIDE OF THE COUNTY.	***Unique Comment #2381-10*** *(ID 3904)**:*** *THE FRASER RIVER IS AN IMPORTANT PART OF GRAND COUNTY AND SHOULD NOT BE DIVERTED TO MEET THE NEEDS OF THOSE OUTSIDE OF THE COUNTY.* **Response #2381-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2383 Joe Horan	[See the Online Petition Standard Form Letter, Petition Signer #399 Entry.] Removing more water from the Fraser/Colorado River watershed will in the long run reduce tourist revenue for the state of Colorado. Saving the water will save the fisheries for years to come.	***Unique Comment #2383-10*** *(ID 3905)**:*** *Removing more water from the Fraser/Colorado River watershed will in the long run reduce tourist revenue for the state of Colorado. Saving the water will save the fisheries for years to come.* **Response #2383-10:** The EIS recognizes the relationship of surface water flows to Grand County economic activity. The preservation of the fisheries in this watershed would be dependent upon many factors, including water flows. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS 5.19 to revise or support the socioeconomic conclusions.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2384 Chas McConnell	[See the Online Petition Standard Form Letter, Petition Signer #400 Entry.] Conservation is the key word. If Denver Water made it's end users conserve their water we would have to divert.	***Unique Comment #2384-10*** *(ID 3906)**:*** *Conservation is the key word. If Denver Water made it's end users conserve their water we would have to divert.* **Response #2384-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2386 Jancie Hughes	[See the Online Petition Standard Form Letter, Petition Signer #402 Entry.] Water - every drop of it matters - the west was built on aridity. Wallace Stegner Please do not turn the Fraser River Valley into an arid valley without a river running through it.	***Unique Comment #2386-10*** *(ID 3907)**:*** *Water - every drop of it matters - the west was built on aridity. Wallace Stegner Please do not turn the Fraser River Valley into an arid valley without a river running through it.* **Response #2386-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2388 Daniel Phillips	[See the Online Petition Standard Form Letter, Petition Signer #404 Entry.] I find it very disturbing that it is even being considered to further reduce the flow from the Colorado and Fraser Rivers. I think talks should start in the other direction as to how to increase these rivers flows.	***Unique Comment #2388-10*** *(ID 3908)**:*** *I find it very disturbing that it is even being considered to further reduce the flow from the Colorado and Fraser Rivers. I think talks should start in the other direction as to how to increase these rivers flows.* **Response #2388-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2389 Pam Leland	[See the Online Petition Standard Form Letter, Petition Signer #405 Entry.] We must conserve our natural water resources before it's too late. Water used to keep lawns green in an arid climate is insane.	***Unique Comment #2389-10*** *(ID 3909)**:*** *We must conserve our natural water resources before it's too late. Water used to keep lawns green in an arid climate is insane.* **Response #2389-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2393 Katherine Mowrey	[See the Online Petition Standard Form Letter, Petition Signer #409 Entry.] Conservation by all Colorado residents is key to sharing our resources and sustaining our water supplies. It is appalling how low the Fraser river flows are in the summer time.	***Unique Comment #2393-10*** *(ID 3910)**:*** *Conservation by all Colorado residents is key to sharing our resources and sustaining our water supplies. It is appalling how low the Fraser river flows are in the summer time.* **Response #2393-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2399 Terry Peterson	[See the Online Petition Standard Form Letter, Petition Signer #415 Entry.] I have been a Fly Fishing Guide for 17 years and have seen first hand what the Denver Water Board is all about. The Fraser River is currently # 3 on the United Stated most endangered rivers. Denver Water is currently taking water from the Fraser and wants to take even more water to the Front Range. I have been guiding client on the Fraser for 5 years now and I can tell you the every year from mid-July through August and sometimes into September I have to close the river to my clients as the water temperature is too hot to fish without killing those you catch. The Clean Water Act requires Denver Water to avoid, minimize, and mitigate all identified impacts. In my personal opinion they have fallen short. I have also been on the river when the tunnel is back flushed and seen the river turn red with algae, very Biblical and never a good sign of a healthy river. Denver Water is in the business of making Money. It is not in the best interest of Denver Water to conform to any of the regulations, impact statements or to provide a sustainable river system on the Fraser, or any other river they cull water from. It is up to the Citizens of Colorado and the United States to tell them when enough is enough. Those same people must also change the ways they consume water. Only through the conservation of water will the Front Range also reach sustainability. The Front Range pays very low rates for water in comparison to other areas of the United States and continues to plant Kentucky Blue grass instead of zero scrapping or	***Unique Comment #2399-10*** *(ID 3919)**:*** *I have been a Fly Fishing Guide for 17 years and have seen first hand what the Denver Water Board is all about. The Fraser River is currently # 3 on the United Stated most endangered rivers. Denver Water is currently taking water from the Fraser and wants to take even more water to the Front Range. I have been guiding client on the Fraser for 5 years now and I can tell you the every year from mid-July through August and sometimes into September I have to close the river to my clients as the water temperature is too hot to fish without killing those you catch. The Clean Water Act requires Denver Water to avoid, minimize, and mitigate all identified impacts. In my personal opinion they have fallen short. I have also been on the river when the tunnel is back flushed and seen the river turn red with algae, very Biblical and never a good sign of a healthy river.*

Comment Information	Comment	Comments and Responses
	planting a drought tolerant species. This fight begins with us the consumers of the water and ends with us demanding change to The Denver Water Board who needs to be forced to stop diverting our water and damaging our eco systems. Owning a water right does not give Denver Water the right to divert water, it only has the right to apply for the permit to do so. If the Front Range conserves 10% of the water they currently use, the 34,000 acre feet intended to be developed would not be needed. Other communities have done this and seen as much as 38% of the water conserved. Though this would eliminate the need to do these Firming projects at this time the communities would need to formulate a storage program that would allow for growth over time and not impact the Fraser and other water systems. The Fraser will have permanent damage to the eco system if it can not sustain adequate flushing and channel maintenance flows. This need to be in the permit or it gives Denver Water a license to kill the River. Denver Water must be required to maintain baseline flows that will sustain all rivers at temperatures equal or better than state standards. The Environmental Impact Statement (EIS) must encompass and mitigate the combined effects of the Moffat Firming Project and the Windy Gap Firming Project. The Northern Colorado Water Conservancy District has documented a significantly higher concentration of run-off nutrients increasing algae and causing diminished water clarity of Lake Granby. The Grand County Stream Management Plan must be added to the Permit as well as a mid-course correction. The only way to answer this questions to the Firming Projects is "No". The best way to reach a good end is though conservation from the Front Range. In doing so Gross Reservoir needs to be built larger and new reservoirs need to be built to store water. The Front Range will not get smaller any time soon, and we will be hear once again but next time there may not be time to build a sustainable future without wiping out our river systems.	**Response #2399-10:** Information gained from www.americanrivers.org indicates that American Rivers reviews nominations for the "America's Most Endangered Rivers" report from river groups and concerned citizens across the country. Per the website, the report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers facing management decisions. Since it appears that American Rivers' criteria for evaluation of river condition is subjective, the comment is simply noted. Most of the additional diversions with the Project would occur in May, June, and July of wet and average years, as discussed in FEIS Sections 4.6.1 and 5.1. There would be no additional diversions in dry years. Therefore, the additional diversions usually would not occur during the late summer period of low flow and highest water temperatures. A revised discussion of low flows and high water temperatures in the Fraser River was added to FEIS Sections 3.11, 4.6.11, and 5.11. ***Unique Comment #2399-11*** *(ID 3918)**:*** *Denver Water is in the business of making Money. It is not in the best interest of Denver Water to conform to any of the regulations, impact statements or to provide a sustainable river system on the Fraser, or any other river they cull water from. It is up to the Citizens of Colorado and the United States to tell them when enough is enough.* **Response #2399-11:** Denver Water does not make a profit on its water sales. Denver Water is a not-profit public utility that is governed by the Denver City Charter. Water rates are determined using cost of service

Comment Information	Comment	Comments and Responses
		methodology. In general, more than 90% of Denver Water's costs are fixed and do not fluctuate with customers' water use. ***Unique Comment #2399-12*** *(ID 3917)**:*** *Those same people must also change the ways they consume water. Only through the conservation of water will the Front Range also reach sustainability. The Front Range pays very low rates for water in comparison to other areas of the United States and continues to plant Kentucky Blue grass instead of zero scrapping or planting a drought tolerant species. This fight begins with us the consumers of the water and ends with us demanding change to The Denver Water Board who needs to be forced to stop diverting our water and damaging our eco systems.* **Response #2399-12:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water has an

Comment Information	Comment	Comments and Responses
		aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Unique Comment #2399-13*** *(ID 3916)**:*** *Owning a water right does not give Denver Water the right to divert water, it only has the right to apply for the permit to do so.* **Response #2399-13:** A water right gives the owner the right to divert water. However, a water right does not give permission to place "fill" in waters of the United States. A Section 404 Permit from the Corps is needed to implement the Moffat Project and Denver Water has applied for such a permit. The Corps prepared this EIS to assist in their permit decision. ***Unique Comment #2399-14*** *(ID 3915)**:*** *If the Front Range conserves 10% of the water they currently use, the 34,000 acre feet intended to be developed would not be needed. Other communities have done this and seen as much as 38% of the water conserved. Though this would eliminate the need to do these Firming projects at this time the communities would need to formulate a storage program that would allow for growth over time and not impact the Fraser and other water systems.*

Comment Information	Comment	Comments and Responses
		Response #2399-14: Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Unique Comment #2399-15*** *(ID 3914)**:*** *The Fraser will have permanent damage to the eco system if it cannot sustain adequate flushing and channel maintenance flows. This need to be in the permit or it gives Denver Water a license to kill the River. Denver Water must be required to maintain baseline flows that will sustain all rivers at temperatures equal or better than state standards.* **Response #2399-15:** High spring flows would still occur with the Moffat

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Project on-line. FEIS Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all of Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years; however, the figures in FEIS Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.6.1 and 5.1. Information was

Comment Information	Comment	Comments and Responses
		included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year floods) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 contains an evaluation of the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic biological resources in the Project area. Appropriate mitigation for predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flow changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, a review of historic photos, a sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more

Comment Information	Comment	Comments and Responses
		detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analyses that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. ***Unique Comment #2399-16*** *(ID 3913)**:*** *The Environmental Impact Statement (EIS) must encompass and mitigate the combined effects of the Moffat Firming Project and the Windy Gap Firming Project. The Northern Colorado Water Conservancy District has documented a significantly higher concentration of run-off nutrients increasing algae and causing diminished water clarity of Lake Granby.* **Response #2399-16:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water

Comment Information	Comment	Comments and Responses
		quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of Front Range entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Unique Comment #2399-17*** *(ID 3912)**:*** *The Grand County Stream Management Plan must be added to the Permit as well as a mid-course correction. The only way to answer this questions to the Firming Projects is "No."* **Response #2399-17:** The Grand County Stream Management Plan has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix

Comment Information	Comment	Comments and Responses
		M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Unique Comment #2399-18*** *(ID 3911)**:*** *The best way to reach a good end is though conservation from the Front Range. In doing so Gross Reservoir needs to be built larger and new reservoirs need to be built to store water. The Front Range will not get smaller any time soon, and we will be hear once again but next time there may not be time to build a sustainable future without wiping out our river systems.* **Response #2399-18:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2408 Jonathan Reynolds	[See the Online Petition Standard Form Letter, Petition Signer #424 Entry.] Stop ruining our premier fishing water to benefit the green lawns of Denver!!! Perhaps a more cohesive strategy is in order?	***Unique Comment #2408-10*** *(ID 3920)**:*** *Stop ruining our premier fishing water to benefit the green lawns of Denver!!! Perhaps a more cohesive strategy is in order?* **Response #2408-10:** The Corps notes the comment.
Comment #2409 Dorothy Howe	[See the Online Petition Standard Form Letter, Petition Signer #425 Entry.] We have a son and many friends in the Fraser Valley and vacation there several times a year. The Colorado River is very important to us. Please do not jeopardize the river, which we and many others enjoy so much. We want to continue to spend money in the area!	***Unique Comment #2409-10*** *(ID 3921)**:*** *We have a son and many friends in the Fraser Valley and vacation there several times a year. The Colorado River is very important to us. Please do not jeopardize the river, which we and many others enjoy so much. We want to continue to spend money in the area!* **Response #2409-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2411 Kevin Schovan	[See the Online Petition Standard Form Letter, Petition Signer #427 Entry.]	***Unique Comment #2411-10*** *(ID 3922)**:*** *As a native Coloradoan and a home owner in*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	As a native Coloradoan and a home owner in Highlands Ranch currently residing in the Dallas Fort Worth metropolitan area. I understand the demand for water along the front range. If the price of water rises usage will fall. This has got to be a potential solution... a simple free market principal of supply and demand. Xeriscaping and water conservation techniques will become the norm for residents along the front range if the price is high enough. The State of Colorado and the Denver Water Board should learn from the mistakes of California not repeat them. In nearly every way the State of California is a shining example of what can go wrong. To this point the impact to the Owens Valley in California by the city of Los Angeles is a small example of the environmental impact. We all know that taking more water from the Colorado and Fraser doesn't solve the unending thirst of the front range. This is a stopgap for later further water removal. The front range of Colorado is growing without end in sight. Please deal with the growth, conservation, and water reclamation without potentially permanently harming the Grand Valley and many other unknown downstream repercussions.	*Highlands Ranch currently residing in the Dallas Fort Worth metropolitan area. I understand the demand for water along the front range. If the price of water rises usage will fall. This has got to be a potential solution... a simple free market principal of supply and demand. Xeriscaping and water conservation techniques will become the norm for residents along the front range if the price is high enough. The State of Colorado and the Denver Water Board should learn from the mistakes of California not repeat them. In nearly every way the State of California is a shining example of what can go wrong. To this point the impact to the Owens Valley in California by the city of Los Angeles is a small example of the environmental impact. We all know that taking more water from the Colorado and Fraser doesn't solve the unending thirst of the front range. This is a stopgap for later further water removal. The front range of Colorado is growing without end in sight. Please deal with the growth, conservation, and water reclamation without potentially permanently harming the Grand Valley and many other unknown downstream repercussions.* **Response #2411-10:** All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2413 Michael Davison	[See the Online Petition Standard Form Letter, Petition Signer #429 Entry.] As a long time Boulder resident, I am always confused by our lax attitude toward water conservation and the needless waste of this resource.	***Unique Comment #2413-10*** *(ID 3923)**:*** *As a long time Boulder resident, I am always confused by our lax attitude toward water conservation and the needless waste of this resource.* **Response #2413-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2414 Elizabeth Allen	[See the Online Petition Standard Form Letter, Petition Signer #430 Entry.] The Fraser is such a vital part of this community. Please consider ALL of the impact it will have on us!	***Unique Comment #2414-10*** *(ID 3924)**:*** *The Fraser is such a vital part of this community. Please consider ALL of the impact it will have on us!* **Response #2414-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2416 Michael Allen	[See the Online Petition Standard Form Letter, Petition Signer #432 Entry.] Please don't destroy our river!	***Unique Comment #2416-10*** *(ID 3925)**:*** *Please don't destroy our river!* **Response #2416-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2430 Paul Renfro	[See the Online Petition Standard Form Letter, Petition Signer #447 Entry.] It is not right to steal one area of Colorado's water & economy to move it to another, period! Especially when conservation efforts have not even been implemented. The rivers, mountains, fishing, rafting, kayaking, are the reasons why people live in Colorado and why they visit without water in our streams and rivers this will all change.	***Unique Comment #2430-10*** *(ID 3926)**:*** *It is not right to steal one area of Colorado's water & economy to move it to another, period! Especially when conservation efforts have not even been implemented. The rivers, mountains, fishing, rafting, kayaking, are the reasons why people live in Colorado and why they visit without water in our streams and rivers this will all change.* **Response #2430-10:** Denver Water has an aggressive 10-year

Comment Information	Comment	Comments and Responses
		conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2432 Elaine Dieterle	[See the Online Petition Standard Form Letter, Petition Signer #449 Entry.] Please save the Fraser River and better fund Colorado Schools.	***Unique Comment #2432-10*** *(ID 3927)**:*** *Please save the Fraser River and better fund Colorado Schools.* **Response #2432-10:** The Corps notes the comment.
Comment #2433 Christopher Stephan	[See the Online Petition Standard Form Letter, Petition Signer #450 Entry.] As a property owner in Grand County I am deeply concerned that further diversion of flows from the Colorado and Fraser will have devastating consequences for our property values, our livelihoods, our quality of life and – most important -- our precious and fragile environment. Further growth of the Denver metro area must not be accomplished at the expenses of our natural resources.	***Unique Comment #2433-10*** *(ID 3928)**:*** *As a property owner in Grand County I am deeply concerned that further diversion of flows from the Colorado and Fraser will have devastating consequences for our property values, our livelihoods, our quality of life and – most important -- our precious and fragile environment. Further growth of the Denver metro area must not be accomplished at the expenses of our natural resources.* **Response #2433-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2435 Valerie Jacobson	[See the Online Petition Standard Form Letter, Petition Signer #452 Entry.] We all know that Colorado's water is a precious resource- I grew up there and have no trouble remembering our constant droughts over the years. Anything that can be done to make sure we aren't destroying natural ecosystems any more than we have is important. Please consider this in your decisions.	***Unique Comment #2435-10*** *(ID 3929)**:*** *We all know that Colorado's water is a precious resource- I grew up there and have no trouble remembering our constant droughts over the years. Anything that can be done to make sure we aren't destroying natural ecosystems any more than we have is important. Please consider this in your decisions.* **Response #2435-10:** The Corps notes the comment. Prior to making

Comment Information	Comment	Comments and Responses
		decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2439 Greg and Jan Roman	[See the Online Petition Standard Form Letter, Petition Signer #456 Entry.] The Fraser River is our natural resource - a lifeline in this valley. We raft it when we can - each year we are afraid it will be the last because of lack of water. Denver Water Board just seems to keep taking - trading water in another water shed doesn't keep a river alive.	***Unique Comment #2439-10*** *(ID 3930)**:*** *The Fraser River is our natural resource - a lifeline in this valley. We raft it when we can - each year we are afraid it will be the last because of lack of water. Denver Water Board just seems to keep taking - trading water in another water shed doesn't keep a river alive.* **Response #2439-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2446 Damion Frasier	[See the Online Petition Standard Form Letter, Petition Signer #463 Entry.] Tough to spend my tourism money on fishing in Colorado if there are is no water for the fish to live.	***Unique Comment #2446-10*** *(ID 3931)**:*** *Tough to spend my tourism money on fishing in Colorado if there are is no water for the fish to live.* **Response #2446-10:** The availability of water for fish is addressed in FEIS Section 5.11. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2449 David Michel	[See the Online Petition Standard Form Letter, Petition Signer #466 Entry.] The water that Denver Water is looking to take will have a far greater environmental impact on the Fraser River then the benefit that Denver Water's customers/constituents will receive. Denver Water needs to implement water conservation policies and prohibit outdoor irrigation. Draining the Fraser River to water Denver lawns will have disastrous impacts to the Fraser River. I live at the base of Winter Park and my back deck is on the Fraser river. I have an intimate understanding of the effect that the flows have on the Fraser River. Every year from summer to winter garbage, traction sand and other sedimentation pile up in the river bottom and along its banks. The spring flows when Denver water stops taking water are sometimes heavy enough to clear/rinse out the sedimentation and debris. This process does not occur every spring due to the amount of water that Denver Water currently takes. I shudder to think about how the river will function if Denver Water takes the proposed amount of water and the semi-annual flush of the river does not occur in the spring. I can not reiterate how strong I feel that Denver needs to implement water conservation measures rather than feeding the poor stewardship practices that have caused suburban sprawl to explode in an area that does not have the water to sustain its own population and uncontrolled growth. We will regret the decision to allow Denver Water to draw more water from the Fraser River for future generations to come.	***Unique Comment #2449-10*** *(ID 3934)**:*** *The water that Denver Water is looking to take will have a far greater environmental impact on the Fraser River then the benefit that Denver Water's customers/constituents will receive. Denver Water needs to implement water conservation policies and prohibit outdoor irrigation. Draining the Fraser River to water Denver lawns will have disastrous impacts to the Fraser River.* **Response #2449-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Unique Comment #2449-11*** *(ID 3933)**:*** *I live at the base of Winter Park and my back*

Comment Information	Comment	Comments and Responses
		deck is on the Fraser river. I have an intimate understanding of the effect that the flows have on the Fraser River. Every year from summer to winter garbage, traction sand and other sedimentation pile up in the river bottom and along its banks. The spring flows when Denver water stops taking water are sometimes heavy enough to clear/rinse out the sedimentation and debris. This process does not occur every spring due to the amount of water that Denver Water currently takes. I shudder to think about how the river will function if Denver Water takes the proposed amount of water and the semi-annual flush of the river does not occur in the spring. **Response #2449-11:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the

Comment Information	Comment	Comments and Responses
		Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Unique Comment #2449-12*** *(ID 3932)**:*** *I cannot reiterate how strong I feel that Denver needs to implement water conservation measures rather than feeding the poor stewardship practices that have caused*

Comment Information	Comment	Comments and Responses
		suburban sprawl to explode in an area that does not have the water to sustain its own population and uncontrolled growth. We will regret the decision to allow Denver Water to draw more water from the Fraser River for future generations to come. **Response #2449-12:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2450 Summer Harrison	[See the Online Petition Standard Form Letter, Petition Signer #467 Entry.] I grew up in the Fraser Valley, and the water levels have drastically decreased over the last 20 years. When we used to be able to run the Father's Day race down the river, now there is not enough water even in June for us to enjoy, and I know this has to be impacting the wildlife in and around the river as the summer goes by. Water is such a necessity, especially at the headwaters that to keep draining the water to fulfill selfish city dwellers needs means draining the life out of the wildlife, and nature at the most delicate part of our ecosystem in the mountains. Let the water flow naturally.	***Unique Comment #2450-10*** *(ID 4107)**:*** *I grew up in the Fraser Valley, and the water levels have drastically decreased over the last 20 years. When we used to be able to run the father's day race down the river, now there is not enough water even in June for us to enjoy, and I know this has to be impacting the wildlife in and around the river as the summer goes by. Water is such a necessity, especially at the headwaters that to keep draining the water to fulfill selfish city dwellers needs means draining the life out of the wildlife, and nature at the most delicate part of our ecosystem in the mountains. Let the water flow naturally.* **Response #2450-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2453 Robert Shoop	[See the Online Petition Standard Form Letter, Petition Signer #470 Entry.] We bought a home in Tabernash because it was near the Fraser River. The beauty as well as the economic impact of tourists will be significantly diminished if the planed water diversion is put in place.	***Unique Comment #2453-10*** *(ID 4108)**:*** *We bought a home in Tabernash because it was near the Fraser River. The beauty as well as the economic impact of tourists will be significantly diminished if the planed water diversion is put in place.* **Response #2453-10:** The aesthetics and economic implications of the diversions are addressed in FEIS Sections 5.17 and 5.19. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions.
Comment #2455 Kamie Filiatrault	[See the Online Petition Standard Form Letter, Petition Signer #472 Entry.] I have lived in the Fraser Valley for 20 years and have seen the impact on the county because of lack of rain and low water levels. Summer businesses depend on water to make a living and how are they going to survive if more water is taken? We are already receiving less precipitation than normal, consistently over the past ten years. I feel that more education about conservation is the way to go. Why take water from someplace that is getting less and less every year?	***Unique Comment #2455-10*** *(ID 4109)**:*** *I have lived in the Fraser Valley for 20 years and have seen the impact on the county because of lack of rain and low water levels. Summer businesses depend on water to make a living and how are they going to survive if more water is taken? We are already receiving less precipitation than normal, consistently over the past ten years. I feel that more education about conservation is the way to go. Why take water from someplace that is getting less and less every year?* **Response #2455-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2456 Chris Morris	[See the Online Petition Standard Form Letter, Petition Signer #473 Entry.] Please understand the long term implications of your actions on one of the most	***Unique Comment #2456-10*** *(ID 4110)**:*** *Please understand the long long term implications of your actions on one of the most*

Comment Information	Comment	Comments and Responses
	pristine valleys in Colorado.	*pristine valleys in Colorado.* **Response #2456-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2464 Angie Ochsner	[See the Online Petition Standard Form Letter, Petition Signer #482 Entry.] Not only does the Fraser River need a flow desirable for trout, rafting and paddling groups also need a reasonable amount of flow. The front range needs to act as though they know they are living on high desert plains and begin to conserve water. The more they use, the more they want from the western slope. Left to the Denver Water Board, we could lose our natural water supply.	***Unique Comment #2464-10*** *(ID 4111)**:*** *Not only does the Fraser River need a flow desirable for trout, rafting and paddling groups also need a reasonable amount of flow. The front range needs to act as though they know they are living on high desert plains and begin to conserve water. The more they use, the more they want from the western slope. Left to the Denver Water Board, we could lose our natural water supply.* **Response #2464-10:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2466 Cyril Vidergar	[See the Online Petition Standard Form Letter, Petition Signer #484 Entry.] In-stream flows are essential to the preservation of the natural systems which rely on the Fraser River. Grand County has vigorously fought to protect those flows, as the integrity of the Fraser Valley and the quality of water flowing into the Colorado River require consideration of issues greater than simple water rights allocation. Environmental impact assessments are to consider these broader impacts and the Corp of Engineers is charged with stewarding the protection of water systems like that in the Fraser Valley. Please recognize these impacts and the damage they have caused in recent years, including algae blooms and the introduction of predatory fish and parasites into Grand County waterways.	***Unique Comment #2466-10*** *(ID 4112)**:*** *In-stream flows are essential to the preservation of the natural systems which rely on the Fraser River. Grand County has vigorously fought to protect those flows, as the integrity of the Fraser Valley and the quality of water flowing into the Colorado River require consideration of issues greater than simple water rights allocation. Environmental impact assessments are to consider these broader impacts and the Corp of Engineers is charged with stewarding the protection of water systems like that in the Fraser Valley. Please recognize these impacts and the damage they have caused in recent years, including algae blooms and the introduction of*

Comment Information	Comment	Comments and Responses
		predatory fish and parasites into Grand County waterways. **Response #2466-10:** Flow-related changes that have occurred in the Fraser River Basin since 1935 are due in part to Denver Water's existing Moffat Collection System diversions, as well as other in-basin water uses, however, those impacts are attributable to past and present operations, not the proposed Moffat Project. Under the proposed Moffat Project, additional diversions through the Moffat Tunnel would occur primarily during runoff months in May, June, and July in average and wet years (see DEIS Table H-3.1). The environmental effects of additional diversions attributable to the Moffat Project were evaluated and determined to be minimal to moderate depending on the resource. Denver Water is not responsible for mitigating the effects of other reasonably foreseeable future actions. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. As stated in 33 CFR Part 320, which are, in part, the Federal regulations governing the Corps' review of Section 404 of the CWA, the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. That decision reflects the national concern for both protection and utilization of important resources. Factors relevant to the proposal that were considered in the public interest include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs,

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.
Comment #2467 Mark Warren	[See the Online Petition Standard Form Letter, Petition Signer #485 Entry.] The Denver metropolitan area does not need more water - it needs to learn to use less. Huge green lawns are a dinosaur in this day and age of global warming and eco-consciousness. Look around the Fraser Valley – you don't see house after house with huge thirsty lawns. If we can do without, so can the Front Range. Please preserve the Fraser River and its fragile ecosystems.	***Unique Comment #2467-10*** *(ID 4113)**:*** *The Denver metropolitan area does not need more water - it needs to learn to use less. Huge green lawns are a dinosaur in this day and age of global warming and eco-consciousness. Look around the Fraser Valley – you don't see house after house with huge thirsty lawns. If we can do without, so can the Front Range. Please preserve the Fraser River and its fragile ecosystems.* **Response #2467-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2468 Adam Grasch	[See the Online Petition Standard Form Letter, Petition Signer #486 Entry.] Please carefully consider the impacts to Western Slope economies and recreation opportunities.	***Unique Comment #2468-10*** *(ID 4114)**:*** *Please carefully consider the impacts to Western Slope economies and recreation opportunities.* **Response #2468-10:** The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions.
Comment #2469 Susan Volk	[See the Online Petition Standard Form Letter, Petition Signer #487 Entry.] Please protect the waters of the United States and DO NOT protect the special interests of unregulated growth.	***Unique Comment #2469-10*** *(ID 4115)**:*** *Please protect the waters of the United States and DO NOT protect the special interests of unregulated growth.* **Response #2469-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2483 Nancy Godwin	[See the Online Petition Standard Form Letter, Petition Signer #501 Entry.] Please don't allow any more water to be diverted, it will spoil the area and wildlife. The Fraser River is so pretty, but is awfully low from all the diverted water.	***Unique Comment #2483-10*** *(ID 4116)**:*** *Please don't allow any more water to be diverted, it will spoil the area and wildlife. The Fraser River is so pretty, but is awfully low from all the diverted water.* **Response #2483-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2484 Lisa Bornfriend	[See the Online Petition Standard Form Letter, Petition Signer #502 Entry.] Please don't let any more water be taken from the Fraser River or any other water system in Grand County. It makes me feel like crying when I think of how much of	***Unique Comment #2484-10*** *(ID 4117)**:*** *Please don't let any more water be taken from the Fraser River or any other water system in Grand County. It makes me feel like crying when*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	our water we never get to see and our land will never get to benefit from. This is a precious resource that needs to be protected. We need to be fighting to get water rights back to the river!	*I think of how much of our water we never get to see and our land will never get to benefit from. This is a precious resource that needs to be protected. We need to be fighting to get water rights back to the river!* **Response #2484-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2490 David Buchler	[See the Online Petition Standard Form Letter, Petition Signer #508 Entry.] Keep the Colorado River, alive!!!	***Unique Comment #2490-10*** *(ID 4118)**:*** *Keep the Colorado River, alive!!!* **Response #2490-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2491 Richard Czoski	[See the Online Petition Standard Form Letter, Petition Signer #509 Entry.] We have owned property in the Fraser River Valley for 11 years and previously lived in Denver for 23 years. We have seen the impacts of population on the entire Front Range and the valley. The river is a valuable asset to the people of Colorado as well as an economic driver for the Fraser Valley. Denver must come to grips with its semi-arid environment. Please do not allow Denver to take any more water from the mountains.	***Unique Comment #2491-10*** *(ID 4119)**:*** *We have owned property in the Fraser River Valley for 11 years and previously lived in Denver for 23 years. We have seen the impacts of population on the entire Front Range and the valley. The river is a valuable asset to the people of Colorado as well as an economic driver for the Fraser Valley. Denver must come to grips with its semi-arid environment. Please do not allow Denver to take any more water from the mountains.* **Response #2491-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2492 Kelly Dee	[See the Online Petition Standard Form Letter, Petition Signer #510 Entry.] Quit taking water from the West Slope to water lawns on the East Slope!!	***Unique Comment #2492-10*** *(ID 4120)**:*** *Quit taking water from the West Slope to water lawns on the East Slope!!*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2492-10: The Corps notes the comment.
Comment #2494 Rhonda Gilkey	[See the Online Petition Standard Form Letter, Petition Signer #512 Entry.] We love the Fraser River and so enjoy it as a recreational draw. Don't threaten its existence, please!	***Unique Comment #2494-10*** *(ID 4121)**:*** *We love the Fraser River and so enjoy it as a recreational draw. Don't threaten its existence, please!* **Response #2494-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2499 Jack Gerstein	[See the Online Petition Standard Form Letter, Petition Signer #517 Entry.] Take care of my valley. do not take more water. Denver is abusive to water use.	***Unique Comment #2499-10*** *(ID 4122)**:*** *Take care of my valley. do not take more water. Denver is abusive to water use.* **Response #2499-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2503 Jessica Hernandez	[See the Online Petition Standard Form Letter, Petition Signer #521 Entry.] Please look to ways to reduce water use in the Front Range, rather than increase the water supply.	***Unique Comment #2503-10*** *(ID 4123)**:*** *Please look to ways to reduce water use in the Front Range, rather than increase the water supply.* **Response #2503-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2508 Jeff Ehlert	[See the Online Petition Standard Form Letter, Petition Signer #526 Entry.] How can you steal more water from a natural eco system to foster Kentucky Blue Grass in a desert. More than half the water that Denver steals is used for lawns. These people pay less for their water than people in Minnesota (The Land of 10,000 Lakes) pay for their water. I see the current draw of water from the west slope as criminal and don't see how any intelligent person could come to any other conclusion.	***Unique Comment #2508-10*** *(ID 4124)**:*** *How can you steal more water from a natural eco system to foster Kentucky Blue Grass in a desert. More than half the water that Denver steals is used for lawns. These people pay less for their water than people in Minnesota (The Land of 10,000 Lakes) pay for their water. I see the current draw of water from the west slope as criminal and don't see how any intelligent person could come to any other conclusion.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2508-10: Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2510 Gregory Gunn	[See the Online Petition Standard Form Letter, Petition Signer #528 Entry.] Do not give them an gallon they will take a whole river.	***Unique Comment #2510-10*** *(ID 4125)**:*** *Do not give them an gallon they will take a whole river.* **Response #2510-10:** The Corps notes the comment.
Comment #2520 Kelly Schweitzer	[See the Online Petition Standard Form Letter, Petition Signer #538 Entry.] You must encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.	***Unique Comment #2520-10*** *(ID 4126)**:*** *You must encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.* **Response #2520-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact

Comment Information	Comment	Comments and Responses
		water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2521 Catherine Barker	[See the Online Petition Standard Form Letter, Petition Signer #539 Entry.] We have lived in Grand County for 17 years. We love the Fraser. We want to keep the water.	***Unique Comment #2521-10*** *(ID 4127)**:*** *We have lived in Grand County for 17 yrs. We love the Fraser. We want to keep the water.* **Response #2521-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2523 Mike Leiser	[See the Online Petition Standard Form Letter, Petition Signer #541 Entry.] This water doesn't belong to us, it belongs to the Pacific Ocean and we should care for it as it passes through. We need to reverse planet damaging water laws. Denver does was never supposed to be this green.	***Unique Comment #2523-10*** *(ID 4128)**:*** *This water doesn't belong to us, it belongs to the Pacific Ocean and we should care for it as it passes through. We need to reverse planet damaging water laws. Denver does was never supposed to be this green.* **Response #2523-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2538 Jon Grayson	[See the Online Petition Standard Form Letter, Petition Signer #556 Entry.] I live right next to Gross Reservoir and understand part of this planning by Denver H_2O includes raising level of Gross Reservoir 120' from its present level. The number of 24/7 cement trucks that will travel Coal Creek are projected to destroy the road, not to mention the residents. The impact on this area I have lived in for the past 20 years will be great. Thus this entire project will affect SOOO many people, animals, plants, life...just for a bit of H_2O for grass that belongs in ...well...Kentucky, not the front range of Colorado.	***Unique Comment #2538-10*** *(ID 4130)**:*** *I live right next to Gross Reservoir and understand part of this planning by Denver H2O includes raising level of Gross Reservoir 120' from its present level. The number of 24/7 cement trucks that will travel Coal Creek are projected to destroy the road, not to mention the residents.* **Response #2538-10:** Most of the roadways serving Gross Reservoir (e.g., State Highways [SHs] 72 and 93) are in good condition and are designed to handle large, heavy construction vehicles. However, Denver Water would improve other roads in the Project area to accommodate construction activities, if needed. Denver Water met with Colorado Department of Transportation to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns. ***Unique Comment #2538-11*** *(ID 4129)**:*** *The impact on this area I have lived in for the past 20 years will be great. Thus this entire project will affect SOOO many people, animals, plants, life...just for a bit of H2O for grass that belongs in ...well...Kentucky, not the front range of Colorado.* **Response #2538-11:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2540 Thad Heroux	[See the Online Petition Standard Form Letter, Petition Signer #558 Entry.] One of the reasons I live in this community is for the natural resources.	***Unique Comment #2540-10*** *(ID 4131)**:*** *One of the reasons I live in this community is for the natural resources.* **Response #2540-10:** The Corps notes the comment.
Comment #2553 Shawna DePlata	[See the Online Petition Standard Form Letter, Petition Signer #701 Entry.] If Denver Water takes water from this area they should have to follow the same rules as everyone else. What you take from the rivers you should have to put back. So if they are diverting the water they should have to pump it back after it has been used!	***Unique Comment #2553-10*** *(ID 4169)**:*** *If Denver Water takes water from this area they should have to follow the same rules as everyone else. What you take from the rivers you should have to put back. So if they are diverting the water they should have to pump it back after it has been used!* **Response #2553-10:** Denver Water diverts water from a variety of different locations and at all times adheres to the requirements specified in the decreed water right. In the case of West Slope water, the decreed water rights allow for the diversion of water from the West Slope to the East Slope without a requirement of return flows.
Comment #2554 A'ala Lyman	[See the Online Petition Standard Form Letter, Petition Signer #570 Entry.] It's time for America to start protecting its natural resources. Please don't make this another environmental travesty.	***Unique Comment #2554-1*** *(ID 4132)**:*** *It's time for America to start protecting it's natural resources. Please don't make this another environmental travesty.* **Response #2554-1:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2558 Katherine Dines	[See the Online Petition Standard Form Letter, Petition Signer #702 Entry.] PLEASE protect the waters from the Fraser and Colorado rivers in Grand County that are so essential for the habitats there. If we work together, we can find more inventive solutions!	***Unique Comment #2558-10*** *(ID 4170)**:*** *PLEASE protect the waters from the Fraser and Colorado rivers in Grand County that are so essential for the habitats there. If we work together, we can find more inventive solutions!* **Response #2558-10:** The Corps notes the comment. Prior to making

Comment Information	Comment	Comments and Responses
		decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2566 Byron Hughes	[See the Online Petition Standard Form Letter, Petition Signer #579 Entry.] Please save our river - our wildlife and natural resources are being destroyed without any concern for the long term effect.	***Unique Comment #2566-10*** *(ID 4133)**:*** *Please save our river - our wildlife and natural resources are being destroyed without any concern for the long term effect.* **Response #2566-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2567 Robert Boxwell	[See the Online Petition Standard Form Letter, Petition Signer #705 Entry.] Thank you for all of your efforts; I support them 100%.	***Unique Comment #2567-10*** *(ID 4171)**:*** *Thank you for all of your efforts; I support them 100%.* **Response #2567-10:** The Corps notes the comment.
Comment #2569 James Stratis	[See the Online Petition Standard Form Letter, Petition Signer #706 Entry.] I am opposed to increasing water supply to the over irrigated front range Denver area at the expense of the health of the Frasier and Upper Colorado river systems.	***Unique Comment #2569-10*** *(ID 4172)**:*** *I am opposed to increasing water supply to the over irrigated front range Denver area at the expense of the health of the Frasier and Upper Colorado river systems.* **Response #2569-10:** The opposition to the Moffat Project is noted.
Comment #2571 Laura Sugaski	[See the Online Petition Standard Form Letter, Petition Signer #582 Entry.] Help us keep the Fraser River Valley pristine and life giving! Please require of the Denver Water to add these conservation measures to their Moffat project!	***Unique Comment #2571-10*** *(ID 4134)**:*** *Help us keep the Fraser River Valley pristine and life giving! Please require of the Denver Water to add these conservation measures to their Moffat project!* **Response #2571-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected

Comment Information	Comment	Comments and Responses
		shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was

Comment Information	Comment	Comments and Responses
		incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2574 Larry Jamison	[See the Online Petition Standard Form Letter, Petition Signer #708 Entry.] I have been in the valley for 14 years and the Fraser River is a vital part of the life of the valley. Not only for drinking water but also for recreation. Please consider the many mitigation ideas in your decision. We all realize that Denver and the residents need water to sustain life but the excessive amount of water that is used to keep lawns green is not sustainable.	***Unique Comment #2574-10*** *(ID 4173)**:*** *I have been in the valley for 14 yrs and the Fraser River is a vital part of the life of the valley. Not only for drinking water but also for recreation. Please consider the many mitigation ideas in your decision. We all realize that Denver and the residents need water to sustain life but the excessive amount of water that is used to keep lawns green is not sustainable.* **Response #2574-10:** The Corps notes the comment.
Comment #2575 John Suter	[See the Online Petition Standard Form Letter, Petition Signer #584 Entry.] It is critical that the powers to be carefully review all of the options available as well as looking into additional storage on the front range with "Free Water" from the South Platte River which is NOT over appropriated when over 425,000 AF of free water leaves the state annually.	***Unique Comment #2575-1*** *(ID 4135)**:*** *It is critical that the powers to be carefully review all of the options available as well as looking into additional storage on the front range with "Free Water" from the South Platte River which is NOT over appropriated when over 425,000 AF of free water leaves the state annually.* **Response #2575-1:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. A broad study area was selected to allow for a

Comment Information	Comment	Comments and Responses
		comprehensive inventory of possible sources and components for alternative screening. The Front Range area included: • Nearby Foothills – area east of the Continental Divide, downstream from the confluence of the North Fork South Platte and the South Platte rivers; upstream from the confluence of Clear Creek and the South Platte rivers; upstream from the confluence of Coal Creek and Boulder Creek; and upstream from the confluence of South Boulder Creek and Boulder Creek. • Nearby Plains and Other – area east of the Continental Divide and between the Front Range Foothills of the South Platte and upstream of the confluence of the Big Thompson and South Platte rivers; and other miscellaneous discrete components that were identified. • Upper South Platte – South Platte River Basin upstream of the confluence of the North Fork South Platte and the South Platte rivers. One-hundred thirty-five new Front Range reservoirs were screened as potential storage sites in the South Platte, Cache la Poudre, St. Vrain, Big Thompson, Clear Creek, and Boulder Creek drainage basins. These new storage sites included Leyden Gulch Reservoir and South Platte River gravel pits, which were analyzed in the EIS as part of Alternatives 1c, 8a, and 13a. Forty-seven existing Front Range storage sites were considered for enlargement or repairs including various unspecified sites within the same drainage basins as new reservoir sites. A majority of these sites were screened out for various reasons, including being a legally and

Comment Information	Comment	Comments and Responses
		physically available source and conflicts with development plans of other entities.
Comment #2576 William McCarthy	[See the Online Petition Standard Form Letter, Petition Signer #709 Entry.] Colorado #1 resource is recreation. Take away recreation such as natural rivers and you defeat the purpose of living here.	***Unique Comment #2576-10*** *(ID 4174)**:*** *Colorado #1 resource is recreation. Take away recreation such as natural rivers and you defeat the purpose of living here.* **Response #2576-10:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2583 Susan Edelstein	[See the Online Petition Standard Form Letter, Petition Signer #712 Entry.] We live in the Colorado River Basin, as do many people. Please follow the suggestions of this petition to ensure water quality and quantity.	***Unique Comment #2583-10*** *(ID 4175)**:*** *We live in the Colorado River Basin, as do many people. Please follow the suggestions of this petition to ensure water quality and quantity.* **Response #2583-10:** The Corps notes the comment.
Comment #2595 Tracy Mailloux	[See the Online Petition Standard Form Letter, Petition Signer #719 Entry.] For the last 10 years, a group of friends and I travel to Colorado to White Water Raft. We have rafted many sections of the Colorado River, and have always had a wonderful time; this is why it has become an annual vacation. It would be a shame to see the rivers dwindle. It would be economic disaster for many businesses that depend on tourism, in addition to another man-made disaster. It would also be just a band aid for the problem to supply water to the Denver area; and an expensive one at that. I think that other, less destructive, and less expensive options are available.	***Unique Comment #2595-10*** *(ID 4176)**:*** *For the last 10 years, a group of friends and I travel to Colorado to White Water Raft. We have rafted many sections of the Colorado River, and have always had a wonderful time; this is why it has become an annual vacation. It would be a shame to see the rivers dwindle. It would be economic disaster for many businesses that depend on tourism, in addition to another man-made disaster. It would also be just a band aid for the problem to supply water to the Denver area; and an expensive one at that. I think that other, less destructive, and less expensive options are available.* **Response #2595-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's

Comment Information	Comment	Comments and Responses
		environmental effects, including economics, according to NEPA.
Comment #2596 Mark Radlauer	[See the Online Petition Standard Form Letter, Petition Signer #720 Entry.] I am very interested in seeing mountain rivers protected, and do not support any expansion of use of these river basins by Denver	***Unique Comment #2596-10*** *(ID 4177)**:*** *I am very interested in seeing mountain rivers protected, and do not support any expansion of use of these river basins by Denver.* **Response #2596-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2598 Bill Spence	[See the Online Petition Standard Form Letter, Petition Signer #722 Entry.] I think that it is critical to help the zone of interest to have sufficient water for it to approach its natural state before the major diversions to the Front Range were put into place. I think that there needs to be a balance between the needs of various population groups, with a weighting in favor of seniority of use. I would like to know who in the Grand County area benefited by selling various water rights and what recourse exists.	***Unique Comment #2598-10*** *(ID 4178)**:*** *I think that it is critical to help the zone of interest to have sufficient water for it to approach its natural state before the major diversions to the Front Range were put into place. I think that there needs to be a balance between the needs of various population groups, with a weighting in favor of seniority of use. I would like to know who in the Grand County area benefited by selling various water rights and what recourse exists.* **Response #2598-10:** Denver Water is not purchasing any water rights in Grand County as a result of the proposed Moffat Project. DEIS Tables 3.1-7 and 3.1-12 present the water rights in Grand County that would be used for the Moffat Project. As discussed in the Reasonable Foreseeable Future Actions (FEIS Section 4.3.1), a description of the Colorado River Cooperative Agreement describes the different measures Denver Water and other entities would undertake in an effort to improve the aquatic environment for the Colorado River and its tributaries.
Comment #2600 Andrew Kane	[See the Online Petition Standard Form Letter, Petition Signer #724 Entry.] Respect the source of the watershed.	***Unique Comment #2600-10*** *(ID 4179)**:*** *Respect the source of the watershed.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2600-10: The Corps notes the comment.
Comment #2601 Peg Thompson	[See the Online Petition Standard Form Letter, Petition Signer #725 Entry.] It seems imperative to me that people on the Front Range (including me) be forced to conserve water BEFORE we take more water from Western Slope streams. This could be done by rate structure, construction guidelines, public education, etc. The amount of water wasted is unbelievable.	***Unique Comment #2601-10*** *(ID 4180)**:*** *It seems imperative to me that people on the Front Range (including me) be forced to conserve water BEFORE we take more water from Western Slope streams. This could be done by rate structure, construction guidelines, public education, etc. The amount of water wasted is unbelievable.* **Response #2601-10:** Rate Structures All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Conservation Incentives Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures and rain gages. In the last three years 38,627 residential rebates have been processed by Denver Water, which amounts to 15% of Denver Water's residential customers participating in rebate programs since 2007. Through these rebates, the new high-efficiency products help save about 960 AF of water, roughly the amount used by 2,400 homes in a year. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying

Comment Information	Comment	Comments and Responses
		inefficient toilets (more than 1.6 gallons per flush) from their Home Improvement Outlet stores as an attempt to save over 40 AF/year. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2602 Timothy Davis	[See the Online Petition Standard Form Letter, Petition Signer #726 Entry.] We must not continue the taking of Fraser and Colorado river water...the valley and the resource are already suffering from this practice and removing additional water will have catastrophic consequences.	***Unique Comment #2602-10*** *(ID 4181)**:*** *We must not continue the taking of Fraser and Colorado river water...the valley and the resource are already suffering from this practice and removing additional water will have catastrophic consequences.* **Response #2602-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2603 Eric Russell	[See the Online Petition Standard Form Letter, Petition Signer #727 Entry.] At one time the Colorado River flowed all the way to the Ocean. It was considered a great source of water and life to many species along its banks. Now it barely makes its way through Arizona. Many people and animals are deprived of its life giving resource. The Fraser River Valley is the Head Waters of the Colorado River Basin. If you take water from this valley, you take water from the Colorado River, which in turn takes more water away from the life downstream. Denver and the Eastern Plains of Colorado were not meant to receive this water as a natural flow. Why is it that you now feel entitled to receive this water? There are other river systems which naturally feed directly into Denver and its surrounding areas. Is there something wrong with the water in the Poudre River, Cherry Creek, or the St. Vrain? With very low snow pack this current winter season, the Fraser and the	***Unique Comment #2603-10*** *(ID 4182)**:*** *At one time the Colorado River flowed all the way to the Ocean. It was considered a great source of water and life to many species along its banks. Now it barely makes its way through Arizona. Many people and animals are deprived of its life giving resource. The Fraser River Valley is the Head Waters of the Colorado River Basin. If you take water from this valley, you take water from the Colorado River, which in turn takes more water away from the life downstream. Denver and the Eastern Plains of Colorado were not meant to receive this water as a natural flow.*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
	Colorado are hurting enough as it is. Leave these rivers be and use the ones you have at your own two feet.	*Why is it that you now feel entitled to receive this water? There are other river systems which naturally feed directly into Denver and its surrounding areas. Is there something wrong with the water in the Poudre River, Cherry Creek, or the St. Vrain? With very low snow pack this current winter season, the Fraser and the Colorado are hurting enough as it is. Leave these rivers be and use the ones you have at your own two feet.* **Response #2603-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2605 Mark Van Cleave	[See the Online Petition Standard Form Letter, Petition Signer #729 Entry.] We also own a condo in Granby and visit numerous times a year.	***Unique Comment #2605-10*** *(ID 4183)**:*** *We also own a condo in Granby and visit numerous times a year.* **Response #2605-10:** The Corps notes the comment.
Comment #2606 Greg Perry	[See the Online Petition Standard Form Letter, Petition Signer #594 Entry.] The Fraser Valley has been sacrificing its water for years. It's time the Front Range came to the table with a plan for reducing their unnecessary use before they come asking for more water. You can all have a green lawn...that's what public parks are for.	***Unique Comment #2606-10*** *(ID 4136)**:*** *The Fraser Valley has been sacrificing its water for years. It's time the Front Range came to the table with a plan for reducing their unnecessary use before they come asking for more water. You can all have a green lawn...that's what public parks are for.* **Response #2606-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2608 William Freeman	[See the Online Petition Standard Form Letter, Petition Signer #595 Entry.] Please stop the effort to divert water from the Fraser River. This is one of the most beautiful rivers in the West, and it would be a tragedy to diminish that beauty in an effort to merely ameliorate the shortsightedness of the City of Denver.	***Unique Comment #2608-10*** *(ID 4137)**:*** *Please stop the effort to divert water from the Fraser River. This is one of the most beautiful rivers in the West, and it would be a tragedy to diminish that beauty in an effort to merely ameliorate the shortsightedness of the City of Denver.* **Response #2608-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2617 Glen Girard	[See the Online Petition Standard Form Letter, Petition Signer #735 Entry.] There should be more focus directed towards reduction of water demand in the metro area.	***Unique Comment #2617-10*** *(ID 4184)**:*** *There should be more focus directed towards reduction of water demand in the metro area.* **Response #2617-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2635 David Farris	[See the Online Petition Standard Form Letter, Petition Signer #748 Entry.] The Fraser River is an important recreational and public welfare resource that indirectly supports important economic activity in areas such as tourism. Reducing the flow will make the valley more vulnerable to economic downturns by reducing the number of viable industries.	***Unique Comment #2635-10*** *(ID 4185)**:*** *The Fraser River is an important recreational and public welfare resource that indirectly supports important economic activity in areas such as tourism. Reducing the flow will make the valley more vulnerable to economic downturns by reducing the number af viable industries.* **Response #2635-10:** The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2638 Traci Maddox	[See the Online Petition Standard Form Letter, Petition Signer #606 Entry.] As a resident of Grand County, I have watched the devastation of the Fraser River and the Colorado River by those who want to water their Kentucky Bluegrass in Denver. While I don't mind people having grass in Denver, I believe they should take the affect on the rivers into consideration before trying to take even more of our water. As a major playground for Front Range residents, I wonder how they would feel if they could no longer fish or play in these rivers? We must ensure the rivers are healthy for future generations and can handle the flushing required after every winter. Conserve more--and we can all enjoy these beautiful rivers for generations!	***Unique Comment #2638-10*** *(ID 4138)**:*** *As a resident of Grand County, I have watched the devastation of the Fraser River and the Colorado River by those who want to water their Kentucky Bluegrass in Denver. While I don't mind people having grass in Denver, I believe they should take the affect on the rivers into consideration before trying to take even more of our water. As a major playground for Front Range residents, I wonder how they would feel if they could no longer fish or play in these rivers? We must ensure the rivers are healthy for future generations and can handle the flushing required after every winter. Conserve more--and we can all enjoy these beautiful rivers for generations!* **Response #2638-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2640 Dorothy Hooks	[See the Online Petition Standard Form Letter, Petition Signer #607 Entry.] Save the River! Save the beauty that remains. Free nature!	***Unique Comment #2640-10*** *(ID 4139)**:*** *Save the River! Save the beauty that remains. Free nature!* **Response #2640-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2641 Brian Young	[See the Online Petition Standard Form Letter, Petition Signer #751 Entry.] Removing +65% of the Upper Colorado River basin's water borders on catastrophic today. Increasing that level significantly and giving the water to towns with little or no conservation measures in place is beyond absurd.	***Unique Comment #2641-10*** *(ID 4186)**:*** *Removing +65% of the Upper Colorado River basin's water borders on catastrophic today. Increasing that level significantly and giving the water to towns with little or no conservation measures in place is beyond absurd.* **Response #2641-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and

Comment Information	Comment	Comments and Responses
		natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2646 Bill Sroka	[See the Online Petition Standard Form Letter, Petition Signer #610 Entry.] You don't know what you've got till it's gone!	***Unique Comment #2646-10*** *(ID 4140)**:*** *You don't know what you've got till it's gone!* **Response #2646-10:** The Corps notes the comment.
Comment #2647 Sidney Logemann	[See the Online Petition Standard Form Letter, Petition Signer #754 Entry.] Our rivers are among the reasons people want to live in the metro area in the first place. We should be diverting less, rather than more, water from them. These plans are akin to killing the goose to get a golden egg for short-term, selfish gain.	***Unique Comment #2647-10*** *(ID 4187)**:*** *Our rivers are among the reasons people want to live in the metro area in the first place. We should be diverting less, rather than more, water from them. These plans are akin to killing the goose to get a golden egg for short-term, selfish gain.* **Response #2647-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2649 Nick Mitchell	[See the Online Petition Standard Form Letter, Petition Signer #755 Entry.] In my efforts to conserve water I only shower twice a week, once to start off the work week and once to start off the weekend.	***Unique Comment #2649-10*** *(ID 4188)**:*** *In my efforts to conserve water I only shower twice a week, once to start off the work week and once to start off the weekend.* **Response #2649-10:** The Corps notes the comment.
Comment #2650 Marshall M. Haith	[See the Online Petition Standard Form Letter, Petition Signer #612 Entry.] Don't destroy the character and recreational value of this river.	***Unique Comment #2650-10*** *(ID 4141)**:*** *Don't destroy the character and recreational value of this river.* **Response #2650-10:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2651 Dustin Seitz	[See the Online Petition Standard Form Letter, Petition Signer #756 Entry.] Rip some lips.	***Unique Comment #2651-10*** *(ID 4189)**:*** *Rip some lips.* **Response #2651-10:** The Corps notes the comment.
Comment #2653 David Cloninger III	[See the Online Petition Standard Form Letter, Petition Signer #757 Entry.] PLEASE DON'T KILL THE FRASER RIVER!!!!	***Unique Comment #2653-10*** *(ID 4190)**:*** *PLEASE DON'T KILL THE FRASER RIVER!!!!* **Response #2653-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2654 Mary Shoop	[See the Online Petition Standard Form Letter, Petition Signer #614 Entry.] Why would any sane person want to destroy an integral part of our environment? Please act responsibly and keep the Frasier River Valley and the ecosystem that is sustained by the river intact.	***Unique Comment #2654-10*** *(ID 4142)**:*** *Why would any sane person want to destroy an integral part of our environment? Please act responsibly and keep the Frasier River Valley and the ecosystem that is sustained by the river intact.* **Response #2654-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2658 Thomas Jones	[See the Online Petition Standard Form Letter, Petition Signer #759 Entry.] We need our water for tourist $$$ in our county. The aquatic creatures; Trout, salmon, salamanders, boreal toads. Just to name a few. Place tighter water restrictions on towns and cities and golf courses downstream; i.e., Grand Junction, town in Utah and in Arizona and the biggest sucker of them all, Las Vegas!!!!!!!	***Unique Comment #2658-10*** *(ID 4191)**:*** *We need our water for tourist $$$ in our county. The aquatic creatures; Trout, salmon, salamanders, boreal toads. Just to name a few. Place tighter water restrictions on towns and cities and golf courses downstream; i.e., Grand Junction, town is Utah and in Arizona and the biggest sucker of them all Las Vegas!!!!!!!* **Response #2658-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects, including economics, according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2659 Marcia Walker	[See the Online Petition Standard Form Letter, Petition Signer #617 Entry.] Can you be so blind to realize that someday our Grand County residents will have to find water somewhere else because of your actions of taking such a large percentage of our water? Then, will you give it back?	***Unique Comment #2659-10*** *(ID 4143)**:*** *Can you be so blind to realize that someday our Grand County residents will have to find water somewhere else because of your actions of taking such a large percentage of our water? Then, will you give it back?* **Response #2659-10:** The Corps notes the comment.
Comment #2660 Judith Cloninger	[See the Online Petition Standard Form Letter, Petition Signer #760 Entry.] I believe that the Front Range people and the people who are bleeding the Colorado River dry, need to learn to conserve their water or before long there won't be ANY water! Please stop this Moffat Project.	***Unique Comment #2660-10*** *(ID 4192)**:*** *I believe that the Front Range people and the people who are bleeding the Colorado River dry, need to learn to conserve their water or before long there won't be ANY water! Please stop this Moffat Project.* **Response #2660-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2662 David B. Cloninger, Jr.	[See the Online Petition Standard Form Letter, Petition Signer #761 Entry.] Stop this project immediately before everyone suffers.	***Unique Comment #2662-10*** *(ID 4193)**:*** *Stop this project immediately before everyone suffers.* **Response #2662-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2663 John Pelaez	[See the Online Petition Standard Form Letter, Petition Signer #619 Entry.] My family just built a home in Frasier and we all enjoy the rivers. Please help keep the rivers and wildlife thriving!	***Unique Comment #2663-10*** *(ID 4144)**:*** *My family just built a home in Frasier and we all enjoy the rivers. Please help keep the rivers and wildlife thriving!*

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Response #2663-10: The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2666 Bob Peterson	[See the Online Petition Standard Form Letter, Petition Signer #763 Entry.] The Fraser River cannot be comprised any more than it has already. The Front Range should find water somewhere else.	***Unique Comment #2666-10*** *(ID 4194)**:*** *The Fraser River cannot be comprised any more than it has already. The Front Range should find water somewhere else.* **Response #2666-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2667 Edward Jenest	[See the Online Petition Standard Form Letter, Petition Signer #621 Entry.] Rather than try to take more, institute some mandatory water conservation programs so less water is required.	***Unique Comment #2667-10*** *(ID 4145)**:*** *Rather than try to take more, institute some mandatory water conservation programs so less water is required.* **Response #2667-10:** Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and

Comment Information	Comment	Comments and Responses
		natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2671 Richard Lucas	[See the Online Petition Standard Form Letter, Petition Signer #765 Entry.] Increased draining of the Fraser River will not solve Denver's problems and only increase the damage that has already been noted to the River.	***Unique Comment #2671-10*** *(ID 4195)**:*** *Increased draining of the Fraser River will not solve Denver's problems and only increase the damage that has already been noted to the River.* **Response #2671-10:** The Corps notes the comment.
Comment #2673 Janie Dalton	[See the Online Petition Standard Form Letter, Petition Signer #766 Entry.] How can we possibly allow diverting our beautiful rivers because of selfish people's landscaping and lawn maintenance! We should never be in a position to lose any part of our beautiful outdoors...that EVERYONE can enjoy...for a select few. Shame on whoever even allowed this to be a possibility!!!!!!!!!!	***Unique Comment #2673-10*** *(ID 4196)**:*** *How can we possibly allow diverting our beautiful rivers because of selfish people's landscaping and lawn maintenance! We should never be in a position to lose any part of our beautiful outdoors...that EVERYONE can enjoy...for a select few. Shame on whoever even allowed this to be a possibility!!!!!!!!!!* **Response #2673-10:** The Corps notes the comment.
Comment #2679 M. Kalendovsky	[See the Online Petition Standard Form Letter, Petition Signer #769 Entry.] There is not an infinite supply of water available...conservation efforts will have to be enacted eventually, no matter what. Focus on conservation now while the environmental impacts can still be mitigated, rather than waiting until the water supply has run out!	***Unique Comment #2679-10*** *(ID 4197)**:*** *There is not an infinite supply of water available...conservation efforts will have to be enacted eventually, no matter what. Focus on conservation now while the environmental impacts can still be mitigated, rather than waiting until the water supply has run out!* **Response #2679-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected

Comment Information	Comment	Comments and Responses
		shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2680 Frank and Jane Watts	[See the Online Petition Standard Form Letter, Petition Signer #628 Entry.] Before more water is taken from the Fraser River the Denver Water Board needs to get serious (really serious) about increasing costs and penalties for excessive water use, waste, and blue-grass lawns. They should oversee the recirculation of waste water. Only then should more water be taken from the Fraser.	***Unique Comment #2680-10*** *(ID 4146)**:*** *Before more water is taken from the Fraser River the Denver Water Board needs to get serious (really serious) about increasing costs and penalties for excessive water use, waste, and blue-grass lawns. They should oversee the recirculation of waste water. Only then should more water be taken from the Fraser.* **Response #2680-10:** All Denver Water customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption

Comment Information	Comment	Comments and Responses
		charge per 1,000 gallons consumed at a fixed, per account service charge. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2687 Cassidy Elizabeth Cloninger	[See the Online Petition Standard Form Letter, Petition Signer #773 Entry.] PLEASE DO NOT DO THIS! This is the most beautiful place and to divert water to the greedy front range is not right. Hundreds of people FROM the front range comes to Winter Park to enjoy it's beauty YEAR ROUND! You take the water and everything will go. I love Colorado and DON'T want Fraser Valley ruined. PLEASE STOP!	***Unique Comment #2687-10*** *(ID 4198)**:*** *PLEASE DO NOT DO THIS! This is the most beautiful place and to divert water to the greedy front range is not right. Hundreds of people FROM the front range comes to Winter Park to enjoy it's beauty YEAR ROUND! You take the water and everything will go. I love Colorado and DON'T want Fraser Valley ruined. PLEASE STOP!* **Response #2687-10:** Prior to making decisions on the proposed

Comment Information	Comment	Comments and Responses
		Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2688 Sarah Wilderman	[See the Online Petition Standard Form Letter, Petition Signer #633 Entry.] Once a river water level is lowered so fish and wildlife can not survive it is almost impossible for it to recover. Cities use water for lawns and pretty medians with grasses not suited for their climate. Denver needs to conserve water not take water from another town. Please deny Denver's permit to take more water from the Fraser River.	***Unique Comment #2688-10*** *(ID 4147)**:*** *Once a river water level is lowered so fish and wildlife cannot survive it is almost impossible for it to recover. Cities use water for lawns and pretty medians with grasses not suited for their climate. Denver needs to conserve water not take water from another town. Please deny Denver's permit to take more water from the Fraser River.* **Response #2688-10:** The opposition to the Moffat Project is noted.
Comment #2693 Ei Strain	[See the Online Petition Standard Form Letter, Petition Signer #776 Entry.] This is beautiful Country. God's Country...Ruined by Humans down in Denver Who refuse to admit this is a semi-desert climate. ENOUGH with the GREEN LAWNS PEOPLE!!! That goes out to all the HOA's that ridiculously water morning noon and night even if it is raining and cool. Denver water needs to get a grip and better educate on water conservation not just during a drought but for infinity. There are no trees here it is dry and the summers are hot…rock it and plant it. :)	***Unique Comment #2693-10*** *(ID 4199)**:*** *This is beautiful Country..God's Country...Ruined by Humans down in Denver Who refuse to admit this is a semi-desert climate. ENOUGH with the GREEN LAWNS PEOPLE!!! That goes out to all the HOA's that ridiculously water morning noon and night even if it is raining and cool. Denver water needs to get a grip and better educate on water conservation not just during a drought but for infinity. There are no trees here it is dry and the summers are hot..rock it and plant it. :)* **Response #2693-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2694 Jennifer Bach	[See the Online Petition Standard Form Letter, Petition Signer #636 Entry.] We live in a desert -- stop acting as though your green lawns and such are natural. Make do with the state and it's terrain that it has been given. Otherwise reap the depletion of all the wilderness and what it has to offer us, and has given us in the past. it may go away for good!	***Unique Comment #2694-10*** *(ID 4148)**:*** *We live in a desert -- stop acting as though your green lawns and such are natural. Make do with the state and it's terrain that it has been given. Otherwise reap the depletion of all the wilderness and what it has to offer us, and has given us in the past. it may go away for good!* **Response #2694-10:** The Corps notes the comment.
Comment #2695 Melinda McWilliams	[See the Online Petition Standard Form Letter, Petition Signer #777 Entry.] Denver Water should implement more stringent conservation measures, particularly prohibiting Kentucky Bluegrass, which takes lots of water to stay green in the summer. About 50% of Fraser River waters diverted to Denver are used to water lawns. Outrageous!	***Unique Comment #2695-10*** *(ID 4200)**:*** *Denver Water should implement more stringent conservation measures, particularly prohibiting Kentucky Bluegrass, which takes lots of water to stay green in the summer. About 50% of Fraser River waters diverted to Denver are used to water lawns. Outrageous!* **Response #2695-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2697 Amy Visconti	[See the Online Petition Standard Form Letter, Petition Signer #637 Entry.] We own a [redacted] condo now, but we used to live in WP and Fraser for about 8 years. My husband was a volunteer for the [redacted] for several years and we both worked at the resort. While we lived there we spent much of our time outdoors enjoying the natural playground the valley has to offer. Although we are currently living in the Denver area, we still visit as often as we can with our 2 young sons. Like many home owners, we rely on the tourism to keep our condo afloat during both winter and summer seasons. Without it we could not afford to keep that condo and we would probably not be able to visit as often as we do. Our visits put money back into the Valley's economy. While we are just one family, our condo brings many more families up to WP where they spend money on fishing, rafting, skiing, food, and other recreational activities. WP and the Fraser valley have a hard enough time trying to compete with the bigger resorts in the winter, it needs to remain as is to continue to bring in those summer visitors. Losing the Fraser River will just send money into the economy of other communities and this is something WP simply can not afford.	***Unique Comment #2697-10*** *(ID 4149)**:*** *We own a [redacted] condo now, but we used to live in WP and Fraser for about 8 years. My husband was a volunteer for the [redacted] for several years and we both worked at the resort. While we lived there we spent much of our time outdoors enjoying the natural playground the valley has to offer. Although we are currently living in the Denver area, we still visit as often as we can with our 2 young sons. Like many home owners, we rely on the tourism to keep our condo afloat during both winter and summer seasons. Without it we could not afford to keep that condo and we would probably not be able to visit as often as we do. Our visits put money back into the Valley's economy. While we are just one family, our condo brings many more families up to WP where they spend money on fishing, rafting, skiing, food, and other recreational activities. WP and the Fraser valley have a hard enough time trying to compete with the bigger resorts in the winter, it needs to remain as is to continue to bring in those summer visitors. Losing the Fraser River will just send money into the economy of other communities and this is something WP simply cannot afford.* **Response #2697-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2703 Nora Stevenson	[See the Online Petition Standard Form Letter, Petition Signer #640 Entry.] I support saving of the Colorado and Fraser Rivers. I have been out west and our natural environment is important to keep it as it is.	***Unique Comment #2703-10*** *(ID 4150)**:*** *I support saving of the Colorado and Fraser Rivers. I have been out west and our natural environment is important to keep it as it is.* **Response #2703-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2704 Laura Terpenning	[See the Online Petition Standard Form Letter, Petition Signer #782 Entry.] Please put the health of our mountainous ecosystems above green lawns on the Front Range. A lot more can be done to decrease irrigation needs. I live on the Front Range and love my xeriscaped front yard.	***Unique Comment #2704-10*** *(ID 4201)**:*** *Please put the health of our mountainous ecosystems above green lawns on the Front Range. A lot more can be done to decrease irrigation needs. I live on the Front Range and love my xeriscaped front yard.* **Response #2704-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal

Comment Information	Comment	Comments and Responses
		measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2712 Colbert Cushing	[See the Online Petition Standard Form Letter, Petition Signer #644 Entry.] Enough is enough!	***Unique Comment #2712-10*** *(ID 4151)**:*** *Enough is enough!* **Response #2712-10:** The Corps notes the comment.
Comment #2713 Scot Stier	[See the Online Petition Standard Form Letter, Petition Signer #787 Entry.] Let's not destroy everything please. The human foot print on Earth has made an irreversible dent on the plant as is. Technology makes life easier for people now, while destroying natural resource for the future. If we can't live in an area without drastically impacting our surroundings, then it's not meant to be inhabited.	***Unique Comment #2713-10*** *(ID 4202)**:*** *Let's not destroy everything please. The human foot print on Earth has made an irreversible dent on the plant as is. Technology makes life easier for people now, while destroying natural resource for the future. If we can't live in an area without drastically impacting our surroundings, then it's not meant to be inhabited.* **Response #2713-10:** The Corps notes the comment.
Comment #2719 Elizabeth Teitsma	[See the Online Petition Standard Form Letter, Petition Signer #648 Entry.] Please let our Grand County rivers return to their natural state that nature intended. Instead of taking more water from the stressed waterways, consider the fact that the front range is a high desert and the people who choose to live there should not be planting and endlessly watering the Kentucky Blue grass that is used extensively in landscaping and which uses approximately 60% of the Grand County water that is diverted to the front range.	***Unique Comment #2719-10*** *(ID 4152)**:*** *Please let our Grand County rivers return to their natural state that nature intended. Instead of taking more water from the stressed waterways, consider the fact that the front range is a high desert and the people who choose to live there should not be planting and endlessly watering the Kentucky Blue grass that is used extensively in landscaping and which uses approximately 60% of the Grand County water that is diverted to the front range.* **Response #2719-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and

Comment Information	Comment	Comments and Responses
		watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2726 Michael Davlin	[See the Online Petition Standard Form Letter, Petition Signer #793 Entry.] The Fraser is a treasure that is already been sacrificed and cannot afford to be further diluted for lawns and car washes on the front range.	***Unique Comment #2726-10*** *(ID 4203)**:*** *The Fraser is a treasure that is already been sacrificed and cannot afford to be further diluted for lawns and car washes on the front range.* **Response #2726-10:** The Corps notes the comment.
Comment #2727 Ken Slack	[See the Online Petition Standard Form Letter, Petition Signer #652 Entry.] I have enjoyed the Fraser and Colorado rivers for many years. We must come up with a way to stop sucking them dry. There has to be a method of reducing water usage on the front range.	***Unique Comment #2727-10*** *(ID 4153)**:*** *I have enjoyed the Fraser and Colorado rivers for many years. We must come up with a way to stop sucking them dry. There has to be a method of reducing water usage on the front range.* **Response #2727-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. A summary of conservation measures implemented by

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2730 Layne Hovey	[See the Online Petition Standard Form Letter, Petition Signer #795 Entry.] We must preserve our natural waters for the use of all and for our future generations. Save the trout!	***Unique Comment #2730-10*** *(ID 4204)**:*** *We must preserve our natural waters for the use of all and for our future generations. Save the trout!* **Response #2730-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2735 Cindy Carter	[See the Online Petition Standard Form Letter, Petition Signer #656 Entry.] Colorado is a national treasure for life and the good living of it! It would be a shame to stunt the area by drying up the rivers and not leaving enough water for everyone to enjoy!	***Unique Comment #2735-10*** *(ID 4155)**:*** *Colorado is a national treasure for life and the good living of it! It would be a shame to stunt the area by drying up the rivers and not leaving enough water for everyone to enjoy!* **Response #2735-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2736 Peter Zalocha	[See the Online Petition Standard Form Letter, Petition Signer #798 Entry.] I used to work for the Parks Dept. In a Front Range community and I've witnessed first hand the excesses in water use for landscaping and golf courses.	***Unique Comment #2736-10*** *(ID 4205)**:*** *I used to work for the Parks Dept. In a Front Range community, and I've witnessed first hand the excesses in water use for landscaping and golf courses.* **Response #2736-10:** The Corps notes the comment.
Comment #2740 Kelly Salling-Davies	[See the Online Petition Standard Form Letter, Petition Signer #800 Entry.] Please don't divert any more of the precious Colorado!	***Unique Comment #2740-10*** *(ID 4206)**:*** *Please don't divert any more of the precious Colorado!* **Response #2740-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2741 Tiffany Collette	[See the Online Petition Standard Form Letter, Petition Signer #660 Entry.] The Fraser River is important to the ecosystem and tourism, which is really important to the economy of the Fraser Valley. Please don't give Denver more of our water to waste on GRASS. Please leave the river at current levels which is still already 60% depleted.	***Unique Comment #2741-10*** *(ID 4154)**:*** *The Fraser River is important to the ecosystem and tourism, which is really important to the economy of the Fraser Valley. Please don't give Denver more of our water to waste on GRASS. Please leave the river at current levels which is still already 60% depleted.* **Response #2741-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2742 Jessica Blagen	[See the Online Petition Standard Form Letter, Petition Signer #801 Entry.] We all live downstream.	***Unique Comment #2742-10*** *(ID 4207)**:*** *We all live downstream.* **Response #2742-10:** The Corps notes the comment.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2745 Laura Hagar	[See the Online Petition Standard Form Letter, Petition Signer #802 Entry.] The bulk of the water that begins here needs to stay here. Since when is a city's need more important than our mountain community's need?	***Unique Comment #2745-10*** *(ID 4208)**:*** *The bulk of the water that begins here needs to stay here. Since when is a city's need more important than our mountain community's need?* **Response #2745-10:** The Corps notes the comment.
Comment #2749 Sean P. Richardson	[See the Online Petition Standard Form Letter, Petition Signer #664 Entry.] Much of Grand County's economy is based on tourist traffic, if we bleed the Fraser River dry it will be one less reason for people to come to such a beautiful part of our great nation. There must be other alternatives to Denver's water needs, I urge you to examine them.	***Unique Comment #2749-10*** *(ID 4156)**:*** *Much of Grand County's economy is based on tourist traffic, if we bleed the Fraser River dry it will be one less reason for people to come to such a beautiful part of our great nation. There must be other alternatives to Denver's water needs, I urge you to examine them.* **Response #2749-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2751 Lyle R. Cordova	[See the Online Petition Standard Form Letter, Petition Signer #665 Entry.] I have lived in Colorado all my life and am increasingly concerned about the negative impacts our water-guzzling way of life is having on rivers and streams. The Fraser River is just one more example. It's time to get serious about conservation in order to maintain quality waters and fisheries. Trout Unlimited's points need to be incorporated into the EIS.	***Unique Comment #2751-10*** *(ID 4157)**:*** *I have lived in Colorado all my life and am increasingly concerned about the negative impacts our water-guzzling way of life is having on rivers and streams. The Fraser River is just one more example. It's time to get serious about conservation in order to maintain quality waters and fisheries. Trout Unlimited's points need to be incorporated into the EIS.* **Response #2751-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection

Comment Information	Comment	Comments and Responses
		System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2755 Robert Beals	[See the Online Petition Standard Form Letter, Petition Signer #667 Entry.] I'm really not sure what will be done next once the Fraser and Colorado become creeks. Conservation speaks volumes and I have a general Idea that this is only a short term fix, a band aid on a situation that will not go away without serious thoughts of everyone involved. Water usage is only going to get worse over the years, maybe we haven't been stringent enough before now. I for one enjoy a peaceful day on the river and to think someone would consider potentially making a river into a creek is unheard of. Please be wise in making a decision of this magnitude as I know you will.	***Unique Comment #2755-10*** *(ID 4158)**:*** *I'm really not sure what will be done next once the Fraser and Colorado become creeks. Conservation speaks volumes and I have a general Idea that this is only a short term fix, a band aid on a situation that will not go away without serious thoughts of everyone involved. Water usage is only going to get worse over the years, maybe we haven't been stringent enough before now. I for one enjoy a peaceful day on the river and to think someone would consider potentially making a river into a creek is unheard of. Please be wise in making a decision of this magnitude as I know you will.* **Response #2755-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected

Comment Information	Comment	Comments and Responses
		shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2757 Hildreth Wold	[See the Online Petition Standard Form Letter, Petition Signer #668 Entry.] We need to protect our watersheds from over development, abuse and misuse. The sprawling growth on the eastern slope should be taking only the amount of water available in a desert climate rather than diverting and purchasing water from alternative sources. Remember, that the eastern slope is classified as a desert. Be wise, and take care of our Colorado wildlife and fisheries and watersheds for future generations.	***Unique Comment #2757-10*** *(ID 4159)**:*** *We need to protect our watersheds from over development, abuse and misuse. The sprawling growth on the eastern slope should be taking only the amount of water available in a desert climate rather than diverting and purchasing water from alternative sources. Remember, that the eastern slope is classified as a desert. Be wise, and take care of our Colorado wildlife and fisheries and watersheds for future generations.* **Response #2757-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2758 Linda Erickson	[See the Online Petition Standard Form Letter, Petition Signer #809 Entry.] The Fraser River has been a special place for us in the past…picnics year-round, fishing, and snow-shoeing…let's keep it special!	***Unique Comment #2758-10*** *(ID 4209)**:*** *The Fraser River has been a special place for us in the past…picnics year-round, fishing, and snow-shoeing…let's keep it special!* **Response #2758-10:** The Corps notes the comment.
Comment #2759 Paul Covey	[See the Online Petition Standard Form Letter, Petition Signer #810 Entry.] To Scott Franklin and US Army Corps of Engineers. As a native Coloradoan who has grown up in many parts of the State I know how difficult and complex many of the issues surrounding Water and the west can be. The Fraser river at one time was proposed to be the head waters of our mighty Colorado River. Although Grand Lake to North won that battle in history it hints at the importance the Fraser has in many people's mind, both then and now. As a child, I attended Fraser Elementary and hand caught trout in one of its tributaries next to the old pole mill by our school. Over the years I have noticed the reduced spring run-off that used to flood the valley. Where before the river kissed the road berms, now it is only a trickle. This I attribute to an increased diversion at the Moffat Tunnel for the city of Denver's water supply. Please stop diverting water essential for the health of the Fraser and Colorado Rivers. We're also wasting our money in the construction of infrastructure for these water projects and also wasting money on the maintenance of these infrastructures that have been shown to become obsolete of their intended goals. We could better use that money to build up education of the populous to conserve the water we already have available and build up the main economic industry in the state, tourism, which relies heavily on our native water ways. Thanks for your time and consideration.	***Unique Comment #2759-10*** *(ID 4211)**:*** *To Scott Franklin and US Army Corps of Engineers. As a native Coloradoan who has grown up in many parts of the State I know how difficult and complex many of the issues surrounding Water and the west can be. The Fraser river at one time was proposed to be the head waters of our mighty Colorado River. Although Grand Lake to North won that battle in history it hints at the importance the Fraser has in many people's mind, both then and now. As a child, I attended Fraser Elementary and hand caught trout in one of its tributaries next to the old pole mill by our school. Over the years I have noticed the reduced spring run-off that used to flood the valley. Where before the river kissed the road berms, now it is only a trickle. This I attribute to an increased diversion at the Moffat Tunnel for the city of Denver's water supply. Please stop diverting water essential for the health of the Fraser and Colorado Rivers.* **Response #2759-10:** The Corps notes the comment. ***Unique Comment #2759-11*** *(ID 4210)**:*** *We're also wasting our money in the construction of infrastructure for these water projects and also wasting money on the maintenance of these infrastructures that have been shown to become obsolete of their intended goals. We could better use that money to build up education of the populous to conserve the water we already have*

Comment Information	Comment	Comments and Responses
		available and build up the main economic industry in the state, tourism, which relies heavily on our native water ways. **Response #2759-11:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2762 Henry Covey	[See the Online Petition Standard Form Letter, Petition Signer #813 Entry.] Headwaters are important to protect and sustain.	***Unique Comment #2762-10*** *(ID 4212)**:*** *Headwaters are important to protect and sustain.* **Response #2762-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2764 Carolyn Hartsog	[See the Online Petition Standard Form Letter, Petition Signer #814 Entry.] I grew up in Denver and spent every summer weekend fishing at Twin Lakes, Williams Fork, the Fraser River, Grand Lake and Shadow Mountain. Even though I have lived in Montana for over 30 years, I still think the Colorado Rockies are more beautiful than any place on earth. It angers me to see Denver homes, country clubs, golf courses, and parks using so much water. While I love the grass as much as anyone, the lawns and expansive green landscaping needs to change with the changing environment and climate. Please do not destroy the beauty of the Colorado Mountains. The pine beetle is already destroying so much, and Montana's forests are not far behind. At least leave the water in its native source and let Denver and the front range adapt to its changing environment by limiting its water supply for more important uses.	***Unique Comment #2764-10*** *(ID 4213)**:*** *I grew up in Denver and spent every summer weekend fishing at Twin Lakes, Williams Fork, the Fraser River, Grand Lake and Shadow Mountain. Even though I have lived in Montana for over 30 years, I still think the Colorado Rockies are more beautiful than any place on earth. It angers me to see Denver homes, country clubs, golf courses, and parks using so much water. While I love the grass as much as anyone, the lawns and expansive green landscaping needs to change with the changing environment and climate. Please do not destroy the beauty of the Colorado Mountains. The pine beetle is already destroying so much, and Montana's forests are not far behind. At least leave the water in its native source and let Denver and the front range adapt to its changing environment by limiting its water supply for more important uses.* **Response #2764-10:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2769 Patricia Thomas	[See the Online Petition Standard Form Letter, Petition Signer #672 Entry.] I have visited your beautiful valley at different times of the year & know how important the water is. Without out at least the level they have now, tourism would be greatly harmed & the valley's economy destroyed!	***Unique Comment #2769-10*** *(ID 4160)**:*** *I have visited your beautiful valley at different times of the year & know how important the water is. Without out at least the level they have now, tourism would be greatly harmed & the valley's economy destroyed!* **Response #2769-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects, including economics, according to NEPA.
Comment #2770 David Steele	[See the Online Petition Standard Form Letter, Petition Signer #817 Entry.] I will be more supportive of further water diversion when comprehensive conservation awareness is a part to main stream culture. When local news broadcasts routinely mention conservation tips, like they do about being safe in extreme cold, when school children are taught about conservation as a matter of course, and especially when it becomes socially unacceptable to grow blue grass lawns, I will be more open to more water diversion. In addition, I want to see more awareness about the massive amounts of water used in mining and agro-business and consideration impact cost to environments and downstream water users. The scramble for water is only going to intensify over the next few decades and I would rather see creative communal problem solving than length contentions court battles and unsustainable environmental decimation.	***Unique Comment #2770-10*** *(ID 4214)**:*** *I will be more supportive of further water diversion when comprehensive conservation a awareness is a part to main stream culture. When local news broadcasts routinely mention conservation tips, like they do about being safe in extreme cold, when school children are taught about conservation as a matter of course, and especially when it becomes socially unacceptable to grow blue grass lawns, I will be more open to more water diversion. In addition, I want to see more awareness about the massive amounts of water used in mining and agro-business and consideration impact cost to environments and downstream water users. The scramble for water is only going to intensify over the next few decades and I would rather see creative communal problem solving than length contentions court battles and unsustainable environmental decimation.* **Response #2770-10:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers'

Comment Information	Comment	Comments and Responses
		water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.
Comment #2774 Marc Hager	[See the Online Petition Standard Form Letter, Petition Signer #820 Entry.] I do not condone any further nor future water diversions to the eastern slope. If you want to live in an alpine desert area then don't grow grass. If you want to mow lawns so badly then move to Kentucky and your more than welcome to mow mine as well. Quit killing the real reason why people live and visit Colorado in the first place (the outdoors). Colorado has too few excellent fisheries as is and the Fraser/Upper Colorado is one of those precious few that I have had the pleasure to enjoy.	***Unique Comment #2774-10*** *(ID 4215)**:*** *I do not condone any further nor future water diversions to the eastern slope. If you want to live in an alpine desert area then don't grow grass. If you want to mow lawns so badly then move to Kentucky and your more than welcome to mow mine as well. Quit killing the real reason why people live and visit Colorado in the first place (the outdoors). Colorado has too few excellent fisheries as is and the Fraser/Upper Colorado is one of those precious few that I have had the pleasure to enjoy.* **Response #2774-10:** The Corps notes the comment.
Comment #2776 A. and D. Kane	[See the Online Petition Standard Form Letter, Petition Signer #822 Entry.] I would like to see the shortfall of water for the front range be mitigated with stricter water conservation measures. We know we are affecting the Western slope with our increase in population and water consumption. I think we could all do more here on the Front Range.	***Unique Comment #2776-10*** *(ID 4216)**:*** *I would like to see the shortfall of water for the front range be mitigated with stricter water conservation measures. We know we are affecting the Western slope with our increase in population and water consumption. I think we could all do more here on the Front Range.* **Response #2776-10:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-

Comment Information	Comment	Comments and Responses
		wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.
Comment #2777 Shawn Nohl	[See the Online Petition Standard Form Letter, Petition Signer #823 Entry.] Please save our river!!!! We need it to keep our community as beautiful as it always has been. I am the head gardener of the Town of Winter Park and we need our water to keep our flowers and parks a place where homeowners and tourist alike want to come back again and again. Thank you so much!!!	***Unique Comment #2777-10*** *(ID 4217)**:*** *Please save our river!!!! We need it to keep our community as beautiful as it always has been. I am the head gardener of the Town of Winter Park and we need our water to keep our flowers and parks a place where homeowners and tourist alike want to come back again and again. Thank you so much!!!* **Response #2777-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2783 Lisa Smith	[See the Online Petition Standard Form Letter, Petition Signer #828 Entry.] Please keep the Colorado River alive!	***Unique Comment #2783-10*** *(ID 4218)**:*** *Please keep the Colorado river alive!* **Response #2783-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2785 Ben Sittig	[See the Online Petition Standard Form Letter, Petition Signer #829 Entry.] My livelihood depends on a healthy Fraser River. Keep the water in the river!	***Unique Comment #2785-10*** *(ID 4219)**:*** *My livelihood depends on a healthy Fraser River. Keep the water in the river!* **Response #2785-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.
Comment #2787 Patricia Marshall	[See the Online Petition Standard Form Letter, Petition Signer #676 Entry.] Enough water is diverted already. The front range communities need to show some respect and pass laws to restrict the use of water for irrigation in any new developments. Such restrictions are imposed in other growing areas such as Scottsdale Arizona and it is the responsible thing to do. Only after such restrictions are in place should any attempt to divert additional water be proposed or considered.	***Unique Comment #2787-10*** *(ID 4161)**:*** *Enough water is diverted already. The front range communities need to show some respect and pass laws to restrict the use of water for irrigation in any new developments. Such restrictions are imposed in other growing areas such as Scottsdale Arizona and it is the responsible thing to do. Only after such restrictions are in place should any attempt to divert additional water be proposed or considered.* **Response #2787-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs

Comment Information	Comment	Comments and Responses
		water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2790 -- --	[See the Online Petition Standard Form Letter, Petition Signer #679 Entry.] Texas also says! Don't mess with Colorado either!	***Unique Comment #2790-10*** *(ID 4162)**:*** *Texas also says! Don't mess with Colorado either!* **Response #2790-10:** The Corps notes the comment.
Comment #2791 Jennifer Giacomini	[See the Online Petition Standard Form Letter, Petition Signer #680 Entry.] Front Range communities need to consider restricting water consumption for outdoor landscaping. The front range is a high altitude desert, and its inhabitants should conduct their landscaping projects and maintenance as such. Xeriscaping regulations put into effect in front range communities would significantly reduce water consumption.	***Unique Comment #2791-10*** *(ID 4163)**:*** *Front Range communities need to consider restricting water consumption for outdoor landscaping. The front range is a high altitude desert, and its inhabitants should conduct their landscaping projects and maintenance as such. Xeriscaping regulations put into effect in front range communities would significantly reduce water consumption.* **Response #2791-10:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and

Comment Information	Comment	Comments and Responses
		watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.
Comment #2794 Jenna Sonntag	[See the Online Petition Standard Form Letter, Petition Signer #683 Entry.] You can't have our water for green grass and clean cars.	***Unique Comment #2794-10*** *(ID 4164)**:*** *You can't have our water for green grass and clean cars.* **Response #2794-10:** The Corps notes the comment.
Comment #2797 Alice Lecinski	[See the Online Petition Standard Form Letter, Petition Signer #686 Entry.] The fish suffer -- as does every other species that depends on the availability of water and established water tables. Colorado tourism depends on wildlife. Diverting too much water to Denver lawns creates a detrimental domino effect to Colorado's economy.	***Unique Comment #2797-10*** *(ID 4165)**:*** *The fish suffer -- as does every other species that depends on the availability of water and established water tables. Colorado tourism depends on wildlife. Diverting too much water to Denver lawns creates a detrimental domino effect to Colorado's economy.* **Response #2797-10:** The aquatic conditions for fish are addressed in FEIS Section 5.11. The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand

Comment Information	Comment	Comments and Responses
		County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status.
Comment #2800 Sherry L. Olson	[See the Online Petition Standard Form Letter, Petition Signer #689 Entry.] The need for water to be moved from one watershed to another has to be questioned. Denver Water and municipal providers could diversify rebate programs that encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.	***Unique Comment #2800-10*** *(ID 4166)**:*** *The need for water to be moved from one watershed to another has to be questioned. Denver Water and municipal providers could diversify rebate programs that encourage residents to voluntarily replace water-guzzling lawns with drought-tolerant landscaping.* **Response #2800-10:** Denver Water explored a “Cash for Grass” program. In 2008 Denver Water held several focus groups and found that there was little interest in participating in this type of program. Therefore, Denver Water pursued other conservation measures that were more cost effective and that would have higher customer participation. Part of the issue with offering a program of this type to single family residential customers is that the majority of those customers already irrigate at a level that is below the efficiency level for turf. Replacing this turf with water efficient landscaping (that still requires irrigation) nets the utility very little water savings. This is compounded by the cost of this landscaping compared to the cost of water. The net result to the customer is that it is a costly endeavor, that even when offset by a utility rebate would take years to pay back the investment. Denver Water has concentrated its outdoor water conservation program as follows:

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
		"Use Only What You Need" – a nationally recognized conservation marketing campaign, and xeriscape – a term developed by Denver Water to describe landscaping that has little to no watering needs. Denver Water does have a program in place which provides incentives to remove bluegrass from large landscapes including park systems and those owned by business parks and homeowners associations. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Online Petition Form Letters)

Comment Information	Comment	Comments and Responses
Comment #2804 Eric Olson	[See the Online Petition Standard Form Letter, Petition Signer #693 Entry.] River good.	***Unique Comment #2804-10*** *(ID 4167)**:*** *River good.* **Response #2804-10:** The Corps notes the comment.
Comment #2811 Keith Schilhab	[See the Online Petition Standard Form Letter, Petition Signer #700 Entry.] This is old thinking. Why continue to sacrifice our landscape and national treasures when we ask almost nothing of the intended recipients of this sacrifice. Until Denver imposes smart guidelines for the construction of ALL new residences and office buildings, and until they start charging what water actually costs, then I say No to this expansion.	***Unique Comment #2811-10*** *(ID 4168)**:*** *This is old thinking. Why continue to sacrifice our landscape and national treasures when we ask almost nothing of the intended recipients of this sacrifice. Until Denver imposes smart guidelines for the construction of ALL new residences and office buildings, and until they start charging what water actually costs, then I say No to this expansion.* **Response #2811-10:** Denver Water raised rates in February 2010 in order to implement the proposed projects and improvements outlined in their 10-year capital plan, which includes the Moffat Project. Rate Structures All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Conservation Incentives Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures and rain gages. In the last three

Comment-Response Report (Online Petition Form Letters)

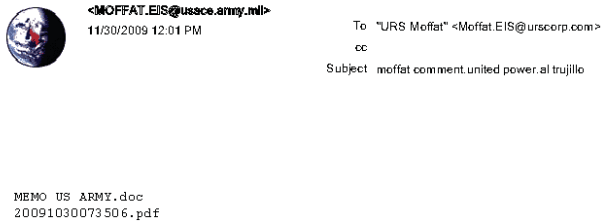
Comment Information	Comment	Comments and Responses
		years 38,627 residential rebates have been processed by Denver Water, which amounts to 15 percent of Denver Water's residential customers participating in rebate programs since 2007. Through these rebates, the new high-efficiency products help save about 960 AF of water, roughly the amount used by 2,400 homes in a year. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying inefficient toilets (more than 1.6 gallons per flush) from their Home Improvement Outlet stores as an attempt to save over 40 AF/year. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers.
Comment #2812 David Mullen	[See the Online Petition Standard Form Letter, Petition Signer #1,010 Entry.] I think we need to leave the Fraser River as close as possible to the way Nature provided it.	***Unique Comment #2812-10*** *(ID 4393)**:*** *I think we need to leave the Fraser River as close as possible to the way Nature provided it.* **Response #2812-10:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

References

United States Army Corps of Engineers (Corps). 2007. Alternatives Screening Report, Moffat Collection System Project. U.S. Army Corps of Engineers Omaha District. August.

Organizations/Stakeholders Part A

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
ORGANIZATIONS/STAKEHOLDERS PART A		
Comment #2 Al Trujillo, Senior Right of Way Specialist United Power	 	***Comment #2-1*** *(ID 84)**:*** *NO OBJECTIONS TO THIS PROPOSAL* **Response #2-1:** The U.S. Army Corps of Engineers (Corps) notes the support of the Moffat Collection System Project (Moffat Project or Project). Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to National Environmental Policy Act of 1969, as amended (NEPA).

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Attachments:	

UNITED POWER

MEMORANDUM

April 6, 2010

TO Scott Franklin, Moffat EIS Project Manager
U.S. Army Corps of Engineers
9307 South Wadsworth Boulevard
Denver, CO 80128

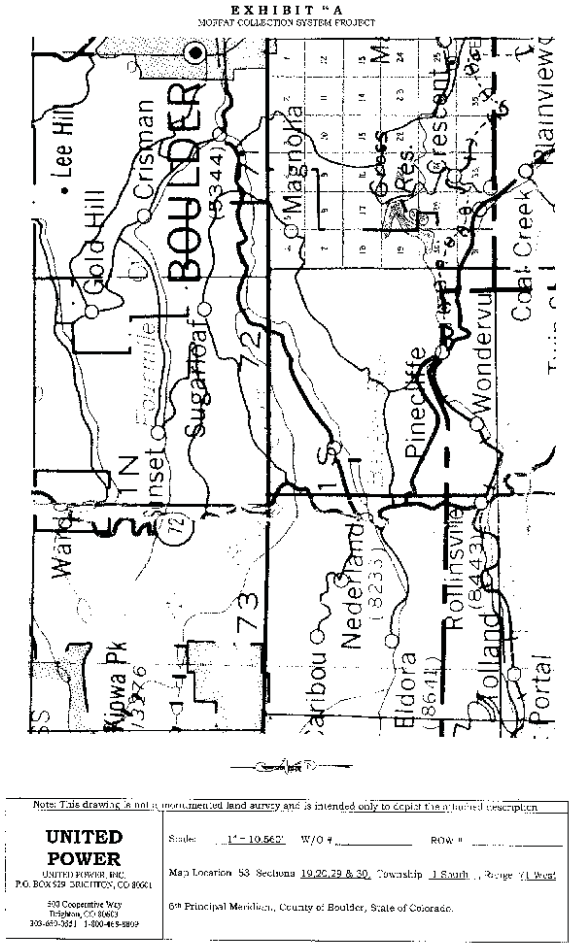
FROM: Al Trujillo, Senior Right Of Way Specialist

RESPONSE/RECOMMENDATIONS			
CASE NAME	FILING	DATE OF NOTICE	COMMENTS ON OR BEFORE
MOFFAT PROJECT	N/A	OCT 23, 2009	JAN 10, 2010
NO OBJECTIONS TO THIS PROPOSAL			

Please let me know if I can be of further assistance on this matter @ 303-637-1241 and thank you for your help.

A CONSUMER OWNED UTILITY

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		

Comment Information	Comment	Comments and Responses
Comment #18 Elena Campbell, MBA, [redacted]	From: Brent and Elena [mailto:[redacted] Sent: Monday, November 30, 2009 5:17 AM To: MOFFAT.EIS@usace.army.mil Subject: Save the Fraser Dear Mr. Franklin: Enough is enough. Our water resources are becoming ever more scarce, and the use of the increasingly scarce resource must focus entirely on conservation. If population and industrial use on the front range is rising, then use per capita must come down. That's it. Folks must make due with less. Please do not allow additional water to be removed from the Fraser River. Thank you. Elena Campbell, MBA [redacted]	***Comment #18-1*** *(ID 506)**:*** *Enough is enough. Our water resources are coming ever more scarce, and the use of the increasingly scarce resource must focus entirely on conservation. If population and industrial use on the front range is rising, then use per capita must come down. That's it. Folks must make due with less.* **Response #18-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 acre-feet per year (AF/yr) of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in the Board of Water Commissioners' (Denver Water) supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS) Table 1-2. ***Comment #18-2*** *(ID 507)**:*** *Please do not allow additional water to be removed from the Fraser River.*

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		Response #18-2: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #26 Wayne Kosloske [redacted]	From: Wayne [mailto: [redacted] Sent: Wednesday, December 02, 2009 3:24 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Firming project - 20091202151559598.pdf	***Comment #26-1*** *(ID 660)**:*** *Please consider the following comments for any Permits for this project: Any permits approved for this project should require adequate flow protections for low flows but also periodic flushing flows, which are vital to maintaining healthy habitats.* **Response #26-1:** The Moffat Project would not affect low flows in dry years because there would be no additional diversions in dry years due to the Moffat Project. In dry years, Denver Water would divert the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the Moffat Project. High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cubic feet per second (cfs) versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7 percent (%). At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those

Comment Information	Comment	Comments and Responses
	Attachments: [redacted] [redacted] Wednesday, December 02, 2009 To-Scott Franklin Subject- Moffat Firming project Please consider the following comments for any Permits for this project: ▪ Any permits approved for this project should require adequate flow **protections for low flows but also periodic flushing flows**, which are vital to maintaining healthy habitats. ▪ The cities that now seek to take more water from the Fraser should **adopt stronger water conservation measures** – particularly for landscaping changes that can reduce outdoor water use, where there is much potential for greater water savings. ▪ The US Army Corps of Engineers much **ensure that effective mitigation is in place** to protect the natural environment and the local communities who rely on the Fraser River. ▪ The Moffat Firming project must be assessed – and mitigation required – with **full recognition of the cumulative impacts** of the Moffat system's existing and proposed diversions as well as other existing projects and the proposed Windy Gap Firming Project. ▪ Protections designed to address these effects must be included as **mitigation requirements – not as unenforceable "enhancement" agreements** as is currently contemplated by Denver Water. ▪ Permit requirements must **include adequate protections for water quality**, which suffers as a result of low flows and high temperatures. The Fraser already faces elevated water temperatures seasonally, and new diversions should be limited to prevent further degradation. Similarly, the diversions may exacerbate nutrient problems for Grand Lake.	locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Sections 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, Indicators of Hydrologic Alteration (IHA) was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way (ROW) agreements with the U.S. Forest Service (USFS). FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that

Comment Information	Comment	Comments and Responses
	Page 2 December 2 2009 • Mitigation measures for the project should integrate and **implement the Grand County Stream Management Plan** - a science based, cooperative effort to identify and protect flows needed to maintain viable river environments in the Colorado headwaters. • The permit should put measures in place for **"adaptive management"** – so that, if mitigation efforts are failing to adequately protect the Fraser's water quality and aquatic life, additional steps will be taken Thank you. Wayne Kosioske [redacted]	could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. FEIS Appendix M presents the plan to provide compensatory mitigation for unavoidable adverse effects associated with the Moffat Project. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M.

Comment Information	Comment	Comments and Responses
		The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #26-2*** *(ID 661)**:*** *The cities that now seek to take more water from the Fraser should adopt stronger water conservation measures - particularly for landscaping changes that can reduce outdoor water use, where there is much potential for greater water savings.* **Response #26-2:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #26-3*** *(ID 662)**:*** *The US Army Corps of Engineers much ensure that effective mitigation is in place to protect the natural environment and the local communities who rely on the Fraser River.* **Response #26-3:** FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the Environmental Impact Statement (EIS). The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. ***Comment #26-4*** *(ID 663)**:*** *The Moffat Firming project must be assessed - and mitigation required - with full recognition of the cumulative impacts of the Moffat system's existing and proposed diversions as well as other existing projects and the proposed Windy Gap Firming Project.* **Response #26-4:** The DEIS includes the Windy Gap Firming Project (WGFP) as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts

Comment Information	Comment	Comments and Responses
		associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the Colorado-Big Thompson (C-BT) system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #26-5*** *(ID 664)**:*** *Protections designed to address these effects must be included as mitigation requirements - not as enforceable "enhancement" agreements as is currently contemplated by Denver Water.* **Response #26-5:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. Colorado Department of Public Health and Environment (CDPHE) will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. U.S. Fish and Wildlife Service (USFWS) will include specific requirements to protect threatened and endangered species that are enforceable through a Biological Opinion (BO). In addition, Denver Water has entered

Comment Information	Comment	Comments and Responses
		into three agreements that would enhance the existing environment and provide additional protections: Colorado River Cooperative Agreement (CRCA), Learning by Doing (LBD) Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" (RFFAs) in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #26-6*** *(ID 665)**:*** *Permit requirements must include adequate protections for water quality, which suffers as a result of low flows and high temperatures. The Fraser already faces elevated water temperatures seasonally, and new diversions should be limited to prevent further degradation. Similarly, the diversions may exacerbate nutrient problems for Grand Lake.* **Response #26-6:** The potential for impairment to temperature standards was evaluated using daily flow data for average, wet, and dry years for river segments identified on the CDPHE 303(d) List. Decreases in flow as a result of the Proposed Action would occur in average and wet years, when temperature excursions are less likely due to low flows. Denver Water is proposing mitigation to monitor water temperature as described in FEIS Appendix M for potential impairments to stream temperatures when diversions are being made.

Comment Information	Comment	Comments and Responses
		Additional analysis of nutrient loading was evaluated in the Fraser River Basin and Three Lakes System as part of the FEIS. Please see FEIS Sections 4.6.2 and 5.2. ***Comment #26-7*** *(ID 666)**:*** *Mitigation measures for the project should integrate and implement the Grand County Stream Management Plan - a science based, cooperative effort to identify and protect flows needed to maintain viable river environments in the Colorado headwaters.* **Response #26-7:** The Grand County Stream Management Plan (GCSMP) has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), Physical Habitat Simulation (PHABSIM) data for analysis of aquatic biological resources (Sections 3.11, 4.6.11, and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #26-8*** *(ID 667)**:*** *The permit should put measures in place for "adaptive management" - so that, if mitigation efforts are failing to adequately protect the Fraser's water quality and aquatic life, additional steps will be taken.* **Response #26-8:** FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-

Comment Information	Comment	Comments and Responses
		related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #42 Frank Watts, BSME, CCDM [redacted]	From: [redacted] Frank Watts [mailto:[redacted] Sent: Saturday, December 05, 2009 11:01 AM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Firming Project Scott Franklin Moffat EIS Project Manager Corps of Denver Regulatory Office 9307 S Wadsworth Blvd. Littleton CO 80128 Sir, As a Grand County resident, engineer, small business owner, ex resident of the front range, and concerned citizen I'd like to add my comments on the Denver Water "firming". It would seem that there are actually three alternatives: Take more water from Grand County Recycle waste water on the front range. Serious conservation of current water supplies. I'd submit that Denver Water is starting with the easiest to accomplish - firming existing "rights". It is not; " . . . a very hard issue and one with a hard solution" It is a hard issue with three possible solutions. It is not a "bigger issue than just Denver Water" - Kentucky blue-grass lawns, waste and miss-management is very much a Denver Water issue. They must not be allowed to "cop-out" on or ignore the other two solutions. Their priorities should be turned upside down: 1. Serious conservation programs and penalties must be put in place on the front range first. Their efforts to date have been modest or pure tokenism. 2. Recycling processes need to be put in place to demonstrate the seriousness of the problem to the population as well as to mitigate it. 3. Last resort - firming up these antiquated rights to Grand County water. Thanks for your attention and difficult decisions. Frank Watts BSME, CCDM [redacted] Author: Engineering Documentation Control Handbook, 3rd Ed 2008, CM Metrics, 1st Ed 2009	***Comment #42-1*** *(ID 425)**:*** *It would seem that there are actually three alternatives: Take more water from Grand County Recycle waste water on the front range. Serious conservation of current water supplies. I'd submit that Denver Water is starting with the easiest to accomplish - firming existing "rights". It is not; " . . . a very hard issue and one with a hard solution" It is a hard issue with three possible solutions. It is not a "bigger issue than just Denver Water" - Kentucky blue-grass lawns, waste and miss-management is very much a Denver Water issue. They must not be allowed to "cop-out" on or ignore the other two solutions.* **Response #42-1:** Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment Information	Comment	Comments and Responses
		All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro Wastewater Reclamation District Treatment Plant (Metro WWTP) and the Littleton–Englewood (Bi-City) Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 acre-feet (AF) to as much as 37,555 AF/yr. Refer to FEIS Section 1.3.1 (subheading Non-Potable Recycling Facility). ***Comment #42-2*** *(ID 426)**:*** *Their priorities should be turned upside down: 1. Serious conservation programs and penalties must be put in place on the front range first. Their efforts to date have been modest or pure tokenism.* **Response #42-2:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water

Comment Information	Comment	Comments and Responses
		accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #42-3*** *(ID 427)**:*** *Recycling processes need to be put in place to demonstrate the seriousness of the problem to the population as well as to mitigate it.* **Response #42-3:** Denver Water has been distributing recycled water since 2004 for industrial, commercial and outdoor irrigation uses and is continuing to expand the recycled water system to ultimately free up enough potable water to serve almost 43,000 households. Refer to DEIS Section 1.3.1.4 for a discussion of Denver Water's non-potable recycling facility. ***Comment #42-4*** *(ID 428)**:*** *Last resort - firming up these antiquated rights to Grand County water.* **Response #42-4:** Denver Water's strategy to meet future demands includes several components, not just diverting water from Grand County. The strategy to reduce demand and increase firm yield, as discussed in DEIS Section 1.4.3, includes (1) conservation, (2) non-potable recycling, (3) system refinements, (4) cooperative projects, and (5) new supply projects.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #48 Clark R. Chapman [redacted]	From: Clark R Chapman [mailto:[redacted] Sent: Wednesday, December 02, 2009 2:10 PM To: MOFFAT.EIS@usace.army.mil Subject: Roads in Gross Reservoir vicinity Mr. Scott Franklin Army Corps of Engineers Scott -- I believe you were the person who told me last evening that you would send me a copy of the Figure (3.10-1) of the Moffat Draft EIS that crashes my browser when I try to download it. By its title, this figure purports to show roads in the area of the project. However, if it is the same figure someone else showed me hard copy of last evening, then it actually doesn't show roads in the project area but rather roads throughout a large portion of Boulder County. Anyway, I would appreciate having a copy. My interest concerns the following factual errors in the Draft EIS: If you could please forward my following substantive comments about these errors involving roads in the Draft EIS to the appropriate person/s, I would appreciate it. The Draft states: "Gross Reservoir can be accessed from Boulder via Flagstaff Road (CR 77), as well as via CR 68 and CR 97E, which turns into FR 359 (Figure 3.10-1)." [Chap. 2, pg. 35] This is false, concerning CR 97E and FR 359, in several ways. First, 97E (which is called Lazy Z Road for the first 2.2 miles east of Magnolia road) does *not* "turn into" FR 359. Instead, this road (known as the Gross Reservoir Haul Road) proceeds down Winiger Gulch to an arm of Gross Reservoir (called Winiger Gulch Inlet elsewhere in the EIS). There is a badly eroded route that connects, along the midpoint of the Haul Road, from that road up to FR 359; but that is not even accessible by 4-wheel-drive vehicles. Such vehicles occasionally came *down* that connector in years past and got stuck on the Haul Road, being unable to get back up, so the USFS closed that route, which is difficult even on foot. It is possible that drafters of the EIS used on-line mapping software and were confused by errors in such maps. For instance, Google Maps currently shows Lazy Z Road merging into Cumberland Gap Road, which intersects CR 68 shortly before CR 68 intersects FR 359. But the Lazy Z label is misplaced; Lazy Z actually goes past Cumberland Gap Road and continues into Winiger Gulch, as I describe above. Second, 97E ends as a public road 2.2 miles east of Magnolia Road, where there is a locked gate. Despite erroneous words in chapter 3 of the EIS, this is locked *not* at the boundary of USFS lands but at the boundary of a private landowner, who does not permit motorized access on the old Haul Road for the quarter mile that is on his property. There is no public motorized access to the portion of the Haul Road on USFS property that is east of the private landowner. The erroneous words are at 3-278: "Winiger Gulch Inlet can be accessed through USFS lands via Boulder CR 97E. The road is closed to motorized vehicles at the USFS boundary" I would note that such errors in the draft EIS, concerning matters I personally know about, suggest shoddy research in preparation of the document, and diminish my faith that other particulars about matters I'm not personally familiar with are accurate. I hope that you would be concerned, as well. You can send a copy of the Figure to my email address below. Thank you. Clark -- Clark R. Chapman [redacted]	***Comment #48-1*** *(ID 681)**:*** *I believe you were the person who told me last evening that you would send me a copy of the Figure (3.10-1) of the Moffat Draft EIS that crashes my browser when I try to download it. By its title, this figure purports to show roads in the area of the project. However, if it is the same figure someone else showed me hard copy of last evening, then it actually doesn't show roads in the project area but rather roads throughout a large portion of Boulder County. Anyway, I would appreciate having a copy. My interest concerns the following factual errors in the Draft EIS: "Gross Reservoir can be accessed from Boulder via Flagstaff Road (CR 77), as well as via CR 68 and CR 97E, which turns into FR 359 (Figure 3.10-1)." [Chap. 2, pg. 35] This is false, concerning CR 97E and FR 359, in several ways. First, 97E (which is called Lazy Z Road for the first 2.2 miles east of Magnolia road) does *not* "turn into" FR 359. Instead, this road (known as the Gross Reservoir Haul Road) proceeds down Winiger Gulch to an arm of Gross Reservoir (called Winiger Gulch Inlet elsewhere in the EIS). There is a badly eroded route that connects, along the midpoint of the Haul Road, from that road up to FR 359; but that is not even accessible by 4-wheel-drive vehicles. Such vehicles occasionally came *down* that connector in years past and got stuck on the Haul Road, being unable to get back up, so the USFS closed that route, which is difficult even on foot. It is possible that drafters of the EIS used on-line mapping software and were confused by errors in such maps. For instance, Google Maps currently shows Lazy Z Road merging into Cumberland Gap Road, which intersects CR 68 shortly before CR 68 intersects FR 359. But the Lazy Z label is is placed; Lazy Z actually goes past Cumberland Gap Road and continues into Winiger Gulch, as I describe above.*

Comment Information	Comment	Comments and Responses
	[redacted]	**Response #48-1:** The Project area evaluated in the EIS includes Gross Reservoir in Boulder County, the Leyden Gulch Reservoir site in Jefferson County, gravel pits along the South Platte River in Adams County, and deep aquifer storage in Denver County. Thus, DEIS Figure 3-10 represents roads in the Project area, not just Gross Reservoir. Nonetheless, labels identifying Magnolia Road (County Road [CR] 132), Lazy Z Road (97E), and Gross Reservoir Haul Road (Forest Road [FR] 359) were added to FEIS Figure 3.12-1 for clarification. Access to Gross Reservoir discussed in the DEIS was intended to mean general access to the reservoir and was not specific to construction activity. The roads that are badly eroded or are not constructed to support vehicles would not be used as designated haul routes during dam construction. Some roads, such as FR 359, may have to be improved for the tree removal. ***Comment #48-2*** *(ID 683)**:*** *Second, 97E ends as a public road 2.2 miles east of Magnolia Road, where there is a locked gate. Despite erroneous words in chapter 3 of the EIS, this is locked *not* at the boundary of USFS lands but at the boundary of a private landowner, who does not permit motorized access on the old Haul Road for the quarter mile that is on his property. There is no public motorized access to the portion of the Haul Road on USFS property that is east of the private landowner. The erroneous words are at 3-278: "Winiger Gulch Inlet can be accessed through USFS lands via Boulder CR 97E. The road is closed to motorized vehicles at the USFS boundary"* **Response #48-2:** The Corps notes the comment. Figure 3.12-1, Figure 3.15-1 and this sentence in FEIS Section 3.15.1.1

Comment Information	Comment	Comments and Responses
		(subheading USFS Lands and Roads) were clarified to read: “The road is closed to motorized vehicles at the USFS boundary; however, it is open to foot, bicycle, and equestrian use.” ***Comment #48-3*** *(ID 684)**:*** *I would note that such errors in the draft EIS, concerning matters I personally know about, suggest shoddy research in preparation of the document, and diminish my faith that other particulars about matters I'm not personally familiar with are accurate. I hope that you would be concerned, as well. You can send a copy of the Figure to my email address below. Thank you.* **Response #48-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project’s environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #50 Becky Long, Water Caucus Coordinator Colorado Environmental Coalition 1536 Wynkoop Street, #5C Denver, CO 80202	From: Becky Long [mailto:becky@cecenviro.org] Sent: Monday, November 16, 2009 7:10 PM To: Franklin, J Scott NWO; MOFFAT.EIS@usace.army.mil Subject: Summit County public meeting for the Moffat Collection System? Hi Scott, Thanks again for passing the links on last week, I think some folks are having a somewhat easier time accessing the DEIS online now, however still getting a good amount of comments from folks who are having trouble (FYI). Another issue that has been raised with me by many of our members is that there is not a meeting in Summit County despite a portion of the project impacting Summit County directly on the Blue River. On behalf of these members I'd like to respectfully request that the USACE consider hosting an additional meeting to take public comments on the Moffat Collection System Project DEIS. Thanks, bl Becky Long Water Caucus Coordinator Colorado Environmental Coalition <http://www.ourcolorado.org/> 1536 Wynkoop St. #5C Denver, CO 80202 Becky@cecenviro.org 303.405.6714 303.534.7063- fax	***Comment #50-1*** *(ID 379)**:*** *Thanks again for passing the links on last week, I think some folks are having a somewhat easier time accessing the DEIS online now, however still getting a good amount of comments from folks who are having trouble (FYI). Another issue that has been raised with me by many of our members is that there is not a meeting in Summit County despite a portion of the project impacting Summit County directly on the Blue River. On behalf of these members I'd like to respectfully request that the USACE consider hosting an additional meeting to take public comments on the Moffat Collection System Project DEIS.* **Response #50-1:** The Corps' website is part of a United States (U.S.) Army website that contains special security measures, one of which is a Security Warning. The Corps communicated to commenters that it was safe to continue through the warning. Additionally, hard copies of the DEIS were available for review at the Public Hearings and at the following locations: • Denver Water • Corps Denver Regulatory Office • Arvada Library • Boulder County Main Library • Denver Central Library • Fraser Valley Library • Golden Library • Granby Library • Kremmling Library • Summit County Library North Branch • Summit County Library South Branch • Thornton Branch Library A public meeting was held at the Beaver Run Conference Center in Breckenridge, Colorado on January 7, 2010. An Open House was held from 4:00-6:00 p.m. and the Public Hearing commenced at 6:00 p.m.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #55 Nathan Williams [redacted]	From: Nathan Williams [mailto:[redacted] Sent: Wednesday, December 09, 2009 11:56 AM To: MOFFAT.EIS@usace.army.mil Subject: Nathan Williams of [redacted] Mr. Moffat As a native to the state of Colorado. I have lived both in the highlands and in Denver. I am proud to say that we as a state are ahead of the curve when it comes to doing whats right for our land. It is time for people to begin taking responsibility for our actions. We need not continue to accommodate an all ready high consumption demand to wasteful people. We must learn to adjust and find the acceptable balance of what the earth can offer us and what we need to live responsibly. The people of Colorado are ready and willing participants in finding this new balance with nature. As an avid outdoors man, I have already seen the affects of a shortened flow for our local streams. I am not a fan of seeing our biggest and prettiest trout floating lifeless down a further dwindling stream. Robbing Peter to pay Paul is a solution that results in creating further problems and damage than any good done in the short term. We are smart and resourceful people, we can adjust to the necessary changes needed to survive from the current water flow. The change must begin now. Respectfully, Nathan Williams [redacted]	***Comment #55-1*** *(ID 368)**:*** *As a native to the state of Colorado. I have lived both in the highlands and in Denver. I am proud to say that we as a state are ahead of the curve when it comes to doing whats right for our land. It is time for people to begin taking responsibility for our actions. We need not continue to accommodate an already high consumption demand to wasteful people. We must learn to adjust and find the acceptable balance of what the earth can offer us and what we need to live responsibly. The people of Colorado are ready and willing participants in finding this new balance with nature. As an avid outdoors man, I have already seen the affects of a shortened flow for our local streams. I am not a fan of seeing our biggest and prettiest trout floating lifeless down a further dwindling stream. Robbing Peter to pay Paul is a solution that results in creating further problems and damage than any good done in the short term.* **Response #55-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #55-2*** *(ID 369)**:*** *We are smart and resourceful people, we can adjust to the necessary changes needed to survive from the current water flow. The change must begin now.* **Response #55-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #61 Dan Northcraft, Construction Manager Habitat for Humanity of the St. Vrain Valley P.O. Box 333 Longmont, CO 80502	From: Dan Northcraft [mailto:dnorthcraft@stvrainhfh.org] Sent: Thursday, December 10, 2009 9:30 PM To: MOFFAT.EIS@usace.army.mil Subject: Denver Water Expansion Mr. Franklin, I am writing in regards to an article I saw in the Denver Post about Denver Water's proposed $225M water project. I would like to express my opinion that Denver Water needs to continue to improve conservation efforts and perhaps increase rates to better reflect the true cost of water rather than increase supply. Overconsumption and the negative effects that accompany it, is already too high and an additional project will only increase this. Thanks, Dan Dan Northcraft Construction Manager Habitat for Humanity of the St. Vrain Valley P.O. Box 333 Longmont, CO 80502 Mobile - 303 946 4992 Fax - 303 684 6762 dnorthcraft@stvrainhfh.org www.stvrainhfh.org <file://www.stvrainhfh.org>	***Comment #61-1*** *(ID 359)**:*** *I am writing in regards to an article I saw in the Denver Post about Denver Water's proposed $225M water project. I would like to express my opinion that Denver Water needs to continue to improve conservation efforts and perhaps increase rates to better reflect the true cost of water rather than increase supply.* **Response #61-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial,

Comment Information	Comment	Comments and Responses
		commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. ***Comment #61-2*** *(ID 360)**:*** *Overconsumption and the negative effects that accompany it, is already too high and an additional project will only increase this.* **Response #61-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #62 Janene L. Johnson, CRS, GRI, [redacted]	From: Janene Johnson [mailto:[redacted] Sent: Friday, December 11, 2009 5:14 PM To: MOFFAT.EIS@usace.army.mil Subject: Draft EIS - Grand County Hello! I would first like to thank you for the well-run public hearing last week in Granby, Colorado. I did not speak because so many of my colleagues, neighbors and friends were able to say their piece very succinctly. I agree with their thoughts and could not have added anything. I did want to make sure to email you with a verification that I agree wholeheartedly with the comments made at that hearing. The Draft EIS is such a huge document, and I'm so ill-informed as to many of the issues therein, that I would like to see more time allowed for review. Even my friends like Scott Linn and Kirk Klancke, who have spent years educating themselves on these issues, are ill-equipped to pass judgment in such a short period of time. I also want to make sure that all those interested parties are aware that any water diversion issues being considered need to address the future impact of our entire system up here in Grand County. Grand Lake has been experiencing some extreme algae and clarity issues that has not been discussed in conjunction with this Draft EIS. I believe these diversion tactics will make these matters even worse, possibly unsolvable. That cannot happen, these systems are inter-connected and any impact at this point, no matter how small Denver Water seems to think it is, will most likely have HUGE negative impacts throughout our county. I run a large, well-respected real estate company and as you might imagine, all of us make our livings from assisting customers and clients to purchase homes in this area. The extreme beauty of Grand County, with it's many amenities like Winter Park Resort, Fraser River, Colorado River Goldwater Trout waters, Grand Lake, Lake Granby, Rocky Mountain National Park, makes this a special place indeed. Protection of the future of this beautiful place needs to be an integral part of any studies being done. Thank you so much for adding my comments to your files. Janene Johnson Janene L. Johnson, CRS, GRI [redacted]	***Comment #62-0*** *(ID 337)**:*** *Hello! I would first like to thank you for the well-run public hearing last week in Granby, Colorado. I did not speak because so many of my colleagues, neighbors and friends were able to say their piece very succinctly. I agree with their thoughts and could not have added anything. I did want to make sure to email you with a verification that I agree wholeheartedly with the comments made at that hearing. The Draft EIS is such a huge document, and I'm so ill-informed as to many of the issues therein, that I would like to see more time allowed for review. Even my friends like Scott Linn and Kirk Klancke, who have spent years educating themselves on these issues, are ill-equipped to pass judgment in such a short period of time.* **Response #62-0:** The following is a summary of the initial public comment period time frame and subsequent extensions. A Notice of Availability (NOA) of a DEIS and Public Notice announcing the receipt and evaluation of a Clean Water Act (CWA) Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment Information	Comment	Comments and Responses
		Comment #62-1 *(ID 338)**:*** *I also want to make sure that all those interested parties are aware that any water diversion issues being considered need to address the future impact of our entire system up here in Grand County. Grand Lake has been experiencing some extreme algae and clarity issues that has not been discussed in conjunction with this Draft EIS. I believe these diversion tactics will make these matters even worse, possibly unsolvable. That cannot happen, these systems are inter-connected and any impact at this point, no matter how small Denver Water seems to think it is, will most likely have HUGE negative impacts throughout our county.* **Response #62-1:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #62-2*** *(ID 339)**:*** *I run a large, well-respected real estate company and as you might imagine, all of us make our livings from assisting customers and clients to purchase homes in this area. The extreme beauty of Grand County, with it's many amenities like Winter Park Resort, Fraser River, Colorado River Goldwater Trout waters, Grand Lake, Lake Granby, Rocky Mountain National Park, makes this a special place indeed. Protection of the future of this beautiful place needs to be an integral part of any studies being done.* **Response #62-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #70 Pat Barron [redacted]	From: Pat Barron [mailto:[redacted] Sent: Monday, December 14, 2009 2:06 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffiat Firming Project To: Mr. Scott Franklin I understand you are the person to contact regarding public input of the proposed firming projects in Grand County. As you go through this process I realize you are going to be tugged in several different directions. I hope through the process that you will keep in mind the treasure we all enjoy that is Grand Lake. The lake is one of Colorado's finest treasures and one of its most important attributes is the clarity of its water. I am not envious of the work ahead for you as you balance water needs of front range residents with the preservation of one of our greatest state and national treasures. Good luck and thank you for your time and consideration. Pat Barron Pat Barron [redacted]	***Comment #70-0*** *(ID 319)**:*** *I understand you are the person to contact regarding public input of the proposed firming projects in Grand County. As you go through this process I realize you are going to be tugged in several different directions. I hope through the process that you will keep in mind the treasure we all enjoy that is Grand Lake. The lake is one of Colorado's finest treasures and one of its most important attributes is the clarity of its water. I am not envious of the work ahead for you as you balance water needs of front range residents with the preservation of one of our greatest state and national treasures. Good luck and thank you for your time and consideration.* **Response #70-0:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #81 Steve McAdoo, [redacted]	From: Steve McAdoo [mailto: [redacted] Sent: Thursday, December 31, 2009 6:41 PM To: MOFFAT.EIS@usace.army.mil Subject: Gross Dam Expansion As a Coal Creek Canyon resident, I have serious concerns in regard to this project: 1. The environmental impact to the affected areas/ecosystems a. Sucking more water out of tributaries to the Colorado Rivers, including the Fraser River, will not lead to a healthy, functioning ecosystem. According to Drew Peternell, Director of Trout Unlimited's Colorado Water Project, "Transbasin diversion projects such as the Gross Reservoir expansion and the Windy Gap firming project -- which also seeks to divert more water from the Colorado River for use on the Front Range, including towns in Boulder County -- may not dry up the streams, but they still disrupt the natural cycle. Additionally, "The Fraser River is the river in Colorado that is the most heavily depleted...It's just really beat up." b. Wildlife indigenous to and dependent upon Gross Reservoir would be driven out by the constant blasting required for opening the quarries that will be constructed so that 60% of the preliminary volume needed for the dam construction is available on site (not to mention the 20-30,000 trees that will have to be cut down). 2. The draft environmental impact statement for the project did not take into account the socio-economic impact of having 40% of the preliminary volume of the dam imported to the site via the stated hauling routes per EIS, Proposed Action (Alternative 1a) 2-33. a. The number, size and frequency of the trucks (estimated to be 60 semi trucks A DAY = 5 trucks per hour) that would travel CO Highway 72 in Coal Creek Canyon for the stated 3-4 years has an economic impact to Jefferson County road maintenance budget and subsequently the tax payers. b. Traffic concerns for Coal Creek Canyon residents: CO Highway 72 is a two lane windy road with no passing lanes and the presence of the long haul loaders referenced above will result in increased commute times for residents that live in the canyon and work in the Denver metro area. Denver Water plans to make up almost half of its projected water shortfall in 2030 with water conservation methods, which is laudable, however, Denver Water should look at other ways to meet its growing demand -- including more water-reuse projects and agriculture water-sharing arrangements -- before sucking more water out of tributaries to the Colorado Rivers, including the Fraser. --- Steve McAdoo [redacted]	***Comment #81-0*** *(ID 294)**:*** *As a Coal Creek Canyon resident, I have serious concerns in regard to this project: The environmental impact to the affected areas/ecosystems a. Sucking more water out of tributaries to the Colorado Rivers, including the Fraser River, will not lead to a healthy, functioning ecosystem. According to Drew Peternell, Director of Trout Unlimited's Colorado Water Project, "Transbasin diversion projects such as the Gross Reservoir expansion and the Windy Gap firming project -- which also seeks to divert more water from the Colorado River for use on the Front Range, including towns in Boulder County -- may not dry up the streams, but they still disrupt the natural cycle. Additionally, "The Fraser River is the river in Colorado that is the most heavily depleted...It's just really beat up."* **Response #81-0:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #81-1*** *(ID 296)**:*** *Wildlife indigenous to and dependent upon Gross Reservoir would be driven out by the constant blasting required for opening the quarries that will be constructed so that 60% of the preliminary volume needed for the dam construction is available on site (not to mention the 20-30,000 trees that will have to be cut down).* **Response #81-1:** Denver Water plans to implement confined charge blasting for construction activities to minimize noise. In general, wildlife may be temporarily and indirectly impacted by construction noise.

Comment Information	Comment	Comments and Responses
		Wildlife responses to noise would depend on several factors such as species, the type of activity, topography, and individual sensitivity. An analysis of displacement effects to elk during construction from blasting and tree cutting has been added to the wildlife analysis in the FEIS Section 5.9.1.1. ***Comment #81-2*** *(ID 297)**:*** *The draft environmental impact statement for the project did not take into account the socio-economic impact of having 40% of the preliminary volume of the dam imported to the site via the stated hauling routes per EIS, Proposed Action (Alternative 1a) 2-33.* **Response #81-2:** As stated in Section 2.3.2.1, the majority of the aggregate required to construct the raised dam would be produced on-site. The exact amount that may be needed to be imported to the site would not be known until the dam design is a complete and quarry activities begin. For EIS planning purposes, it was assumed that 40% of the aggregate material, plus sand, fly-ash, and concrete, would be obtained from off-site sources. The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on CR 77S, State Highway (SH) 72, SH 93, SH 128, U.S. Highway (US) 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of

Comment Information	Comment	Comments and Responses
		commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. The FEIS provides additional analysis and discussion as appropriate regarding impacts to communities surrounding Gross Reservoir, including increased truck traffic and associated effects. Additionally, Denver Water met with Colorado Department of Transportation (CDOT) to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating the Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. ***Comment #81-3*** *(ID 298)**:*** *The number, size and frequency of the trucks (estimated to be 60 semi trucks A DAY = 5 trucks per hour) that would travel CO Highway 72 in Coal Creek Canyon for the stated 3-4 years has an economic impact to Jefferson County road maintenance budget and subsequently the tax payers.* **Response #81-3:** As described in Chapter 2 (Table 2-19) and discussed in Chapter 4 (Socioeconomics) of the DEIS, the number of haul trucks moving materials to Gross Reservoir would actually range from 17 to 22 per day, depending on the alternative. Under the Proposed Action, there would be 60 vehicles carrying commuting construction workers to the site daily; as noted in Chapter 4 (Socioeconomics) of the DEIS, this number of additional vehicles would have a negligible impact on traffic volume on SH 72 given current average daily traffic volumes. Additionally, the costs of road maintenance on SH 72 are the responsibility of CDOT, not Jefferson County. Chapter

Comment Information	Comment	Comments and Responses
		4 (Socioeconomics) of the DEIS includes data on current CDOT budget items, including road maintenance, and states that “any CDOT expenditures related to road or bridge maintenance due to the reservoir expansion would likely account for a negligible portion of total expenditures”. ***Comment #81-4*** *(ID 299)**:*** *Traffic concerns for Coal Creek Canyon residents: CO Highway 72 is a two lane windy road with no passing lanes and the presence of the long haul loaders referenced above will result in increased commute times for residents that live in the canyon and work in the Denver metro area.* **Response #81-4:** Denver Water met with CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns. ***Comment #81-5*** *(ID 300)**:*** *Denver Water plans to make up almost half of its projected water shortfall in 2030 with water conservation methods, which is laudable, however, Denver Water should look at other ways to meet its growing demand -- including more water-reuse projects and agriculture water-sharing arrangements -- before sucking more water out of tributaries to the Colorado Rivers, including the Fraser.* **Response #81-5:** Alternative 13a consists of a combination of water supplies derived from agricultural water rights transfers and Denver Water's Moffat Collection

Comment Information	Comment	Comments and Responses
		System. There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights and gravel pit storage to firm that supply are two key limiting factors that affect the amount of water that could potentially be derived from this supply. Generating 3,000 AF/yr of firm yield from agricultural supplies would require that almost 25 % of the remaining uncommitted shares in four major ditch systems, which are in the vicinity of available gravel pit storage, be purchased. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the competitive market for agricultural water rights and there is no guarantee there will be an adequate number of willing sellers under these ditch systems. The configuration of Alternative 13a is reasonable, considering the uncertainties regarding the availability and location of agricultural water rights and the complexities of treating the lesser quality water and disposing of the treatment residuals. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to

Comment Information	Comment	Comments and Responses
		supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility).

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #88 Jeff Strom, [redacted]	From: Strom, Jeff [mailto [redacted] Sent: Tuesday, January 05, 2010 4:28 PM To: MOFFAT.EIS@usace.army.mil Subject: Fraser River Sensitivity Mr. Franklin; I would like to go on public record to express my concern with the Moffat Firming Project. As a long time Colorado resident and avid outdoorsman with experience on the Fraser river I am concerned that the Moffat project will negatively and irreversibly impact this most important Colorado resource. I would like to see protections from the firming project that insure; Environment and water quality protection AND mitigation Flow (low & flushing) protections AND insurance Mitigation REQUIREMENTS not enhancement agreements As well, cities should be required to adopt water conservation measures to reduce the need (a very prudent first step prior to the project). This project should integrate and implement the Grand County Stream Management Plan in its baseline operation and "adaptive management" practices should be in place for a "worst case scenario"! Thank you for considering my input. Sincerely; Jeff Jeff Strom [redacted]	***Comment #88-1*** *(ID 278)**:*** *I would like to go on public record to express my concern with the Moffat Firming Project. As a long time Colorado resident and avid outdoorsman with experience on the Fraser river I am concerned that the Moffat project will negatively and irreversibly impact this most important Colorado resource.* **Response #88-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #88-2*** *(ID 279)**:*** *I would like to see protections from the firming project that insure; Environment and water quality protection AND mitigation.* **Response #88-2:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #88-3*** *(ID 280)**:*** *Flow (low & flushing) protections AND insurance.* **Response #88-3:** The proposed Moffat Project would not divert additional water in dry years. As described in FEIS Section 5.1, the majority of additional water would be diverted during the months of May, June, and July during run-off – not during low flow periods. Denver Water would not increase its diversions during the fall and winter months and existing bypass flow requirements would not change. Denver Water has committed to provide flushing flows in the Fraser River, St. Louis Creek, Vasquez Creek, and Ranch Creek. Denver Water has also committed

Comment Information	Comment	Comments and Responses
		to forgo diversions when stream temperatures associated with low flow conditions are elevated. Refer to FEIS Appendix M for a description of the proposed mitigation measures. The Corps is considering imposing such permit conditions to mitigate effects in the aquatic environment, if a permit is issued. In addition, to compliment the mitigation measures, Denver Water is committed to the LBD Cooperative Effort to enhance the existing environment and stream flow conditions (FEIS Section 4.3.1). For example, Denver Water will work with the Management Committee of the LBD Cooperative Effort to coordinate operations of its diversion structures in an effort to provide flushing flows, enhance peak spring flows and/or augment low flows. Specific enhancements that could address low flow and flushing flows include: • 1,000 AF annually of bypass water from the Fraser Collection System for environmental purposes. • Up to 1,000 AF annually of releases from Williams Fork Reservoir and 2,500 AF of carry over storage in Williams Fork Reservoir for environmental purposes. • Denver Water agrees not to reduce USFS bypass flows during a drought unless Denver Water has banned all residential lawn watering in its service area (Denver Water has never banned residential lawn watering). FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued.

Comment Information	Comment	Comments and Responses
		Comment #88-4 *(ID 281)**:*** *Mitigation REQUIREMENTS not enhancement agreements.* **Response #88-4:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a BO. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #88-5*** *(ID 282)**:*** *As well, cities should be required to adopt water conservation measures to reduce the need (a very prudent first step prior to the project).* **Response #88-5:** Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers’ water use by 22% by 2016. To date, Denver Water customers are using

Comment Information	Comment	Comments and Responses
		20% less water than they were prior to the 2002 drought. ***Comment #88-6*** *(ID 283)**:*** *This project should integrate and implement the Grand County Stream Management Plan in its baseline operation and "adaptive management" practices should be in place for a "worst case scenario"!* **Response #88-6:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation.

Comment Information	Comment	Comments and Responses
Comment #117 Sheila McCaddon, [redacted]	From: Sheila McCaddon [redacted] [mailto:[redacted] Sent: Monday, February 01, 2010 8:29 AM To: MOFFAT.EIS@usace.army.mil Subject: Keep Grand county Water Where It Belongs!!!!! To whom this may concern! To take a whopping 76% of Colorado River and tributary water supply AT THE SOURCE in Grand County, Colorado, is an abomination!!!!! Problems are vast, but in a nutshell: this will dry up many wetlands, diminish development potential and threaten the rural lifestyle of the entire western slope of Colorado; this includes the most scenic country in Colorado used traditionally for skiing, vacationing, agriculture, fishing; the water simply will be siphoned at the source. Instead of taking what little water we do have and giving it to those who DO NOT try to conserve, why not get the front range to understand where their lawn water comes from. It makes me sick when I see water from sprinklers running down the gutters and new housing projects that don't use "zero-scaping" but instead put in thick green grass. Denver and the surrounding area is high desert, we are not suppose to have lawns! Major points you must consider are: § Any permits approved for this project should require adequate flow protections for low flows but also periodic flushing flows, which are vital to maintaining healthy habitats. § The cities that now seek to take more water from the Fraser should adopt stronger water conservation measures - particularly for landscaping changes that can reduce outdoor water use, where there is much potential for greater water savings. § The US Army Corps of Engineers much ensure that effective mitigation is in place to protect the natural environment and the local communities who rely on the Fraser River. § The Moffat Firming project must be assessed - and mitigation required - with full recognition of the cumulative impacts of the Moffat system's existing and proposed diversions as well as other existing projects and the proposed Windy Gap Firming Project. § Protections designed to address these effects must be included as mitigation requirements - not as unenforceable "enhancement" agreements as is currently contemplated by Denver Water. § Permit requirements must include adequate protections for water quality, which suffers as a result of low flows and high temperatures. The Fraser already faces elevated water temperatures seasonally, and new diversions should be limited to prevent further degradation. Similarly, the diversions may exacerbate nutrient problems for Grand Lake. § Mitigation measures for the project should integrate and implement the Grand County Stream Management Plan - a science based, cooperative effort to identify and protect flows needed to maintain viable river environments in the Colorado headwaters. The permit should put measures in place for "adaptive management" - so that, if mitigation efforts are failing to adequately protect the Fraser's water quality and aquatic life, additional steps will be taken. PLEASE take all this into consideration and let your conscience be your guide. Sheila McCaddon [redacted] Don't miss out on great skiing and riding as [redacted] Resort celebrates its 70th anniversary. To sweeten the deal during our platinum season, check out our Buy One, Get One at 50% Off <[redacted] lodging package. For information on [redacted] and [redacted] including snow conditions, events and more, visit [redacted].	***Comment #117-1*** *(ID 784)**:*** *To take a whopping 76% of Colorado River and tributary water supply AT THE SOURCE in Grand County, Colorado, is an abomination!!!!! Problems are vast, but in a nutshell: this will dry up many wetlands, diminish development potential and threaten the rural lifestyle of the entire western slope of Colorado; this includes the most scenic country in Colorado used traditionally for skiing, vacationing, agriculture, fishing; the water simply will be siphoned at the source.* **Response #117-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #117-2*** *(ID 785)**:*** *Instead of taking what little water we do have and giving it to those who DO NOT try to conserve, why not get the front range to understand where their lawn water comes from. It makes me sick when I see water from sprinklers running down the gutters and new housing projects that don't use "zero-scaping" but instead put in thick green grass. Denver and the surrounding area is high desert, we are not supposed to have lawns!* **Response #117-2:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #117-3*** *(ID 786)**:*** *Major points you must consider are: Any permits approved for this project should require adequate flow protections for low flows but also periodic flushing flows, which are vital to maintaining healthy habitats.*

Comment Information	Comment	Comments and Responses
	Confidentiality Warning: This message and any attachments are intended only for the use of the intended recipient(s), are confidential, and may be privileged. If you are not the intended recipient, you are hereby notified that any review, retransmission, conversion to hard copy, copying, circulation or other use of this message and any attachments is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by return e-mail, and delete this message and any attachments from your system. Thank you.	**Response #117-3:** The proposed Moffat Project would not divert additional water in dry years. As described in FEIS Section 5.1, the majority of additional water would be diverted during the months of May, June, and July during run-off – not during low flow periods. Denver Water would not increase its diversions during the fall and winter months and existing bypass flow requirements would not change. Denver Water has committed to provide flushing flows in the Fraser River, St. Louis Creek, Vasquez Creek, and Ranch Creek. Denver Water has also committed to forgo diversions when stream temperatures associated with low flow conditions are elevated. Refer to FEIS Appendix M for a description of the proposed mitigation measures. The Corps is considering imposing such permit conditions to mitigate effects in the aquatic environment, if a permit is issued. In addition, to compliment the mitigation measures, Denver Water is committed to the LBD Cooperative Effort to enhance the existing environment and stream flow conditions (FEIS Section 4.3.1). For example, Denver Water will work with the Management Committee of the LBD Cooperative Effort to coordinate operations of its diversion structures in an effort to provide flushing flows, enhance peak spring flows and/or augment low flows. Specific enhancements that could address low flow and flushing flows include: • 1,000 AF annually of bypass water from the Fraser Collection System for environmental purposes. • Up to 1,000 AF annually of releases from Williams Fork Reservoir and 2,500 AF of carry over storage in Williams Fork Reservoir for environmental purposes.

Comment Information	Comment	Comments and Responses
		• Denver Water agrees not to reduce USFS bypass flows during a drought unless Denver Water has banned all residential lawn watering in its service area (Denver Water has never banned residential lawn watering). FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. ***Comment #117-4*** *(ID 787)**:*** *The cities that now seek to take more water from the Fraser should adopt stronger water conservation measures - particularly for landscaping changes that can reduce outdoor water use, where there is much potential for greater water savings.* **Response #117-4:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #117-5*** *(ID 788)**:*** *The US Army Corps of Engineers much ensure that effective mitigation is in place to protect the natural environment and the local communities who rely on the Fraser River.* **Response #117-5:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #117-6*** *(ID 789)**:*** *The Moffat Firming project must be assessed - and mitigation required - with full recognition of the cumulative impacts of the Moffat system's existing and proposed diversions as well as other existing projects and the proposed Windy Gap Firming Project.* **Response #117-6:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor.

Comment Information	Comment	Comments and Responses
		DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Council on Environmental Quality (CEQ) interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the Platte and Colorado Simulation Model (PACSM) to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology.

Comment Information	Comment	Comments and Responses
		The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography. Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows diverted by Denver Water. This allows the reader to compare natural flows with past diversions at each of Denver Water's diversions locations modeled in PACSM. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #117-7*** *(ID 790)**:*** *Protections designed to address these effects must be included as mitigation requirements - not as unenforceable "enhancement" agreements as is currently contemplated by Denver Water.* **Response #117-7:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through the Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a BO. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife

Comment Information	Comment	Comments and Responses
		Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #117-8*** *(ID 791)**:*** *Permit requirements must include adequate protections for water quality, which suffers as a result of low flows and high temperatures. The Fraser already faces elevated water temperatures seasonally, and new diversions should be limited to prevent further degradation. Similarly, the diversions may exacerbate nutrient problems for Grand Lake.* **Response #117-8:** Additional water quality analysis, including temperature, has been performed on the Fraser River. Additional water quality analysis has been performed for the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #117-9*** *(ID 792)**:*** *Mitigation measures for the project should integrate and implement the Grand County Stream Management Plan - a science based, cooperative effort to identify and protect flows needed to maintain viable river environments in the Colorado headwaters. The permit should put measures in place for "adaptive management" - so that, if mitigation efforts are failing to adequately protect the Fraser's water quality and aquatic life, additional steps will be taken. PLEASE take all this into consideration and let your conscience be your guide.*

Comment Information	Comment	Comments and Responses
		Response #117-9: The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11, and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including Adaptive Management for mitigation.

Comment Information	Comment	Comments and Responses
Comment #126 David Holsinger Homestead Hills Homeowner's Association	From: David Holsinger [mailto: [redacted] Sent: Wednesday, February 03, 2010 4:56 PM To: MOFFAT.EIS@usace.army.mil Cc: gbumgarner@co.grand.co.us; [redacted]; Susan Meyer Subject: Moffat Firming EIS Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 Homestead Hills is a subdivision south of Granby, CO. As a Homeowners Association, we are highly concerned about plans to divert more flow from the Fraser River (Moffat Firming Project). We believe the Draft Environmental Impact Statement is seriously deficient in addressing the following points. HOA Comments on the Moffat Firming EIS Conservation: Water resources are a finite quantity. Front Range population is not. Sooner or later the Front Range water demand will exceed available resources. Conservation can be either sooner or later. We strongly believe it should be the sooner alternative. Denver Water is in the business of selling water, so naturally they will see it as a later alternative. Conservation is essentially neglected as an alternative in the draft EIS. This oversight requires review. Stream Management: Quality of the Fraser and Colorado Rivers can be modeled, but no one can predict when we will experience a "tipping point" on stream quality. Any project approval must include an ongoing assessment of stream quality, and prompt modifications to water diversion plans if degradation of stream quality is experienced. Periods of drought or probable lodgepole forest fires may also require a limit on water diversion to protect these streams and rivers from unmodeled situations. Socioeconomic: Grand County is highly dependent on both summer tourism and second home ownership. But the EIS neglects to assess impacts to same from additional water diversion. Both tourism and second home ownership depend on attractive summer environments. Damaged streams and rivers would severely erode these key aspects of the Grand County economy. Negative economic impacts would also occur due any water supply limitations to municipalities, or reduction in aquifer levels for individual home wells, which could result from excessive water diversion.	***Comment #126-1*** *(ID 880)**:*** *Homestead Hills is a subdivision south of Granby, CO. As a Homeowners Association, we are highly concerned about plans to divert more flow from the Fraser River (Moffat Firming Project). We believe the Draft Environmental Impact Statement is seriously deficient in addressing the following points.* **Response #126-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #126-2*** *(ID 881)**:*** *Conservation: Water resources are a finite quantity. Front Range population is not. Sooner or later the Front Range water demand will exceed available resources. Conservation can be either sooner or later. We strongly believe it should be the sooner alternative. Denver Water is in the business of selling water, so naturally they will see it as a later alternative. Conservation is essentially neglected as an alternative in the draft EIS. This oversight requires review.* **Response #126-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs.

Comment Information	Comment	Comments and Responses
		Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #126-3*** *(ID 882)**:*** *Stream Management: Quality of the Fraser and Colorado Rivers can be modeled, but no one can predict when we will experience a "tipping point" on stream quality. Any project approval must include an ongoing assessment of stream quality, and prompt modifications to water diversion plans if degradation of stream quality is experienced. Periods of drought or probable lodgepole forest fires may also require a limit on water diversion to protect these streams and rivers from unmodeled situations.* **Response #126-3:** The Moffat Project would not affect low flows in dry years because there would be no additional diversions in dry years due to the Moffat Project. In dry years, Denver Water would divert the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the Moffat Project in dry years. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate

Comment Information	Comment	Comments and Responses
		mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. In addition, an adaptive management plan will be required as part of a Section 404 Permit. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. ***Comment #126-4*** *(ID 883)**:*** *Socioeconomic: Grand County is highly dependent on both summer tourism and second home ownership. But the EIS neglects to assess impacts to same from additional water diversion. Both tourism and second home ownership depend on attractive summer environments. Damaged streams and rivers would severely erode these key aspects of the Grand County economy. Negative economic impacts would also occur due any water supply limitations to municipalities, or reduction in aquifer levels for individual home wells, which could result from excessive water diversion.* **Response #126-4:** The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions. Section 5.19 of the FEIS includes a discussion of the impacts to Grand County water providers resulting from Moffat Project alternatives. Grand County Water and Sanitation District #1 would face a shortage of

Comment Information	Comment	Comments and Responses
		6 AF/yr as a result of a Moffat Project; no other water providers would experience water shortages. This shortage would not hinder development or cause other socioeconomic effects to the County. Section 4.6.19 discusses the cumulative socioeconomic effects of all past, present and RFFAs, including a Moffat Project alternative. The text in that section addresses the potential shortages faced by all Grand County water providers as they approach build-out demand levels (between 1 and 364 AF/yr) and the socioeconomic implications of those shortages.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #158 Austin B. Pottorff, [redacted]	From: Austin B Pottorff [mailto:[redacted] Sent: Wednesday, February 10, 2010 1:54 PM To: MOFFAT.EIS@usace.army.mil Subject: The Fraser River Mr. Scott Franklin, I am writing on behalf of my entire community when I say the Fraser River has no more water to give. Our entire economy is dependent upon tourism and this river flows right through the heart of our downtown community. Please, stand up for our community, our citizens, and our Fraser River. WE HAVE NO MORE WATER TO GIVE! Austin B. Pottorff [redacted] [redacted] Certified Distressed Property Expert [redacted] Serving Grand & Eagle Counties of Colorado P please consider the environment before printing this e-mail	***Comment #158-1*** *(ID 898)**:*** *I am writing on behalf of my entire community when I say the Fraser River has no more water to give. Our entire economy is dependent upon tourism and this river flows right through the heart of our downtown community. Please, stand up for our community, our citizens, and our Fraser River. WE HAVE NO MORE WATER TO GIVE!* **Response #158-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #269 Alan Mishell, [redacted]	From: Alan Mishell [mailto:[redacted] On Behalf Of Alan Mishell Sent: Thursday, February 11, 2010 4:35 PM To: MOFFAT.EIS@usace.army.mil Subject: Re: Moffat Collection System Project (Permit Application NOW-2002089762-DEN) Scott, Thank you for responding to my letter. As a native Coloradan I feel it is important to protect our watersheds for wildlife and the tourism that depends on it. It is a major driver of our state economy, far more so than the municipal irrigation that diversion supports. I own a home on South Boulder Creek on the east side of the Moffat Tunnel and the water diversion system. The sheer volume of water channeled through South Boulder Creek at this time is astonishing. I cannot imagine what an additional 25% of the Fraser's water would be like in South Boulder Creek. Additionally, my parents live in Tabernash and I frequent the Fraser River and am alarmed at the frequent low flows that occur there. As a local resident that sees both sides of the Moffat diversion system, I know that it cannot be good for either river to divert even more water from the Fraser River into South Boulder Creek. Denver Water stands to profit handsomely from ever increasing use of west slope water to feed unchecked demand in Denver. Instead it should be looking to increase conservation and restructure pricing to ensure that revenues remain while encouraging less water use. Thank you for your attention in this matter. Alan Alan Mishell [redacted]	***Comment #269-1*** *(ID 5385)**:*** *Thank you for responding to my letter. As a native Coloradan I feel it is important to protect our watersheds for wildlife and the tourism that depends on it. It is a major driver of our state economy, far more so than the municipal irrigation that diversion supports. I own a home on South Boulder Creek on the east side of the Moffat Tunnel and the water diversion system. The sheer volume of water channeled through South Boulder Creek at this time is astonishing. I cannot imagine what an additional 25% of the Fraser's water would be like in South Boulder Creek. Additionally, my parents live in Tabernash and I frequent the Fraser River and am alarmed at the frequent low flows that occur there. As a local resident that sees both sides of the Moffat diversion system, I know that it cannot be good for either river to divert even more water from the Fraser River into South Boulder Creek. Denver Water stands to profit handsomely from ever increasing use of west slope water to feed unchecked demand in Denver. Instead it should be looking to increase conservation and restructure pricing to ensure that revenues remain while encouraging less water use. Thank you for your attention in this matter.* **Response #269-1:** Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs.

Comment Information	Comment	Comments and Responses
		Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #350 Bryan Wakefield, [redacted]	From: Wakefield, Bryan [mailto:[redacted] Sent: Tuesday, February 16, 2010 8:44 AM To: MOFFAT.EIS@usace.army.mil; moffatproject@denverwater.org Cc: boatgross@gmail.com Subject: FW: Power Boating on Gross Reservoir Dear Sirs and/or Madame: I have been made aware that motor boating is being considered on Gross Reservoir and I would like to voice my support toward allowing this. I have been visiting Gross Reservoir since the mid 80's and know it well. I believe that allowing access to motorized boats under controlled conditions would be a positive development and give the residents a needed option as none other exists in the immediate area. Thank you for your time and consideration. Best regards, Bryan Wakefield Bryan Wakefield [redacted] The information contained in this e-mail message may be privileged and confidential information and is intended only for the use of the individual and/or entity identified in the alias address of this message. If the reader of this message is not the intended recipient, or an employee or agent responsible to deliver it to the intended recipient, you are hereby requested not to distribute or copy this communication. If you have received this communication in error, please notify us immediately by telephone or return e-mail and delete the original message from your system.	***Comment #350-1*** *(ID 936)**:*** *I have been made aware that motor boating is being considered on Gross Reservoir and I would like to voice my support toward allowing this. I have been visiting Gross Reservoir since the mid 80's and know it well. I believe that allowing access to motorized boats under controlled conditions would be a positive development and give the residents a needed option as none other exists in the immediate area.* **Response #350-1:** Denver Water is not considering allowing motor boating on Gross Reservoir as a part of the Moffat Project. The existing Federal Energy Regulatory Commission (FERC) license specifies only car-top non-motorized boats and Denver Water has made a commitment that the recreational opportunities with an enlarged Gross Reservoir would be identical to that identified in its current FERC license.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #422 Howard Ivy [redacted]	From: Howard Ivy [mailto:[redacted] Sent: Tuesday, February 23, 2010 3:38 PM To: MOFFAT.EIS@usace.army.mil; publicinformation@denverwater.org Subject: FW: Water Projects Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 & Andrea Parker, Moffat EIS Project Mgr 8181 E. Tufts Avenue, Denver, CO 80237 Here are some pipe line projects I am working on. I would be interested in Colorado Projects that wants to build pipelines in Colorado. If you know who to speak with are and have some contact Info: that is my question to you if you can help I would appreciate it . Don,t know if they need any help from me but I want to ask. Also here is a little info; on our Pipe Technology Attached. Thank You Howard Ivy [redacted]	***Comment #422-1*** *(ID 959)**:*** *Here are some pipe line projects I am working on. I would be interested in Colorado Projects that wants to build pipelines in Colorado. If you know who to speak with are and have some contact Info: that is my question to you if you can help I would appreciate it . Don't know if they need any help from me but I want to ask. Also here is a little info; on our Pipe Technology Attached.* **Response #422-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #452 Elmer Lanzi, Trustee Grand Lake Board of Trustees Grand Lake, CO	*12-01-2009 Public Hearing Commenter* Yes, sir. Elmer Lanzi, [redacted] I'm here to speak as an individual and also as a trustee to the Board of Trustees, Grand Lake, Colorado. < > First of all, I'd like to ask for a 45-day extension to our plan. We need time to digest all the facts. Second of all, I'd like to speak of the economic impact to our community. In the best of times, Grand Lake business is marginal at best, due to the nature of its seasonal -- seasonal business, mostly summertime business. And the fact is is we don't get our wealth from money. We -- we choose to live a rich life in a pristine environment. Also, I'd like to talk about how -- how these projects, water projects -- there's northwest Colorado and, of course, there's Denver Water -- that haven't even started with this new project. And I just need to report to you that at this time, because of the Big Thompson project, our water clarity over the last 25 years has been significantly reduced. Grand Lake, if you folks have never been there, it's the state's largest natural lake, mountain lake. When I first moved to Grand Lake 25 years ago, it was a clear lake, beautiful. And over the years, we've noticed that the clarity has been significantly reduced. And, of course, that pristine lake -- people, friends, and visitors come to see us because of its pristine value. I'd like to say that, yes, without these two water projects, yes, our economy is significantly affected. Thank you very much.	***Comment #452-1*** *(ID 85)**:*** *First of all, I'd like to ask for a 45-day extension to our plan. We need time to digest all the facts.* **Response #452-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #452-2*** *(ID 86)**:*** *Second of all, I'd like to speak of the economic impact to our community. In the best of times, Grand Lake business is marginal at best, due to the nature of its seasonal -- seasonal business, mostly summertime business. And the fact is is we don't get our wealth from money. We -- we choose to live a rich life in a pristine environment.* **Response #452-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

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		Comment #452-3 *(ID 87)**:*** *And I just need to report to you that at this time, because of the Big Thompson project, our water clarity over the last 25 years has been significantly reduced. And over the years, we've noticed that the clarity has been significantly reduced. And, of course, that pristine lake -- people, friends, and visitors come to see us because of its pristine value.* **Response #452-3:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #452-4*** *(ID 88)**:*** *I'd like to say that, yes, without these two water projects, yes, our economy is significantly affected.* **Response #452-4:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #454 Larry Quilling, Local Chapter President Boulder Flycasters, Trout Unlimited	*12-01-2009 Public Hearing Commenter* I'm already here. Thank you. Larry Quilling. < > Larry Quilling, Q-U-I-L-L-I-N-G. [redacted] That's [redacted] And it's Quilling, Q-U-I-L-L-I-N-G. [redacted] < > Thank you for this evening. I'm the Trout Unlimited local chapter president of Boulder Flycasters. I'm here tonight to talk about the mission for our organization, and that is to conserve, protect, and restore our cold-water resources. With that in mind, I think something that's really important to discuss tonight is avoiding polarization. Anything that we can figure out to do to work together to work through these difficult water decisions is really important. I happen to live just within a few stones throw from South Boulder Creek. I can watch it in the wintertime go completely dry after the irrigation season. The mitigation associated with this project has a great benefit associated with helping mitigating the expansion of Gross Reservoir, but it doesn't do anything for my playground. I have, you know, family and a property in Grand County, and that's where I play. And believe me, I don't want to see the water dry up in the Fraser River and the Colorado. And I think we need to find ways to make this work for everyone. Conservation is something that needs to be taken very seriously in all our communities. Right now we're talking about Denver. And I ask everyone to work together to try to figure out how we make this difficult set of decisions work for the betterment of both sides of the Divide. So thank you very much.	***Comment #454-1*** *(ID 110)**:*** *I'm here tonight to talk about the mission for our organization, and that is to conserve, protect, and restore our cold-water resources.* **Response #454-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #454-2*** *(ID 111)**:*** *The mitigation associated with this project has a great benefit associated with helping mitigating the expansion of Gross Reservoir, but it doesn't do anything for my playground. I have, you know, family and a property in Grand County, and that's where I play. And believe me, I don't want to see the water dry up in the Fraser River and the Colorado. And I think we need to find ways to make this work for everyone.* **Response #454-2:** FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. ***Comment #454-3*** *(ID 112)**:*** *Conservation is something that needs to be taken very seriously in all our communities. Right now we're talking about Denver. And I ask everyone to work together to try to figure out how we make this difficult set of decisions work for the betterment of both sides of the Divide.* **Response #454-3:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

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Comment #456 David Nickum, Executive Director Colorado Trout Unlimited	*12-01-2009 Public Hearing Commenter (Boulder Country Club)* David Nickum, [redacted] < > D-A-V-I-D. Last name is N-I-C-K-U-M. I'm also with Trout Unlimited. I'm the executive director for Colorado Trout Unlimited. I'd like to echo some of the comments that have already been made in that the major issues that are concerned to us with this project are the cumulative effects on the rivers of upper Colorado, notably the Fraser, as well as the Colorado and South. An easy 18,000 acre-feet taken primarily during higher-flow seasons may not sound like a great deal, but when you lay it on top of many other diversions that already are in place and the Windy Gap Firming Project that's also being considered at the same time, as you already heard from Grand County Commissioner Newberry, you're looking at diverting almost three-quarters of that portion of the Colorado River. And that creates a different set of accumulated impacts that really need to be accounted for and considered and offset. I did want to praise Denver Water's creativity in working with Boulder and Lafayette and looking at mitigation on this side of the Divide. The environmental pool is a very good concept and could be very meaningfully benefiting South Boulder Creek. It will be important to make sure that's done with the right safeguards to ensure that that's using water here and not actually exacerbating problems on the other side. But with those kinds of safeguards, it's a very creative opportunity to help the environment here in any depleted streams. And I hope that the same kind of creativity can be brought to bear on the West Slope as well and very much encourage the Corps, as well as Denver Water, to look to the recommendations emerging from the Grand County Stream Flow Management Plan as something of a road map for creative ways of trying to address the flow problems on that side of the Divide as well. Thank you.	***Comment #456-1*** *(ID 113)**:*** *I'd like to echo some of the comments that have already been made in that the major issues that are concerned to us with this project are the cumulative effects on the rivers of upper Colorado, notably the Fraser, as well as the Colorado and South.* **Response #456-1:** The DEIS does address the collective effects of major water diversions in the upper Colorado Basin, as presented in Chapter 5 (see Table 5-2 and Section 5.6.1). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions, and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions. ***Comment #456-2*** *(ID 114)**:*** *An easy 18,000 acre-feet taken primarily during higher-flow seasons may not sound like a great deal, but when you lay it on top of many other diversions that already are in place and the Windy Gap Firming Project that's also being considered at the same time, as you already heard from Grand County Commissioner Newberry, you're looking at diverting almost three-quarters of that portion of the Colorado River. And that creates a different set of accumulated impacts that really need to be accounted for and considered and offset.* **Response #456-2:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the

Comment Information	Comment	Comments and Responses
		Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #456-3*** *(ID 115)**:*** *The environmental pool is a very good concept and could be very meaningfully benefiting South Boulder Creek. It will be important to make sure that's done with the right safeguards to ensure that that's using water here and not actually exacerbating problems on the other side. But with those kinds of safeguards, it's a very creative opportunity to help the environment here in any depleted streams.* **Response #456-3:** Through an Intergovernmental Agreement (IGA) with the cities of Boulder and Lafayette, only those entities may store their water rights in the Environmental

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		Pool. The IGA was signed by all parties in February 2010. Water stored by Boulder and Lafayette would include flow rights on South Boulder Creek or exchanged to Gross Reservoir from other locations in the South Platte River Basin. These exchanges would not change existing depletions from the Colorado River Basin. ***Comment #456-4*** *(ID 116)**:*** *I very much encourage the Corps, as well as Denver Water, to look to the recommendations emerging from the Grand County Stream Flow Management Plan as something of a road map for creative ways of trying to address the flow problems on that side of the Divide as well.* **Response #456-4:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11, and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15).

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #459 Clark Chapman, Member Preserve Unique Magnolia Association	*12-01-2009 Public Hearing Commenter (Boulder Country Club)* Clark Chapman, C-H-A-P-M-A-N, [redacted] I'm a member of the Preserve Unique Magnolia Association, a neighborhood association in the area of several -- that is 2 to 3 miles radius west of Gross Reservoir. This area will receive no benefits from this project. We receive no water. The project will impact us, however. And my personal view is that cities in the desert southwest -- and, effectively, that includes metro Denver, which if it had 2 inches less rainfall per year, would be officially a desert -- ought to live within their means and not put burdens on other people to satisfy the growth. And I also think people in our community, like Gross Reservoir, as it is --although it might be nice in a different way when it's finished. But the real impact on us will be what's planned to be four years, and if things go the way they usually go, will turn out to be six years of massive construction activity that has to feed in on the very limited network of roads that go past many of our houses and, certainly, the commute routs that people use to come down to Golden and Boulder, and so on, for work. And this is an area that several hundred families in the Magnolia area have repeatedly, in local opinion polls, have voted against the paving of the dirt roads in the neighborhood. They live there because they enjoy the pristine rural environment with horses and llamas and so on. And the trucks that will be bringing the gravel and sand in and out and the trees -- the tree removal mentioned in the Draft EIS will be a completely major impact on people, whether it happens on the weekends when they're used to having it peaceful and quiet, or clogs up the roads during commute hours. There are very few roads that lead in and out: Basically, Boulder Canyon Road and Coal Creek Canyon Road. And it seems to me incumbent on a project like this to give much more detail and specific attention in this EIS project to real ways of mitigating these impacts. Projects begin and they end, but when they last for four years or six years, it's a major part of people's lives and impacts them very seriously. And I really hope serious attention will be given to that. Also, I hope that the project maybe wouldn't be done because maybe Denver would realize that it's a city like Las Vegas or Phoenix and really ought to live within its means. Thanks.	***Comment #459-1*** *(ID 122)**:*** *I'm a member of the Preserve Unique Magnolia Association, a neighborhood association in the area of several -- that is 2 to 3 miles radius west of Gross Reservoir. This area will receive no benefits from this project. We receive no water. The project will impact us, however. And my personal view is that cities in the desert southwest -- and, effectively, that includes metro Denver, which if it had 2 inches less rainfall per year, would be officially a desert -- ought to live within their means and not put burdens on other people to satisfy the growth.* **Response #459-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #459-2*** *(ID 123)**:*** *But the real impact on us will be what's planned to be four years, and if things go the way they usually go, will turn out to be six years of massive construction activity that has to feed in on the very limited network of roads that go past many of our houses and, certainly, the commute routs that people use to come down to Golden and Boulder, and so on, for work. And this is an area that several hundred families in the Magnolia area have repeatedly, in local opinion polls, have voted against the paving of the dirt roads in the neighborhood. They live there because they enjoy the pristine rural environment with horses and llamas and so on. And the trucks that will be bringing the gravel and sand in and out and the trees -- the tree removal mentioned in the Draft EIS will be a completely major impact on people, whether it happens on the weekends when they're used to having it peaceful and quiet, or clogs up the roads during commute hours. There are very few roads that lead in and out: Basically, Boulder Canyon Road and Coal Creek Canyon Road. And it seems to me*

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		incumbent on a project like this to give much more detail and specific attention in this EIS project to real ways of mitigating these impacts. **Response #459-2:** The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on CR 77S, SH 72, SH 93, SH 128, US 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water met with CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns.

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		Comment #459-3 *(ID 125)**:*** *Projects begin and they end, but when they last for four years or six years, it's a major part of people's lives and impacts them very seriously. And I really hope serious attention will be given to that. Also, I hope that the project maybe wouldn't be done because maybe Denver would realize that it's a city like Las Vegas or Phoenix and really ought to live within its means.* **Response #459-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

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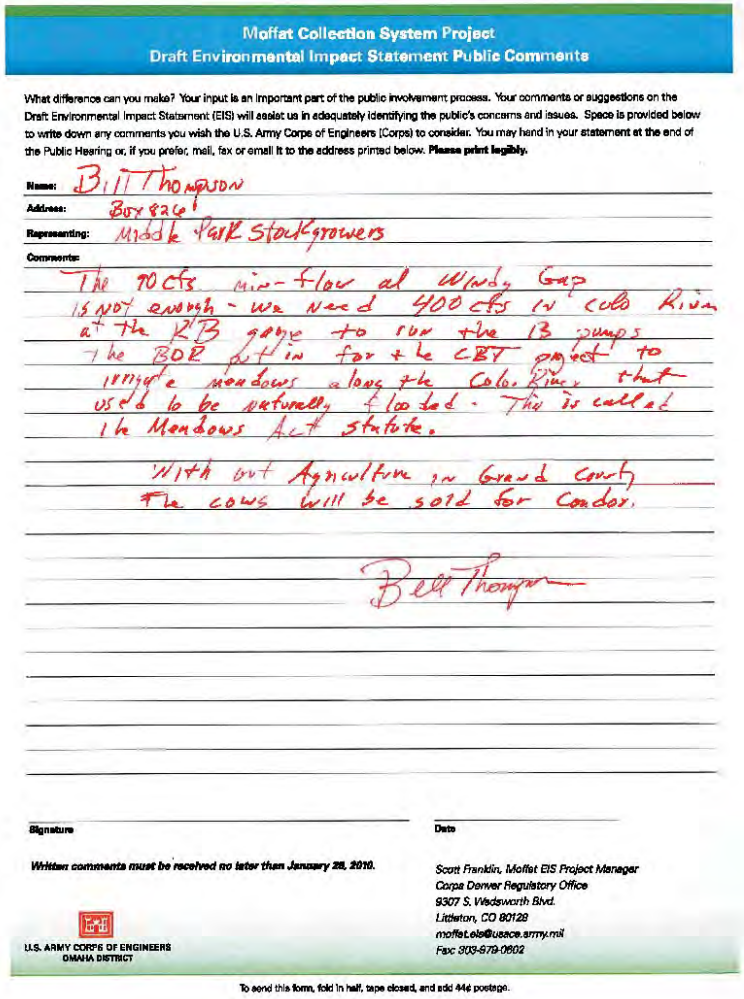
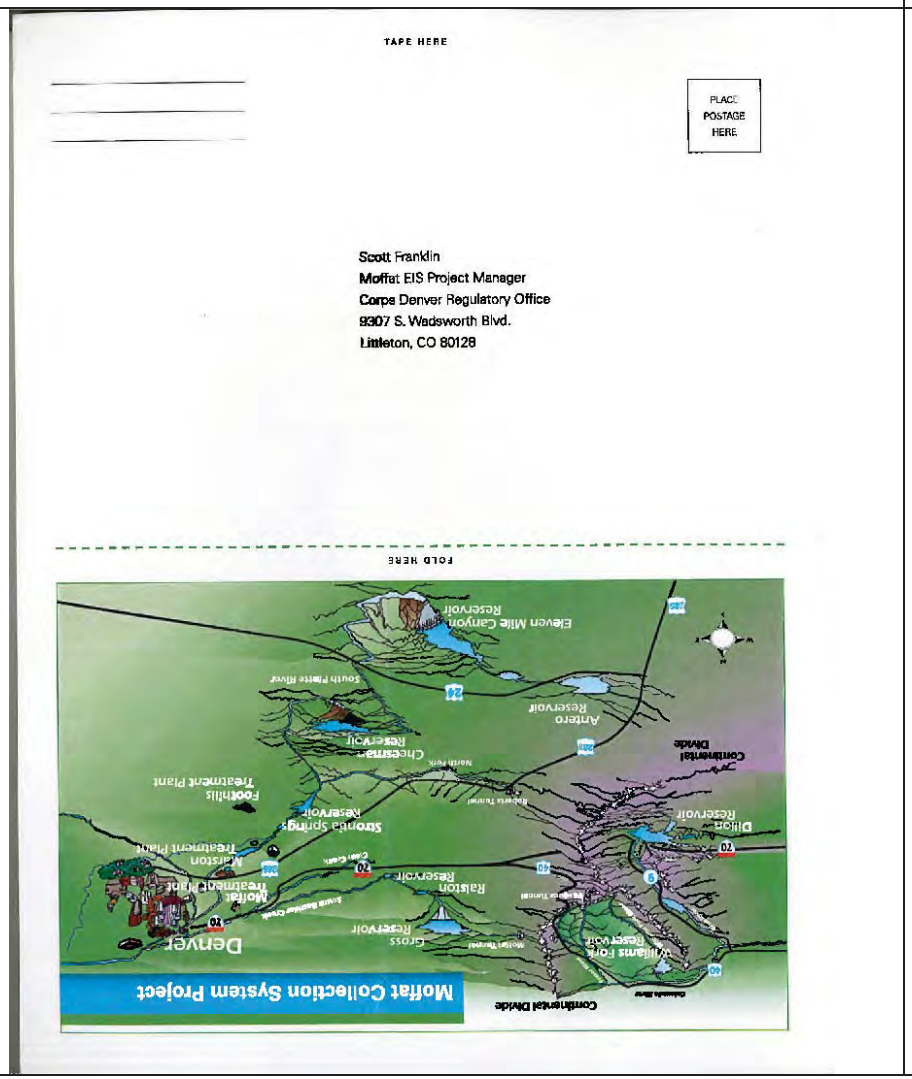
Comment #460 Bill Thompson Middle Park Stockgrowers	 **Moffat Collection System Project** **Draft Environmental Impact Statement Public Comments** What difference can you make? Your input is an important part of the public involvement process. Your comments or suggestions on the Draft Environmental Impact Statement (EIS) will assist us in adequately identifying the public's concerns and issues. Space is provided below to write down any comments you wish the U.S. Army Corps of Engineers (Corps) to consider. You may hand in your statement at the end of the Public Hearing or, if you prefer, mail, fax or email it to the address printed below. **Please print legibly.** Name: Bill Thompson Address: Box 8260 Representing: Middle Park Stockgrowers Comments: The 90 cfs min-flow at Windy Gap is not enough - we need 400 cfs in Colo River at the KB gauge to run the 13 pumps The BOR put in for the CBT project to irrigate meadows along the Colo. River that used to be naturally flooded. This is called the Meadows Act statute. With out Agriculture in Grand County the cows will be sold for Condos. Bill Thompson Signature Date *Written comments must be received no later than January 28, 2010.* *Scott Franklin, Moffat EIS Project Manager* *Corps Denver Regulatory Office* *9307 S. Wadsworth Blvd.* *Littleton, CO 80128* *moffat.eis@usace.army.mil* *Fax 303-979-0602* U.S. ARMY CORPS OF ENGINEERS OMAHA DISTRICT To send this form, fold in half, tape closed, and add 44¢ postage.	***Comment #460-1*** *(ID 10)**:*** *The 90 cfs min-flow at Windy Gap is not enough -- we need 400 cfs in Colo River at the KB gauge to run the 13 pumps.* **Response #460-1:** Several water rights that pump water from the Colorado River water between the confluence with the Williams Fork River and the Kremmling gage were granted senior status in relation to C-BT Project water rights per Senate Document 80. While these rights were granted senior status with respect to the C-BT Project, they are operated in strict priority in relation to Denver Water's water rights. The physical ability for some of these water rights to pump water from the Colorado River can be limited during dry years and late in the summer when flows in the Colorado River are low. The proposed Moffat Project would not affect low flows because there would be no additional diversions in dry years due to the Moffat Project. In dry years and late in the summer, Denver Water already diverts the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the proposed Moffat Project. In addition, Denver Water's out-of-priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no change in Colorado River flows below the confluence with the Williams Fork River due to Denver Water's out-of-priority diversions. In summary, there would be little to no impact on the ability of these water rights to pump from the Colorado River due to the proposed Moffat Project. ***Comment #460-2*** *(ID 11)**:*** *The BOR put in for the CBT project to irrigate meadows along the Colo. River that used to be naturally flooded. This is called the Meadows Act*

Comment Information	Comment	Comments and Responses
	 TAPE HERE PLACE POSTAGE HERE Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 FOLD HERE 	*Statute.* **Response #460-2:** The Corps notes the comment. Please see the response to Comment Identification (ID) 10. ***Comment #460-3*** *(ID 12)**:*** *Without agriculture in Grand County the cows will be sold for candor.* **Response #460-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #461 John Brooks, Representative Greater Grand Lake Shoreline Association	*12-01-2009 Public Hearing Commenter (Boulder Country Club)* Thank you, sir. John Brooks. Thank you for the opportunity here to testify. My name is John Brooks, B-R-O-O-K-S, [redacted] I'm here representing GGLSA, which is the Greater Grand Lake Shoreline Association, a group that is vitally concerned with the health and prosperity of Grand Lake. As some of you may know, about a year and a half ago, the Colorado Water Control Commission met and issued in a landmark decision the first ever clarity standard for a lake in Colorado. That was an attempt to get us somewhere close to solving some of the problems created by the Big Thompson Project. Now, given that, we understand that the Fraser River under the Moffat Firming Project will be further diverted to Denver, leaving what's left of the Fraser more loaded with nutrients coming out of the Fraser Valley. It will end up in Windy Gap Reservoir, and from there will be pumped up into Grand Lake through the Adams Tunnel to the Front Range. Now, given that that nutrient loading will be added to what's already an unacceptable loading of nutrients coming from Shadow Mountain into Grand Lake, we were astounded to see that no mention of Grand Lake was made in the EIS; no mention of the economic impact to Grand Lake was made in the EIS. We would ask, therefore, that the impact to Grand Lake be addressed in the EIS and that mitigation for that impact also be addressed. Thank you.	***Comment #461-1*** *(ID 126)**:*** *As some of you may know, about a year and a half ago, the Colorado Water Control Commission met and issued in a landmark decision the first ever clarity standard for a lake in Colorado. That was an attempt to get us somewhere close to solving some of the problems created by the Big Thompson Project.* *Now, given that, we understand that the Fraser River under the Moffat Firming Project will be further diverted to Denver, leaving what's left of the Fraser more loaded with nutrients coming out of the Fraser Valley. It will end up in Windy Gap Reservoir, and from there will be pumped up into Grand Lake through the Adams Tunnel to the Front Range.* *Now, given that that nutrient loading will be added to what's already an unacceptable loading of nutrients coming from Shadow Mountain into Grand Lake, we were astounded to see that no mention of Grand Lake was made in the EIS; no mention of the economic impact to Grand Lake was made in the EIS.* *We would ask, therefore, that the impact to Grand Lake be addressed in the EIS and that mitigation for that impact also be addressed.* **Response #461-1:** Additional water quality analyses have been performed on the Fraser River and the Three Lakes area, including various temperature studies. Please refer to FEIS Sections 4.6.2 and 5.2. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. DEIS Section 4.17 does include an analysis of economic and demographic impacts to Grand County under each alternative. The West Slope agricultural and recreational economies were further addressed in FEIS Section 5.19.

Comment Information	Comment	Comments and Responses
Comment #462 Steve Paul, President Greater Grand Lake Shoreline Association	*12-01-2009 Public Hearing Commenter (Boulder Country Club)* My name is Steve Paul, P-A-U-L, [redacted] The zip is [redacted] I'm president of the Greater Grand Lake Shoreline Association. John just explained what the letters mean. I wanted to talk about a couple things. As you may or may not be aware, the Colorado Water Quality Control Commission is going to have a hearing in June of 2011 to establish statewide standards for nutrient loading in rivers. This is particularly relevant because of the increased nutrient loading we're anticipating additional water being taken out by the Moffat Firming, as well as Windy Gap. We're very concerned about this nutrient loading because Shadow Mountain Reservoir can't handle the nutrient loading that it has now. We see a plethora of weeds, algae, algal toxins approaching World Health Organization's limits already. And this is only going to exacerbate that. And as John pointed out, nowhere in the EIS that we've been able to find has it been mentioned. We'd like to ask for a 45-day extension, also, along with the other people so that we can further examine it and see if there is something in there that we've missed. I applaud Denver for their conservation efforts in the 16,000 acre-feet. I would like to suggest, however -- I think 13A is one of the alternatives that talked about taking agricultural land out of irrigation. What I'd like to suggest is that Denver take the land that they were irrigating in a noncash crop known as Kentucky bluegrass in the properties that they own, in between the sidewalk and the street throughout the city of Denver -- they control that property, they can determine -- they can tell you whether you can grow a tree or take it down. They can tell you whether you can grow grass on it or not. That would be a great step and easy way to achieve this 34,000 acre-feet without taking another drop out of Grand County. The other thing, we need a paradigm shift here. Water resources are finite. Just because Denver needs more water doesn't mean Grand County is going to create more water. Maybe if we get hydrogen-powered vehicles that have water as a by-product, we can create some water. Otherwise, we need to start living within our means. And if we want more people to come in, we need to figure out more ways to conserve water. Thank you.	***Comment #462-1*** *(ID 129)**:*** *As you may or may not be aware, the Colorado Water Quality Control Commission is going to have a hearing in June of 2011 to establish statewide standards for nutrient loading in rivers. This is particularly relevant because of the increased nutrient loading we're anticipating additional water being taken out by the Moffat Firming, as well as Windy Gap.* **Response #462-1:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. That additional analysis includes potential changes in nutrient concentrations and loading. ***Comment #462-2*** *(ID 130)**:*** *We're very concerned about this nutrient loading because Shadow Mountain Reservoir can't handle the nutrient loading that it has now. We see a plethora of weeds, algae, algal toxins approaching World Health Organization's limits already. And this is only going to exacerbate that. And as John pointed out, nowhere in the EIS that we've been able to find has it been mentioned.* **Response #462-2:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #462-3*** *(ID 131)**:*** *We'd like to ask for a 45-day extension, also, along with the other people so that we can further examine it and see if there is something in there that we've missed.*

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		Response #462-3: The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #462-4*** *(ID 132)**:*** *I applaud Denver for their conservation efforts in the 16,000 acre-feet. I would like to suggest, however -- I think 13A is one of the alternatives that talked about taking agricultural land out of irrigation. What I'd like to suggest is that Denver take the land that they were irrigating in a noncash crop known as Kentucky bluegrass in the properties that they own, in between the sidewalk and the street throughout the city of Denver -- they control that property, they can determine -- they can tell you whether you can grow a tree or take it down. They can tell you whether you can grow grass on it or not. That would be a great step and easy way to achieve this 34,000 acre-feet without taking another drop out of Grand County.*

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		Response #462-4: Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #462-5*** *(ID 133)**:*** *The other thing, we need a paradigm shift here. Water resources are finite. Just because Denver needs more water doesn't mean Grand County is going to create more water. Maybe if we get hydrogen-powered vehicles that have water as a by-product, we can create some water. Otherwise, we need to start living within our means. And if we want more people to come in, we need to figure out more ways to conserve water.* **Response #462-5:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #474 Stephen E. Paul, President Greater Grand Lake Shoreline Association P.O. Box 1096 Grand Lake, CO 80447	From: Steve Paul [mailto:[redacted] Sent: Saturday, February 27, 2010 1:18 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Firming Project Comments Mr. Scott Franklin, Attached are comments on the Moffat Firming project to supplement comments made at the Boulder meeting in December 2009. Thank you for your consideration of the issues we have raised. Regards, Steve Paul Pres. Greater Grand Lake Shoreline Assoc. - Corps_MoffatFirm 27Feb10.doc	***Comment #474-8*** *(ID 3516)**:*** *This letter is to amplify comments made at the Boulder meeting in December, 2009. We are not opposed to the construction of an enlarged dam at Gross Reservoir, however we are adamantly opposed to filling it by diverting additional water from the already badly depleted Fraser River.* **Response #474-8:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #474-7*** *(ID 3515)**:*** *At the meeting in Boulder, as President and designated representative of the Greater Grand Lake Shoreline Assoc., I called for a paradigm shift in everyone's thinking. We need to match the anticipated increase in demand with the same amount of conservation. We must learn to live within our "water" means just as each of us must learn to live within our "financial" means. Denver Water's conservation efforts are admirable but half-way is simply not good enough. All 34,000 acre feet needed in the next 20 years must be obtained through conservation. Over half of the water Denver Water uses (some estimates are as high as 62%) goes to irrigating a non-cash crop known as Kentucky blue grass. We live in Colorado not Kentucky; Denver Water's service area is a high plains desert situated at 5000 feet, not the 500 ft. at which Kentucky is situated. The EIS talks about drying up agricultural use in option 13a, but fails to consider drying up the Kentucky blue grass. Denver owns the property between the sidewalk and the street; you can't plant or cut down a tree without their permission. Convert all of this Denver property into Xeriscaped ground and see how much water you can save.*

Comment Information	Comment	Comments and Responses
	Attachments: Greater Grand Lake Shoreline Association P. O. Box 1096 Grand Lake, CO 80447-1096 Mr. Scott Franklin, Moffat EIS Mngr. Corps Denver Regulatory Office 9307 So. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin, This letter is to amplify comments made at the Boulder meeting in December, 2009. We are not opposed to the construction of an enlarged dam at Gross Reservoir, however we are adamantly opposed to filling it by diverting additional water from the already badly depleted Fraser River. 1. At the meeting in Boulder, as President and designated representative of the Greater Grand Lake Shoreline Assoc., I called for a paradigm shift in everyone's thinking. We need to match the anticipated increase in demand with the same amount of conservation. We must learn to live within our "water" means just as each of us must learn to live within our "financial" means. Denver Water's conservation efforts are admirable but half-way is simply not good enough. All 34,000 acre feet needed in the next 20 years must be obtained through conservation. Over half of the water Denver Water uses (some estimates are as high as 62%) goes to irrigating a non-cash crop known as Kentucky blue grass. We live in Colorado not Kentucky, Denver Water's service area is a high plains desert situated at 5000 feet, not the 500 ft. at which Kentucky is situated. The EIS talks about drying up agricultural use in option 13a, but fails to consider drying up the Kentucky blue grass. Denver owns the property between the sidewalk and the street; you can't plant or cut down a tree without their permission. Convert all of this Denver property into Xeriscaped ground and see how much water you can save. It is fantasy indeed to think Denver can perpetually get more water from the Fraser, or any other river. Another conservation suggestion is the installation of zero flush urinals on all city property. I imagine Mayor Hickenlooper could talk to his business associates and get them to do the same. Save money, save water, save the Fraser. The clean water act requires the Corps to approve only the least environmentally damaging alternative, and totally meeting the demand through conservation was not even considered. 2. Taking additional water from the Fraser will, of necessity, increase the nutrient loading which is then pumped into Grand Lake by Northern Water's Windy Gap project. The water goes through Shadow Mtn. Res. before coming into Grand Lake and Shadow Mtn. Res. cannot handle the nutrient loading it has now. This will further decrease water clarity and the scenic beauty of Grand Lake which is already burdened by a decrease in clarity from 9 meters in 1941 to 1.57 meters in 2007. 3. The Moffat draft EIS does not consider the combined effect of the Moffat Project and the Windy Gap project as if there were two Fraser rivers. There is only one (here in Colorado) and the two projects together will reduce the Fraser to 26% of its native flow. While it may sound "o.k." to take the extra water in a run-off period, where are the studies showing the run-off is no longer needed to cleanse the river? The run-off helps	*It is fantasy indeed to think Denver can perpetually get more water from the Fraser, or any other river. Another conservation suggestion is the installation of zero flush urinals on all city property. I imagine Mayor Hickenlooper could talk to his business associates and get them to do the same. Save money, save water, save the Fraser. The clean water act requires the Corps to approve only the least environmentally damaging alternative, and totally meeting the demand through conservation was not even considered.* **Response #474-7:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver

Comment Information	Comment	Comments and Responses
	provide a flushing action effect for the river which is increasingly important when you consider the need to flush agricultural run-off and the mag-chloride which finds its way to the river each year. 4. To avoid permanent damage to the Fraser River System, the permit should contain and guarantee adequate year around base line stream flows in the Fraser, Colorado, and Williams Fork rivers and guarantee adequate flushing and channel maintenance flows necessary for maintaining the rivers' ecosystems. The permit should also prohibit diversions when stream temperatures threaten to exceed state standard protective of aquatic life. The permit should incorporate the stream management plan that has been put forth by Grand County. Further, the Corps should require, as part of the EIS, that the gauges monitoring the bypass flows are placed directly below Denver Water's diversion points to ensure accurate measurement of bypass flows. 5. The Colorado Water Quality Control Commission will hold hearings in June, 2011 to establish statewide nutrient standards. It is inappropriate to approve this project prior to these hearings and the standards being set, all the while knowing that the nutrient loading will be increased by additional diversions from the Fraser. 6. In the EIS, socioeconomic impacts talk about "Severe and more frequent mandatory watering restrictions, including surcharges, may result in a reduced quality of life and place financial burden on customers." Where is the cost comparison between planned rate increases to pay for the Moffat firming project and surcharges needed? Will increased cost not reduce consumption? What about quality of life in Grand County – and boating on the Fraser (p.45 of Exec. Summary) is not what we're talking about. You have not adequately considered the financial burden to Grand County tourism by reducing the flows in the Fraser and increasing nutrients to make worse the pea green water that is being pumped into Grand Lake from Shadow Mtn. Res. You have not considered the possibility of population increases somewhere besides the Denver Metro area. The draft EIS needs to be revised to include: an all conservation option, the nutrient and socio-economic impact on Grand Lake and Grand County, the combined impact of Windy Gap firming and Moffat firming projects, a guarantee on flows, and full consideration of and conformation to the statewide nutrient standards to be set in 2011. Respectfully, Stephen E. Paul Pres. Greater Grand Lake Shoreline Assoc. Cc: Sec. Ken Salazar Gov. Bill Ritter Senator Mark Udall Senator Michael Bennet Representative Jared Polis Mayor John Hickenlooper Mr. Michael Collins	Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #474-6*** *(ID 3514)**:*** *Taking additional water from the Fraser will, of necessity, increase the nutrient loading which is then pumped into Grand Lake by Northern Water's Windy Gap project. The water goes through Shadow Mtn. Res. before coming into Grand Lake and Shadow Mtn. Res. cannot handle the nutrient loading it has now. This will further decrease water clarity and the scenic beauty of Grand Lake which is already burdened by a decrease in clarity from 9 meters in 1941 to 1.57 meters in 2007.* **Response #474-6:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. This additional analysis includes potential changes in nutrient concentrations and loading.

Comment Information	Comment	Comments and Responses
		Comment #474-5 *(ID 3513)**:*** *The Moffat draft EIS does not consider the combined effect of the Moffat Project and the Windy Gap project as if there were two Fraser rivers. There is only one (here in Colorado) and the two projects together will reduce the Fraser to 26% of its native flow. While it may sound "o.k." to take the extra water in a run-off period, where are the studies showing the run-off is no longer needed to cleanse the river? The run-off helps provide a flushing action effect for the river which is increasingly important when you consider the need to flush agricultural run-off and the mag-chloride which finds its way to the river each year.* **Response #474-5:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS

Comment Information	Comment	Comments and Responses
		Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #474-4*** *(ID 3512)**:*** *To avoid permanent damage to the Fraser River System, the permit should contain and guarantee adequate year around base line stream flows in the Fraser, Colorado, and Williams Fork rivers and guarantee adequate flushing and channel maintenance flows necessary for maintaining the rivers' ecosystems. The permit should also prohibit diversions when stream temperatures threaten to exceed state standard protective of aquatic life. The permit should incorporate the stream management plan that has been put forth by Grand County.* *Further, the Corps should require, as part of the EIS, that the gauges monitoring the bypass flows are placed directly below Denver Water's diversion points to ensure accurate measurement of bypass flows.* **Response #474-4:** The proposed Moffat Project would not divert additional water in dry years. As described in FEIS Section 5.1, the majority of additional water would be diverted during the months of May, June, and July during run-off – not during low flow periods. Denver Water would not increase its diversions during the fall and winter months and existing bypass flow requirements would not change. Denver Water has committed to provide flushing flows in the Fraser River, St. Louis Creek, Vasquez Creek and Ranch Creek. Denver Water has also committed to forgo diversions when stream temperatures associated with low flow conditions are elevated. Refer to FEIS Appendix M for a description of the proposed mitigation measures. The Corps is considering imposing such permit conditions to mitigate effects in the aquatic environment, if a permit is issued. In addition, to compliment the mitigation

Comment Information	Comment	Comments and Responses
		measures, Denver Water is committed to the LBD Cooperative Effort to enhance the existing environment and stream flow conditions (FEIS Section 4.3.1). For example, Denver Water will work with the Management Committee of the LBD Cooperative Effort to coordinate operations of its diversion structures in an effort to provide flushing flows, enhance peak spring flows and/or augment low flows. Specific enhancements that could address low flow and flushing flows include: • 1,000 AF annually of bypass water from the Fraser Collection System for environmental purposes. • Up to 1,000 AF annually of releases from Williams Fork Reservoir and 2,500 AF of carry over storage in Williams Fork Reservoir for environmental purposes. • Denver Water agrees not to reduce USFS bypass flows during a drought unless Denver Water has banned all residential lawn watering in its service area (Denver Water has never banned residential lawn watering). FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (see Sections 4.6.2 and 5.2). In addition to monitoring stream temperatures, Denver Water has proposed to bypass additional water when stream temperatures reach a certain level.

Comment Information	Comment	Comments and Responses
		The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), channel morphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. ***Comment #474-3*** *(ID 3511)**:*** *The Colorado Water Quality Control Commission will hold hearings in June, 2011 to establish statewide nutrient standards. It is inappropriate to approve this project prior to these hearings and the standards being set, all the while knowing that the nutrient loading will be increased by additional diversions from the Fraser.* **Response #474-3:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. This additional analysis includes potential changes in nutrient concentrations and loading and considers the latest listings adopted by CDPHE in 2012. ***Comment #474-2*** *(ID 3510)**:*** *In the EIS, socioeconomic impacts talk about "Severe and more frequent mandatory watering restrictions, including surcharges, may result in a reduced quality of life and place financial burden on customers." Where is the cost comparison between planned rate increases to pay for the Moffat firming project and surcharges needed? Will increased cost not reduce consumption? What about quality of life in Grand County – and boating on the Fraser (p.45 of Exec.*

Comment Information	Comment	Comments and Responses
		Summary) is not what we're talking about. You have not adequately considered the financial burden to Grand County tourism by reducing the flows in the Fraser and increasing nutrients to make worse the pea green water that is being pumped into Grand Lake from Shadow Mtn. Res. You have not considered the possibility of population increases somewhere besides the Denver Metro area. **Response #474-2:** The timing, frequency and severity of mandatory restrictions under the No Action alternative are dependent on a number of factors, including the expected or actual reservoir storage levels on July 1st, as described in Chapter 2. Specific restrictions would likely vary from year to year in terms of type of restriction and degree. Due to the uncertainties surrounding specific annual restrictions, no quantitative calculations of potential surcharges can be made and the discussion of socioeconomic impacts under the No Action alternative must be qualitative in nature. However, DEIS Section 4.17 does include calculations of projected water rate increases for customers under the No Action and all action alternatives; this information can be found in the Financial Impacts to Denver Water Customers section for each alternative. Reduced consumption from higher rates is accounted for in the water demand projections. Additional or expanded analyses of socioeconomic impacts to Grand County were included in the FEIS as appropriate and applicable. Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to Sections 4.6.2 and 5.2 of the FEIS. ***Comment #474-1*** *(ID 3509)**:*** *The draft EIS needs to be revised to include: an all conservation option, the nutrient and socio-economic*

Comment Information	Comment	Comments and Responses
		impact on Grand Lake and Grand County, the combined impact of Windy Gap firming and Moffat firming projects, a guarantee on flows, and full consideration of and conformation to the statewide nutrient standards to be set in 2011. **Response #474-1:** A Statewide nutrient standard has not been developed; however, additional analysis has been performed related to nutrients in the Fraser River and the Three Lakes system. Please refer to FEIS Sections 4.6.2 and 5.2. The cumulative effects of the Project alternatives and the WGFP were considered in the analysis presented in FEIS Section 4.3.1. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year

Comment Information	Comment	Comments and Responses
		conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. DEIS Section 4.17 does include an analysis of economic and demographic impacts to Grand County under each alternative. The West Slope agricultural and recreational economies were further addressed in FEIS Section 5.19. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. Minimum flows were considered as part of the evaluation of mitigation.

Comment Information	Comment	Comments and Responses
Comment #484 Mely Whiting Trout Unlimited and Bart Miller Western Resource Advocates and Becky Long Colorado Environmental Coalition and David Nickum Colorado Trout Unlimited and Gary Wockner Clean Water Action and Steve Glazer Rocky Mountain Chapter of the Sierra Club	November 23, 2009 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 VIA Email: Moffat.eis@usace.army.mil RE: Moffat Collection System Project (Permit Application NOW-2002080762-DEN) DEIS Public Comment Deadline extension request. Dear Mr. Franklin, On behalf of the undersigned organizations, representing thousands of Colorado citizens, I respectfully request that you consider a comment period extension of forty-five (45) days, moving the deadline to March 14th, for the Moffat Collection System Project Draft Environmental Impact Statement (DEIS). As you know, the development of the DEIS, including hundreds of pages of technical addendums, has taken years to complete and the totals thousands of pages. This dense, technical document should be analyzed in a detailed fashion, and a small extension of 45 days would provide our organizations and individual members with the opportunity to provide more substantive comments to the US Army Corps in response to this proposed project. Additionally given the timing of the release, and Public Comment periods coinciding with Thanksgiving, many December Holidays, and the New Year, many are unable to commit 90 consecutive days to reviewing this project. Additional time after the New Year would help ease this constraint. Finally, many of our individual members have expressed technical issues in accessing the DEIS electronically from the US Army Corps website, forcing members of the public to either turn away from the public comment process, delay accessing the document, or need additional time to review hard copies of the documents at public libraries. Additionally there appear to be crucial technical documents not posted online, including the aquatics report, a critically important document for many of our members. A cornerstone of the National Environmental Policy Act (NEPA) is the public comment process, and inability to access the documents is a barrier to public comment and review of the Moffat Collection System Project. We feel that a small extension will help overcome these challenges and generate stronger public involvement. Thank you for your consideration, Becky Long Colorado Environmental Coalition Steve Glazer Rocky Mountain Chapter of the Sierra Club Mely Whiting Trout Unlimited Gary Wockner Clean Water Action David Nickum Colorado Trout Unlimited Bart Miller Western Resource Advocates	***Comment #484-1*** *(ID 20)**:*** *On behalf of the undersigned organizations, representing thousands of Colorado citizens, I respectfully request that you consider a comment period extension of forty-five (45) days, moving the deadline to March 14th, for the Moffat Collection System Project Draft Environmental Impact Statement (DEIS). As you know, the development of the DEIS, including hundreds of pages of technical addendums, has taken years to complete and the totals thousands of pages. This dense, technical document should be analyzed in a detailed fashion, and a small extension of 45 days would provide our organizations and individual members with the opportunity to provide more substantive comments to the US Army Corps in response to this proposed project. Additionally given the timing of the release, and Public Comment periods coinciding with Thanksgiving, many December Holidays, and the New Year, many are unable to commit 90 consecutive days to reviewing this project. Additional time after the New Year would help ease this constraint.* **Response #484-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a

Comment Information	Comment	Comments and Responses
		timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #484-2*** *(ID 21)**:*** *Finally, many of our individual members have expressed technical issues in accessing the DEIS electronically from the US Army Corps website, forcing members of the public to either turn away from the public comment process, delay accessing the document, or need additional time to review hard copies of the documents at public libraries. Additionally there appear to be crucial technical documents not posted online, including the aquatics report, a critically important document for many of our members. A cornerstone of the National Environmental Policy Act (NEPA) is the public comment process, and inability to access the documents is a barrier to public comment and review of the Moffat Collection System Project.* **Response #484-2:** Corps Website The Corps' website is part of a U.S. Army website that contains special security measures, one of which is a Security Warning. The Corps communicated to commenters that it was safe to continue through the warning. Comment Period Extension The Corps extended the comment review period twice to allow the public additional time to review the document. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period

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Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #485 Bart Miller Western Resource Advocates and Becky Long Colorado Environmental Coalition and David Nickum Colorado Trout Unlimited and Gary Wockner Clean Water Action and Mely Whiting Trout Unlimited and Steve Glazer Rocky Mountain Chapter of the Sierra Club	November 24, 2009 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 VIA Email: Moffat.eis@usace.army.mil RE: Moffat Collection System Section 404 Permit Public Comment Period extension request Dear Mr. Franklin, On behalf of the undersigned organizations, representing thousands of Colorado citizens, I respectfully request that you consider a comment period extension of forty-five (45) days, moving the deadline to March 14th, for the Moffat Collection System Section 404 Permit public comment period. As you know, the development of the Moffat Project, including the Section 404 application has taken years to complete, and relies on the Moffat Collection System Project DEIS, including hundreds of pages of technical addendums, has taken years to complete and the DEIS totals thousands of pages. This dense, technical document should be analyzed in a detailed fashion, and a small extension of 45 days would provide our organizations and individual members with the opportunity to provide more substantive comments to the US Army Corps in response to this proposed project. Additionally given the timing of the release, and Public Comment period coinciding with Thanksgiving, many December Holidays, and the New Year, many are unable to commit 90 consecutive days to reviewing this project. Additional time after the New Year would help ease this constraint. Finally, many of our individual members have expressed technical issues in accessing the DEIS electronically from the US Army Corps website, forcing members of the public to either turn away from the public comment process, delay accessing the document, or need additional time to review hard copies of the documents at public libraries. A cornerstone of the National Environmental Policy Act (NEPA) is the public comment process, and inability to access the documents is a barrier to public comment and review of the Moffat Collection System Project. Difficulty in accessing the DEIS, also means that our organizations and many others have difficulties in providing substantive comments on the Section 404 Permit Application . We feel that a small extension will help overcome these challenges and generate stronger public involvement. Thank you for your consideration, Becky Long Colorado Environmental Coalition Steve Glazer Rocky Mountain Chapter of the Sierra Club Mely Whiting Trout Unlimited Gary Wockner Clean Water Action David Nickum Colorado Trout Unlimited Bart Miller Western Resource Advocates	***Comment #485-1*** *(ID 23)**:*** *On behalf of the undersigned organizations, representing thousands of Colorado citizens, I respectfully request that you consider a comment period extension of forty-five (45) days, moving the deadline to March 14th, for the Moffat Collection System Section 404 Permit public comment period. As you know, the development of the Moffat Project, including the Section 404 application has taken years to complete, and relies on the Moffat Collection System Project DEIS, including hundreds of pages of technical addendums, has taken years to complete and the DEIS totals thousands of pages. This dense, technical document should be analyzed in a detailed fashion, and a small extension of 45 days would provide our organizations and individual members with the opportunity to provide more substantive comments to the US Army Corps in response to this proposed project. Additionally given the timing of the release, and Public Comment period coinciding with Thanksgiving, many December Holidays, and the New Year, many are unable to commit 90 consecutive days to reviewing this project. Additional time after the New Year would help ease this constraint.* **Response #485-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in

Comment Information	Comment	Comments and Responses
		the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #485-2*** *(ID 24)**:*** *Finally, many of our individual members have expressed technical issues in accessing the DEIS electronically from the US Army Corps website, forcing members of the public to either turn away from the public comment process, delay accessing the document, or need additional time to review hard copies of the documents at public libraries. A cornerstone of the National Environmental Policy Act (NEPA) is the public comment process, and inability to access the documents is a barrier to public comment and review of the Moffat Collection System Project. Difficulty in accessing the DEIS, also means that our organizations and many others have difficulties in providing substantive comments on the Section 404 Permit Application.* **Response #485-2:** Corps Website The Corps' website is part of a U.S. Army website that contains special security measures, one of which is a Security Warning. The Corps communicated to commenters that it was safe to continue through the warning. Comment Period Extension The Corps extended the comment review period twice to allow the public additional time to review the document. An NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for

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		the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #485-3*** *(ID 25)**:*** *We feel that a small extension will help overcome these challenges and generate stronger public involvement.* **Response #485-3:** The Corps notes the comment.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #496 Mike Barrow, Representative Boulder Mountain Bike Alliance	*12-01-2009 Public Hearing Commenter (Boulder Country Club)* I'm Mike Barrow, B-A-R-R-O-W, [redacted] I'm -- I'm a self-professed public lands recreation advocate. I'm here on behalf of the Boulder Mountain Bike Alliance. We work on recreation issues throughout Boulder County. And I'm pretty conflicted after I've come and listened to all you folks tonight about the changes that this project would give. The reason why I came tonight is that we have a very long-term goal project that we're trying to create a trail that will get you from the Divide all the way to the plains. And the South Boulder Creek drainage is a perfect opportunity waiting to happen. We've been working for the last seven to ten years with the City of Boulder, Eldorado Canyon State Park, Boulder County, and the U.S. Forest Service to make this happen. Needless to say, Gross Reservoir sits right in the middle of this. But -- and I would encourage the Corps to look at these recreation opportunities that are called out for in the Boulder County Comprehensive Plan. And I don't know whether or not your -- your process has even looked at the Boulder County Comprehensive Plan to see if you can integrate some of the goals that we, as a community, have agreed upon with your own goals. That being said, I have to agree with the folks in PUMA that a construction project over six years is going to impact everybody up in the hills, and that has to be addressed a lot more. And I don't -- I'm not sure, but a bigger Gross Reservoir is going to be a bigger draw for people. It's going to change the nature of that neighborhood, the whole general area. And I would like to see, you know, any project that goes forward do a better job of addressing those concerns. Thank you.	***Comment #496-1*** *(ID 217)**:*** *The reason why I came tonight is that we have a very long-term goal project that we're trying to create a trail that will get you from the Divide all the way to the plains. And the South Boulder Creek drainage is a perfect opportunity waiting to happen. We've been working for the last seven to ten years with the City of Boulder, Eldorado Canyon State Park, Boulder County, and the U.S. Forest Service to make this happen. Needless to say, Gross Reservoir sits right in the middle of this. But -- and I would encourage the Corps to look at these recreation opportunities that are called out for in the Boulder County Comprehensive Plan. And I don't know whether or not your -- your process has even looked at the Boulder County Comprehensive Plan to see if you can integrate some of the goals that we, as a community, have agreed upon with your own goals.* **Response #496-1:** The Boulder County Comprehensive Plan was consulted as part of the Corps' analysis. The Project would not conflict with potential future trail corridors. The Boulder County Comprehensive Plan identifies a Conceptual Trail Corridor near Gross Reservoir; however, as the Boulder County Comprehensive Plan states: " A Conceptual Trail Corridor is a general course that usually links specific destinations, but no landscape feature or specific location has been determined for the trail itself. Corridors are depicted on the map with a dotted symbol in order to portray their inexact location." Potential trail opportunities would remain following an expansion of Gross Reservoir. ***Comment #496-2*** *(ID 218)**:*** *That being said, I have to agree with the folks in PUMA that a construction project over six years is going to impact everybody up in the hills, and that has to be addressed a lot more. And I don't -- I'm not sure,*

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		but a bigger Gross Reservoir is going to be a bigger draw for people. It's going to change the nature of that neighborhood, the whole general area. And I would like to see, you know, any project that goes forward do a better job of addressing those concerns. **Response #496-2:** As described in Section 2.8.1, the anticipated construction scheduled for the Proposed Action is 4.1 years. At the anticipated normal water elevation of 7,400 feet, an enlarged Gross Reservoir under the Proposed Action is anticipated to have a surface area of approximately 818 acres. This represents an additional 400 acres, approximately double the existing surface area of the reservoir. Prior to 2005 no boating was permitted at the reservoir. Per the FERC Gross Reservoir Recreation Management Plan, car top boating is now allowed from Memorial Day through the end of September each year. Enlarging the surface area of the reservoir would provide substantial additional space on which people can recreate via car top boating. Additionally, reservoir enlargement would create additional shoreline. At the anticipated normal water elevation of 7,400 feet, the enlarged reservoir is anticipated to have approximately 13.5 miles of shoreline, representing an additional 2.6 miles more than exists currently. The presence of additional shoreline may provide additional dispersed shoreline recreation opportunities such as additional fishing access. Even though an expanded shoreline would provide a larger pool at high water, the overall attractiveness of the reservoir to recreational users is not expected to substantially change. Much of the reservoir shoreline would remain steep and seasonal fluctuations in water levels would continue. For these reasons, a

Comment Information	Comment	Comments and Responses
		major increase in visitation is not expected. Nonetheless, any additional recreation opportunities created as a result of an enlarged reservoir may result in some increased use and therefore may increase traffic on certain roads leading to the reservoir. Denver Water intends to adhere to its Recreation Management Plan, which was approved by FERC with considerable stakeholder and agency input. There would be no increase in parking spaces, seasons and/or hours of operation, or changes to the types of activities that are currently prohibited. No additional developed recreation sites are planned. FEIS Section 5.19 provided additional analysis and discussion as appropriate regarding impacts to communities surrounding Gross Reservoir.

Comment Information	Comment	Comments and Responses
Comment #511 Mattie Wade, [redacted]	*01-07-2010 Public Hearing Commenter (Beaver Run Resort)* Hello, my name is Mattie Wade; M-a-t-t-i-e, W-a-d-e. I live at [redacted] as in [redacted] I own [redacted] < > Okay. Did you catch that? I support everything that's been said here tonight. I think it's great comments, and that needs to be looked at. A couple things, some points I want to bring up to you, is, on the DEIS, conservation needs to be written into it. There are no conservation issues, whatsoever, in that document. I think that would probably solve 70 percent of this Moffat plan. If Denver was able to start up a conservation area and by conserving water down there, they wouldn't need the water to take up from up here. Also, possibly looking at a surcharge for the people down in Denver that are using extra water to water their lawns and water their grass, that's blue green -- that's blue Kentucky grass, which takes much more water than any other kind, any other kind of grass; and looking at other types of native grass to Colorado that doesn't use the water that happens. Also everything needs to be in writing. I found out about a meeting that happened, that nobody knew about. And I'm still trying to find information about that. It happened over in Grand County. And I think that if there's any meetings that happen, they have to be totally put on the Web and let everyone know about it. Scott Franklin, I think it's your position that you need to look at this and make sure that this is all done right. It's your job. It's your duty. There's a lot of impact that can happen here, and the biggest thing why I'm standing here is that I have a business and we deal with water. I have a kayak shop. And if we don't have those stream flows in rivers around here, then that will affect my business, and which affects the life of everyone around here. I'd also like to say that a flatline river is a dead river. A river that doesn't have high flows and low flows to be able to do that ecosystem and to floodland areas, will make that river die. Gold Medal water around here is a good thing to have and the starship of our community. That's about it.	***Comment #511-1** (ID 403):* *A couple things, some points I want to bring up to you, is, on the DEIS, conservation needs to be written into it. There are no conservation issues, whatsoever, in that document. I think that would probably solve 70 percent of this Moffat plan. If Denver was able to start up a conservation area and by conserving water down there, they wouldn't need the water to take up from up here. Also, possibly looking at a surcharge for the people down in Denver that are using extra water to water their lawns and water their grass, that's blue green -- that's blue Kentucky grass, which takes much more water than any other kind, any other kind of grass; and looking at other types of native grass to Colorado that doesn't use the water that happens.* **Response #511-1:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2.

Comment Information	Comment	Comments and Responses
		Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #511-2*** *(ID 404)**:*** *Also everything needs to be in writing. I found out about a meeting that happened, that nobody knew about. And I'm still trying to find information about that. It happened over in Grand County. And I think that if there's any meetings that happen, they have to be totally put on the Web and let everyone know*

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		about it. Scott Franklin, I think it's your position that you need to look at this and make sure that this is all done right. It's your job. It's your duty. There's a lot of impact that can happen here, and the biggest thing why I'm standing here is that I have a business and we deal with water. I have a kayak shop. And if we don't have those stream flows in rivers around here, then that will affect my business, and which affects the life of everyone around here. **Response #511-2:** Information on the public hearings was distributed as display ads in the following local newspapers: • Denver Post, 10/30/09 and 11/30/09 • Sky-Hi Daily News, 10/30/09 and 11/30/09 • Mountain Messenger (Coal Creek Canyon), November Issue • Highlander Monthly, November Issue • Boulder Daily Camera, 10/30/09 and 11/30/09 Public hearing information was also displayed on the Corps Project website at https://www.nwo.usace.army.mil/html/od-tl/eis/moffat-eis.html and Denver Water's website at http://www.denverwater.org/SupplyPlanning/Planning/FutureWaterSupply/WaterSupplyProjects/Moffat/. ***Comment #511-3*** *(ID 405)**:*** *I'd also like to say that a flatline river is a dead river. A river that doesn't have high flows and low flows to be able to do that ecosystem and to floodland areas, will make that river die. Gold Medal water around here is a good thing to have and the starship of our community.* **Response #511-3:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily

Comment Information	Comment	Comments and Responses
		hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Sections 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for

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		several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11.

Comment Information	Comment	Comments and Responses
Comment #514 Duke Bradford, Representative Colorado River Rafters Association	*01-07-2010 Public Hearing Commenter (Beaver Run Resort)* Hello, my name's Duke Bradford. I'm here on behalf of Colorado River Rafters Association, as well as a local business owner here in Breckenridge. I just wanted to say that, after looking at the samples on the Colorado, with the Windy Gap, as well as the Moffat, we're talking about 20 percent of the water being reduced -- it's not 6 percent, as it said -- just with the Moffat. And it's going to really look -- we're looking to reduce the overall boating season below what it is now, a hundred and fifty days, significantly. And with Breckenridge and Summit County being based on a recreational economy, this would have significant ramifications for this community. So we wanted to comment, on the record, as letting -- letting people know that that's the case. Also, when we talk about the Blue River, currently it has dropped below levels that are even boatable, so there is no commercial rafting. And so the guests that come to Summit County now, there is no boating on the Blue. They have to leave this county to boat now. And I think we'll see that sort of ramifications on the Colorado, too, if these projects continue and if we're in a situation where people are not asked to cut it off at a certain level. We're talking about 20 percent today. There's no guarantee that this will be cut off and this will be it, and we'll be back here again. So it's very concerning to the Colorado River Rafters Association. We wanted to come and express our concern. Thanks a lot.	***Comment #514-1*** *(ID 441)**:*** *I just wanted to say that, after looking at the samples on the Colorado, with the Windy Gap, as well as the Moffat, we're talking about 20 percent of the water being reduced -- it's not 6 percent, as it said -- just with the Moffat. And it's going to really look -- we're looking to reduce the overall boating season below what it is now, a hundred and fifty days, significantly. And with Breckenridge and Summit County being based on a recreational economy, this would have significant ramifications for this community. So we wanted to comment, on the record, as letting -- letting people know that that's the case.* **Response #514-1:** Impacts to water levels on the Colorado River were described in DEIS Section 4.13.1.2. PACSM results do not suggest a loss of 20%. The analysis examined daily flows over the course of the full 45 years of record. This same analysis was repeated in FEIS Section 5.15 but was revised to compare Current Conditions (2006) to Full Use with a Project Alternative (2032) using daily flows over the full 45 years of record. ***Comment #514-2*** *(ID 442)**:*** *Also, when we talk about the Blue River, currently it has dropped below levels that are even boatable, so there is no commercial rafting. And so the guests that come to Summit County now, there is no boating on the Blue. They have to leave this county to boat now. And I think we'll see that sort of ramifications on the Colorado, too, if these projects continue and if we're in a situation where people are not asked to cut it off at a certain level. We're talking about 20 percent today. There's no guarantee that this will be cut off and this will be it, and we'll be back here again. So it's very concerning to the Colorado River Rafters Association. We wanted to come and express our concern.*

Comment-Response Report (Organizations/Stakeholders Part A)

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		Response #514-2: DEIS Section 3.13.5 discussed existing whitewater opportunities along the Blue River when dam releases provide water levels adequate enough to allow it. Impacts to boating on the Colorado River were discussed in DEIS Section 4.13.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #518 Scott Linn, Board Member Colorado River Headwaters Chapter of Trout Unlimited	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* Hi, my name is Scott Lynn; S-c-o-t-t, L-i-n-n. I live [redacted] I also own a business in Fraser. And I'm also a board member of the Colorado River Headwaters Chapter of Trout Unlimited. Tonight we'd like to make a few points regarding the Moffat Firming Project. No. 1: We'd like to ask for a 45-day extension to the comment period. We feel like this project is very serious and deserves the most time possible to understand the 2,000-page document. No. 2: We feel that there needs to be more conservation done on the Front Range, some type of a reward to property owners for not irrigating an unnatural grass that shouldn't be grown in Colorado. No. 3: We'd like to know what had happened to the mitigation proposals that were presented to Grand County last spring. None of these proposals are in the EIS. And without aggressive mitigation, we will oppose this, vigorously. No. 4: The Army Corps of Engineers must acknowledge the cumulative impacts of the Windy Gap Firming Project in correlation with the Moffat Firming Project. And No. 5: We feel the Corps must insist on a plan of action if and when adverse effects become apparent, such as sedimentation and high stream temperatures, that we feel are -- are going to happen to the rivers here in Grand County when this project takes place. Those are my comments. < > There was a meeting in Hot Sulphur Springs last spring, I believe it was in April or maybe it was in March, that Denver and Northern hosted and proposed a long list of mitigation items that -- that are not in the Draft EIS. Yep.	***Comment #518-1*** *(ID 532)**:*** *We'd like to ask for a 45-day extension to the comment period. We feel like this project is very serious and deserves the most time possible to understand the 2,000-page document.* **Response #518-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #518-2*** *(ID 533)**:*** *We feel that there needs to be more conservation done on the Front Range, some type of a reward to property owners for not irrigating an unnatural grass that shouldn't be grown in Colorado.*

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		Response #518-2: All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed -- a fixed, per account service charge. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. Denver Water explored a “Cash for Grass” program. In 2008 Denver Water held several focus groups and found that there was little interest in participating in this type of program. Therefore, Denver Water pursued other conservation measures that were more

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		cost effective and that would have higher customer participation. Part of the issue with offering a program of this type to single family residential customers is that the majority of those customers already irrigate at a level that is below the efficiency level for turf. Replacing this turf with water efficient landscaping (that still requires irrigation) nets the utility very little water savings. This is compounded by the cost of this landscaping compared to the cost of water. The net result to the customer is that it is a costly endeavor, that even when offset by a utility rebate would take years to pay back the investment. Denver Water has concentrated its outdoor water conservation program as follows: "Use Only What You Need" – a nationally recognized conservation marketing campaign, and xeriscape – a term developed by Denver Water to describe landscaping that has little to no watering needs. Denver Water does have a program in place which provides incentives to remove bluegrass from large landscapes including park systems and those owned by business parks and homeowner associations. ***Comment #518-3*** *(ID 534)**:*** *We'd like to know what had happened to the mitigation proposals that were presented to Grand County last spring. None of these proposals are in the EIS. And without aggressive mitigation, we will oppose this, vigorously.* **Response #518-3:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a BO. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections:

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		CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #518-5*** *(ID 5406):* *No. 4: The Corps must acknowledge the cumulative impacts of the WGFP in correlation with the Moffat Firming Project.* **Response #518-5:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has

Comment Information	Comment	Comments and Responses
		been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #518-4*** *(ID 535)**:*** *We feel the Corps must insist on a plan of action if and when adverse effects become apparent, such as sedimentation and high stream temperatures, that we feel are -- are going to happen to the rivers here in Grand County when this project takes place. There was a meeting in Hot Sulphur Springs last spring, I believe it was in April or maybe it was in March, that Denver and Northern hosted and proposed a long list of mitigation items that -- that are not in the Draft EIS.* **Response #518-4:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a BO. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged.

Comment-Response Report (Organizations/Stakeholders Part A)

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Comment #519 Kirk Klancke, President Colorado River Headwaters Chapter of Trout Unlimited	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* I'd like to turn my comments in. < > They're in writing, because I'm going to read right off of this. < > My name is Kirk Klancke. Good job on enunciating it. It's K-i-r-k. Is this on? < > Sure. K-l-a-n-c-k-e. I'm going to read my comments. First comment I would -- oh, I'm the president of our local Headwaters Chapter of Trout Unlimited, so I'll be speaking with my Trout Unlimited hat on this evening. I want to reiterate the time extension. There's 90 days to interpret a 2,000-page document. It isn't adequate. We have some comments prepared for this evening. But to adequately interpret the entire Draft Environmental Impact Statement, I think another 45 days is completely reasonable. This 90 days happens to fall during Grand County's three largest holidays: Thanksgiving, Christmas, and hunting season. That really holds us up on having time to interpret this, so I'd really appreciate an extension, if at all possible. Next I'd like to get into the impact -- impacts in here that are not addressed, in this Draft Environmental Impact Statement. It's shamefully shy on both addressing some obvious impacts and addressing some needed mitigations. Impacts that the Draft EIS doesn't address is in an incomplete doc- -- okay. Impacts that the Draft ES doesn't address, and is an incomplete document until they are addressed, are the long-term effects of eliminating high flows. High flows are an integral part of a river's natural flow regime and serve many purposes, including flushing sediment, shaping a healthy streambed, and flooding the wetlands to maintain a healthy riparian environment. 90 percent of the wildlife in Colorado depend on this environment, and the U.S. Army Corps of Engineers has always hung their hat on protecting these wetlands. Without over-the-bank flooding, the recruitment for young cottonwoods will not take place. And when the old cottonwoods die off, we will no longer have this important wetlands plant. Is that really true? One minute?	***Comment #519-1*** *(ID 537)**:*** *I want to reiterate the time extension. There's 90 days to interpret a 2,000-page document. It isn't adequate. We have some comments prepared for this evening. But to adequately interpret the entire Draft Environmental Impact Statement, I think another 45 days is completely reasonable. This 90 days happens to fall during Grand County's three largest holidays: Thanksgiving, Christmas, and hunting season. That really holds us up on having time to interpret this, so I'd really appreciate an extension, if at all possible.* **Response #519-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #519-2*** *(ID 538)**:*** *Next I'd like to get into the impact -- impacts in here that are not addressed, in this Draft Environmental Impact Statement. It's shamefully shy on both addressing some obvious impacts and addressing*

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	< > Okay. It took a long time to spell my name. < > Increased nutrient concentrations. I'm concerned that Denver's going after water in May, June, and July, right when we're flushing our cow pastures and our golf courses. They're going to be going into a river with lower flows. This river, because of Windy Gap, gets pumped into Grand Lake, and the EIS doesn't even mention Grand Lake. We need to take into consideration the fact that this is already a lake with algae and clarity problems, and we will be pumping a higher concentration of nutrients into it. Then there's cumulative effects. The Draft EIS fails to understand the -- or even mention what are the impacts of Windy Gap and Moffat Firming below the Windy Gap Reservoir. This section of the stream is already tremendously impaired. And you've got my words in writing. Thank you. < > Thank you.	*some needed mitigations. Impacts that the Draft EIS doesn't address is in an incomplete doc- -- okay. Impacts that the Draft ES doesn't address, and is an incomplete document until they are addressed, are the long-term effects of eliminating high flows. High flows are an integral part of a river's natural flow regime and serve many purposes, including flushing sediment, shaping a healthy streambed, and flooding the wetlands to maintain a healthy riparian environment. 90 percent of the wildlife in Colorado depend on this environment, and the U.S. Army Corps of Engineers has always hung their hat on protecting these wetlands. Without over-the-bank flooding, the recruitment for young cottonwoods will not take place. And when the old cottonwoods die off, we will no longer have this important wetlands plant.* **Response #519-2:** More information has been added to FEIS Section 5.8 regarding the effects of changes in high flows (flows of greater than 2-year return interval) on wetlands and riparian areas, including recruitment of cottonwoods. Information on sediment and maintenance of a healthy streambed is provided in the geomorphology analysis contained in FEIS Section 5.3. The implication in this comment that any reduction in flows would affect flushing flows is not correct. A flushing flow analysis was performed and documented in the channel geomorphology subsection of DEIS Section 4.1. The results of that analysis were incorporated into the aquatic resources impact evaluations for each stream segment in the study area (see DEIS Section 4.9). ***Comment #519-3*** *(ID 540)**:*** *Increased nutrient concentrations. I'm concerned that Denver's going after water in May, June, and July, right when we're flushing our cow pastures and our golf courses. They're going to be going into a river with lower flows. This river, because of Windy Gap,*

Comment Information	Comment	Comments and Responses
		gets pumped into Grand Lake, and the EIS doesn't even mention Grand Lake. We need to take into consideration the fact that this is already a lake with algae and clarity problems, and we will be pumping a higher concentration of nutrients into it. **Response #519-3:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #519-4*** *(ID 541)**:*** *Then there's cumulative effects. The Draft EIS fails to understand the -- or even mention what are the impacts of Windy Gap and Moffat Firming below the Windy Gap Reservoir. This section of the stream is already tremendously impaired.* **Response #519-4:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson

Comment Information	Comment	Comments and Responses
		Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #520 Rich Newton Trout Unlimited	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* Yep, the process of a 60-year-old bladder. My name's Rich Newton, N-e-w-t-o-n. I live at [redacted] I have the unique privilege to have fished the Fraser River for the past 30 years. My real concern is the degradation of the stream that I've noticed over that period of time, as more and more water has been taken out of the river. As Kirk referenced, we have algae problems. We have high weed growth problems. We have concentrations of nutrients, which, without the high flows that we need in the spring, don't get washed downstream. The weeds don't get washed out. This is a stream that gets, in the Fraser Canyon, a great deal of pressure from the public. The Colorado River at Parshall receives a tremendous amount of pressure. One of the things that this -- the Corps of Engineers needs to consider, and consider closely, is a combination of cumulative effects of the Moffat Project and the Windy Gap Firming Project. This will have -- these two projects will have a tremendous impact on the river flows and the river quality in the Colorado River, where the public has tremendous access and makes tremendous use of the river. I don't have the figures on the number of rod days that the Kemp and Breeze Units and the Williams Fork and the Sunset properties carry every year. But I fish there regularly, and I can tell you, it's a rare day when the parking lots aren't at least half full. This is a real concern. If we don't get the flushing flows in the Fraser and Colorado which these two firming projects tend to remove, what's going to happen is we're going to have a tremendous amount of algae growth and a tremendous amount of weed growth in the river, which is going to act to the detriment of the health of the stream and reduce the use and viability of this very great resource to the Colorado general public, or angling public, anyway; not to mention the fact that these people who come contribute a tremendous amount to the economic welfare of this county. All of these issues need to be considered in concert; and to take them one at a time, simply ignores the fact that you take the water out of the Fraser and start pumping it up through Windy Gap, you have – you take the water out of the Moffat system, there's less water in the lower Colorado, no question. These two have to be considered together. Thank you.	***Comment #520-1*** *(ID 542)**:*** *My real concern is the degradation of the stream that I've noticed over that period of time, as more and more water has been taken out of the river. As Kirk referenced, we have algae problems. We have high weed growth problems. We have concentrations of nutrients, which, without the high flows that we need in the spring, don't get washed downstream. The weeds don't get washed out.* **Response #520-1:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #520-2*** *(ID 543)**:*** *This is a stream that gets, in the Fraser Canyon, a great deal of pressure from the public. The Colorado River at Parshall receives a tremendous amount of pressure. One of the things that this -- the Corps of Engineers needs to consider, and consider closely, is a combination of cumulative effects of the Moffat Project and the Windy Gap Firming Project. This will have -- these two projects will have a tremendous impact on the river flows and the river quality in the Colorado River, where the public has tremendous access and makes tremendous use of the river.* **Response #520-2:** Please see the response to Comment ID 545. ***Comment #520-3*** *(ID 544)**:*** *I don't have the figures on the number of rod days that the Kemp and Breeze Units and the Williams Fork and the Sunset properties carry every year. But I fish there regularly, and I can tell you, it's a rare day when the parking lots aren't at least half full. This is a real concern. If we don't get the flushing flows in the Fraser and Colorado which these two firming projects tend to remove, what's going to happen is we're going*

Comment Information	Comment	Comments and Responses
		to have a tremendous amount of algae growth and a tremendous amount of weed growth in the river, which is going to act to the detriment of the health of the stream and reduce the use and viability of this very great resource to the Colorado general public, or angling public, anyway; not to mention the fact that these people who come contribute a tremendous amount to the economic welfare of this county. **Response #520-3:** Please see the response to Comment ID 542. The third paragraph of DEIS Section 4.9.1.2 states: "Didymo apparently prefer cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo." Additional discussions on algae (Didymo) were added to FEIS Sections 4.6.11 and 5.11. ***Comment #520-4*** *(ID 545)**:*** *All of these issues need to be considered in concert; and to take them one at a time, simply ignores the fact that you take the water out of the Fraser and start pumping it up through Windy Gap, you have – you take the water out of the Moffat system, there's less water in the lower Colorado, no question. These two have to be considered together.* **Response #520-4:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the

Comment Information	Comment	Comments and Responses
		magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #522 Pat Rady Grand Lake Shoreline Association	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* Hello. Can you hear me? My name is Pat Rady, P-a-t, R-a-d-y. I'm a resident of Grand Lake. My box number is [redacted] I do water quality sampling on Grand Lake, and if anyone wants to know, Grand Lake is degrading at a rapid rate, and it's frightening to me. I've been doing this since 1996, and we have records going back even farther than that. Grand Lake must be part of this EIS study because the way systems are working now, it's all interconnected. Grand Lake was originally, and now it is, Colorado's largest natural lake. It was fed by two streams, the North Inlet and the East Inlet. Those come directly from Rocky Mountain National Park. That is all clear, good water. Now, with Windy Gap project, the water is coming from the Fraser River, which now, you're telling me, is going to be perfectly -- not even a stream anymore. And then that ugly water's going to end in Windy Gap. It's going to go through the project, up to Grand Lake. It just has to be considered as part of the project. The Water Quality Control Division has set a clarity standard for Grand Lake of 14 meters -- 14 feet. Not 14 meters, that would be wonderful. 14 feet. We cannot have any further degradation of Grand Lake, and this project -- I empathize with the people in Fraser. I understand the problems with fishing and everything else. But you have to look at this as a countywide problem, not just a problem of the impacts on the Fraser River. Thank you.	***Comment #522-1*** *(ID 547)**:*** *I do water quality sampling on Grand Lake, and if anyone wants to know, Grand Lake is degrading at a rapid rate, and it's frightening to me. I've been doing this since 1996, and we have records going back even farther than that. Grand Lake must be part of this EIS study because the way systems are working now, it's all interconnected. Grand Lake was originally, and now it is, Colorado's largest natural lake. It was fed by two streams, the North Inlet and the East Inlet. Those come directly from Rocky Mountain National Park. That is all clear, good water. Now, with Windy Gap project, the water is coming from the Fraser River, which now, you're telling me, is going to be perfectly -- not even a stream anymore. And then that ugly water's going to end in Windy Gap. It's going to go through the project, up to Grand Lake. It just has to be considered as part of the project. The Water Quality Control Division has set a clarity standard for Grand Lake of 14 meters -- 14 feet. Not 14 meters, that would be wonderful. 14 feet. We cannot have any further degradation of Grand Lake, and this project -- I empathize with the people in Fraser. I understand the problems with fishing and everything else. But you have to look at this as a countywide problem, not just a problem of the impacts on the Fraser River.* **Response #522-1:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #523 Richard McQueary, Board Member Greater Grand Lake Shoreline Association	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* Not bad. < > My name's Richard McQueary, R-i-c-h-a-r-d, M-c-Q-u-e-a-r-y. My family came into Grand Lake in 1861, and I think I'm either seventh generation or however many there are. I grew up on the Williams Fork River, and I saw the Williams Fork, as a child, when it was really a roaring river in the spring. I now live in Grand Lake, at [redacted] I'm on the board of the Greater Grand Lake Shoreline Association. I've been listening to all the comments. I agree with the importance of looking at what the degradation of the Fraser River is going to do as it's combined with the Windy Gap Project and then pumped into the Shadow Mountain petri dish, we call it, where the algae and bacteria grow; and then pumped through the Grand Lake, into the tunnel, Adams Tunnel. My grandfather was married in Grand Lake in 1908, and he told me they stood on the rocks and looked down 60 feet and watched the fish. If you can find a place in Grand Lake where you can look down at 16 feet when they're pumping it, I'd be surprised. I was thinking today that I now understand what the Indians felt like when they saw buffalo hunters show up. They had the buffalo that they'd lived with for thousands of years, provided all their needs. And all of a sudden, some entrepreneur in New York decided they needed buffalo robes to make a profit. And so the protest was, "Well, wait a minute, we're eating these buffalo." "Oh, there's millions of them, we won't bother you." We know what happened. The fact that Denver needs the water is based upon the fact that they need the growth. The growth is based upon the fact that some developer is going to open another subdivision and needs water to grow grass that's not native, and they want to divert the water from here to supply that demand. It would be my fervent wish that the Corps would look at this as a finite resource, which is the water up here, and say: You don't need more buffalo robes. You wear wool or do something else. Thanks.	***Comment #523-1*** *(ID 548)**:*** *I grew up on the Williams Fork River, and I saw the Williams Fork, as a child, when it was really a roaring river in the spring. I now live in Grand Lake, at [redacted]. I'm on the board of the Greater Grand Lake Shoreline Association. I've been listening to all the comments. I agree with the importance of looking at what the degradation of the Fraser River is going to do as it's combined with the Windy Gap Project and then pumped into the Shadow Mountain petri dish, we call it, where the algae and bacteria grow; and then pumped through the Grand Lake, into the tunnel, Adams Tunnel. My grandfather was married in Grand Lake in 1908, and he told me they stood on the rocks and looked down 60 feet and watched the fish. If you can find a place in Grand Lake where you can look down at 16 feet when they're pumping it, I'd be surprised. I was thinking today that I now understand what the Indians felt like when they saw buffalo hunters show up. They had the buffalo that they'd lived with for thousands of years, provided all their needs. And all of a sudden, some entrepreneur in New York decided they needed buffalo robes to make a profit. And so the protest was, "Well, wait a minute, we're eating these buffalo." "Oh, there's millions of them, we won't bother you." We know what happened. The fact that Denver needs the water is based upon the fact that they need the growth. The growth is based upon the fact that some developer is going to open another subdivision and needs water to grow grass that's not native, and they want to divert the water from here to supply that demand. It would be my fervent wish that the Corps would look at this as a finite resource, which is the water up here, and say: You don't need more buffalo robes. You wear wool or do something else.* **Response #523-1:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #538 Mitch Kirwan, [redacted]	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* My name is Mitch Kirwan, M-i-t-c-h, K-i-r-w-a-n. < > M-i-t-c-h, K-i-r-w-a-n. I'm representing myself as well as my business, [redacted] which is in Fraser, Colorado. And I live in Tabernash. I would like to first request the 35-day extension that Kirk Klancke mentioned, to further review the document, extend the commentary time. My points: The representation here today, I think, is obvious; that both the Moffat Firming Project and the Windy Gap Firming Project need to be taken in tandem. The cumulative effects need to be examined together, not separately. Conservation must be explored before further diversion is -- is even considered. Real mitigation points need to be put into the plan, instead of the window dressing we've seen so far. There must be accountability in the approval process for Denver Water. If we do not have them accountable for the mitigation points, what use is it? We need to have some teeth in the document for them to follow through. One thing that I'd like to -- one point that I'd like to make, that we haven't really heard yet, is we are talking about money. Okay. Denver Water poses as a public utility. Denver Water is a for-profit organization. Okay. They want our water to sell. Okay. It's not to, you know, supply the Front Range. They are selling that water. As far as the no-action option, that is the only one to consider, as far as what we've been offered. My personal recommendation would be reversed action. I've lived here 21 years. God bless the rest of you, who have lived here for a lot longer and have had to deal with Denver Water a lot longer than that. Reversed action needs to happen, okay? We cannot lose our economy, our ecology. We cannot lose the Fraser River. We cannot lose the Colorado River. Okay. Like Chas said, a hundred percent correct, you cannot forsake a natural environment for an artificial one. Thank you.	***Comment #538-1*** *(ID 589)**:*** *I would like to first request the 35-day extension that Kirk Klancke mentioned, to further review the document, extend the commentary time.* **Response #538-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #538-2*** *(ID 590)**:*** *My points: The representation here today, I think, is obvious; that both the Moffat Firming Project and the Windy Gap Firming Project need to be taken in tandem. The cumulative effects need to be examined together, not separately. Conservation must be explored before further diversion is -- is even considered. Real mitigation points need to be put into the plan, instead of the window dressing we've seen so far. There must be accountability in the approval process for Denver Water. If we do not have them accountable for the mitigation points, what use is it?*

Comment Information	Comment	Comments and Responses
		We need to have some teeth in the document for them to follow through. **Response #538-2:** Windy Gap Firming Project The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's

Comment Information	Comment	Comments and Responses
		supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #538-3*** *(ID 591)**:*** *One thing that I'd like to -- one point that I'd like to make, that we haven't really heard yet, is we are talking about money. Okay. Denver Water poses as a public utility. Denver Water is a for-profit organization. Okay. They want our water to sell. Okay. It's not to, you know, supply the Front Range. They are selling that water.*

Comment Information	Comment	Comments and Responses
		Response #538-3: Denver Water's Charter prohibits it from operating for profit and rates for water are set to cover the cost of service. All revenue generated by the sale of water, per Denver Water's Charter, must be used to cover the cost of delivering water to the customers. ***Comment #538-4*** *(ID 592)**:*** *As far as the no-action option, that is the only one to consider, as far as what we've been offered. My personal recommendation would be reversed action. I've lived here 21 years. God bless the rest of you, who have lived here for a lot longer and have had to deal with Denver Water a lot longer than that. Reversed action needs to happen, okay? We cannot lose our economy, our ecology. We cannot lose the Fraser River. We cannot lose the Colorado River. Okay. Like Chas said, a hundred percent correct, you cannot forsake a natural environment for an artificial one.* **Response #538-4:** The Corps notes the comment. A "reversed action," if understood correctly, in not an independent option within the evaluation of an EIS, since it doesn't include an evaluation of project-related impacts.

Comment Information	Comment	Comments and Responses
Comment #540 Randy Piper, [redacted]	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* Thank you. I think I'll probably speak loudly, passionately, and knowledgeably enough, I won't need to come up front there. Name is Randy Piper, P-i-p-e-r. I live in [redacted] I also own a business called [redacted] where we market and represent many wood processors throughout the state, for beetle kill lumber and timber products. Over the course of the last six years, what I have learned, in studying this situation -- I have recently been a founding member of the Beetle Kill Trade Association as well as the Sustainable Forest Trade Association. I've done that because something has been missing here tonight, and that is the true impacts of this beetle kill epidemic on our water supplies, our forest industry, our electrical grids, our communication and roadway systems. I've been surprised that I haven't heard it, so I'm going to bring up a few points that I think I'm knowledgeable enough to speak accurately about. First of all, the Colorado River itself is the most widely utilized and distributed water resource in the world. It is direly threatened. Over 30 million people rely on it. Headwaters, Grand Lake, Colorado. I believe there needs to be a massive public relations campaign, education campaign, put out to the people on the Front Range and in Denver, educating them as to the dire circumstances that we have, regardless of just the water. There's many other factors that come into play. I've talked to people for six years. They call me for two reasons: The beautiful wood; they see the devastation, and they want to make use of the product. These people are concerned, but they have absolutely no knowledge of the situation that we've talked about here tonight, and especially tying in with the -- with the beetle kill epidemic that's taken place, which so direly threatens our tourism industry and everything else. Following that PR campaign, there needs to be a tiered pricing structure put into place for the Denver Water people. I also spent seven years in water treatment and water purification industries. So an average of 70 gallons per day, which, I believe, still stands, is probably excessive; again, living in a dry, arid climate. And once people understand and it starts hitting their pocketbooks, you will see a drastic reduction in the utilization of water. This will create additional revenue to repair water systems many others have spoken here about tonight. In closing, I've already mentioned that tourism is a tremendous revenue generator for the state; it's second, in fact. The people that come here don't come to Denver to take long, hot showers and run barefoot through the lawns. They come here to the mountains. And we already have a threatened situation with our forests, where we've got about 3 million acres of dead trees. Over the next 10 to 15 years, they are predicting another 22 to 32 million acres of dead trees sweeping throughout the West. This is going to be very impactful on our water situation. The bottom line is, we need to conserve, not take more.	***Comment #540-1*** *(ID 594)**:*** *I also own a business called [redacted], where we market and represent many wood processors throughout the state, for beetle kill lumber and timber products. Over the course of the last six years, what I have learned, in studying this situation -- I have recently been a founding member of the Beetle Kill Trade Association as well as the Sustainable Forest Trade Association. I've done that because something has been missing here tonight, and that is the true impacts of this beetle kill epidemic on our water supplies, our forest industry, our electrical grids, our communication and roadway systems. I've been surprised that I haven't heard it, so I'm going to bring up a few points that I think I'm knowledgeable enough to speak accurately about. First of all, the Colorado River itself is the most widely utilized and distributed water resource in the world. It is direly threatened. Over 30 million people rely on it. Headwaters, Grand Lake, Colorado. I believe there needs to be a massive public relations campaign, education campaign, put out to the people on the Front Range and in Denver, educating them as to the dire circumstances that we have, regardless of just the water. There's many other factors that come into play. I've talked to people for six years. They call me for two reasons: The beautiful wood; they see the devastation, and they want to make use of the product. These people are concerned, but they have absolutely no knowledge of the situation that we've talked about here tonight, and especially tying in with the -- with the beetle kill epidemic that's taken place, which so direly threatens our tourism industry and everything else.* **Response #540-1:** The Moffat Project does not influence or impact the pine beetle epidemic. Impacts from the pine beetle on sediment supply are relatively unknown. The effects as a result of pine beetle infestation alone would not

Comment Information	Comment	Comments and Responses
	So I would urge the Corps tonight, Denver Water, and the people of the Front Range, to please slow down, think about what's going on here; do not make hasty decisions; and that first steps need to be in conservation, not more use. Thank you very much.	impact channel morphology; however, forest loss and vegetation community changes from the beetle could potentially cause a succession of similar impacts, such as decreased sediment supply as dying forests decrease overhead shading resulting in increased groundcover and mid-story vegetation, therefore decreasing erosion potential. Pine beetle could also result in increased sediment supply if a large fire were to occur, fueled by the killed timber increasing erosion potential. In the event of a large scale fire, sediment supply would likely significantly increase for a finite amount of time. Sediment deposition from increased erosion would be expected to occur in streams during this time. As groundcover and the forest regenerates, sediment supply would be reduced and likely return to levels near Current Conditions. As revegetation occurs, sediment supply would decrease and at some point during the revegetation process sediment supply would once again drop below sediment transport capacity. Over time, sediment supply would again be orders of magnitude less than sediment transport capacity. When sediment transport capacity once again exceeds sediment supply, sediment that had been deposited as a result of the fire would begin to erode and transport downstream. The system would continue along this erosional process until it returned to its equilibrium. Results of the channel morphology analysis show that with or without the proposed Project sediment transport capacity greatly exceeds supply in all locations evaluated. However, the proposed Project would result in decreased sediment transport capacity. Following a major fire it can therefore be predicted that either with or without the Project, the river system would eventually return to the same dynamic state.

Comment Information	Comment	Comments and Responses
		The analysis that was completed for sediment transport indicated that the sediment transport capacity greatly exceeds sediment supply for all modeled locations and impacts are not expected as a result of the proposed Project. DEIS Section 4.1 (FEIS Section 5.1) under the subheading Sediment Supply explains how pine beetle could impact river systems. Additional water quality analysis was also performed on the Fraser River and Three Lakes related to nutrients (FEIS Sections 4.6.2 and 5.2). Information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in the FEIS (Sections 4.6.7.1 and 5.7.1.1). In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Refer to Appendix G for a description of the Forests to Faucets Partnership and other cooperative efforts. ***Comment #540-2*** *(ID 596)**:*** *Following that PR campaign, there needs to be a tiered pricing structure put into place for the Denver Water people. I also spent seven years in water treatment and water purification industries. So an average of 70 gallons per day, which, I believe, still*

Comment Information	Comment	Comments and Responses
		stands, is probably excessive; again, living in a dry, arid climate. And once people understand and it starts hitting their pocketbooks, you will see a drastic reduction in the utilization of water. This will create additional revenue to repair water systems many others have spoken here about tonight. In closing, I've already mentioned that tourism is a tremendous revenue generator for the state; it's second, in fact. The people that come here don't come to Denver to take long, hot showers and run barefoot through the lawns. They come here to the mountains. And we already have a threatened situation with our forests, where we've got about 3 million acres of dead trees. Over the next 10 to 15 years, they are predicting another 22 to 32 million acres of dead trees sweeping throughout the West. This is going to be very impactful on our water situation. The bottom line is, we need to conserve, not take more. So I would urge the Corps tonight, Denver Water, and the people of the Front Range, to please slow down, think about what's going on here; do not make hasty decisions; and that first steps need to be in conservation, not more use. **Response #540-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be

Comment Information	Comment	Comments and Responses
		noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #541 David Lutz, [redacted]	*12-02-2009 Public Hearing Commenter(Inn at Silver Creek)* I'm David Lutz, L-u-t-z. I live at [redacted] I don't have any reports to bring up here. I was the last-minute card. Appreciate you taking the time to hear me. I've owned and operated a land surveying business in this valley for the last eight years, and I've surveyed, literally, hundreds of miles of river, lake, wetlands, from south, south Park County to this county. And the taking of water for the Front Range to water lawns and be wasted running down the gutters, I've seen it firsthand. It is destroying our wetlands. It's destroying our rivers, our creeks. You know, and then you take the water, and you take, and you take. And then, when we do have a heavy flow because there's no vegetation growing, all it does is ruin the riverbed, ruin the creek bed. Denver really -- the Denver Water Board, if they want to be serious and want to be -- you know, they're not out there giving out water as a humanitarian effort. They're in the business of making money, period, just like I'm in business for making money. But they need to actually make a concerted effort to conserve. If they can't make people do it through campaign efforts, I think they certainly could charge, you know, let's -- let's start at 30 bucks a month if you want to water your lawn, additional, on top of your regular water bill. You know, people will start thinking about using water and having Kentucky bluegrass in a semiarid climate. That means desert. This -- this -- this state is a desert for long, long periods of time, decades at a time. Take a geography class. It doesn't take a rocket scientist to figure out that the use of water, the way it's being used by the Denver Water Board, is a waste. And they want waste because they make money. Doesn't take a genius to figure that out, either. Thanks.	***Comment #541-0*** *(ID 597)**:*** *I've owned and operated a land surveying business in this valley for the last eight years, and I've surveyed, literally, hundreds of miles of river, lake, wetlands, from south, south Park County to this county. And the taking of water for the Front Range to water lawns and be wasted running down the gutters, I've seen it firsthand. It is destroying our wetlands. It's destroying our rivers, our creeks. You know, and then you take the water, and you take, and you take. And then, when we do have a heavy flow because there's no vegetation growing, all it does is ruin the riverbed, ruin the creek bed. Denver really -- the Denver Water Board, if they want to be serious and want to be -- you know, they're not out there giving out water as a humanitarian effort. They're in the business of making money, period, just like I'm in business for making money. But they need to actually make a concerted effort to conserve. If they can't make people do it through campaign efforts, I think they certainly could charge, you know, let's -- let's start at 30 bucks a month if you want to water your lawn, additional, on top of your regular water bill. You know, people will start thinking about using water and having Kentucky bluegrass in a semiarid climate. That means desert. This -- this -- this state is a desert for long, long periods of time, decades at a time. Take a geography class. It doesn't take a rocket scientist to figure out that the use of water, the way it's being used by the Denver Water Board, is a waste. And they want waste because they make money. Doesn't take a genius to figure that out, either.* **Response #541-0:** Denver Water is a not-for-profit organization, and a significant portion of Denver Water's annual costs do not vary with the amount of water sold. When those costs increase, the costs to ratepayers increase as well. All Denver Water Customers are metered. Denver Water implements a Block Census Rate

Comment Information	Comment	Comments and Responses
		Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed -- a fixed, per account service charge. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #545 Kirk Klancke Trout Unlimited	*12-03-2009 Public Hearing Commenter (Doubletree Denver)* Thank you. My name is Kirk Klancke. That's spelled with a K. I live on the [redacted] just outside of [redacted] I want to reiterate the 45-day extension. I think that's a reasonable and necessary request. The second thing I'd like to ask for is, I would like to make a point that the need to make -- okay. The second point that I need to make is based on the Draft EIS referring to part of the 2030 water short-fall for Denver Water being made up through water conservation. What the Draft EIS doesn't state is that the portion of the shortfall that comes from conservation must be implemented first, before any further depletions of the West Slope water takes place. After four decades of watching the Fraser River deteriorate in perfect synchronism with Denver's growth, I have a pretty good understanding of what Colorado's future could be if we continue to do business as usual. In the same day that a West Slope resident witnesses the extensive weed and algae growth in the river that once attracted the president of the United States to its banks, they can drive to Denver and see lawn sprinklers running at high noon, when most of the water's evaporating and not even getting to the roots of this thirsty plant from a humid environment. And this is not just the uneducated minority. It's also municipal parks and cities that are getting their water from the West Slope. Half the residential water use in Denver is not for people, but for this thirsty plant, and seemingly their sidewalks too. Denver is too arid of an environment and the West is too fragile an environment for us to continue with these wasteful practices. Other Western municipalities have already reduced their water consumption by far greater percentages than Denver's proposing with the modest numbers in their Draft EIS. Their success has come from aggressively reducing the amount of Kentucky bluegrass that they allow in their municipality. It breaks my heart to see a natural environment on the West Slope disappear while the people on the Front Range create an artificial environment that belongs east of the Mississippi. The Moffat Firming Project must write an EIS that requires conservation before diversion. While I can acknowledge that diversion is an important part of the solution to Denver's water supply shortage, I cannot support the idea of diverting any more water off the West Slope until the development of water through conservation has been exhausted. This conservation needs to come through cutting back on outdoor water use, repairing their leaky water distribution system, and developing their full re-use water rights. Approval of this project must be contingent on conservation being a priority over diversion. Denver Water has a chance, with this EIS, to create a legacy as the first water diverter to figure out how to develop their water supply and sustain the pristine environment that	***Comment #545-1*** *(ID 612)**:*** *I want to reiterate the 45-day extension. I think that's a reasonable and necessary request.* **Response #545-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. ***Comment #545-2*** *(ID 613)**:*** *The second thing I'd like to ask for is, I would like to make a point that the need to make -- okay. The second point that I need to make is based on the Draft EIS referring to part of the 2030 water short-fall for Denver Water being made up through water conservation. What the Draft EIS doesn't state is that the portion of the shortfall that comes from conservation must be implemented first, before any further depletions of the West Slope water takes place. After four decades of watching the Fraser River deteriorate in perfect synchronism with Denver's growth, I have a pretty good understanding*

Comment Information	Comment	Comments and Responses
	they are diverting water from. Past diversion projects have put the Fraser River at a crossroads. Denver Water now needs to choose whether they go down the road of sustainability or take the route that will destroy the environment on the West Slope and the playground for the people of Denver. Thank you. < > Do I give it to Carla or . . . < > Thank you.	*of what Colorado's future could be if we continue to do business as usual. In the same day that a West Slope resident witnesses the extensive weed and algae growth in the river that once attracted the president of the United States to its banks, they can drive to Denver and see lawn sprinklers running at high noon, when most of the water's evaporating and not even getting to the roots of this thirsty plant from a humid environment. And this is not just the uneducated minority. It's also municipal parks and cities that are getting their water from the West Slope. Half the residential water use in Denver is not for people, but for this thirsty plant, and seemingly their sidewalks too. Denver is too arid of an environment and the West is too fragile an environment for us to continue with these wasteful practices. Other Western municipalities have already reduced their water consumption by far greater percentages than Denver's proposing with the modest numbers in their Draft EIS. Their success has come from aggressively reducing the amount of Kentucky bluegrass that they allow in their municipality. It breaks my heart to see a natural environment on the West Slope disappear while the people on the Front Range create an artificial environment that belongs east of the Mississippi.* **Response #545-2:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted).

Comment Information	Comment	Comments and Responses
		Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #545-3*** *(ID 614)**:*** *The Moffat Firming Project must write an EIS that requires conservation before diversion. While I can acknowledge that diversion is an important part of the solution to Denver's water supply shortage, I cannot support the idea of diverting any more water off the West Slope until the development of water through conservation has been exhausted. This conservation needs to come through cutting back on outdoor water use, repairing their leaky water distribution system, and developing their full re-use water rights. Approval of this project must be contingent on conservation being a priority over diversion.* **Response #545-3:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage

Comment Information	Comment	Comments and Responses
		address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #545-4*** *(ID 615)**:*** *Denver Water has a chance, with this EIS, to create a legacy as the first water diverter to figure out how to develop their water supply and sustain the pristine environment that they are diverting water from. Past diversion projects have put the Fraser River at a crossroads. Denver Water now needs to choose whether they go down the road of sustainability or take the route that will destroy the environment on the West Slope and the playground for the people of Denver.* **Response #545-4:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #547 Canton O'Donnell, Representative Three Lakes Watershed Association	*12-03-2009 Public Hearing Commenter (Doubletree Denver)* Thank you. I'm Canton O'Donnell, [redacted] I represent the Three Lakes Watershed Association. Three Lakes Watershed Association has over 200 members, consisting of business owners and residents of the area around Grand Lake, Shadow Mountain Reservoir, Granby Reservoir, and Grand Lake. Our efforts are directed at the maintenance of the quality of life in our area. Currently, we are concentrated on the quality of the water in our three lakes and reservoirs. We have studied the high points of the Draft EIS for the Moffat Firming Project. Nowhere in that draft is there any mention of the Colorado Big Thompson Project, which is closely linked to the Moffat Project since Fraser River waters end up in the Colorado Big Thompson system by virtue of pumping from Windy Gap into Granby Reservoir. Shadow Mountain Reservoir and Grand Lake are already entirely severely impacted by the pumping of water from Granby through these other two water bodies. We're opposing the Windy Gap Firming Project until a long-term solution to our water problems commences. We oppose the Moffat Firming Project for all the same reasons, in addition to the fact that Front Range communities have failed to implement water conservation programs that will allow sufficient water to remain in Grand County and downstream. We believe that your EIS in its final form must take into consideration the impacts on the CBT system, the fact of the Windy Gap Firming Project, and the effects of both of the increases in water diversions upon the waters of Grand County. We encourage you to extend the comment period as well. Thank you.	***Comment #547-1*** *(ID 619)**:*** *Three Lakes Watershed Association has over 200 members, consisting of business owners and residents of the area around Grand Lake; Shadow Mountain Reservoir, Granby Reservoir, and Grand Lake. Our efforts are directed at the maintenance of the quality of life in our area. Currently, we are concentrated on the quality of the water in our three lakes and reservoirs. We have studied the high points of the Draft EIS for the Moffat Firming Project. Nowhere in that draft is there any mention of the Colorado Big Thompson Project, which is closely linked to the Moffat Project since Fraser River waters end up in the Colorado Big Thompson system by virtue of pumping from Windy Gap into Granby Reservoir. Shadow Mountain Reservoir and Grand Lake are already entirely severely impacted by the pumping of water from Granby through these other two water bodies.* **Response #547-1:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope

Comment Information	Comment	Comments and Responses
		entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #547-2*** *(ID 620)**:*** *We're opposing the Windy Gap Firming Project until a long-term solution to our water problems commences. We oppose the Moffat Firming Project for all the same reasons, in addition to the fact that Front Range communities have failed to implement water conservation programs that will allow sufficient water to remain in Grand County and downstream.* **Response #547-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #547-3*** *(ID 621)**:*** *We believe that your EIS in its final form must take into consideration the impacts on the CBT system, the fact of the Windy Gap Firming Project, and the effects of both of the increases in water diversions upon the waters of Grand County.* **Response #547-3:** Please see the response to Comment ID 619. ***Comment #547-4*** *(ID 622)**:*** *We encourage you to extend the comment period as well.* **Response #547-4:** The following is a summary of the initial public comment period time frame and subsequent

Comment Information	Comment	Comments and Responses
		extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #552 Ted Diedrich, Access Director Colorado Whitewater Association	*12-03-2009 Public Hearing Commenter (Doubletree Denver)* Hi, Ted Diedrich, D-i-e-d-r-i-c-h. I live at [redacted] I am the access director for the Colorado Whitewater Association, which is the large nonprofit here, dedicated to the promotion of whitewater boating. Some of my points I'd to make will be similar to those Kyle McCutchen had mentioned. < > Sure. < > I'd like to voice initial opposition to this proposal. Upper South Boulder Creek is a premier regional run, both for the quality of its white water and simply for the beauty of the landscape. It is most certainly one of the best runs in the Front Range region. The proposed Gross expansion's increased footprint would flood the lower section of this run, basically destroying it, making a lake out of it. Furthermore, this run has a temporal window within which it will be run. Within that window there's a sweet spot at which the flow and cubic feet per second make it ideal. The proposed expansion could shorten that window and, furthermore, shorten this sweet spot within which we could run this -- this stretch of the river. Lastly, this could also remove entirely the window in which the Fraser River can be run. It's very -- it's fairly rare now, as it is, that paddlers, kayakers can enjoy that stretch. It's a fabulous remote canyon. I have yet to see it, as a kayaker, because it runs so infrequently now. With this, I don't know that it would ever run again. And, furthermore, I'd like to like to echo what the gentleman from Tabernash had to say about projects such as this seemingly being devoted to fill the water needs for landscaping and green grass, and not necessarily even for people, and not to mention the environmental needs of the watersheds on either side of the Divide. Thank you.	***Comment #552-1*** *(ID 639)**:*** *I'd like to voice initial opposition to this proposal.* **Response #552-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #552-2*** *(ID 640)**:*** *Upper South Boulder Creek is a premier regional run, both for the quality of its white water and simply for the beauty of the landscape. It is most certainly one of the best runs in the Front Range region. The proposed Gross expansion's increased footprint would flood the lower section of this run, basically destroying it, making a lake out of it. Furthermore, this run has a temporal window within which it will be run. Within that window there's a sweet spot at which the flow and cubic feet per second make it ideal. The proposed expansion could shorten that window and, furthermore, shorten this sweet spot within which we could run this -- this stretch of the river. Lastly, this could also remove entirely the window in which the Fraser River can be run. It's very -- it's fairly rare now, as it is, that paddlers, kayakers can enjoy that stretch. It's a fabulous remote canyon. I have yet to see it, as a kayaker, because it runs so infrequently now. With this, I don't know that it would ever run again.* **Response #552-2:** Impacts to boating on in the Fraser River Valley were described in DEIS Section 4.13. Impacts to boating on the upper portion of South Boulder Creek are also discussed in DEIS Section 4.13. Additional information on the impacts to South Boulder Creek has been added to FEIS Section 5.15.1.2. ***Comment #552-3*** *(ID 641)**:*** *And, furthermore, I'd like to like to echo what the gentleman from Tabernash had to say about projects*

Comment Information	Comment	Comments and Responses
		such as this seemingly being devoted to fill the water needs for landscaping and green grass, and not necessarily even for people, and not to mention the environmental needs of the watersheds on either side of the Divide. **Response #552-3:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #558 Suzanne O'Neill, Executive Director Colorado Wildlife Federation 1410 Grant Street, Suite C-313 Denver, CO 80203	From: cwfed@coloradowildlife.org [mailto:cwfed@coloradowildlife.org] Sent: Monday, March 01, 2010 2:24 PM To: MOFFAT.EIS@usace.army.mil Subject: CWF's comments re Moffat Firming Project EIS Attached is a letter that provides comments of the Colorado Wildlife Federation re the Moffat Firming Project EIS Thank you for the opportunity to comment. Suzanne O'Neill Suzanne O'Neill Executive Director Colorado Wildlife Federation 1410 Grant Street, Suite C-313 Denver CO 80203 303-987-0400 x1 cwfed@coloradowildlife.org - CWF Comments Moffat Firming Project.doc	***Comment #558-1*** *(ID 838)**:*** *The Colorado Wildlife Federation (CWF) appreciates the extension for public comments to March 1.* **Response #558-1:** The Corps notes the comment. ***Comment #558-2*** *(ID 839)**:*** *We are concerned about reasonably foreseeable cumulative impacts to the Fraser River and Upper Colorado River from this project when considered in conjunction with the Windy Gap project. The impact to these rivers from the cumulative effect of extensive existing diversions plus proposed diversions has not been addressed and is of paramount importance. We strongly urge that the Environmental Impact Statement (EIS) Process address in detail measures needed to enable sustained health of the river ecosystem.* **Response #558-2:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most

Comment Information	Comment	Comments and Responses
	Attachments: February 28, 2010 Scott Franklin, Moffat EIS Project Engineer U.S Army Corps of Engineers Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton CO 80128 Transmitted by email to : Moffat.eis@usace.army.mil Re: Moffat Firming Project EIS Dear Mr. Franklin: The Colorado Wildlife Federation (CWF) appreciates the extension for public comments to March 1. We are concerned about *reasonably foreseeable cumulative impacts* to the Fraser River and Upper Colorado River from this project when considered in conjunction with the Windy Gap project. The impact to these rivers from the cumulative effect of extensive existing diversions plus proposed diversions has not been addressed and is of paramount importance. We strongly urge that the Environmental Impact Statement (EIS) Process address in detail measures needed to enable sustained health of the river ecosystem. Sustained health of the river ecosystem requires detailed attention to the following: ➢ Specific measures to ensure that flows are adequate to maintain healthy fish populations and riparian habitat and that water temperatures do not rise to levels that threaten the aquatic life. ➢ Mitigation particulars to prevent greater deterioration of water quality problems in Grand Lake from the project. ➢ Independent monitoring coupled with adaptive management steps to activate in the event that mitigation measures fail to sustain the Fraser River's habitat and its water quality. In addition, it is essential that Denver Water institute measures that curtail residents' outdoor water use first. West Slope stream flows are too important to current and future generations of Coloradoans to endanger and sacrifice. Sincerely, Suzanne O'Neill Executive Director 1410 Grant Street, Suite C-313 Denver, CO 80203 Phone (303) 987-0400x1 Fax (303) 987-0200 www.coloradowildlife.org cwfed@coloradowildlife.org	notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #558-3*** *(ID 840)**:*** *Sustained health of the river ecosystem requires detailed attention to the following: Specific measures to ensure that flows are adequate to maintain healthy fish populations and riparian habitat and that water temperatures do not rise to levels that threaten the aquatic life. Mitigation particulars to prevent greater deterioration of water quality problems in Grand Lake from the project. Independent monitoring coupled with adaptive management steps to activate in the event that mitigation measures fail to sustain the Fraser River's habitat and its water quality.* **Response #558-3:** Flow related changes that have occurred in the Fraser River Basin since 1936 are due in large part to Denver Water's existing Moffat Collection System diversions, however, these impacts are attributable to past and present operations of that system, not the proposed Moffat Project. Under the proposed Moffat Project, additional diversions through the Moffat Tunnel would occur primarily during runoff months in May, June, and July (see Table H-3.1 in DEIS Appendix H). The environmental effects of additional diversions attributable to the Moffat Project were evaluated and determined to be minimal to moderate depending on the resource. Denver Water is not responsible for mitigating the effects of other reasonably foreseeable actions. FEIS Appendix M presents the plan to provide compensatory mitigation for unavoidable adverse effects associated with the proposed Moffat Project.

Comment Information	Comment	Comments and Responses
		Additional water quality analysis was performed on temperature and nutrients in the Fraser River Basin and the Three Lakes area, including Grand Lake. Please refer to FEIS Sections 4.6 and 5.2. Mitigation with respect to water temperatures is as follows. Based on temperature monitoring by the Grand County Water Information Network (GCWIN) in 2007 and 2008, most of the monitoring results indicated that steam temperatures in the Fraser River Basin and upper Colorado River are within State regulatory standards. Temperatures exceeding the regulatory limit have occurred in the Fraser River and Ranch Creek in July and August. Reductions in stream flow associated with the Moffat Project during the summer months could contribute to higher water temperature on hot summer days. The DEIS identified negligible to moderate temperature impacts on the Fraser River and Ranch Creek. In addition, the Colorado River, between Windy Gap Reservoir and Kremmling, can have low flows in the late summer and experience elevated water temperatures on hot summer days. The DEIS identified negligible temperature impacts on this portion of the Colorado River associated with the Moffat Project. Denver Water would continue its participation in and support of GCWIN to monitor stream temperatures in the Fraser River Basin and Colorado River. In addition, Denver Water would work with the Municipal Subdistrict of the Northern Colorado Water Conservancy District (NCWCD) to install and monitor two continuous real-time temperature monitoring stations on the Colorado River to be located at the Windy Gap stream gage and upstream of the Williams Fork River confluence. When specified temperature values are exceeded in August, Denver Water would forgo up to 250 AF of diversions from its Fraser River Collection System after August 1 by releasing 4 cfs if the Proposed Action of the Moffat Project is diverting. The 250 AF is an estimate of the amount of diversion caused by the Proposed Action during the month of August. Denver

Comment Information	Comment	Comments and Responses
		Water, the Municipal Subdistrict, and other stakeholders would work together to establish the specific temperature thresholds. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. In addition, an adaptive management plan will be required as part of a Section 404 Permit. ***Comment #558-4*** *(ID 842)**:*** *In addition, it is essential that Denver Water institute measures that curtail residents' outdoor water use first. West Slope stream flows are too important to current and future generations of Coloradoans to endanger and sacrifice.* **Response #558-4:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations.

Comment Information	Comment	Comments and Responses
Comment #571 Amelia (Mely) S. Whiting Trout Unlimited and Bart Miller Western Resource Advocates and Becky Long Colorado Environmental Coalition and David Nickum Colorado Trout Unlimited and Gary Wockner Save The Poudre: Poudre Steve Waterkeeper and Meghan Maloney San Juan Citizens Alliance and Myrna Poticha Clean Water Action and	From: Mely Whiting [mailto:MWhiting@tu.org] Sent: Friday, January 22, 2010 4:29 PM To: MOFFAT.EIS@usace.army.mil; Franklin, J Scott NWO Cc: Carey, Timothy T NWO; Peter, Chandler J NWO Subject: Moffat Project - Request for Extension Importance: High Scott, Attached please find a request for extension of time for public comments on the Moffat Tunnel Collection System draft environmental impacts statement and CWA section 404 permit application. Do not hesitate to call me with questions. Thank you for your consideration. Mely Whiting Trout Unlimited 720.470.4758 This transmission may contain information that is privileged, confidential and/or exempt from disclosure under law. If you are not the intended recipient, any disclosure, copying, distribution or use of the information in this message, including any reliance thereon by you or any other third person, is prohibited. If you have received this message in error, please immediately contact the sender and destroy this message in both electronic and any hard copy formats. Thank you. -ExtensionRequestDraft1-22-2010.pdf	***Comment #571-1*** *(ID 3100)**:*** *We are writing on behalf of the undersigned organizations to request an extension of time for public comments on the draft Environmental Impact Statement (DEIS) and proposed Clean Water Act § 404 permit for the Moffat Collection System Project. The current deadline for public comments is March 1, 2010. The reason for our request is that critical technical documents that provide the bases for the DEIS' analysis and conclusions have not yet been made available for public review, making meaningful public comment impossible at this time. Since the date when such documents will be made available for public review is unknown at this time, we request that the comment period be extended to March 31, 2010 or 30 days after the USACE makes all technical documents relied upon in the DEIS available for public review, whichever occurs last. NEPA was enacted to ensure that information on the environmental impacts of federal action is available to public officials and citizens before decisions are made and actions taken. "Accurate scientific analysis, expert agency comments and public scrutiny are essential to implementing NEPA." 40 CFR 1500.1(b). To achieve this goal, CEQ regulations require federal agencies to support their environmental impact statements with "evidence that [the] agencies have made the necessary environmental analyses." 40 CFR 1500.2(b). Such evidence may be incorporated by reference into the document. 40 CFR 1502.21. However, "[n]o material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." Id. The DEIS relies upon dozens of technical documents which are not available to the public. Many of these documents were prepared specifically for the DEIS analysis – including technical memoranda containing critical information regarding hydrological model assumptions, impacts to aquatic life, water quality,*

Comment Information	Comment	Comments and Responses
Paul Holleman Chimney Rock Ranch and Steve Glazer Sierra Club, Rocky Mountain Chapter	Attachments: January 22, 2010 Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 ***By email***: moffat.eis@usace.army.mil **Re: Moffat Collection System Project (NOW-2002080762 DEN)** **Request for Extension of Time for Public Comments on DEIS and CWA section 404 Permit** Dear Mr. Franklin, We are writing on behalf of the undersigned organizations to request an extension of time for public comments on the draft Environmental Impact Statement (DEIS) and proposed Clean Water Act § 404 permit for the Moffat Collection System Project. The current deadline for public comments is March 1, 2010. The reason for our request is that critical technical documents that provide the bases for the DEIS' analysis and conclusions have not yet been made available for public review, making meaningful public comment impossible at this time. Since the date when such documents will be made available for public review is unknown at this time, we request that the comment period be extended to March 31, 2010 or 30 days after the USACE makes all technical documents relied upon in the DEIS available for public review, whichever occurs last. NEPA was enacted to ensure that information on the environmental impacts of federal action is available to public officials and citizens before decisions are made and actions taken. "Accurate scientific analysis, expert agency comments and public scrutiny are essential to implementing NEPA." *40 CFR 1500.1(b)*. To achieve this goal, CEQ regulations require federal agencies to support their environmental impact statements with "evidence that [the] agencies have made the necessary environmental analyses." *40 CFR 1500.2(b)*. Such evidence may be incorporated by reference into the document. *40 CFR 1502.21*. However, "[n]o material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." *Id.* The DEIS relies upon dozens of technical documents which are not available to the public. Many of these documents were prepared specifically for the DEIS analysis – including technical memoranda containing critical information regarding hydrological model assumptions, impacts to aquatic life, water quality, channel conditions, sediment transport and cumulative impacts of the project. Others contain essential baseline data –	*channel conditions, sediment transport and cumulative impacts of the project. Others contain essential baseline data – 2 including flow, water quality, aquatic life, and channel condition data - that can be subject to differing interpretations. Other documents include studies, academic and theoretical information that is not readily available to the public and which the DEIS relies upon in drawing conclusions regarding the project's potential impacts. These documents are also subject to interpretation.1 Since publication of the DEIS, the undersigned organizations as well as other interested parties have requested copies of missing documents on a piecemeal basis. Some of the documents have been provided by the USACE, others are yet to be provided. In any event, this piecemeal approach makes the review of the DEIS very expensive, difficult, and time-consuming. Every time a missing, needed document is identified, a request to the USACE needs to be made and the reviewer must await USACE submission of the information to complete review. The problem is compounded by the fact that sometimes the missing document includes additional references to data, reports or other information that are themselves not available, initiating yet another cycle of requests. Perhaps mindful of the problem, on January 12, 2010, the USACE included a list of "Selected Draft EIS Reference Documents" in its Moffat Tunnel Collection Project website and has begun the process of populating the list with links to the actual documents. Unfortunately, at this time, only a handful of documents have been made so available. We truly appreciate the USACE's previous 30-day extension of time and recent effort to make DEIS information available to the public. Unfortunately, such effort will not enable the public to provide timely comments under the current deadline. Accordingly, at this time, we request an extension of time for public comments on the DEIS and proposed Clean Water Act Section*

Comment Information	Comment	Comments and Responses
	including flow, water quality, aquatic life, and channel condition data - that can be subject to differing interpretations. Other documents include studies, academic and theoretical information that is not readily available to the public and which the DEIS relies upon in drawing conclusions regarding the project's potential impacts. These documents are also subject to interpretation.[1] Since publication of the DEIS, the undersigned organizations as well as other interested parties have requested copies of missing documents on a piecemeal basis. Some of the documents have been provided by the USACE, others are yet to be provided. In any event, this piecemeal approach makes the review of the DEIS very expensive, difficult, and time-consuming. Every time a missing, needed document is identified, a request to the USACE needs to be made and the reviewer must await USACE submission of the information to complete review. The problem is compounded by the fact that sometimes the missing document includes additional references to data, reports or other information that are themselves not available, initiating yet another cycle of requests. Perhaps mindful of the problem, on January 12, 2010, the USACE included a list of "Selected Draft EIS Reference Documents" in its Moffat Tunnel Collection Project website and has begun the process of populating the list with links to the actual documents. Unfortunately, at this time, only a handful of documents have been made so available. We truly appreciate the USACE's previous 30-day extension of time and recent effort to make DEIS information available to the public. Unfortunately, such effort will not enable the public to provide timely comments under the current deadline. Accordingly, at this time, we request an extension of time for public comments on the DEIS and proposed Clean Water Act section 404 permit until March 31, 2010 or 30 days after the date when the USACE makes all documents relied upon in the DEIS available to the public for review, whichever occurs last. As the missing documents are provided and the magnitude of review better ascertained, we may request an additional extension of time. Thank you in advance for your consideration. Do not hesitate to contact us with questions. Sincerely, Bart P. Miller Western Resource Advocates bmiller@westernresources.org Phone 303.444.1188 Amelia S. Whiting Trout Unlimited mwhiting@tu.org Phone 720.470.4758 [1] Attached is a sample list of documents that are either missing or for which a link was provided on or about January 12, 2010, the latest USACE Moffat Project web site update. This sample list is not intended to be exhaustive of all documents necessary for adequate public review under NEPA. 2	*404 Permit until March 31, 2010 or 30 days after the date when the USACE makes all documents relied upon in the DEIS available to the public for review, whichever occurs last. As the missing documents are provided and the magnitude of review better ascertained, we may request an additional extension of time. Thank you in advance for your consideration. Do not hesitate to contact us with questions. Attached is a sample list of documents that are either missing or for which a link was provided on or about January 12, 2010, the latest USACE Moffat Project web site update. This sample list is not intended to be exhaustive of all documents necessary for adequate public review under NEPA.* **Response #571-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Becky Long Colorado Environmental Coalition becky@cecenviro.org David Nickum Colorado Trout Unlimited dnickum@tu.org Steve Glazer Sierra Club, Rocky Mtn. Chapter steve@hccaonline.org Gary Wockner, Save The Poudre: Poudre Steve Waterkeeper garywockner@comcast.net Paul Holleman Chimney Rock Ranch pfholleman@pbblaw.com Myrna Poticha Clean Water Action mpoticha@aol.com Meghan Maloney San Juan Citizens Alliance meghanmaloney@frontier.net 3	A conscious and significant effort was made by the Corps to include explanations and summaries of technical decisions in the main body of the DEIS and appendices so that referrals to adjunctive technical reports might be kept to a minimum. Technical documents pertaining to geomorphology and aquatic biological resources were available for review at the public hearings held in December 2009 and January 2010. In early February 2010, the Corps systematically uploaded batches of the actual Moffat DEIS references on the Project website as a digital index with links to the items posted. Copyrighted documents and large maps were not posted to the website, but were made available for review at the Corps Denver Regulatory Office at Chatfield Reservoir.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	SAMPLE DEIS DOCUMENTS Albano, C.M. 2006. *Structural and Functional Responses of Aquatic Macroinvertebrate Communities to Streamflow Diversion in Rocky Mountain Streams.* Masters Thesis, Colorado State University, Fort Collins, Colorado. Andrews, E.D. and J.N. Nankervis. 1995. Discharge and the Design of Channel Maintenance Flows for Grave-Bed Rivers, Natural and Anthropogenic Influences in Fluvial Geomorphology - Geophysical Monograph 89, American Geophysical Union. Apodaca, L.E. and J.B. Bails. 1999. Fraser River Watershed, Colorado - Assessment of Available Water-Quantity and Water-Quality Data Through Water Year 1997, USGS WRIR 98-4255. Bails, J.B. 2003. Streamwater Quality at Selected Sites in the Fraser River Basin, Grand County, Colorado, Water Years 1991-2000, USGS WRIR 03-4087. Bauch, N.J. and J.B. Bails. 2004. Water-Quality Characteristics and Ground-Water Quantity of the Fraser River Watershed, Grand County, Colorado, 1998-2001, USGS WRIR 03-4275. BBC Research and Consulting (BBC). 2004. The Economic Impacts of Hunting, Fishing and Wildlife Watching in Colorado. Biedenharn, D.S., R.R. Copeland, C.R. Thorne, P.J. Soar, R.D. Hey, and C.C. Watson. 2000. *Effective Discharge Calculation: A Practical Guide*, Technical Report, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi. Black & Veatch. 2006. Multi-Basin Water Supply Investigation. Blazer, V.S., T.B. Waldrop, W. B. Schill, C. L. Densmore, and D. Smith. 2003. Effects of Water Temperature and Substrate Type on Spore Production and Release in Eastern *Tubifex Tubifex* Worms Injected with *Myxobolus Cerebralis*. *Journal of Parasitology* 89(1): 21-26. Bovee, K.D. 1978. *Probability of Use Criteria for the Family Salmonidae. Instream Flow Information Paper: No. 4.* Cooperative Instream Flow Service Group. U. S. Department of the Interior, Fish and Wildlife Service, Fort Collins, Colorado. Bovee, K.D. 1982. A Guide to Stream Habitat Analysis Using Instream Flow Incremental Methodology. Instream Flow Information Paper No. 12 (FWS/OBS-82/26). U.S. Department of the Interior, Fish and Wildlife Service. Fort Collins, Colorado. Boyle Engineering Corporation (Boyle). 2000. Final Report, Colorado River Decision Support System Colorado River Basin Water Resources Planning Model. ____. 2003b. Technical Memorandum, Verification of Denver Water PACSM Hydrology Model. Review of Summary of Phase I - Task 3, Moffat Collection System Project EIS. December. ____. 2004. Technical Memorandum, Review of PACSM Modifications. March. 4	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	____. 2005. Technical Memorandum, Comparison of Fraser River Flows Simulated in the WGFP CDSS Model with those Simulated in PACSM. September 19. ____. 2006c. Technical Memorandum, Review of Lower South Platte River Extension in PACSM. May. ____. 2006d. Technical Memorandum, Review of Modifications Made to PACSM to Reflect the Baseline Scenario and EIS Alternatives. November. Bunte, K. and S.R. Abt. 2001. Sampling Surface and Subsurface Particle Size Distributions in Wadable Gravel- and Cobble-bed Streams for Analyses in Sediment Transport, Hydraulics, and Streambed Monitoring. Gen. Tech. Rep. RMS-GTR-74, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado, 428 p. Cattanéo, F., N. Lamouroux, P. Breil, and H. Capra. 2002. The influence of hydrological and biotic processes on brown trout (*Salmo trutta*) population dynamics. *Canadian Journal of Fisheries and Aquatic Sciences* 59: 12-22. Chadwick & Associates, Inc. 1984. Aquatic Baseline Metropolitan Denver Water Supply Systemwide/Site-Specific Environmental Impact Statement. Report prepared for Denver Water, Denver, Colorado. ____. 1985. Biological Data Available for the Systemwide/Site-Specific Environmental Impact Statement. Prepared for Denver Water, Denver, Colorado. ____. 1986. Aquatic Baseline. Metropolitan Denver Water Supply Systemwide/Site-Specific Environmental Impact Statement. Prepared for Denver Water, Denver, Colorado. ____. 1988. Fish and Benthic Invertebrates of the South Platte River and Selected Tributaries in the Metropolitan Denver Area. Prepared for Denver Water, Denver, Colorado. ____. 1991. Use-Attainability Analysis of Ralston Creek, Little Dry Creek and Big Dry Creek, Colorado. Prepared for the City of Arvada, Colorado. Chadwick, J.W., L.C. Bergstedt, D.J. Conklin, and S. P. Canton. 2004. Drought and Trout - Sometimes Less Is More. Pages 1-13 IN: Proceedings of the International Congress on the Biology of Fish, Fish Communities and Fisheries. Manaus, Brazil. Coley/Forrest, Inc. 2007. Grand County: Its Economy and Water Resources. Colorado Division of Wildlife (CDOW). 1984. Unpublished survey records - fish sampling data sheets for a number of Colorado streams. ____. 2003. Unpublished survey records. ____. 2005a. Colorado Herpetofaunal Atlas, Boreal Toad Observations. Accessed at: http://ndis.nrel.colostate.edu/herpatlas/coherpatlas on November 28. ____. 2005b. E-mail transmission of stream survey records from Harry Vermillion, Colorado Division of Wildlife, to Grant De Jong, Chadwick Ecological Consultants. 5	

Comment Information	Comment	Comments and Responses
	____. 2006c. E-mail transmission of stream survey records from Harry Vermillion, Colorado Division of Wildlife, to Grant De Jong, Chadwick Ecological Consultants. April 26. Denver Board of Water Commissioners (Denver Water). 1995a. Operating Information for Continental - Hoosier Project. April. ____. 1995b. Operating Information for Antero Reservoir. April. ____. 1995c. Operating Information for the City of Aurora's Water Supply System. April. ____. 1995d. Operating Information for Eleven Mile Canyon Reservoir. April. ____. 1995e. Operating Information for Cheesman Reservoir. April. ____. 1995f. Operating Information for Strontia Springs Reservoir and Foothills Treatment Plant. April. ____. 1995g. Operating Information for Public Service Company. April. ____. 2003a. *Moffat Collection System Project Information Document*. September. ____. 2003c. Operating Information Denver Water's Moffat Collection System, September. ____. 2003d. Operating Information Englewood-Ranch Creek System. September. ____. 2003e. Operating Information for Williams Fork Collection System. September. ____. 2003f. Operating Information for Green Mountain Reservoir. September. ____. 2003g. Operating Information for Dillon Reservoir and Roberts Tunnel. September. ____. 2003h. Operating Information for Wolford Mountain Reservoir. September. ____. 2007a. Water quality data for the Vasquez Creek. Transmitted from Denver Water to URS Corporation. November 23. ____. 2007b. Water quality data for the Williams Fork Basin. Transmitted from Denver Water to URS Corporation. October 10. ____. 2007c. Water quality data for South Boulder Creek above and below the Moffat Tunnel. Transmitted from Denver Water to URS Corporation. June 15. ____. 2007d. Water quality data for the North Fork of the South Platte River. Transmitted from Denver Water to URS Corporation. October 10. ____. 2007e. Denver Water, Moffat Collection System Project Construction Schedules, 2007. ____. 2007g. Water Quality Data for the South Platte River. Transmitted from Denver Water to URS Corporation. December 20. 6	

Comment Information	Comment	Comments and Responses
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Comment Information	Comment	Comments and Responses
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Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
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Comment Information	Comment	Comments and Responses
Comment #591 Myrth McDonald, Executive Director, Friends of the Lower Blue River and Sam Kirk, Chair, Board of Directors Friends of the Lower Blue River	From: Friends of the Lower Blue River [mailto:friendsofthelowerblueriver@gmail.com] Sent: Tuesday, March 09, 2010 1:56 PM To: MOFFAT.EIS@usace.army.mil; Amstutz, Lynn; Beardsley, George; Beardsley, Pam; Craven, Currie; Ferguson, Signe; Fielder, John; Hillman, John; Isenhart, Frank; Isenhart, Myra; Kirk, Sam; LeCoq, John; Ledbury, Priscilla; Longhill, John & Rose; McCotter, Jim; Taylor, John; Wegner, Phyl & Roger Subject: Friends of the Lower Blue River BOD & Moffat Collection System Project in Summit County Dear Scott, Please see attached letter from the Board of Directors of the Friends of the Lower Blue River re: Moffat Collection System Project in Summit County. Sincerely, Myrth McDonald -- Myrth McDonald Executive Director Friends of the Lower Blue River www.folbr.org - Moffat Project Concerns - Summit County FOLBR.doc	***Comment #591-10*** *(ID 3122)**:*** *Thank you for the opportunity to comment. Friends of the Lower Blue River (FOLBR) is a group of citizens living in the area along the Blue River north of Silverthorne to its confluence with the Colorado River near Kremmling that scrutinizes issues related to quality of life and environmental health of the lower Blue River basin and ecosystems.* **Response #591-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #591-9*** *(ID 3121)**:*** *The Draft EIS for the Moffat Collection System Project identifies additional diversions from the Blue River as a result of the Project. Grand County and Summit County watersheds have already suffered great loss of water due to diversions to the East Slope. Summit County and other Western Slope representatives are involved in long term negotiations with Denver Water on a wide range of issues, including Denver's compliance with the Blue River Decree and the impacts of the Moffat Project. Successful negotiations may be beneficial for all parties. However, no agreement is currently in place that would address concerns about the Moffat Project. We support the efforts of local citizens and governments in the Blue River basin to ensure that all impacts are properly disclosed and any unavoidable impacts are filly mitigated. Diversions from the Blue River will be concentrated during the summer months when stream flows and lake levels are most important for summer recreation. Diversions at the high water and average water are considered negligible impact. However, high water flushing flows are critical for long term habitat protection for our gold medal fisheries.*

Comment Information	Comment	Comments and Responses
	Attachments: **Scott Franklin, Moffat EIS Project Manager** **Corps of Engineers Denver Regulatory Office** **9307 S. Wadsworth Blvd.** **Littleton, CO 80128** **moffat.eis@usace.army.mil** **RE: Draft EIS for the Moffat Collection System Project** Thank you for the opportunity to comment. Friends of the Lower Blue River (FOLBR) is a group of citizens living in the area along the Blue River north of Silverthorne to its confluence with the Colorado River near Kremmling that scrutinizes issues related to quality of life and environmental health of the lower Blue River basin and ecosystems. The Draft EIS for the Moffat Collection System Project identifies additional diversions from the Blue River as a result of the Project. Grand County and Summit County watersheds have already suffered great loss of water due to diversions to the East Slope. Summit County and other Western Slope representatives are involved in long term negotiations with Denver Water on a wide range of issues, including Denver's compliance with the Blue River Decree and the impacts of the Moffat Project. Successful negotiations may be beneficial for all parties. However, no agreement is currently in place that would address concerns about the Moffat Project. We support the efforts of local citizens and governments in the Blue River basin to ensure that all impacts are properly disclosed and any unavoidable impacts are filly mitigated. Diversions from the Blue River will be concentrated during the summer months when stream flows and lake levels are most important for summer recreation. Diversions at the high water and average water are considered negligible impact. However, high water flushing flows are critical for long term habitat protection for our gold medal fisheries. The DEIS fails to consider alternatives to provide the stated need of 18,000 acre feet of water for Front Range customers. There are conservation alternatives that could save this much water already being considered by Denver Water, that were not evaluated in the DEIS, such as: - Replacement of inefficient water fixtures that could save 39,000 acre feet by 2045 according to a Denver Water study - Re-use projects are ongoing and integral supplies for Aurora and other water providers. There technologies need to be considered in the DEIS alternatives. The No-Action Alternative in the DEIS uses different assumptions, so there is no fair representation of what this really means. There is no apples to apples comparison. Reductions in flows in the Blue River will result in loss of adjacent wetland functions along the river corridor, and loss of riparian zone functions and habitat. These losses are not adequately evaluated. There is no suggested mitigation for this loss of quality habitat. The DEIS only looks at the incremental impacts of additional water diversions. The DEIS does not address the cumulative impacts to the natural ecosystem caused by existing and ongoing water diversions. 1	**Response #591-9:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line.

Comment Information	Comment	Comments and Responses
	The Blue River Decree specifies that water in the Blue River be used for the City and County of Denver. There are customers receiving water under this proposal who don't fit within the Blue River Decree. The Blue River Decree also requires re-use conservation of water by Denver before using more Blue River water. The DEIS fails to consider the sections of the Blue River and Colorado River that are under consideration for Wild and Scenic designation, and what impacts this project would have on those sections. The DEIS fails to consider the impact of a Colorado Compact call on customers relying on water being diverted under this proposal. The DEIS fails to adequately consider the impacts on the expected yield of the Moffat Project related to changes in climate and resulting reduced water supplies in the Colorado River Basin. We are especially disappointed in reviewing the DEIS to see that Denver basically utilizes average stream flows and a fairly short climate history with which to portray future stream flows and projected impacts. Averages are inadequate. They distort, even hide low flow impacts. And a short past history paints too optimistic a picture regarding real historic dry periods, much less possible climate change. To be realistic they must go back to the drawing boards and provide better data on these topics. Without this it is not fair to ask the stakeholders to give a complete opinion. . The Corps must find that the Moffat Project is in the public interest before issuing a permit under the Clean Water Act. The DEIS does not support that conclusion. Sincerely, Sam Kirk, Chair Board of Directors FOLBR 2	Additional information on high flows was added to Sections 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites (including a detailed sampling and sediment modeling site on the Blue River), review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Additional detailed sediment sampling and modeling along with assessment of stream segments below diversion points were conducted. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #591-8*** *(ID 3120)**:*** *The DEIS fails to consider alternatives to provide the stated need of 18,000 acre feet of water for Front Range customers. There are conservation alternatives that could save this much water already being considered by Denver Water, that were not evaluated in the DEIS, such as: - Replacement of inefficient water fixtures that could save 39,000 acre feet by 2045 according to a Denver Water study - Re-use projects are ongoing and integral supplies for Aurora and other water providers. There technologies need to be considered in the DEIS alternatives.* **Response #591-8:** The partnership between Denver Water, Aurora, and the South Metro Water Supply Authority (SMWSA) would make use of excess reusable water as it becomes available from time to time. When available,

Comment Information	Comment	Comments and Responses
		and on a space available basis, the excess reusable water would be pumped from the lower South Platte River (north of Denver) to water users upstream (south of Denver). The Water Infrastructure and Supply Efficiency (WISE) project makes use of the same reusable water considered for Alternatives 8a, 10a, and other alternatives considered in the DEIS. While the WISE project could provide Denver Water some firm yield, it does not deliver water to where Denver Water needs the extra supply (North end). Alternatives 8a and 10a did deliver this water to North end and are considered practicable alternatives in this EIS. Denver Water has “up to” 40,000 AF of excess reusable effluent. In some years, Denver Water has 0 AF of excess reusable effluent. On average, Denver Water has 8,000 AF on average of excess reusable effluent – this is the amount used when developing Alternatives 8a and 10a for the DEIS. There is currently insufficient information available to incorporate the WISE Project in Denver Water’s PACSM because a variety of possible scenarios are being considered and evaluated by the Project proponents. A qualitative evaluation of this Project was added to FEIS Section 4.6.1, which describes the purpose of the Project, the participants, and generally how it would operate. While WISE would have participation from several water providers, WISE would use, in part the same water (unused Denver Water reusable effluent) as Moffat Project Alternatives 8a and 10a and various aquifers in the regions to store water similar to Alternative 10a. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement

Comment Information	Comment	Comments and Responses
		(customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Maintenance of Infrastructure On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Recycled Water All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's

Comment Information	Comment	Comments and Responses
		Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). ***Comment #591-7*** *(ID 3119)**:*** *The No-Action Alternative in the DEIS uses different assumptions, so there is no fair representation of what this really means. There is no apples to apples comparison.* **Response #591-7:** The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 Code of Federal Regulations [CFR] 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to

Comment Information	Comment	Comments and Responses
		those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. ***Comment #591-6*** *(ID 3118)**:*** *Reductions in flows in the Blue River will result in loss of adjacent wetland functions along the river corridor, and loss of riparian zone functions and habitat. These losses are not adequately evaluated. There is no suggested mitigation for this loss of quality habitat. The DEIS only looks at the incremental impacts of additional water diversions. The DEIS does not address the cumulative impacts to the natural ecosystem caused by existing and ongoing water diversions.* **Response #591-6:** Information on water quality functions of wetlands and riparian areas has been added to the FEIS (Sections 3.8.5 and 5.8.1.2). Riparian zones act as filters that protect stream water quality from upland runoff that contains sediment, nitrates and other nutrients, and also affect nutrient levels in adjacent streams. Shading by riparian vegetation moderates water temperatures. FEIS Section 5.8.1.2 includes an expanded evaluation of the effects of changes in stream flows, including peak flows, on riparian and wetland areas.

Comment Information	Comment	Comments and Responses
		In general, new analysis conducted by the Corps in Fall 2010 concluded that the riparian zones in the Project area would experience negligible to minor effects. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #591-5*** *(ID 3117)**:*** *The Blue River Decree specifies that water in the Blue River be used for the City and County of Denver. There are customers receiving water under this proposal who don't fit within the Blue River Decree. The Blue River Decree also requires re-use conservation of water by Denver before using more Blue River water.* **Response #591-5:** As discussed in DEIS Sections 1.3.1.4 and 2.2, the main sources of reusable water in Denver Water's Collection System is the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. Denver Water has a long history of evaluating recycled water options, beginning with the Successive Use and Potable Reuse Demonstration projects spanning from the late 1960s to the early 1990s. Denver Water's existing recycled water system began delivering water in 2004 for industrial,

Comment Information	Comment	Comments and Responses
		commercial and landscape irrigation uses. This system has been expanded since then and would continually be expanded to deliver 17,500 AF of water each year. ***Comment #591-4*** *(ID 3116)**:*** *The DEIS fails to consider the sections of the Blue River and Colorado River that are under consideration for Wild and Scenic designation, and what impacts this project would have on those sections.* **Response #591-4:** The most recent and updated version of the Upper Colorado River Wild and Scenic Stakeholder Group Management Plan, dated January 2012, was provided to the Bureau of Land Management (BLM) and reviewed and included as a consulted resource in the FEIS. In 2006, the Kremmling and Glenwood Springs Field Offices of the BLM began the eligibility phase of a Wild and Scenic Rivers evaluation as part of their Resource Management Plan (RMP) revision process. The Wild and Scenic Rivers study process is composed of two main components: the eligibility phase and the suitability phase. The eligibility phase involves identifying eligible rivers and stream segments, and determining a tentative classification (Wild, Scenic, or Recreational). To be eligible for designation, a river must be free flowing and contain at least one Outstandingly Remarkable Value (ORV) that is scenic, recreational, geological, fish-related, wildlife-related, historic, cultural, botanical, hydrological, paleontological, or scientific. Upon conclusion of the eligibility phase, the BLM prepared a Wild and Scenic Eligibility Report that identified five river segments within the Moffat Project EIS study area (portions of the Colorado and the Blue

Comment Information	Comment	Comments and Responses
		rivers) that were eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS) (BLM 2007). The Wild and Scenic Suitability Report followed in April 2010. In the report, BLM states: “The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection.” Those segments of the Colorado River between Kremmling and Glenwood Springs were determined to be eligible. The Kremmling and Glenwood Springs Field Offices of the BLM addressed this issue in separate Draft RMPs/EISs that were released in 2011. The preferred alternative in both RMPs includes a determination that much of the Colorado River between Kremmling and Glenwood Springs is suitable for inclusion in the Wild and Scenic Rivers Act. A variation of the preferred alternative in both field offices would defer designation by adopting and implementing the Stakeholder Group Management Plan. If monitoring indicates that the Management Plan was not providing an adequate level of protection, BLM would initiate a process to evaluate suitability at a future date. The recreation analysis in the EIS did evaluate effects of the Project alternatives on the Colorado River below Kremmling (see DEIS Section 4.13.1.2). The Corps coordinated with the BLM regarding the Wild and Scenic River designation process throughout the NEPA process. However, the Corps does not use its authorities to protect those segments under the BLM study for determination in a greater capacity than it does all waterways under its jurisdiction. The Corps’ direct and cumulative impact analysis shows that minor impacts would result from implementation of the action alternatives. These results were then interpreted to find that the alternatives would not likely

Comment Information	Comment	Comments and Responses
		affect the suitability of the eligible segments for inclusion in the NWSRS. This conclusion was added to the FEIS. ***Comment #591-3*** *(ID 3115)**:*** *The DEIS fails to consider the impact of a Colorado Compact call on customers relying on water being diverted under this proposal.* **Response #591-3:** The Corps does not administer water rights or compact calls, which are under the administration of the State Engineer's Office (SEO). For the proposed Project, the Colorado SEO would also administer water rights and any compact curtailments. ***Comment #591-2*** *(ID 3114)**:*** *The DEIS fails to adequately consider the impacts on the expected yield of the Moffat Project related to changes in climate and resulting reduced water supplies in the Colorado River Basin. We are especially disappointed in reviewing the DEIS to see that Denver basically utilizes average stream flows and a fairly short climate history with which to portray future stream flows and projected impacts. Averages are inadequate. They distort, even hide low flow impacts. And a short past history paints too optimistic a picture regarding real historic dry periods, much less possible climate change. To be realistic they must go back to the drawing boards and provide better data on these topics. Without this it is not fair to ask the stakeholders to give a complete opinion.* **Response #591-2:** The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff:

Comment Information	Comment	Comments and Responses
		"Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the Colorado Water Conservation Board

Comment Information	Comment	Comments and Responses
		(CWCB), Climate Change in Colorado, indicates that, “In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation.” The 2009 U.S. Geological Survey (USGS) Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: (1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and (2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation (BLM) planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011).

Comment Information	Comment	Comments and Responses
		The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal agency of the Moffat Project EIS believes the analysis is adequate. Lastly, as shown in DEIS Table H-7.1, Denver Water would divert an additional 8,377 AF of water from the Fraser River Basin as a result of the proposed Project. ***Comment #591-1*** *(ID 3113)**:*** *The Corps must find that the Moffat Project is in the public interest before issuing a permit under the Clean Water Act. The DEIS does not support that conclusion.* **Response #591-1:** As stated in 33 CFR Part 320, which are, in part, the Federal regulations governing the Corps' review of Section 404 of the CWA, the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. That decision reflects the national concern for both protection and utilization of important resources. Factors relevant to the proposed Project that were considered in the public interest include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #594 Marian A. Waldron, Member Grand County Board of Realtors	From: Marian Waldron [mailto:mwaldron@cbmp.com] Sent: Tuesday, March 09, 2010 4:47 PM To: MOFFAT.EIS@usace.army.mil Subject: membercommentsscottfranklin To Mr. Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 moffat.eis@usace.army.mil Fax: 303-979-0602 GCBOR has legal standing as bona fide representatives of an important industry in Grand County, also indirect representatives of many land owners, all of whom would be significantly affected by the proposed actions of both Moffat and Windy Gap Firming projects as presented in Draft Environmental Impact Statements (DEIS). We have concern for indirect and cumulative effects of the proposed action and past trans-mountain water diversions from the Fraser and Colorado River. The DEIS is fatally flawed due to lack of reasonable detail on: * Purpose and need - the project ignores water rights and the "Firming" process. We understand the project is all about "firming conditional water rights" so Front Range users can secure "firm water yield" yet the reader is offered no honest explanation of this process and the effects on water rights in Grand County including those held by local landowners. * Alternatives - the DEIS does not offer a reasonable array of alternatives and ignores the obvious, most cost effective alternative of conservation even though it should be required under NEPA. Cities in California are conserving 50% or more of their water and the San Francisco Bay Area has targeted conservation of 1,000,000 acre feet to meet their long term needs. Front Range conservation efforts are pitiful in comparison. Front Range cities should be required to conserve all possible water with all available technology before asking for any additional diversions. * Affected Environment - The DEIS offers no readable explanation of how the water yields (in acre feet) relate to water flows in our streams and rivers (in cubic feet per second) and shallow riparian groundwater systems. The hydrology presented assumes our waterways are lined with PVC or concrete, not complex hydrologic ecosystems. USGS Chief Hydrologist Robert Hirsch tells us that shallow riparian groundwater and surface water are inextricably connected and must be considered together in resource management planning (USGS Circular 1139 - Ground Water and Surface Water, A single Resource, dated 1998). * Consequences - The DEIS ignores the cumulative effects of past, present, and cumulative effects from Moffat and Windy Gap trans-mountain diversions. These effects reduce resource and property values in Grand County yet the DEIS ignores the socioeconomic effects on our already stressed community. Indeed, local hydrogeologist Geoff Elliott has stated real concern that the cumulative effects of the Moffat and Windy Gap projects will decimate our local ranching community, a community identified in our Grand County Master Plan as fundamental to our local heritage and way of life. * Local economic impacts- The GCBOR is fearful that the depletion of this natural resource will have a detrimental effect on the natural beauty and recreational opportunities in our area. Our Real estate market is primarily driven by tourism and the sale of secondary homes. Recreation and the natural beauty of the area are the primary products that we sell in Grand County. If our product is depleted or undermined by this action it will seriously affect the livelihood of many local people and local businesses that are associated with the real estate industry. Real Estate and tourism are the primary drivers of the Grand County economy. These industries are vital to our economic well being. Due to the recent downturn in the national economy we have already taken serious hits over the last two years. The GCBOR is concerned that impacting our streams any further will be a final blow to our local economy that we may not be able to recover from. Finally, the mitigations offered in the DEIS are pitifully inadequate to deal with actual effects of these projects. In fact, we believe that an honest	***Comment #594-1*** *(ID 1055)**:*** *GCBOR has legal standing as bona fide representatives of an important industry in Grand County, also indirect representatives of many land owners, all of whom would be significantly affected by the proposed actions of both Moffat and Windy Gap Firming projects as presented in Draft Environmental Impact Statements (DEIS). We have concern for indirect and cumulative effects of the proposed action and past trans-mountain water diversions from the Fraser and Colorado River.* **Response #594-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #594-2*** *(ID 1056)**:*** *Purpose and need - the project ignores water rights and the "Firming" process. We understand the project is all about "firming conditional water rights" so Front Range users can secure "firm water yield" yet the reader is offered no honest explanation of this process and the effects on water rights in Grand County including those held by local landowners.* **Response #594-2:** The Corps relies on administration and enforcement of the State water laws to ensure downstream senior rights are protected and, in issuing any Section 404 Permit, would attempt to not impose conditions on the operation of the Project contrary to the jurisdiction of Colorado Water Law. The Corps defers to the State to resolve water law issues. The Corps' analysis for the DEIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership would not be a factor in the Corps public interest decision." 33 CFR Part 320.4(g). Whether water rights or other property rights

Comment Information	Comment	Comments and Responses
	re-evaluation of purpose and need, alternatives, affected environment, and consequences will lead to vastly increased mitigations that would bring health back to our stream and river corridors rather than forcing us to teeter on the brink of oblivion. The US Army Corps of Engineers and Bureau of Reclamation should deny these two related projects as proposed. If they were to proceed, the DEIS documents should be re-written based upon sound science and real effects to aquatic resources in Grand County and other West Slope counties. Thank you for your concern, Marian A Waldron Member of the Grand County Board of Realtors	need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR Part 230.10. The proposed Moffat Project and associated water rights would have no impact to senior water rights. Water rights junior to Denver Water may be affected depending on their location, time of year, and type of year (dry, average, wet). In dry years, there would be no effect on junior or senior water rights because the proposed Project would not divert water in dry years as Denver Water already diverts all the legally available water during dry years. Additionally, the majority of the diversions would occur during the months of May, June, and July. Refer to DEIS Section 3.1.5 for a discussion of water rights in the West Slope river segments. ***Comment #594-3*** *(ID 1057)**:*** *Alternatives - the DEIS does not offer a reasonable array of alternatives and ignores the obvious, most cost effective alternative of conservation even though it should be required under NEPA. Cities in California are conserving 50% or more of their water and the San Francisco Bay Area has targeted conservation of 1,000,000 acre feet to meet their long term needs. Front Range conservation efforts are pitiful in comparison. Front Range cities should be required to conserve all possible water with all available technology before asking for any additional diversions.* **Response #594-3:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations.

Comment Information	Comment	Comments and Responses
		Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #594-4*** *(ID 1058)**:*** *Affected Environment - The DEIS offers no readable explanation of how the water yields (in acre feet) relate to water flows in our streams and rivers (in cubic feet per second) and shallow riparian groundwater systems. The hydrology presented assumes our waterways are lined with PVC or concrete, not complex hydrologic ecosystems. USGS Chief Hydrologist Robert Hirsch tells us that shallow riparian groundwater and surface water are inextricably connected and must be considered together in resource management planning (USGS Circular 1139 - Ground Water and Surface Water, A single Resource, dated 1998).*

Comment Information	Comment	Comments and Responses
		Response #594-4: The hydrology presented does not assume waterways are lined with PVC or concrete. The interaction between shallow riparian groundwater and surface water was considered and explained in the groundwater resource sections of the DEIS (see Sections 3.2, 4.2, and 5.6.2). Surface water and groundwater are linked components of the hydrologic system in every watershed. Depending on the elevation of water levels in streams compared to the adjacent groundwater levels, water would flow between surface water bodies, streams, and aquifers. Thus, changes in surface water levels and flows may affect groundwater. The proposed diversions are expected to have minor direct impacts on groundwater, which would be limited to the local areas of the existing diversion structures. Extending the duration of diversions would cause a minor increase in the amount of groundwater recharge directly beneath the unlined portions of the diversion structures and conveyance canals, which may cause minor increases in groundwater levels in those areas during the period of the extended diversion. Localized minor increases in recharge rates and groundwater levels would cause negligible impacts to groundwater resources and the ecosystem. Increasing groundwater recharge rates beneath the diversion and conveyance structures would partly offset the minor reductions in recharge that could result from stream flow reductions in some areas. The additional diversions proposed for the Moffat Project would likely cause the dry reaches of some tributaries to extend a minor distance further downstream, and would prolong the duration of these dry sections during average years. However, in many of these stream segments, the influx of groundwater or tributary water further downstream would

Comment Information	Comment	Comments and Responses
		contribute to stream flow recovery. Reductions in stream flow attributable to the Moffat Project would be partly offset by groundwater influx to the streams. Declining stream levels would likely cause minor reductions in groundwater levels immediately adjacent to the streams. Outside of the immediate areas of the existing diversion structures and beyond the limits of existing stream channels downstream of the diversion structures, the Moffat Project would not cause adverse impacts to groundwater resources because Denver Water is not proposing to make any changes to the physical characteristics of the ground surface or soils that could affect groundwater recharge or discharge rates in any of the West Slope watersheds. ***Comment #594-5*** *(ID 1059)**:*** *Consequences - The DEIS ignores the cumulative effects of past, present, and cumulative effects from Moffat and Windy Gap trans-mountain diversions. These effects reduce resource and property values in Grand County yet the DEIS ignores the socioeconomic effects on our already stressed community. Indeed, local hydrogeologist Geoff Elliott has stated real concern that the cumulative effects of the Moffat and Windy Gap projects will decimate our local ranching community, a community identified in our Grand County Master Plan as fundamental to our local heritage and way of life.* **Response #594-5:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry

Comment Information	Comment	Comments and Responses
		years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. The West Slope agricultural and recreational economies were further addressed in FEIS Section 5.19. ***Comment #594-6*** *(ID 1060)**:*** *Local economic impacts- The GCBOR is fearful that the depletion of this natural resource will have a detrimental effect on the natural beauty and recreational opportunities in our area. Our Real estate market is primarily driven by tourism and the sale of secondary homes. Recreation and the natural beauty of the area are the primary products that we sell in Grand County. If our product is depleted or undermined by this action it will seriously affect the livelihood of many local people and local businesses that are associated with the real estate industry. Real Estate and tourism are the primary drivers of the Grand County economy. These industries are vital to our economic well being. Due to the recent downturn in the national economy we have already taken serious hits over the last two years. The GCBOR is*

Comment Information	Comment	Comments and Responses
		concerned that impacting our streams any further will be a final blow to our local economy that we may not be able to recover from. **Response #594-6:** The socioeconomic impact analysis takes into account the conclusions about impact to a number of other resources, including surface water, recreation, visual resources, aquatic resources and others. The evaluation of socioeconomic impacts to Grand County incorporates these conclusions in considering the impacts on tourism and related economic sectors. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19. ***Comment #594-7*** *(ID 1061)**:*** *Finally, the mitigations offered in the DEIS are pitifully inadequate to deal with actual effects of these projects. In fact, we believe that an honest re-evaluation of purpose and need, alternatives, affected environment, and consequences will lead to vastly increased mitigations that would bring health back to our stream and river corridors rather than forcing us to teeter on the brink of oblivion.* **Response #594-7:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations.

Comment Information	Comment	Comments and Responses
		Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document will not be prepared for the Moffat Project. As a result of comments received on the DEIS, however, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from Denver Regional Council of Governments (DRCOG), Colorado Department of Local Affairs (DOLA) or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #594-8*** *(ID 1062)**:*** *The US Army Corps of Engineers and Bureau of Reclamation should deny these two related projects as proposed. If they were to proceed, the DEIS documents should be re-written based upon sound science and real effects to aquatic resources in Grand County and other West Slope counties.* **Response #594-8:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #600 Kit Coddington Lakeshore Neighborhood	From: [redacted] [mailto: [redacted] Sent: Wednesday, March 10, 2010 3:20 PM To: MOFFAT.EIS@usace.army.mil Subject: Attention Scott Franklin re Moffat Collection System Project Dear Mr. Franklin: Attached please find a list of mitigations /concerns the Lakeshore Neighborhood on the North Shore of Gross Reservoir has regarding the above referenced project. Would you please send a confirmation that you have received the attached file? Thank you. Kit Coddington for the Lakeshore Neighborhood [redacted] March 10, 2010 — Gross Dam mitigation list 2.doc	***Comment #600-1*** *(ID 3123)**:*** *Attached please find a list of mitigations /concerns the Lakeshore Neighborhood on the North Shore of Gross Reservoir has regarding the above referenced project. Would you please send a confirmation that you have received the attached file? Thank you. ATTACHMENT In the event there is no stopping this project, what mitigations would you like to see enacted or promised before Denver Water is issued a permit? 1) No public or construction parking allowed on the north side of Flagstaff Rd. ever; no parking allowed on the shoulders of Flagstaff and Gross Dam Rd. during and after construction. 2) Mitigations of noise from helicopters, chain saws, the cement batch plant that will run 24/7-- need to ensure that decibel levels do not exceed a safe or comfortable level. Remember, we are not used to hearing ANY noise! Construction hours should be kept to the length of a normal work day so that noise does not go on all night. 3) All efforts should be made to keep stockpile areas, staging areas, construction trucks, out of sight from existing neighborhoods. 4) Dust from haul trucks and construction traffic needs to be controlled on dirt roads. Dust from concrete cutting and batch plant needs to be controlled. How will this be done and who will monitor emissions to be sure they are at safe levels? 5) Toxic releases from possible incineration of slash from the tree-cutting needs to be curbed to safe levels. Who will be monitoring this? 6) There needs to be assurances that blasting will not harm water wells in the area or be too loud, exceeding safe decibel limits. There need to be guarantees that water wells will not be damaged, and financial reparations made if they are. 7) Elk calving grounds on Winiger, which is the staging area for the tree removal plan, need to be protected. 8) NO water access by motorized vehicles off North Shore. Heavy use here would impede traffic on Flagstaff Rd. and Gross Dam Rd. in the event the reservoir is enlarged.*

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Attachments: **In the event there is no stopping this project, what mitigations would you like to see enacted or promised before Denver Water is issued a permit?** **1) No public or construction parking allowed on the north side of Flagstaff Rd.ever; no parking allowed on the shoulders of Flagstaff and Gross Dam Rd. during and after construction.** **2) Mitigations of noise from helicopters, chain saws, the cement batch plant that will run 24/7-- need to ensure that decibel levels do not exceed a safe or comfortable level. Remember, we are not used to hearing ANY noise! Construction hours should be kept to the length of a normal work day so that noise does not go on all night.** **3) All efforts should be made to keep stockpile areas, staging areas, construction trucks, out of sight from existing neighborhoods.** **4) Dust from haul trucks and construction traffic needs to be controlled on dirt roads. Dust from concrete cutting and batch plant needs to be controlled. How will this be done and who will monitor emissions to be sure they are at safe levels?** **5) Toxic releases from possible incineration of slash from the tree-cutting needs to be curbed to safe levels. Who will be monitoring this?** **6) There needs to be assurances that blasting will not harm water wells in the area or be too loud,. exceeding safe decibel limits. There need to be guarantees that water wells will not be damaged, and financial reparations made if they are.** **7) Elk calving grounds on Winiger, which is the staging area for the tree removal plan, need to be protected.** **8) NO water access by motorized vehicles off North Shore . Heavy use here would impede traffic on Flagstaff Rd. and Gross Dam Rd. in the event the reservoir is enlarged.** **9) Guarantees of after-hour patrolling for untended camp-fires, illegal camping, and after-hours use of the reservoir, including parking, especially on the North Shore. The park closes at dusk, but cars often remain parked at the North Shore after the rangers have gone off duty.**	*9) Guarantees of after-hour patrolling for untended camp-fires, illegal camping, and after-hours use of the reservoir, including parking, especially on the North Shore. The park closes at dusk, but cars often remain parked at the North Shore after the rangers have gone off duty. 10) A detailed plan for reclamation and revegetation of shoreline—including planting schedules, location, quantity, size and types of plantings. The aspen, cottonwoods and willows that will be cut should be replanted to promote tree diversity in an area already targeted by pine beetle infestations. A detailed plan for replanting disturbed soils keeping invasive weeds to a minimum. 11) Updated mailing lists for stakeholders in the area need to be generated and used to notify residents of construction proceedings. 12) Assurances that the new dam size is safe structurally and can withstand the blasting and added pressure generated by 125 feet of higher dam and water. This work should be documented BEFORE before permits for construction are issued. 13) Evidence of increased conservation programs implemented by Denver for their customer base. 14)Felled timber needs to be treated for pine beetle before it is moved to control spread of beetle infestations. 15) Maintenance of bbq grills—weeds growing beneath the grills, and within a 10 ft. area from grills need to be mown or pulled to prevent windblown sparks from igniting them. These grills are rarely patrolled or maintained and need to be. Often fires inside them are still burning when they are abandoned, because there is no water source readily available to extinguish them. 16) Cut trees after spring/summer nesting is over and young birds have fledged. Use hydroaxe as little as possible or ban altogether because it destroys burrowing animals homes and often their lives. 17) Tree cutting also needs to be timed so that pine beetle larvae are not hatching or flying. 18) Any night lighting of DW operations needs to be aimed at the ground—not up in the air.*

Comment Information	Comment	Comments and Responses
	10) A detailed plan for reclamation and revegetation of shoreline—including planting schedules, location, quantity, size and types of plantings. The aspen, cottonwoods and willows that will be cut should be replanted to promote tree diversity in an area already targeted by pine beetle infestations. A detailed plan for replanting disturbed soils keeping invasive weeds to a minimum. 11) Updated mailing lists for stakeholders in the area need to be generated and used to notify residents of construction proceedings. 12) Assurances that the new dam size is safe structurally and can withstand the blasting and added pressure generated by 125 feet of higher dam and water. This work should be documented BEFORE before permits for construction are issued. 13) Evidence of increased conservation programs implemented by Denver for their customer base. 14)Felled timber needs to be treated for pine beetle before it is moved to control spread of beetle infestations. 15)Maintenance of bbq grills—weeds growing beneath the grills, and within a 10 ft. area from grills need to be mown or pulled to prevent windblown sparks from igniting them. These grills are rarely patrolled or maintained and need to be. Often fires inside them are still burning when they are abandoned, because there is no water source readily available to extinguish them. 16)Cut trees after spring/summer nesting is over and young birds have fledged. Use hydroaxe as little as possible or ban altogether because it destroys burrowing animals homes and often their lives. 17) Tree cutting also needs to be timed so that pine beetle larvae are not hatching or flying. 18) Any night lighting of DW operations needs to be aimed at the ground—not up in the air. 19) Many Denver Water fencelines are in disrepair; areas where the fence is down need to be fixed. Barbed wire in all areas except in the vicinity of the dam should be replaced with fencing that is friendlier to wildlife. We have seen elk hung	*19) Many Denver Water fencelines are in disrepair; areas where the fence is down need to be fixed. Barbed wire in all areas except in the vicinity of the dam should be replaced with fencing that is friendlier to wildlife. We have seen elk hung up on these fences. 20) The DEIS suggests that up to 15 acres of private land may have to be acquired to accommodate the expanded FERC boundary. Where is this private land located? The DEIS and the FERC project manual suggest $10000- $20,000 per acre as fair compensation for this land; recent market values show a 1 acre lot in Lakeshore sold for $70,000 + , and a 4 acre lot sold for $185,000. If any land is to be condemned, or otherwise appropriated, the landowner should get market value for it. 21) Any use of toxic substances, epoxies, sealants used in the making, cutting, and curing of concrete, or stored at the on-site batch plant which is to be located near the reservoir water line needs to be documented and toxic releases need to be monitored in both the air and water. These releases should be deemed "not harmful" to the health of people or animals, and if they are, they should not be allowed. Respectfully submitted to the US Army Corps of Engineers, and copies to FERC and Denver Water on March 10, 2010 by the Lakeshore Neighborhood.* **Response #600-1:** 1. Parking for construction workers would occur primarily within the FERC boundary at appropriate locations (e.g., stockpile and staging areas) within the Project area. There would be no increase in permanent parking spaces, seasons and/or hours of operation, or changes to the types of activities that are currently prohibited at Gross Reservoir. During construction activities, it may be necessary for construction related equipment to park along Gross Dam Road. However, safety would be considered when selecting areas available for road side parking. Once the Project is complete, all parking restrictions currently in place would be restored.

Comment Information	Comment	Comments and Responses
	up on these fences. 20) The DEIS suggests that up to 15 acres of private land may have to be acquired to accommodate the expanded FERC boundary. Where is this private land located? The DEIS and the FERC project manual suggest $10000- $20,000 per acre as fair compensation for this land; recent market values show a 1 acre lot in Lakeshore sold for $70,000 + , and a 4 acre lot sold for $185,000. If any land is to be condemned, or otherwise appropriated, the landowner should get market value for it. 21) Any use of toxic substances, epoxies, sealants used in the making, cutting, and curing of concrete, or stored at the on-site batch plant which is to be located near the reservoir water line needs to be documented and toxic releases need to be monitored in both the air and water. These releases should be deemed "not harmful" to the health of people or animals, and if they are, they should not be allowed. Respectfully submitted to the US Army Corps of Engineers, and copies to FERC and Denver Water on March 10, 2010 by the Lakeshore Neighborhood.	2. Noise impacts would occur from tree removal and residue disposal at Gross Reservoir. This activity would take approximately 6 to 8 months to complete and the specific timeline for tree removal would be determined during final design with the cooperation of Colorado Parks and Wildlife (CPW) (previously called Colorado Division of Wildlife) and the USFS. On-site temporary noise impacts would occur from timber harvest, yarding, and use of temporary roads. Noise levels would be similar to other construction activities and would not be expected to exceed relevant standards and guidelines. Off-site impacts would occur from trucks hauling the forest residue (ash, chips, whole trees, logs, and/or firewood) to sites where they would be disposed or sold. Roads used for access would include Flagstaff Road (CR 77) east and north of the dam, Gross Dam Road (CR 77S) from SH 72, CR 97, and CR 68, SH 72, and SH 93. Impacts are anticipated to be temporary and moderate. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the USFS, Colorado State Forest Service, and Boulder County.

Comment Information	Comment	Comments and Responses
		Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of FERC in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC. The concrete batch plant would be located at the Gross Dam staging area (on the south dam abutment) as shown on DEIS and FEIS Figure 2-3 and would operate from April through November. All Gross Reservoir construction and operation activity would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the U.S. Environmental Protection Agency (EPA), as summarized in FEIS Table 5.14-1. 3. Several temporary staging areas have been identified at the reservoir site. Two staging areas are downstream of the dam on South Boulder Creek. Two additional staging areas would be located at the southwestern end of the dam (see Figure 2-3). The staging areas adjacent to the dam and those that would be located near the hydropower plant are associated with the proposed dam construction footprint. The concrete plant, job trailers, and equipment yard would be located there. Existing slopes would be terraced to accommodate this. All staging areas above the new high water line would be temporary disturbances and would be restored following construction. As stated in DEIS Section 2.3.2.1, the majority of the aggregate required to construct the raised dam would be produced on-site. The exact amount that may be needed to be imported to the site would not be known until the dam design is complete and

Comment Information	Comment	Comments and Responses
		quarry activities begin. For EIS planning purposes, it was assumed that 40% of the aggregate material, plus sand, fly-ash and concrete, would be obtained from off-site sources. Two tentative stockpile areas have been identified on the south side of the reservoir: one is adjacent to the quarry site and the other is located immediately west of the dam (see Figure 2-3). The stockpile areas would be located in areas where material mined from the quarry site can be easily transported and stored until it is used for dam construction. FEIS Figure 4.15-1 shows a photographic simulation of the enlarged Gross Reservoir (additional 72,000 AF) as seen from the North Shore recreation parking lot. Temporary construction activities associated with stockpile and spoil areas would create major adverse temporary direct impacts to visual resources. Recommended mitigation measures aimed to minimize impacts to visual resources are described in FEIS Section 5.17.7. 4. As discussed in FEIS Section 5.13.7, a land development construction permit would be required from the CDPHE Air Pollution Control Division (APCD) prior to beginning the land clearing activities. The operating terms and conditions of a land development permit include a Fugitive Dust Control Plan to control emissions of particulate matter (dust). The Fugitive Dust Control Plan would define specific control measures, such as those listed in FEIS Table 5.13 9, that must be complied with by Denver Water and its contractors throughout the Project to minimize the release of fugitive dust. While a Corps' Section 404 Permit would require that construction activities conform to Colorado State Air Quality standards, the Corps would not require a compensation plan as a Section 404 Permit condition. However, it is the

Comment Information	Comment	Comments and Responses
		Corps' understanding that Denver Water is attempting to address residents' concerns. The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces National Ambient Air Quality Standards (NAAQS). Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, would require that construction activities conform to Colorado State Air Quality standards. For purposes of EIS analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. Denver Water would comply with applicable noise ordinances. Concrete batch plants mix sand, aggregate, cement and water (either in a mix truck or a stationary mixer) to produce concrete. Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. Particulate emissions from the Project's concrete batch plant would be controlled by devices such as baghouses (i.e., fabric filters used to filter exhaust air during pneumatic transfers of material). The air emissions from the concrete batch plant have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The concrete batch plant would be located at the Gross Dam

Comment Information	Comment	Comments and Responses
		staging area (on the south dam abutment) as shown on DEIS and FEIS Figure 2-3 and would operate from April through November. 5. Air quality impacts from tree removal and residue disposal are discussed in FEIS Section 5.13.1.1. Denver Water would work with the USFS to determine the best disposal option, which may involve the use of an air curtain incinerator (ACI) onsite or grinding the trees and removing the chips. ACIs use a blower to create a high velocity air flow to a combustor box. This provides higher temperatures and longer residence time for combustion than open burning, resulting in more complete combustion and fewer particulate emissions (smoke). A recent study evaluating the effectiveness of ACIs showed the ACI to give a 23-fold reduction in particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) emissions over pile burns, and a 33-fold reduction over understory burns according to "Reducing PM2.5 Emissions through Technology" (USFS, Rocky Mountain Research Station, Fires Sciences Laboratory, Missoula, Montana). 6. Blasting would occur when onsite aggregate quarries are in operation (approximately the first year of aggregate processing) and in the early phases of construction related to the dam foundation excavation. Typically the frequency of blasting is every 3 to 4 days due to the time it takes to drill the blast holes. Blasting would occur only during daylight hours, typically occurring at the end of the day shift. Safety precautions would be taken to keep unauthorized personnel away from blast areas. Blasts would be designed such that holes are appropriately spaced, loaded and stemmed to prevent air blast and excessive vibration and to limit any fly rock migrating outside of the blast zone. The blasting agent used would likely be

Comment Information	Comment	Comments and Responses
		Ammonium Nitrate Fuel Oil, which when handled appropriately is a relatively safe and stable product used in construction and quarrying operations throughout the U.S. The blast would be designed to produce relatively low vibrations (ground motions) and blasting adjacent to the dam would be controlled to prevent any damage to the dam or the existing foundation. All blasting would be designed and overseen by a Colorado-licensed Blasting Engineer. Blasting would be designed specifically for Gross Dam and would only create ground vibrations and land motion appropriate for the dam structure to sustain. A seismograph would be used to monitor ground motions and air pressure (noise) vibrations produced from the blasting operations to ensure that acceleration thresholds are not exceeded. The land motion created from blasting dissipates rapidly from the source (i.e., the dam) and would be insufficient to collapse wells in the region. 7. Winiger Ridge would be used as a staging area for tree removal. The main access points would include SH 72, Gross Dam Road, and across Winiger Ridge using FR 359 and CR 68. Winiger Ridge is used by elk as severe winter range and winter concentration area, but is not identified as elk calving habitat (see DEIS Figure 3.7-2). Additionally, the proposed Project would inundate only the edges of Winiger Ridge and the majority of habitat would remain intact. Tree removal would be concurrent with other construction activities and would not take place during winter months. Additional information has been added to the FEIS regarding the elk migration corridor near Gross Reservoir. An analysis of displacement effects to elk during construction has also been added to the wildlife analysis in FEIS Sections 3.9 and 5.9.

Comment Information	Comment	Comments and Responses
		8. Motorized boating is not currently allowed at Gross Reservoir pursuant to the FERC Gross Reservoir Recreation Management Plan and Denver Water does not anticipate changing this condition. Any changes to the Gross Reservoir Recreation Management Plan, such as motorized boating, would occur during the FERC hydropower license amendment. At that time, there would be an additional opportunity for public comment to the FERC. 9. It is assumed that existing ranger patrols at Gross Reservoir would continue under an expanded Gross Reservoir. 10. A majority of mitigation and restoration would be staged and occur concurrently with construction activities. Some mitigation, however, would not be conducted until after construction is completed. Due to the variation of the timing of mitigation, the Corps is unable to provide a specific timeframe of these activities. Revegetation of the cleared area above the inundation line would be done in the first appropriate season following timber removal, and there would not be a gap of several years between clearing and revegetation. Within the expanded inundation area, there could be a gap of several years between timber removal and inundation, and no revegetation would be conducted below the new high water line. Denver Water would work with the USFS to ensure that forest clearing and revegetation would be consistent with National Forest standards. Removal of trees in the new inundation area would create a temporary major visual impact until the reservoir fills, which was described in DEIS Section 4.15. The revegetation plan for Gross Reservoir would be prepared after

Comment Information	Comment	Comments and Responses
		completion of the FEIS and prior to construction for those areas above the new high water line. A discussion of the potential for water-borne dispersal of noxious weeds to Gross Reservoir has been added to the vegetation analysis in FEIS Section 5.7.1. Although there would be unavoidable adverse effects if noxious weeds spread, efforts to control noxious weeds and to revegetate disturbed areas would use standard practices that are expected to be generally effective. DEIS Section 4.5.7 provided a summary of mitigation and monitoring requirements, and has been updated in the FEIS to include USFS requirements for Forest Service lands in the Gross Reservoir area. With the recommended mitigations, it is unlikely that noxious weeds or non-native plants would spread into undisturbed forests as a result of this Project, and impacts would generally be confined to disturbed areas. Additionally, as part of Denver Water's existing FERC hydropower license for Gross Reservoir (Article 406 – Conditions 107 and 108), Denver Water is required to submit an annual monitoring report for noxious plants. This report includes a list of the priority species and plans to eradicate those species from the FERC project area (which includes lands owned by the USFS and Denver Water).These weed control efforts involve the cooperation of the USFS and Denver Water and use lists of noxious weeds developed by the USFS and the Colorado Department of Agriculture. 11. Denver Water maintains a list of interested parties for the FERC amendment process and has obtained a mailing list from Boulder County for the residents near Gross Reservoir. Any interested party can sign-up for the distribution list by visiting Denver Water's web page

Comment Information	Comment	Comments and Responses
		(www.denverwater.org). Additionally, Denver Water and the Corps purchase advertising space in local publications informing the community of upcoming meetings and events. 12. Please see the response to Item 6 above. Routine Federal- and State-imposed dam safety inspections are performed on the existing Gross Dam. Similarly, dam safety inspections and analyses would be conducted for an enlarged Gross Reservoir during final design. Where appropriate, general safety features were incorporated into the conceptual dam designs used for the EIS impact analysis. For example, Section 2.3.2.1 states: “In order to satisfy current dam safety criteria, the dam raise would necessitate an increased spillway capacity, improved dam safety condition, and would require the construction of a service spillway. The spillway could be located in the dam crest, a topographic saddle south of the dam or along the right abutment of the dam or some combination (Figure 2-3).” Denver Water would design the dam enlargement in accordance with the Colorado Rules and Regulations for Dam Safety and Dam Construction and current engineering practices, and it would be subject to a series of design reviews by Denver Water, the Colorado SEO, FERC, and an independent review panel made up of expert dam engineers approved by FERC. FERC and the SEO conduct annual inspections of the existing Gross Dam and FERC requires that an Independent Safety Inspection be conducted by an outside third-party consultant every five years. Denver Water’s Dam Safety staff also conducts a formal inspection of Gross dam every year, and the Denver Water Engineering Manager

Comment Information	Comment	Comments and Responses
		of Dam Safety conducts periodic spot inspections. Additionally, Denver Water would update its current Emergency Action Plan (EAP), required by FERC and the SEO, if Gross Reservoir is enlarged, to minimize the risk of loss of life and property damage when potential emergency conditions threaten the structural integrity of a dam. The EAP describes procedures to: • Identify unusual and unlikely conditions that may endanger the dam • Initiate remedial actions to prevent or minimize the downstream impacts of a dam failure • Initiate emergency actions to warn downstream residents of impending or actual failure of the dam. The EAP provides a detailed description of the communications protocol such as who needs to be notified and what areas are likely to be flooded, among other details, in the highly unlikely event of a dam failure. Plan participants include the Boulder County Office of Emergency Management, Boulder County Sheriff, Boulder police and fire departments, Lafayette police department, Colorado State Police, State of Colorado Division of Emergency Management, National Weather Service, and many others. The EAP is exercised yearly and a formal tabletop and functional exercise is conducted with downstream emergency personnel every five years. 13. As shown in FEIS Table 1-1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement

Comment Information	Comment	Comments and Responses
		(customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections, pages 9-12) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water – and customers are on pace to meet this goal. It is anticipated that Denver Water will continue its conservation program after the 2016 goal is met, however no specific percentage after that date has yet been established. Denver Water prefers to establish goals within a shorter timeframe than 40 years to accommodate changes in water use, landscaping trends, technological innovation and population growth. Denver Water has a conservation-oriented rate structure that includes a positive slope in the average price curve for all of its customers except master meter distributors. Denver Water does not have the legal authority to prescribe a rate structure to its master meter distributors, but it should be noted that similar drops in water use have been observed in master meter districts,

Comment Information	Comment	Comments and Responses
		regardless of the rate structure they use. Denver Water has a holistic suite of residential indoor/outdoor and industrial, commercial, and institutional conservation incentives. Denver Water does not currently have a landscape retrofit rebate program, but does provide incentive contracts to large irrigators to retrofit their landscape. Denver Water's current operating budget is $251 million and it's spending on conservation programs in most years exceeds $8 million, meaning it currently spends more than 3% of its operating budget on this program. Denver Water operates almost 3,000 miles of pipes in the treated water system and has programs to monitor and maintain the distribution piping, including leak detection, corrosion monitoring, valve testing, water quality testing, pressure monitoring and fire flow testing. Denver Water's leak detection program is a crucial component of conservation and system maintenance. Year-round leak programs have been in place since 1981. The current leak detection program includes system loggers and mobile sonic detection devices, which are used to survey the system and to pinpoint leaks. Denver Water has a team dedicated to leak detection tasks, with the goal of covering all pipes every 5 years. All leaks detected are repaired. Denver Water's distribution system leak and break rate is less than half the national average. Three programs for pipe renewal have been operating since at least 1960; the main replacement program, the pipe rehabilitation (cement mortar lining) program, and the system improvements program. Collectively, these programs are geared to reducing leak losses, improving fire flow and water quality, minimizing interruptions, and maintaining high service standards. In 2009, the Denver Water Board approved major increases

Comment Information	Comment	Comments and Responses
		on the replacement and rehabilitation programs, and expenditures are expected to double over the next ten years. Denver Water encourages local and State governments to adopt ordinances and laws for efficient water use, however Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But it does have the power to enact water rules and enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day irrigation can occur. Denver Water and its suburban distributors are in compliance with Colorado statute 37-60-126. 14. The forests at Gross Reservoir have not been affected by the current outbreak of mountain pine beetle in the Rockies, and have a moderate to good chance of not being affected. Therefore, it is not appropriate to forecast the potential changes in forest structure in the FEIS. Information about the relationship of the Project and mountain pine beetle has been added to the to the vegetation analysis in FEIS Sections 4.6.7 and 5.7. Furthermore, the proposed Project would not affect the current pine beetle outbreak. Denver Water would also work with the USFS to ensure that forest clearing and revegetation would be consistent with National Forest Standards. 15. Installed barbecue grills include crusher fine gravel surrounding the grill to provide a non-flammable base. Over time, vegetation has encroached around some of the grills and as such, mowing, to remove flammable material, is performed as needed. 16. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops

Comment Information	Comment	Comments and Responses
		complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the USFS, Colorado State Forest Service, and Boulder County. Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of FERC in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC. Nesting birds are protected under the Migratory Bird Treaty Act, and land-clearing activities would be timed to avoid the breeding season (DEIS Section 4.7.7). 17. Please see the response to Item 14 above. 18. In general, construction activities would occur during the day and night lighting would not be required other than for safety and security purposes. However, there may be infrequent periods during the construction phase of the Project when double or even triple work shifts would be required. Increased night lighting would be required during these infrequent periods and it would be visible from surrounding nearby residences and wildlife during this construction

Comment Information	Comment	Comments and Responses
		activity. Work hours for all construction would be limited in conformance with applicable local ordinances. Following completion of construction, lighting on the raised dam would be the same as currently exists. Therefore, no long term impacts from lighting are expected. 19. The Corps notes the comment. 20. The private land needed, as shown in the Draft FERC amendment application, is to the south of the existing reservoir. Denver Water has contacted the landowner and is currently negotiating an agreement to take ownership of the land required for an enlargement. 21. Denver Water and its contractor would comply with all applicable Federal, State, and local regulations related to proper handling and disposal of hazardous materials. A Materials Handling Plan would be developed to identify how to properly handle and dispose of contaminated materials generated during the Project. For example, contractors would store fuel and other hazardous materials associated with construction activities away from water bodies and take appropriate precautions to avoid spilling hazardous materials or fuels during construction.

Comment Information	Comment	Comments and Responses
Comment #620 Patricia Raney, Secretary Greater Grand Lake Shoreline Association P.O. Box 1096 Grand Lake, CO 80447	From: Pat Raney [mailto:patraney@patraney.com] Sent: Sunday, March 14, 2010 5:48 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Firming Comment Attached please find my comments on the Moffat Firming Project. Patricia Raney, Grand Lake, Colorado - PDR-MoffatFirm3-2010.doc	***Comment #620-3*** *(ID 3132)**:*** *This letter is to express my concerns for water quality in Grand County, and my opposition to the Moffat Firming process. I am adamantly opposed to any action to divert water from the already badly depleted Fraser River. Taking additional water from the Fraser will increase the nutrient loading at Windy Gap. This water is then pumped into Grand Lake by Northern Water's Windy Gap project. The water flows through Shadow Mountain Reservoir before coming into Grand Lake. Shadow Mountain Reservoir cannot handle the nutrient loading it is experiencing now due to the Colorado-Big Thompson diversion system. I have been sampling the water in Grand Lake every summer since 1996. I was trained by the Colorado Department of Health and by GCWIN. The data shows an alarming decrease in the water clarity of Grand Lake. Grand Lake, Colorado's largest natural lake, has been degraded by NCWCD's water diversions to the Front Range. In fact, the clarity of Grand Lake has decreased from 9 meters in 1941 to 1.57 meters in 2007.* **Response #620-3:** Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #620-2*** *(ID 3131)**:*** *The Colorado Water Quality Control Commission will hold hearings in June, 2011 to establish statewide nutrient standards. It is inappropriate to approve this project prior to these hearings and the standards being set, all the while knowing that the nutrient loading will be increased by additional diversions from the Fraser River.*

Comment Information	Comment	Comments and Responses
	Attachments: Greater Grand Lake Shoreline Association P. O. Box 1096 Grand Lake, CO 80447-1096 Mr. Scott Franklin, Moffat EIS Mngr. Corps Denver Regulatory Office 9307 So. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin, This letter is to express my concerns for water quality in Grand County, and my opposition to the Moffat Firming process. I am adamantly opposed to any action to divert water from the already badly depleted Fraser River. Taking additional water from the Fraser will increase the nutrient loading at Windy Gap. This water is then pumped into Grand Lake by Northern Water's Windy Gap project. The water flows through Shadow Mountain Reservoir before coming into Grand Lake. Shadow Mountain Reservoir cannot handle the nutrient loading it is experiencing now due to the Colorado-Big Thompson diversion system. I have been sampling the water in Grand Lake every summer since 1996. I was trained by the Colorado Department of Health and by Grand County Water Information Network. The data shows an alarming decrease in the water clarity of Grand Lake. Grand Lake, Colorado's largest natural lake, has been degraded by NCWCD's water diversions to the Front Range. In fact, the clarity of Grand Lake has decreased from 9 meters in 1941 to 1.57 meters in 2007. The Colorado Water Quality Control Commission will hold hearings in June, 2011 to establish statewide nutrient standards. It is inappropriate to approve this project prior to these hearings and the standards being set, all the while knowing that the nutrient loading will be increased by additional diversions from the Fraser River. The draft EIS should be revised to include: • A guarantee on flows, and full consideration of and conformation to the statewide nutrient standards for Grand Lake to be set in 2011. • A serious water conservation program on the Front Range • Consideration of the socio-economic impact on Grand Lake and Grand County • Consideration of the combined impact of Windy Gap firming and Moffat firming projects on Grand Lake I appreciate your consideration of this important matter. Patricia Raney Secretary, Greater Grand Lake Shoreline Association	**Response #620-2:** The FEIS has been updated to reflect the current (2012) Section 303(d) listings. Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. This additional analysis includes potential changes in nutrient concentrations and loading. ***Comment #620-1*** *(ID 3130)**:*** *The draft EIS should be revised to include: • A guarantee on flows, and full consideration of and conformation to the statewide nutrient standards for Grand Lake to be set in 2011. • A serious water conservation program on the Front Range • Consideration of the socio-economic impact on Grand Lake and Grand County • Consideration of the combined impact of Windy Gap firming and Moffat firming projects on Grand Lake I appreciate your consideration of this important matter* **Response #620-1:** Additional water quality analyses have been performed on the Fraser River and the Three Lakes area, including various temperature studies. Refer to FEIS Sections 4.6.2 and 5.2. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. As shown in FEIS Table 1-1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of

Comment Information	Comment	Comments and Responses
		demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections, pages 9-12) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water – and customers are on pace to meet this goal. It is anticipated that Denver Water will continue its conservation program after the 2016 goal is met, however no specific percentage after that date has yet been established. Denver Water prefers to establish goals within a shorter timeframe than 40 years to accommodate changes in water use, landscaping trends, technological innovation and population growth. Denver Water has a conservation-oriented rate structure that includes a positive slope in the average price curve for all of its customers except master meter distributors. Denver Water does not have the legal authority to prescribe a rate structure to its master meter distributors, but it should be noted that similar drops in water use have been observed in master meter districts, regardless of the rate structure they use. Denver Water has a holistic suite of residential indoor/outdoor and ICI conservation incentives. Denver Water does not currently have a landscape retrofit rebate program, but does provide incentive contracts to large irrigators to retrofit their landscape. Denver Water's current operating budget is $251 million and it's spending on conservation programs in most years exceeds

Comment Information	Comment	Comments and Responses
		$8 million, meaning it currently spends more than 3% of its operating budget on this program. Denver Water operates almost 3,000 miles of pipes in the treated water system and has programs to monitor and maintain the distribution piping, including leak detection, corrosion monitoring, valve testing, water quality testing, pressure monitoring and fire flow testing. Denver Water's leak detection program is a crucial component of conservation and system maintenance. Year-round leak programs have been in place since 1981. The current leak detection program includes system loggers and mobile sonic detection devices, which are used to survey the system and to pinpoint leaks. Denver Water has a team dedicated to leak detection tasks, with the goal of covering all pipes every 5 years. All leaks detected are repaired. Denver Water's distribution system leak and break rate is less than half the national average. Three programs for pipe renewal have been operating since at least 1960; the main replacement program, the pipe rehabilitation (cement mortar lining) program, and the system improvements program. Collectively, these programs are geared to reducing leak losses, improving fire flow and water quality, minimizing interruptions, and maintaining high service standards. In 2009, the Denver Water Board approved major increases on the replacement and rehabilitation programs, and expenditures are expected to double over the next ten years. Denver Water encourages local and State governments to adopt ordinances and laws for efficient water use, however Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But it does have the power to enact water rules and enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day irrigation can occur. Denver Water and its suburban distributors are in compliance with Colorado statute 37-60-126.

Comment Information	Comment	Comments and Responses
		The socioeconomic impact analysis takes into account the conclusions of a number of other resources, including surface water, recreation, visual resources, aquatic biological resources and others. The evaluation of socioeconomic impacts to Grand County in DEIS Section 4.17 considered these conclusions in assessing Project impacts on tourism and related sectors. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 The DEIS and FEIS included the WGFP as part of the analysis because the WGFP is assumed to be on-line under Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2, under the sub-heading, Colorado River Water Quality, acknowledged: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment Information	Comment	Comments and Responses
Comment #714 Jason Scott Johnston [redacted]	From: Jason Johnston [mailto: [redacted] Sent: Monday, March 15, 2010 12:44 PM To: MOFFAT.EIS@usace.army.mil Cc: Jason Johnston Subject: Comment on the Draft EIS for the Moffat Project Dear Sir or Madam: I am a part time resident of Winter Park who spends substantial time fishing on the Fraser River and mountain biking and hiking in the Fraser River Valley. I am also an economist and [redacted] at the [redacted] where I direct the [redacted] A major focus of my research is on the economics of environmental and natural resource regulation. This email contains some comments on the October, 2009 draft EIS for the Moffat Collection system project. My comments in this email consist of: 1) some personal observations regarding the impact of existing Denver Water (DW) withdrawls from the Fraser River on fish in that river and speculations on what the proposed increased withdrawls would do to the River, personal observations and speculations that would, at the litigation stage, motivate a search for supporting expert opinions from fish biologists, 2) a very partial and incomplete set of criticisms of the economic analysis underlying the EIS, criticisms that would -- along with the critique of the environmental impact evidence regarding impact of increased diversion on Fraser River fish populations -- be much more fully developed when the EIS is subject to judicial review, and, 3) perhaps the greatest weakness of the DIS, its failure to consider an alternative that minimizes environmental impacts at very little if any cost -- new restrictions on the use of water for lawns and similar cosmetic landscaping by DW customers. As described in the draft EIS, the Gross Reservoir expansion preferred alternative would involve increased DW withdrawls from the Fraser River during periods of drought in average and wet years (see p. 2-38) The problem with this is that existing DW Fraser River withdrawls already have caused noticeable degradation of the Fraser and severely stress native trout populations. My impression -- which of course would have to be confirmed by biologists -- is that DW now withdraws lots of Fraser River water during periods of high heat and drought in Denver, not so as to supply drinking water -- as drinking water demand does not increase during such periods -- but to satisfy customer demand for water to water lawns and ornamental, non-native trees and shrubberies during such hot periods. The clear impact of the current pattern of Fraser River withdrawls by DW has been to cause noticeable river degradation, with the growth of green algae in particular seeming to indicate a river that is too warm, with too little flow and too little oxygen, for a good portion of the summer (June - September) season. Under the current pattern of DW withdrawls from the Fraser, afternoon water temperatures in the Fraser often soar above 65 degrees Fahenheit beginning, in some years, as early as mid-July, but certainly by early August. This has caused many owners of private Fraser River waters to close afternoon fishing. The reason for such closures is that even without fishing pressure, trout in	***Comment #714-1*** *(ID 3200):* *I am a part time resident of Winter Park who spends substantial time fishing on the Fraser River and mountain biking and hiking in the Fraser River Valley. I am also an economist and [redacted], where I direct the [redacted]. A major focus of my research is on the economics of environmental and natural resource regulation. This email contains some comments on the October, 2009 draft EIS for the Moffat Collection system project. My comments in this email consist of: 1) some personal observations regarding the impact of existing Denver Water (DW) withdrawls from the Fraser River on fish in that river and speculations on what the proposed increased withdrawls would do to the River, personal observations and speculations that would, at the litigation stage, motivate a search for supporting expert opinions from fish biologists, 2) a very partial and incomplete set of criticisms of the economic analysis underlying the EIS, criticisms that would -- along with the critique of the environmental impact evidence regarding impact of increased diversion on Fraser River fish populations -- be much more fully developed when the EIS is subject to judicial review, and, 3) perhaps the greatest weakness of the DIS, its failure to consider an alternative that minimizes environmental impacts at very little if any cost -- new restrictions on the use of water for lawns and similar cosmetic landscaping by DW customers.* **Response #714-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver

Comment Information	Comment	Comments and Responses
	the Fraser are severely stressed. I have personally observed dead or distressed trout in the Fraser by late summer. The pattern of withdrawls under the preferred alternative in the draft EIS would seem to mean even bigger withdrawls during hot and droughty periods during even average summers. Such an increase in withdrawls cannot help but further degrade the Fraser, leading to even more stress on the trout population. Now whether these impacts have been adequately and full considered in the draft EIS would depend very much upon what outside experts say about the thoroughness and quality of the scientific evidence backing up the EIS. I am not a biologist and so can only guess. On the economic basis of the draft EIS, however, I can say a bit more. Appendix A to the draft EIS contains the review by Harvey Economics of the socio-economic forecasts underlying DW's justification for the Moffat project. The review by Harvey Economics is a cursory and superficial analysis -- which explicitly did not involve any evaluation of the data or underlying assumptions used in the models generating DW's forecasted shortfall (see Appendix A to the EIS, p.6)-- that cannot possible satisfy the standard that federal courts require of NEPA EIS's. DW says that this project is needed because its "near term" water needs -- where "near term" has the rather bizarre meaning of 2030 -- will involve a shortfall of 34,000 AF/yr without the project, only 16,000 AF/yr of which can be met by new conservation projects. (see p. ES-4). This leaves a "need" for an additional 18,000 AF/yr. However, DW's need is generated by forecasts contained in its Integrated Resources Plan, first prepared in 1997 and updated in 2002, and that updated Plan in turn apparently relies on forecasts generated by BBC Research and Consulting and DRI in 2001, some or all of which were apparently paid for by the Denver Regional Council of Governments (DRCG). These economic forecasts are basically predictions of future water demand by DW customers. To predict this, one has to predict how many people will be served by DW over the next 20 years, plus the price that DW will charge for water in the future, plus the regulations that will be imposed by DW on its customers' water use. The 20 year forecasts relied upon by DW include, perhaps most importantly, a forecast of smooth employment growth with no exogenous shocks, a prediction that metro Denver can grow in population to 1.443 million by 2030 (an increase of about 25%) and to 1.7 million by 2050 (a 70% increase relative to 2010), relatively modest water price increases over this period, and no changes in regional growth controls. The problem with these forecasts is that they were prepared in 2002, and are now simply absurd and fantastical. As everyone knows, the Great Recession that began in 2007 has changed the economic world. Virtually every major macroeconomic forecasting business has altered downward their economic forecasts for U.S. economic growth and U.S. population growth. Generally, predicted rates of economic growth over the next 20-30 years have been cut in half relative to what they were even as recently as 2005. With immigration to the U.S. having greatly slowed, and even reversed itself to a net outflow in some regions of the country, population growth forecasts have also been revised substantially downward. For the draft EIS to cursorily endorse the use of forecasts dating from 2002, as it effectively does, is effectively to allow any number, however outdated and absurd, to be used to justify a project. NEPA's core requirement -- that environmental costs be balanced and	Water enforces water waste rules per its Operating Rules, including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, and prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The Corps considers appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #714-2*** *(ID 3199)**:*** *As described in the draft EIS, the Gross Reservoir expansion preferred alternative would involve increased DW withdrawls from the Fraser River during periods of drought in average and wet years (see p. 2-38) The problem with this is that existing DW Fraser River withdrawls already have caused noticeable degradation of the Fraser and severely stress native trout populations. My impression -- which of course would have to be confirmed by*

Comment Information	Comment	Comments and Responses
	considered by the action agency -- cannot be satisfied by an EIS that effectively allows the project proponent to use outdated and arbitrary economic forecasts to generate the need for the project in the first place. The reason is simple -- an EIS must always consider the no action alternative, and in any EIS, let alone this one, the use of outdated and extremely pro-growth economic forecasts always dooms the no action alternative to a growth-oriented infrastructure project. There is a final and more fundamental objection to the draft EIS: its failure to consider among the alternatives one that requires DW to radically change how it effectively regulates water use by its customers. There are many possibilities here: some involve restrictions on water use for watering lawns and ornamental trees and shrubberies, some involve variable pricing, with prices increasing very rapidly for water uses above those amounts needed to typical direct human bathing and drinking water use. Many municipal water districts, from Tucson to Atlanta, have already imposed such restrictions in use and pricing. Especially in light of forecasts of potential increasingly frequent drought over the next several decades, it is inconceivable that a water supplier to a dry, high plains city such as Denver would not consider FIRST such conservation and efficiency-oriented regulatory changes, before even thinking about increasing demands on our finite water supplies through a new infrastructure project such as the Moffat Collection system proposal. It is this aspect of the EIS -- its failure to adequately consider the full range of conservation alternatives -- that give this particular EIS potentially national and even international significance, and would justify strenuous efforts to ensure that the EIS is subject to thorough and complete judicial review in the federal courts if the USACE were to approve the Moffat Collection project. Thank you for your time and attention. Sincerely, Jason Scott Johnston. Jason Scott Johnston [redacted] Phone [redacted] Fax: [redacted]	*biologists -- is that DW now withdraws lots of Fraser River water during periods of high heat and drought in Denver, not so as to supply drinking water -- as drinking water demand does not increase during such periods -- but to satisfy customer demand for water to water lawns and ornamental, non-native trees and shrubberies during such hot periods. The clear impact of the current pattern of Fraser River withdrawls by DW has been to cause noticeable river degradation, with the growth of green algae in particular seeming to indicate a river that is too warm, with too little flow and too little oxygen, for a good portion of the summer (June - September) season. Under the current pattern of DW withdrawls from the Fraser, afternoon water temperatures in the Fraser often soar above 65 degrees Fahrenheit beginning, in some years, as early as mid-July, but certainly by early August. This has caused many owners of private Fraser River waters to close afternoon fishing. The reason for such closures is that even without fishing pressure, trout in the Fraser are severely stressed. I have personally observed dead or distressed trout in the Fraser by late summer. The pattern of withdrawls under the preferred alternative in the draft EIS would seem to mean even bigger withdrawls during hot and droughty periods during even average summers. Such an increase in withdrawls cannot help but further degrade the Fraser, leading to even more stress on the trout population.* **Response #714-2:** As discussed in DEIS Section 3.9 and FEIS Section 3.11, the length of the Fraser River continues to support a healthy fish community of trout and non-game species, based on sampling through 2009. Rainbow trout have declined somewhat with the presence of whirling disease, but the fish community has been fairly stable over the past three decades with the existing withdrawals of water from the headwater streams.

Comment Information	Comment	Comments and Responses
		Regarding late summer flows, additional withdrawals as part of the Project would generally occur during the runoff period in May through early July of average and wet years. Flow changes in late July through September in these years would be small and flows throughout the year in dry (drought) years would be unchanged. Therefore, conditions for fish and other aquatic organisms in the part of the late summer with low flows and high temperatures would have minimal changes with the Project (see DEIS Section 4.9 and FEIS Section 5.11). ***Comment #714-3*** *(ID 3198)**:*** *Now whether these impacts have been adequately and full considered in the draft EIS would depend very much upon what outside experts say about the thoroughness and quality of the scientific evidence backing up the EIS. I am not a biologist and so can only guess. On the economic basis of the draft EIS, however, I can say a bit more. Appendix A to the draft EIS contains the review by Harvey Economics of the socio-economic forecasts underlying DW's justification for the Moffat project. The review by Harvey Economics is a cursory and superficial analysis -- which explicitly did not involve any evaluation of the data or underlying assumptions used in the models generating DW's forecasted shortfall (see Appendix A to the EIS, p.6)-- that cannot possible satisfy the standard that federal courts require of NEPA EIS's. DW says that this project is needed because its "near term" water needs -- where "near term" has the rather bizarre meaning of 2030 -- will involve a shortfall of 34,000 AF/yr without the project, only 16,000 AF/yr of which can be met by new conservation projects. (see p. ES-4). This leaves a "need" for an additional 18,000 AF/yr. However, DW's need is generated by forecasts contained in its Integrated Resources Plan, first prepared in 1997 and updated in 2002, and that updated Plan in turn apparently relies on forecasts*

Comment Information	Comment	Comments and Responses
		generated by BBC Research and Consulting and DRI in 2001, some or all of which were apparently paid for by the Denver Regional Council of Governments (DRCG). *These economic forecasts are basically predictions of future water demand by DW customers. To predict this, one has to predict how many people will be served by DW over the next 20 years, plus the price that DW will charge for water in the future, plus the regulations that will be imposed by DW on its customers' water use. The 20 year forecasts relied upon by DW include, perhaps most importantly, a forecast of smooth employment growth with no exogenous shocks, a prediction that metro Denver can grow in population to 1.443 million by 2030 (an increase of about 25%) and to 1.7 million by 2050 (a 70% increase relative to 2010), relatively modest water price increases over this period, and no changes in regional growth controls. The problem with these forecasts is that they were prepared in 2002, and are now simply absurd and fantastical. As everyone knows, the Great Recession that began in 2007 has changed the economic world. Virtually every major macroeconomic forecasting business has altered downward their economic forecasts for U.S. economic growth and U.S. population growth. Generally, predicted rates of economic growth over the next 20-30 years have been cut in half relative to what they were even as recently as 2005. With immigration to the U.S. having greatly slowed, and even reversed itself to a net outflow in some regions of the country, population growth forecasts have also been revised substantially downward. For the draft EIS to cursorily endorse the use of forecasts dating from 2002, as it effectively does, is effectively to allow any number, however outdated and absurd, to be used to justify a project. NEPA's core requirement -- that environmental costs be balanced and considered by the action agency -- cannot be satisfied by an EIS*

Comment Information	Comment	Comments and Responses
		that effectively allows the project proponent to use outdated and arbitrary economic forecasts to generate the need for the project in the first place. The reason is simple -- an EIS must always consider the no action alternative, and in any EIS, let alone this one, the use of outdated and extremely pro-growth economic forecasts always dooms the no action alternative to a growth-oriented infrastructure project. **Response #714-3:** The following facts about the EIS correct the misperceptions expressed in this comment: a. The underlying data and assumptions adopted for the Denver Water water demand forecasting model were independently evaluated. b. Water price and regulation of use (conservation) were explicitly considered in determining the Purpose and Need for the Project. c. Water demand projections 20 or more years in the future assume normalized economic conditions as appropriate methodology. d. The projections are not arbitrary, but are based upon commonly utilized techniques by recognized forecasting agencies in the region and the State. The water demand estimates and projections provided in the Denver Water Integrated Resources Plan (IRP) were evaluated independently and in considerable detail. The demand forecasting model, the specifications of that model, and the independent variables that drove that model were independently examined and validated. The data used as inputs to the water demand forecasting model was reviewed and updated for the FEIS, as appropriate. More recent data, including economic and demographic projections, reflected the conditions of the past

Comment Information	Comment	Comments and Responses
		several years and these patterns were incorporated into the model. Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver Primary Metropolitan Statistical Area (PMSA) between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #714-4*** *(ID 3197)**:*** *There is a final and more fundamental objection to the draft EIS: its failure to consider among the alternatives one that requires DW to radically change how it effectively regulates water use by its customers. There are many possibilities here: some involve restrictions on water use for watering lawns and ornamental trees and shrubberies, some involve variable pricing, with prices increasing very rapidly for water uses above those amounts needed to typical direct human bathing and drinking water use. Many municipal water districts, from Tucson to Atlanta, have already imposed such restrictions in use and pricing. Especially in light of forecasts of potential increasingly frequent drought over the next several decades, it is inconceivable that a water supplier to a dry, high plains city such as Denver would not*

Comment Information	Comment	Comments and Responses
		consider FIRST such conservation and efficiency-oriented regulatory changes, before even thinking about increasing demands on our finite water supplies through a new infrastructure project such as the Moffat Collection system proposal. It is this aspect of the EIS -- its failure to adequately consider the full range of conservation alternatives -- that give this particular EIS potentially national and even international significance, and would justify strenuous efforts to ensure that the EIS is subject to thorough and complete judicial review in the federal courts if the USACE were to approve the Moffat Collection project. **Response #714-4:** All Denver Water customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed -- a fixed, per account service charge. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water

Comment Information	Comment	Comments and Responses
		requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's water collection system. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable, long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural

Comment Information	Comment	Comments and Responses
		replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.

Comment Information	Comment	Comments and Responses
Comment #719 N. LeRoy Poff, PhD, [redacted]	From: LeRoy Poff [mailto:[redacted] Sent: Monday, March 15, 2010 5:16 PM To: MOFFAT.EIS@usace.army.mil Cc: campbell.carol@epa.gov Subject: Comments on Moffat DEIS Dear Mr. Franklin, Please accept my comments, and enter them into the public record, on the DEIS for the Moffat Collection Expansion Project. Thank you, LeRoy Poff -- --- N. LeRoy Poff [redacted] --- [redacted] --- - Poff_Moffat DEIS comments(3_15_10).pdf	***Comment #719-7*** *(ID 3294)**:*** *Please accept my comments, and enter them into the public record, on the DEIS for the Moffat Collection Expansion Project.* **Response #719-7:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #719-6*** *(ID 3293)**:*** *These comments are focused on the Fraser River tributaries, where I and my graduate students in the [redacted] have conducted numerous field studies in the last 10 years. I will make selected comments on Chapter 3 (Affected Environment) and Chapter 4 (Environmental Consequences) Chapter 3 – Affected Environment The DEIS strongly infers that current diversion practices on tributaries in the Fraser River basin do not meaningfully impair benthic macroinvertebrate communities. Research conducted by masters students in my lab at [redacted] (Albano 2006, McCarthy 2008) is used to support these assertions/conclusions. There are three general points I wish to address in this chapter. 1. Diversions cause biological impairment. Below diversion structures without by-pass flows, reductions in species richness is dramatic. In particular, sensitive species, such as those requiring fast flow habitats (rheophiles) and those that use flow to filter organic material from the water column (filter-feeders) decline greatly. For diverted streams with bypass flows, the impact is much reduced, at least in terms of the metrics reported. This occurs because organisms from undiverted, upstream reaches are able to move into the diverted reaches and be collected. Whether they are able to reproduce was not something we measured. Albano's broader field survey (including streams northward into Wyoming) suggests that*

Comment Information	Comment	Comments and Responses
	Attachments: To: Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 E-mail: moffat.eis@usace.army.mil From: N. LeRoy Poff, PhD [redacted] RE: Comments on Moffat Collection Expansion Project, DEIS Date: 15 March 2010 CC: Carol Campbell, Deputy Regional Administrator, USEPA, campbell.carol@epa.gov These comments are focused on the Fraser River tributaries, where I and my graduate students in the [redacted] have conducted numerous field studies in the last 10 years. I will make selected comments on Chapter 3 (Affected Environment) and Chapter 4 (Environmental Consequences) **Chapter 3 – Affected Environment** The DEIS strongly infers that current diversion practices on tributaries in the Fraser River basin do not meaningfully impair benthic macroinvertebrate communities. Research conducted by masters students in my lab at [redacted] (Albano 2006, McCarthy 2008) is used to support these assertions/conclusions. There are three general points I wish to address in this chapter. 1. Diversions cause biological impairment. Below diversion structures without by-pass flows, reductions in species richness is dramatic. In particular, sensitive species, such as those requiring fast flow habitats (rheophiles) and those that use flow to filter organic material from the water column (filter-feeders) decline greatly. For diverted streams with bypass flows, the impact is much reduced, at least in terms of the metrics reported. This occurs because organisms from undiverted, upstream reaches are able to move into the diverted reaches and be collected. Whether they are able to reproduce was not something we measured. 1	*diversions approaching 90% lead to rapid declines in macroinvertebrate metrics such as total species richness. Thus the message is that CONNECTIVITY of upstream-downstream reaches allows for sustained high species richness, including presence of a range of functional types (rheophilic species, filter-feeders). Some other metrics reported in Albano (2006) and McCarthy (2008) do not appear to change, notably density (number of organisms per square meter); however, the overall abundance of benthic macroinvertebrates (total number per length of stream) is greatly reduced. This follows logically from the fact that the wetted habitat area (total number of square meters) below diversions is dramatically diminished, and this continues downstream until flow levels recover to some semblance of upstream (undiverted) levels. From the perspective of total ecosystem function, these reduced abundances mean less production of aquatic insect biomass that can fuel aquatic or linked aquatic-riparian food webs.* **Response #719-6:** It is unknown where the DEIS "strongly infers that current diversion practices" have no effect on benthic invertebrates. However, the FEIS includes revised discussions of the status of invertebrate populations in Sections 3.11, 4.6.11 and 5.11. The revised discussion includes many of the benthic invertebrate population metrics listed in this comment. ***Comment #719-5*** *(ID 3292)**:*** *2. "Recovery" occurs downstream of diversion structures, but takes 100s to 1000s of meters to occur. The DEIS states (p 3-221) that "Even in the most severely diverted streams that were dry below the diversions, there were communities of benthic macroinvertebrates a short distance downstream as flow resumed." This statement ignores the aforementioned differences in taxonomic, functional*

Comment Information	Comment	Comments and Responses
	Albano's broader field survey (including streams northward into Wyoming) suggests that diversions approaching 90% lead to rapid declines in macroinvertebrate metrics such as total species richness. Thus the message is that CONNECTIVITY of upstream-downstream reaches allows for sustained high species richness, including presence of a range of functional types (rheophilic species, filter-feeders). Some other metrics reported in Albano (2006) and McCarthy (2008) do not appear to change, notably density (number of organisms per square meter); however, the overall abundance of benthic macroinvertebares (total number per length of stream) is greatly reduced. This follows logically from the fact that the wetted habitat area (total number of square meters) below diversions is dramatically diminished, and this continues downstream until flow levels recover to some semblance of upstream (undiverted) levels. From the perspective of total ecosystem function, these reduced abundances mean less production of aquatic insect biomass that can fuel aquatic or linked aquatic-riparian food webs. 2. "Recovery" occurs downstream of diversion structures, but takes 100s to 1000s of meters to occur. The DEIS states (p 3-221) that "Even in the most severely diverted streams that were dry below the diversions, there were communities of benthic macroinvertebrates a short distance downstream as flow resumed." This statement ignores the aforementioned differences in taxonomic, functional and total abundance of the upstream vs. downstream communities. Our findings clearly show that, due to minimal downstream tributary inflow (virtually all potential contributing tributaries are diverted into the aqueduct), "recovery" is not immediate. McCarthy (2008, Table 2-6, p. 101) measured "recovery" of 18 diverted Fraser tributaries in terms of restoration of flow below diversions (due to groundwater inflows, etc.) and estimated probabilities that streams reaches below diversions would resemble upstream (reference) conditions in terms of having sensitive benthic species (rheophilic species). For the 18 diverted streams, a total of a total of 43 km of stream length (average 2.4 km) is directly influenced by the diversions, i.e., the distance downstream to a confluence with a larger stream. Using the criterion of biological "recovery" as the modeled number of rheophile species recovering to within one standard deviation of above diversion reference condition, she found that 48% of the affected stream kilometers are impaired. Using a more conservative measure of recovery (to within 10% of reference), she estimated 83% of the affected reaches to be impaired. More severely diverted streams had more pronounced downstream impairment. Risk to overall invertebrate family richness (less sensitive to flow conditions) was somewhat less but still noteworthy (19% and 55%). 2	*and total abundance of the upstream vs. downstream communities. Our findings clearly show that, due to minimal downstream tributary inflow (virtually all potential contributing tributaries are diverted into the aqueduct), "recovery" is not immediate. McCarthy (2008, Table 2-6, p. 101) measured "recovery" of 18 diverted Fraser tributaries in terms of restoration of flow below diversions (due to groundwater inflows, etc.) and estimated probabilities that streams reaches below diversions would resemble upstream (reference) conditions in terms of having sensitive benthic species (rheophilic species). For the 18 diverted streams, a total of a total of 43 km of stream length (average 2.4 km) is directly influenced by the diversions, i.e., the distance downstream to a confluence with a larger stream. Using the criterion of biological "recovery" as the modeled number of rheophile species recovering to within one standard deviation of above diversion reference condition, she found that 48% of the affected stream kilometers are impaired. Using a more conservative measure of recovery (to within 10% of reference), she estimated 83% of the affected reaches to be impaired. More severely diverted streams had more pronounced downstream impairment. Risk to overall invertebrate family richness (less sensitive to flow conditions) was somewhat less but still noteworthy (19% and 55%). Clearly, in a cumulative sense, the diversion works on the Fraser River tributaries are impairing biological integrity and future activities should be assessed in this context. The discussion of "impacts" of the proposed alternatives to water quality do not address the biological component of benthic macroinvertebrates in the tributaries to the Fraser River. Given the information above, I believe this to be a serious omission.* **Response #719-5:** The FEIS includes revised discussions of the status of invertebrate populations in sections 3.11, 4.6.11

Comment Information	Comment	Comments and Responses
	Clearly, in a cumulative sense, the diversion works on the Fraser River tributaries are impairing biological integrity and future activities should be assessed in this context. The discussion of "impacts" of the proposed alternatives to water quality do not address the biological component of benthic macroinvertebrates in the tributaries to the Fraser River. Given the information above, I believe this to be a serious omission. 3. Future conditions The work coming out of my lab on the Fraser tributaries shows that the benthic macroinvertebrate communities in diverted tributaries (especially lacking bypass flows) are impaired under **current conditions** (circa 2006). Given these observations of diversion impacts on the current condition of tributary streams, future diversions from these tributaries that increase the total percent diverted toward an upper range approaching 90% can be expected (based on empirical data) to cause additional degradation of biological integrity. Using 2006 data as the "existing condition" for a post-2016 project makes little sense as a "baseline" when the biological condition in 2016 is likely to have become further impaired due to continuing diversion to achieve full use of the existing system. Therefore, in 2016 these tributary systems can be expected to be at a higher risk of impairment and more vulnerable to post-2016 diversions. This has not been acknowledged in the DEIS. In particular, I have specific concerns about the information presented in Appendix H-1.51, which shows that bypass flows on tributary streams have been (and will be) extensively reduced. Would these reduced levels of bypass flow approach the 90% diversion level that the empirical studies have indicated represents a precipitous decline in measures of benthic invertebrate community condition? In the absence of legally binding bypass flows, is complete dewatering an option? It is my understanding that Denver Water has modeled various hydrologic scenarios associated at points of diversion under future water demand, so I would imagine it a relatively straightforward process to assess the total diversion percentages for these structures under a range of future scenarios. An impacts analysis of the risks to tributary stream biological integrity under worst-case scenarios is needed to thoroughly assess environmental impact of the proposed actions on headwater streams in the Fraser River. Further, I would argue that, from a whole system management perspective, extending bypass flow requirements to diversion dams that currently lack them would be a reasonable way to mitigate the negative downstream impacts associated with the current operational scheme, because this would re-establish connectivity between upstream and downstream (diverted) reaches. 3	and 5.11. The revised discussion includes many of the benthic invertebrate population metrics listed in this comment. CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects. The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the Proposed Action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the Proposed Action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River Basin and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in the DEIS Chapter 3 Affected Environment, specifically Section 3.1 Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography.

Comment Information	Comment	Comments and Responses
	Chapter 4 – Environmental Consequences These cumulative diversions translate into reduced flow volumes for the Fraser River mainstem (in the valley). I wish to comment on some shoddy observations in the DEIS that misapply my own work to the current situation. P. 4-311 In the "Approach to Impacts Analysis" the DEIS states: "Fish populations are generally influenced by extremes in flow and habitat conditions, which can act as a bottleneck to limit population size (Poff et al. 1997; Poff and Ward 1989)." This is a narrow and simplistic rendering of my work. Flow extremes also keep fish populations healthy by rejuvenating habitat and creating more habitat, e.g., though channel migration and creation of backwater habitats that can provide refugia for juvenile fish. Eliminating these high flows is likely to lead to channel fossilization, habitat simplification and increased biological vulnerability to really big flows that inevitably occur. Thus, over the long term high flows help sustain fish populations. The premise of the "approach to impacts analysis" is one-sided at best. P. 4-314 The paragraph "High flows can be a disturbance that reduces populations of fish and invertebrates" appears to be a selective misrepresentation of the ecosystem benefits associated with high flows. High flow disturbance is a natural process that sustains many ecological processes. In snowmelt-dominated systems (like the Fraser River and other rivers in the domain of the DEIS) peak flows are annual events that rejuvenate the system and help sustain high invertebrate diversity and abundance. While very high flows may indeed reduce recruitment of trout fry, healthy populations of trout (i.e., those with lots of good habitat and ample food resources and a stable age distribution) are able to maintain robust populations even in the face of occasional large spring runoff events, according to regional fisheries biologists. P. 4-316 "The overall pattern of the flow regime in each of the four segments would be the same, with highest flows during spring runoff and lowest flows in the winter, which is an important concern in maintaining the aquatic biological community of the Fraser River (Poff et al. 2007a, b)." This is NOT a statement I would agree with in the CONTEXT of the proposed diversion scheme. Yes, the overall pattern is necessary but certainly not sufficient. There must be an adequate flow volume to do the geomorphic work on the channel. If one were to reduce all daily flows by 99.9% while keeping the same "pattern" of seasonal flow variation, would one state that maintaining the pattern of this trickling flow is an important feature of maintaining the biological community? 4	Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows in the Fraser and Williams Fork river basins diverted by Denver Water. This would allow the reader to compare the percentage of natural flows with past diversions at each of Denver Water's diversion locations modeled in PACSM under Current Conditions, Full Use of the Existing System, and for each of the Moffat Project alternatives. Additional discussion of the affected environment related to water quality, 303(d) listings, and discharge permits has also been included in FEIS Section 3.2. ***Comment #719-4*** *(ID 3291)**:*** *3. Future conditions The work coming out of my lab on the Fraser tributaries shows that the benthic macroinvertebrate communities in diverted tributaries (especially lacking bypass flows) are impaired under current conditions (circa 2006). Given these observations of diversion impacts on the current condition of tributary streams, future diversions from these tributaries that increase the total percent diverted toward an upper range approaching 90% can be expected (based on empirical data) to cause additional degradation of biological integrity. Using 2006 data as the "existing condition" for a post-2016 project makes little sense as a "baseline" when the biological condition in 2016 is likely to have become further impaired due to continuing diversion to achieve full use of the existing system. Therefore, in 2016 these tributary systems can be expected to be at a higher risk of impairment and more vulnerable to post-2016 diversions. This has not been acknowledged in the DEIS. In particular, I have specific concerns about the information presented in Appendix H-1.51, which shows that bypass flows on tributary streams have been (and will be)extensively reduced. Would these reduced levels of bypass flow approach the 90% diversion level that the empirical*

Comment Information	Comment	Comments and Responses
		studies have indicated represents a precipitous decline in measures of benthic invertebrate community condition? In the absence of legally binding bypass flows, is complete dewatering an option? It is my understanding that Denver Water has modeled various hydrologic scenarios associated at points of diversion under future water demand, so I would imagine it a relatively straightforward process to assess the total diversion percentages for these structures under a range of future scenarios. An impacts analysis of the risks to tributary stream biological integrity under worst-case scenarios is needed to thoroughly assess environmental impact of the proposed actions on headwater streams in the Fraser River. *Further, I would argue that, from a whole system management perspective, extending bypass flow requirements to diversion dams that currently lack them would be a reasonable way to mitigate the negative downstream impacts associated with the current operational scheme, because this would re-establish connectivity between upstream and downstream (diverted) reaches.* **Response #719-4:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). FEIS Section 4.6.1 has been revised to include information concerning the total amount of water

Comment Information	Comment	Comments and Responses
		diverted from tributaries. This information has been incorporated into FEIS Sections 3.11, 4.6.11, and 5.11. Both the DEIS and FEIS include discussions of the magnitude and severity of diversions and if the streams are fully diverted or have bypass flows. ***Comment #719-3*** *(ID 3290)**:*** *Chapter 4 – Environmental Consequences These cumulative diversions translate into reduced flow volumes for the Fraser River mainstem (in the valley). I wish to comment on some shoddy observations in the DEIS that misapply my own work to the current situation. P. 4-311 In the "Approach to Impacts Analysis" the DEIS states: "Fish populations are generally influenced by extremes in flow and habitat conditions, which can act as a bottleneck to limit population size (Poff et al. 1997; Poff and Ward 1989)." This is a narrow and simplistic rendering of my work.* *Flow extremes also keep fish populations healthy by rejuvenating habitat and creating more habitat, e.g., though channel migration and creation of backwater habitats that can provide refugia for juvenile fish.* *Eliminating these high flows is likely to lead to channel fossilization, habitat simplification and increased biological vulnerability to really big flows that inevitably occur. Thus, over the long term high flows help sustain fish populations. The premise of the "approach to impacts analysis" is one-sided at best.* **Response #719-3:** The citation of work in the aquatic resources section of the DEIS appropriately attributed work in the context of available, short-term habitat for aquatic populations, especially fish and macroinvertebrates This is also consistent with applications of PHABSIM and with observations of fish and invertebrate

Comment Information	Comment	Comments and Responses
		dynamics in streams that members of the Corps team have followed for decades. This discussion has been slightly modified in the FEIS to help clarify this issue. The discussion does not contradict the channel dynamics context of the work, and the need for flows that maintain the channel. However, high flows can simultaneously have detrimental effects to populations while having beneficial effects to the channel. Channel maintenance, flushing flows, and sediment deposition are discussed in the FEIS Section 3.3 and 5.4 and were taken into account and incorporated into the biological discussions and impact evaluation in both the DEIS (see page 4-307) and FEIS Section 4.6.11. ***Comment #719-2*** *(ID 3289)**:*** *P. 4-314 The paragraph "High flows can be a disturbance that reduces populations of fish and invertebrates" appears to be a selective misrepresentation of the ecosystem benefits associated with high flows. High flow disturbance is a natural process that sustains many ecological processes. In snowmelt-dominated systems (like the Fraser River and other rivers in the domain of the DEIS) peak flows are annual events that rejuvenate the system and help sustain high invertebrate diversity and abundance. While very high flows may indeed reduce recruitment of trout fry, healthy populations of trout (i.e., those with lots of good habitat and ample food resources and a stable age distribution) are able to maintain robust populations even in the face of occasional large spring runoff events, according to regional fisheries biologists.* **Response #719-2:** FEIS Section 4.6.11 has been revised to clearly discuss the beneficial and detrimental effects of high flows.

Comment Information	Comment	Comments and Responses
		Comment #719-1 *(ID 3288)**:*** *P. 4-316 "The overall pattern of the flow regime in each of the four segments would be the same, with highest flows during spring runoff and lowest flows in the winter, which is an important concern in maintaining the aquatic biological community of the Fraser River (Poff et al. 2007a, b)." This is NOT a statement I would agree with in the CONTEXT of the proposed diversion scheme. Yes, the overall pattern is necessary but certainly not sufficient. There must be an adequate flow volume to do the geomorphic work on the channel. If one were to reduce all daily flows by 99.9% while keeping the same "pattern" of seasonal flow variation, would one state that maintaining the pattern of this trickling flow is an important feature of maintaining the biological community?* **Response #719-1:** The discussions in the DEIS and the FEIS clearly demonstrate that one important aspect of the flow regime, namely the timing of high runoff flows, would change only slightly with the Project. Based on the hydrological information this statement is accurate and remains in the FEIS. Another aspect of peak flows, the magnitude of the reductions in peak flows, although not 99.9%, was also taken into account and considered in the impact evaluation for both aquatic biological resources (FEIS Sections 4.6.11 and 5.11) and for geomorphology (FEIS Section 4.6.3). The hypothetical situation of 99.9% reduction in peak flow and trickling flow in the Fraser River would not occur as a result of the Project.

Comment Information	Comment	Comments and Responses
Comment #721 Kathy Chandler Henry, President Eagle River Watershed Council, Inc. P.O. Box 7688 Avon, CO 81620 and Tambi Katieb, Director, Policy and Planning Eagle River Watershed Council, Inc. P.O. Box 7688 Avon, CO 81620	From: Tambi Katieb [mailto:landplan@centurytel.net] Sent: Monday, March 15, 2010 9:43 PM To: MOFFAT.EIS@usace.army.mil Cc: 'Kathy Chandler-Henry'; 'Melissa Macdonald' Subject: Dear Mr. Franklin: Please find attached comments submitted by the Eagle River Watershed Council regarding the proposed Moffat Collection System EIS under public NEPA review. A hard copy to the USACE notice address will follow. If you could confirm you received this email I'd appreciate it. Thanks again for your time and consideration, as well as your explanation of the permit and review process with me on the phone. Best, Tambi Katieb Dir. Policy and Planning, ERWC What we want to be: Our watershed is a unique network of clear mountain streams and two major rivers- the Eagle and Upper Colorado - that provide good water quality in ample quantity for a self-sustaining fish population and still meet our community needs. Almost the entire Eagle River Watershed is located in Eagle County, and three quarters of it exists in public land managed by the U.S. Forest Service and Bureau of Land Management. At the same time, however, the Eagle River and its tributaries and the Upper Colorado River are under threat from increased urbanization, water diversions, and diverse resource uses on public and private land. This unique physical and ecological setting juxtaposed against the constant threat of degradation to our watershed gives us purpose as an organization for what we want to be. This purpose can be clearly stated as our vision: Vision: "The vision of the Eagle River Watershed Council is to protect and enhance the high quality natural, scenic and economic values that our rivers and tributaries provide our citizens, visitors and wildlife population. In doing so, we seek to promote the interconnected conservation values the watershed represents to diverse interest groups that benefit from its continued health and well being and leave a natural resource legacy to future generations." _____ What we value as an Organization: Preservation and enhancement of the natural values of the watershed to leave a conservation legacy for generations of citizens and guests yet to live in or visit Eagle County and our extraordinary river systems. A proactive approach to education and conservation through our projects and relationships with public, private and governmental entities that support our vision and mission. An understanding that all of our actions in the watershed are interrelated. Land uses, transportation, recreation, water projects and public access must be mindful and long term in the design of their footprint and impact on the waterways and riparian areas of the watershed if we are to successfully preserve this unique resource. Our Mission: The Eagle River Watershed Council advocates for the health and conservation of the Upper Colorado and Eagle River basins through research, education and projects. We provide a forum where everyone can gain a greater understanding of the Eagle River environment. Said another way, our mission is "preserving our quality of life by protecting the Eagle and Colorado Rivers in Eagle County."	***Comment #721-10*** *(ID 3316)**:*** *Please find attached comments submitted by the Eagle River Watershed Council regarding the proposed Moffat Collection System EIS under public NEPA review. A hard copy to the USACE notice address will follow. If you could confirm you received this email I'd appreciate it. Thanks again for your time and consideration, as well as your explanation of the permit and review process with me on the phone. Best, What we want to be: Our watershed is a unique network of clear mountain streams and two major rivers-the Eagle and Upper Colorado - that provide good water quality in ample quantity for a self-sustaining fish population and still meet our community needs. Almost the entire Eagle River Watershed is located in Eagle County, and three quarters of it exists in public land managed by the U.S. Forest Service and Bureau of Land Management. At the same time, however, the Eagle River and its tributaries and the Upper Colorado River are under threat from increased urbanization, water diversions, and diverse resource uses on public and private land. This unique physical and ecological setting juxtaposed against the constant threat of degradation to our watershed gives us purpose as an organization for what we want to be. This purpose can be clearly stated as our vision: Vision: "The vision of the Eagle River Watershed Council is to protect and enhance the high quality natural, scenic and economic values that our rivers and tributaries provide our citizens, visitors and wildlife population. In doing so, we seek to promote the interconnected conservation values the watershed represents to diverse interest groups that benefit from its continued health and well being and leave a natural resource legacy to future generations." What we value as an Organization: Preservation and enhancement of the natural values of the watershed to leave a conservation legacy for generations of citizens and guests yet to live in or visit Eagle County and our*

Comment Information	Comment	Comments and Responses
	THIS ELECTRONIC MAIL TRANSMISSION INCLUDING ANY ATTACHMENT IS INTENDED ONLY FOR THE PERSON TO WHOM IT IS ADDRESSED AND CONTAINS INFORMATION THAT IS CONFIDENTIAL AND LEGALLY PRIVILEGED. IF YOU ARE NOT THE INTENDED RECIPIENT, PLEASE NOTIFY THE SENDER AT THE EMAIL ADDRESS ABOVE AND DESTROY ALL COPIES OF THIS MESSAGE. THANK YOU. - mfftltrerwcfinal031510.pdf	*extraordinary river systems. A proactive approach to education and conservation through our projects and relationships with public, private and governmental entities that support our vision and mission. An understanding that all of our actions in the watershed are interrelated. Land uses, transportation, recreation, water projects and public access must be mindful and long term in the design of their footprint and impact on the waterways and riparian areas of the watershed if we are to successfully preserve this unique resource. Our Mission: The Eagle River Watershed Council advocates for the health and conservation of the Upper Colorado and Eagle River basins through research, education and projects. We provide a forum where everyone can gain a greater understanding of the Eagle River environment. Said another way, our mission is "preserving our quality of life by protecting the Eagle and Colorado Rivers in Eagle County." ATTACHMENT The Eagle River Watershed Council (ERWC) would like to thank you for the opportunity to comment on the Moffat Tunnel DEIS and for spending the time with our staff discussing the regulatory framework of this review. The ERWC mission is premised on the following vision regarding our local water resources: "The vision of the Eagle River Watershed Council is to protect and enhance the high quality natural, scenic and economic values that our rivers and tributaries provide our citizens, visitors and wildlife population. In doing so, we seek to promote the interconnected conservation values the watershed represents to diverse interest groups that benefit from its continued health and well being and leave a natural resource legacy to future generations." Importantly, our mission includes being advocates for the health and conservation of the Upper Colorado and Eagle River basins in order to preserve our quality of life in Eagle County.*

Comment Information	Comment	Comments and Responses
	Attachments: Eagle River Watershed Council, Inc. Kathy R. Chandler-Henry, Board President Arlene S. Quenon, Vice President Josiah Macy, Vice President John Mosesso, Secretary Phil Frank, Treasurer Susan G. Pollack, Assistant Treasurer Dr. Thomas Steinberg, Chairman Emeritus Bill Carlson, Director Phil Hancock, Director Keith C. Kepler, Director Timm E. Paxson, Director Steve Sarro, Director Adam Bybliw, Director Dr. Joe LeBeau, Director Melissa Macdonald, Executive Director Tambi Katleh, Director of Policy and Planning March 15, 2010 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128 *(Sent via e-mail/hardcopy to follow: moffat.eis@usace.army.mil)* **RE:** Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and 404 Comments Dear Mr. Franklin: The Eagle River Watershed Council (ERWC) would like to thank you for the opportunity to comment on the Moffat Tunnel DEIS and for spending the time with our staff discussing the regulatory framework of this review. The ERWC mission is premised on the following vision regarding our local water resources: *"The vision of the Eagle River Watershed Council is to protect and enhance the high quality natural, scenic and economic values that our rivers and tributaries provide our citizens, visitors and wildlife population. In doing so, we seek to promote the interconnected conservation values the watershed represents to diverse interest groups that benefit from its continued health and well being and leave a natural resource legacy to future generations."* Importantly, our mission includes being advocates for the health and conservation of the Upper Colorado and Eagle River basins in order to preserve our quality of life in Eagle County. The Moffat Tunnel DEIS proposes development of an additional 18,000 acre-feet per year of new annual firm yield to the Moffat Treatment Plant, of which 3,000 acre-feet per year is being developed for the City of Arvada. While the DEIS proposes development of this new supply, it also proposes an additional P.O. Box 7688 Avon, CO 81620 Phone (970) 827-5406 A community supported 501 (c)3 nonprofit organization www.eagleriverwatershedcouncil.org	**Response #721-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #721-9*** *(ID 3315)**:*** *The Moffat Tunnel DEIS proposes development of an additional 18,000 acre-feet per year of new annual firm yield to the Moffat Treatment Plant, of which 3,000 acre-feet per year is being developed for the City of Arvada. While the DEIS proposes development of this new supply, it also proposes an additional 16,000 acre feet of yield as a result of additional conservation measures implemented by the applicant concurrent with approval of this permit. Though the ERWC is aware of the cited reasons the application is being proposed by Denver Water, we are hopeful the U.S. Army Corps of Engineers carefully evaluates this proposal as it underestimates the negative impacts of the Project and overestimates its benefits. Specifically, consideration of the long term cumulative impacts on the aquatic ecosystem of the Upper Colorado is our primary concern. Cumulative effects from any single action are rarely limited or aligned with political or administrative boundaries. In this context, the Eagle River Watershed Council respectfully asks the Corps to consider the following aspects of the proposal during review of the application: Denver Water's Integrated Water Resource Plan (adopted in 2002) concludes that, at build out of the service area, there exists a requirement for 450,000 acre feet of supply per year, including a 30,000 acre foot safety factor. The proposed Moffat Collection system action increases current system supply from an existing 285,000 acre feet per year to 300,000 acre feet - a total new yield of only 5% against the 58% required in the future. Shouldn't this ultimate future demand be taken into consideration as a part of this application and its evaluation instead of permitting a piecemeal*

Comment Information	Comment	Comments and Responses
	16,000 acre feet of yield as a result of additional conservation measures implemented by the applicant concurrent with approval of this permit. Though the ERWC is aware of the cited reasons the application is being proposed by Denver Water, we are hopeful the U.S. Army Corps of Engineers carefully evaluates this proposal as it underestimates the negative impacts of the Project and overestimates its benefits. Specifically, consideration of the long term cumulative impacts on the aquatic ecosystem of the Upper Colorado is our primary concern. Cumulative effects from any single action are rarely limited or aligned with political or administrative boundaries. In this context, the Eagle River Watershed Council respectfully asks the Corps to consider the following aspects of the proposal during review of the application: ▪ Denver Water's Integrated Water Resource Plan (adopted in 2002) concludes that, at build out of the service area, there exists a requirement for 450,000 acre feet of supply per year, including a 30,000 acre foot safety factor. The proposed Moffat Collection system action increases current system supply from an existing 285,000 acre feet per year to 300,000 acre feet - a total new yield of only 5% against the 58% required in the future. Shouldn't this ultimate future demand be taken into consideration as a part of this application and its evaluation instead of permitting a piecemeal approach to depletions of the Upper Colorado River that will negatively impact its biological integrity? ▪ Analysis provided herein does not specifically look at the proposed Northern Colorado Conservancy District's plans for the Windy Gap Firming Project, the cumulative impacts on the river from both projects and what mitigation is most appropriate should both projects be brought 'online' simultaneously. ▪ The application states that "Conservation or demand reduction is intrinsic to Denver Water's Purpose and Need, and would be included in all alternatives carried forward to the EIS" (Table 2-2, Chapter 2). Have all best efforts in conservation been exhausted by the applicant? Denver has accelerated plans for conservation, however the DEIS does not acknowledge or evaluate if in light of these savings there actually exists a valid purpose and need for this project. Finally, many elements of the Drought Response Plan (adopted by Denver Water in 2004) should be considered standard practices rather than staged responses to a severe drought situation when considering the cumulative environmental effects of continued water transfers from the Upper Colorado. 2	*approach to depletions of the Upper Colorado River that will negatively impact its biological integrity?* **Response #721-9:** The FEIS has been revised to include additional analyses that have been incorporated into the evaluation of impacts to aquatic resources, including the Colorado River Basin. These analyses include additional information concerning cumulative diversions from tributary streams, channel maintenance and sedimentation, water quality and temperature, and have been incorporated into the evaluation of cumulative and Project impacts in Sections 4.6.11 and 5.11 of the FEIS. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr. of additional conservation and the 18,000 AF/yr. proposed Project (72,000 AF enlargement of Gross Reservoir). The phrase "Implementation of the near-term strategies described in the IRP is beyond the scope of this EIS because there is no Federal nexus with the components that would require a Corps action, decision, or permit." has been removed from FEIS Section 1.4.3 since Denver Water's near-term strategies (conservation, non-potable recycling, system refinements, cooperative projects, and new supply projects) are all currently in various stages of implementation and were considered in the Corps

Comment Information	Comment	Comments and Responses
	▪ The application contemplates the Shoshone Powerplant senior water right on the Colorado will remain in perpetuity, and as a result the modeling of stream flow and rights to withdraw water in the Moffat Collection system are tied to this historic water right. However, there remains uncertainty that Xcel Energy will operate the power plant, and the seniority of this call may not play as important a role in ensuring that sufficient water flows in the Colorado remain. Denver Water must be required to send water downstream to preserve the integrity of this historic call, to contribute to the benefit of the Colorado River if the Shoshone call were to be abandoned. This is a reasonably foreseeable future action that must be explored in the DEIS, or made a condition on any permit issued by the Army Corps. ▪ Does the application adequately analyze the important ecological repair that flushing flows and channel maintenance flows provide to the Colorado? Water proposed for diversion in wet years that follow dry years, under the proposed action, will not normally afford the riparian areas of the river to replenish or maintain themselves. If the permit is approved, these types of flows must be made conditions of the permit. ▪ Does approval of this application support the 2011 proposal by the Colorado Division of Wildlife for minimum instream flows to be established on the Colorado through Eagle County, when the baseline conditions under the "No Action" alternative have been mischaracterized in light of the Shoshone call, the comparison of a dry year yield to average unrestricted demand, an arbitrary 30,000 acre foot 'safety factor' and Denver's accelerated conservation goals? Continued aggressive conservation management solutions should be acknowledged by the DEIS and employed before resorting to further depletions of the Upper Colorado River. Strategic growth management for all jurisdictions being served by Denver Water should be in place today, before any further diversions are proposed, since out of basin water is requisite for continued development of these urban areas. This might avoid putting Denver Water in the continued position of having to propose further depletions of the Colorado River and its tributaries. The Colorado Division of Wildlife estimated in 2007 that fishing contributed almost $40 million of economic activity to Eagle County alone. The continued incremental loss of valuable watershed functions to the Upper Colorado will only migrate downstream. The 'Pumphouse' stretch of the Colorado in Eagle County is the second most popular stretch of recreational river water in the State and we are very concerned about the potential for real adverse 3	review of Project Purpose and Need. To the extent that future Denver Water projects need Federal approval, the projects would undergo a permitting process prior to construction. ***Comment #721-8*** *(ID 3314)**:*** *Analysis provided herein does not specifically look at the proposed Northern Colorado Conservancy District's plans for the Windy Gap Firming Project, the cumulative impacts on the river from both projects and what mitigation is most appropriate should both projects be brought 'online' simultaneously.* **Response #721-8:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment Information	Comment	Comments and Responses
	economic impacts to our stretch of the Upper Colorado from continued depletions of water over time in a piecemeal approach as proposed. In closing, while we understand the many reasons Denver Water is proposing to withdraw more water from the Colorado, we are hopeful that the U.S. Army Corps of Engineers will carefully evaluate the regulatory guidance that is in place regarding cumulative impacts and reasonably foreseeable actions before rendering a decision on this proposal that will negatively impact the Upper Colorado River Basin. This project as proposed will not provide a long term water strategy in the best interests of the Colorado River. Kind Regards, Kathy Chandler-Henry Kathy Chandler Henry, President CC: *File/BOD* 4	Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #721-7*** *(ID 3313)**:*** *The application states that "Conservation or demand reduction is intrinsic to Denver Water's Purpose and Need, and would be included in all alternatives carried forward to the EIS" (Table 2-2, Chapter 2). Have all best efforts in conservation been exhausted by the applicant? Denver has accelerated plans for conservation, however the DEIS does not acknowledge or evaluate if in light of these savings there actually exists a valid purpose and need for this project. Finally, many elements of the Drought Response Plan (adopted by Denver Water in 2004) should be considered standard practices rather than staged responses to a severe drought situation when considering the cumulative environmental effects of continued water transfers from the Upper Colorado.* **Response #721-7:** Conservation Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water

Comment Information	Comment	Comments and Responses
		supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Watering Restrictions Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's

Comment Information	Comment	Comments and Responses
		estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #721-6*** *(ID 3312)**:*** *The application contemplates the Shoshone Powerplant senior water right on the Colorado will remain in perpetuity, and as a result the modeling of stream flow and rights to withdraw water in the Moffat Collection system are tied to this historic water right. However, there remains uncertainty that Xcel Energy will operate the power plant, and the seniority of this call may not play as important a role in ensuring that sufficient water flows in the Colorado remain. Denver Water must be required to send water downstream to preserve the integrity of this historic call, to contribute to the benefit of the Colorado River if the Shoshone call were to be abandoned. This is a reasonably foreseeable future action that must be explored in the DEIS, or made a condition on any permit issued by the Army Corps.* **Response #721-6:** It is reasonable and foreseeable that the Shoshone Power Plant would continue to operate as it has for the past 100 years. Scheduled and unscheduled maintenance issues would continue to affect operations as it does at all facilities regardless of ownership. The Corps is not aware of any plans to retire the Shoshone Power Plant. The CRCA, which is

Comment Information	Comment	Comments and Responses
		discussed in FEIS Section 4.3.1, describes a long-term agreement for water users to release water in the event the Shoshone Power Plant is not operating has it has historically. ***Comment #721-5*** *(ID 3311)**:*** *Does the application adequately analyze the important ecological repair that flushing flows and channel maintenance flows provide to the Colorado? Water proposed for diversion in wet years that follow dry years, under the proposed action, will not normally afford the riparian areas of the river to replenish or maintain themselves. If the permit is approved, these types of flows must be made conditions of the permit.* **Response #721-5:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the

Comment Information	Comment	Comments and Responses
		Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M.

Comment Information	Comment	Comments and Responses
		The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. Additional information was added to FEIS Sections 4.1 and 5.1 on daily flow changes during a sequence of dry years followed by a wet year. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites (including an additional site on the Colorado River), review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Additional detailed sediment sampling and modeling along with assessment of stream segments below diversion points were conducted. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. ***Comment #721-4*** *(ID 3310)**:*** *Does approval of this application support the 2011 proposal by the Colorado Division of Wildlife for minimum instream flows to be established on the Colorado through Eagle County, when the baseline conditions under the "No Action" alternative have been mischaracterized in light of the Shoshone call, the comparison of a dry year yield to average unrestricted demand, an arbitrary 30,000 acre foot 'safety factor' and Denver's accelerated conservation goals?* **Response #721-4:** If minimum instream flows are established on the Colorado River through Eagle County, Denver Water's water rights would be senior to those instream flow rights. However, the Moffat Project would likely have little to no impact on the ability to meet minimum instream flows because there would be no additional diversions in dry years and low flow periods due to the Moffat Project. In dry years, Denver Water would divert the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the Moffat Project. In addition, Denver Water's out-of-priority diversions from the Fraser River Basin would be replaced with releases from Williams Fork Reservoir, resulting in no change in Colorado River flows downstream of the confluence with the Williams Fork River due to out-of-priority Moffat System diversions.

Comment Information	Comment	Comments and Responses
		PACSM does not reflect the potential relaxation of the Shoshone call under the current agreement between Xcel Energy and Denver Water. Impacts of a Shoshone call relaxation are discussed qualitatively in DEIS Section 5.3.1. The future operations of the Shoshone Call relaxation were not included in PACSM because the trigger conditions are based on forecasted values, most of which are unavailable for the majority of the study period. Furthermore, Denver Water does not have to implement the Shoshone Call relaxation if the trigger conditions are met. One of the triggers that permits a relaxation of the Shoshone call is whether the July 1 forecast of Denver Water's total system storage is at or below 85% of average. This condition may occur more frequently under the No Action alternative, therefore, it is possible that the Shoshone call relaxation could be invoked more frequently under the No Action compared to Current Conditions and the Moffat Project alternatives. Potential differences in future operations of the Shoshone Call relaxation under the No Action alternative compared to Current Conditions, Full Use of the Existing System and the action alternatives are discussed qualitatively in FEIS Section 4.3.1. It is reasonable and foreseeable that the Shoshone Power Plant would continue to operate as it has for the past 100 years. Scheduled and unscheduled maintenance issues would continue to affect operations as it does at all facilities regardless of ownership. The Corps is not aware of any plans to retire the Shoshone Power Plant. The CRCA, which is discussed in FEIS Section 4.3.1, describes a long-term agreement for water users to release water in the event the Shoshone Power Plant is not operating has it has historically. Modeling water supply and annual firm (dry year) yield on the basis of unrestricted demand purposefully excludes consideration of drought

Comment Information	Comment	Comments and Responses
		response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Information was included in the FEIS which explains why Denver Water's demand was modeled as unrestricted in PACSM. Reviews nationwide of utilities demonstrate that it is reasonable and prudent for a utility the size of Denver Water to maintain a water supply reserve of 8 to 12% (Denver Water presently has a strategic water reserve of less than 9%). The need for the 30,000 AF safety factor (i.e., Strategic Water Reserve) is described in Appendix A (Review of Denver Water's IRP, p. 11 and Supplemental Evaluation of Denver Water Demand Projections, pgs. 13-15). As stated, the safety factor is intended to protect against a host of uncertainties, including the constriction of existing supplies, a downward revision of the estimated safe annual yield from prolonged drought, challenges to historic operations of Denver Water's water rights, changes in administration of water rights resulting in adverse impacts to Denver Water's supplies, catastrophic loss of facilities, delays in the development of new supplies, or higher than anticipated demand forecasts.

Comment Information	Comment	Comments and Responses
		The 30,000 AF safety factor is reasonable to help account for these risks These risks are not accounted for in the firm yield modeling and calculations, nor are they considered in the water demand projections. The safety factor must be held apart from the derivation of the 18,000 AF shortfall to appropriately reflect the risks which occur outside the models, methods and procedures to calculate that need. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustments can help assure anticipated conservation changes would be achieved. Almost half (16,000 AF/yr) of the identified supply short-fall would be met with additional conservation savings. Denver Water plans to reduce its demand by 16,000 AF/yr by 2032 with additional conservation measures, which are anticipated to achieve long-term sustainable reductions in water use. An independent review of the projected conservation savings of 16,000 AF/yr was conducted as part of the EIS analysis. Denver Water is relying upon these future savings in its demand projections to calculate the need for 18,000 AF/yr of new firm yield. Refer to FEIS Sections 1.4.1.2 and 1.4.3.1 and Appendix A for a discussion of Denver Water's conservation efforts. ***Comment #721-3*** *(ID 3309)**:*** *Continued aggressive conservation management solutions should be acknowledged by the DEIS and employed before resorting to further depletions of the Upper Colorado River. Strategic growth management for all jurisdictions being served by Denver Water should be in place today, before any further diversions are proposed, since out of basin water is*

Comment Information	Comment	Comments and Responses
		requisite for continued development of these urban areas. This might avoid putting Denver Water in the continued position of having to propose further depletions of the Colorado River and its tributaries. **Response #721-3:** Denver Water does not have the legal authority to manage growth of the Combined Service Area they serve. Rather, as a water utility, Denver Water forecasts and responds to the projected water needs of their constituents. ***Comment #721-2*** *(ID 3308)**:*** *The Colorado Division of Wildlife estimated in 2007 that fishing contributed almost $40 million of economic activity to Eagle County alone. The continued incremental loss of valuable watershed functions to the Upper Colorado will only migrate downstream. The 'Pumphouse' stretch of the Colorado in Eagle County is the second most popular stretch of recreational river water in the State and we are very concerned about the potential for real adverse economic impacts to our stretch of the Upper Colorado from continued depletions of water over time in a piecemeal approach as proposed.* **Response #721-2:** DEIS Section 4.9.1.2 (Aquatic Biological Resources) describes the impacts to fish and aquatic invertebrates in each affected river segment in the Project area. The conclusions for the Colorado River include the following statements: "There would be no changes in water quality, riparian vegetation, or channel morphology that would affect fish and invertebrates in the Colorado River. Increases in water temperatures would be negligible and flushing flows would be adequate to prevent the accumulation of sediment.

Comment Information	Comment	Comments and Responses
		Although reductions in peak runoff flows would tend to be favorable for fish and invertebrates, the changes would be minor and limited to average years and would be expected to have no impact on aquatic resources." DEIS Section 4.13.1.2 (Recreation) also states that "no impacts to fishing on the Colorado River are anticipated." Given the conclusions of these resource sections, socioeconomic activity related to fishing on the Colorado River (number of anglers and angler spending patterns) is not expected to be affected by the Moffat Project alternatives. The analysis of socioeconomic impacts in Grand County (DEIS Section 4.17) addresses fishing in the Fraser River; this discussion was expanded in FEIS Section 5.19 to include the Colorado River. ***Comment #721-1*** *(ID 3307)**:*** *In closing, while we understand the many reasons Denver Water is proposing to withdraw more water from the Colorado, we are hopeful that the U.S. Army Corps of Engineers will carefully evaluate the regulatory guidance that is in place regarding cumulative impacts and reasonably foreseeable actions before rendering a decision on this proposal that will negatively impact the Upper Colorado River Basin. This project as proposed will not provide a long term water strategy in the best interests of the Colorado River.* **Response #721-1:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts

Comment Information	Comment	Comments and Responses
		can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and RFFAs. The Section 404 regulations state that "cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1]). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #723 Stephen Robinson, [redacted] and Elizabeth Hawkins Robinson	From: Stephen Robinson [mailto:[redacted] Sent: Monday, March 15, 2010 11:49 PM To: MOFFAT.EIS@usace.army.mil Subject: Comments of Proposed Moffatt and Gross Dam Project Attn: Mr. Scott Franklin Please read and respond - thank you! Stephen Robinson, [redacted] - Robinson Letter to Army Corps and FERC.doc	***Comment #723-17*** *(ID 3347)**:*** *Please read and respond - thank you!* **Response #723-17:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #723-16*** *(ID 3346)**:*** *We are residents at [redacted], just adjacent to Gross Reservoir. We are deeply concerned about the expansion of Gross Reservoir and the undeniable impact and toll the execution of the project will have. We do not feel that the draft environmental impact statement (DEIS) adequately addresses the impact of the project and the concerns of the communities that will absolutely suffer during the course of its execution. Further, the data used in the DEIS is dated, and we believe no longer sufficient for determining whether the project should be permitted As neighbors and residents of the Lakeshore Park community adjacent to Gross Reservoir, we offer our comments and thoughts on the Moffatt Collection Systems Project Draft Environmental Impact Statement.* **Response #723-16:** Data of existing environmental conditions within the Project area was collected for the DEIS. As part of the preparation of the FEIS, the baseline data were re-evaluated to verify if the existing conditions have changed since 2006 and, where appropriate, data were updated with more current information. Additional data were collected and analyzed for the following resources in the FEIS: water quality (Section 5.2), geomorphology (Section 5.3), groundwater (Section 5.4), aquatic biological resources (Section 5.11), wetland and riparian areas (Section 5.8), wildlife (Section 5.9), sensitive species (Section 5.10), air quality (Section 5.13), and socioeconomics (Section 5.19).

Comment Information	Comment	Comments and Responses
	Attachments: **To: Mr. Scott Franklin, U.S. Army Corps of Engineers** **From: Stephen Robinson and Elizabeth Hawkins Letter** **35 Lakeshore Park Road, Boulder CO 80302** Dear Mr. Franklin: We are residents at [redacted] just adjacent to Gross Reservoir. We are deeply concerned about the expansion of Gross Reservoir and the undeniable impact and toll the execution of the project will have. We do not feel that the draft environmental impact statement (DEIS) adequately addresses the impact of the project and the concerns of the communities that will absolutely suffer during the course of its execution. Further, the data used in the DEIS is dated, and we believe no longer sufficient for determining whether the project should be permitted As neighbors and residents of the Lakeshore Park community adjacent to Gross Reservoir, we offer our comments and thoughts on the Moffatt Collection Systems Project Draft Environmental Impact Statement. There are a number of different areas we wish to highlight, including direct and indirect impacts such as pollution and property values; safety issues; and conservation: **Toxic Byproducts and Air, Ground, Water Pollution** • Toxic byproducts and pollution from the proposed concrete plant • Toxic byproducts and pollution from the proposed air curtain destructors • Toxic byproducts and pollution from the proposed chainsaws and hillside saws • Toxic byproducts and pollution from the proposed trucking in and out of the area (tree removal and general purpose labor); The EIS is vague around its measurement of all of the above. What specific impacts does the EIS contemplate and how does it intend to mitigate them? How will toxic byproducts affect wildlife in the area, including the fish in Boulder creek? What specific measurement is in place for the large carbon footprint created by a continually running concrete plant, trucks, chainsaws, earth movers, and or any other large scale construction equipment? The surrounding neighborhoods around Gross Dam, in our view, would suffer from the injection of a large amount of toxic waste within a pristine environment. Please address all of the above bullets thoroughly. **Noise Pollution** • Noise pollution from the concrete plant • Noise pollution from the proposed helicopter usage (tree removal etc.) • Noise pollution from the proposed trucking in and out of the area (tree removal and general purpose labor) • Noise pollution from the many workers handling equipment and carrying on conversations. The EIS indicates that noise dissipates after 50 feet. Of course, for those of us who live up here and can hear an audible conversation on the lake surface from the ridgeline of the Lakeshore neighborhood, this is laughable. We want to know specifically what the number of decibels produced by all of the efforts would create? Having concrete plants running 24/7 is unacceptable and should not be permitted. Please address all of the above bullets thoroughly. DRAFT 1	***Comment #723-15*** *(ID 3345)**:*** *There are a number of different areas we wish to highlight, including direct and indirect impacts such as pollution and property values; safety issues; and conservation: Toxic Byproducts and Air, Ground, Water Pollution • Toxic byproducts and pollution from the proposed concrete plant • Toxic byproducts and pollution from the proposed air curtain destructors • Toxic byproducts and pollution from the proposed chainsaws and hillside saws • Toxic byproducts and pollution from the proposed trucking in and out of the area (tree removal and general purpose labor); The EIS is vague around its measurement of all of the above. What specific impacts does the EIS contemplate and how does it intend to mitigate them? How will toxic byproducts affect wildlife in the area, including the fish in Boulder creek? What specific measurement is in place for the large carbon footprint created by a continually running concrete plant, trucks, chainsaws, earth movers, and or any other large scale construction equipment? The surrounding neighborhoods around Gross Dam, in our view, would suffer from the injection of a large amount of toxic waste within a pristine environment. Please address all of the above bullets thoroughly.* **Response #723-15:** Cement kilns are a significant source of mercury emissions, but concrete plants are not. The Project would not include a cement kiln; it would include a concrete batch plant. Concrete batch plants mix sand, aggregate, cement and water (either in a mix truck or a stationary mixer) to produce concrete. Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. Particulate emissions from the Project's concrete batch plant would be controlled by devices such as baghouses (i.e., fabric filters used to filter exhaust air during pneumatic transfers of material). The air

Comment Information	Comment	Comments and Responses
	In our view, the surrounding neighborhoods would endure a massive amount of ongoing noise pollution for an extended period. **Property Devaluation** Nowhere in the EIS do we see the property values addressed. While some may argue in the long term that a higher reservoir level COULD equate to higher property values, an ongoing construction project will likely lower property values in the near term and make it nearly impossible to sell within the proposed construction time window (4-7 years). The pristine nature of this area will be sullied and thus devalued by a huge construction project. Does Denver Water plan to compensate each and every homeowner for lost value of their properties or the inability to sell based on the construction? What specific comments within the EIS address this issue? The Chapman letter to follow covers this in considerably more detail. **Safety** The roads entering and exiting the Gross Dam area (72, Gross Dam Road, Flagstaff, and the Magnolia and feeder roads on the Weniger Ridge side) will be flooded with traffic for an extended period. No matter what mitigation efforts are put in place, there will be likely deaths and injuries in connection with this project, ranging from hikers to bikers to motorcyclists to motor vehicle drivers. In addition, the combination of existing commercial traffic with the proposed Dam construction traffic will make these roads much less safe. What does the EIS say about the likelihood of serious safety issues? What has been addressed for Eldorado Canyon and South Boulder if the dam breaks? We see nothing in the EIS about this issue. We refer you to section V of the TEG, which asks many questions in this regard. **Conservation** We see little effort within the EIS to effectively address conservation as the ***number one alternative to building a new dam***. It seems that the conservation estimates are not based on recent data – or the facts. We would like to see this entire section reworked to emphasize alternatives, including looking at investing a percentage of the planned project cost FIRST in creating a more robust conservation strategy. I refer you to section 1. B. in the attached TEG for a detailed assessment of this issue. The letter from another set of neighbors addresses conservation thoroughly – the Chapman letter, which is addendum 2 at the end of this letter. Overall, we oppose the project on the basis of its destructive nature and lack of emphasis on conservation. We encourage Denver to take the lead in the West to work with a water conservation, and if need, a water restriction plan that reflects 21st century realities, including the ***fact that Coloradans live in the high desert!*** Unlimited growth is not a long term viable strategy for the US economy, and Denver can take steps to regulate its growth by matching its water conservation efforts to the reality of millions of people living in the high desert. We have no doubt that the project would adversely effect us, our neighbors, and many nearby communities. It would affect Colorado writ large. We are certainly NOT convinced that the expansion is necessary. We call on the Army Corps to prepare a more thorough and unbiased assessment of the project and to answer in detail every question we and others have posed. DRAFT 2	emissions from the concrete batch plant have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver Water. A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction. Greenhouse gas emissions from the Project have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The calculations include on-road exhaust emissions from worker commuter vehicles, delivery trucks, and all other Project-related construction equipment. Detailed emission calculation spreadsheets and references are presented in FEIS Appendix I. In addition to Special Conditions outlined in a Corps' Section 404 Permit and the 401 Water Quality Certification, Denver Water would comply with all applicable Federal, State, and local regulations and obtain the appropriate permits prior to construction in Boulder County. Additionally, Denver Water would obtain a Construction Stormwater General Permit and prepare a State-approved Stormwater Management Plan. Because the average annual emissions of nitrogen oxides and carbon monoxide would each exceed 100 tons per year for every Project alternative, a conformity analysis (as discussed in FEIS Section 3.11.4) would need to be conducted. Denver Water would work with the APCD to demonstrate conformity to ensure that the Project alternative selected does

Comment Information	Comment	Comments and Responses
	We also wholeheartedly endorse the TEG Gross Reservoir document, which is thoughtfully drafted and addresses the many issues around this proposed project thoroughly. We endorse the Chapman letter as well, which is attached, and covers the issues in a variety of other ways. Stephen Robinson and Elizabeth Hawkins Robinson [redacted] Additional Questions To Address: • What is the carbon footprint on the project including both the vehicles that will be going to/from the site and the equipment that will used for the project? • What can be expected in the disturbance of the environment that may make conditions more ripe for pine beetle infestation? • What alternative water conservation investments can be made that may mitigate the necessity of expanding Gross Reservoir? A range of alternatives should be offered. • What is being done, or can be done, to contain urban sprawl and increased development of areas that Denver Water is saying will need access to the Gross Reservoir water (more than is currently held in Gross Reservoir)? A range of alternatives should be offered. • What will be the chemicals and bonding agents used in the cement needed for the expansion of Gross Dam and what impact might those chemicals have on those people who live above, near and downstream? And what impact will the will the chemicals and bonding agents have on fish, plant and animal communities that use, live in, or near Gross Reservoir? • What is the true measure of noise and how will that impact human and wildlife that live near Gross Reservoir? • The DEIS needs to address the impact of increased traffic on all roads that will be used including highway 72, Gross Dam Road, Flagstaff Road with a much more thorough analysis of those roads and what is actually feasible with minimal impact to the communities lining those roads; • What are the indirect impacts and worst case scenarios of the project? For instance what if the dam breaks? • What light pollution will be created during the project and what impact will that have on surrounding homes and wildlife? Attached letters that we, as Gross Dam neighbors, support the following addendum: A. TEG Gross Reservoir document and B. Chapman Letter **Memorandum** TO: Scott Franklin, U.S. Army Corps of Engineers FROM: The Environmental Group, Coal Creek Canyon RE: Public comment, Draft Environmental Impact Statement, Moffat Collection System Project DATE: DRAFT 3	not impair State and local efforts to improve or maintain air quality. Note that the emissions for the Proposed Alternative (Alternative 1a) are the lowest of any of the alternatives. An expanded analysis of impacts to communities surrounding Gross Reservoir is included in FEIS Section 5.19, including an evaluation of impacts to property values. FEIS Sections 4.6.11 and 5.11 discuss the impacts to fish in several sections of South Boulder Creek. There would be adverse impacts to fish upstream of Gross Reservoir and beneficial impacts downstream of the reservoir. ***Comment #723-14*** *(ID 3344)**:*** *Noise Pollution • Noise pollution from the concrete plant • Noise pollution from the proposed helicopter usage (tree removal etc.) • Noise pollution from the proposed trucking in and out of the area (tree removal and general purpose labor) • Noise pollution from the many workers handling equipment and carrying on conversations. The EIS indicates that noise dissipates after 50 feet. Of course, for those of us who live up here and can hear an audible conversation on the lake surface from the ridgeline of the Lakeshore neighborhood, this is laughable. We want to know specifically what the number of decibels produced by all of the efforts would create? Having concrete plants running 24/7 is unacceptable and should not be permitted. Please address all of the above bullets thoroughly. In our view, the surrounding neighborhoods would endure a massive amount of ongoing noise pollution for an extended period.* **Response #723-14:** On-site temporary noise impacts would occur from timber harvest, yarding, and use of temporary roads. Noise levels would be similar to other construction

Comment Information	Comment	Comments and Responses
	The Environmental Group of Coal Creek Canyon is a non-profit organization, founded in 1990 for "the purpose of actively dealing with current and future environmental issues that affect the community and the world around us." On behalf of The Environmental Group and the Gross Reservoir community, we submit this response to the Moffat Collection System Project Draft Environmental Impact Statement (DEIS) issued by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act and the requirements of the National Environmental Policy Act. The Corps is mandated to look at several alternatives to any proposed project, including No Action, and to recommend and permit the most reasonable, practicable and common sense alternative, regardless of the position of the applicant. In addition, the proposal must be the "least environmentally damaging practicable alternative" (Clean Water Act Guidelines). The alternative promoted by Denver Water as the most reasonable and least costly, is the largest expansion of Gross Dam and Reservoir, diverting more water from the western slope river basins. No other additional water sources or storage facilities are included. This is the Proposed Action. Need for Gross dam expansion. Denver Water presents four needs and purposes for the expansion of Gross Reservoir by 72,000 acre feet (AF) to 113,000 AF, with 18,000 AF/yr firm yield: (1) projected gradual increasing shortfall beginning in 2016 reaching 18,000 AF/yr by 2030 (including 3,000AF/yr contracted to the City of Arvada if the project goes forth); (2) need for "balance" between the "north system" and the "south system;" this issue is related to (3) drought protection and (4) protection against "equipment" failure resulting in a temporary shut-down of a south system water treatment plant. We address these needs and related issues in Sections I-IV. In Section V we consider impacts, such as traffic safety, that must be addressed further, with mitigation plans, in the final EIS. Because we are opposed to the Proposed Action but are in favor of Denver Water's focus on water supply in the future, in Section VI we make our recommendations for other approaches to a secure water future. In the Summary we capsulate the reasons for our request that the Corps deny the Section 404 permit to Denver Water for the Proposed Action. **Section I: Projected Shortfall** A. **Sources of error: models, data and assumptions used to project the shortfall** 1. Shortfall. The projected shortfall of 18,000 AF/yr by 2030 (3,000 AF/yr is contracted to Arvada if the project goes forth) is based on forecast models that use time-series regression analysis, based on 1973-1999 water use. Backcasting revealed that the models over-predict or under-predict demand, but a 5% increase in demand was added "to compensate for systematic error." This upward compensation is without merit and biases the results. 2. Data. The data used in the models are from demographic and economic analyses prepared by Denver Regional Council of Governments (DRCOG) in 2000 and used by Denver Water in its 2002 IRP. The memorandum prepared by Harvey Economics (HE) (Appendix A, Jan. '04 p. 4) says, "The drawback to these models is the requirement for voluminous and accurate data necessary to conduct meaningful regression analysis." And "In truth, there is little DRAFT 4	activities and would not be expected to exceed relevant standards and guidelines. Off-site impacts would occur from trucks hauling the forest residue (ash, chips, whole trees, logs, and/or firewood) to sites where they would be disposed or sold. Roads used for access would include Flagstaff Road (CR 77) east and north of the dam, Gross Dam Road (CR 77S) from SH 72, CR 97, and CR 68, SH 72, and SH 93. Impacts are anticipated to be temporary and moderate. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the USFS, Colorado State Forest Service, and Boulder County. Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of FERC in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC. The concrete batch plant would be located at the Gross Dam staging area (on the south dam abutment) as shown on Figure 2-3 and would operate from April through November. The noise levels

Comment Information	Comment	Comments and Responses
	opportunity for testing the accuracy of demographic and economic forecasts. Such forecasts are inherently very uncertain." In the memorandum of Aug. '04 p. 2 "The information provided by Denver Water was represented and accepted without audit of the original data sources." a. Bias. Harvey Economics memorandum, Jan. 04 p. 7 (Appendix A), " ... to overcome the "growth agenda" bias, DRCOG now focuses on a "consistent consensus from among the larger group." **Consensus does not automatically overcome a bias**, of any kind. Most of the DRCOG entities have a compact to increase urban density 10% by 2020. b. Faulty assumptions. As described in the Harvey Economics memoranda (Appendix A), DRCOG based the projections used by Denver Water on many assumptions that today have proven sadly errant: (1) **increasing full-employment** growth path; (2) **expansionary** fiscal policy, state and federal; (3) increasing consumption; (4) **no economic shocks**; (5) federal budget **surplus** for the next ten years (from 2000). The Proposed Action by Denver Water is based on assumptions and data from 2000 that are clearly outdated. c. Failure to validate. Harvey Economics (HE) was contracted by Denver Water to determine the validity of its purpose and need projections, to be used in the Environmental Impact Statement. In fact, HE used the identical models, the identical data, crunched the numbers and came up with the identical figures as Denver Water (Appendix A, p. 8 Exhibit 4). This is a test of calculation reliability and is **not a test of validity**. Yet, HE ultimately concluded that the models and the data, and extrapolations, are reasonable and appropriate, and thus Denver Water's projections can be used in the Environmental Impact Statement. d. Old data. The 2002 data used as the foundation for the projected supply and demand estimates for 2030 (Ch. 1, Table 1-1) are outdated and do not reflect current conservation goals and practices. These data therefore underestimate the power of conservation to reduce demand by 2030. Furthermore, data on system refinements and non-potable reuse are not accurate. For example, non-potable reuse was estimated to be 17,000 AF by 2030, included as "supply" on Table 1-1. In fact, "The goal is to expand the recycled water program to 17,500 acre feet per year by **2020**" (GreenPrint Committee, October 20, 2009). **This faulty data-base is the foundation upon which the Proposed Action is anchored and must be amended.** 3. Denver Water contracts and obligations. The DEIS includes in the Purpose and Needs section, and in the projected demand, the total contracted "fixed account" water demand of treated and raw water customers. This may be overestimated. For example, every year Denver Water renews a contract with the US Department of Energy for Rocky Flats for 1,396 AF/yr. Rocky Flats is closed but the contract continues on the books and is included in total demand projections for 2030. This is misleading and all such contracts must be eliminated from demand totals, whether or not they are renewed, and must be represented as such in the DEIS. 4. Additional water sources not included. a. The DEIS, (Chapter 2, p. 24) describes an intriguing water source, **unused return flows**, with values from 0 to 37,555 AF/yr (Table 2-9, 1947-1999). The DEIS states that if new storage and conveyance facilities were available, "The reusable flows could be combined with other water sources to meet the entire 18,000AF/yr of new firm yield needed." Although the Platte and Colorado Simulation Model (PACSM) was used to estimate the availability of unused reusable water, the DEIS does not state the impact on supply, nor is it included as a "deduction" in Table 1-1. Chapter 1, p. 6 " . . . .return flows of reusable water can be used over and over to extinction." **This supply source must be investigated before the Proposed Action is considered.** DRAFT 5	described in the EIS are predicted at distances of less than 50 feet from the source and would be temporary and remote. Sound travels omni-directionally (i.e., does not travel upward or downward), which means that it dissipates outward in all directions the further away from its source it travels. As a general rule, when the radius or distance that a sound wave travels has doubled, the sound level is reduced by 6 decibels (dB). Many of the construction activities at the Project site would not be stationary or occur in one location. Construction operations would occur in irregular patterns and are likely to vary considerably in intensity throughout a work day. Therefore, the Corps cannot estimate the specific number of decibels that the combined construction activities for the Project would create. Once the pouring of concrete starts it must be done in a continuous manner or a cold joint would form in the dam. These cold joints require additional work (sandblasting and grouting) before additional concrete can be placed and could result in the development of weak planes in the dam. In order to maintain the highest quality of structural integrity of the dam, the number of cold joints must be minimized. Thus, once the pouring of concrete starts, it must be done in a continuous manner (i.e., 24 hours per day/7 days per week), which would also help to reduce the overall duration of this construction activity. ***Comment #723-13*** *(ID 3343)**:*** *Property Devaluation Nowhere in the EIS do we see the property values addressed. While some may argue in the long term that a higher reservoir level COULD equate to higher property values, an ongoing construction project will likely lower property values in the near term and make it nearly impossible to sell*

Comment Information	Comment	Comments and Responses
	b. Chatfield Reservoir. Chatfield Reservoir is operated by the Corps and was built principally for flood control. Currently an agreement is being worked out with 15 entities and the Corps to increase storage in Chatfield and reallocate an amount of water for commercial and industrial use (Chatfield Reservoir Reallocation Study). This additional supply must be included in the predictions for 2016 and 2030. c. Rueter-Hess Reservoir. This reservoir is being expanded to 72,000 AF and is described in DEIS Chapter 5, p. 13, "The purpose of the enlarged reservoir is to provide sufficient storage of Denver Basin groundwater and the associated reuse water from Denver Basin (to be used) for selected south metropolitan Denver water providers." This project will also recharge the Denver aquifer. d. The Denver Basin aquifers. In the past the Denver aquifer was an important source of water for the metropolitan area but as use exceeded recharge, well levels dropped and today less is taken from the wells, and recharge is increasing (USGS, HA 730-C). The Denver Basin aquifers are massive, with storage of 270,000,000 AF and are a potential water source for future need. e. Prairie Waters Pipeline. The City of Aurora will complete the Prairie Waters pipeline and begin delivering water to the Aurora reservoir in 2011. Excess capacity in the pipeline can be used to transport reusable return flows in the South Platte River into Denver Water's distribution system. This cooperative partnership between Aurora and Denver Water has the potential of providing 5.000 AF firm yield by 2015 and 18,000 AF firm yield by 2050. This potential must be considered in supply estimates (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). **5. Denver Water's Near-Term Strategy** (Ch. 1, p.16-17). The DEIS lists five strategies that Denver Water is implementing to "resolve" the projected shortfall, (beginning in 2016 and reaching 18,000 AF/yr by 2030). The DEIS concludes, "With this multiple project approach, Denver Water is projecting to have **sufficient supplies** until 2030." This contradiction is significant. Nonetheless, the DEIS continues, "The Corps independently reviewed Denver Water's Near-Term Strategy and concluded that the development of 18,000 AF/yr of new firm yield is the only action to be analyzed in the EIS." In fact, the Corps **did not review**, in any meaningful sense, the near-term strategies saying, "Implementation of the near-term strategies described in the IRP is beyond the scope of this EIS because there is no Federal nexus with the components that would require a Corps action, decision, or permit." In short, this Federal agency, mandated to evaluate the proposed actions of Section 404 permit applicants, fails to evaluate key variables that could affect the need and purpose of the proposed action. Had this been done, the Corps would have known that the projections are invalid. This in itself, casts doubt on the entire process and must be addressed. **Conclusion**: Both the purpose and need for the Proposed Action by Denver Water regarding "shortfall" are unsubstantiated and must be revised. The projection models used to determine future water supply and demand necessitate "voluminous and accurate" data. The data used are biased, outdated and possibly invalid, and the projections are based on assumptions that, unfortunately, are incorrect. The projected demand and shortfall of 18,000 AF/yr in 2030 are incorrectly **over-estimated** and invalid, and are not properly evaluated by the Corps. In addition, increased supply through a variety of sources was not included. These supply sources must be included in the DEIS, and water supply and demand projections for 2016 and 2030 revised accordingly. DRAFT 6	*within the proposed construction time window (4-7 years). The pristine nature of this area will be sullied and thus devalued by a huge construction project. Does Denver Water plan to compensate each and every homeowner for lost value of their properties or the inability to sell based on the construction? What specific comments within the EIS address this issue? The Chapman letter to follow covers this in considerably more detail.* **Response #723-13:** An expanded analysis of impacts to communities surrounding Gross Reservoir was included in FEIS Section 5.19, including an evaluation of impacts to property values. As described in Section 2.8.1, the anticipated construction scheduled for the Proposed Action is 4.1 years. ***Comment #723-12*** *(ID 3342)**:*** *Safety The roads entering and exiting the Gross Dam area (72, Gross Dam Road, Flagstaff, and the Magnolia and feeder roads on the Winiger Ridge side) will be flooded with traffic for an extended period. No matter what mitigation efforts are put in place, there will be likely deaths and injuries in connection with this project, ranging from hikers to bikers to motorcyclists to motor vehicle drivers. In addition, the combination of existing commercial traffic with the proposed Dam construction traffic will make these roads much less safe. What does the EIS say about the likelihood of serious safety issues? What has been addressed for Eldorado Canyon and South Boulder if the dam breaks? We see nothing in the EIS about this issue. We refer you to section V of the TEG, which asks many questions in this regard.* **Response #723-12:** The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver

Comment Information	Comment	Comments and Responses
	B. Failure to Evaluate Innovative Conservation as the most reasonable, practical, common sense, least environmentally damaging, and cost-effective alternative. Early in the scoping and selection process, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (1) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Water conservation is addressed but with a minimal expectation of 16,000 AF/yr savings by 2030. Furthermore, demand is calculated on a basis of **"unrestricted"** use in all projections, a clear bias toward over-estimation and blatantly denies the effects of enhanced conservation and efficiency over time. 1. Considerations. a. Data used by Denver Water and therefore in the DEIS, are from "pre-drought" years and "backcasting" over a period of time when conservation was far from the public awareness and certainly not an "ethic" as it is beginning to be today. As noted above, these data used for projection do not reflect current conservation practices and therefore are not accurate. b. In 2002, Denver Water projected a water "savings" of 16,000 AF/yr by 2030 through conservation, which as noted, led to the projected shortfall of 18,000 AF/yr, including the 3,000 AF/yr to Arvada if the proposed action moves forward. [If additional water is not available from Gross Reservoir, the Arvada contract is suspended and the projected shortfall is 15,000 AF/yr.] There are no data to support this savings projection and it appears to be a considerable **underestimation**. In the document "Denver Water's 2010 Strategic Rate Initiative" the projections are for " . . achieving 16,000 acre-feet of conservation savings by 2016 and **29,000** acre-feet of conservation savings by 2045." **It appears that Denver Water has increased its conservation savings estimate substantially, invalidating the projections used in the DEIS.** c. Misleading information. Throughout the DEIS the projected shortfall in 2030 is stated as 34,000 AF/yr. This is false. The projected shortfall is 18,000 AF/yr. Similarly, the projected demand in 2030 is often given as 379,000 AF/yr, and this is false. The actual projected demand is 363,000 AF/yr. In each case, the projected conservation saving of 16,000 AF/yr, which automatically reduces demand since water conserved is not demanded, is excluded to give the higher number. This is done to exaggerate the problem and it casts doubt on the authenticity of the DEIS. This is like saying that 12 gallons of gasoline must be in the tank to drive from Denver to Kansas City, but actually the trip begins in Goodland so only eight is needed, but call it twelve anyway. The DEIS also misleads by comparing projected supply and demand in 2016, called "full use" with projections for 2030. "Full use" is a speculative concept derived from the projection that by 2016 supply and demand will meet—supply will be in "full use." This comparison of supposed "full use" in 2016 as a baseline, to 2030, decreases the calculated impacts of the Proposed Project on river systems since it is assumed that increased diversions will occur in the next four years anyway. This is fallacious on two counts (1) full use will not occur in 2016 and (2) it cannot be argued that impacts will be less because by 2016 conditions will already be worse. d. A strong **bias against conservation** is evidenced throughout the DEIS. For example, in the Harvey Economics memorandum, Jan. '04, p. 5, the ". . . low hanging fruit of conservation savings have already been achieved." **This was false then**, and is today. In the Harvey Economics memorandum, August '04, one of the variables used in the demand model is "annual conservation expenditures" over five decades, beginning in 2000 (Appendix A, Exhibit 3). The projected expenditures are identical for each decade. This is incorrect. The No Action DRAFT 7	Water. A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction. A dam safety analysis was conducted for the existing Gross Dam. Similarly, a dam safety analysis would be conducted for an enlarged Gross Reservoir during final design. Where appropriate, general safety features were incorporated into the conceptual dam designs used for the EIS impact analysis. For example, Section 2.3.2.1 of the DEIS states: "In order to satisfy current dam safety criteria, the dam raise would necessitate an increased spillway capacity, improved dam safety condition, and would require the construction of a service spillway. The spillway could be located in the dam crest, a topographic saddle south of the dam or along the right abutment of the dam or some combination (Figure 2-3)." If constructed, the enlargement of Gross Reservoir would be subject to a series of design reviews by several organizations including: Denver Water, the SEO, and the FERC. FERC and the SEO conduct annual inspections of the existing Gross Dam and would continue to do so if the reservoir is enlarged. Daily inspections would also continue to be conducted at Gross Dam by Denver Water personnel. Additionally, Denver Water would update its current Emergency Preparedness Plan if Gross Reservoir is enlarged. This plan provides a detailed description of who needs to be notified, and what areas are likely to be flooded, among other details, in the highly unlikely event of a dam failure. ***Comment #723-11*** *(ID 3341)**:*** *Conservation We see little effort within the EIS to effectively address conservation as the number one alternative to building a new dam. It seems that the conservation estimates are not based on recent data*

Comment Information	Comment	Comments and Responses
	alternative addresses only two possibilities if Gross Reservoir is not expanded, **in times of drought or emergency**, (1) draw down the strategic water reserve or, (2) ". . . mandatory severe restrictions" or both. During the recent drought Denver Water maintained a substantial surplus, but ". . . they enacted severe and mandatory restrictions on there customers' use of water" (Executive Summary, p. 14). **This is false**. The drought level never exceeded Stage 2 restrictions. The loaded word "restrictions" is used repeatedly, and the DEIS (Ch. 4, p. 449) claims that restrictions will result in a negative perception of the Denver area, would lead to decreasing property values and adverse effects on business and, ". . .consumers may feel they experience a reduced quality of life." Speculation in the DEIS continues: under the No Action alternative and without the Proposed Action, Level 4 drought restrictions could be enforced (a level that has never been defined) and businesses might have to cut-back or even shut down (Ch. 4, p. 502). This doomsday scenario is without warrant but exemplifies the extremism evidenced in the No Action alternative discussion. e. We highlight **in times of drought or emergency** because the DEIS states, "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the 4-5 year construction project—with destruction of 450 acres of land and up to 30,000 trees, and reduced quality of life for those in the area (with no benefits to them)—is for the few years, perhaps 5 in 45 years (Appendix E, 1-1) when Denver Water customers might experience a Level 2 shortage. Predictions of a major shortage to **raw water customers in the northern system** could be once in 45 years (Ch. 4, p 499), or once in 300 years. In its drought plan, the City of Boulder says, "The 2002-2003 drought is considered to be a **1-in-300 year drought** within the Boulder Creek and the Colorado River basins, which simply means it is extremely uncommon in its high degree of severity" (City of Boulder, Colorado Drought Plan, Vol. 1, 2003 Drought Response Plan, p. 6). f. **The concept of "demand hardening" is invalid**. To justify the Proposed Action vs. No Action, the authors of the DEIS refer to this speculative "hardening" of conservation efforts, saying that because water customers are already conserving water, in times of drought no more could be conserved, unless severe mandatory restrictions were enforced, perhaps Stage 4 restrictions—therefore Gross Reservoir must be expanded. This concept is contrary to Denver Water's goals of conservation savings of 16,000 AF/yr by 2016 and **29,000 AF/yr** by 2045 (see reference above). Clearly, **Denver Water does not anticipate "demand hardening"** The concept is pure speculation and carries little weight with water managers elsewhere (California Urban Water Agencies report, www.cuwa.org/publications.html). g. Although off to a good start, water conservation is in its infancy. The projected savings of 16,00 AF/yr by 2030 to offset the projected shortfall was pessimistic when calculated in 2002, and by today's standards, is false. In fact, Denver Water's planning estimates used throughout the DEIS as a basis for need, **use a conservation estimate from 1997** (Ch. 1, p. 12). In spite of upbeat talk about conservation today, Denver Water has yet to effectively tackle both residential and commercial water use. Even so, Denver Water established the goal of reducing overall water use 22% by 2016 (Appendix A, Solutions). This goal is based on conservation and efficiency practices that were not in place then the IRPs were written and are not incorporated in the supply and demand projections used as a rationale for the Proposed Action. h. Water shortfall increases slowly over time, which is why Denver Water projected a shortfall of 18,000 AF/yr by 2030. Water saving through conservation can also increase over time, and will. It is clear from a brief look at conservation data that good conservation, practiced year-round, would negate the projected shortfall and increase the strategic water reserve. The DRAFT 8	*– or the facts. We would like to see this entire section reworked to emphasize alternatives, including looking at investing a percentage of the planned project cost FIRST in creating a more robust conservation strategy. I refer you to section 1.B. in the attached TEG for a detailed assessment of this issue. The letter from another set of neighbors addresses conservation thoroughly – the Chapman letter, which is addendum 2 at the end of this letter.* **Response #723-11:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation

Comment Information	Comment	Comments and Responses
	concept of "strict mandatory restrictions" used repeatedly in the DEIS, has no place in this discussion because it implicitly assumes that prevention cannot occur through good, on-going conservation practices. This is a false assumption. i. As recently as 2006, (Denver Water, July 6, 2006, "Proposed 10-Year Conservation Plan) Denver Water established the goal of reducing total water use in its service area by 22%, as noted above. The plan relies almost exclusively on voluntary reductions in water use and rebates and incentives, with only four "regulatory" steps: metered irrigation, low-flow urinals in new buildings, retrofits of toilets, etc., and water efficiency rating for new customers. These efforts are laudable, and customers have done better than expected. In 2008 Denver Water reported a 30% decrease in water use from pre-drought levels. **These data substantiate the fact that the projection of supply equaling demand in 2016 is wrong**. Furthermore, enhanced efficiency products and creative water conservation will evolve beyond the 2006 measures in use today. Again, supply and demand projections in the DEIS, upon which Denver Water makes a case for the Proposed Action, are outdated and invalid. Also not included in the DEIS projections is Denver Water's current focus on locating "leaks" in the system and replacing failing infrastructure. This saving is significant. In 2004 Harvey Economics (memorandum, August '04, p.4, Appendix A) estimated a 6% system loss, approximately **16,000 AF/yr**. j. During the 2002-04 drought, Denver Water customers conserved approximately 22 % over pre-drought levels even though the conservation requirements **did not exceed Stage 2** drought level (the primary conservation measure was mandatory reduction of outdoor watering). The fact that conservation continues suggests that it is no longer a foreign concept and customers, residential and commercial, will do more. Denver Water customers are demonstrating that they do not need a drought to do better. k. Before granting a permit to proceed with the Proposed Action, Denver Water should be required to assure the Corps that all of its customers, in all categories, have conservation plans on file with the Colorado Water Conservation Board, and are **following that plan**. Failure to comply should be met with penalities—not further diversions from western slope rivers and destructive expansion of Gross Reservoir. To date, 18 "entities" receiving water from Denver Water have not filed an approved conservation plan, including the City of Arvada, contracted to gain 3,000 AF/yr if the Proposed Action proceeds (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). In the next two decades, as innovative and effective conservation practices become routine, or mandatory, these entities will increasingly contribute to demand reduction. This factor is not accounted for in the DEIS, other than in the global 16,000 AF/yr savings projection for 2030. A savings of 1,000 AF/yr from each should be required, eliminating the supposed shortfall and the need for the Proposed Action. l. Conservation plans often include **rate increases**, sending a message regarding the need to conserve and the preciousness of water, and covering the costs of conservation incentives and practices offered to customers. So far, Denver Water has not used this approach and for customers, "Denver Water is a good buy compared to water rates in other jurisdictions" said John Wright, Manager of Rate Administration (GreenPrint Committee, October 20, 2009, p. 3). Rates for single-family residential customers inside the city increased in January 2010 from $1.91 to $2.11 **per 1,000 gallons**, for "block 1" families using less than 11, 999 gallons a month. Households in block 2, using 12,000-30,000 gallons a month saw a rate increase of 40 cents/1,000 gallons, from $3.82 to $4.22. Rate increases were comparable for all customer categories. Denver DRAFT 9	measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #723-10*** *(ID 3340)**:*** *Overall, we oppose the project on the basis of its destructive nature and lack of emphasis on conservation. We encourage Denver to take the lead in the West to work with a water conservation, and if need, a water restriction plan that reflects 21st century realities, including the fact that Coloradans live in the high desert! Unlimited growth is not a long term viable strategy for the US economy, and Denver can take steps to regulate its growth by matching its water conservation efforts to the reality of millions of people living in the high desert. We have no doubt that the project would adversely effect us, our neighbors, and many nearby communities. It would*

Comment Information	Comment	Comments and Responses
	Water is a very good buy. Clearly there is room for rate increases that would really send a message while facilitating the development of innovative conservation and new infrastructure. 2. Data: two examples of conservation/efficiency savings that reduce demand and increase supply, not considered in the DEIS. a. Denver Water (www.denverwater.org: Conservation) estimates that by watering a few minutes less, customers could conserve 2 billion gallons of water in a typical summer, **one billion more** than Denver Water estimated for 2009. Two billion gallons is 6,138 AF. In fact, in the summer of 2009, with conservation and wet weather, **9 billion** gallons (27,000 AF) of water were not used. More than 20,000 AF stayed in the reservoirs; a savings that was not anticipated. While the DEIS and Denver Water project droughts, savings during wet years are not included in projections. Yet, a single wet year like 2009 would contribute at least 6% to the total supply for 2030 and is **greater than the projected shortfall for that year**. Landscape watering is 54% of total residential water use (Denver Water, Key Facts; Exhibit 1), followed by toilets at 13%. Landscape watering, with a peak in the summer, forces Denver Water to "oversize" facilities, "Because of this summertime spike in demand, Denver Water's storage, treatment, distribution and other facilities need to be oversized" (Denver Water's 2010 Strategic Rate Initiative, page 3). Total residential use increased on average from 119 gpd in February to 320 gpd in July (2005-2008). Single -family homes account for about half of all categories of users, therefore **landscape watering is about 25% of total annual water use**. Based on total use of 265,000/yr AF, this is **more than 66,000 AF/yr**. For those of us who live in the foothills, do not have lawns, and are not allowed to use our well water for outdoor purposes, this is maddening. We know that if the projected shortfall in 2030 were correct, it would be inexcusable and totally preventable. In the 2009 pamphlet "Solutions: Saving water for the future" Denver Water acknowledges that among survey respondents two-thirds say, " . . the prestige and pride associated with green lawns is an important consideration for them." However, rather than initiating a campaign to change this unsustainable perception, Denver Water is hoping to accommodate it with larger reservoirs and attempt to increase water conservation by **educating** people on more efficient watering. This effort is referred to as "coaxing" (Solutions, 2009, Denver Water). Within the next two decades this excessive use of water will be mitigated, by more than 18,000 AF/yr. By this means alone, **the projected shortfall will evaporate**. It would be incorrect to claim that this potential savings was already taken into account in the DEIS. b. In the projected total demand for 2030, Denver Water included a savings of 23,000 AF/yr (footnote, Harvey Economics memorandum, Aug. '04 p. 12) due to "natural replacement" of 5.1 gallon per flush toilets to low flow (the high efficiency toilet was not invented). This estimate was made before the 10-year conservation plan was created, and was used by Harvey Economics in approving the projected Need and Purpose statement for the DEIS. In fact, replacement of plumbing fixtures is now included in the rebate/incentive conservation plan that was not in place in 2002. This savings projection is underestimated. **Conclusion**: The demand and supply projections in the DEIS are invalid, due to outdated information, possible "development bias" and failure to accurately estimate conservation savings, all falsely inflating demand. Furthermore, failure to consider innovative conservation and enhanced efficiency as a reasonable, practicable and common sense approach to water supply **invalidates** the "shortfall" rationale for expansion of Gross Dam and Reservoir. The foundation upon which the proposed action rests is weak. We find however, that **the shortfall projection** DRAFT 10	*affect Colorado writ large. We are certainly NOT convinced that the expansion is necessary. We call on the Army Corps to prepare a more thorough and unbiased assessment of the project and to answer in detail every question we and others have posed. We also wholeheartedly endorse the TEG Gross Reservoir document, which is thoughtfully drafted and addresses the many issues around this proposed project thoroughly. We endorse the Chapman letter as well, which is attached, and covers the issues in a variety of other ways.* **Response #723-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #723-9*** *(ID 3339)**:*** *What is the carbon footprint on the project including both the vehicles that will be going to/from the site and the equipment that will used for the project?* **Response #723-9:** Greenhouse gas emissions from the Project have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The calculations include on-road exhaust emissions from worker commuter vehicles, delivery trucks, and other Project construction equipment. Detailed emission calculation spreadsheets and references are presented in FEIS Appendix I. ***Comment #723-8*** *(ID 3338)**:*** *What can be expected in the disturbance of the environment that may make conditions more ripe for pine beetle infestation?*

Comment Information	Comment	Comments and Responses
	has been accepted without question and critical analysis. We also find a clear bias against conservation. The fact that Denver Water is now focusing on conservation, and customers will be increasingly successful in saving water, has not been taken into account and the meager 16,000 AF/yr by 2030 projection made in 2002 is false. The use of conservation data from 1997 invalidates both the projected shortfall beginning in 2016, and the shortfall of 18,000 AF/yr projected for 2030. Most importantly, the "mandatory" firm yield of 18,000 AF/yr derived from the latter projection is invalid. It is clear that in the scoping process, in the elimination of reasonable alternatives and during the preparation of the DEIS, the Corps failed to critically evaluate the evidence presented by Denver Water for the purpose and need of the Proposed Action. At this point, this serious omission can only be rectified by denying the Section 404 permit on the grounds that the stated purpose and need regarding supply and demand are not substantiated. **Section II: Need to "balance" the north and south systems**. The north and south systems have served Denver Water customers reliably for years, even when Gross and Ralston reservoirs are low and the Moffat Water Treatment Plant (WTP) is not running. With enhanced conservation during dry years Denver Water maintained it's strategic water reserve. Nonetheless, increasing demand, the hypothetical shortfall, and fears of drought and equipment failure of a south treatment water plant, convince Denver Water that increasing Gross Reservoir by 72,000 AF is essential. While these concerns seem reasonable, the expansion of Gross Dam and Reservoir, with the ensuing destruction, degradation of quality of life of those in the area during construction—and main purpose for storage—demand an examination of this need. A. Misleading demarcation of north and south systems (Ch. 1, Figure 1-1). At first glance Figure 1-1 appears to verify the so-called "imbalance" of the small north system, relying entirely on Gross and Ralston reservoirs, and the very large south system. Based on this division, Denver Water states that the "north" system holds 10% total storage and the south holds 90%. There is however, a middle system, with a reservoir capacity exceeding all others—Dillon reservoir and the rivers that feed it. Dillon is indeed "middle" and Roberts Tunnel carries water into the North Fork of the South Platte River where it is carried by conduit to the two "south" treatment plants. The true "south" system is comprised of the drainages on the east side of the continental divide, entering into Antero and Eleven Mile Canyon reservoirs, the South Platte River and Cheesman and Strontia reservoirs. In fact, the middle system holds 48% of the total storage capacity, and supply, available to Denver Water customers. Therefore, storage capacity is distributed across these three systems and the storage "imbalance" of north vs. south is not meaningful. B. 4:1 ratio. Although no rationale or data are given to verify this "mandatory" storage to firm yield ratio, Denver Water and the Corps used this ratio to determine additional storage needed in Gross reservoir. Given the presumed shortfall of 18,000 AF/yr in 2030 and the alternative selection criterion that 18,000 AF/yr firm yield must come from Gross reservoir, the ratio led to the conclusion that Gross reservoir must be expanded by 72,000 AF, (or 77,000 if Boulder and Lafayette enter into an IGA with Denver Water), bringing the reservoir to 113,000 AF (or 118,000 AF). However, even if the 4:1 storage to firm yield ratio is justified, **the expansion figure is questionable**. Gross reservoir already holds 30,000 AF above minimum pool level so to meet the 4:1 ratio, the reservoir would need **72,000 AF total**, increasing by 42,000 AF. Denver Water argues however, that the current capacity of Gross Reservoir cannot be included because it is already "contracted" (personal communication). The definition of "firm yield" is: "The measure DRAFT 11	**Response #723-8:** The current mountain pine beetle (*Dendroctonus ponderosae*) outbreak has been mostly confined to high elevation lodgepole pine forest, above 8,500 feet elevation. It is by far the largest outbreak of mountain pine beetle in the historic record and appears to be exacerbated by winters that are warmer than the historic record. A previous outbreak in the 1970s in Colorado was mostly confined to low elevation ponderosa pine forests. In the past two years, the current outbreak has spread to lower elevation ponderosa pine forests along the East Slope, including areas near Gross Reservoir. Mountain pine beetle is likely to continue to spread in ponderosa pine for the next several years, but it is not clear whether tree mortality will be as high as it was in the even-aged lodgepole pine forests at higher elevations. The forests at Gross Reservoir are comprised mostly of ponderosa pine and Douglas fir. Mountain pine beetle and the Douglas-fir beetle (*D. pseudotsugae*) could affect forest structure in the future. However, both species are native and any outbreak may be within historic limits. DEIS Section 4.1 under the subheading Sediment Supply explains how pine beetle could impact the system. Information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in the FEIS (Sections 4.6.7.1 and 5.7.1.1). In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will

Comment Information	Comment	Comments and Responses
	of a water collection system's ability to reliably supply water to meet demand during drought periods" (Glossary, page 3). The projected demand in 2030 includes current demand, and current supply in the reservoir is part of the "reliable supply." The logic of excluding the 30,000 AF currently available is unclear. C. "Balancing" supply is misleading. "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the expanded reservoir, with double the surface area and evaporation (nearly 1,000 AF/yr), is not for supply, rather it is for storage in case of a dry year or years. This suggests that the need for "balance" is overstated and the massive expansion of Gross dam and reservoir is not justified. 1. The storage issue. The DEIS notes repeatedly that if Denver Water had more storage capacity in Gross Reservoir, it could divert more water from the western slope river basins—it has the legal right to do so—but without storage it cannot. As noted, the increased diversion would be primarily for storage, to be used during dry years, or if the two south WTPs were so disabled that they could not meet customers needs. We highlight this storage issue to separate it from a supply issue. Denver Water uses the supply shortfall argument to justify the massive expansion of Gross reservoir, but supply would not be its main function. Other alternatives for storage, as parts of alternatives 8A and 10A are valid, see Section VI. **Section III: Drought and the "what if" scenario.** Drought is a natural concern for any water supplier because, if unprepared, increased conservation may not be easy to orchestrate and customers " . . . would likely become frustrated by restrictions and with their water utilities as a result" (Ch.4, p.449), and sales would decrease. It is not particularly cynical to note that there is an inevitable "conflict of interest" between needing to sell water and needing to encourage customers to conserve it. [Ironically, wet summers have the same financial impact.] If the Proposed Action goes forward, Denver Water will not have to rely on "restrictions" and decreased water use in times of drought. In fact, the expansion of Gross Reservoir is primarily for storage in case of drought. This is a win-win for customers and Denver Water, but a lose-lose for western slope river basins and residents in the area surrounding the reservoir. Currently, Denver Water maintains a Strategic Water Reserve of 120,000 AF in storage at all times which " . . . provides a hedge against unforeseen circumstances such as infrastructure failure and higher than expected water use." This is 33% of projected supply of 345,000 AF in 2030 and far exceeds the recommended 10% "safety factor" suggested by Harvey Economics (Appendix A, memorandum of Aug. '04). The proposed expansion of Gross Reservoir, from 41,000 AF to 113, 000 AF (or 118,000 AF) for use in a dry year or series of dry years, is clearly "overkill." With increased supply and storage capacity through other means, and with demand reduction through conservation and enhanced efficiency, **which can be achieved in spite of growth**, (see "New House New Paradigm" Western Resource Advocates, September '09), the Proposed Action is not justified. We are also concerned about the "moral hazard" of water bailout. The recent bank bailouts raised the issue of so-called moral hazard, whereby banks, knowing that they would be bailed out in the future, continue risky and ultimately destructive behavior. To protect their customers from possible drought restrictions, Denver Water proposes to ensure supply, regardless of drought—a drought bailout—while further endangering western slope rivers, ecosystems, quality of life of the Gross Reservoir community and the reservoir environment. As with the financial system, this is DRAFT 12	accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Refer to Appendix G for a description of the Forests to Faucets Partnership and other cooperative efforts. ***Comment #723-7*** *(ID 3337)**:*** *What alternative water conservation investments can be made that may mitigate the necessity of expanding Gross Reservoir? A range of alternatives should be offered.* **Response #723-7:** Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures and rain gages. In the last three years 38,627 residential rebates have been processed by Denver Water, which amounts to 15 % of Denver Water's residential customers participating in rebate programs since 2007. Through these rebates, the new high-efficiency products help save about 960 AF of water, roughly the amount used by 2,400 homes in a year. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying inefficient toilets (more than 1.6 gallons per flush) from their Home Improvement Outlet stores as an attempt to save over 40 AF/yr. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers. ***Comment #723-6*** *(ID 3336)**:*** *What is being done, or can be done, to contain urban sprawl and increased development of areas that Denver Water is saying will need access to the Gross Reservoir water (more than is currently held in Gross*

Comment Information	Comment	Comments and Responses
	not a bogus concern. The Corps must consider this "unintended consequence" in its evaluation of the Proposed Action. **Section IV: Need for "flexibility" in the event of equipment failure or emergency.** Denver Water runs three water treatment plants, one in the north system and two in the south. Chapter 1, p. 8, "During periods of low demand, it is possible for any of the three treatments plants to serve most areas within the CSA. In general, the Foothills WTP is the primary treatment plant used to meet treated water demands . . . the Marston and Moffat WTPs are primarily peaking plants . . ." Further, "The (south) system is designed for dual feed to any area to minimize service interruption and to maintain fire protection capability." In addition, Denver Water plans to improve the south distribution system so that **both plants are running at full capacity** by 2016. Nonetheless, Denver Water argues that the massive expansion of Gross Dam and Reservoir is necessary because a failure or maintenance shut-down of a south system plant would threaten reliable water supply. Denver Water further argues that with the expansion of the reservoir, the Moffat WTP would operate at the minimum output throughout the winter, "shifting" the burden slightly from the south plants. [Currently Gross Reservoir is low during winter months and the Moffat WTP shuts down from mid October until April.] It seems certain however, that the combined "dual feed" system and greater capacity of the Marston and Foothills WTPs reduces the need for more flexibility and balance between the north and south systems. The massive expansion of Gross Reservoir would be a minor contribution. In comparison to the negative impacts of the Proposed Action, this shift and added flexibility are insubstantial. **Conclusion**. While the importance of adequate water supply during a drought is clear, the DEIS does not address the equal importance of innovative conservation and efficiency to maintain adequate supply, in case of drought. Instead, the solution to the **possibility** of water shortage is "build a bigger dam." Secondly, the absolute necessity of having greater surplus in the north system is not demonstrated. The Corps must examine the "balance" and "flexibility" concerns to determine both the legitimacy of these "needs" and alternative solutions, before proceeding. **Section V: Impacts**. The DEIS uses an impact scale from negligible to major, and short-term to long-term. In general, the impacts of the Proposed Action on the environment and residents in the area are minimized. Some impacts, such as highway congestion, are described as minor and temporary. Nothing about a 4-5 year construction project is "temporary." A. Traffic in Coal Creek Canyon. There will be haul trucks, lumber trucks and worker vehicles up and down the canyon, in varying numbers, for over four years. This is a major impact, and is not "temporary" any more that being sick for four years would be temporary. The DEIS estimates a maximum of 44-74 haul truck trips/day (260 days a year, 8am-3pm or longer) and 202 worker vehicle trips/day. An estimate of number and frequency of trucks hauling fly ash and cements **is not given**, and the number of truck trips/day could be much higher. To evaluate this impact, the DEIS must be precise. Yet, " . . number and duration of delays will be negligible" (Ch. 4, p. 341), with "No significant indirect impacts." If stress is an indirect impact, then there will be significant indirect impact. The DEIS claims that the cost of producing sand-sized material on site is "very high" (Ch. 2, page 33) but gives no supporting data and assumes that 40% of the aggregate would have to be imported. In fact, mineral industry sources indicate that concrete sand has been produced on DRAFT 13	*Reservoir)? A range of alternatives should be offered.* **Response #723-6:** The Corps analyzed demand in the Project area based on demographic projections from various Federal and local sources. The Corps also independently evaluated the demand projections stated in Denver Water's Integrated Resource Plan, which that will help guide water management over the next 40 years. As stated in DEIS Section 4.14 and FEIS Section 5.16: "Several recent studies have suggested that there is no substantive causal relationship between population growth and the development of water, or vice versa. One such study is summarized as follows: The relationship between water and growth in the modern West is often misunderstood. Historically, it has been assumed that water development was a necessary precursor to growth and, similarly, that a lack of water development could act as a deterrent to growth. While these premises may have been true at one time, recent experience in Colorado and other western states shows both ideas are now unsupportable. To the contrary, many of the regions showing the highest rates of growth in the West – from Douglas County, Colorado to Las Vegas, Nevada – show the opposite trend; growth is actually highest in some of the driest regions. Similarly the veto of the proposed Two Forks Dam on the East Slope by the EPA in 1990 certainly did not deter growth in the Denver Metropolitan area. Examples also suggest that an abundance of water is often insufficient to stimulate growth. The experience of Pueblo is illustrative (Nichols et al. 2001). Numerous other studies analyzing the relationship between growth and water reach similar conclusions,

Comment Information	Comment	Comments and Responses
	site for dams in Colorado at Durango and Parker in a cost range of $2.50-6.50/ton. This compares with the typical cost of purchased concrete sand of $5.50-7.50/ton plus hauling costs. Hauling costs can easily amount to 50% of the material cost so the total cost of purchased sand could approximate $10/ton, significantly higher than sand produced on site. Producing sand on-site must be reevaluated. B. Traffic safety. The haul route through the narrow and winding canyon on Hwy 72 is of great concern. There are only two short passing areas, the shoulders are rough and narrow, there are few pull-outs on the uphill side of the highway. During the summer, Hwy 72 is popular with cyclists who use the highway for recreation and training. Groups of cyclists tour the canyon, hugging the side of the road as best they can; there is no bike lane and getting past bikers in a car is nerve-racking. The danger to bicyclists by constant haul truck traffic will escalate. However, the DEIS mentions bicyclists once, in passing, " . . . temporary moderate adverse impact on recreation experience and safety to road bicyclists" (Ch. 4, p. 370). No more is said about that. A **moderate safety impact is intolerable**. Hwy 72 is also a favorite route for motorcyclists, often traveling in groups and every summer tourists travel up and down the canyon. Enlarging the pull-out areas will not solve the traffic safety issue. Large, slow trucks going up and down the canyon will be an agonizing hazard that has not been addressed in the DEIS. The dimensions of the haul and logging trucks are not given; long vehicles may have difficulty navigating within the lane on many of the sharp curves. Also, the numerous sharp curves on Hwy 72 will require braking and down-shifting repeatedly; the canyon will be clogged with diesel smoke; people living along the road will be subjected to both smoke and noise. The dust impact along Gross Dam Road cannot be fully mitigated, and the road will become rutted—in this the DEIS is accurate. The Corps should not proceed with the permit process until traffic safety is addressed and mitigation measures described, such as a paved bike lane. Due to the seriousness of this long-term impact, Denver Water should be required to reevaluate the possibility of using the railroad for hauling. Rail should be seriously considered, to avoid construction-related traffic hazards, energy consumption, air pollution and haul costs. Industry sources indicate that rail costs for bulk hauling of materials like sand could be as low as 10% of truck haul costs. In addition, railroad hauling makes sense because the plan is to stockpile the sand ahead of construction, thus reducing the use of the railroad. C. Destruction of land. The destruction from the excavation of a quarry on the edge of the reservoir, which will not be reclaimed, is correctly described as "permanent and major." In all, 30 acres for the quarry will be destroyed and not reclaimed (Ch. 4, p. 403). Thirty eight acres of trees will be destroyed and 465 acres of land will be inundated. This entire project is contrary to the goals of the Federal Energy Regulatory Commission, Boulder County, and the National Forest Plan to maintain the land as "forested" and natural (Ch. 3, p. 294). D. Inundation of plant communities. Two **globally rare plant** communities will be destroyed by inundation in Winiger Gulch and South Boulder Creek (Ch. 4, p. 232). The South Boulder Creek community is rated as "high significance" by Colorado Natural Heritage Program. 43% of the Winiger Gulch Potential Conservation Areas and 30% of the South Boulder Creek PCA would be inundated. The DEIS says, "Inundation of the central portions of these PCAs would have a moderate to major impact." Nothing is said regarding the potential loss of biodiversity if these areas are destroyed and mitigation is not mentioned. [XXX waiting for input from HCHP on this] DRAFT 14	such as Western Land Use Trends and Policy: Implications for Water Resources (Riebsame 1997); Atlas of the New West (Center of the American West 1997); and Water in the West: The Challenge for the Next Century (Western Water Policy Review Advisory Commission 1998). This growth issue was evaluated and dismissed by the Corps during the NEPA analysis of the Two Forks Dam and Reservoir Project in 1988 – "As a result of including the No Federal Action scenario, the Corps was able to answer a major question then being asked – would growth continue in the Denver Metropolitan area without Federal approval of a major water supply project. The evaluation of the No Federal Action scenario determined that growth would occur regardless of Federal action" (Corps 1998, Page 3-3 of the FEIS Metropolitan Denver Water Supply EIS, Volume 1). Independent studies, such as the State-wide Water Supply Initiative, commissioned by the State of Colorado anticipate high growth rates for Colorado, including the East Slope. These high growth rates are likely to occur regardless of what water projects are constructed. ***Comment #723-5*** *(ID 3335)**:*** *What will be the chemicals and bonding agents used in the cement needed for the expansion of Gross Dam and what impact might those chemicals have on those people who live above, near and downstream? And what impact will the will the chemicals and bonding agents have on fish, plant and animal communities that use, live in, or near Gross Reservoir?* **Response #723-5:** The concrete mixture and additives for the dam raise would be determined during final design. The raise would likely be performed in the dry, such that during the curing process, the reservoir water would not be

Comment Information	Comment	Comments and Responses
	E. The loss of 20,000-30,000 trees. Tree removal is a major, permanent impact. From an environmental point of view, the fact that the land will be inundated with water is irrelevant. 1. Pine beetle warning. Everyone in the Coal Creek and South Boulder Creek drainages knows that the Pine beetle is now over the continental divide and moving east. Some of us are already using expensive mitigation techniques, many of us have taken pine beetle workshops and know when to cut wood and how to dispose of it, and never do so when the beetles are flying. As the U.S. Forest Service reminds us, "Beetles fly in July." We are very cautions and very worried. We know that tree cutting is the best way to attract beetles but find no discussion of the pine beetle threat in the DEIS and therefore no plan to protect the area above the reservoir from this potential destruction and major long-term impact. Until the Corps can be assured that the destruction of trees at Gross Reservoir will be done at the right time of year, and will not increase the risk of pine beetle infestation, the Proposed Action should not be permitted. 2. The carbon footprint. The "carbon footprint" of the entire project is ignored in the DEIS. The Corps should reject Denver Water's application until this is addressed. It is inexcusable that up to 30,000 trees could be destroyed, tons of carbon put into the atmosphere from destruction of this carbon sink and use of many diesel engines on site, and diesel trucks, and the only concern in the DEIS is air quality. 3. Replanting following vegetation destruction. Mitigation will not begin until after Gross Reservoir is filled. Under the Proposed Action the reservoir would gain 18,500 AF/yr. If this represents actual net gain, it would take at least four years to fill the additional 72,000 AF (evaporation loss is approximately 1,000 AF/yr when full, Appendix H-8.1). During this time the unsightly visual impact remains, as well as the potential for erosion. 4. Allied Waste [XXXX waiting for info on ability to handle 30,000 trees] F. Noise. There is nothing "temporary and minor" about the sound of diesel engines, rock crushing, a cement plant and earth moving equipment, day and night at times, for four years. To minimize this impact, the DEIS claims, "At a distance greater than 50 ft. noise levels diminish rapidly." **This is nonsense**. At this altitude, sound carries easily through the dry air. Most significantly, sound travels upward. The residents living in the hills, all live above the reservoir. For some the noise may be muffled, for others it will be obtrusive, but for everyone it will be a constant background annoyance. The DEIS does not address mitigation of the noise impact. Denver Water should not be permitted to expand Gross dam until noise mitigation is addressed satisfactorily. G. Quality of life. The "quality of life" of Denver Water customers is repeatedly addressed under the No Action alternative, regarding the supposed hardships of water restrictions during drought that will ensue if Gross Reservoir is not expanded. **Quality of life of those exposed to the construction of the dam, for years, is ignored.** Driving in the canyon is already stressful and everything that is stressful about it will be compounded. Living with background noise is antithetical to our chosen life-style, and those of us who enjoyed boating and fishing on the reservoir will have to give that up for many years—major construction will occur in summer and no one would want to be in the area for recreation. In exchange for this, we find nothing in the DEIS to encourage us to support this project; we bare the brunt but the benefits are all downstream. H. Home prices. In a single sentence, two impacts are minimized, "Construction activities would be temporary and would not affect home prices" (Ch.4, p.435). The DEIS gives no data to support this. We know that home-buyers in this area are savvy enough to investigate potential threats to the environment, and would not purchase anywhere near the reservoir for 4-5 years DRAFT 15	in contact with the curing concrete. While curing, the chemical additives are generally inert, and significant adverse effects on reservoir or stream water quality are unlikely. There have been many dams constructed with large quantities of concrete for creation of drinking water reservoirs, and the Corps is not aware of documented adverse effects related to the concrete mixture. Similar mixes are anticipated for this Project. ***Comment #723-4*** *(ID 3334)**:*** *What is the true measure of noise and how will that impact human and wildlife that live near Gross Reservoir?* **Response #723-4:** All Gross Reservoir construction and operation activity would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the EPA, as summarized in FEIS Table 5.14-1. On-site construction noise may periodically exceed the EPA noise threshold of 70 A-weighted decibel (dBA) scale for public exposure, but the public would not be exposed to these levels on a continuous basis. The noise levels described in the EIS are predicted at distances of less than 50 feet from the source and would be temporary and remote. Sound travels omni-directionally (i.e., does not travel upward or downward), which means that it dissipates outward in all directions the further away from its source it travels. As a general rule, when the radius or distance that a sound wave travels has doubled, the sound level is reduced by 6 dB. As described in FEIS Section 5.9, wildlife may be temporarily and indirectly impacted by construction noise. Wildlife responses to noise would depend on

Comment Information	Comment	Comments and Responses
	without a drop in home prices. A drop in home prices is an incentive to buy, and it would happen. Anyone living near the reservoir and planning to sell within the next seven years can anticipate a drop in home value. I. Western slope rivers. The river basins on the western slope that feed Gross Reservoir are already being depleted. Adding 72,000 AF to Gross Reservoir from the western slope is a major impact. For example, in May-July, in average and wet years the upper Fraser river will be depleted 38%, with a decrease of 17% at the Granby gage. Overall, the Fraser River will be depleted by 80% of natural flow. The Fraser River is already ranked as the third most endangered river in the U.S. by American Rivers (Colorado Trout Unlimited). The entire river basin system will be depleted to varying degrees at varying times, effecting sediment disposition and flooding flows. Perhaps in this context, the concept of "demand hardening" is applicable. The rivers, and the people of the western slope, can only give so much. Denver Water has the legal right to take this water, if it has storage capacity i.e. expanded Gross Reservoir. Having the legal right however, does not make it right. We are in full support of the western slope groups who oppose the expansion of Gross Reservoir. They are the experts on impacts in those river basins and environment and we leave that discussion to them. XXXXX contact Grand County etc for "incorporated by reference" material. J. Earthquake potential. Gross Reservoir lies in Seismic Zone 1, (Ch 4, p.216) which refers to a 1/10 chance that an earthquake with an acceleration of 1/10 the acceleration of gravity would occur in the next 50 years. "In general, reservoirs with deaths greater than 300 ft may potentially induce seismicity" and "The water loads at Gross Reservoir would not change water content in faults at depths of a few miles." The depth of the expanded reservoir will be 421 ft. (including the environmental pool). The conclusion in the DEIS is that the load of the reservoir would not affect water lubricated faults. Zone 1 refers to probability and acceleration but does not relate to depth of faults. To evaluate this potential, the DEIS must include fault depth and recalculate earthquake probability along the Livingston Sheer Zone and fault, and the Copeland Fault, which runs under Gross Reservoir (see Exhibit 2). K. Urban sprawl. The City of Arvada and local developers are eagerly waiting to begin developing a large tract near the base of Coal Creek Canyon. Although the Corps should address growth and development in the Environmental Impact Statement, under Cumulative Effects, growth and development are briefly mentioned but not in the context of impacts. And although the causal relationship between water availability and development is denied in the DEIS, (Ch. 4, p.391) the relationship is causal when city ordinances make it so, and if not causal, water and development are correlated. In the Coal Creek Canyon area, development of land annexed by the City of Arvada and the expansion of Gross Reservoir, (with the 3,000 AF/yr of water for Arvada, contingent upon it), go hand in hand. Greater storage capacity in Gross Reservoir is not what the City of Arvada is looking for. The complex issue of urban and suburban development and growth is a serious concern to forward-looking managers, water-grab cannot go on forever. NEPA specifically states that achieving a balance between population and resource use is a goal. Development management, in conjunction with water management, must be addressed by Denver Water before granting the permit for the Proposed Action. The DEIS must describe a "mitigation" plan through which development will not outpace water supply. **Conclusion**. The impacts of the Proposed Action to western slope rivers are significant and long-term; the impacts to the local environment and residents are numerous, over a 4-5 year period, DRAFT 16	several factors, such as species, the type of activity, topography, and individual sensitivity. ***Comment #723-3*** *(ID 3333)**:*** *The DEIS needs to address the impact of increased traffic on all roads that will be used including highway 72, Gross Dam Road, Flagstaff Road with a much more thorough analysis of those roads and what is actually feasible with minimal impact to the communities lining those roads;* **Response #723-3:** DEIS Section 4.10 analyzed traffic impacts on roads in the Project area including SH 72, Gross Dam Road, and Flagstaff Road. The Corps acknowledges that there would be delays caused by slow-moving construction vehicles. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water met with CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson

Comment Information	Comment	Comments and Responses
	with traffic safety being the greatest personal concern and destruction of land and trees being the greatest environmental concern. Negative impacts must be weighed against need. We find that the need and purpose of the Proposed Action by Denver Water are not substantiated, can be addressed through other programs, and ultimately lack vision. We conclude that the project, with so many negative impacts, is not justified. **Section VI. Recommendations**. The projected shortfall, reaching 18,000 AF/yr by 2030, is over-estimated and the **time-period can be off-set by many years**. During this time great progress will be made in efficiency and water conservation, thus reducing water demand and maintaining supply. Currently the key concern for Denver Water is storage, in case of drought; supply from the western slope and elsewhere is readily available. Denver Water's total usable water supply in reservoirs and other storage facilities far exceeds projected demand in 2030, **not** including the strategic water reserve of 120,000 AF (Water Watch Report). Nonetheless, without limits on population growth and development, we can imagine that eventually supply and demand will meet. As noted above, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (1) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Also excluded were viable alternatives such as 11a, *Deep and Shallow Aquifer Storage of Reusable Supplies*. This alternative was excluded because it was determined that it could not deliver 18,000 AF firm yield (Ch 2, p. 15) but it has the advantage of no loss from evaporation. In light of current data that negate the DEIS predictions for 2016 and 2030, the Corps should reassess all reasonable and practicable alternatives that were excluded. Recommendations 1-4 are based on no expansion of Gross Reservoir. If Gross Reservoir is not enlarged, then the contract with the City of Arvada for 3,000 AF/yr, contingent upon the expansion, is suspended and the supposed shortfall would be 15,000 AF/yr. **Recommendation #1**. Invest in innovation conservation and efficiency tools and practices. Conservation and enhanced efficiency are the keys to sustainable water supply. Eventually every home and multifamily residence will have in-house grey water processing for outdoor use; every home and multifamily residence will have reverse osmosis membrane units and recycling systems to reuse household water for indoor needs; eventually toilets everywhere (currently the major indoor water use) will be an adaptation of airplane style vacuum toilets. Eventually grass will be engineered to be green and drought-resistant. Eventually Southwestern landscaping in Denver will be beautiful. Eventually the daily luxury shower will be a thing of the past—showerheads will have timers as well as flow control; perhaps the art of taking a one gallon Sun Shower sponge bath will be in. The list goes on (for example, see Exhibit 1, Water Online), and the possibilities are limited only by lack of creativity and incentive. Because the timing of the projected shortfall is miscalculated, **there is time** to invest in conservation and efficiency. The idea that "the low hanging fruit of conservation" has already DRAFT 17	and Boulder counties to address local traffic concerns. ***Comment #723-2*** *(ID 3332)**:*** *What are the indirect impacts and worst case scenarios of the project? For instance what if the dam breaks?* **Response #723-2:** A dam safety analysis was conducted for the existing Gross Dam, as well as routine dam safety inspections. Similarly, dam safety inspections and analyses would be conducted for an enlarged Gross Reservoir during final design. Where appropriate, general safety features were incorporated into the conceptual dam designs used for the EIS impact analysis. For example, Section 2.3.2.1 states: “In order to satisfy current dam safety criteria, the dam raise would necessitate an increased spillway capacity, improved dam safety condition, and would require the construction of a service spillway. The spillway could be located in the dam crest, a topographic saddle south of the dam or along the right abutment of the dam or some combination (Figure 2-3).” Denver Water would design the dam enlargement in accordance with the Colorado Rules and Regulations for Dam Safety and Dam Construction and current engineering practices. If constructed, the enlargement of Gross Reservoir would be subject to a series of design reviews by several organizations including: Denver Water, the Colorado SEO, the FERC, and an independent review panel made up of expert dam engineers approved by FERC. These reviews would ensure that the structure is designed and constructed to be safe and structurally sound. FERC and the SEO conduct annual inspections of the

Comment Information	Comment	Comments and Responses
	been picked is false. Mandatory conservation and efficiency practices for new development in particular, will be in place. In several years it will be possible to make projections of demand with greater accuracy. The estimated $353 million to expand Gross Dam and Reservoir could fund innovative conservation R & D that would serve Denver Water customers for years to come. A bigger dam cannot do this. If Denver Water can raise funds to build a bigger dam, it can raise funds for conservation and efficiency. The data suggest however, that funding to the level of $353 million is not needed. Perhaps it is fortunate that landscape watering accounts for nearly 25% of total water use. Reducing landscape watering by (1) watering less, through regulations and/or rate increases if necessary, and (2) by changing the landscape to xeriscape, through incentives if necessary, would solve the drought problem that the bigger dam is expected to solve. **Recommendation #2**: Alternatives 8a and 10a have a storage component and were selected for review because they are "reasonable and practicable." Alternative 8a increases reusable return flows with gravel pit storage of 20,000 AF, and 5,000 AF firm yield. Alternative 10a uses the return flows for storage in Denver Basin Aquifer, adding 20,000 AF, with 5,000 AF firm yield. A review of Figure 2-1, Appendix C suggests that by extending Conduit O south to the AWTP for 10a, it would be possible to use both water sources and storage facilities of 8a and 10a, carrying the treated water in the combined O and M conduit to Moffat WTP. This would give 10,000 AF firm yield. #2A: Use the transfer of agricultural water rights and gravel pit storage component of Alternative 13a, combined with 8a and 10a above. The total firm yield is 13,000 AF. **Recommendation #3**: Combine water sources of Alternatives 8a, 10a and 13a. **Do not build the proposed AWTP**. Upgrade Moffat WPT to process water from these sources to meet standards for potable water. Advantages: the impacts of the Proposed Action to western slope rivers and the Gross Reservoir environment are avoided; water sources are dispersed, unlike the Proposed Action which puts all the new water "in one basket;" funds are used to upgrade Moffat WTP rather than build a new AWTP; the issue of "balance" is solved because the additional firm yield is from the Moffat WTP; the time-period is 2.5 years, versus 3.1 years (Ch. 2, Table 2-16) or 4.1 years of construction with the Proposed Action. **Recommendation #4** Denver Water could use the $353 million not invested in expanding Gross reservoir to upgrade and enhance the efficiency of the conduit/canal system for moving water from the Marston WTP to the Moffat Water Treatment Plant. The two south system WTPs are linked as a "dual system" and in case of a shut-down of one, or an increased need during "peak" demand, water could be delivered to the north system. This approach would be less costly than any other alternative. DRAFT 18	existing Gross Dam and would continue to do so if the reservoir is enlarged. FERC also requires that an Independent Safety Inspection (Part 12) by an outside third-party consultant be conducted every five years. Daily inspections would also continue to be conducted at Gross Dam by Denver Water personnel as they are now. Denver Water's Dam Safety staff also conduct a formal inspection of Gross dam every year, which would continue for the new structure. The Denver Water Engineering Manager of Dam Safety conducts periodic spot inspections of the existing facility, which would also continue. Additionally, Denver Water would update its current EAP, required by FERC and the SEO, if Gross Reservoir is enlarged, to minimize the risk of loss of life and property damage when potential emergency conditions threaten the structural integrity of a dam. The EAP describes procedures to: • Identify unusual and unlikely conditions that may endanger the dam • Initiate remedial actions to prevent or minimize the downstream impacts of a dam failure • Initiate emergency actions to warn downstream residents of impending or actual failure of the dam. The EAP provides a detailed description of the communications protocol such as who needs to be notified and what areas are likely to be flooded, among other details, in the highly unlikely event of a dam failure. Plan participants include the Boulder County Office of Emergency Management, Boulder County Sheriff, Boulder police and fire departments, Lafayette police department, Colorado State Police, State of Colorado Division of Emergency Management, National Weather Service, and many others. This plan is exercised yearly and a formal

Comment Information	Comment	Comments and Responses
	Recommendation #5. The Proposed Action and this recommendation have a serious drawback, evaporation. At the Proposed Action level, Gross Reservoir would lose nearly 1,000 AF/yr. Given that the primary use is storage, this loss would be significant, year after year. Re-evaluate the 4:1 ratio and capacity of Gross Reservoir to supply 18,000 AF during a drought year. To meet this ratio and 18,000 AF/yr firm yield Gross reservoir needs to have a capacity of 72,000 AF. Assuming that this must be above minimum pool level, the additional capacity would be 42,000AF, not 72,000 AF as proposed. Gross reservoir already holds 30,000 AF above minimum pool level. Raising the dam to provide an additional 42,000 AF would not eliminate the impacts but would decrease construction time, and would reduce the diversion of water from the western slope river basins. **Conclusion** The Proposed Action, for which Denver Water is seeking a Section 404 permit from the US Army Corps of Engineers is based on outdated and invalid data, unfounded assumptions and failure to accurately incorporate the power of conservation and efficiency measures in supply and demand projections. New sources of water, such as increased allocation from Chatfield reservoir, are not included in the projections. The "shortfall" foundation upon which the "mandatory" 18,000 AF/yr firm yield and the Proposed Action are based, is not substantial and does not warrant a Section 404 permit. Furthermore, the Proposed Action fails to meet the Clean Water Act guideline as the least environmentally damaging practicable alternative. The need for "flexibility" and "balance" between the north and south systems is over-stated and can be achieved through alternative means. Weighed against the serious and long-term impacts to the western slope rivers, and to the environment and community affected by the construction, the proposed massive expansion of Gross Reservoir, primarily for storage, cannot be justified. "What if" drought and equipment failure scenarios do not provide sufficient reason to permit the Proposed Action. In addition, the negative impacts of the Proposed Action are consistently minimized and mitigation plans are not provided, or are sketchy. Failure to adequately address traffic safety during construction is a key example. We request that the US Army Corps of Engineers deny the Section 404 permit. Denver Water should go back to the drawing board with current water use data, accurate demographic and economic assumptions, and make innovative conservation and enhanced efficiency the most reasonable, common-sense and cost-effective approach to water supply, now and as the population grows. Western slope rivers and streams cannot continue to be the water-bearer for Front Range development. The "build a bigger dam" approach is antiquated and the purpose and need for the expansion of Gross Reservoir have not been demonstrated. B. Chapman Letter: addendum b. **Critique of Draft Environmental Impact Statement for "Moffat Collection System Project" (Enlargement of Gross Reservoir)** DRAFT 19	tabletop and functional exercise is conducted with downstream emergency personnel every five years. ***Comment #723-1*** *(ID 3331)**:*** *What light pollution will be created during the project and what impact will that have on surrounding homes and wildlife?* **Response #723-1:** In general, construction activities would occur during the day and night lighting would not be required other than for safety and security purposes. However, there may be infrequent periods during the construction phase of the Project when double or even triple work shifts would be required. Increased night lighting would be required during these infrequent periods and it would be visible from surrounding nearby residences and wildlife during this construction activity. Work hours for all construction would be limited in conformance with applicable local ordinances. Following completion of construction, lighting on the raised dam would be the same as currently exists. Therefore, no long-term impacts from lighting are expected. ***Comment #723-18*** *(ID 5407)**:*** *Attached letters that we, as Gross Dam neighbors, support the following addendum: TEG Gross Reservoir document and B. Chapman Letter.* **Response #723-18:** The Corps notes the support of the two addendum: The Environmental Group, Coal Creek Canyon Memorandum Regarding Public Comment, DEIS, Moffat Project; and Clark and Y Chapman's Letter Regarding Critique of DEIS for Moffat Project (Enlargement of Gross Reservoir).

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Executive Summary The Draft Environmental Impact Statement (DEIS) for the Moffat Project is technically incompetent, materially incomplete, and heavily biased in favor of a project that is *not* the most reasonable alternative to address Denver Water Board's future water delivery needs. Thus it violates the primary purposes of NEPA. The DEIS should be shelved and the Gross Reservoir project should be abandoned. Recognizing that its service area is located within a near-desert climate zone, Denver Water should adopt a more sustainable approach to serving its customers, an approach illegally excluded without analysis in the DEIS. Among the major failures of the DEIS are: • The DEIS states that "development of 18,000 AF/yr of new firm yield is the only action to be analyzed in the EIS," thus restricting analysis to engineering options and illegally ignoring proactive options including conservation that would enable Denver Water's customers to use water in a sustainable way. • The models that arrive at the 18,000 AF/yr "requirement" do not consider probabilities that the assumptions are wrong or that the projections will be off. Yet they base the purported "need" on a probability that sometime in future decades there may be a drought that, were the water not available, would require a temporary ban on watering of lawns (and similar restrictions), whereas the citizens of Boulder, Jefferson, and Gilpin County foothills neighborhoods who would be most impacted by Gross Reservoir enlargement are already prohibited by Colorado State law from any outside watering 24h a day/365 days per year. This is an unjust and biased "requirement." • The DEIS fails to evaluate whether Denver's current and projected uses of water are ultimately sustainable, which should be required before approving an augmented water supply to provide for future perceived "need". In fact, Denver uses more water per capita than many cities in the dry American West and it fails to employ steeply tiered water rate structures used in other Western cities to curtail wasteful usage. Furthermore, other Americans who do not benefit from Denver Water help subsidize Denver rate payers in many ways. In particular, when this DEIS provides only partial mitigation or no mitigation for adverse impacts of the project to citizens not customers of Denver Water, those citizens thereby subsidize artificially low water rates in Denver. This is an unfair and untenable long-term stance on the part of Denver Water. • The "study area" is extremely limited in scope, mainly extending just a thousand feet beyond the boundaries that would be inundated by the larger reservoir. By excluding analysis of serious impacts extending up to a mile or more away (except along roads and streams), the DEIS fails to consider mitigation of such omitted impacts. • The formalism for analysis of environmental consequences in the DEIS (chap. 4) focuses on comparisons of the "current" (2006!) conditions with the situation at the end of (2016) and with conditions in 2030. Thus it downplays the extremely serious impacts *during construction*. The near-term construction and restoration period is supposed to take ~5 years, though experience DRAFT 20	

Comment Information	Comment	Comments and Responses
	suggests that the duration would likely be longer. Situations more distant in the future are discounted in professional economic analyses, but not in the DEIS; the construction period deserves enhanced focus and emphasis. Many years of construction in a region the USFS has managed for protection of wildlife, adjacent to rural neighborhoods, constitutes one of the greatest impacts of the project, yet construction impacts are given short shrift in the DEIS because of the biased formalism of the analysis. • Citizens in the Magnolia/Winiger Ridge neighborhoods west of Gross Reservoir prepared, in consultation with a professional land use planner and under the aegis of the Preserve Unique Magnolia Association (PUMA), a comprehensive 250-page "Magnolia Environmental Protection Plan" (MEPP), which was officially incorporated into the Boulder County Comprehensive Plan in late 2000. Its evaluated 22 sq. miles of lands south of Boulder Canyon, north of South Boulder Creek, east of Peak-to-Peak Highway, and west of Gross Reservoir, and contained recommendations for Denver Water Board, among other parties. During early phases of development of the Moffat Project DEIS, in late 2003, the Boulder County Commissioners informed both Denver Water and the Army Corps of Engineers of the importance of MEPP and requested that they keep MEPP in mind in developing the DEIS. However, nowhere throughout the six volumes of the DEIS can we find any mention of MEPP or its policies, which are summarized at http://www.puma-net.org/popupmepppol.htm. • The DEIS exhibits an appalling lack of familiarity with facts on the ground around Gross Reservoir and in adjacent neighborhoods. It claims access to Gross where none exists. It claims roads connect when they do not. Parts of the DEIS exhibits zero awareness that there is a long-standing USFS seasonal closure to motor vehicles (November to May) in lands west of the reservoir, and thus there is no discussion of how to mitigate the impacts of revoking the closure that is implicit in the construction schedule. DEIS lists of affected roads omit some that would logically be affected by proposed operations (e.g. CR 68 and 97E can be accessed only from Magnolia Road, but Magnolia [CR 132] is never listed). One of the major fire departments, covering all regions north and west of the reservoir, is High Country Fire Department, but the DEIS only discusses fire departments covering lands to the south and east. The most important local natural feature that would be inundated by the project is Forsythe Falls; even though it is located within the official study region, neither it nor its threatened loss are mentioned anywhere in the DEIS. • A major concern of local citizens is dust during and following the long construction period. Yet, despite Gross Reservoir's location in one of the windiest neighborhoods in the United States, there is zero consideration of this factor in the DEIS analysis of "fugitive dust control." The words "chinook" and "wind speed" simply do not appear in analysis of the Proposed Action. Nor are winds mentioned with respect to project trucks on SH 93, a road frequently closed to high-profile vehicles due to hurricane-force winds or closed to all vehicles by drifting snow. • The DEIS estimates socioeconomic impacts in the hundreds of dollars, wholly and falsely discounting the temporary and potential long-term impacts on home values in neighborhoods whose character would be grossly disrupted during construction and permanently changed in ways antithetical to the amenities for which people moved here. It unrealistically concludes that DRAFT 21	

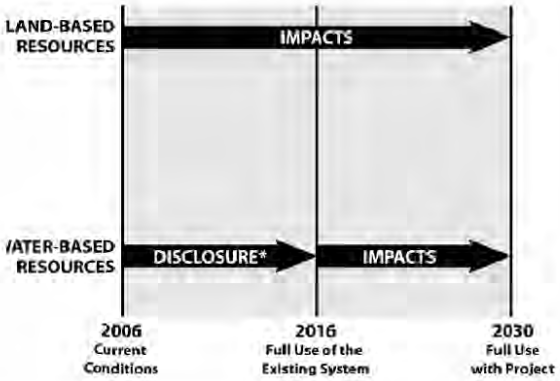
Comment Information	Comment	Comments and Responses
	nobody would move away due to the project. There is no appreciation of rural lifestyles and values in Colorado. • While noting that a major wintering grounds for elk is immediately adjacent to Gross Reservoir, there is no analysis in the DEIS of how the project could disrupt the entire migration route, extending west toward the Continental Divide. The DEIS absurdly suggests that the only impact to elk would be a minuscule diminishment of their grounds by inundation; it wholly fails to consider that the noise/traffic/activity during construction might temporarily or even permanently drive these skittish animals far away from their habitual wintering grounds. There is no consideration of or reference to the extensive scientific literature on the impact of human disturbance on the movement of elk. • There are many major impacts of the project for which no mitigation is recommended in the DEIS and/or no mitigation is proposed (Appendix M) by Denver Water Board. In some cases this is because the analysis falsely claims zero or minor impacts, but in other cases despite findings of significant impacts. Among the impacts for which "**no compensatory mitigation**" is proposed are noise, visual (viewshed) impairment, socioeconomic impacts (e.g. home values), and land use issues (e.g. "improvements" to and heavy use of local roads, violation of stipulations in Boulder County's "Forestry" zoning of these lands, violation of USFS land management regulations). There are many other serious deficiencies in the DEIS. On issues dealing with the vicinity of Gross Reservoir, near which we live, and on topics about which we are knowledgeable, the DEIS is replete with errors of fact, major omissions, serious misunderstandings, and evidence of sheer sloppiness. It is reasonable to suspect that other aspects of the DEIS beyond our familiarity and expertise (e.g. issues involving stream flows on the western slope) are similarly erroneous. If the whole report has the same character, then it deserves the waste basket as its final resting place. The supposed necessity of the project is based on false assumptions and reasoning, the analysis of the DEIS is faulty and omits consideration of major alternatives, and the project would have extreme adverse impacts during construction and significant permanent consequences for which insufficient or zero mitigation is proposed. The project is not needed, it is a waste of money (~$149 million), and its overall effects would be seriously negative. The project should not be built. **Introduction** We are residents of Boulder County, located less than 2 miles west of Gross Reservoir. We believe that we, and several thousands of our neighbors in the vicinity of Gross, would be seriously impacted by the years of construction of the Proposed Action and that there would be deleterious temporary and permanent effects on the natural features, flora, and fauna in the vicinity. From our understanding of water usage in the American West, we find no compensating reasons for the destructive consequences of the project. Denver Water may be proud of its fledgling attempts to DRAFT 22	

Comment Information	Comment	Comments and Responses
	conserve, but objectively there is absolutely no need for the additional water storage that the Proposed Action would develop. Therefore, we strongly oppose implementing the project. The present document is primarily an analysis and critique of the Draft Environmental Impact Statement (DEIS), for which comments are due on March 17th. We are aware of widespread opposition to the project, having attended numerous public meetings about it during the past several years. At most of these meetings, there have been *zero* supporters of the project, aside from individuals representing Denver Water or the Army Corps of Engineers and their hired consultants. So we are aware of concerns about commuter traffic and safety in lower Coal Creek Canyon, concerns about streams on the Western Slope, and concerns about impacts east of the foothills. But we choose to apply our local knowledge and professional expertise in this critique, so we emphasize issues affecting lands and communities northwest and west of the reservoir. We summarize our relevant experience and professional expertise in a footnote to this page[1]. Clearly we, and other citizens and NGOs, have far fewer resources to devote to this matter than the Army Corps of Engineers and their hired environmental consultants (URS Corporation). But we have enough expertise and knowledge of local conditions, and have spent enough time evaluating the proposed enlargement of Gross, so that our evaluation and conclusions should be sufficient to merit postponement of this project until a completely new effort is undertaken to prepare a competent, balanced DEIS. We believe that if such a DEIS were prepared it would conclusively demonstrate that the project is not warranted at this time and perhaps not warranted ever. An overwhelming feature of the DEIS, despite its length, is its *generic* character, as if it were copied from a standardized template with minimal, incomplete input concerning relevant literature and with inadequate on-the-ground fieldwork to determine the specific local conditions at Gross [1] Clark and Y Chapman have lived since 1997 on the [redacted] They have been members of the Preserve Unique Magnolia Association (PUMA, a neighborhood association) since 1997 and co-authored the "Transportation" section of the Magnolia Environmental Protection Plan (MEPP, which was incorporated into the Boulder County Comprehensive Plan in 2000). Y Chapman coordinated with the U.S.F.S. to produce a video program of the 1999 controlled burn along the south side of Winiger Ridge from the shore of Gross Reservoir for two miles west. Dr. Clark Chapman received his MS degree from MIT's Meteorology Dept. and his PhD from MIT's Earth and Planetary Sciences Dept., and thus has professional competence to address geological and meteorological issues in the DEIS. He also was a member of the American Planning Association and a member of the Planning and Zoning Commission of Pima County (AZ), a large suburban/rural Western county with many public and USFS lands, similar to Boulder County. Dr. Chapman is currently working on a study sponsored by the World Bank to evaluate the implications of low-probability high-consequence natural disasters on understanding more common risks that society faces. Since the DEIS recommendations seem predicated on protecting Denver's water from an unlikely but possible drought, he is qualified to address this issue. For many years, Clark and Y Chapman conducted regular bird counts, for the Audubon Society, along Winiger Ridge. DRAFT 23	

Comment Information	Comment	Comments and Responses
	Reservoir and in surrounding neighborhoods. Some of the most significant attributes of the locale, and primary concerns of citizens in the region, are wholly overlooked, or represented in erroneous ways. Because of the superficial, faulty treatment of local conditions and issues, the conclusions drawn from the DEIS analyses are themselves faulty. Beyond such inadequacies, the DEIS is replete with unsupported judgments, which frequently are biased in favor of the adopted Proposed Action. Except in a few portions, such as treatment of visual impacts, the report exudes a bias that seems to reflect an eastern, urban perspective (where everyone waters their lawns), is insensitive to sustainable living in the dry American West, and is wholly indifferent to the lifestyles and values of residents of rural mountain neighborhoods. We and our neighbors have made many inputs to this Moffat Project process since 2003 (including a meeting between PUMA and Denver Water in May 2007 and numerous meetings, including formal hearings, during the last two years), but we see little evidence in the DEIS that our oral and written input was even read, let alone seriously considered. In short, we appreciate that Denver Water and the Army Corps have undertaken the legally required solicitation of public input, even though many residents have, understandably, become aware of the issues only recently as the deadline for comment has approached. But, despite input given, it has not been seriously included in the DEIS. It is our hope that each of our specific criticisms of bad logic, bad facts, missing pertinent analysis, and so on concerning the DEIS *will* finally be addressed this time, which we understand is legally mandated. We begin by addressing major issues that underpin our belief that the DEIS is fundamentally faulty and unacceptable. Later, we list many individual errors in the DEIS, which cumulatively undermine the reliability of the analysis; we address those issues with which we are familiar. We infer that similar errors might be characteristic of the entire report, including portions that address issues beyond our knowledge or expertise. **Major Conceptual and Legal Flaws** *Illegal Failure to Consider Reasonable Options Other than Developing 18,000 AF/yr* The DEIS states: "The Corps independently reviewed Denver Water's Near-Term Strategy and concluded that the development of 18,000 AF/yr of new firm yield is the only action to be analyzed in the EIS." This is an astonishing restriction of the scope of the DEIS. It appears to rule out-of-order consideration not only of alternative options to addressing the adopted criteria of reliability, vulnerability, flexibility, and firm yield (e.g. water usage conservation, upgrading existing plants) but also rules out evaluation of *on-going* strategies by Denver Water that are *currently being implemented*! (These ongoing measures include "(1) conservation, (2) non-potable recycling, (3) system refinements, (4) cooperative projects, and (5) new supply projects.") NEPA requires that all "reasonable" alternatives be examined, so exclusion of such alternatives appears to be illegal. At a minimum, since such alternatives are widely advocated by the public, NGO's, and media commentators, it must somewhere be demonstrated that they are "unreasonable" and require no further consideration. There is no such demonstration in the DEIS. DRAFT 24	

Comment Information	Comment	Comments and Responses
	Furthermore, the DEIS continues: "Implementation of the near-term strategies described in the IRP is beyond the scope of this EIS because there is no Federal nexus with the components that would require a Corps action, decision, or permit." This basis for not considering the near-term strategies and other components of a reasonable alternative to developing 18,000 AF/yr appears to explicitly violate 40 CFR 1502: "An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable." The DEIS's "Purpose and Needs" chapter concludes with this statement: "It is Denver Water's opinion that additional water supply and the associated distribution facilities would help meet these needs." But a desire is not a "need". An "opinion" is not a robust technical "demonstration." The basis for this project should be a *demonstration* that the project meets demonstrated "requirements" and that negative consequences of the project would be less severe than the projected consequences for Denver Water users if the requirements aren't met. That this demonstration is absent from the DEIS is a major failure. *Unfair Failure to Consider Sustainable Water Usage in a Near-Desert Environment* Denver Water prides itself on its water conservation efforts, yet they are hardly more than cosmetic. Denver receives only 3 inches more rain annually than Tucson, Arizona. So it should behave like a city in an arid climate. Instead, Denver's per capita usage of water exceeds that of many other dry-climate cities in the American West. Tucson's tiered water rate structure, beginning for basic services at a rate similar to Denver Water's, climbs to around $12 per 1000 gallons for amounts above ~35,000 gallons monthly usage. In the last few years, Denver has charged less than $4 per 1000 gallons at this usage level, and charges less than $8 per 1000 gallons for consumption over 80,000 gallons per month! This hardly provides incentive for conservation. The DEIS references some old studies (roughly a decade old) but provides no modern analysis of how well various measures to conserve water (fixing leaks, installing water-efficient appliances, promoting xeriscaping, adopting a more steeply tiered water rate structure, stopping wasteful watering of medians, etc.) -- beyond the superficial, tentative measures currently in place – would suffice without requiring more water storage. The DEIS does evaluate the "No Action Alternative," but this is not intended to constructively and proactively assess an option that would obviate the fixed requirement of developing more stored water. Instead, its purpose is to assume, *without* evaluation of conservation alternatives or even of on-going strategies, that simply *nothing* is done. In particular, in Sect, 2.10.2, the DEIS states: "non-structural concepts were evaluated and eliminated from further consideration for the No Action Alternative because they did not meet the Purpose and Need." In other words, because the "need" has been defined to be an additional 18,000 AF/year, the DEIS refuses to evaluate positive alternatives that would eliminate the need for the extra water...an extreme example of tautology and circular reasoning. The DEIS thus concludes that Denver Water would, in some future drought, be forced to draw down the Strategic Reserve and/or "rely on more frequent and severe mandatory water use restrictions." In particular, the DEIS declares that Stage 3 or Stage 4 responses might be necessary DRAFT 25	

Comment Information	Comment	Comments and Responses
	during some unlikely, "extraordinary" future drought, and that such a possibility is unacceptable. Stage 3 mandatory restrictions include "prohibiting lawn watering, watering only trees and shrubs and high public use turf areas once a week, and other measures." There is no up-to-date quantitative analysis in the DEIS, as there should be, of the actual probabilities that such prohibitions would have to be enforced, what probable durations there would be for such temporary curtailments, nor evaluation of the likely damage from such restrictions. The mere *possibility* is held up as unacceptable. For context, consider residents of rural Colorado (in neighborhoods surrounding Gross Reservoir, in the Fraser River Valley, etc.). By Colorado State law adopted in 1972, such rural residents (who depend on well water, outside of municipal water districts) are *currently* prohibited from *any* outside use of water, 24 hours a day, 365 days a year, into perpetuity! Yet we rural citizens of Colorado near Gross Reservoir would suffer the negative consequences of this project because of slight possibilities that during some future decade, a similar but temporary ban (Stage 4) might apply to residents of Denver. (It can be said that we chose to live in rural neighborhoods where such a permanent ban is in effect, though few people moving here are actually made aware of the ban; but people moving to Denver can hardly be unaware that they are moving to one of the driest states in the country where water is regarded as a precious resource. Guaranteed ability to keep your grass green every year for the rest of your life is hardly a constitutional right.) The stance of Denver Water toward water "need" is hypocritical, preposterous, and unjust. *Incomplete, Premature Information Preventing Analysis of Consequences* Throughout this process, information has been developed too late, or not developed at all, thus precluding objective analysis of impacts and potential mitigation. Time and time again, the public has been told that the studies (e.g. of the geology underlying the reservoir) will be done only after the project is approved. A specific example in the DEIS is its reliance on an assumption that gravel would be hauled from a site near Longmont, Colorado. Thus there is frequent reference in the DEIS to roads that would be used for trucks between that site and the dam site (e.g. SH 128). But in public meetings (e.g. Nederland Community Center, 23 Feb. 2010) project officials have stated that the Longmont site is just "an example" among many possibilities of where the gravel might be hauled from. Other potential sites would involve wholly different roads east of the intersection of SH 72 and SH 93. Since these have not been identified, citizens who use those roads and other stakeholders remain unaware of possible impacts to them, and the DEIS wholly fails to evaluate consequences or mitigation options for those alternatives. Such postponement of consideration of alternatives that would plausibly be implemented after project approval is an unacceptable omission for a DEIS. *Structure of Analyses in Chapter 4 Downweights Impacts During Construction* Chapter 4 adopts "three impact-related time frame definitions [to be] used in the Environmental Impact Statement (EIS)": Comparison of Current Conditions (absurdly, 2006 is considered to be "current"), Full Use of the Existing System (2016, apparently assumed to be the end of construction, just before the enlarged reservoir is utilized), and Full Use with Project (2030). This formulation for impacts (see Figure below) omits the "short-term", near-term impacts that would DRAFT 26	

Comment Information	Comment	Comments and Responses
	occur during the 4-to-5 years estimated time for construction and final restoration. While "temporary impacts" are addressed in Chapter 4, they are generally treated in a dismissive fashion, as in this statement: "Temporary impacts generally occur during construction activities and are considered short-term disturbances that can be reclaimed (e.g., pipelines) or would cease upon completion of construction activities (e.g., construction noise)."  Most professional economic analyses rather sharply discount effects decades in the future compared with the near-term. This DEIS, by its formal structure, downplays the relatively near-term element of the 4-to-5 year long construction phase. By 2016 or 2030, whoever remains or has just moved into the foothills communities surrounding the reservoir will regard it as an in-the-ground attribute of the landscape. But during the years of construction, the long-standing environment for people who moved to these regions during past decades for its rural/wilderness character will be badly disrupted or destroyed. We exemplify these impacts in this critique, and how they have been inappropriately dismissed or downweighted by this DEIS, but the essential issue is that by design of this DEIS, they have been largely ignored as illustrated above. The appropriate time-markers should instead have been: * 2009 Current Conditions (2006 is obsolete) * 2012 – 2016 Construction/restoration phase (if that's right) * post 2016 System operating, landscape begins recovery * post 2030 Full Use with Project DRAFT 27	

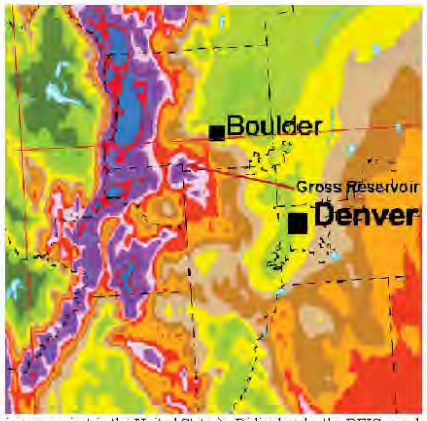
Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Most (rather than least) weight should be give to the near-term 2012-2016 construction period, with discounted emphasis given to the later phases...although, ultimately, Denver must become a sustainable city that lives within its means *without* this proposed desecration of the vicinity of Gross Reservoir. *Failure to Consult the Magnolia Environmental Protection Plan (MEPP)* In the late 1990s, a large number of residents – mainly living within 1 to 3 miles of Gross Reservoir to its west and northwest, members of PUMA (Preserve Unique Magnolia Association) – undertook a major study of the environmental attributes of the region south of Boulder Canyon, north of South Boulder Creek, east of the Peak-to-Peak Highway, and west of the shores of Gross Reservoir. They hired a professional land use planner and prepared a comprehensive document, complete with recommendations, that is more than 250 pages long. In late 2000, this Magnolia Environmental Protection Plan (MEPP) was officially incorporated into the Boulder County Comprehensive Plan by the Boulder County Commissioners. This study evaluated resource domains central to the analysis of the Gross DEIS, including: Geology, Mineral Resources and Geologic Hazards; Water Resources, Hydrology and Hydrogeology; Vegetation and Ecosystems; Wildlife; Cultural Resources; Public Recreation Resources; Scenic Resources; Transportation; and Noise. The extensive recommendations, which include many specifically addressed to Denver Water, are available at http://www.puma-net.org/popupmepppol.htm. Yet there is no reference to MEPP throughout the six volumes of the DEIS. One could imagine that this was a simple oversight, but that is not the case. In December 2003, as work was beginning on the Moffat DEIS, the Boulder County Commissioners specifically admonished the Denver Water Board and the Army Corps of Engineers to bear the MEPP and its recommendations in mind. Unfortunately, this recommendation was not followed through, resulting in a shoddy, incomplete alternative analysis of the issues addressed in MEPP. Instead of relying on the knowledge and information assembled by local residents, the non-local, outside consultants hired by the Army Corps ignored previous work and substituted their own uninformed evaluations. This is not the only example of the failure of the study team that drafted the DEIS to search for relevant documents in the literature (searching on Google for "Winiger Ridge", "Gross Reservoir", and other such terms identifies resources in seconds), but it is a major faux pas. *Intractable Transportation Issues Not Resolved in DEIS* Gross Reservoir is located in very rugged country. Although much of its periphery can be accessed by small 4-wheel-drive and off-the-road vehicles, it is difficult to imagine that more than a modest fraction of the lands to be cleared can be accessed on public roads by logging trucks. In addition, many of the roads in the area – ranging from SH 72 (in Coal Creek Canyon) to DRAFT 28	

Comment Information	Comment	Comments and Responses
	neighborhood dirt roads – have special value to rural residents, whose lives would be badly disrupted by the threatened enhanced level of vehicular traffic, both by workers at the Gross site and by construction, gravel, and logging vehicles. The DEIS does a terrible job of addressing these issues. First, the analysis is woefully preliminary. For example, the DEIS describes that many road segments would have to be realigned, "improved", or built afresh, but nowhere does it provide even a cursory summary of what roads would be affected and in what specific ways. It is well known to residents of the foothills west of Boulder that there are few routes to travel between these neighborhoods and the Front Range cities below. There are only three access roads between US 6 west of Denver and the road from Lyons to Rocky Mountain National Park. One of these is SH 72, currently a windy, paved, 2-lane road with almost no opportunities to pass or pull over. It is difficult to imagine that heavy equipment and haul trucks could access Gross Reservoir any other way, yet this road is the lifeline for communities along its length and beyond. The threatened increased traffic would obviously delay commuters in these neighborhoods. Yet the DEIS concludes, absurdly, "the frequency (times per day) and duration (total minutes) of traffic delays, and the numbers of people affected by them, pose no significant indirect impacts." No professional criteria have been applied to make this assertion. One can expect that the degraded travel conditions during frequent windy, snowy, and foggy conditions have been ignored by the DEIS, since these factors aren't mentioned. An example of shoddy analysis in the DEIS is this: "Roads used for access would include Flagstaff Road (CR 77) east and north of the dam, Gross Dam Road (CR 77S) from SH 72, and CR 97 and CR 68. Additional traffic from tree removal and disposal would also occur on SH 72 and SH 93. Although CR 77 is used for vehicular access, logging truck access is prohibited. The closest landfill that accepts whole trees is located near the intersection of SH 72 and SH 93, and other landfills are located at much greater distances. Tree harvesting and removal would also use several existing unpaved and four-wheel drive roads on USFS lands, as well as several new temporary access roads that would be built within the reservoir expansion area and the existing reservoir area, which would need to be partially drawn down during tree harvest. Some portions of the existing roads at the reservoir would need to be improved to accommodate the heavy equipment required for tree removal. Traffic related to tree removal would result in moderate temporary impacts." What vehicles relevant to this project would use Flagstaff Road, which is extremely curvy and passes through the environmentally protected City of Boulder Mountain Park? CR 97 connects SH 72 with Magnolia Road (which is nowhere mentioned in the DEIS, but would have to be used if CR 68 were to be used). It not only is difficult to imagine logging trucks on the narrow, steep, curvy, dirt road that is CR 97, but also on CR 68 which is an especially narrow, dirt neighborhood road. Residents of the Pine Glade and Aspen Meadows neighborhoods would bitterly oppose any "improvements" to CR 68. And residents of the entire region west of Gross Reservoir have on several occasions been polled on whether Magnolia should be paved and have overwhelmingly opposed that idea. Nobody who lives here would consider the impacts "moderate". They would destroy the character of the neighborhoods. Mitigation measures listed in 4.10.7 are extremely vague and unconvincing. DRAFT 29	

Comment Information	Comment	Comments and Responses
	Below we show that there are major errors in the maps and text about the network of roads in the vicinity of the reservoir. Access and road connections are claimed that simply do not exist. Road numbers and locations are badly confused on the maps and in the text of the DEIS. Residents should be fearful that, once the project managers become aware of the true conditions, massively adverse road construction would be necessary to achieve the requirements of reservoir enlargement. *Failure to Competently Address Elk Migration and Home Range* The DEIS takes a very uninformed position on the elk. One of the major elk migration routes in this entire part of Colorado leads from the mountains above Eldora down along Winiger Ridge to the broad peninsula sticking out into Gross Reservoir between Forsythe Canyon and Winiger Gulch. Part of the herd passes by our house every November and spring. A major part of its winter home range is adjacent to the reservoir. The winter range is shown on Fig. 3.7-2 (though with insufficient specificity and detail), but the DEIS fails to describe this as the end of a migration corridor that is maybe 15 miles long. (The severe winter range can sometimes extend to much lower elevations, possibly even down to Rocky Flats.) The USFS Boulder Ranger District has long planned that the highest and best use of Winiger Ridge is for wildlife conservation, with elk being a major element of the designation for the Winiger Ridge Environmental Conservation Area...the USFS has managed roads, trails, and fire mitigation with the elk in mind. There can be little doubt, given the skittish nature of elk, that a four-to-five-year-long construction project in their wintering grounds would be extremely harmful. They might even be permanently driven from their grounds. There is abundant scientific literature on the effects of human disturbance of elk ranges on their movements. Much of it pertains to logging activities, which are generally of much shorter duration and intensity than the construction activities contemplated for Gross Dam. For example, it has been found that elk typically stay 500 to 1000 meters away from areas of disturbance and it is concluded that "displacement of elk may cause substantial reductions in habitat availability" (Edge et al., *J. Wildl. Manag.* **49**, 926-930). Since, at its broadest point, the Winiger Ridge peninsula is only 865 meters across, logging activity around the periphery of the reservoir would necessarily displace the elk from this central part of their winter range. But nowhere in the DEIS is any of this literature referenced. Instead, there are incompetent, unsubstantiated, and blatantly wrong assertions that there would be minimal effect on elk. The analysis restricts itself to describing the relatively small diminished range that would result from inundation by the enlarged reservoir. Even this is described as a "moderate impact." There is also discussion of the obstacles big game would face from having to travel around the enlarged reservoir. The DEIS concludes that "displacement of big game from areas on the west side of the reservoir is unlikely due to the distance from construction disturbance." What??!! Logging operations around the periphery of Gross Reservoir, helicopters flying overhead, and construction (remember the dam itself is only 500 DRAFT 30	

Comment Information	Comment	Comments and Responses
	meters away from Winiger Ridge peninsula) won't affect the elk?! Have any of the writers of this DEIS ever seen an elk...or a herd of elk? Apparently not. Elk are a major amenity to the Magnolia community. If the elk are forced to go elsewhere, we might lose this remarkable feature of our lives. We have, on occasion, had over 90 elk within 100 feet of our house on the south side of Winiger Ridge. It is for the proponents of this Project to demonstrate that we along the Winiger Ridge elk migration corridor would not lose – perhaps forever -- these elk, which we look forward to every November, during the 5 years of the project and restoration activities. These issues are not mentioned at all in the DEIS. Sections 4.7.7 and 4.7.8 wholly fail to address consequences of the project for elk. Ultimately, the only mitigation measures proposed for wildlife of any sort is to comply with existing laws concerning migratory birds. There is no mention of issues that would seriously impact elk, mountain lions, and bears. This whole topic is treated incompetently in the DEIS. *Failure to Consider Extreme Winds in Vicinity of Gross Reservoir* There is brief, standard mention of ways to mitigate dust from disturbed soils during construction. But there is no awareness at all in the DEIS that Gross Reservoir is in one of the windiest populated places in Colorado, and thus one of the windiest places in the United States. Winds in excess of hurricane force are common nearly every spring and autumn. Winds in excess of 125 mph have been recorded in Wondervu (1 mile southwest of Gross Reservoir) within the last decade. The weather bureau commonly issues warnings for high winds with special mention of Nederland, Coal Creek Canyon, and Rocky Flats...and Gross Reservoir sits right within this windy corridor. Highway 93 through Rocky Flats, proposed as a haul route for this project, is frequently closed to high-profile vehicles because of high winds or closed to all vehicles due to drifting, windblown snow in the winter. The strongest winds are commonly from the northwest so dust would preferentially be blown into neighborhoods in lower Coal Creek Canyon and El Dorado Springs. There is NO mention of these windy conditions, or ways to mitigate them, throughout Chapter 4. The words "chinook" or "bora" never appear in the DEIS, and the word "wind speed" is absent from all considerations of the Proposed Action. Wind speeds are mapped in the Figure below, from http://www.windpoweringamerica.gov/wind_maps.asp. Gross Reservoir is in the intermediate purple region, within the blob of high winds southwest of Boulder, in the zone of 8.0 to 8.5 m/sec measured at 80 meters height. DRAFT 31	

Comment Information	Comment	Comments and Responses
	 There is no doubt that disturbance of soils at Gross Reservoir would result in periodic dusty conditions in regions far beyond the vicinity of the construction, including residential communities downwind. Anyone who has spent any time in this region during spring and autumn (especially) would appreciate that ignoring these conditions is a major omission. Since the authors of this DEIS were apparently unaware of the winds, there is no pertinent discussion of the environmental and health consequences, nor any consideration of mitigation (beyond the standard water treatment, windbreaks, etc. used in any project in the United States). Ridiculously, the DEIS concludes that, "During the construction phase of the Proposed Action, air quality impacts would be minor." It is hardly surprising, therefore, that the only approach to mitigating dust and particulates in the DEIS is to "implement a fugitive dust control plan," the features of which are nowhere described in the DEIS. Also ignored are other possible impacts of the winds on project-related transportation. The weather bureau frequently warns against driving high profile vehicles in this windy corridor. During snowy winters, SH 93 (shown as a gravel haul route in the DEIS transportation section) can be closed for days due to badly drifting snow across this north-south highway. It is possible that high winds might affect other construction or logging activities, not addressed in the DEIS. And the winds augment the dangers of fire beyond what would be contemplated for a generic project in the United States. Failure to address this region's exceptional chinook winds is a major failing of the DEIS. *Invalid Analysis of Socioeconomic Impacts* A major concern of residents within several miles of the proposed reservoir enlargement is that the qualities of their neighborhoods would be so severely and adversely impacted that potential home buyers would be dissuaded from moving here and that house and property values would suffer. Astonishingly, the DEIS contains many preposterous statements that reveal no understanding of the values of people who live in this mountainous, rural community...and the amenities that would attract others to move here. (The DEIS evaluates the Gross Reservoir PIA, which is a census area surrounding Gross Reservoir that appears to include most of the Magnolia neighborhoods, but not all DRAFT 32	

Comment Information	Comment	Comments and Responses
	of them since the northwestern boundary is Magnolia Road, and also the Lakeshore and Flagstaff Road neighborhoods, but not much of the Coal Creek Canyon community nor Wondervu.) The DEIS states that: "Construction activity, described in Section 4.17.1.1 Economic Impacts, and in Section 2.8, would likely cause some minor nuisances to local residents, including noise from operating machinery and increased traffic on local roads, but these temporary impacts would be unlikely to cause permanent residents to leave the area." It also states, "Construction-related activities would temporarily impact adjacent land uses including the Lakeshore residential subdivision. Impacts would include increased noise levels, dust pollution, and possibly ground vibrations from quarrying activities. Although the impacts may present temporary inconveniences, none of these impacts would be long term or impede existing or future land uses during or following the construction period." What eastern city-dweller author of the DEIS has the temerity to describe the construction activities as "minor nuisances" or "temporary inconveniences"? With regard to people moving out, what polling has been done on perceptions of neighbors about the seriousness of the adverse impacts and whether they might move instead of enduring them? To people living in an industrial city or off the end of an airport runway, the noise might seem "minor" but here it would be perceived as destroying – for a period of 4 years or more – one of the chief amenities of the neighborhood. For people accustomed to urban stop-and-go traffic, the impacts on Coal Creek Canyon Road might seem "minor", but many studies of perceived traffic congestion show that even modest *changes* in numbers and types of vehicles are the primary considerations. The DEIS goes on to conclude that, because nobody would move out because of the project and the construction activities would not affect potential home buyers, there would be no demographic changes to the community and no "environmental justice" issues would arise. (There are, of course, larger "environmental justice" issues raised by grass-loving urban population of Denver foisting this project off on rural citizens, who are already prohibited from watering gardens and grass every day of their lives.) The DEIS goes on to claim that "Vacancy rates in affected areas would not change as a result of the Proposed Action. Given that the population and number of housing units in these areas would not change as a result of this Alternative, vacancy rates would also be unaffected." All of the above conclusions are wrong because the assumptions are wrong, or at least unsupported. Some people would feel that they were forced to move in order to maintain the rural serenity they thought they moved to. Property values and sale opportunities would surely be severely depressed during construction and for some years after until the surrounding environment had healed. The DEIS states an unsupported, bald-faced lie: "Construction activities would be temporary and would not affect home prices. In addition, the population of the Gross Reservoir PIA, Boulder County, Denver metropolitan area counties, and Grand County would remain unchanged and demand for homes in these areas would not increase or decrease as a result of the Proposed Action. Therefore, home values in these areas would also be unaffected by the Proposed Action." Nothing in the DEIS supports this absurd conclusion. The DEIS might as well assert that the Earth is flat. Nobody who lives here believes that home values would be unaffected. The DEIS authors have no grasp of why people move to, or choose to remain in, these neighborhoods. Just imagine a would-be home-buyer driving behind a slow gravel haul truck up SH 72 to view a home in a neighborhood west of Gross Reservoir and encountering noisy logging trucks on DRAFT 33	

Comment Information	Comment	Comments and Responses
	recently widened dirt roads, spewing clouds of dust behind them. Seeking a near-wilderness home location within driving distance of Golden or Boulder, they would be put off. New folk who don't care for a rural mountain lifestyle wouldn't replace them, but would concentrate their searches for a home in the flatlands. "Property values and property tax rates for private residents and businesses in Boulder County, Denver metropolitan area counties, and Grand County would not be affected by the Proposed Action. No loss of property tax funding would accrue to service providers or to any special districts in the Denver metropolitan area or in Grand County as a result of the Proposed Action," says the DEIS, following a trivial and irrelevant analysis that claims that Boulder County, the School District, and Coal Creek Fire District would lose only $182 in annual tax revenues. This dismissal of inevitable loss in home values during and following the construction phases of this project is unprofessional and unconscionable. Where is the testimony from local realtors? Where are references to studies of comparable impacts of big projects done within communities in the rural West? These are unsupported assertions by disconnected analysts who have no clue. **Specific Issues and Errors (Chapter 1, Purpose and Need)** * *Denver Rate Payers do Not Bear Full Costs.* There is no acknowledgement here or in the rest of the DEIS that, apart from tiered rate structure, Denver water users are actually being subsidized by the American people. The long-term unsustainable character of current (and assumed in this DEIS) Denver water usage, is encouraged by the fact that full costs are not accounted for and therefore not paid by rate payers. As a minor example, the American taxpayers pay for the involvement of the Army Corps of Engineers in this EIS process, yet those costs are not borne by Denver Water rate payers. The widespread and long-term impacts of this project on the Fraser and Colorado rivers, which are only partially mitigated in promises made in this DEIS, are also not borne by the rate payers. There is a whole variety of rather subjective but large factors that are not accounted for in the narrow economic analysis at the foundations of this DEIS. Among these are the many adverse impacts (some acknowledged by the DEIS) on people who do not receive Denver Water, which are proposed to be inadequately mitigated or not mitigated at all. In effect, residents of the Magnolia, Lake Shore, and Coal Creek Canyon neighborhoods would be *subsidizing* Denver rate payers if this project is implemented. As a gedanken experiment, one could consider raising Denver water rates so that every resident within X miles of Gross Reservoir (and users of more distant roads, streams, and other features negatively affected by the project) would be paid to recompense them for the estimated cost of impacts that are not fully mitigated by other actions. This admittedly wholly impractical solution to the inequities of the project illustrates one way in which Denver water users are not paying their full fair share. **Specific Issues and Errors (Chapter 2, Proposed Action and Alternatives)** * *Road "Improvements".* The DEIS states that: "improvements to some existing roads at the reservoir are needed to accommodate the heavy equipment required for tree removal. The main DRAFT 34	

Comment Information	Comment	Comments and Responses
	access points would include Flagstaff Road, Gross Dam Road, and across Winiger Ridge using Forest Road (FR) 359 and County Road (CR) 68." The DEIS fails to be specific about what kind of "improvements" would be made and which road segments would be involved. There appears to be no recognition that residents of, for example, CR 68 consider the features of this narrow, dirt road to be an *amenity* of their rural neighborhood. Far from considering such changes "improvements", they would regard it as highly destructive to the character of their neighborhood. Indeed residents of the Magnolia area (which includes CR 68) have several times been polled about whether they want Magnolia Road paved, and a substantial majority have always opposed it. (Magnolia is a road ignored by the DEIS, although it would necessarily be affected if CR 68 is used, because CR 68 can be accessed only from Magnolia Road.) * *Access to FR 359 from CR 97E.* The DEIS states that: "Gross Reservoir can be accessed from Boulder via Flagstaff Road (CR 77), as well as via CR 68 and CR 97E, which turns into FR 359 (Figure 3.10-1). Numerous road segments would need to be abandoned and relocated or newly constructed in order to facilitate construction operations at Gross Reservoir." The last sentence is alarming and suffers from the same lack of specificity as the previous quote. But, in addition, it is *false* that 97E "turns into" FR 359. County Road 97E (Lazy Z Road) dead-ends approximately 2.1 miles east of Magnolia and 2 miles west of the Winiger Gulch inlet of Gross Reservoir. There is a locked gate at that point with public motor vehicle access prohibited at that point. Beyond the gate, the road continues across ¼ mile of private land. It then proceeds east, next to the Winiger Gulch creek, across USFS and then Denver Water lands, ending (after another gate) at the inlet. This road is shown as FR 238 and called "Gross Reservoir Road" on the relevant USGS topographic quadrangle map; locally, it is known to some as the "Haul Road" (not to be confused with the Haul Road near the dam, discussed in the DEIS). None of these road segments in Winiger Gulch "turn into" FR 359. Rather, FR 359 (also called Winiger Ridge Road on some maps) begins at CR 68, approximately 2 miles east of Magnolia Rd. at a seasonally-closed gate (called Winiger Ridge Recreation Access on Fig. 3.13-1, although the adjacent road is labeled with an incorrect number in that figure). It proceeds south up to the top of Winiger Ridge, then turns east and continues to the planned-to-be-inundated recreation areas along the western shore of Gross Reservoir. (Both Figs. 3.13-1 and 3.10-1 incorrectly label the Gross Reservoir Road in Winiger Gulch as "CR 97E/FR 359"; at that point, neither designation is correct.) There used to be a very steep 4-wheel-drive trail dropping 200 feet from Winiger Ridge (near the point that FR 359 turns east) down into Winiger Gulch. This road was closed to motor vehicles several years ago by the USFS, in part because vehicles became trapped on the Gross Reservoir Road (it was [a] impossible to return up the steep trail and [b] access across the private segment of the road to the west is not permitted and was blocked). It is preposterous to imagine that access between Gross Reservoir Road and Winiger Ridge (a 200 foot elevation difference) could be climbed by tree-hauling vehicles, even if legal access to Gross Reservoir Road from Lazy Z Road could be obtained. One supposes that arm-chair engineers looked at a map showing the trail connecting the two roads and failed to realize that topography prohibits vehicles from connecting at that point. In short, the DEIS is hopelessly confused about routes that would be used to haul trees away from lands west of Gross Reservoir. (One suspects that at many places in the DEIS the term "CR 97" is used when "CR 97E" was intended; of course, CR 97E cannot be accessed from SH 72 without also using CR 97 and CR 132 [Magnolia].) DRAFT 35	

Comment Information	Comment	Comments and Responses
	* *"Unpredictable" Droughts.* On page 2-87 it says: "Since droughts are natural events that occur with unpredictable frequency and variable intensity and duration it is unknown how long the drought would last or how severe it would be." While nobody has a crystal ball to predict specific future droughts, attributes of droughts are predictable, in a statistical sense and with uncertainties that can be estimated. Nothing is known for sure, but rational estimates can be made. The reliance of these studies on a major drought in the early 1950s during a "study period" from 1947 through 1991, plus anecdotal commentary about the 2002 drought, is only a partial approach to the problem. There are tree-ring data that go back hundreds of years and there is also a range of forecasts about the implications of future climate change for precipitation in Colorado. There is, in fact, an enormous literature about how past measures of climate may be expected to change in the future. The studies in this DEIS are incomplete and not up to technical standards in the field of analysis of risks from natural hazards such as droughts. **Specific Issues and Errors (Chapter 3, Affected Environment)** * *Minimal Study Area.* On page 3-1 a study area is described, and subsequently utilized, which is effectively defined by the squared-off boundaries of the proposed enlarged reservoir, although it extends somewhat beyond those limits (see Fig. 3.6.1). By restricting study to within those perimeters, the DEIS effectively forecloses in-depth consideration of impacts that would extend beyond the study area (except along roads and streams). This is prejudicial to the concerns of many residents out to distances of a mile or more that they will be impacted by project activity beyond affects on roads and streams. * *Failure to Mitigate "Major" Land Use Impacts.* Chapter 3 asserts: "The CNHP (CNHP 2004) has identified two globally rare plant communities in the Gross Reservoir study area.... *Alnus incana*/mesic forb (thinleaf alder/mesic forb) riparian shrubland occurs on Winiger Gulch just upstream of the reservoir. The CNHP Conservation Site Report identified this community as a 'small but nice quality occurrence within a narrow V-shaped gulch.'" Later in Chap. 3, this region is identified as a Potential Conservation Area (Colorado Natural Heritage Program). Furthermore, this is part of a very large area, covering both Winiger Gulch and Forsythe Canyon, and extending 2.5 miles west of Gross Reservoir, that is designated by the U.S.F.S. as the Winiger Ridge Environmental Conservation Area. As stated in the DEIS, "the U.S.F.S. management goals for the area are to maintain and enhance the flora and fauna in the Winiger Ridge critical elk winter range..." by various actions. These include prescribed burns and seasonal road closures. As the DEIS states here, but seems to ignore later, "Road (FDR) 359, a high-clearance vehicle roadway, runs from the intersection with Boulder CR 68J to the shoreline at Winiger Ridge. Access along this road is restricted from December through May to protect elk winter range." [We say more about this seasonal closure elsewhere.] Further, the DEIS states: "Boulder County has zoned the study area as Forestry, which permits rural land uses that conserve forest resources, protect the natural environment, and preserve open areas (Boulder County 2005b). Winiger Ridge... is listed as a Natural Landmark in the Boulder County Comprehensive Plan (1999). A Natural Landmark is defined as a prominent landscape feature designated for scenic, visual, and aesthetic values. Upper and lower South Boulder Creek, including lands surrounding Gross Reservoir, are classified in the Boulder County Comprehensive Plan – Open Space Plan Map as Open Streamside Corridors (Boulder County DRAFT 36	

Comment Information	Comment	Comments and Responses
	2006). The intent of the open streamside corridors classification is to ensure that natural water courses remain free from development." Sect. 4.5.1.1 asserts that this panoply of overlapping environmental concerns present "moderate" to "minor" to "moderate to major" impacts. These inconsistent, biased evaluations are most egregiously illustrated by the finding that conflict between the Proposed Action and these conservation designations is "minor"! On page 4-392, the DEIS asserts: "The Proposed Action would present minor conflicts with Boulder County zoning regulations stipulating that the Gross Reservoir area is zoned as 'Forestry' to conserve forest resources, protect the natural environment, and preserve open areas. Under the Proposed Action, no areas of the Winiger Ridge Natural Landmark would be inundated." This is an appalling, unsupportable conclusion. It refers only to inundation, without consideration of the larger, integrated ecosystem impacts that are the basis for the conservation designations. Land use impacts during the many years of construction are dismissed: "Impacts would include increased noise levels, dust pollution, and possibly ground vibrations from quarrying activities. Although the impacts may present temporary inconveniences, none of these impacts would be long term or impede existing or future land uses during or following the construction period." The DEIS also concludes (4.14.1.1) that, "overall, impacts to existing land uses at or adjacent to Gross Reservoir are expected to be minor." This is a wholly false conclusion. The egregious final conclusion of the DEIS (Table M-1) is that "No compensatory mitigation is recommended...[or] proposed" for land use impacts! Unspecified mitigation of inundation of rare plant species is proposed. As for wildlife, no mitigation is proposed other than adherence to existing law regarding birds. It is simply an outrage that long-standing land-use policies can be dismissed in such a cavalier fashion. * *No Public Access to Winiger Gulch Inlet.* The DEIS states: "Winiger Gulch Inlet can be accessed through USFS lands via Boulder CR 97E. The road is closed to motorized vehicles at the USFS boundary; however, it is open to foot, bicycle, and equestrian use." This is incorrect. The road is *not* closed at the USFS boundary but rather at the boundary to private property, which the closed road crosses for ¼ mile. Furthermore, at the USFS boundary to the east, the road is closed to motorized traffic by the USFS from autumn to spring (seasonal closure to protect wildlife, land, and ecosystem). * *No Mitigation of "Major" Visual Resource Impacts.* The evaluation of visual impacts in chapter 3 says that they would be serious. Major areas in the Gross Reservoir area are rated as having "very high scenic quality" and others "have the potential to have high to very high scenic quality." Furthermore, the DEIS states, "Due to the recreational nature of users and the scenic amenities valued by residents, user sensitivity to visual change is considered to be high." With regard to impacts during the lengthy construction period, the DEIS says, "These activities would be incompatible with the recreational and scenic nature of the area, and would be a major short-term impact." The DEIS states that: "Scenery guidelines in the Denver Water Article 414 Visual Resource Protection Plan and USFS Arapaho & Roosevelt National Forest's Forest Plan require that 'the overall landscape character around the reservoir should remain natural appearing with limited human intervention,' (Denver Water 1999b), and that the valued landscape character appear intact." Furthermore, it states that major areas associated with the construction "would not DRAFT 37	

Comment Information	Comment	Comments and Responses
	be compliant with management guidelines and would be considered major adverse long-term impacts." Yet, despite all of the above, the DEIS concludes that, "It is not possible to completely mitigate the major short-term direct construction impacts in order to meet these objectives." And finally, in Appendix M, the stark conclusion is the "No compensatory mitigation is recommended ...[or] proposed." All of the analysis of impacts is ultimately disregarded in the DEIS: "not possible to completely mitigate" turns into zero mitigation at all! [We can just see the Army Corps "correcting" this by simply omitting the word "completely" and failing to address the major disconnect between the findings of chapters 3 and 4 and the ultimate failure to act on destruction of viewsheds in the mitigation plans.] Another problem is that the temporary and permanent impacts on viewsheds are clearly (and stated in the DEIS to be) incompatible with Denver Water's FERC license, Article 414 ("Visual Resource Protection Plan"), which emphasizes "limited human intervention" and requires that "the valued landscape character 'appear' intact." The sole response in the DEIS to this issue is that Denver Water would amend Article 414 "as part of the license amendment process." There is no discussion at all of what the amendment would consist of. If the license is to be amended, it should be required that the EIS describe *how* it would be amended so that the public can comment. * *No Mitigation of Major Noise Violations and Impacts*. As the DEIS states, "The CDOT guidelines also state that noise abatement should be considered when the new noise levels resulting from a proposed action 'substantially exceed the existing noise levels.' This criterion is defined as an increase in the Leq of 10 dBA or more above existing noise levels." Later, the DEIS states that background noise levels in the more remote portions of the Gross Reservoir study area are estimated to be in the range of 30 to 40 dBA, in which case an increase to 40 to 50 dBA would violate CDOT criteria. It is indisputable that construction and logging activities would – at times -- cause noise levels dramatically louder than these threshold levels over major parts of the study area and far beyond, including the rural neighborhoods through which logging trucks would pass. (The DEIS notes that "Less developed portions of the Project Area, however, would be more affected by temporary noise than more urbanized areas," but is clueless about the fact that there are no neighborhoods that approach the definition of urban within many miles of this project.) The DEIS does acknowledge that "Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose." Living as we do in this area, we can testify that the remarkably quiet environment is a major amenity for us, and an essential feature of the habitat for the remarkable array of animals that live here. The DEIS analysis falsely discusses "50 feet" distance as a criterion that would lessen noise impacts, which exemplifies the incompetence of the analysis of noise for rural/near-wilderness settings. The issue isn't breaking eardrums in close proximity to the dam construction. It is the combination of activities, including truck traffic, helicopters, etc. – many associated with tree disposal – that completely degrade the existing, very-low noise levels. Here we listen to bird songs and coyotes howling a mile away. We are disturbed by barking dogs a quarter mile away, a train a couple miles away, occasional aircraft flying miles overhead, someone's chainsaw half a mile away...noises at levels that would not even by "heard" by most city dwellers. The noise character of the vicinity for miles around would be transformed for the worse by many of the proposed activities. The discussion talks about "urbanized areas" but there are no urbanized areas within many miles of Gross. This is a rural community, with large portions effectively wilderness. DRAFT 38	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	 The DEIS attempts to rationalize that noise is already allowed: "Off-road vehicles, however, are allowed on the land surrounding the reservoir." Of course, this is not true for the months of roughly November to May, when motor vehicles are appropriately excluded, at least from lands west of the reservoir. But the Moffat Project intends to be undertaking construction activities year-round. Inconsistent with the objective noise impacts (which, however, are not treated quantitatively in the DEIS), the false conclusion is reached (4.12.8) that "Noise from construction is unavoidable, but is a short-term impact that is not predicted to be significant for any action alternatives." This statement is grotesquely untrue. The final "finger" is given to the people and animals in this region in Appendix M, where it is stated that "No compensatory mitigation is recommended...[or] proposed" for noise impacts. * *Inadequate Discussion of Local Birds.* In Table 3.7-2 and adjoining text on page 3-172, roughly 1/3 of the birds are listed of the >125 documented as being in the area in the Magnolia Environmental Protection Plan. It is indicative of the sloppy work that such an incomplete accounting of birds has been done and that the consultants who prepared the DEIS failed to look into previously published bird data for this region. * *No Reference to a Major Natural Feature, Forsythe Falls.* One of the most beautiful destinations in the entire Gross Reservoir region is Forsythe Falls (see photo). This is reached along the lovely Forsythe Trail. Although the falls is close to the Forsythe Creek inlet of Gross Reservoir and is located within the official study area, no mention is made of it in the entire DEIS, despite the fact that the falls would be totally inundated and destroyed by the project. This is a major oversight and raises the question of whether anyone has actually examined Gross Reservoir on the ground in preparation of this document. **Specific Issues and Errors (Chapter 4, Environmental Consequences)** * *Disturbed Grounds, Noxious Weeds, etc.* The DEIS states, "the Proposed Action would temporarily disturb vegetation resulting from temporary construction impacts until fully restored. Despite revegetation efforts, the post-revegetation communities would remain different for years following construction completion. The Project would unavoidably create favorable conditions for the establishment of noxious weeds, as a result of construction and operation." Unfortunately, the above are permanent adverse impacts. Various mitigations are discussed immediately before these words, but they would be very ineffective. Disturbances (noxious weeds, non-native plants, etc.) to forest ecosystems like these are likely to last decades where the forest hasn't been permanently inundated or cleared. Appendix M mentions only superficial attempts to revegetate ground that has been disturbed, which would mitigate the expected adverse impacts only marginally. DRAFT 39	

Comment Information	Comment	Comments and Responses
	* *Raptor Nests*. The DEIS says that "CDOW recommends that no activities (beyond those historically present) occur within 0.33 mile of an active red-tailed hawk nest." The DEIS presents no credible way of accomplishing this. Red-tailed hawks are very common in the skies in the Gross Reservoir region and one must assume that nests are common. How could construction activities proceed, unless this recommendation is not followed? * *Benefits from an Enlarged Reservoir*. At several points the DEIS assumes that increased recreational opportunities would be derived from an enlarged reservoir and that would be beneficial. While many might agree with this assessment, an equal number would not. When car-top boating was proposed and eventually mandated some years ago, there were as many opponents as proponents who appeared at FERC hearings, citing increased pressures on the ecosystem, dangers from the high winds, and other issues. * *Inadequate Treatment of Archaeological Impacts*. In 4.16.1.1, the DEIS states that "Enlargement of Gross Reservoir would have no impact on paleontological resources, nor would there be any impact to cultural or archaeological resources from inundation." This appears to be the totality of the *evaluation* of potential impacts on historical or archaeological artifacts or resources. It is apparently based on surveys conducted several years ago (described in 3.16.1.1) for different purposes (renewal of the FERC hydroelectric license). It is not demonstrated in this DEIS that those surveys are applicable to the inundation, logging, new roads, and other proposed activities for the Moffat project. * *"SH 77"?* The DEIS states (4-437): "The number of haul trucks and commuter vehicles required under the Proposed Action would have a negligible impact on traffic volume on SH 77." There is something wrong with this statement. If this is meant to be "CR 77" (Flagstaff Road) then there is a disconnect, because haul trucks are prohibited on Flagstaff Road (according to statements elsewhere in the DEIS, although ignored in some other paragraphs). If this is meant as "SH 72" (Coal Creek Canyon), then the statement is wrong. The DEIS suggests that daily traffic on that road would be increased by more than 100 (currently it averages about 5000 AADT, according to State Transportation Dept. data). But that includes heavy, slow-moving haul trucks. And the number does *not* include (according to the DEIS) the heavy, slow-moving trucks hauling logs or tree refuse away from Gross Reservoir, all of which not disposed of on-site or hauled away expensively by helicopter would have to come down SH 72. The DEIS further states that the advertised AADT does not include "the tree harvest workforce and equipment." Even if these substantial additional trips were included, the augmented traffic volume might remain numerically modest, but the impacts would hardly be "negligible" and they are qualitatively serious impacts. * *"Modest" Adverse Impacts to Destroyed Recreational Facilities?* The DEIS states that "There would be moderate adverse unavoidable impacts to existing recreational facilities at Gross Reservoir due to the expanded inundation area." Obviously, the impact is more than "moderate" to sites that would be inundated by the expanded reservoir. One simply cannot say that impacts on existing sites, where people may have fond memories, are just "moderate" when they are totally destroyed. To be sure, the intention is to replace them with new sites elsewhere, but that is a separate consideration. DRAFT 40	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	 * *No Connection between Growth and Water Development?* The DEIS asserts that "Several recent studies have suggested that there is no substantive causal relationship between population growth and the development of water, or vice versa." This is a complex topic, but the DEIS argument is based on reports and case studies dating from the 1980s and 1990s. One quoted study says that growth is highest in driest regions (e.g. Las Vegas), but circumstances are now very different. At some point, hopefully sooner than later, Denver will have to act as a sustainable community and curtail lawns and other green amenities that currently attract people from Ohio. When water prices get very high, as they must eventually for greater-than-basic usage to meet the restrictions of western water contracts, people may move instead to more sustainable communities. * *Has USFS Agreed that Impacts are "Minor"?* The DEIS asserts that "Conflicts with USFS management direction include minor, permanent impacts to wildlife and plant habitats (refer to Section 4.5 Vegetation, and Section 4.7 Wildlife)…." This is a bald, unsupported judgment. There is no supporting documentation in the DEIS that the USFS management (e.g. in the Boulder Ranger District) agrees that the impacts would be "minor". * *Acquisition of Private Property.* The DEIS says, "The Proposed Action would require the acquisition of approximately 15 acres of private lands within the southern Project area boundary. At this time, it is not possible to know the future land uses or the interests of respective property owners; however, long-term adverse effects would occur if the landowners were unwilling to cooperate with Denver Water." We disagree. Long-term adverse impacts would result from enlargement of the reservoir. If the private property owners refuse to sell and the reservoir cannot be enlarged, society would benefit. * *Traffic on CR 77S (Gross Dam Rd.)* The DEIS states, "average daily traffic volume data for CR 77S was [*sic*] not available for analysis." Traffic data are available from http://www.bouldercounty.org/transportation/pdf_files/MAPS/TrafficCounts_Map_2009.pdf. It was 315 on 77S for 2009. So the impact would be great, especially on the modest number of people who use it as a commute route to Boulder. * *Incomplete, Trivial Analysis of Fire Potential and Fire Depts.* The DEIS states, "Similarly, the demands on the Coal Creek Canyon Volunteer Fire Department and the Cherryvale Fire Protection District would potentially increase by a small amount during the construction phase of the Gross Reservoir enlargement, stemming from emergencies at the site or along commuting routes. These fire protection agencies should be able to adequately respond to potential emergencies and additional demands are likely to be minor and temporary." DRAFT 41	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	What is the basis for these assertions? Were these departments consulted? The DEIS doesn't even mention High Country Fire Dept. which serves most regions north and west of Gross Reservoir, including along many of the access roads listed (e.g. there is a fire station near SH 72 and CR 97). High Country has responded to many fires on the western shore of Gross Reservoir. Instead, the DEIS gives prominence to an estimate that Coal Creek Canyon Fire Department would suffer a loss of just $21 per year...what a ridiculous substitution of the trivial for a real analysis! Another relevant fire department, according to the fire department service region map on the Boulder County GIS website, is the Nederland Fire Dept. Where is the analysis of the possibilities that the construction, logging, and/or tree-disposal operations might *cause* a fire? This is a fire-prone area and in 2000 there was a major fire around Gross Reservoir (see photo). There were also dangerous outbreaks after a controlled burn along Winiger Ridge in 1999. Where are these factors evaluated? * *Impact on Nederland Library*. The DEIS states, "There would be no impacts or change in funding to libraries in Boulder County, the Denver metropolitan area, or Grand County as a result of the Proposed Action." The impact on libraries would seem to be trivial but, but to assert that there would be "no" impacts is wrong. For example, we pay taxes for the Nederland library district, whose boundary crosses our property. If we were to move, and our home were to sell for a fraction of its current valuation, and nearby home values were to drop -- as might happen -- the Nederland library would suffer, at least slightly. The DEIS assertion is not backed up by any evidence and is probably wrong, even though it is a minor matter. It is the widespread opinion among people in these neighborhoods that the highly visible negative aspects of the extended period of construction would cause home values to go down (even more!). Since such *perceptions*, whether backed up objectively or not, actually influence home values, the failure of the DEIS to acknowledge this is a major failing. It is simply wrong and false. * *Incomplete "Comparison of Alternatives"*. On the final page of Chap. 4 ("Comparison of Alternatives") the DEIS states, "These strategies, however, do not resolve the issues of system vulnerability, flexibility, or reliability." This refers to the over-simplified, passive, do-nothing interpretation the DEIS takes toward the "No Action Alternative," namely using the Strategic Reserve and implementing more frequent and severe mandatory restrictions on water use...and nothing else. The DEIS utterly fails to consider proactive, constructive no-build alternatives to address these issues. We have argued above that the DEIS fails to address the quantity of water consumed, by ignoring on-going and other potential approaches to water conservation. This quote is directed toward the *other* perceived issues concerning the present system, vulnerability, flexibility, and reliability. By adhering to its stunted interpretation of the No Action Alternative, the DEIS fails to evaluate alternative approaches (not involving 18,000 AF/yr extra water in the northern part of its system) to address these issues. For example, measures could be taken to enhance existing facilities, for example with built-in redundancies, so that they are less likely to fail. Another example would be to implement controlled burns and other forest management techniques to lessen the chances of another major fire that would otherwise potentially curtail the effectiveness of Denver Water's southern system. Unfortunately the DEIS is wholly remiss by failing to consider these reasonable alternatives. DRAFT 42	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	Specific Issues and Errors (Chapter 5, Cumulative Effects) * *Population Forecasts: Uncertainties and Biases.* This chapter states that, "By 2030, metropolitan Denver's population is anticipated to increase by nearly 50% to almost 3.9 million." It also projects (Table 5.1) that Boulder County's population will increase from a bit under 300,000 currently to 385,000 in 2035. The source is listed as "Metropolitan Denver Economic Development Corporation." From its website, this affiliate of the Denver Chamber of Commerce is clearly oriented toward pro-business, pro-growth activities and so its forecasts for future growth are dubious. With strong policies of most cities in Boulder County to confine growth within limits that are largely built-out, and to restrict development in open-space greenbelts, and with the BCC policy to restrict new development in unincorporated areas to one house per 36 acres or larger, the estimate of Boulder County's growth is subject to challenge. More specifically, such population projections are based on assumptions that deserve to be examined, and such projections have associated estimated uncertainties ("error bars"), which should be taken into account as alternative futures. The DEIS simply takes nominal numbers from potentially biased sources and does not consider the uncertainties or alternative projections. * *Old Projections, Irrelevant Data.* This DEIS chapter reports that "Denver Water estimates that by 2050, 1.9 million people will be using their supplies (Denver Water 2002a)." This unsupported, self-serving speculation is nearly a decade obsolete. Shouldn't a DEIS being evaluated in 2010 have a more up-to-date evaluation of this vital number? Later it is stated that "Between 1990 and 2000, the Denver region's urban area grew from 410 square miles to 500 square miles. If this trend continues, the region would have an estimated 800 square miles of urban area by 2030." Apart from the caveat beginning with "If", this statement is irrelevant. Denver Water doesn't serve "the urban area" but rather its legally and contractually defined service area. * *Global Warming is Not Fast.* The DEIS says, "Denver Water needs improved operational flexibility of the Moffat Collection System, including being able to respond to global climate changes and adjusting operations in response to new scientific information." There is no rational basis for this statement, other than that flexibility feels good. The best estimates of the IPCC is that Colorado is not especially favored or disfavored in terms of expected future warming, so it is unclear whether the implications will be favorable or not. In any case, none of the dozen-or-so climate models evaluated in a presentation at last December's American Geophysical Union conference in San Francisco show any chance of climate change happening rapidly (that is, major changes prior to the 2030 timeframe of this DEIS). * *"Temporary" Effects can have Cumulative Effects.* The DEIS states that "Cumulative transportation effects associated with the Project alternatives would generally be minor and temporary." Apart from the grammatical illogic of the sentence (that cumulative effects can be temporary), the intent is presumably to suggest that since impacts on transportation are temporary, DRAFT 43	

Comment Information	Comment	Comments and Responses
	there won't be cumulative effects. On the other hand, the DEIS repeatedly says how roads will have to be improved and new roads built, and that can only augment future use of those roads. * *Economic Activity.* The DEIS states that, "Minor beneficial cumulative socioeconomic effects would be experienced during construction of Project facilities due to employment and other economic factors. Another minor beneficial effect would be associated with the Moffat Project by the Project meeting the existing and future water demands of water users along the Front Range, supporting economic activity." Such statements are obviously biased: biased in favor of certain kinds of economic activity and biased in terms of continuing many of the unsustainable water use practices of Denver Water's customers. Had a reasonable no-build alternative been evaluated by the DEIS, it might have shown even greater potential employment opportunities for people designing and building xeriscapes, installing efficient toilets and other appliances, and so on. The economic analysis simply wasn't done, so the quoted statements must stand as unsupported opinions. We consider that meeting "future demands of water users," as they are projected in this DEIS is not "beneficial" but rather detrimental to Colorado and the West. **Specific Issues and Errors (Appendix M, Denver Water's Proposed Mitigation)** * *Unspecific Mitigation Example.* One mitigation of transportation impacts, chiefly along SH 72, is stated to be "limiting the hours of truck travel." Well, perhaps. But what are the details? The DEIS should have made a first-cut at suggesting which hours truck travel would be limited to. Avoiding commute hours? Limit it to weekends? Limit it to nights, when the road is nearly empty? Are any of these options good or bad? Have residents who live near SH 72 or who use it regularly been consulted? What is their opinion? Most of the mitigations recommended or proposed in this Appendix are similarly vague and unsupported, providing little basis for substantive citizen input at this time. It is most unfortunate that the treatment of these vital issues is so lightweight, because this is the primary opportunity for citizens to evaluate the proposal and make input. That right is partially withdrawn when citizens are presented with such an incomplete and inadequate document. * *List of FERC License Amendments.* This Appendix presents a "list of articles that the FERC will either continue or amend as part of the license amendment process." They are the 15 Articles numbered 401 through 416, excepting 408 and 409. But nowhere is it explained *how* the articles might be amended. This list is thus wholly lacking in transparency and is an insult to evaluators of this draft EIS. **This report has been written and submitted by** **Clark and Y Chapman** [redacted] DRAFT 44	

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
	[redacted] 16 March 2010 DRAFT 45	

Comment Information	Comment	Comments and Responses
Comment #735 Kaylea White, [redacted]	From: kaylea white [mailto[redacted] Sent: Tuesday, March 16, 2010 2:46 PM To: MOFFAT.EIS@usace.army.mil Subject: Comments on the Moffat DEIS Please confrm receipt of the attached comments. Thank you, Kaylea White - Moffat Comments KCR final.pdf	***Comment #735-6*** *(ID 3355)**:*** *As land and water rights owners in Grand County, we have the following comments on the Moffat Collection System Project Draft Environmental Impact Statement ("DEIS"). Our comments fall into four categories. (1) To the extent that Colorado water law cannot protect the Upper Colorado River system and the water users of Grand County from development of this water grab by Denver Water of this fundamental resource, therefore federal law must step in to provide some protection for those in the basin of origin. (2) The DEIS found "unavoidable" impacts to threatened and endangered ("T&E") species in the Colorado River system, therefore the Endangered Species Act must apply and consultation with USEPA is required and mitigation should be implemented. (3) The DEIS trigger for environmental analysis was misapplied and therefore the DEIS analysis of the Colorado River between its confluence with the Fraser River and the Blue River is insufficient and should be re-evaluated. (4) The DEIS is insufficient because it did not analyze Denver's estimated 4:1 ratio for firm yield.* **Response #735-6:** 1. The Corps' Section 404 regulations require the Corps to consider degradation to the waters of the U.S. and minimization of potential adverse effects to the aquatic ecosystem. Additionally, the Corps' public interest review balances both protection and utilization of natural resources and includes consideration of conservation, historic and cultural values, fish and wildlife values, aesthetics, etc. These resources are considered in the Corps' impact analysis and permitting decision.

Comment Information	Comment	Comments and Responses
	Attachments: [redacted] US Army Corps of Engineers (via email, *moffat.eis@usace.army.mil*) March 16, 2010 Re: Moffat Collection System Project Draft Environmental Impact Statement To Whom It May Concern, As land and water rights owners in Grand County, we have the following comments on the Moffat Collection System Project Draft Environmental Impact Statement ("DEIS"). Our comments fall into four categories. (1) To the extent that Colorado water law cannot protect the Upper Colorado River system and the water users of Grand County from development of this water grab by Denver Water of this fundamental resource, therefore federal law must step in to provide some protection for those in the basin of origin. (2) The DEIS found "unavoidable" impacts to threatened and endangered ("T&E") species in the Colorado River system, therefore the Endangered Species Act must apply and consultation with USEPA is required and mitigation should be implemented. (3) The DEIS trigger for environmental analysis was misapplied and therefore the DEIS analysis of the Colorado River between its confluence with the Fraser River and the Blue River is insufficient and should be re-evaluated. (4) The DEIS is insufficient because it did not analyze Denver's estimated 4:1 ratio for firm yield. First, the water users in the State of Colorado seem to have has concluded that there is nothing they can do about Denver's ownership of the conditional water rights in Grand County; that Denver can perfect its water rights as it sees fit. However, the water rights awarded to Denver in the 1930's, with 1920's appropriations were based on, nothing other than the size of the Moffatt tunnel. The water rights are not based on projected need, which in modern times would be a major limiting legal factor to a water grab such as this. The water rights are not based on water availability in the streams where the water was appropriated. And the water right is not based on a reasonable amount of export that would allow for environmental protection and reasonable water use by people in the basin of origin (Grand County). Denver's conditional water right that, under Colorado water law, it has a right to grow into with a 1922 appropriation (1) is potentially greater that the total flow of the Fraser River and other streams in Grand County; (2) allows Denver to grow indefinitely under no particular planning horizon; (3) ignores water needs in Grand County for environment, development, and existing needs. Denver argues that the existing law in the State of Colorado cannot protect Grand County from Denver's drying up its streams. If in fact the state's laws are inadequate to protect the water needs in Grand County, having this NEPA review opportunity and duty, the federal agencies must step in to correct this potential wrong. Water, like air, is an essential resource that should be available to 1	2. The Corps is consulting with the USEPA as a Cooperating Agency throughout the NEPA process. The environmental consequences of diverting additional water due to the Moffat Project were evaluated and the resource impacts were determined to be minimal to moderate depending on the resource. FEIS Appendix M presents the plan to provide compensatory mitigation for unavoidable adverse effects associated with the proposed Moffat Project. The Corps prepared a Biological Assessment (BA) to the USFWS to comply with the requirements of Section 7 of the Endangered Species Act (ESA). The BA evaluated impacts to Federally-listed, proposed and candidate species that would result from construction and operation of the Proposed Action. In response to the BA, the USFWS issued a BO on July 31, 2009 that determined the Project's potential to jeopardize the continued existence of listed species or adversely modify critical habitat. The Corps submitted a request for reinitiation of consultation on August 14, 2012, in response to a February 16, 2010 letter from USFWS commenting on the DEIS. After some discussion, USFWS indicated that it would provide two BOs for the Project, one addressing depletions to the Platte and Colorado rivers and additional information on Preble's meadow jumping mouse, and the second addressing impacts to greenback cutthroat trout in the Fraser River and Williams Fork River systems. The Corps submitted a Revised BA for depletions and Preble's on August 14, 2013. A Final BO from the USFWS was issued on December 6, 2013 that replaced the July 31, 2009 BO for depletions and Preble's. The Corps is preparing and will submit a Supplemental BA for greenback cutthroat trout. Section 7 consultation will be completed prior to issuance of the Record of Decision. The Final BO concluded that the proposed Moffat Project is

Comment Information	Comment	Comments and Responses
	everyone. Yet, Colorado's water law allows entities like Denver to take all the water it can grab from Grand County because Denver has an old water right decree on the books that erroneously allows it to take all the water. Unlike California, Colorado has no basin of origin protection, and has no public interest law. California has been able to require restoration of Mono Lake by Los Angeles Water and Power under California's public interest laws. Denver's water grab of Grand County's water is a similar situation where the water in the basin of origin was grabbed by the big city and taken away from the rural land, wildlife and people. However, Colorado has no public interest protection law for the people of Grand County. The federal government has an opportunity and a obligation to act now to afford some protection for the basin of origin. The DEIS states that Denver already take 50% of the Fraser River natural flow and that under the preferred alternative, Denver will take an additional 20% of the natural flows for a total of 70% of the natural flow taken by Denver alone, with more room to grow into its existing water rights. At what point will the people of Grand County have some protection for their water? By this project, the USACE can impose mitigation measures. Denver is already discussions for mitigation with Boulder County to provide mitigating bypass stream flows for Boulder Creek from depletions caused by this project. The Fraser River, from which the vast majority of the water for this project is taken, appears to not be considered for mitigating bypass stream flows. Yet the DEIS states that in some places at times Denver diverts all the water, leaving the streams completely dry. The DIES lists the Colorado Water Conservation Board's ("CWCB") decreed instream flows, which are designed to preserve the environment to a reasonable degree by protecting a minimum stream flow amount. However, the CWCB's program started in the 1970's, and as the DEIS states, the CWCB's instream flow water rights are junior to Denver's appropriations and thus cannot protect the streams from being diverted dry by Denver. The USACE should step in now and require mitigation on the Fraser River, William's Fork River and the Colorado River where Denver diverts its water. Without requiring mitigation now, where is the limit on Denver's diversions? At 80% of the stream flow, 90%, 100%? Second, the Moffat DEIS analyzed environmental impacts and found "unavoidable impacts" to stream flow, habitat suitability for fish and invertebrates, recreation, and to threatened and endangered (T&E) species in the Colorado River basin. For ESA reasons, the USACE should require mitigation upon consultation with the USEPA for the T&E impacts found. Third, while the DEIS found impacts to T&E species of fish, the DEIS is insufficient in its analysis of other T&E species along the reach of the Colorado River between the Fraser River confluence and the Blue River confluence. This reach of the Colorado River contains among other treasures, a blue ribbon fishery and great habitat for Bald Eagles. The DEIS trigger for a full environmental analysis was a 10% change in stream flow. Because of a mistake, the stream flow in this reach was not analyzed. Instead, the Colorado stream flow gage used to represent this reach is the downstream gage at Kremmling after the Blue River joins the Colorado where the stream flow is known to be 10-times the stream flow in this upper reach. Had this reach of the Colorado been properly studied, the DEIS would surely have seen a marked change in stream flow, riparian vegetation, T&E and other species' habitat with a resulting 2	consistent with the Platte River Recovery Implementation Program Tier I Programmatic Biological Opinion (PBO) for effects to listed species and critical habitat addressed in the Tier 1. Because Denver Water is participating in the Platte River Recovery Implementation Program (PRRIP), ESA compliance for flow-related effects to Federally-listed endangered and threatened species and designated critical habitat from the Project is provided to the extent described in the Tier 1 PBO. The USFWS also determined that the Moffat Project fits under the umbrella of the Colorado River PBO for Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of Recovery Program action in the upper Colorado River above the Confluence with the Gunnison River. 3. Hydrologic effects for the section of the Colorado River below the confluence with the Fraser River and above the confluence with the Blue River are discussed in DEIS Section 4.1.1.2 under the subheading Colorado River. See Table H-3.31, which presents changes in monthly average, wet and dry flows for the Colorado River below the confluence with Williams Fork River, Figures H-4.61 and H-4.62, which present average and wet average daily hydrographs for the Colorado River below the confluence with Williams Fork River, Figure H-5.16, which is a flow duration curve for the Colorado River below the confluence with Williams Fork River, and Table H-6.3, which presents information on daily flow changes in the Colorado River below the confluence with Williams Fork River. Similar information was also presented in DEIS Appendix H for the Colorado River below the Windy Gap diversion, which is downstream of the confluence with Fraser River. The information on flows changes along the Colorado River was used to evaluate impacts on

Comment Information	Comment	Comments and Responses
	impact on wildlife and T&E species. This reach of the Colorado River should be re-evaluated. For ESA reasons, the USACE should require mitigation under consultation with the USEPA for the T&E impacts found and after re-evaluation, additional T&E species impacts will likely need to be addressed. Fourth, Denver assumes it needs 72,000 acre-feet of storage to obtain a firm yield of only 18,000 acre-feet, a 4:1 ratio. There are several other methods to firm the yield, one of which is to store the water underground to avoid large evaporation rates. The DIES is insufficient in that it did not analyze Denver's 4:1 assumption. The assumption should be evaluated. Other alternatives have less impact on the Upper Colorado system and should be reconsidered. In conclusion, some of the "unavoidable impacts" can be avoided with a combination of bypass requirements, appropriate reservoir releases, and implementation of one or part of the other alternatives analyzed in the DEIS. But ultimately, federal agencies should require reasonable bypass flows on the Fraser and Williams Fork Rivers to help preserve the flows in the Fraser, Williams Fork and Colorado Rivers in Grand County. Sincerely, Kaylee White, [redacted] 3	other resources. 4. Aquifer storage and recovery was considered to firm a portion of the new yield required and avoid large evaporation rates. Alternative 10a combines Moffat Collection System supplies with an expansion of Gross Reservoir and deep aquifer storage of reusable return flows to provide 18,000 AF/yr of new firm yield. Denver Water's firm yield and their system storage to firm ratio of 4:1 were estimated using PACSM. The study period used in PACSM extends 45 years from 1947 through 1991 and includes Denver Water's critical drought period from 1953 through 1957. The critical drought period is the time span from the last time the storage reservoirs are full to the time all reservoir water is completely depleted and the reservoirs begin to refill. Denver Water's firm yield was determined to be 345,000 AF/yr (not including the 30,000-AF Strategic Water Reserve) based on implementation of the non-potable recycling project, system refinements, and cooperative projects that Denver Water assumes would be fully implemented before 2016. At this level of demand, PACSM results show that Denver Water's reservoirs were essentially full at the start of the critical drought period in 1953 and empty in April 1957 without causing any shortfall in meeting demand. Based on the total storage in Denver Water's system, their overall storage to firm yield ratio was estimated to be approximately 4:1. Four years is approximately the length of the critical period in Denver Water's PACSM simulation period; therefore, new reservoir storage must supply a firm yield over a 4-year period (a 4:1 storage-to-firm yield ratio). The storage required for the Proposed Action is estimated based on storage of surface water

Comment Information	Comment	Comments and Responses
		available from existing Denver Water rights for the Moffat Collection System. While a useful rule of thumb for storage in the Moffat Collection System, this ratio is sensitive to the location of the storage within Denver Water's system and the source of supply and cannot be universally applied to other portions of Denver Water's system or to other water systems. The storage to firm ratio was adequately analyzed using PACSM. ***Comment #735-5*** *(ID 3354)**:*** *First, the water users in the State of Colorado seem to have has concluded that there is nothing they can do about Denver's ownership of the conditional water rights in Grand County; that Denver can perfect its water rights as it sees fit. However, the water rights awarded to Denver in the 1930's, with 1920's appropriations were based on, nothing other than the size of the Moffatt tunnel. The water rights are not based on projected need, which in modern times would be a major limiting legal factor to a water grab such as this. The water rights are not based on water availability in the streams where the water was appropriated. And the water right is not based on a reasonable amount of export that would allow for environmental protection and reasonable water use by people in the basin of origin (Grand County). Denver's conditional water right that, under Colorado water law, it has a right to grow into with a 1922 appropriation (1) is potentially greater that the total flow of the Fraser River and other streams in Grand County; (2) allows Denver to grow indefinitely under no particular planning horizon; (3) ignores water needs in Grand County for environment, development, and existing needs. Denver argues that the existing law in the State of Colorado cannot protect Grand County from Denver's drying up its streams. If in fact the state's laws are inadequate to protect the water needs in Grand County, having this NEPA review opportunity and duty, the federal*

Comment Information	Comment	Comments and Responses
		agencies must step in to correct this potential wrong. Water, like air, is an essential resource that should be available to everyone. Yet, Colorado's water law allows entities like Denver to take all the water it can grab from Grand County because Denver has an old water right decree on the books that erroneously allows it to take all the water. Unlike California, Colorado has no basin of origin protection, and has no public interest law. California has been able to require restoration of Mono Lake by Los Angeles Water and Power under California's public interest laws. Denver's water grab of Grand County's water is a similar situation where the water in the basin of origin was grabbed by the big city and taken away from the rural land, wildlife and people. However, Colorado has no public interest protection law for the people of Grand County. The federal government has an opportunity and an obligation to act now to afford some protection for the basin of origin. The DEIS states that Denver already take 50% of the Fraser River natural flow and that under the preferred alternative, Denver will take an additional 20% of the natural flows for a total of 70% of the natural flow taken by Denver alone, with more room to grow into its existing water rights. *At what point will the people of Grand County have some protection for their water? By this project, the USACE can impose mitigation measures. Denver is already discussions for mitigation with Boulder County to provide mitigating bypass stream flows for Boulder Creek from depletions caused by this project. The Fraser River, from which the vast majority of the water for this project is taken, appears to not be considered for mitigating bypass stream flows. Yet the DEIS states that in some places at times Denver diverts all the water, leaving the streams completely dry. The DIES lists the Colorado Water Conservation Board's ("CWCB") decreed instream flows, which are designed to preserve the environment to a*

Comment Information	Comment	Comments and Responses
		reasonable degree by protecting a minimum stream flow amount. However, the CWCB's program started in the 1970's, and as the DEIS states, the CWCB's instream flow water rights are junior to Denver's appropriations and thus cannot protect the streams from being diverted dry by Denver. The USACE should step in now and require mitigation on the Fraser River, William's Fork River and the Colorado River where Denver diverts its water. Without requiring mitigation now, where is the limit on Denver's diversions? At 80% of the stream flow, 90%, 100%? **Response #735-5:** Denver Water's diversion and use of water under the Moffat Project would be consistent with Colorado water law and its decreed water rights. The Corps does not administer water rights or compact calls, which are under the administration of the SEO. For the proposed Project, the Colorado SEO would also administer water rights and any compact curtailments. ***Comment #735-4*** *(ID 3353)**:*** *Second, the Moffat DEIS analyzed environmental impacts and found "unavoidable impacts" to stream flow, habitat suitability for fish and invertebrates, recreation, and to threatened and endangered (T&E) species in the Colorado River basin. For ESA reasons, the USACE should require mitigation upon consultation with the USEPA for the T&E impacts found.* **Response #735-4:** In 1990, the USFWS issued a PBO for activities that cause depletions in the upper Colorado River Basin above the confluence with the Gunnison River, and has determined that projects that fit under the PBO would avoid jeopardy or adverse modification of habitat from depletion effects. The criteria are (1) having a depletion in the upper Colorado River,

Comment Information	Comment	Comments and Responses
		(2) signing a recovery agreement, and (3) payment of a one-time fee to cover the costs of acquisition of water rights and other recovery actions to offset the depletion effects. Payment of the fee will be required as a condition of the BO issued by the USFWS for the Moffat Project. Additionally, the Corps and Denver Water have conducted formal consultation with the USFWS for the Moffat Project EIS to ensure compliance with the EPA and worked closely with the USFWS to develop appropriate mitigation. Refer to FEIS Appendix G-2. Compliance with the USFWS Final BO for depletions and Preble's (dated December 6, 2013) will be included as a special condition in a Section 404 Permit, if issued by the Corps. Therefore, Project impacts would be mitigated under the recovery program. ***Comment #735-3*** *(ID 3352)**:*** *Third, while the DEIS found impacts to T&E species of fish, the DEIS is insufficient in its analysis of other T&E species along the reach of the Colorado River between the Fraser River confluence and the Blue River confluence. This reach of the Colorado River contains among other treasures, a blue ribbon fishery and great habitat for Bald Eagles. The DEIS trigger for a full environmental analysis was a 10% change in stream flow. Because of a mistake, the stream flow in this reach was not analyzed. Instead, the Colorado stream flow gage used to represent this reach is the downstream gage at Kremmling after the Blue River joins the Colorado where the stream flow is known to be 10-times the stream flow in this upper reach. Had this reach of the Colorado been properly studied, the DEIS would surely have seen a marked change in stream flow, riparian vegetation, T&E and other species' habitat with a resulting impact on wildlife and T&E species. This reach of the Colorado River should be re-evaluated. For ESA reasons, the USACE should require mitigation under consultation with the USEPA for the T&E impacts found and after re-*

Comment Information	Comment	Comments and Responses
		evaluation, additional T&E species impacts will likely need to be addressed. **Response #735-3:** The comment is incorrect when it says that changes in stream flow were not evaluated in the EIS. Data on changes in stream flows are provided in Appendix H-3 for three locations along the Colorado River, including near Windy Gap Reservoir, below the confluence with Williams Fork, and below the confluence with the Blue River. The DEIS evaluated the Colorado River from the Fraser River confluence to the Williams Fork River, with a riparian sample site (CR1) located within the Hot Sulphur Springs Wilderness Study Area. A description of the riparian habitat in this river reach was provided in DEIS Section 3.6.5.3, and a description of the threatened, endangered and sensitive species was provided in DEIS 3.8.5.3. Impacts were described in DEIS Sections 4.6 and 4.8. The portion of the Colorado River from the Williams Fork to Kremmling was not evaluated because changes in flows would be less than 10 % in all months. Impacts to riparian habitat and special status species would be very similar to those described for the focus reach along the Colorado River, and would be minor or negligible. ***Comment #735-2*** *(ID 3351)**:*** *Fourth, Denver assumes it needs 72,000 acre-feet of storage to obtain a firm yield of only 18,000 acre-feet, a 4:1 ratio. There are several other methods to firm the yield, one of which is to store the water underground to avoid large evaporation rates. The DIES is insufficient in that it did not analyze Denver's 4:1 assumption. The assumption should be evaluated. Other alternatives have less impact on the Upper Colorado system and should be reconsidered.*

Comment Information	Comment	Comments and Responses
		Response #735-2: Please see the response to Comment ID 3355. ***Comment #735-1*** *(ID 3350)**:*** *In conclusion, some of the "unavoidable impacts" can be avoided with a combination of bypass requirements, appropriate reservoir releases, and implementation of one or part of the other alternatives analyzed in the DEIS. But ultimately, federal agencies should require reasonable bypass flows on the Fraser and Williams Fork Rivers to help preserve the flows in the Fraser, Williams Fork and Colorado Rivers in Grand County.* **Response #735-1:** The proposed Moffat Project would not divert additional water in dry years. As described in FEIS Section 5.1, the majority of additional water would be diverted during the months of May, June, and July during run-off – not during low flow periods. Denver Water would not increase its diversions during the fall and winter months and existing bypass flow requirements would not change. FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #740 Brian P. Bledsoe, PhD, P.E. [redacted]	From: Brian Bledsoe [mailto:[redacted] Sent: Tuesday, March 16, 2010 4:58 PM To: MOFFAT.EIS@usace.army.mil; campbell.carol@epa.gov Cc: Bledsoe Subject: Moffat DEIS comments attached Dear Mr. Franklin, Please enter the attached comments into the public record on the Moffat Collection System Project - Draft Environmental Impact Statement. Thank you, Brian Bledsoe -- ~~~~~~ Brian P. Bledsoe, Ph.D., P.E. [redacted] - Bledsoe_Moffat_DEIS_comments_Mar16_10.pdf	***Comment #740-11*** *(ID 3389)**:*** *Please enter the attached comments into the public record on the Moffat Collection System Project - Draft Environmental Impact Statement.* **Response #740-11:** These comments were entered into the public record for the Moffat Project. ***Comment #740-10*** *(ID 3388)**:*** *The following comments summarize my perspectives on the subject Draft Environmental Impact Statement (DEIS) and supporting documents relating to channel dynamics, physical habitat and fluvial processes in the affected river networks. I am a hydrologist in the [redacted]. I have worked on water management issues as an engineer and environmental scientist in the private and public sectors for over 20 years. I have taught river mechanics and nonpoint source pollution courses at [redacted] annually since 1999. I am a licensed professional civil engineer in CO and NC and served on the scientific advisory board on suspended and bedded sediments for USEPA. Prior to moving to Fort Collins in 1997, I served as both Nonpoint Source Program Coordinator and §404 Mitigation Specialist for the State of North Carolina.* **Response #740-10:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
	Attachments: To: Scott Franklin, Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 E-mail: moffat.eis@usace.army.mil From: Brian Bledsoe, Ph.D., P.E. [redacted] Date: March 16, 2010 Re: Draft Environmental Impact Statement - Moffat Collection System Project CC: Carol Campbell, Deputy Regional Administrator, USEPA, Email: campbell.carol@epa.gov The following comments summarize my perspectives on the subject Draft Environmental Impact Statement (DEIS) and supporting documents relating to channel dynamics, physical habitat and fluvial processes in the affected river networks. I am a hydrologist in the [redacted]. I have worked on water management issues as an engineer and environmental scientist in the private and public sectors for over 20 years. I have taught river mechanics and nonpoint source pollution courses at [redacted] annually since 1999. I am a licensed professional civil engineer in CO and NC and served on the scientific advisory board on suspended and bedded sediments for USEPA. Prior to moving to Fort Collins in 1997, I served as both Nonpoint Source Program Coordinator and §404 Mitigation Specialist for the State of North Carolina. **Geomorphic Processes / Stream Morphology** High flows in gravel bed rivers prevent excessive accumulation of fine sediments and perform many important geomorphic and ecologic functions including habitat, channel, riparian, and hyporheic maintenance (Whiting 2002). If the supply of fine sediments to a stream exceeds its time-integrated transport capacity over a period of years, sediment deposition and aggradation occur in the absence of flushing flows. Fine sediment accumulation produces a variety of physical responses in streams, including reductions in benthic habitat for fish spawning and aquatic insects, as well as reduced pool volume (Waters 1995). Accordingly, sound geomorphic analyses are critical for assessing the potential for sedimentation impacts to aquatic habitat and river biota in the context of flow extraction. I have identified a number of concerns with the geomorphic analyses presented in the Moffat Collection System Project DEIS. The concerns are primarily focused on: 1) erroneous assumptions made about the potential for aggradation and the estimated Bledsoe Moffat DEIS Comments Page 1 of 5	***Comment #740-9*** *(ID 3387)**:*** *Geomorphic Processes / Stream Morphology High flows in gravel bed rivers prevent excessive accumulation of fine sediments and perform many important geomorphic and ecologic functions including habitat, channel, riparian, and hyporheic maintenance (Whiting 2002). If the supply of fine sediments to a stream exceeds its time-integrated transport capacity over a period of years, sediment deposition and aggradation occur in the absence of flushing flows. Fine sediment accumulation produces a variety of physical responses in streams, including reductions in benthic habitat for fish spawning and aquatic insects, as well as reduced pool volume (Waters 1995). Accordingly, sound geomorphic analyses are critical for assessing the potential for sedimentation impacts to aquatic habitat and river biota in the context of flow extraction.* **Response #740-9:** The analyses completed for the DEIS and FEIS include a comparison of the time-integrated transport capacity over a period of years and sediment supply. The flows required to mobilize the stream bed (Phase 2 sediment transport) were defined at all Representative Reaches. The recurrence interval of these flows, the maximum time between Phase 2 flow events and the frequency of Phase 2 flows were defined for all Project alternatives. Results of these analyses are presented in Sections 4.6.3 and 5.3. An analysis of past changes to stream morphology resulting from existing flow reductions was completed using historic data as a way to supplement results obtained from numeric modeling. This analysis is provided in FEIS Section 4.6.3. ***Comment #740-8*** *(ID 3386)**:*** *I have identified a number of concerns with the geomorphic analyses presented in the Moffat Collection System Project DEIS. The concerns are*

Comment Information	Comment	Comments and Responses
	transport capacity for flushing sand in the main stem of the Fraser River, and 2) the methodological approach and interpretation of the effective discharge and sediment mobility analyses. Historical analysis of a fluvial system's trajectory is an important tool in impact assessment. The DEIS correctly acknowledges that downstream segments of the Fraser River are currently aggradational; however, the authors of the DEIS go on to repeatedly assert that sediment transport capacity greatly exceeds supply and that "there would be no increase in sediment deposition in the Fraser River from the Proposed Action" (p 4-13). This is a flawed conclusion that reflects incorrect assumptions and the outdated methods that were used in the sediment transport analyses. There is compelling evidence that aggradation is occurring in the main stem of the Fraser. As the DEIS states, evidence of fine sediment storage including bars and other deposits of sand is widespread in the Fraser River mainstem. Second, substrate measurements indicate that the % sand and finer material exposed on the bed surface can exceed 15% in many locations and approaches 30% in some locations (USFS 2001). These values are at the highest end of the range of variability in ambient fine sediment levels in mountain streams of the Southern Rockies Ecoregion (Hurst 2005). Specific gauge analysis (Biedenharn and Watson 1997, Watson and others 2007) of the stage vs. discharge data available for the USGS Fraser River at Winter Park gauge indicates an aggradational trend over the last 25 years. If transport capacity greatly exceeds supply, as the DEIS repeatedly states, why is this is happening? The DEIS offers no plausible explanation. Sediment supply is estimated in the DEIS with outdated relationships from Simons and Associates (1986). It is very likely that these power functions do not accurately reflect the current sediment supply in the lower basin because of the lagged response of sediment impacts and the geomorphic context in which the data were originally collected. These relationships are inappropriately extrapolated to low gradient reaches of the Fraser and do not distinguish between sand load and gravel bedload. The analysis of mobility of particles of different sizes is flawed and transport capacity is overestimated. The analysis uses inappropriate criteria for estimating the shear stresses required to mobilize sand from gravel / cobble beds, with no hiding factor and apparently no shear stress partitioning. These are now well recognized components of such an analysis—for example, see the ASCE Manual of Practice 110 on Sedimentation Engineering. These analyses are an important element of the DEIS because bed mobility and flushing are necessary for reducing substrate embeddedness and for rejuvenation of benthic habitat. Reliable estimates of bed mobility and scouring potential are also 1) integral to predicting encroachment of vegetation and channel narrowing, and 2) linked to preventing proliferation of algae and other periphyton along with other factors such as nutrient loads, temperature and light. The effective discharge analysis is flawed and does not follow the methodologies recommended by USACE (Biedenharn and others 2000, Soar and Thorne 2001). It also uses an outdated sediment transport equation that lacks appropriate criteria for Bledsoe Moffat DEIS Comments Page 2 of 5	*primarily focused on: 1) erroneous assumptions made about the potential for aggradation and the estimated transport capacity for flushing sand in the main stem of the Fraser River, and 2) the methodological approach and interpretation of the effective discharge and sediment mobility analyses. Historical analysis of a fluvial system's trajectory is an important tool in impact assessment. The DEIS correctly acknowledges that downstream segments of the Fraser River are currently aggradational; however, the authors of the DEIS go on to repeatedly assert that sediment transport capacity greatly exceeds supply and that "there would be no increase in sediment deposition in the Fraser River from the Proposed Action" (p 4-13). This is a flawed conclusion that reflects incorrect assumptions and the outdated methods that were used in the sediment transport analyses. There is compelling evidence that aggradation is occurring in the main stem of the Fraser. As the DEIS states, evidence of fine sediment storage including bars and other deposits of sand is widespread in the Fraser River mainstem. Second, substrate measurements indicate that the % sand and finer material exposed on the bed surface can exceed 15% in many locations and approaches 30% in some locations (USFS 2001). These values are at the highest end of the range of variability in ambient fine sediment levels in mountain streams of the Southern Rockies Ecoregion (Hurst 2005). Specific gauge analysis (Biedenharn and Watson 1997, Watson and others 2007) of the stage vs. discharge data available for the USGS Fraser River at Winter Park gauge indicates an aggradational trend over the last 25 years. If transport capacity greatly exceeds supply, as the DEIS repeatedly states, why is this is happening? The DEIS offers no plausible explanation.*

Comment Information	Comment	Comments and Responses
	mobilization of different grain sizes in this geomorphic setting. The binning of the flow classes is not arithmetic as recommended by USACE and, because it is logarithmic, limits interpretation of project effects in the most important ranges of flow. Selection of an appropriate sediment transport relationship that accounts for the key physical processes in mobilizing sand from a gravel mixture would indicate less capacity than the current analyses. My judgment is that further / revised analyses would indicate that capacity has been substantially overestimated and supply to lower gradient downstream segments of the Fraser has been underestimated in DEIS analyses. The weight of evidence from field observations, historical analysis of the relationship between stage and discharge at Winter Park, qualitative response models from Lane and Schumm, magnitude-frequency analysis of flushing flows (effective discharge) suggests that aggradation and concomitant impacts to aquatic habitat would probably be exacerbated by additional flow extraction from the lower gradient segments of the Fraser River main stem under the current sediment supply. It is important to not think of the flushing flow problem solely in terms of peak flow magnitudes in the context of this project. The key to evaluating whether aggradation is likely to be exacerbated is to examine changes in *durations* of geomorphically effective flows. By removing "shoulder flows" the proposed project decreases the number of days on average that flows exceed the thresholds necessary transport sand and fine gravel through the main stem reaches with relatively mild slopes. That is, long term sediment transport capacity is determined by both magnitudes and durations of flows. If there are longer periods between flushing events, more sediment will accumulate. It is fairly straightforward to estimate inter-event periods between flow events that achieve bed mobilization for a period of days; however, I cannot find an analysis of changes to the duration of and timing between flushing and bed rejuvenating flows in the DEIS. Longer periods of aggradation will likely increase effects on biota. For example, Wesche (pers. comm.) has found that trout spawn in clean 25-50 mm gravel in the Fraser River. Hurst (2005) examined the response of benthic macroinvertebrates to deposited fine sediments using USEPA Regional/ Environmental Monitoring and Assessment Program (R/EMAP) sites from the Southern Rockies Ecoregion of Colorado and data from a field experiment conducted in a gravel-bed mountain stream in southeastern Wyoming. A conditional probability approach based on the benthic macroinvertebrate index of Ephemeroptera, Plecoptera, and Trichoptera (EPT) richness was employed to express the likelihood of a reduced number of sensitive taxa given an exceedance of reach-scale percent sand and fines (≤2 mm), and departure from expected levels of deposited fine sediments. Natural variability in fine sediment resulting from differences in hydrogeomorphic context was addressed by stratifying R/EMAP sites according to stream power, geology, and drainage area. Combined results from the ecoregion scale and from field experiment suggest that consistent levels of deposited fine sediment, ranging between 15 and 30 percent surface coverage, are associated with an increased risk of reduced EPT taxa richness. Furthermore, Hurst (2005) observed the most pronounced response of EPT taxa richness to the departure from expected sand and fines when fine sediments are 10 to 30 percent in excess of predicted ambient conditions. Bladwin Moffat DEIS Comments Page 3 of 5	**Response #740-8:** A survey was completed of the Fraser River at the USGS gage and compared with survey data collected at intervals since the gage was installed to evaluate specific geometric changes at this location. This information is presented in FEIS Section 4.6.3. Percent fines measured in the field were discussed in relation to anticipated levels. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Impacts of traction sand on the Fraser River were included in the assessment. An analysis of historic data was completed to supplement results obtained through numeric modeling. Analyses were completed and changes to the magnitude and frequency of flood flows were included. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #740-7*** *(ID 3385)**:*** *Sediment supply is estimated in the DEIS with outdated relationships from Simons and Associates (1986). It is very likely that these power functions do not accurately reflect the current sediment supply in the lower basin because of the lagged response of sediment impacts and the geomorphic context in which the data were originally collected. These relationships are inappropriately extrapolated to low gradient reaches of the Fraser and do not distinguish between sand load and gravel bedload.*

Comment Information	Comment	Comments and Responses

	Interestingly, it is in the range of 20-30% surface sand that Peter Wilcock and his students have documented a physical process shift in gravel streams from a framework supported gravel bed to a sand matrix that largely fills the gravel interstices and produces significantly different benthic environments.
	
	The analyses presented in the DEIS do not provide what is needed to assess potential changes in sediment processes and physical habitat. The following would be good starting points:
	
	• Use of effective discharge methods published by USACE (Biedenharn and Copeland 2000, Soar and Thorne 2001).
	• Quantification of the average number of days per year that flows exceed dimensionless shear stress values of 0.015, 0.02, 0.025, 0.03, 0.035, 0.04, etc., referenced to the median gravel size.
	• Inter-event periods between flushing flows lasting on the order of 5-10 days.
	• Direct comparisons among alternatives of changes in frequency and duration of flows that correspond to important geomorphic and ecological processes:
	  ○ sand / fine sediment flushing
	  ○ partial transport of bedload
	  ○ periphyton scour / disturbance
	  ○ limiting encroaching vegetation
	  ○ armor breakup/full transport of bedload
	• Use of an appropriate bedload function with shear partitioning and a hiding factor to account for differences in cumulative sediment transport capacity and aggradation potential (e.g., Parker with Andrews and Nankervis hiding factor, Wilcock and Kenworthy, or Wilcock and Crowe as opposed to the outdated Meyer Peter and Muller (1948) threshold approach which was shown to be incorrect by Wong and Parker (2006) and which doesn't reflect some of the key processes).
	• Using recent measurements that reflect the proximal sediment supply in the lower gradient (<2%) sections of the Fraser River under the current sediment regime.
	
	A more complete and scientifically rigorous geomorphic analysis is necessary for assessing potential project impacts to channel morphology, river habitat, and aquatic life.
	
	References
	Andrews, E.D. (1984). Bed-material entrainment and hydraulic geometry of gravel-bed rivers in Colorado. Bulletin of the Geological Society of America 95:1225-1231.
	
	Andrews, E.D., and J.M. Nankervis (1995). Effective discharge and the design of channel maintenance flows for gravel-bed rivers. In Natural and Anthropogenic Influences in Fluvial Geomorphology, J.E. Costa, A.J. Miller, K.W. Potter, and P.R. Wilcock (Eds.), Geophysical Monograph 89, Amer. Geophysical Union, pp. 151-164.
	
	ASCE. (1992). Sediment and aquatic habitat in river systems. Journal of Hydraulic Engineering 118(5):669-687.
	
	Bledsoe Moffat DEIS Comments
	Page 4 of 5
		Response #740-7:
		Sediment supply equations used in the FEIS were derived from an extensive field sediment sampling program conducted within the impacted watersheds for the Two Forks EIS. Sample locations include upper tributary areas and lower basins and sediment measurements were taken at a wide range of flows.
		
		Sediment supply was found to be related to flows. Sediment supply equations were based on measured sediment loads and therefore account for subsurface materials that are transported at higher flow rates. Additional information on sediment supply equation derivation is provided in FEIS Section 4.6.3.
		
		Comment #740-6 *(ID 3384)**:***
		The analysis of mobility of particles of different sizes is flawed and transport capacity is overestimated. The analysis uses inappropriate criteria for estimating the shear stresses required to mobilize sand from gravel / cobble beds, with no hiding factor and apparently no shear stress partitioning. These are now well recognized components of such an analysis—for example, see the ASCE Manual of Practice 110 on Sedimentation Engineering. These analyses are an important element of the DEIS because bed mobility and flushing are necessary for reducing substrate embeddedness and for rejuvenation of benthic habitat. Reliable estimates of bed mobility and scouring potential are also 1) integral to predicting encroachment of vegetation and channel narrowing, and 2) linked to preventing proliferation of algae and other periphyton along with other factors such as nutrient loads, temperature and light.
		
		Response #740-6:
		Additional assessments including sensitivity analysis of sediment supply and sediment transport equations were completed. Results are provided in FEIS Section 4.6.3.

Comment Information	Comment	Comments and Responses
	Biedenharn, D. S., Copeland, R. R., Thorne, C. R., Soar, P. J., Hey, R. D., and Watson, C. C. (2000). Effective discharge calculation: A practical guide. Technical Rep. No. ERDC/CHL TR-00-15, U.S. Army Engineer Research and Development Center, Vicksburg, MS. Biedenharn, D.S., and Watson, C.C. (1997). Stage adjustment in the lower Mississippi River, USA. Regulated Rivers: Research & Management, 13:517-536. Emmett, W.W., and M.G. Wolman (2001). Effective discharge and gravel-bed rivers. Earth Surface Processes and Landforms 26:1369-1380. Hurst, B.E. (2005). Conditional Probability Approach for Assessing Fine Sediment Impacts on Aquatic Insects with Consideration of Hydrogeomorphic Context. Unpublished M.S. Thesis, Colorado State University. Meyer-Peter, E., R. Müller (1948). Formulas for bed-load transport. In: Proc. 2nd Congress of the Int. Ass Hydraulic Structures Research, Stockholm (1948). Parker, G. (2008a). Transport of Gravel and Sediment Mixtures, In Sedimentation Engineering: Theories, Measurements, Modeling, and Practice (Manuals and Reports on Engineering Practice No. 110). American Society of Civil Engineers, 1150 pp. Parker, G. (2008b). 1D Sediment Transport Morphodynamics with Applications to Rivers and Turbidity Currents. http://vesl.uiuc.edu/people/parkerg/morphodynamics_e-book.htm Schumm, S.A. (1977). The Fluvial System. Wiley-Interscience, New York, NY. Soar, P. J., and Thorne, C. R. (2001). Channel restoration design for meandering rivers. Rep. No. ERDC/CHL CR-01-1, U.S. Army Engineer Research and Development Center, Vicksburg, MS. Whiting, P.J. (2002). Streamflow necessary for environmental maintenance. Annual Review of Earth and Planetary Sciences 30:181-206. Wilcock, P.R. (1993). Critical shear stress of natural sediments. Journal of Hydraulic Engineering 119(4):491-505. USFS. (2001). Fraser River Nonpoint Source Pollution Control Project 2000 Monitoring Data Summary. Waters, T.F. (1995). Sediment in streams -- Sources, biological effects, and control. American Fisheries Society Monograph 7:251. Wong, M. and G. Parker. (2006). Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller Using Their Own Database. J. Hydr. Engrg. Volume 132(11):1159-1168. 	***Comment #740-5*** *(ID 3383)**:*** *The effective discharge analysis is flawed and does not follow the methodologies recommended by USACE (Biedenharn and others 2000, Soar and Thorne 2001). It also uses an outdated sediment transport equation that lacks appropriate criteria for mobilization of different grain sizes in this geomorphic setting. The binning of the flow classes is not arithmetic as recommended by USACE and, because it is logarithmic, limits interpretation of project effects in the most important ranges of flow.* **Response #740-5:** Arithmetic and logarithmic binning were both evaluated. Logarithmic was found to be more appropriate given the large number of low flow data points, which are not handled well using the arithmetic procedures. ***Comment #740-4*** *(ID 3382)**:*** *Selection of an appropriate sediment transport relationship that accounts for the key physical processes in mobilizing sand from a gravel mixture would indicate less capacity than the current analyses. My judgment is that further / revised analyses would indicate that capacity has been substantially overestimated and supply to lower gradient downstream segments of the Fraser has been underestimated in DEIS analyses.* *The weight of evidence from field observations, historical analysis of the relationship between stage and discharge at Winter Park, qualitative response models from Lane and Schumm, magnitude-frequency analysis of flushing flows (effective discharge) suggests that aggradation and concomitant impacts to aquatic habitat would probably be exacerbated by additional flow extraction from the lower gradient segments of the Fraser River main stem under the current sediment supply.*

Comment Information	Comment	Comments and Responses
		Response #740-4: The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #740-3*** *(ID 3381)**:*** *It is important to not think of the flushing flow problem solely in terms of peak flow magnitudes in the context of this project. The key to evaluating whether aggradation is likely to be exacerbated is to examine changes in durations of geomorphically effective flows. By removing "shoulder flows" the proposed project decreases the number of days on average that flows exceed the thresholds necessary transport sand and fine gravel through the main stem reaches with relatively mild slopes. That is, long term sediment transport capacity is determined by both magnitudes and durations of flows. If there are longer periods between flushing events, more sediment will accumulate. It is fairly straightforward to estimate inter-event periods between flow events that achieve bed mobilization for a period of days; however, I cannot find an analysis of changes to the duration of and timing between flushing and bed rejuvenating flows in the DEIS.* **Response #740-3:** An analysis was done to quantify changes in the magnitude, duration and frequency of higher flow events. Results are provided in FEIS Sections 4.6.3

Comment Information	Comment	Comments and Responses
		and 5.3. ***Comment #740-2*** *(ID 3380)**:*** *Longer periods of aggradation will likely increase effects on biota. For example, Wesche (pers. comm.) has found that trout spawn in clean 25-50 mm gravel in the Fraser River. Hurst (2005) examined the response of benthic macroinvertebrates to deposited fine sediments using USEPA Regional/ Environmental Monitoring and Assessment Program (R/EMAP) sites from the Southern Rockies Ecoregion of Colorado and data from a field experiment conducted in a gravel-bed mountain stream in southeastern Wyoming. A conditional probability approach based on the benthic macroinvertebrate index of Ephemeroptera, Plecoptera, and Trichoptera (EPT) richness was employed to express the likelihood of a reduced number of sensitive taxa given an exceedance of reach- cale percent sand and fines (=2 mm), and departure from expected levels of deposited fine sediments. Natural variability in fine sediment resulting from differences in hydrogeomorphic context was addressed by stratifying R/EMAP sites according to stream power, geology, and drainage area.* *Combined results from the ecoregion scale and from field experiment suggest that consistent levels of deposited fine sediment, ranging between 15 and 30 percent surface coverage, are associated with an increased risk of reduced EPT taxa richness. Furthermore, Hurst (2005) observed the most pronounced response of EPT taxa richness to the departure from expected sand and fines when fine sediments are 10 to 30 percent in excess of predicted ambient conditions. Interestingly, it is in the range of 20-30% surface sand that Peter Wilcock and his students have documented a physical process shift in gravel streams from a framework supported gravel bed to a sand matrix that largely fills the gravel*

Comment Information	Comment	Comments and Responses
		interstices and produces significantly different benthic environments. **Response #740-2:** The DEIS evaluated the effects of sediment on aquatic organisms. FEIS Sections 3.11, 4.6.11, and 5.11 have been modified to incorporate updated information on sediment conditions in the streams in the Project area. The effects of sediment on fish and aquatic macroinvertebrates, including EPT species, has been included in these sections of the FEIS. The analysis of stream morphology was expanded to include an IHA assessment. The duration, frequency and magnitude of larger flood events were evaluated and changes resulting from the proposed Project were quantified. Results are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #740-1*** *(ID 3379)**:*** *The analyses presented in the DEIS do not provide what is needed to assess potential changes in sediment processes and physical habitat. The following would be good starting points: · Use of effective discharge methods published by USACE (Biedenharn and Copeland 2000, Soar and Thorne 2001). · Quantification of the average number of days per year that flows exceed dimensionless shear stress values of 0.015, 0.02, 0.025, 0.03, 0.035, 0.04, etc., referenced to the median gravel size. · Inter-event periods between flushing flows lasting on the order of 5-10 days. · Direct comparisons among alternatives of changes in frequency and duration of flows that correspond to important geomorphic and ecological processes: o sand / fine sediment flushing o partial transport of bedload o periphyton scour / disturbance o limiting encroaching vegetation o armor breakup/full transport of bedload · Use of an appropriate bedload function with shear partitioning and a hiding factor to account for differences in*

Comment Information	Comment	Comments and Responses
		cumulative sediment transport capacity and aggradation potential (e.g., Parker with Andrews and Nankervis hiding factor, Wilcock and Kenworthy, or Wilcock and Crowe as opposed to the outdated Meyer Peter and Muller (1948) threshold approach which was shown to be incorrect by Wong and Parker (2006) and which doesn't reflect some of the key processes). · Using recent measurements that reflect the proximal sediment supply in the lower gradient (<2%) sections of the Fraser River under the current sediment regime. A more complete and scientifically rigorous geomorphic analysis is necessary for assessing potential project impacts to channel morphology, river habitat, and aquatic life. **Response #740-1:** The FEIS includes an evaluation of effective discharge using methods that are appropriate for the flow regime of each individual location. A sensitivity analysis was conducted utilizing multiple transport equations and includes transport capacity for separate particle sizes. An analysis was completed to evaluate changes in the duration, magnitude and time between larger flood events. A Phase II sediment transport assessment was completed. Sediment data collected in the Fraser River by the USFS was also incorporated into the analysis and results were evaluated considering potential impacts of traction sand in the Fraser River. Additional assessments are provided in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
Comment #742 Dan Burak, [redacted]	To Whom It May Concern - I am writing to oppose and express my dismay at the current plan for the Moffat Tunnel/Gross Dam expansion project proposed by Denver Water and planned by the Army Corps of Engineers (FERC project #2035). This is not simply a "not in my backyard" letter. The plan, as outlined, displays short-sightedness, disregard for true environmental impact in and beyond the immediate project area, a lack of knowledge of the canyon to be affected, and a "water-grab" mentality that smacks of quick-hit large corporate development, not long-range planning. Some of the most egregious issues include: · Disregard for the depleting flows of the Fraser and Colorado rivers: Between this expansion and the Northern Water Conservancy District project, up to 75% of the headwaters from these rivers could be diverted - especially during critical high-flow periods to "flush" the river. This is irresponsible at best, a crime at worst. These rivers and the wildlife that depend on them cannot survive, much less thrive, under these circumstances. The draft EIS must include the impacts and mitigation to address the effects of both of these projects combined on the health of this ecosystem. · Kentucky Blue Grass versus Simple Conservation: With over half of residential water use going to keep Kentucky blue grass thriving in a high plains desert, Denver has an opportunity to save large amounts of water before building any new and costly infrastructure. Denver can save more than enough water than it needs for the next several years with some political will to enact common-sense regulation around landscaping and water usage. Are we really going to flat-line rivers and kill fish in order to let Denver residents have lush, non-native lawns? · Coal Creek Canyon Safety: Coal Creek Canyon has become a strong bedroom community for residents as well as a recreational outlet for bicyclists and motorcyclists. Large haul trucks going up and down the canyon for 4 years (44 - 74 haul truck trips/day for 260 days per year) and heavy bicycle and motorcycle traffic are a deadly combination. Even if this project does move forward, not utilizing/optimizing the existing railroad infrastructure is, frankly, lazy planning. Work with the railroad - don't run a truck over canyon residents and cyclists because it's the easiest path. · Poor Conservation Planning In And Around Gross Dam Reservoir: During construction, noise from the work will be significant at this altitude. The plan's claim that "at a distance greater than 50 ft. noise levels diminish rapidly" is dismissive and untrue. Noise travels further in thin air. Additionally, the plan calls for 30 acres of work area to be permanently left unrecovered and 20,000 trees to be removed. This demonstrates a complete disregard for the quality of life of residents and visitors. · Arvada's Ticket to Development: With Arvada being among the first in line for this additional water, this plan is a license for additional poorly planned development of residential and commercial properties in a predatory "grow fast or die" mentality that Arvada has sadly demonstrated for so many years. Long-term, this could very well lead to the green light of the ill-fated 470 western corridor project that would put a freeway right up against the pristine foothills backdrop. While I'm sure a lot of work and planning has been done to-date for this project and for Denver's water needs in general, the spirit of this planning seems to be more about raiding this state's natural resources to grow grass in a high-desert city than about thoughtful, holistic planning. This project may have looked good on paper in the 1950s when we either didn't know better or didn't care about environmental impacts. Today, we have the benefit of knowing and therefore the burden of doing it right. Sincerely, Dan Burak	***Comment #742-7*** *(ID 3232)**:*** *I am writing to oppose and express my dismay at the current plan for the Moffat Tunnel/Gross Dam expansion project proposed by Denver Water and planned by the Army Corps of Engineers (FERC project #2035). This is not simply a "not in my backyard" letter. The plan, as outlined, displays short-sightedness, disregard for true environmental impact in and beyond the immediate project area, a lack of knowledge of the canyon to be affected, and a "water-grab" mentality that smacks of quick-hit large corporate development, not long-range planning. Some of the most egregious issues include:* **Response #742-7:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #742-6*** *(ID 3231)**:*** *Disregard for the depleting flows of the Fraser and Colorado rivers: Between this expansion and the Northern Water Conservancy District project, up to 75% of the headwaters from these rivers could be diverted – especially during critical high-flow periods to "flush" the river. This is irresponsible at best, a crime at worst. These rivers and the wildlife that depend on them cannot survive, much less thrive, under these circumstances. The draft EIS must include the impacts and mitigation to address the effects of both of these projects combined on the health of this ecosystem.* **Response #742-6:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur

Comment Information	Comment	Comments and Responses
	[redacted] -- Dan Burak | [redacted]	only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #742-5*** *(ID 3230)**:*** *Kentucky Blue Grass versus Simple Conservation: With over half of residential water use going to keep Kentucky blue grass thriving in a high plains desert, Denver has an opportunity to save large amounts of water before building any new and costly infrastructure. Denver can save more than enough water than it needs for the next several years with some political will to enact common-sense regulation around landscaping and water usage. Are we really going to flat-line rivers and kill fish in order to let Denver residents have lush, non-native lawns?*

Comment Information	Comment	Comments and Responses
		Response #742-5: Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #742-4*** *(ID 3229)**:*** *Coal Creek Canyon Safety: Coal Creek Canyon has become a strong bedroom community for residents as well as a recreational outlet for bicyclists and motorcyclists. Large haul trucks going up and down the canyon for 4 years (44 – 74 haul truck trips/day for 260 days per year) and heavy bicycle and motorcycle traffic are a deadly combination. Even if this project does move forward, not utilizing/optimizing the existing railroad infrastructure is, frankly, lazy planning. Work with the railroad - don't run a truck over canyon residents and cyclists because it's the easiest path.*

Comment Information	Comment	Comments and Responses
		Response #742-4: Denver Water hired an independent consultant to evaluate using the railroad to transport material to the site. The consultant found that using the railroad would not be feasible for the Project because of the technical, logistical, topographical and cost problems associated with unloading material at the existing railroad siding. Based on discussions with Union Pacific Railroad, the consultant determined that new infrastructure would need to be constructed to accommodate the rail cars and avoid conflicts with the coal train traffic on the mainline; handle unloading of the various materials into trucks, which would be needed to transport the material to the dam site; and avoid conflicts with traffic on Gross Dam Road. A new siding would be very difficult and expensive (approximately $20 million) to construct due to the constraints of the existing topography and would require a significant amount of material to be hauled to the siding by truck on SH 72. ***Comment #742-3*** *(ID 3228)**:*** *Poor Conservation Planning In And Around Gross Dam Reservoir: During construction, noise from the work will be significant at this altitude. The plan's claim that "at a distance greater than 50 ft. noise levels diminish rapidly" is dismissive and untrue. Noise travels further in thin air. Additionally, the plan calls for 30 acres of work area to be permanently left unrecovered and 20,000 trees to be removed. This demonstrates a complete disregard for the quality of life of residents and visitors.* **Response #742-3:** The noise levels described in the EIS are predicted at distances of less than 50 feet from the source and would be temporary and remote. It is true that noise would travel greater distances from a source of sound at higher elevations due to lack of ground absorption. Sound travels omni-directionally (i.e., does not travel

Comment Information	Comment	Comments and Responses
		upward or downward), which means that it dissipates outward in all directions the further away from its source it travels. As a general rule, when the radius or distance that a sound wave travels has doubled, the sound level is reduced by 6 dB. All Gross Reservoir construction and operation activity would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the EPA, as summarized in FEIS Table 5.14-1. It is important to remove the existing trees and other debris within the reservoir enlargement area. This process would avoid floating debris in the reservoir, which could damage intake valves, hydroelectric facilities, and pose a hazard to boaters and downstream facilities. Also, decaying vegetation associated with submersed trees would cause water quality problems. Post-construction, the upper portion of the quarry would remain visible above the enlarged reservoir's water surface. The quarry would appear as exposed bedrock in a benched slope formation, with a series of horizontal benches and/or cut slopes, and would not be reclaimed. The quarry site would not be revegetated because of exposed rock and lack of suitable soil for restoration efforts. An additional mitigation measure has been added to FEIS Section 5.7.7 to address reclamation of the quarry site. The proposed quarry site and any alternative quarry sites would be located on USFS and Denver Water land. Denver Water would work with the USFS to ensure appropriate revegetation of these sites based on site conditions. ***Comment #742-2*** *(ID 3227)**:*** *Arvada's Ticket to Development: With Arvada being among the first in line for this additional water, this plan is a license for additional poorly planned development of residential and commercial properties*

Comment Information	Comment	Comments and Responses
		in a predatory "grow fast or die" mentality that Arvada has sadly demonstrated for so many years. Long-term, this could very well lead to the green light of the ill-fated 470 western corridor project that would put a freeway right up against the pristine foothills backdrop. **Response #742-2:** The Corps analyzed demand in the Project area based on demographic projections from various Federal and local sources. The Corps also independently evaluated the demand projections stated in Denver Water's Integrated Resource Plan, which would help guide water management over the next 40 years. As stated in DEIS Section 4.14 and FEIS Section 5.16: "Several recent studies have suggested that there is no substantive causal relationship between population growth and the development of water, or vice versa. One such study is summarized as follows: The relationship between water and growth in the modern West is often misunderstood. Historically, it has been assumed that water development was a necessary precursor to growth and, similarly, that a lack of water development could act as a deterrent to growth. While these premises may have been true at one time, recent experience in Colorado and other western states shows both ideas are now unsupportable. To the contrary, many of the regions showing the highest rates of growth in the West – from Douglas County, Colorado to Las Vegas, Nevada – show the opposite trend; growth is actually highest in some of the driest regions. Similarly the veto of the proposed Two Forks Dam on the East Slope by the EPA in 1990 certainly did not deter growth in the Denver Metropolitan area. Examples also suggest that an abundance of water is often insufficient to stimulate growth. The experience of Pueblo is illustrative (Nichols et al. 2001).

Comment Information	Comment	Comments and Responses
		Numerous other studies analyzing the relationship between growth and water reach similar conclusions, such as Western Land Use Trends and Policy: Implications for Water Resources (Riebsame 1997); Atlas of the New West (Center of the American West 1997); and Water in the West: The Challenge for the Next Century (Western Water Policy Review Advisory Commission 1998). This growth issue was evaluated and dismissed by the Corps during the NEPA analysis of the Two Forks Dam and Reservoir Project in 1988 – "As a result of including the No Federal Action scenario, the Corps was able to answer a major question then being asked – would growth continue in the Denver Metropolitan area without Federal approval of a major water supply project. The evaluation of the No Federal Action scenario determined that growth would occur regardless of Federal action." (Corps 1998, FEIS page 3-3 Metropolitan Denver Water Supply EIS, Volume 1.)" Independent studies, such as the State-wide Water Supply Initiative, commissioned by the State of Colorado anticipate high growth rates for Colorado, including the East Slope. These high growth rates are likely to occur regardless of what water projects are constructed. ***Comment #742-1*** *(ID 3226)**:*** *While I'm sure a lot of work and planning has been done to-date for this project and for Denver's water needs in general, the spirit of this planning seems to be more about raiding this state's natural resources to grow grass in a high-desert city than about thoughtful, holistic planning. This project may have looked good on paper in the 1950s when we either didn't know better or didn't care about environmental impacts. Today, we have the benefit of knowing and therefore the burden of doing it right.*

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		Response #742-1: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #744 Jerry (Gerald) Nissen [redacted]	From: Jerry Nissen [mailto:[redacted] Sent: Tuesday, March 16, 2010 3:25 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Firming comments Dear Mr Franklin, Please find my comments in the enclosed pdf file. Jerry Nissen [redacted] - Fraser River Letter 031510.pdf	***Comment #744-6*** *(ID 3361)**:*** *I have several comments I would like to add to the record. First, I believe that Denver's long-term solution to their perceived water needs lies in conservation rather than endlessly acquiring more and more water. It is heartbreaking that I can travel from Grand County to Denver in the same day and see the Fraser River with almost no water flowing in it and then see Denver's golf courses, green Kentucky bluegrass, and water running down the streets. To repeat an often used phrase, "bluegrass isn't green". The reality that some Front Range subdivisions require bluegrass is absurd. Water conservation and xeriscaping simply is not practiced in a significant fashion in Denver. After years of promoting xeriscaping, nearly two-thirds of Denver's water is still used for landscaping. Voluntary conservation measures simply haven't worked. Denver is a semi-arid region, and landscaping such as bluegrass simply is inappropriate there. My personal feeling is that bluegrass in this climate is as immoral a choice as dumping toxic waste into a river. Why does a community in an area as dry as Denver have some of the nation's lowest water rates, even lower than those in Minneapolis which is located in the "Land of 10,000 lakes"? There is no real understanding on the Front Range that water is a resource that is both precious and finite. Even the Denver Post, in a November 15, 2009 editorial, argued against raising water rates. Perhaps the only way to encourage serious conservation is to significantly raise Denver water rates now. If the price of maintaining bluegrass goes up, Denver's citizens may decide bluegrass is not a wise choice. Here in Grand County, we have no choice. The true costs of water include the cost to mitigate the impact of its removal and must be passed on to the consumers in Denver.*

Comment Information	Comment	Comments and Responses
	Attachments: Jerry Nissen [redacted] March 15, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Re: Moffat EIS Dear Mr. Franklin, I have several comments I would like to add to the record. First, I believe that Denver's long-term solution to their perceived water needs lies in conservation rather than endlessly acquiring more and more water. It is heartbreaking that I can travel from Grand County to Denver in the same day and see the Fraser River with almost no water flowing in it and then see Denver's golf courses, green Kentucky bluegrass, and water running down the streets. To repeat an often used phrase, "bluegrass isn't green". The reality that some Front Range subdivisions require bluegrass is absurd. Water conservation and xeriscaping simply is not practiced in a significant fashion in Denver. After years of promoting xeriscaping, nearly two-thirds of Denver's water is still used for landscaping. Voluntary conservation measures simply haven't worked. Denver is a semi-arid region, and landscaping such as bluegrass simply is inappropriate there. My personal feeling is that bluegrass in this climate is as immoral a choice as dumping toxic waste into a river. Why does a community in an area as dry as Denver have some of the nation's lowest water rates, even lower than those in Minneapolis which is located in the "Land of 10,000 lakes"? There is no real understanding on the Front Range that water is a resource that is both precious and finite. Even the *Denver Post*, in a November 15, 2009 editorial, argued against raising water rates. Perhaps the only way to encourage serious conservation is to significantly raise Denver water rates now. If the price of maintaining bluegrass goes up, Denver's citizens may decide bluegrass is not a wise choice. Here in Grand County, we have no choice. The true costs of water include the cost to mitigate the impact of its removal and must be passed on to the consumers in Denver. Denver's leaders had the foresight to acquire water rights from the mountains long before there was any thought of protecting Grand County's environment or planting thousands of acres of bluegrass on the Front Range. Similarly, miners acquired mineral rights before any awareness of the environmental impact of mining. Our society no longer tolerates mining minerals without thoroughly addressing all the negative consequences of that mining. The mining of the West Slope's water should be no different. All the consequences must be thoroughly mitigated or mining of water or minerals *must* not be allowed. Another issue is the provision which allows Denver to take 100% of the water from the Fraser River simply because they impose water restrictions in Denver. Reducing the number of days per week Denver residents can water their bluegrass does not give them the right to dry up our rivers. This is completely unacceptable to any reasonable person, regardless of where they live.	*Denver's leaders had the foresight to acquire water rights from the mountains long before there was any thought of protecting Grand County's environment or planting thousands of acres of bluegrass on the Front Range. Similarly, miners acquired mineral rights before any awareness of the environmental impact of mining. Our society no longer tolerates mining minerals without thoroughly addressing all the negative consequences of that mining. The mining of the West Slope's water should be no different. All the consequences must be thoroughly mitigated or mining of water or minerals must not be allowed.* **Response #744-6:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. All Denver Water customers are metered. Denver Water implements a Block Census Rate Structure

Comment Information	Comment	Comments and Responses
	Continued dewatering of the Fraser River Valley has another important consequence. By reducing the Fraser's flow, all effluent from waste water treatment and other undesirable products (such as the toxic waste flowing out of the Moffat Railroad Tunnel) is concentrated. In order to dilute undesirable components to tolerable levels there must be adequate flow. If that flow is reduced by Denver, there is no provision to compensate Grand County for the increase in cost associated with further purifying effluent from our waste water treatment plants. Next, one of many concerns I have is that the Stream Flow Management Plan developed by Grand County is not being seriously considered by Denver Water. For example, Denver's proposals are based on monthly average stream temperatures during summer rather than the (available) daily temperatures. If all the fish are killed by increased temperatures in one day it simply doesn't matter if the average for that month is within the tolerance for the fish. I'm not a fisherman, but I simply see the fish as an indicator species for the health of the entire ecosystem…the proverbial canary in the coal mine. Denver needs to remember that the mountains (including healthy streams) are an amenity for its citizens and visitors from other regions, not just for Coloradans living in the mountains. Denver's residents live in Denver and play in the mountains. I believe if Denver residents were given a choice between being able to ski, fish and simply enjoy the beauty of the natural mountain environment or keep their bluegrass lawns they would willingly give up most lawns. Ultimately that is the choice. The EIS also ignores the fact that the rivers in Grand County are part of a *system*. There is no consideration of the cumulative effects of all the various proposals to extract water from Grand County and other mountain areas. Proposals that address a single water extraction proposal as if it happened in a vacuum and had no relationship to other proposals are short sighted and irresponsible. Which proposal will be permitted to be the one which becomes the proverbial "last straw" which dooms Grand County and other mountain areas to a waterless future? Finally, and perhaps most importantly, the proposals make no provision for ongoing monitoring of the impact of the water extraction from Grand County, or includes any requirement to change the amount of water extraction even if the impact to Grand County is devastating. This is a result of the foolish assumption that the EIS is perfect and all possible outcomes have been carefully addressed and completely mitigated. The law of unintended consequences will certainly reveal many unexpected results from the water removal. Long-term monitoring and mitigation of unexpected consequences not provided for in the proposals must be added to the requirements. In short, mandatory conservation is a better choice than additional transfers of water from the already endangered rivers of western Colorado. As a nation, we have resisted selling our national parks to the highest bidder. We have decided that it is better for all of us to keep the national parks in their (mostly) natural state. For the sake of future generations, we must do the same with our water. The Army Corps of Engineers charter includes *protecting* our waters, not just harnessing and transporting them. Sincerely, *Jerry Nissen* Jerry (Gerald) Nissen Cc: Larry Svobda-EPA, Mark Udall, Michael Bennet, Bill Ritter, Jared Polis, Colorado Division of Wildlife	(i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed -- a fixed, per account service charge. ***Comment #744-5*** *(ID 3360)**:*** *Another issue is the provision which allows Denver to take 100% of the water from the Fraser River simply because they impose water restrictions in Denver. Reducing the number of days per week Denver residents can water their bluegrass does not give them the right to dry up our rivers. This is completely unacceptable to any reasonable person, regardless of where they live. Continued dewatering of the Fraser River Valley has another important consequence. By reducing the Fraser's flow, all effluent from waste water treatment and other undesirable products (such as the toxic waste flowing out of the Moffat Railroad Tunnel) is concentrated. In order to dilute undesirable components to tolerable levels there must be adequate flow. If that flow is reduced by Denver, there is no provision to compensate Grand County for the increase in cost associated with further purifying effluent from our waste water treatment plants.* **Response #744-5:** Denver Water's withdrawals from the Fraser River Basin during droughts are typically a function of what is physically and legally available at their diversion points. Customer demands during droughts are influenced by Denver Waters Drought Response Plan which was adopted to provide a framework for addressing droughts. Three levels of drought severity have been defined, based on the predicted

Comment Information	Comment	Comments and Responses
		percentage of storage in Denver Water's reservoirs at the end of the run-off season on July 1. The basic response to a Stage 1 drought is voluntary measures; to a Stage 2 drought, mandatory restrictions; and to a Stage 3 drought, prohibitions on lawn watering. To adopt a particular drought response, the Denver Water declares a drought level and adopts an effective date for applicable restrictions. Because Stage 2 and Stage 3 drought restrictions are mandatory, they are incorporated into the Operating Rules where they become enforceable upon a drought declaration pursuant to the Denver Charter, the Denver Revised Municipal Code and provisions in Denver Water's water service agreements and water leases. Stage 1 and 2 drought restrictions were imposed during the drought from 2002 through 2005. Denver Water's ability to reduce bypass flows in accordance with the severity of restrictions it places on its customers is provided under the 1970 Bureau of Sport Fisheries Stipulation and the 1992 Clinton Agreement. Diversions under the proposed Moffat Project would not increase during dry periods. There would be no additional diversions in dry years because Denver Water would divert the maximum amount physically and legally available under their existing water rights without additional storage in their system. Dry years would be most critical with respect to impacts on wastewater treatment providers and dilution flows. The greatest impact to a wastewater treatment provider would be a change in chronic and acute low flows. The water quality evaluation considered changes in the percentage of wastewater treatment plant (WWTP) discharges as a percentage of the total stream flow and changes in water quality due to changes in flow percentages contributed by each tributary. Impacts with respect to wastewater influence in the Fraser River Basin were determined to be negligible. Additional analysis of nutrient loading

Comment Information	Comment	Comments and Responses
		in the Fraser River Basin and potential impacts on dilution flows is included in FEIS Sections 4.6.2 and 5.2. ***Comment #744-4*** *(ID 3359)**:*** *Next, one of many concerns I have is that the Stream Flow Management Plan developed by Grand County is not being seriously considered by Denver Water. For example, Denver's proposals are based on monthly average stream temperatures during summer rather than the (available) daily temperatures. If all the fish are killed by increased temperatures in one day it simply doesn't matter if the average for that month is within the tolerance for the fish. I'm not a fisherman, but I simply see the fish as an indicator species for the health of the entire ecosystem…the proverbial canary in the coal mine.* **Response #744-4:** A combination of daily and monthly hydrologic data was used for the evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources (fish and invertebrates), stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations).

Comment Information	Comment	Comments and Responses
		Most of the additional diversions with the Project would occur in May, June, and July of wet and average years, as discussed in FEIS Sections 4.6.1 and 5.1. There would be no additional diversions in dry years. Therefore, the additional diversions usually would not occur during the late summer period of low flows and highest water temperatures. A revised discussion of low flows and high water temperatures in the Fraser River was added to FEIS Sections 3.11, 4.6.11, and 5.11. The DEIS and the FEIS both have discussions on flow changes and diversions with the Project and the potential impacts to fish habitat and fish populations. ***Comment #744-3*** *(ID 3358)**:*** *Denver needs to remember that the mountains (including healthy streams) are an amenity for its citizens and visitors from other regions, not just for Coloradans living in the mountains. Denver's residents live in Denver and play in the mountains. I believe if Denver residents were given a choice between being able to ski, fish and simply enjoy the beauty of the natural mountain environment or keep their bluegrass lawns they would willingly give up most lawns. Ultimately that is the choice.* **Response #744-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #744-2*** *(ID 3357)**:*** *The EIS also ignores the fact that the rivers in Grand County are part of a system. There is no consideration of the cumulative effects of all the various proposals to extract water from Grand County and other mountain areas. Proposals that address a single water extraction proposal as if it happened in a vacuum and had no relationship to other proposals are short sighted and irresponsible. Which proposal*

Comment Information	Comment	Comments and Responses
		will be permitted to be the one which becomes the proverbial "last straw" which dooms Grand County and other mountain areas to a waterless future? **Response #744-2:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and RFFAs. The Section 404 regulations state that "cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1]). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of

Comment Information	Comment	Comments and Responses
		the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions. ***Comment #744-1*** *(ID 3356)**:*** *Finally, and perhaps most importantly, the proposals make no provision for ongoing monitoring of the impact of the water extraction from Grand County, or includes any requirement to change the amount of water extraction even if the impact to Grand County is devastating. This is a result of the foolish assumption that the EIS is perfect and all possible outcomes have been carefully addressed and completely mitigated. The law of unintended consequences will certainly reveal many unexpected results from the water removal. Long-term monitoring and mitigation of unexpected consequences not provided for in the proposals must be added to the requirements.* **Response #744-1:** Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. If issued, a Section 404 Permit would include a statement that the Corps can re-evaluate and re-condition the Section 404 Permit as conditions warrant. ***Comment #744-8*** *(ID 3364)**:*** *In short, mandatory conservation is a better choice than additional transfers of water from the already endangered rivers of western Colorado. As a nation, we have resisted selling our national parks to the highest bidder. We have decided that it is better for all of us to keep the national parks in their (mostly) natural state. For the sake of future generations, we must do the same with our water.*

Comment Information	Comment	Comments and Responses
		Response #744-8: Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. ***Comment #744-7*** *(ID 3363)**:*** *The Army Corps of Engineers charter includes protecting our waters, not just harnessing and transporting them.* **Response #744-7:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #753 Michael Delaney, President Boulder County Nature Association	From: J Michael Delaney [mailto:[redacted]] Sent: Tuesday, March 16, 2010 7:08 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat firming project Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Manager Franklin: I am adamantly opposed to the Moffat Firming Project. Others have enumerated multiple reasons for opposition: the lack of evidence that Denver Water needs this much for future use coupled with the lack of strict conservation requirements for Denver water users; the lack of requirement in the EIS for a spring flushing; the huge expansion of Gross reservoir that will inundate a significant amount of wildlife habitat; and perhaps most damning, the fact that the proposal ignores all of the current withdrawal of water from the Fraser and the consequent danger this project poses for the entire acquatic ecosystem; etc. As president of the Boulder County Nature Association, a lifelong resident of Colorado, and one who enjoys angling and the outdoors in general, I urge the Army Corps of Engineers to reject outright the proposal and protect the Fraser and upper Colorado rivers. Thank you for your consideration. Sincerely, Michael Delaney [redacted]	***Comment #753-1*** *(ID 3252)**:*** *I am adamantly opposed to the Moffat Firming Project. Others have enumerated multiple reasons for opposition: the lack of evidence that Denver Water needs this much for future use coupled with the lack of strict conservation requirements for Denver water users; the lack of requirement in the EIS for a spring flushing; the huge expansion of Gross reservoir that will inundate a significant amount of wildlife habitat; and perhaps most damning, the fact that the proposal ignores all of the current withdrawal of water from the Fraser and the consequent danger this project poses for the entire aquatic ecosystem; etc. As president of the Boulder County Nature Association, a lifelong resident of Colorado, and one who enjoys angling and the outdoors in general, I urge the Army Corps of Engineers to reject outright the proposal and protect the Fraser and upper Colorado rivers.* **Response #753-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #759 Randy Fricke [redacted] New Castle, CO	From: Randy Fricke [mailto:[redacted] Sent: Tuesday, March 16, 2010 8:32 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Water Tunnel Dear Water & Government Officials: I am opposed to the Moffat Water Tunnel Project. Let's not increase the Gross Resvoir size for more water going to the Denver area. Enough is enough. Where is the conservation practices and policies? Denver will keep asking and asking for more water. There is a huge water shortage already in Colorado. Denver needs to curb its consumption of water. Let's protect the water where it is right now. If the oil and gas companies are not sucking this state dry of water, Denver is!!!!! Read my report: "A Water Crisis In Colorado", December 2009. In other words, no more water transfers of any kind in Colorado. Randy Fricke [redacted] New Castle, CO	***Comment #759-1*** *(ID 3256)**:*** *I am opposed to the Moffat Water Tunnel Project. Let's not increase the Gross Reservoir size for more water going to the Denver area. Enough is enough. Where is the conservation practices and policies? Denver will keep asking and asking for more water. There is a huge water shortage already in Colorado. Denver needs to curb its consumption of water. Let's protect the water where it is right now. If the oil and gas companies are not sucking this state dry of water, Denver is!!!!! Read my report: "A Water Crisis In Colorado", December 2009. In other words, no more water transfers of any kind in Colorado.* **Response #759-1:** The opposition to the Moffat Project is noted.

Comment Information	Comment	Comments and Responses
Comment #772 Bob Hamel, Chairman Colorado River Outfitters Association P.O. Box 337 Cotopaxi, CO	From: Bob Hamel [mailto:bob@arkansasrivertours.com] Sent: Wednesday, March 17, 2010 9:40 AM To: MOFFAT.EIS@usace.army.mil; dbwc@denverwater.org; svoboda.larry@epa.gov; milehighmayor@denvergov.org Subject: DEIS - Moffat Firming Project Comments Please review the attached comments from the Colorado River Outfitters Association. Thanks. Bob Hamel , Chairman Colorado River Outfitters Association Arkansas River Tours PO Box 337 Cotopaxi,CO 719-942-4362 800-321-4352 www.arkansasrivertours.com - CROA comments.doc	***Comment #772-7*** *(ID 4548)**:*** *One of the most important factors that the DEIS does not discuss is mitigation on the amount of water that needs to be left in western slope rivers. Without any mitigation on the Blue, Colorado and other affected rivers, these rivers can and will die, at the discretion of Denver Water. We think that the mitigation should be more in the summer months to protect not only the local economies of the affected areas but the natural flora, fauna and wildlife.* **Response #772-7:** Evaluation of flushing flow requirements, minimum instream flow rights, baseline flows and bypass flows, are included in the FEIS. The Corps evaluated other RFFAs including the CRCA, LBD Cooperative Effort, and the Fish and Wildlife Enhancement Plan (see FEIS Appendix M). These actions may address the commenter's concerns related to flows. ***Comment #772-6*** *(ID 4547)**:*** *There is no mention or evaluation of any sort of the pine beetle epidemic in Summit and Grand Counties in the DEIS. Evaluation of what the loss of our forest canopy will do in a dramatic manner to our water shed should be researched and presented in the EIS.* **Response #772-6:** The Moffat Project does not influence or impact the pine beetle epidemic. Impacts from the pine beetle on sediment supply are relatively unknown. The effects as a result of pine beetle infestation alone would not impact channel morphology; however, forest loss and vegetation community changes from the beetle could potentially cause a succession of similar impacts, such as decreased sediment supply as dying forests decrease overhead shading resulting in increased groundcover and mid-story vegetation, therefore decreasing erosion potential. Pine beetle could also result in increased sediment supply if a large fire were to occur, fueled by the killed timber increasing erosion potential.

Comment Information	Comment	Comments and Responses
	Attachments: COLORADO RIVER OUTFITTERS ASSOCIATION March 7, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, Co. 80128 Comments Generated by The Colorado River Outfitters Association RE: Moffat Firming Project **General Comments:** ▪ One of the most important factors that the DEIS does not discuss is mitigation on the amount of water that needs to be left in western slope rivers. Without any mitigation on the Blue, Colorado and other affected rivers, these rivers can and will die, at the discretion of Denver Water. We think that the mitigation should be more in the summer months to protect not only the local economies of the affected areas but the natural flora, fauna and wildlife. ▪ There is no mention or evaluation of any sort of the pine beetle epidemic in Summit and Grand Counties in the DEIS. Evaluation of what the loss of our forest canopy will do in a dramatic manner to our water shed should be researched and presented in the EIS. ▪ The DEIS includes a segment regarding flow impacts in terms of monthly and annual average flows. This document should and needs to address the daily flow rates – during wet, average and dry years. Having this data is imperative to both recreational and commercial boating. ▪ The DEIS does not take into account other aggregation or combinations of other projects occurring at the same time as the Moffat Project. The DEIS should give scenarios in the statement. A combination could and will prove to be a detrimental hydrological scenario, that has not been investigated at this time. **Blue River:** ▪ In 2009 commercial boating generated an economic impact of $901,508 in the local area surrounding the Blue River, with $352,152 in direct expenditures. (Colorado River Outfitters Association Commercial River Use In Colorado 1988-2009). In a normal-wet scenario, Summit County can anticipate an economic impact of nearly $1 million in the future since the DEIS concludes there will be negligible recreational impacts. The DEIS does not give the appropriate data to support this. ▪ Section 4-13 – Table 4.13.7. The first column in this table compares available recreation days for minimum flows between 300 and 600cfs. The Dillon Ranger District in cooperation with the river outfitters who commercially run the Blue River call for a minimum of 500 cfs for this stretch to be considered "floatable". The analysis would need to be adjusted to reflect this 500 cfs minimum. ▪ The DEIS concludes that there will be no significant recreational impacts to the Blue River. However the DEIS is claiming a 2% change in water flows over a 12 month period	In the event of a large scale fire, sediment supply would likely significantly increase for a finite amount of time. Sediment deposition from increased erosion would be expected to occur in streams during this time. As groundcover and the forest regenerates, sediment supply would be reduced and likely return to levels near Current Conditions. As revegetation occurs, sediment supply would decrease and at some point during the revegetation process sediment supply would once again drop below sediment transport capacity. Over time, sediment supply would again be orders of magnitude less than sediment transport capacity. When sediment transport capacity once again exceeds sediment supply, sediment that had been deposited as a result of the fire would begin to erode and transport downstream. The system would continue along this erosional process until it returned to its equilibrium. Results of the channel morphology analysis show that with or without the proposed Project sediment transport capacity greatly exceeds supply in all locations evaluated. However, the proposed Project would result in decreased sediment transport capacity. Following a major fire it can therefore be predicted that either with or without the Project, the river system would eventually return to the same dynamic state. The analysis that was completed for sediment transport indicated that the sediment transport capacity greatly exceeds sediment supply for all modeled locations and impacts are not expected as a result of the proposed Project. DEIS Section 4.1 (FEIS Section 5.1) under the subheading Sediment Supply explains how pine beetle could impact the river systems. Additional water quality analysis was also performed on the Fraser River and Three Lakes related to nutrients (FEIS Sections 4.6.2 and 5.2). Information about the relationship of the Project and mountain pine beetle

Comment Information	Comment	Comments and Responses
	(under the Action Alternative). This statistic is not accurately portrayed when the DEIS also states that water would only be diverted during runoff months. Because the Blue River shows peak flows over the months of May and June historically, this would equate to a 12% average decrease over the two months where water flows are actually decreased. In addition to the decrease in flows, the Action Alternative states that a 3-feet drop in reservoir levels would be present. The Blue River flows rely heavily on overflow (The Glory Hole) from Dillon Reservoir, thus, an average 3-feet drop in the lake level would again significantly impact flows on the Blue. This will significantly alter boating flows thus affecting recreational and commercial boating on the Blue River, and needs to be evaluated closely in the EIS. The DEIS is looking at one or the other scenario, not both at the same time, and should do so. ▪ The Blue River is a smaller drainage, thus, even a small change will have a much larger effect on the river itself, not only to the boating community but to the aquatic aspects of the river as well. ▪ We would like to request that a thorough analysis of the impacts to the Blue River basin be included in the EIS, including a monthly and daily draw on flows. **Colorado River:** ▪ In 2009 commercial boating generated an economic impact of $8,171,650 in the local area surrounding the Upper Colorado River (Kremmling Area), with $3,192,051 in direct expenditures. Glenwood generated $15,391,010 in economic impact and $6,012,113 in direct expenditures. (Colorado River Outfitters Association Commercial River Use In Colorado 1988-2009). ▪ The Moffat DEIS does not clearly disclose the affects on historic, current and future flows in the Colorado River. ▪ The DEIS should clearly disclose daily flow impacts as it relates to commercial and recreational boating. Although the DEIS states that the flow decrease will be insignificant for a portion of some months and above average for other portions of the month, clarification on daily flows need to be made. Without this data, river users may have 2 weeks in a month where we see abnormally high water, and unboatable flows the other 2 weeks of the month, making it impossible to run businesses, and take guests from around the world down the Colorado River. ▪ Without any mitigation on the Colorado River, flows could potentially drop as much as 75%. Stated in the Executive summary ES-23, Water Quality; "Stream temperature changes on the Colorado River would be negligible". In 2002, low flows on the Colorado River led to a rise in water temperature and nearly destroyed the fishery. Low flows also severely impacted commercial and recreational boating. Mitigation needs to be addressed and implemented in the EIS. Sincerely, Bob Hamel, Chairman Colorado River Outfitters Assoc.	has been added to the vegetation analysis in the FEIS (Sections 4.6.7.1 and 5.7.1.1) In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Refer to Appendix G for a description of the Forests to Faucets Partnership and other cooperative efforts. ***Comment #772-5*** *(ID 4546)**:*** *The DEIS includes a segment regarding flow impacts in terms of monthly and annual average flows. This document should and needs to address the daily flow rates – during wet, average and dry years. Having this data is imperative to both recreational and commercial boating.* **Response #772-5:** The resource evaluations did not rely solely on averages. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were

Comment Information	Comment	Comments and Responses
		used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). ***Comment #772-4*** *(ID 4545)**:*** *The DEIS does not take into account other aggregation or combinations of other projects occurring at the same time as the Moffat Project. The DEIS should give scenarios in the statement. A combination could and will prove to be a detrimental hydrological scenario, that has not been investigated at this time.* **Response #772-4:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the

Comment Information	Comment	Comments and Responses
		Proposed Action and its alternatives when added to the aggregate effects of past, present, and RFFAs. The Section 404 regulations state that “cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems” (40 CFR 230.11[g][1]). The cumulative effects analysis for the Moffat Project evaluated past and present actions that continue to influence existing environmental conditions. The cumulative effects analysis also included reasonably foreseeable actions that, when combined with one of the Project alternatives, result in a cumulative effect on the environment. For purposes of organization of the EIS cumulative effects were evaluated in two timeframes: (1) past or ongoing present actions and (2) future actions. Each of these two timeframes includes a discussion of water-based or land-based actions. ***Comment #772-3*** *(ID 4544)**:*** *Blue River: In 2009 commercial boating generated an economic impact of $901,508 in the local area surrounding the Blue River, with $352,152 in direct expenditures. (Colorado River Outfitters Association Commercial River Use In Colorado 1988-2009). In a normal-wet scenario, Summit County can anticipate an economic impact of nearly $1 million in the future since the DEIS concludes there will be negligible recreational impacts. The DEIS does not give the appropriate data to support this. Section 4-13 – Table 4.13.7. The first column in this table compares available recreation days for minimum flows between*

Comment Information	Comment	Comments and Responses
		300 and 600 cfs. The Dillon Ranger District in cooperation with the river outfitters who commercially run the Blue River call for a minimum of 500 cfs for this stretch to be considered "floatable". The analysis would need to be adjusted to reflect this 500 cfs minimum. The DEIS concludes that there will be no significant recreational impacts to the Blue River. However the DEIS is claiming a 2% change in water flows over a 12 month period (under the Action Alternative). This statistic is not accurately portrayed when the DEIS also states that water would only be diverted during runoff months. Because the Blue River shows peak flows over the months of May and June historically, this would equate to a 12% average decrease over the two months where water flows are actually decreased. In addition to the decrease in flows, the Action Alternative states that a 3-feet drop in reservoir levels would be present. The Blue River flows rely heavily on overflow (The Glory Hole) from Dillon Reservoir, thus, an average 3-feet drop in the lake level would again significantly impact flows on the Blue. This will significantly alter boating flows thus affecting recreational and commercial boating on the Blue River, and needs to be evaluated closely in the EIS. The DEIS is looking at one or the other scenario, not both at the same time, and should do so. The Blue River is a smaller drainage, thus, even a small change will have a much larger effect on the river itself, not only to the boating community but to the aquatic aspects of the river as well. We would like to request that a thorough analysis of the impacts to the Blue River basin be included in the EIS, including a monthly and daily draw on flows. **Response #772-3:** The most current information available at the time of the DEIS analysis was used in identifying minimum rafting flows. In the DEIS, the days for minimum and optimum flows were determined from several sources including the Upper Colorado River Basin Study

Comment Information	Comment	Comments and Responses
		(UPCO), American Whitewater, and personal interviews with commercial raft guides and private kayakers. New information in the GCSMP indicates a minimum flow of 400 cfs for the section between Dillon Reservoir and Green Mountain Reservoir. As such, the Corps' analysis in FEIS Section 5.15.1.2 has been updated to reflect this range of flows. An analysis on the section of the Blue River below Green Mountain Reservoir to the confluence with the Colorado River has been included in FEIS Section 5.15.1.2. ***Comment #772-2*** *(ID 4543)**:*** *Colorado River: In 2009 commercial boating generated an economic impact of $8,171,650 in the local area surrounding the Upper Colorado River (Kremmling Area), with $3,192,051 in direct expenditures. Glenwood generated $15,391,010 in economic impact and $6,012,113 in direct expenditures. (Colorado River Outfitters Association Commercial River Use In Colorado 1988-2009). The Moffat DEIS does not clearly disclose the affects on historic, current and future flows in the Colorado River. The DEIS should clearly disclose daily flow impacts as it relates to commercial and recreational boating. Although the DEIS states that the flow decrease will be insignificant for a portion of some months and above average for other portions of the month, clarification on daily flows need to be made. Without this data, river users may have 2 weeks in a month where we see abnormally high water, and unboatable flows the other 2 weeks of the month, making it impossible to run businesses, and take guests from around the world down the Colorado River.* **Response #772-2:** The analysis examined daily flows over the course of the full 45 years of record. This same analysis was repeated in the FEIS but has been revised in FEIS

Comment Information	Comment	Comments and Responses
		Section 5.15.1.2 to compare Current Conditions (2006) to Full Use with a Project Alternative (2032) using daily flows over the full 45 years of record. ***Comment #772-1*** *(ID 4542)**:*** *Without any mitigation on the Colorado River, flows could potentially drop as much as 75%. Stated in the Executive summary ES-23, Water Quality; "Stream temperature changes on the Colorado River would be negligible". In 2002, low flows on the Colorado River led to a rise in water temperature and nearly destroyed the fishery. Low flows also severely impacted commercial and recreational boating. Mitigation needs to be addressed and implemented in the EIS.* **Response #772-1:** Additional water quality analyses have been performed on the Fraser River and the Three Lakes area, including various temperature studies. Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. The proposed Moffat Project would not divert additional water in dry years (like 2002). As described in FEIS Section 5.1, the majority of additional water would be diverted during the months of May, June, and July during run-off – not during low flow periods. Denver Water would not increase its diversions during the fall and winter months and existing bypass flow requirements would not change.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #775 Doug Laraby, [redacted]	From: Doug Laraby ([redacted]) [mailto[redacted] Sent: Wednesday, March 17, 2010 5:27 PM To: MOFFAT.EIS@usace.army.mil Subject: Attached are comments from [redacted] on the Moffat Collection System EIS. Thanks, Doug Laraby [redacted] Confidentiality Warning: This message and any attachments are intended only for the use of the intended recipient(s), are confidential, and may be privileged. If you are not the intended recipient, you are hereby notified that any review, retransmission, conversion to hard copy, copying, circulation or other use of this message and any attachments is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by return e-mail, and delete this message and any attachments from your system. Thank you. - moffat.eis-[redacted]omments 031710.pdf	***Comment #775-13*** *(ID 4588)**:*** *Attached are comments from [redacted] on the Moffat Collection System EIS. ATTACHMENT [redacted] submits these comments on the U.S. Army Corps of Engineer's (ACOE) Moffat Collection System Project (Project) Draft Environmental Impact Statement dated October 30, 2009 (DEIS). [redacted] believes the DEIS is inadequate under the standards established by that National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) for several reasons. In addition to [redacted] submitting these comments independently, [redacted] would like the ACOE to know that [redacted] supports the comments of the Clinton Ditch and Reservoir Company, Grand County, Town of Winter Park, Winter Park Water & Sanitation District and Colorado River Water Conservation District.* **Response #775-13:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #775-12*** *(ID 4587)**:*** *[redacted] operates [redacted] a year round recreational facility located in Grand County, Colorado. The Resort serves over 1,000,000 guests each year and on peak weekends during the winter and summer, the Resort can comfortably accommodate up to 15,000 guests. The Resort is a primary component to Grand County's recreation and tourism based economy. The Resort is located in the headwaters of the Fraser River and a portion of Denver's Moffat Collection System traverses the ski area at the Resort. The Resort also depends upon on mountain wells for its domestic water and pumps water from the Moffat Collection System, by agreement with Denver Water, for the Resort's snowmaking water supplies.*

Comment Information	Comment	Comments and Responses
	Attachments: [redacted] March 17, 2010 Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Moffat.eis@usace.army.mil ***RE:*** [redacted] ***comments on the U.S. Army Corps of Engineer's Moffat Collection System Project Draft Environmental Impact Statement dated October 30, 2009*** Dear Mr. Franklin: [redacted] submits these comments on the U.S. Army Corps of Engineer's (ACOE) Moffat Collection System Project (Project) Draft Environmental Impact Statement dated October 30, 2009 (DEIS). IWPOC believes the DEIS is inadequate under the standards established by that National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) for several reasons. In addition to [redacted] submitting these comments independently, [redacted] would like the ACOE to know that [redacted] supports the comments of the Clinton Ditch and Reservoir Company, Grand County, Town of Winter Park, Winter Park Water & Sanitation District and Colorado River Water Conservation District. [redacted] operates [redacted] a year round recreational facility located in Grand County, Colorado. The Resort serves over 1,000,000 guests each year and on peak weekends during the winter and summer, the Resort can comfortably accommodate up to 15,000 guests. The Resort is a primary component to Grand County's recreation and tourism based economy. The Resort is located in the headwaters of the Fraser River and a portion of Denver's Moffat Collection System traverses the ski area at the Resort. The Resort also depends upon on mountain wells for its domestic water and pumps water from the Moffat Collection System, by agreement with Denver Water, for the Resort's snowmaking water supplies. More specifically, the Resort is located on a short reach of the Fraser River between the Moffat Collection System Fraser River Diversion and USGS Gage 09024000 Fraser River at Winter Park Gage. This small stream reach in the headwaters of the Fraser I s extremely important to the economic viability of this part of Grand County and [redacted] [redacted]	**Response #775-12:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #775-11*** *(ID 4586)**:*** *More specifically, the Resort is located on a short reach of the Fraser River between the Moffat Collection System Fraser River Diversion and USGS Gage 09024000 Fraser River at Winter Park Gage. This small stream reach in the headwaters of the Fraser I s extremely important to the economic viability of this part of Grand County and the ski industry in the State of Colorado. Stream flow conditions in this reach should be given a very high priority and yet the DEIS fails to examine the impacts of the Project on this specific stream reach. The DEIS is inadequate because did not look at the relative importance of individual stream reaches and the impacts the Project will have on such individual stream reaches. Therefore,* [redacted] *requests that the ACOE reevaluate environmental and recreational attributes and prioritize for each stream reach impacts by the Project.* **Response #775-11:** The DEIS evaluated flows at the upstream and downstream ends of the reach between Denver Water's Fraser River diversion and the USGS Fraser River at Winter Park gage (see the surface water section of DEIS Chapter 4 and Tables H-3.2 and H-3.6). PACSM includes additional nodes in the stream reach referenced in the comment including Node 2130- Winter Park Recreation and Water and Sanitation District and Node 2145- Winter Park WWTP. Small tributaries to the Fraser River within this reach are also modeled in PACSM including Node 2160-Jim Creek at Denver Water's diversion, Node 2540-Cub and Buck Creeks at Denver Water's diversions, and 2380-Cooper Creek (this node

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 03/17/2010 Page 2 the ski industry in the State of Colorado. Stream flow conditions in this reach should be given a very high priority and yet the DEIS fails to examine the impacts of the Project on this specific stream reach. The DEIS is inadequate because did not look at the relative importance of individual stream reaches and the impacts the Project will have on such individual stream reaches. Therefore, [redacted] requests that the ACOE reevaluate environmental and recreational attributes and prioritize for each stream reach impacts by the Project. Further, the Fraser River is the sole water source for the Winter Park Water and Sanitation District (WPW&SD) which provides domestic and some commercial water to the Resort. The Fraser River is an already severely compromised resource. The cumulative impacts analysis is flawed because it fails to examine existing, present conditions which taken together with a new transmountain diversion, essentially will dry up the river. Alternatives that are reasonable and feasible from a practical and economic standpoint must be considered in the range of alternatives presented in a DEIS. Before spending hundred of millions of dollars and causing significant irreversible environmental and other impacts, why would Denver not implement a comprehensive re-use system that uses the water from previous transmountain diversions to extinction as an alternative for the Project. A substantial re-use program should be developed and in place prior to allowing further diversions and impacts to the Fraser River Basin and Grand County. It is inappropriate to approve of another transmountain diversion project for Denver Water while failing to consider and implement a re-use system which is a reasonable and feasible alternative. The Resort urges the Corps to reconsider this as a Project alternative. The No Action Alternative fails to properly evaluate current supply and demand. Denver itself has accelerated its conservation goals and this is not reflected properly in its engineering. In addition, estimated shortages in water supply fail to consider the implementation of drought restrictions. Finally, shortfalls between supplies and demands only occur when comparing dry year supplies to unrestricted average year demands (must compare dry year supplies to dry year demands). All of the action alternatives propose to divert water from the Fraser River and stream flows would decrease. Each of the DEIS action alternatives will take away peak of hydrograph and wet year flows following dry years. The diversions and reductions in stream flows will have direct and indirect impacts on Winter Park Resort and the DEIS has failed to adequately analyze such impacts. Such site specific analysis is void in the DEIS. These site specific impacts include reduced water supply, degradation to water quality, socioeconomic impacts, visual and aesthetic impacts, impacts to fish and	includes Denver Water's diversion and Winter Park Recreational Association's diversion). PACSM was used to simulate the effects of the Moffat Project at each of the nodes listed above. The DEIS evaluates and presents stream flow data at 5 of the 7 nodes within this reach, which is sufficiently detailed to adequately evaluate resource impacts and effects on WPW&SD. As shown in Table 5-4 of the DEIS, WPW&SD would incur a shortage of 6 AF/yr (approximately 1%) based on a build-out demand of 500 AF/yr under Full Use of Denver Water's Existing System compared to Current Conditions. However, this shortage would be incurred due to Denver Water's additional diversions as their demand increases from Current Conditions to Full Use of their Existing System as opposed to the Moffat Project. Additional diversions under the Moffat Project would not increase shortages to WPW&SD because Denver Water's additional diversions would occur in average and wet years. PACSM contains over 400 nodes. While hydrologic data is available at every node in the model, it was impractical to present and evaluate data at each node in each individual sub-reach of every affected stream. Locations where hydrologic data is presented and evaluated were selected throughout the study area and were based on areas that would experience the greatest flow change and potentially the greatest resource impacts. DEIS Section 3.0 includes additional information on the selection of focus river segments and sampling sites where resource evaluations were conducted. ***Comment #775-10*** *(ID 4585)**:*** *Further, the Fraser River is the sole water source for the Winter Park Water and Sanitation District (WPW&SD) which provides domestic and some commercial water to the Resort. The Fraser River is an already severely compromised resource. The*

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat FIS Project Manager Corps of Engineers Denver Regulatory Office 03/17/2010 Page 3 wildlife, wetlands and recreational values. Because the DEIS fails to consider these impacts as they relate to Winter Park Resort, the Town of Winter Park and Grand County, the DEIS is inadequate and flies in the face of NEPA. Furthermore, the DEIS fails to adequately mitigate such impacts and therefore the DEIS is fundamentally flawed. (See 40 CFR 1502.14 (f) and 40 CFR 1502.16(h)) Table II-1.51 (page H1-67) of the DEIS indicates that Denver Water predicts that it would reduce the bypass flows in the Fraser River in the future, given the same hydrology as 1947-1991. In this scenario Denver Water projects to dip in to the bypasses in 8 years out of the 45, or about 1 out of every six years. However, the DEIS states *"The reductions in minimum bypass flows in the Fraser River basin under the Proposed Action are similar to those under Full Use of the Existing System (2016)"* page 4-36. In the past, the reduction of these bypass flows have occurred only three times. What has actually occurred and what is represented and modeled in the DEIS are inconsistent and not well defined. The DEIS should clearly define the Project's impacts to bypass flows in the Fraser River. Moreover, the DEIS fails to adequately study Denver's bypass flow requirements in the Fraser River and elsewhere in the Moffat Collection System. Bypass flows make up Winter Park Water & Sanitation District's water supply (which serves Intrawest's base area and village). Bypass flows are dilution flows for wastewater treatment plants, as well as recreation and environmental flows. Denver has certain agreements for the reduction of bypass flows in dry years and those reductions could significantly impair Grand County water users. The DEIS indicates Denver anticipates reducing bypass flows more frequently in the future than what has historically occurred. The DEIS does not contain any substantive information regarding additional bypass reductions in terms of frequency, duration or volume. Due to the critical nature of bypass flows in the area, the Project impacts are inadequately evaluated. The methodology used in the DEIS to determine environmental impacts is stale and outdated and thus violates 40 CFR 1502.24. The 2002 Integrated Resource Plan ("IRP") and PACSM model used by Denver is old and does not reflect the most current data available. Therefore, the scientific integrity of the data and information must be questioned and therefore the impacts analysis throughout the DEIS also must be questioned. The ACOE's has failed to properly mitigate impacts caused by each of the action alternatives. The DEIS should include Grand County's Stream Management Plan as mitigation for the Project. The ACOE should request that the United States Forest Service and the other federal agencies involved reevaluate the permitting requirements for the Project. As bypass flows are so critical to water users in the Fraser River Basin,	*cumulative impacts analysis is flawed because it fails to examine existing, present conditions which taken together with a new transmountain diversion, essentially will dry up the river.* **Response #775-10:** Existing conditions are described in DEIS Chapter 3. To provide more information on the impacts of existing operations on stream channels, the surface water section in FEIS Chapter 3 was revised to provide a discussion of the natural flows in the Fraser and Williams Fork river basins and the percentage of natural flow Denver Water is estimated to divert under Current Conditions and Full Use of the Existing System. In addition, the impact analysis was revised to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). ***Comment #775-9*** *(ID 4584)**:*** *Alternatives that are reasonable and feasible from a practical and economic standpoint must be considered in the range of alternatives presented in a DEIS. Before spending hundred of millions of dollars and causing significant irreversible environmental and other impacts, why would Denver not implement a comprehensive reuse system that uses the water from previous transmountain diversions to extinction as an alternative for the Project. A substantial re-use program should be developed and in place prior to allowing further diversions and impacts to the Fraser River Basin and Grand County. It is inappropriate to approve of another transmountain diversion project for Denver Water while failing to consider and implement a re-use system which is a reasonable and feasible alternative. The Resort urges the Corps to reconsider this as a Project alternative.*

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Manager Corps of Engineers Denver Regulatory Office 03/17/2010 Page 4 the ACOE should require as a condition to the permit that Denver Water's right to reduce bypass flows be eliminated. Denver previously required water users transferring water out of the basin to make 20% of the water transferred available to in-basin water users. Several Grand County water users, including [redacted]'s predecessor-in-interest acquired such 20% Water. Any permit should be conditioned upon Denver Water entering into permanent delivery agreements with the [redacted] or its related entities for 20% Water, previously acquired and being used for many years under temporary year-to-year agreements. Also as a condition to the permit, additional mitigation in the form of infrastructure projects are necessary to alleviate the severe water shortages and maximize the utilization of the existing resources in the upper reach of the Fraser River. These projects should include the Jim Canal/Bypass Pipeline which brings water from the Jim Creek Canal to the Fraser River above the Winter Park Water & Sanitation District Pipeline, and the WPRA Fraser River Pump/Pipeline and Discovery Park Pond Project which recaptures certain snowmaking return flows and pumps such return flows to Denver's Moffat Collection System or a new Discovery Park Pond. Additionally, [redacted] asks that the Project include the additional improvements to sediment collection facilities along State Highway 40 along with plans currently being negotiated between Denver Water and CDOT for an additional sediment basin. If implemented, these should improve these localized areas. Thank you for the opportunity to comment on the DEIS. [redacted] is hopeful that its current negotiations with Denver Water progress to the point where the above mitigation measures are resolved but the ACOE must address these measures in some fashion. Please add these comments to the administrative record for the Project. Very truly yours, [redacted] Doug Laraby [redacted]	**Response #775-9:** Alternatives that were formulated that include some component of reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated included some component of reuse (Corps 2007). These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 6, 7, and 14 were screened out due to cost (Screen 1C) because they had high relative costs associated with advanced water treatment and residual disposal. Alternative 11 was also screened out because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there is not sufficient unused reusable effluent supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in these alternatives was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main

Comment Information	Comment	Comments and Responses
		sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). Denver Water is in the process of completing a Recycling Project that will use reusable supplies to meet an annual demand of 17,500 AF. Denver Water is also in the process of constructing 30,000 AF of gravel pit reservoir storage downstream of Denver. The storage facilities will be used to manage reusable supplies by storing excess reusable supplies in time of surplus, and releasing the stored reusable supplies at times of shortage. The gravel pits will be used for the following purposes: 1. Perform exchanges to upstream facilities. In an exchange, reusable water is added to a stream at a downstream location to enable diversion of a like amount of water at an upstream location.

Comment Information	Comment	Comments and Responses
		2. Deliver the reusable water to the Recycling Plant, treat the water, and distribute it for non-potable uses. The recycling plant requires gravel pit storage to supply reusable water to the Recycle Plant, via exchange, when reusable water is not available at Metro WWTP or Bi-City. 3. Deliver an annual supply of 5,000 AF of reusable water to South Adams County Water and Sanitation District (per agreements). 4. Use reusable water to augment raw water systems in the Denver Metropolitan area (e.g., augment the wells used to supply water to Denver parks). The reusable water needed to support these projects was included in the PACSM simulations and therefore less reusable water is available for a new project. These projects were not on-line in from 1998 to 2008 as noted in the comment, but once these projects are completed, the average annual available unused reusable effluent is estimated to be approximately 7,600 AF. This is an example of why it is inappropriate to simply rely on historical values to draw conclusions. As shown in the DEIS Table 2-9, the estimated 7,600 AF of average annual unused reusable water ranges from to zero AF some years, to as high as approximately 37,500 AF in one year. The highest year of unused return flows does occur in a dry year, but many other dry years and periods have less than the 6,700 AF average. Project alternatives that included 5,000 AF of yield using the reusable return flows were analyzed. Alternative that included more than 5,000 AF would have been even more expensive on a cost per AF basis. Also note that with PACSM, Denver Water's unused reusable return flows are used and reused to extinction.

Comment Information	Comment	Comments and Responses
		Comment #775-8 *(ID 4583)**:*** *The No Action Alternative fails to properly evaluate current supply and demand. Denver itself has accelerated its conservation goals and this is not reflected properly in its engineering. In addition, estimated shortages in water supply fail to consider the implementation of drought restrictions. Finally, shortfalls between supplies and demands only occur when comparing dry year supplies to unrestricted average year demands (must compare dry year supplies to dry year demands).* **Response #775-8:** Additional data were collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs because there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF of additional conservation and the 18,000 AF proposed Project (72,000 AF enlargement of Gross Reservoir). Drought response is designed for adaptability as abnormal circumstances arise. Droughts are

Comment Information	Comment	Comments and Responses
		unpredictable, requiring adaptable responses. As stated in Chapter 2 of the DEIS in the second sentence of the paragraph preceding Table 2-22 Summary of Monthly Water Demand Reductions from 2002 through 2005: "These savings may not be indicative of future savings because drought conditions (i.e., frequency and duration) are highly variable." A reasonably aggressive conservation plan has been implemented by Denver Water to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. ***Comment #775-7*** *(ID 4582)**:*** *All of the action alternatives propose to divert water from the Fraser River and stream flows would decrease. Each of the DEIS action alternatives will take away peak of hydrograph and wet year flows following dry years. The diversions and reductions in stream flows will have direct and indirect impacts on Winter Park Resort and the DEIS has failed to adequately analyze such impacts. Such site specific analysis is void in the DEIS. These site specific impacts include reduced water supply, degradation to water quality, socioeconomic impacts, visual and aesthetic impacts, impacts to fish and wildlife, wetlands and recreational values. Because the DEIS fails to consider these impacts as they relate to Winter Park Resort, the Town of Winter Park and Grand County, the DEIS is inadequate and flies in the face of NEPA. Furthermore, the DEIS fails to adequately mitigate such impacts and therefore the DEIS is fundamentally flawed. (See 40 CFR 1502.14 (f) and 40 CFR 1502.16(h))* **Response #775-7:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key

Comment Information	Comment	Comments and Responses
		locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins.

Comment Information	Comment	Comments and Responses
		The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA, was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. The analyses of stream morphology, specifically the anticipated response of the streams to projected flow changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of transport capacity by substrate particle size. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. Additionally, as a result of comments received on the DEIS, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). ***Comment #775-6*** *(ID 4581)**:*** *Table H-1.51 (page HI-67) of the DEIS indicates that Denver Water predicts that it would reduce the bypass flows in the Fraser River in the future, given the same hydrology as 1947-1991. In this scenario Denver Water projects to dip in to the bypasses in 8 years out of the 45, or about lout of every six years. However, the DEIS states "The reductions in minimum bypass flows in the Fraser River basin*

Comment Information	Comment	Comments and Responses
		under the Proposed Action are similar to those under Full Use of the Existing System (2016)" page 4-36. In the past, the reduction of these bypass flows have occurred only three times. What has actually occurred and what is represented and modeled in the DEIS are inconsistent and not well defined. The DEIS should clearly define the Project's impacts to bypass flows in the Fraser River. Moreover, the DEIS fails to adequately study Denver's bypass flow requirements in the Fraser River and elsewhere in the Moffat Collection System. Bypass flows make up Winter Park Water & Sanitation District's water supply (which serves Intrawest's base area and village). Bypass flows are dilution flows for wastewater treatment plants, as well as recreation and environmental flows. Denver has certain agreements for the reduction of bypass flows in dry years and those reductions could significantly impair Grand County water users. The DEIS indicates Denver anticipates reducing bypass flows more frequently in the future than what has historically occurred. The DEIS does not contain any substantive information regarding additional bypass reductions in terms of frequency, duration or volume. Due to the critical nature of bypass flows in the area, the Project impacts are inadequately evaluated. The methodology used in the DEIS to determine environmental impacts is stale and outdated and thus violates 40 CFR 1502.24. The 2002 Integrated Resource Plan ("IRP") and PACSM model used by Denver is old and does not reflect the most current data available. Therefore, the scientific integrity of the data and information must be questioned and therefore the impacts analysis throughout the DEIS also must be questioned. **Response #775-6:** The reduction of bypass flows from Current Conditions to Full Use of Denver Water's Existing System should not be compared with past reductions of bypass flows. Several of the years that bypass

Comment Information	Comment	Comments and Responses
		flows would be reduced under Current Conditions including 1954 through 1957 and 1963-1964 precede the agreements which provide for the reduction of bypass requirements. Furthermore, reductions in bypass have historically occurred in six years including 1975, 1977, 1981, 2002, 2003, and 2004. The Moffat Project would not impact bypass flows in the Fraser River Basin or increase the frequency that bypass reductions would occur. The increase in bypass flow reductions from Current Conditions to Full Use of the Existing System would occur due to the increase in Denver Water's average annual demand from 285,000 AF to 345,000 AF. Bypass flows are reduced in dry years in accordance with the severity of restrictions Denver Water places on its customers. The Moffat Project could potentially reduce Denver Water's need to reduce bypass flows in the Fraser River Basin because the Moffat Project would increase Denver Water's water supply and the reliability of their system, in which case restrictions may be imposed less frequently. Denver Water anticipates needing to reduce bypass flows more frequently in the future than it has historically as their demand grows without additional storage on-line. This is demonstrated by the increase in bypass flow reductions under the Full Use of the Existing System scenario compared to Current Conditions. Increases in bypass flow reductions are not anticipated with the Moffat Project on-line compared to Full Use of the Existing System. The DEIS contains information regarding additional bypass reductions. DEIS Appendix H-1 summarizes the years in which bypass flows would be reduced and Table H-1.51 shows the volume and number of days that bypass flow would be reduced under Full Use of the Existing System compared to Current

Comment Information	Comment	Comments and Responses
		Conditions. FEIS Chapter 4 was revised to provide additional information on bypass flow reductions including the time of year and at which location bypasses would be reduced and potential impacts on water providers attributable to future bypass reductions. In addition, FEIS Section 4.1 was revised to include information on the increased frequency, duration and time of year that stream flows would be reduced to minimum USFS bypass flows and tributaries without bypass requirements would be dried up. Regarding the outdated nature of data being used in the EIS, several resource evaluations were updated using more current information and additional field work and data collected between the DEIS and FEIS. The inclusion and evaluation of more recent data is summarized in the FEIS. The PACSM study period from 1947 through 1991 does not need to be extended to include more recent data. The model period used in the DEIS from 1947 through 1991 provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The characteristics of the study period including the number of years included, range of hydrologic conditions, and sequences of year-types is important, whereas, the specific years in the study period are not relevant because the model relies on natural flows which remove man-made alterations to the water supply. Extension of the modeling period would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. ***Comment #775-5*** *(ID 4580)**:*** *The ACOE's has failed to properly mitigate impacts caused by each of the action alternatives. The DEIS should include Grand County's Stream Management Plan as mitigation for the Project. The ACOE should request that the United States Forest Service and the*

Comment Information	Comment	Comments and Responses
		other federal agencies involved reevaluate the permitting requirements for the Project. As bypass flows are so critical to water users in the Fraser River Basin, the ACOE should require as a condition to the permit that Denver Water's right to reduce bypass flows be eliminated. **Response #775-5:** The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), channel morphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required as appropriate. The Corps requested that three Federal agencies, with statutory authority over the proposed Project, participate in the NEPA process as Cooperating Agencies (40 CFR 1501.6 and 1508.5), including the EPA, FERC, and USFS. The USFS declined the Corps' request to be a Cooperating Agency, but formal Cooperating Agency agreements were executed between the Corps and FERC and the Corps and EPA. Although the Corps denied a request by Grand County to be a Cooperating Agency, the Corps granted Grand County Consulting Agency status relative to effects on county resources. After the release of the DEIS, the Colorado Department of Natural Resources and the CDPHE also became Cooperating Agencies to facilitate Federal and State coordination under the Fish and Wildlife Coordination Act (FWCA) and the CWA

Comment Information	Comment	Comments and Responses
		Section 401 Water Quality Certification, respectively. Denver Water, through the CRCA, has identified additional water that might be used for bypass flows. Denver Water has also agreed to not reduce bypass flows unless it bans outdoor watering for its customers. ***Comment #775-4*** *(ID 4579)**:*** *Denver previously required water users transferring water out of the basin to make 20% of the water transferred available to in-basin water users. Several Grand County water users, including [redacted]'s predecessor-in-interest acquired such 20% Water. Any permit should be conditioned upon Denver Water entering into permanent delivery agreements with the [redacted] or its related entities for 20% Water, previously acquired and being used for many years under temporary year-to-year agreements.* **Response #775-4:** The Corps notes the comment. ***Comment #775-3*** *(ID 4578)**:*** *Also as a condition to the permit, additional mitigation in the form of infrastructure projects are necessary to alleviate the severe water shortages and maximize the utilization of the existing resources in the upper reach of the Fraser River. These projects should include the Jim Canal/Bypass Pipeline which brings water from the Jim Creek Canal to the Fraser River above the Winter Park Water & Sanitation District Pipeline, and the WPRA Fraser River Pump/Pipeline and Discovery Park Pond Project which recaptures certain snowmaking return flows and pumps such return flows to Denver's Moffat Collection System or a new Discovery Park Pond.*

Comment Information	Comment	Comments and Responses
		Response #775-3: The Corps notes the comment. Additionally, the Corps has reviewed the CRCA and noted the additional commitments Denver Water has provided to Grand County for projects. ***Comment #775-2*** *(ID 4577)**:*** *Additionally, [redacted] asks that the Project include the additional improvements to sediment collection facilities along State Highway 40 along with plans currently being negotiated between Denver Water and CDOT for an additional sediment basin. If implemented, these should improve these localized areas.* **Response #775-2:** Since the release of the DEIS, Denver Water, CDOT, Grand County, and others funded and constructed a sediment removal facility at Denver Water's Fraser River diversion. This facility captures incoming sediment and provides access for removing sediment from the system. It is intended to help offset sediment loading resulting from traction sand. It is anticipated that this facility will reduce, but not eliminate traction sand loading into the Fraser River. ***Comment #775-1*** *(ID 4576)**:*** *Thank you for the opportunity to comment on the DEIS. [redacted] is hopeful that its current negotiations with Denver Water progress to the point where the above mitigation measures are resolved but the ACOE must address these measures in some fashion. Please add these comments to the administrative record for the Project.* **Response #775-1:** The comments were entered into the public record for the Moffat Project.

Comment Information	Comment	Comments and Responses
Comment #777 Kirsten M. Kurath, Attorney at Law Williams, Turner & Holmes, P.C., on Behalf of the Grand Valley Water Users Association, the Orchard Mesa Irrigation District, and the Ute Water Conservancy District 200 North 6th Street, P.O. Box 338 Grand Junction, CO 81502	From: Kirsten Kurath [mailto:kmkurath@wth-law.com] Sent: Wednesday, March 17, 2010 2:08 PM To: MOFFAT.EIS@usace.army.mil Cc: Dick Proctor; max@acsol.net; lclever@utewater.org; Mark Hermundstad Subject: Moffat Collection System Project Draft EIS and Denver Water's Section 404 Permit Application Mr. Franklin: Attached are the comments submitted on behalf of our clients: the Grand Valley Water Users Association, the Orchard Mesa Irrigation District and the Ute Water Conservancy District. The original will be mailed today. If possible, I will appreciate it if you would confirm receipt of this e-mail. Thank you very much, Kirsten Kurath Kirsten M. Kurath Williams, Turner & Holmes, P.C. 200 North 6th Street (81501) P.O. Box 338 Grand Junction, Colorado 81502-0338 Telephone: 970/242-6262 Fax: 970/241-3026 E-mail: kmkurath@wth-law.com <mailto:bonnie@wth-law.com> CONFIDENTIALITY NOTICE : ATTORNEY-CLIENT PRIVILEGED / WORK PRODUCT This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain privileged attorney-client communications and work product. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message. CIRCULAR 230 NOTICE: IRS regulations require us to advise you that, unless otherwise specifically noted, any tax advice included in this communication (including any attachments, enclosures, or other accompanying documents and materials) was not intended or written to be used, and cannot be used, by any taxpayer for the purpose of (i) avoiding any tax penalties, or (ii) promoting marketing, or recommending any transaction or matters addressed herein to another party. Any tax advice included in this communication may NOT be forwarded or otherwise transmitted to a third party without our express written consent. – 10.03.17GrandValleyComment.pdf	***Comment #777-12*** *(ID 4608)**:*** *Attached are the comments submitted on behalf of our clients: the Grand Valley Water Users Association, the Orchard Mesa Irrigation District and the Ute Water Conservancy District. The original will be mailed today. If possible, I will appreciate it if you would confirm receipt of this e-mail. Thank you very much, We are submitting comments on the Moffat Collection System Project ("MCSP") Draft EIS for Denver Water's Application for Clean Water Act Section 404 Permit ("DEIS"). These comments are submitted on behalf of three Grand Valley entities: the Grand Valley Water Users Association ("GVWUA"), the Orchard Mesa Irrigation District ("OMID") and the Ute Water Conservancy District ("Ute"). These entities have critical roles in providing irrigation and domestic water in the Grand Valley of Western Colorado. Between GVWUA and OMID's service areas, approximately 32,541 acres of land and crops are provided irrigation water. Ute serves an area in excess of 250 square miles in Mesa County, Colorado, and currently provides domestic water to over 80,000 people. Ute is heavily dependent upon the established dual water system in the Grand Valley as it relies upon irrigation entities, including but not limited to GVWUA and OMID, to provide Colorado River water for most residential irrigation purposes. Our clients' systems are dependent one way or another on the Colorado River. They have existing facilities on the Colorado River and they divert from the Colorado River or its tributaries. These entities are active in the Upper Colorado River Endangered Fish Recovery Program ("Recovery Program") in the ongoing efforts to secure the 10,825 acre feet of water required by the Recovery Program for habitat enhancement of the 15 mile critical reach at Grand Junction. As stewards of their water rights, GVWUA, OMID and Ute are active participants in numerous water court cases involving water rights applications concerning water diverted from the Colorado River and its tributaries.*

Comment Information	Comment	Comments and Responses
	Attachments: Williams, Turner & Holmes, P.C. ATTORNEYS AT LAW J. D. Snodgrass Mark A. Hermundstad* Susan M. Corle Kirsten M. Kurath* Phillip J. Jones*** Jeffrey L. Driscoll Kathleen Lyon *Of Counsel* William D. Prikken James M. Cofosky** Douglas V. Johnson Henry M. Dusenbury All Attorneys Admitted in Colorado *Also Admitted in Utah **Also Admitted in Nebraska ***Also Admitted in Florida Bernit C. Holmes *Retired* Anthony W. Williams (1926 - 2007) Warren L. Turner (1926 - 2003) GRAND JUNCTION OFFICE *Courthouse Plaza Building* 200 N. 6th Street PO Box 339 Grand Junction, Colorado 81502-0339 Phone: 970-242-6262 Fax: 970-241-9026 wth-law.com MOAB Phone: 435/259-4382 Kirsten M. Kurath kmkurath@wth-law.com (970) 242-6262, ext 236 March 17, 2010 VIA E-MAIL(moffat.eis@usace.army.mil) and U.S. Mail Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Re: Moffat Collection System Project Draft EIS Denver Water's Application for Clean Water Act Section 404 Permit Dear Mr. Franklin: We are submitting comments on the Moffat Collection System Project ("MCSP") Draft EIS for Denver Water's Application for Clean Water Act Section 404 Permit ("DEIS"). These comments are submitted on behalf of three Grand Valley entities: the Grand Valley Water Users Association ("GVWUA"), the Orchard Mesa Irrigation District ("OMID") and the Ute Water Conservancy District ("Ute"). These entities have critical roles in providing irrigation and domestic water in the Grand Valley of Western Colorado. Between GVWUA and OMID's service areas, approximately 32,541 acres of land and crops are provided irrigation water. Ute serves an area in excess of 250 square miles in Mesa County, Colorado, and currently provides domestic water to over 80,000 people. Ute is heavily dependent upon the established dual water system in the Grand Valley as it relies upon irrigation entities, including but not limited to GVWUA and OMID, to provide Colorado River water for most residential irrigation purposes. Our clients' systems are dependent one way or another on the Colorado River. They have existing facilities on the Colorado River and they divert from the Colorado River or its tributaries. These entities are active in the Upper Colorado River Endangered Fish Recovery Program ("Recovery Program") in the ongoing efforts to secure the 10,825 acre feet of water required by the Recovery Program for habitat enhancement of the 15 mile critical reach at Grand Junction. As stewards of their water rights, GVWUA, OMID and Ute are active participants in numerous water court cases involving water rights applications concerning water diverted from the Colorado River and its tributaries. Our clients, and the people they serve, rely upon the Colorado River and the quantity and the quality of its flow. They oppose Denver Water's Section 404	**Response #777-12:** The Corps received both the electronic and hard copies of the Colorado River Water Conservation District's comments. ***Comment #777-11*** *(ID 4607)**:*** *Our clients, and the people they serve, rely upon the Colorado River and the quantity and the quality of its flow. They oppose Denver Water's Section 404 Permit application because the DEIS is inadequate and the Proposed Action has not been demonstrated to be the practicable alternative with the least adverse environmental impact.* **Response #777-11:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. A thorough and detailed alternative screening analysis was conducted for the proposed Moffat Project. The Corps evaluated compliance with NEPA and the CWA Section 404 regulations (FEIS Appendix K) and has not yet determined the least environmentally damaging practicable alternative (LEDPA). The Final LEDPA determination will be made as part of the combined FEIS/404 Record of Decision. ***Comment #777-10*** *(ID 4606)**:*** *The Corps is charged with determining if there is a practicable alternative to the Proposed Action which would have fewer adverse impacts to the environment. The Proposed Action and the listed alternatives involve transmountain diversions of water from tributaries of the Colorado River; hence, the environmental impacts to the West Slope cannot be ignored in the DEIS process. By overstating its need, understating its ability to reuse and conserve water and inaccurately treating its No Action Alternative (all*

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office March 17, 2010 Page 2 Permit application because the DEIS is inadequate and the Proposed Action has not been demonstrated to be the practicable alternative with the least adverse environmental impact. The Corps is charged with determining if there is a practicable alternative to the Proposed Action which would have fewer adverse impacts to the environment. The Proposed Action and the listed alternatives involve transmountain diversions of water from tributaries of the Colorado River; hence, the environmental impacts to the West Slope cannot be ignored in the DEIS process. By overstating its need, understating its ability to reuse and conserve water and inaccurately treating its No Action Alternative (all of which result in minimizing the difference between the reported environmental impacts for the Proposed Action and the No Action Alternative), Denver Water has effectively removed the screening process for alternatives and steered the process in one and only one direction, the Proposed Action and diversion of more water out of the Colorado River basin to the East Slope. The DEIS is premised on Denver Water's expressed need to provide an additional 18,000 AF/yr of new firm yield. This is based upon Denver Water's modeling which purports to show a demand for 450,000 AF by 2030 and a predicted shortfall of 34,000 AF/yr. Denver Water asserts it can meet 16,000 AF/yr of the predicted shortfall with additional conservation. Denver Water's claim that 450,000 AF will be needed by 2030 has been the subject of much scrutiny in recent federal and Water Division No. 5 court cases involving Denver Water's water rights in the Colorado River basin. In those cases, Denver Water's modeling and supporting evidence has been reviewed, although full disclosure concerning the model has not been made by Denver Water. Expert analysis and opinions by opposers in those cases support the conclusion that Denver Water has overestimated its demand for 2030 for multiple reasons. For example, Denver Water's model imposes an unconstrained average year demand which creates an artificial deficit as it does not account for drought watering restrictions and conservation. This results in an overestimation of approximately 36,000 AF/yr. In order to recognize the realities of operating in the arid West, the model should account for drought watering restrictions and conservation. Denver Water's model also includes an unsubstantiated overall 5% upward adjustment which artificially increases the demand by approximately 17,600 AF/yr. The Denver Water model needs to be adjusted to more accurately reflect the predicted demographics and such an adjustment would result in a decrease in the demand of at least 16,700 AF/yr. The Denver Water model also relies on an outdated baseline for water conservation expenditures which results in significantly overstating the demand by about 25,000 AF/yr. Finally, the Denver Water model assumes much more system loss than should be expected based upon recent data and this results in an additional 12,500 AF/yr increase in demand which is not accurate. All total, these deficiencies identified in the Denver Water	*of which result in minimizing the difference between the reported environmental impacts for the Proposed Action and the No Action Alternative), Denver Water has effectively removed the screening process for alternatives and steered the process in one and only one direction, the Proposed Action and diversion of more water out of the Colorado River basin to the East Slope.* **Response #777-10:** Conservation and Reuse Denver Water has committed to implement the programs necessary to realize 16,000 AF of conservation savings by 2032 and an additional 13,000 AF of conservation savings (total 29,000 AF) from 2032 to the build-out of the service area. As a demonstration of its commitment to conservation, Denver Water assumes that the 29,000 AF would be realized. In addition to this commitment, Denver Water has already subtracted the 29,000 AF from its demand projections. Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives.

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office March 17, 2010 Page 3 model in pending water cases alone account for the total shortfall predicted by Denver Water and upon which the DEIS is based. Hence, there is no demonstrated need for the MCSP expansion sought by Denver Water and its associated detrimental environmental impacts. Not only is Denver Water's predicted shortfall suspect, but the need for the 18,000 AF/yr new firm yield which forms the basis of the DEIS analysis is overstated. Denver Water's "need" includes 3,000 AF/yr for Arvada. This is not a "need" of Denver Water's customers within its service area, but simply a contractual obligation which is contingent upon the MCSP being completed. Denver Water is essentially overstating its "need" by almost 17%, yet this "need" does not even exist if the MCSP is not approved. Denver Water's approach for the DEIS is a bit like putting the cart before the horse. A contractual obligation contingent upon the approval of the MCSP should not inflate the "need" to be addressed by the MCSP and skew the DEIS process. This 3,000 AF/yr contractual obligation to Arvada is misused by Denver Water in yet another aspect of the DEIS. Even though Denver Water has no contractual obligation to deliver this amount of water to Arvada if the MCSP is not completed, it includes the 3,000AF/yr in its analysis under the No Action Alternative. The No Action Alternative, by definition, is supposed to look at the impacts if Denver has to proceed without the MCSP. Without the MCSP, Denver Water does not have to deliver the 3,000 AF/yr to Arvada. Including this 3,000 AF/yr in the No Action Alternative does not accurately represent the circumstances and has the effect of minimizing the difference in the modeled environmental impacts between the Proposed Action and the other alternatives with the No Action Alternative, suggesting that a certain level of environmental impact is a forgone conclusion. Denver Water also overstates its need by significantly understating its ability to reuse and conserve water. Colorado law provides that water imported from one river basin to another can be used and reused to extinction. C.R.S. § 37-82-106. GVWUA, OMID and Ute are West Slope beneficiaries of the Green Mountain Reservoir ("GMR") and its administration. The Blue River decree in Consolidated Cases 2782, 5016 and 5017 which governs GMR requires Denver Water to reuse the return flows from its Blue River diversions (another Denver Water transmountain diversion from the Colorado River basin) within legal limitations and subject to economic feasibility. Denver Water has not made full use of the transmountain diversions it already makes. For example, the expert analysis referred to above demonstrated that, in 2002, Denver Water was in possession of over 48,000 AF of reusable return flows, but only reused 8,000 AF. Furthermore, with its ability to exchange reusable return flows with South Platte water, Denver Water has opportunities to maximize use of its reusable water. It has been estimated that the Denver Model fails to account for about 25,000 AF of unused reusable water. Denver Water could clearly meet its overestimated shortfall, or significantly reduce it, without the need for the MCSP by fully utilizing the water it has already taken from the West Slope to the East Slope.	Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Alternatives that were formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated include some component of reuse. These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat Water Treatment Plant (WTP). Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7, and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office March 17, 2010 Page 4 The Denver Water model upon which the DEIS is based understates the amount of water Denver Water can add to its system through concerted conservation efforts. Denver Water has publically stated that it intends to conserve an additional 29,000 AF/yr by 2016 - this is 13,000 AF/yr more than the 16,000 AF/yr of water to be gained through conservation identified in the DEIS. Repeatedly, the Denver Water model understates Denver Water's ability to fully utilize its system and the water it currently diverts from the Colorado River basin, understates its public commitment to and ability to conserve water and overstates its expected shortfall. Our focus here on the flawed demand analysis of the Denver Water model and DEIS is to emphasize that a myriad of practicable alternatives with less adverse environmental impacts were not seriously considered because of the large volume of water at issue. Denver Water must substantiate a realistic expected need in order to ensure the process adequately considers all the viable alternatives that appear were screened out by the very large hole built into the DEIS. The DEIS is further flawed because it fails to even consider the adverse environmental impacts which will be experienced on the lower Colorado River. The DEIS essentially stops its analysis at the Kremmling gauge - located in Grand County on the upper Colorado River. The reasoning given is that the change in annual flow in the Colorado River at this location will be less than 10%. The DEIS does not substantiate why this purported <10% reduction justifies not considering the adverse environmental impacts to the majority of the Colorado River in Colorado. Furthermore, the Denver Water model relies on modeled changes in the total annual volume. Using average annual volumes can mask significant impacts. The DEIS process should look at changes in stream flows during the months of diversion by the MCSP. We are confident such a refinement in the analysis will show reduction in stream flows greater than those set forth in the DEIS. Furthermore, the data set utilized by Denver Water in its model, while extensive in the number of years covered, misses a very critical set of water years for the Colorado River basin - those being 2002-2004. It also appears that the years used by Denver Water do not include some of the wettest years and the driest years on record for the West Slope. The time period chosen by Denver Water may encompass the East Slope's most critical years, but it is a serious failing of the DEIS not to include the most critical years for the affected environment from which the water is diverted. The DEIS ignores the lower Colorado River even though it contains the 15 mile critical reach for four endangered fish. The lower Colorado River also includes listed Section 303(d) Water-Quality-Limited Segments requiring TMDL's under the Clean Water Act and segments on Colorado's Monitoring and Evaluation List. The flow in the lower Colorado River naturally varies from year to year, and within the year, but it is affected by uses upstream that deplete the high quality flow from the headwaters and concentrate the salts and sediment in the water. By not looking	were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in Alternatives 8a and 10a was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. Approximately 7,600 AF/yr on average of unused reusable water would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. Alternatives 8a and 10a, which provide 5,000 AF/yr of the new firm yield requirement from reusable supplies were considered reasonable and achievable given the variability in timing and amount of unused reusable supplies available. As part of Denver Water's obligation to reuse water under the Blue River decree, Denver Water currently uses its reusable supplies for exchanges, augmentation, contract deliveries, and its non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. No Action Alternative Under NEPA, every EIS must analyze a No Action Alternative, which is what is expected to occur if the proposed Project does not get permitted. The EIS then compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps consulted with Denver Water on what steps they would take to meet its water supply needs in the absence of the Moffat

Comment Information	Comment	Comments and Responses
	Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office March 17, 2010 Page 5 beyond the Kremmling gauge, it is not clear that the DEIS has adequately considered the cumulative effects on the lower Colorado River when the MCSP would become operational. As transbasin diversions and upstream depletions increase, the water quality in the Grand Valley decreases because there is less and less water to dilute the sediment, salinity and selenium, just to name some examples of water quality issues on the Colorado River. By not even considering the adverse environmental impacts below Kremmling, the DEIS cannot support a finding that any alternative is the practicable alternative with the least adverse environmental impact. Our clients are not in the position, nor do they have the resources, to analyze in detail the hundreds and hundreds of pages on information posted in support of the DEIS, or to comment on every deficiency in the DEIS. In recognition of such constraints, our clients must rely heavily on the efforts of the Colorado River District and with this letter endorse the comments of the Colorado River District in addition to those set forth herein. Our clients appreciate the opportunity to provide these comments. Please add my contact information to any notice list you have, so that we will receive all further notices your office may issue during the process. If you would like our clients to submit any additional information, or if you have any questions, please feel free to call me or Dick Proctor for GVWUA (970-242-5065), Larry Clever for Ute (970-242-7491) or Max Schmidt for OMID (970-464-7885). Thank you. Sincerely, WILLIAMS, TURNER & HOLMES, P.C. Kirsten M. Kurath KMK pc: Larry Clever Dick Proctor Max Schmidt	Project. Denver Water assumed that growth would still occur and identified ways to meet future water demands through operational controls. The Corps feels the steps outlined for various restriction scenarios were a reasonable approach for developing the No Action Alternative. Alternative Screening The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) besides transmountain diversions in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the “long list” passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1, Must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: “Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need.” This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include

Comment Information	Comment	Comments and Responses
		expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented. ***Comment #777-9*** *(ID 4605)**:*** *The DEIS is premised on Denver Water's expressed need to provide an additional 18,000 AF/yr of new firm yield. This is based upon Denver Water's modeling which purports to show a demand for 450,000 AF by 2030 and a predicted shortfall of 34,000 AF/yr. Denver Water asserts it can meet 16,000 AF/yr of the predicted shortfall with additional conservation. Denver Water's claim that 450,000 AF will be needed by 2030 has been the subject 0 f much scrutiny in recent federal and Water Division No. 5 court cases involving Denver Water's water rights in the Colorado River basin. In those cases, Denver Water's modeling and supporting evidence has been reviewed, although full disclosure concerning the model has not been made by Denver Water. Expert analysis and opinions by opposers in those cases support the conclusion that Denver Water has overestimated its demand for 2030 for multiple reasons. For example, Denver Water's model imposes an unconstrained average year demand which creates an artificial deficit as it does not account for drought watering restrictions and conservation. This results in an overestimation of approximately 36,000 AF/yr. In order to recognize the realities of operating in the arid West, the model should account for drought watering restrictions and*

Comment Information	Comment	Comments and Responses
		conservation. Denver Water's model also includes an unsubstantiated overall 5% upward adjustment which artificially increases the demand by approximately 17,600 AF/yr. The Denver Water model needs to be adjusted to more accurately reflect the predicted demographics and such an adjustment would result in a decrease in the demand of at least 16,700 AF/yr. The Denver Water model also relies on an outdated baseline for water conservation expenditures which results in significantly overstating the demand by about 25,000 AF/yr. Finally, the Denver Water model assumes much more system loss than should be expected based upon recent data and this results in an additional 12,500 AF/yr increase in demand which is not accurate. All total, these deficiencies identified in the Denver Water model in pending water cases alone account for the total shortfall predicted by Denver Water and upon which the DEIS is based. Hence, there is no demonstrated need for the MCSP expansion sought by Denver Water and its associated detrimental environmental impacts. **Response #777-9:** Denver Water is unaware of any court determination that Denver Water's modeling is invalid or illegal. The Corps verified Denver Water's PACSM and conducted an independent evaluation of Denver Water's modeling approach and determined they are reasonable. Denver Water's reasoning for modeling water supply and annual firm yield on the basis of unrestricted demand and purposefully excluding consideration of drought response plans was explained to the Corps. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in

Comment Information	Comment	Comments and Responses
		response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. The shortfall of 18,000 AF/yr is intended to meet an "unconstrained" demand of 363,000 AF/yr. Denver Water's estimated 2032 demand is 379,000 AF/yr after accounting for Natural Replacement and Conservation Savings since 1980 and prior to 2002 (as well as 3,000 AF for the Arvada contract). After backing out the 16,000 AF/yr for additional Conservation, Denver Water's estimated 2032 demand is 363,000 AF/yr. The Corps conducted an independent review of the projected conservation savings of 16,000 AF/yr.. Even though Denver Water is not required by any regulations to implement conservation, Denver Water is relying upon these future savings in its demand projections to reduce the need for new yield to 18,000 AF/yr.. An aggressive conservation plan has been implemented by Denver Water to achieve long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF/yr. of new reliable firm yield. Denver Water's reason for the 5% adjustment is based on the average annual model under-prediction between 1985 and 2000, as explained in the technical memoranda included in Appendix A of the DEIS (Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS). Harvey Economics reviewed Denver Water's model and found this adjustment to be reasonable. The Purpose

Comment Information	Comment	Comments and Responses
		and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #777-8*** *(ID 4604)**:*** *Not only is Denver Water's predicted shortfall suspect, but the need for the 18,000 AF/yr new firm yield which forms the basis of the DEIS analysis is overstated. Denver Water's "need" includes 3,000 AF/yr for Arvada. This is not a "need" of Denver Water's customers within its service area, but simply a contractual obligation which is contingent upon the MCSP being completed. Denver Water is essentially overstating its "need" by almost 17%, yet this "need" does not even exist if the MCSP is not approved. Denver Water's approach for the DEIS is a bit like putting the cart before the horse. A contractual obligation contingent upon the approval of the MCSP should not inflate the "need" to be addressed by the MCSP and skew the DEIS process.* **Response #777-8:** If a project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. However, Arvada would still have this demand to be met without an identified supply. Therefore, the Corps believes it is a reasonable and conservative approach to include the 3,000 AF in the predicted 2032 demand in the analysis. There would be a shortage of water supply

Comment Information	Comment	Comments and Responses
		without a Project, but the demand would still be there. In addition, Denver Water has a contractual agreement to provide 3,000 AR/yr of water to Arvada if the proposed Project is permitted. ***Comment #777-7*** *(ID 4603)**:*** *This 3,000 AF/yr contractual obligation to Arvada is misused by Denver Water in yet another aspect of the DEIS. Even though Denver Water has no contractual obligation to deliver this amount of water to Arvada if the MCSP is not completed, it includes the 3,000 AF/yr in its analysis under the No Action Alternative. The No Action Alternative, by definition, is supposed to look at the impacts if Denver has to proceed without the MCSP. Without the MCSP, Denver Water does not have to deliver the 3,000 AF/yr to Arvada. Including this 3,000 AF/yr in the No Action Alternative does not accurately represent the circumstances and has the effect of minimizing the difference in the modeled environmental impacts between the Proposed Action and the other alternatives with the No Action Alternative, suggesting that a certain level of environmental impact is a forgone conclusion.* **Response #777-7:** If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. However, Arvada would still have this demand to be met without an identified supply. Therefore, the Corps believes it is a reasonable and conservative approach to include the 3,000 AF in the predicted 2032 demand in the analysis for all alternatives. Hydrologic modeling of the No Action Alternative is based on the same future water demands as the action alternatives (363,000 AF/yr by the year 2032). The demand includes the 3,000 AF/yr of firm yield for the City of Arvada." For consistency purposes, the Arvada contract was evaluated for all alternatives, including the No Action Alternative. Under the No Action Alternative, that

Comment Information	Comment	Comments and Responses
		Denver Water would not meet the future demand of Arvada (3,000 AF) and Denver Water's supply deficit would be 15,000 AF/yr. ***Comment #777-6*** *(ID 4602)**:*** *Denver Water also overstates its need by significantly understating its ability to reuse and conserve water. Colorado law provides that water imported from one river basin to another can be used and reused to extinction. C.R.S. § 37-82-106. GVWUA, OMID and Ute are West Slope beneficiaries of the Green Mountain Reservoir ("GMR") and its administration. The Blue River decree in Consolidated Cases 2782, 5016 and 5017 which governs GMR requires Denver Water to reuse the return flows from its Blue River diversions (another Denver Water transmountain diversion from the Colorado River basin) within legal limitations and subject to economic feasibility. Denver Water has not made full use of the transmountain diversions it already makes. For example, the expert analysis referred to above demonstrated that, in 2002, Denver Water was in possession of over 48,000 AF of reusable return flows, but only reused 8,000 AF. Furthermore, with its ability to exchange reusable return flows with South Platte water, Denver Water has opportunities to maximize use of its reusable water. It has been estimated that the Denver Model fails to account for about 25,000 AF of unused reusable water. Denver Water could clearly meet its overestimated shortfall, or significantly reduce it, without the need for the MCSP by fully utilizing the water it has already taken from the West Slope to the East Slope. The Denver Water model upon which the DEIS is based understates the amount of water Denver Water can add to its system through concerted conservation efforts. Denver Water has publically stated that it intends to conserve an additional 29,000 AF/yr by 2016 - this is 13,000 AF/yr more than the 16,000 AF/yr of water to be gained through conservation identified in the DEIS.*

Comment Information	Comment	Comments and Responses
		Response #777-6: Denver Water will continue to fully comply with the requirements of the Blue River Decrees. Denver Water currently uses their reusable supplies for exchanges, augmentation, contract deliveries, and their non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.

Comment Information	Comment	Comments and Responses
		All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). ***Comment #777-5*** *(ID 4601)**:*** *Repeatedly, the Denver Water model understates Denver Water's ability to fully utilize its system and the water it currently diverts from the Colorado River basin, understates its public commitment to and ability to conserve water and overstates its expected shortfall. Our focus here on the flawed demand analysis of the Denver Water model and DEIS is to emphasize that a myriad of practicable alternatives with less adverse environmental impacts were not seriously considered because of the large volume of*

Comment Information	Comment	Comments and Responses
		water at issue. Denver Water must substantiate a realistic expected need in order to ensure the process adequately considers all the viable alternatives that appear were screened out by the very large hole built into the DEIS. **Response #777-5:** The water demand estimates and projections provided in the Denver Water IRP were evaluated independently and in considerable detail by the Corps team. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from the DRCOG. Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. Denver Water has an aggressive conservation program that has reduced consumption by 20% in the last 10- years. The recycle plant, at full build out, would provide 17,500 AF/yr. of water for industrial and irrigation needs. The use of unused reusable return flows was evaluated in several alternatives in the EIS process – Alternatives 6, 7, 8, 10, 11, and 14. These alternatives were configured to meet a portion or all of the new firm yield requirements with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. Alternatives 6, 7, and 14 were

Comment Information	Comment	Comments and Responses
		screened out due to cost (Screen 1C) because they had high relative costs associated with advanced water treatment and residual disposal. Alternative 11 was screened out because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7, and 14 were not screened out for cost, they would be screened out because there is not sufficient unused reusable effluent supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were considered "practicable" alternatives and are evaluated in the EIS. Refer to Section 2.1 and Appendix B of the DEIS for information on the alternatives screening process. ***Comment #777-4*** *(ID 4600)**:*** *The DEIS is further flawed because it fails to even consider the adverse environmental impacts which will be experienced on the lower Colorado River. The DEIS essentially stops its analysis at the Kremmling gauge - located in Grand County on the upper Colorado River. The reasoning given is that the change in annual flow in the Colorado River at this location will be less than 10%. The DEIS does not substantiate why this purported <10% reduction justifies not considering the adverse environmental impacts to the majority of the Colorado River in Colorado.* **Response #777-4:** The study area for the Moffat Project EIS extends downstream to the USGS gage below Kremmling. The downstream extent of the study area was initially based on the location where average monthly flow changes under the action alternatives would be less than 10% compared to Full Use of the Existing System. The exception to the downstream extent

Comment Information	Comment	Comments and Responses
		includes the evaluation of recreation and special status species in the 15-Mile Reach. Resource evaluations were conducted to determine impacts at that location and assess the validity of the downstream extent of the study area. Results of the resource evaluations indicate effects due to the Moffat Project would be negligible to minor along the Colorado River at the Kremmling gage, and would continue to diminish downstream with tributary inflows. Therefore, extension of the study area further downstream is not warranted based on the results of the resource evaluations. The resource evaluations were relied on to justify the criteria used to define the downstream extent of the study area. The study area was re-evaluated in the FEIS on a resource by resource basis to determine whether extension of the area was warranted based on the total environmental effects of the Moffat Project in combination with other RFFAs. The proposed Moffat Project would not affect low flows when minimum instream flows are an issue because there would be no additional diversions in dry years due to the Moffat Project. In dry years and late in the summer, Denver Water already diverts the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in their system, in which case, there would be no further reduction in low flows due to the proposed Moffat Project. ***Comment #777-3*** *(ID 4599)**:*** *Furthermore, the Denver Water model relies on modeled changes in the total annual volume. Using average annual volumes can mask significant impacts. The DEIS process should look at changes in stream flows during the months of diversion by the MCSP. We are confident such a refinement in the analysis will show reduction in stream flows greater than those set forth in the DEIS. Furthermore, the*

Comment Information	Comment	Comments and Responses
		data set utilized by Denver Water in its model, while extensive in the number of years covered, misses a very critical set of water years for the Colorado River basin those being 2002-2004. It also appears that the years used by Denver Water do not include some of the wettest years and the driest years on record for the West Slope. The time period chosen by Denver Water may encompass the East Slope's most critical years, but it is a serious failing of the DEIS not to include the most critical years for the affected environment from which the water is diverted. **Response #777-3:** A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations) Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). The model period used in the DEIS from 1947 through 1991 provides a broad range of average, wet,

Comment Information	Comment	Comments and Responses
		and dry flow conditions for evaluating hydrologic impacts. The characteristics of the study period including the number of years included, range of hydrologic conditions, and sequences of year-types is important, whereas, the specific years in the study period are not relevant because the model relies on natural flows which remove man-made alterations to the water supply. A separate assessment of the 2002-2003 period was completed by Denver Water to determine whether inclusion of an extreme drought year would change conclusions regarding hydrologic effects due to the Moffat Project. Results of that assessment indicated that in drought years like 2002, Denver Water would not divert additional water due to the proposed Moffat Project because Denver Water would already divert the maximum amount physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. The current model study period also addresses the carry-over or recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The study period from 1947 through 1991 includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the existing study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years.

Comment Information	Comment	Comments and Responses
		Extension of the modeling period to include additional dry and wet years would not substantially change the predicted impacts to flows as a result of the proposed Moffat Project. Therefore, the DEIS includes information for years that are reflective of the some of the driest and wettest conditions that have occurred in the past. 1983 and 1984, which are included in the PACSM study period, were the two wettest years at most locations in the upper Colorado River Basin. In addition, 1954 and 1963, which are included in the PACSM study period, were two of the five driest years at most locations in the upper Colorado River Basin. The PACSM study period does not have to include all of the five driest and wettest years at each location to accurately characterize hydrologic effects in dry and wet years. ***Comment #777-2*** *(ID 4598)**:*** *The DEIS ignores the lower Colorado River even though it contains the 15 mile critical reach for four endangered fish. The lower Colorado River also includes listed Section 303(d) Water Quality-Limited Segments requiring TMDL's under the Clean Water Act and segments on Colorado's Monitoring and Evaluation List. The flow in the lower Colorado River naturally varies from year to year, and within the year, but it is affected by uses upstream that deplete the high quality flow from the headwaters and concentrate the salts and sediment in the water. By not looking beyond the Kremmling gauge, it is not clear that the DEIS has adequately considered the cumulative effects on the lower Colorado River when the MCSP would become operational. As transbasin diversions and upstream depletions increase, the water quality in the Grand Valley decreases because there is less and less water to dilute the sediment, salinity and selenium, just to name some examples of water quality issues on the Colorado River. By not*

Comment Information	Comment	Comments and Responses
		even considering the adverse environmental impacts below Kremmling, the DEIS cannot support a finding that any alternative is the practicable alternative with the least adverse environmental impact. **Response #777-2:** The proposed Project would not increase diversions during low flow periods nor would it change Denver Water's existing bypass requirements. Endangered fish associated with the 15-mile reach are discussed in DEIS Sections 3.7.5.3 and 4.8.1.2. Those stream segments between Kremmling and the State line that are listed in the Section 303(d) and Monitoring and Evaluation List are discussed in FEIS Sections 4.6.2 and 5.2. ***Comment #777-1*** *(ID 4597)**:*** *Our clients are not in the position, nor do they have the resources, to analyze in detail the hundreds and hundreds of pages on information posted in support of the DEIS, or to comment on every deficiency in the DEIS. In recognition of such constraints, our clients must rely heavily on the efforts of the Colorado River District and with this letter endorse the comments of the Colorado River District in addition to those set forth herein. Our clients appreciate the opportunity to provide these comments. Please add my contact information to any notice list you have, so that we will receive all further notices your office may issue during the process. If you would like our clients to submit any additional information, or if you have any questions, please feel free to call me or Dick Proctor for GVWUA (970-242-5065), Larry Clever for Ute (970-242-7491) or Max Schmidt for OMID (970-464-7885). Thank you.* **Response #777-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #781 Drew Beckwith, Water Policy Analyst Western Resource Advocates 2260 Baseline Road, Suite 200 Boulder, CO 80302	From: Drew Beckwith [mailto:dbeckwith@westernresources.org] Sent: Wednesday, March 17, 2010 3:14 PM To: MOFFAT.EIS@usace.army.mil Cc: Bart Miller; david.little@denverwater.org Subject: Western Resource Advocates Moffat DEIS Comments Scott - Please find attached Western Resource Advocates comments on the Moffat Collection System Project Draft Environmental Impact Statement prepared by the US Army Corps of Engineers. Will you please confirm receipt of this email. Thank you, Drew Drew Beckwith | Western Resource Advocates Water Policy Analyst 2260 Baseline Road, Suite 200 | Boulder, CO 80302 phone: 303.444.1188 x226 | fax: 303.786.8054 email: dbeckwith@westernresources.org www.westernresourceadvocates.org Please consider not printing this e-mail - WRA Moffat DEIS Comments.pdf	***Comment #781-41*** *(ID 5135)**:*** *Western Resource Advocates (WRA) would like to provide this cover letter to our comments on the Moffat Collection System Project Draft Environmental Impact Statement. Western Resource Advocates has actively participated in discussions with Denver Water regarding the proposed Moffat Collection System Project throughout much of its planning process, and we plan to continue such discussions in the future. In 2005, WRA and a consortium of Colorado environmental groups released a report entitled "Facing our Future: A Balanced Water Solution for Colorado."[1] A key feature of this report is its recognition that some new storage facilities will be necessary to increase and improve management of water supplies – and the Moffat project was one of the proposals evaluated. However, the report also asserts that higher priorities are to improve conservation and efficiency, and invest more in reuse and water "sharing" between cities and farmers. These strategies increase supply faster, with less harm to Colorado's famous environmental values, and with much less controversy. FOOTNOTE: [1] Colorado Environmental Coalition, Trout Unlimited, & Western Resource Advocates. 2005. Facing our Future: A Balanced Water Solution for Colorado. http://www.westernresourceadvocates.org/facingourfuture/. In the report, WRA pledged to work closely with water providers and conservation districts to achieve higher levels of water conservation and efficiency, to ensure that the new or enhanced water projects fulfill their potential to be "smart", and to facilitate the subsequent approval and development of these projects. Both WRA and Denver Water have benefited from this pledge. Over the past five years, WRA and Denver Water have collaborated on several successful water conservation and efficiency programs, such as the SWSI Phase II Conservation and Efficiency Technical Roundtable, Denver Water's implementation of a conservation-oriented rate*

Comment Information	Comment	Comments and Responses
	Attachments: WESTERN RESOURCE ADVOCATES March 17, 2010 Mr. Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin, Western Resource Advocates (WRA) would like to provide this cover letter to our comments on the Moffat Collection System Project Draft Environmental Impact Statement. Western Resource Advocates has actively participated in discussions with Denver Water regarding the proposed Moffat Collection System Project throughout much of its planning process, and we plan to continue such discussions in the future. In 2005, WRA and a consortium of Colorado environmental groups released a report entitled "Facing our Future: A Balanced Water Solution for Colorado."[1] A key feature of this report is its recognition that some new storage facilities will be necessary to increase and improve management of water supplies – and the Moffat project was one of the proposals evaluated. However, the report also asserts that higher priorities are to improve conservation and efficiency, and invest more in reuse and water "sharing" between cities and farmers. These strategies increase supply faster, with less harm to Colorado's famous environmental values, and with much less controversy. In the report, WRA pledged to work closely with water providers and conservation districts to achieve higher levels of water conservation and efficiency, to ensure that the new or enhanced water projects fulfill their potential to be "smart", and to facilitate the subsequent approval and development of these projects. Both WRA and Denver Water have benefited from this pledge. Over the past five years, WRA and Denver Water have collaborated on several successful water conservation and efficiency programs, such as the SWSI Phase II Conservation and Efficiency Technical Roundtable, Denver Water's implementation of a conservation-oriented rate structure, and WRA's participation in Denver Water's 2010 Integrated Resource Plan. [1] Colorado Environmental Coalition, Trout Unlimited, & Western Resource Advocates. 2005. Facing our Future: A Balanced Water Solution for Colorado. http://www.westernresourceadvocates.org/facingourfuture/. COLORADO • 2260 Baseline Road, Suite 200 • Boulder, CO 80302 • 303.444.1188 • Fax: 303.786.8054 • Email: info@westernresources.org NEVADA • 204 N. Minnesota Street, Suite A • Carson City, NV 89703 • 775.841.2400 • Fax: 866.723.8365 • Email:info@westernresources.org NEW MEXICO • 227 E. Palace Avenue, Suite M • Santa Fe, NM 87501 • 505.820.1590 • Fax: 505.820.1589 • Email:info@westernresources.org UTAH • 150 South 600 East, Suite 2A0 • Salt Lake City, UT 84102 • 801.487.9911 • Email:utah@westernresources.org www.westernresourceadvocates.org	*structure, and WRA's participation in Denver Water's 2010 Integrated Resource Plan. Over this same time period, Denver Water has also made significant strides towards reducing per capita water use, improving conservation and efficiency programs, and providing leadership for other Colorado water providers. WRA explicitly recognized Denver Water's efforts by bestowing them with a "Top Drop" award during the release of a WRA report comparing Colorado utility conservation programs. We encourage and support Denver Water to keep improving its conservation programs, and we hope to be actively engaged in supporting this future progress. The Facing our Future report acknowledges "smart" projects as ones that fully integrate public opinion and economic, financial, environmental, and recreational needs into the planning and development process. These types of projects are the better way to provide Colorado with a secure water future. WRA and the environmental consortium identified the following actions to be followed by Denver Water as a prerequisite to making the Moffat Project "smart": • Demonstrate that Denver has pursued all reasonable urban efficiency measures before proceeding with increased transbasin diversions. • Avoid or offset environmental impacts (including those arising from flow reductions), in both the South Platte and Colorado River Basins, especially in the Fraser River and its tributaries. • Where feasible, integrate Denver's system with other transbasin diverters out of the Upper Colorado and Front Range water suppliers to decrease total diversions, both now and in the future, and create opportunities to restore healthy flows on the Fraser River and elsewhere. While we submit that Denver Water has made significant progress on some of these measures, we do not feel that Denver Water has pursued all reasonable efficiency measures, sufficiently avoided environmental impacts, or fully investigated systems integration – at least to the extent these are described*

Comment Information	Comment	Comments and Responses
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While we submit that Denver Water has made significant progress on some of these measures, we do not feel that Denver Water has pursued all reasonable efficiency measures, sufficiently avoided environmental impacts, or fully investigated systems integration – at least to the extent these are described in the DEIS. While we are not advocating through our comments that the USACE should deny a permit for the proposed project at this time, we are, however, asking that the issues described in our comments are adequately addressed through the USACE's response to public comments in a revised Draft EIS and the Final EIS. Should the project move forward, we ask that the permit conditions are clear and reflect the needs not only of Denver Water ratepayers, but of their neighbors statewide as well. At the end of our comments section, we have included a list of conservation and efficiency mitigation measures for consideration in the permitting process. Until all impacts of the project have been adequately assessed and addressed, we cannot provide additional conclusions. We appreciate the opportunities we have had to discuss the Moffat project with Denver Water staff, and recognize the progress made in improving existing Denver Water operations as well as in developing creative solutions within the context of the Moffat project. We hope the following comments can be used to continue our dialogue with Denver Water, permitting agencies and others, as we move through the federal permitting processes. Please do not hesitate to contact me if you have any questions or wish to discuss these matters further. ii	*in the DEIS. While we are not advocating through our comments that the USACE should deny a permit for the proposed project at this time, we are, however, asking that the issues described in our comments are adequately addressed through the USACE's response to public comments in a revised Draft EIS and the Final EIS. 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Please do not hesitate to contact me if you have any questions or wish to discuss these matters further.* **Response #781-41:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #781-40*** *(ID 5134)**:*** *Western Resource Advocates (WRA) is pleased to offer these comments on the Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and the associated § 404 Permit Application prepared by the U.S. Army Corps of Engineers (USACE). Western Resource Advocates is*

Comment Information	Comment	Comments and Responses
	Sincerely, Drew Beckwith Water Policy Analyst Western Resource Advocates 2260 Baseline Rd, Suite 200 Boulder, CO 80302 303-444-1188 x226 dbeckwith@westernresources.org cc: U.S. Environmental Protection Agency, Region VIII Colorado Department of Natural Resources Colorado Division of Wildlife Colorado Wildlife Commission Colorado Water Conservation Board U.S. Senator Udall U.S. Senator Bennet U.S. Representative Salazar U.S. Representative Polis State Senator Al White State Representative Baumgardner Denver Mayor John Hickenlooper Denver Water Board Grand County Board of County Commissioners Summit County Board of County Commissioners Colorado River Water Conservancy District Board iii	*a regional nonprofit organization dedicated to protecting the Interior West's land, air, and water. We promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for future generations. We meet our goals in collaboration with other environmental and community groups, and by developing solutions appropriate to the environmental, economic, and cultural framework of the southwestern United States. These comments were generated by a team of WRA staff that, collectively, has dozens of years of experience on water issues in this region. These comments address the analysis, findings, and underlying assumptions of the Moffat Collection System Project DEIS in light of requirements specified by the National Environmental Policy Act and Section 404 of the Clean Water Act. They are grouped into the following topic areas: 1. Legal Framework 2. Purpose and Need 3. Alternatives 4. Climate Change 5. Hydrologic Data and PACSM Output 6. Proposed Mitigation: Conservation and Efficiency Measures WRA also incorporates by reference the comments of Trout Unlimited, Colorado Environmental Coalition, Center for Native Ecosystems, the Joint Rebuttal submitted by West Slope entities, and Summit County.* **Response #781-40:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #781-39*** *(ID 5133)**:*** *Legal Framework Based on our review of the Moffat Collection System Project DEIS, the analysis completed thus far fails to satisfy requirements of the National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) Section 404(b) noted below. In particular, the DEIS lacks an adequate evaluation of the proposed project's purpose and need or its*

Comment Information	Comment	Comments and Responses
	This page intentionally left blank. iv	*alternatives – including the No Action Alternative and elements considered but rejected. 1.1. National Environmental Policy Act The National Environmental Policy Act[2] requires federal agencies to prepare a detailed statement on the environmental impacts of a proposed "major federal action" and all of the reasonable alternatives thereto before authorizing any such action."[3] An agency proposal for major federal action exists for NEPA purposes "at that the stage…when an agency subject to [NEPA] has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated."[4] NEPA's purpose is to promote efforts "which will prevent or eliminate damage to the environment",[5] to inform the public of environmental consequences,[6] and to "help public officials…take actions that protect, restore, and enhance the environment."[7] FOOTNOTES: [2] 42 U.S.C. §§ 4321-4370f. [3] Id. at § 4332(2)(C). [4] 40 C.F.R. § 1508.23. [5] 42 U.S.C. § 4321. [6] 40 C.F.R. § 1500.1(b). [7] Id. at § 1500.1(c). Under NEPA, the Moffat DEIS must analyze "connected", "cumulative", and "similar" actions and three types of impacts.[8] Connected actions are those which are "closely related," including those that "[c]annot or will not proceed unless other actions are taken", or those that "[a]re interdependent parts of a larger action and depend on the larger action for their justification."[9] Cumulative actions are those that "have cumulatively significant impacts and should therefore be discussed in the same impact statement."[10] Similar actions include those that have "common timing or geography."[11] To assess "significance" NEPA requires consideration of "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts."[12] FOOTNOTES: [8] Id. at §§ 1508.25, 1508.7, 1508.8. [9] Id. at § 1508.25(a)(1). [10] Id. at § 1508.25(a)(2). [11] Id. at § 1508.25(a)(3). [12] Id. at § 1508.27(b)(7).*

Comment Information	Comment	Comments and Responses
	WESTERN RESOURCE ADVOCATES March 17, 2010 Mr. Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128 Transmitted via E-mail to: moffat.eis@usace.army.mil Western Resource Advocates (WRA) is pleased to offer these comments on the Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and the associated § 404 Permit Application prepared by the U.S. Army Corps of Engineers (USACE). Western Resource Advocates is a regional nonprofit organization dedicated to protecting the Interior West's land, air, and water. We promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for future generations. We meet our goals in collaboration with other environmental and community groups, and by developing solutions appropriate to the environmental, economic, and cultural framework of the southwestern United States. These comments were generated by a team of WRA staff that, collectively, has dozens of years of experience on water issues in this region. These comments address the analysis, findings, and underlying assumptions of the Moffat Collection System Project DEIS in light of requirements specified by the National Environmental Policy Act and Section 404 of the Clean Water Act. They are grouped into the following topic areas: 1. Legal Framework.....2 2. Purpose and Need.....5 3. Alternatives.....15 4. Climate Change.....30 5. Hydrologic Data and PACSM Output.....32 6. Proposed Mitigation: Conservation and Efficiency Measures.....33 WRA also incorporates by reference the comments of Trout Unlimited, Colorado Environmental Coalition, Center for Native Ecosystems, the Joint Rebuttal submitted by West Slope entities, and Summit County. COLORADO • 2260 Baseline Road, Suite 200 • Boulder, CO 80302 • 303.444.1188 • Fax: 303.786.8054 • Email: info@westernresources.org NEVADA • 204 N. Minnesota Street, Suite A • Carson City, NV 89703 • 775.841.2400 • Fax: 866.223.8365 • Email:info@westernresources.org NEW MEXICO • 227 E. Palace Avenue, Suite M • Santa Fe, NM 87501 • 505.820.1590 • Fax: 505.820.1589 • Email:info@westernresources.org UTAH • 150 South 600 East, Suite 2AB • Salt Lake City, UT 84102 • 801.487.9911 • Email:utah@westernresources.org www.westernresourceadvocates.org]	*The three types of impacts to be studied in an EIS are those that are "direct," "indirect," and "cumulative."[13] Direct effects are those that "are caused by the action and occur at the same time and place."[14] Indirect effects are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[15] A project's "cumulative impact," is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[16] FOOTNOTES: [13] Id. at 1508.25(c); see also id. at §§ 1508.7, 1508.8. [14] Id. at § 1508.8(a). [15] Id. at § 1508.8(b). [16] Id. at § 1508.7. See also Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1379 (9th Cir. 1998) (with respect to a cumulative impacts analysis, an agency must provide "some quantified or detailed information" because "[w]ithout such information, neither courts nor the public…can be assured that the [agency] provided the hard look that it is required to provide."). NEPA's many policies and goals include: • Encouraging a "productive and enjoyable harmony between man and his environment";[17] FOOTNOTE: [17] 42 U.S.C. § 4321. • Promoting "efforts which will prevent or eliminate damage to the environment and biosphere";[18] FOOTNOTE: [18] Id. • Using "all practicable means and measures…to create and maintain conditions under which man and nature can exist in productive harmony";[19] FOOTNOTE: [19] Id. • Fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations";[20] FOOTNOTE: [20] Id. at § 4331(b)(1). • Assuring "all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings";[21] FOOTNOTE: [21] Id. at § 4331(b)(2). • Allowing beneficial use of the environment "without degradation…or other*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **1. Legal Framework** Based on our review of the Moffat Collection System Project DEIS, the analysis completed thus far fails to satisfy requirements of the National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) Section 404(b) noted below. In particular, the DEIS lacks an adequate evaluation of the proposed project's purpose and need or its alternatives – including the No Action Alternative and elements considered but rejected. **1.1. National Environmental Policy Act** The National Environmental Policy Act[2] requires federal agencies to prepare a detailed statement on the environmental impacts of a proposed "major federal action" and all of the reasonable alternatives thereto before authorizing any such action."[3] An agency proposal for major federal action exists for NEPA purposes "at that the stage…when an agency subject to [NEPA] has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated."[4] NEPA's purpose is to promote efforts "which will prevent or eliminate damage to the environment",[5] to inform the public of environmental consequences,[6] and to "help public officials…take actions that protect, restore, and enhance the environment."[7] Under NEPA, the Moffat DEIS must analyze "connected", "cumulative", and "similar" actions and three types of impacts.[8] Connected actions are those which are "closely related," including those that "[c]annot or will not proceed unless other actions are taken", or those that "[a]re interdependent parts of a larger action and depend on the larger action for their justification."[9] Cumulative actions are those that "have cumulatively significant impacts and should therefore be discussed in the same impact statement."[10] Similar actions include those that have "common timing or geography."[11] To assess "significance" NEPA requires consideration of "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts."[12] The three types of impacts to be studied in an EIS are those that are "direct," "indirect," and "cumulative."[13] Direct effects are those that "are caused by the action and occur at the same time and place."[14] Indirect effects are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[15] A project's "cumulative impact," is the impact on the environment which results from the incremental impact of the action when added to [2] 42 U.S.C. §§ 4321-4370f. [3] *Id.* at § 4332(2)(C). [4] 40 C.F.R. § 1508.23. [5] 42 U.S.C. § 4321. [6] 40 C.F.R. § 1500.1(b). [7] *Id.* at § 1500.1(c). [8] *Id.* at §§ 1508.25, 1508.7, 1508.8. [9] *Id.* at § 1508.25(a)(1). [10] *Id.* at § 1508.25(a)(2). [11] *Id.* at § 1508.25(a)(3). [12] *Id.* at § 1508.27(b)(7). [13] *Id.* at 1508.25(c); *see also id.* at §§ 1508.7, 1508.8. [14] *Id.* at § 1508.8(a). [15] *Id.* at § 1508.8(b). 2	*undesirable and unintended consequences";[22] FOOTNOTE: [22] Id. at § 4331(b)(3). • Preserving "important historic, cultural, and natural aspects of our national heritage";[23] FOOTNOTE: [23] Id. at § 4331(b)(4). • Achieving a "balance between population and resource use";[24] and FOOTNOTE: [24] Id. at § 4331(b)(5). • Enhancing "the quality of renewable resources" and maximizing recycling of depletable resources.[25] FOOTNOTE: [25] Id. at § 4331(b)(6). At the most fundamental level, NEPA is intended to help public officials make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.[26] Federal agencies are required, to the fullest extent possible, to use all practicable means consistent with the requirements of NEPA to "restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."[27] Federal Council on Environmental Quality (CEQ) regulations further define mitigation as: FOOTNOTES: [26] See 40 CFR § 1500.1(b). [27] Id. at 1500.2(f). • Avoiding the impact altogether by not taking a certain action or parts of an action; • Minimizing impacts by limiting the degree or magnitude of the action and its implementation; • Rectifying the impact by repairing, rehabilitating, or restoring the affected environment; • Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; • Compensating for the impact by replacing or providing substitute resources or environments.[28] FOOTNOTE: [28] 40 C.F.R. § 1508.20. See also MEMORANDUM OF AGREEMENT BETWEEN The Department of the Army AND The Environmental Protection Agency CONCERNING THE DETERMINATION OF MITIGATION UNDER THE CLEAN WATER ACT SECTION 404(b)(1) GUIDELINES, February 6, 1990.*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS other past, present, and reasonably foreseeable future actions…cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[16] NEPA's many policies and goals include: • Encouraging a "productive and enjoyable harmony between man and his environment";[17] • Promoting "efforts which will prevent or eliminate damage to the environment and biosphere";[18] • Using "all practicable means and measures…to create and maintain conditions under which man and nature can exist in productive harmony";[19] • Fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations";[20] • Assuring "all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings";[21] • Allowing beneficial use of the environment "without degradation…or other undesirable and unintended consequences";[22] • Preserving "important historic, cultural, and natural aspects of our national heritage";[23] • Achieving a "balance between population and resource use";[24] and • Enhancing "the quality of renewable resources" and maximizing recycling of depletable resources.[25] At the most fundamental level, NEPA is intended to help public officials make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.[26] Federal agencies are required, to the fullest extent possible, to use all practicable means consistent with the requirements of NEPA to "restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."[27] Federal Council on Environmental Quality (CEQ) regulations further define mitigation as: • Avoiding the impact altogether by not taking a certain action or parts of an action; • Minimizing impacts by limiting the degree or magnitude of the action and its implementation; • Rectifying the impact by repairing, rehabilitating, or restoring the affected environment; [16] *Id.* at § 1508.7. *See also Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998) (with respect to a cumulative impacts analysis, an agency must provide "some quantified or detailed information" because "[w]ithout such information, neither courts nor the public…can be assured that the [agency] provided the hard look that it is required to provide."). [17] 42 U.S.C. § 4321. [18] *Id.* [19] *Id.* [20] *Id.* at § 4331(b)(1). [21] *Id.* at § 4331(b)(2). [22] *Id.* at § 4331(b)(3). [23] *Id.* at § 4331(b)(4). [24] *Id.* at § 4331(b)(5). [25] Id. at § 4331(b)(6). [26] *See* 40 CFR § 1500.1(b). [27] *Id.* at 1500.2(f). 3	**Response #781-39:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #781-38*** *(ID 5132)**:*** *Effective mitigation starts at the beginning of the NEPA process, not at the end, and must be included as part of the alternatives development and analysis process. The proposed mitigation plan described in the DEIS does not begin to use all practicable means available to restore or enhance the environment and does not incorporate water conservation and efficiency as an effective mitigation element.* **Response #781-38:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the 34,000 AF water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1, 29,000

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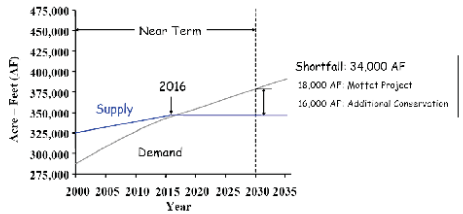
	WRA Comments on Moffat Collection System Project DEIS • Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; • Compensating for the impact by replacing or providing substitute resources or environments.[28] Effective mitigation starts at the beginning of the NEPA process, not at the end, and must be included as part of the alternatives development and analysis process. The proposed mitigation plan described in the DEIS does not begin to use all practicable means available to restore or enhance the environment and does not incorporate water conservation and efficiency as an effective mitigation element. 1.2. Clean Water Act The Clean Water Act (CWA) also applies to the Moffat Project, including section 404(b)(1) guidelines. The guidelines provide that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."[29] The Corps compares alternatives by considering both direct and indirect impacts to aquatic ecosystems, including fluctuating water levels in reservoirs and impacts to downstream flows.[30] The DEIS fails to evaluate many practicable alternatives that would have less adverse impacts on the aquatic environment, including several alternatives eliminated during the initial screening process and a conservation alternative focused on water use efficiency. The inadequacy of the DEIS and these "missed" alternatives are described further in Section 3: Alternatives. [28] 40 C.F.R. § 1508.20. *See also* MEMORANDUM OF AGREEMENT BETWEEN The Department of the Army AND The Environmental Protection Agency CONCERNING THE DETERMINATION OF MITIGATION UNDER THE CLEAN WATER ACT SECTION 404(b)(1) GUIDELINES, February 6, 1990. [29] 40 C.F.R. § 230.10(a). [30] *Id.* at § 230.11(h). 4	AF/yr of past conservation, 27,700 AF/yr of natural replacement, 12,500 AF/yr of cooperative actions, and 17,500 AF/yr of non-potable reuse have been considered when Denver Water calculates its future demand. Additionally, Denver Water has accelerated its future conservation efforts with a goal of reducing consumption by 22% by 2016. To date, Denver Water has achieved a 20% reduction in water use compared to water use in 2001. ***Comment #781-37*** *(ID 5131)**:*** *Clean Water Act The Clean Water Act (CWA) also applies to the Moffat Project, including section 404(b)(1) guidelines. The guidelines provide that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."[29] The Corps compares alternatives by considering both direct and indirect impacts to aquatic ecosystems, including fluctuating water levels in reservoirs and impacts to downstream flows.[30] FOOTNOTES: [29] 40 C.F.R. § 230.10(a). [30] Id. at § 230.11(h). The DEIS fails to evaluate many practicable alternatives that would have less adverse impacts on the aquatic environment, including several alternatives eliminated during the initial screening process and a conservation alternative focused on water use efficiency. The inadequacy of the DEIS and these "missed" alternatives are described further in Section 3: Alternatives. [See TABLE 4. CONSERVATION SAVINGS – ACTUAL VS. GOALS in Source File.]* **Response #781-37:** Please see the response to Comment ID 5101.

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **2. Purpose and Need** *The purpose of the Moffat Collection System Project is to develop 18,000 acre feet per year of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers.*[31] **2.1. Purpose and Need Statement** In the Moffat Collection System Project DEIS, Denver Water describes its need for the expansion of storage as having four elements – a reliability need, a vulnerability need, a flexibility need, and a firm yield need. The DEIS states that Denver Water outlines these objectives in the context of its Integrated Resource Plan (IRP 1997 and 2002) which includes not only new supply, but also "aggressive conservation" and water re-use. The implication is that any "solution" to the Moffat System problems must treat these four objectives as co-equal and, thus, must deal with all in an equivalently effective manner to be acceptable to Denver Water. As stated in scoping comments, WRA is concerned that USACE takes these claims at face value without resorting to any independent assessment, and that it then limits its description of the Purpose and Need based solely and exclusively on Denver Water's stated objectives. We find nothing in the DEIS that offers any evidence that the *only* way to meet Denver Water's four-fold objective, valid or not, is by increasing the yield of the Moffat system. We agree that a federal agency may give deference to a private party applicant's stated purpose and need, but at the same time the agency is also required to look more broadly to ensure that it will consider reasonable alternatives.[32] Courts repeatedly find a nexus between agencies' need to develop the project's purpose and need independently on the one hand, and the agency's duty to identify reasonable alternatives on the other. Thus, courts will not allow an agency to define objectives so narrowly as to preclude a reasonable consideration of alternatives.[33] To be consistent with this legal requirement, the Corps must conduct its own analysis of the objectives of applicant's proposed project. Finally, the USACE must keep in mind its obligations under the Section 404(b)(1) Guidelines. These Guidelines allow "… permit issuance for only the least environmentally damaging practicable alternative."[34] The emphasis is on the avoidance of impacts. The Guidelines require "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." They also make clear that "[C]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." [31] U.S. Army Corps of Engineers Omaha Division (USACE). 2009. Moffat Collection System Project Draft Environmental Impact Statement (DEIS), p. 2-1. [32] *Citizens Committee to Save our Canyons v. United States Forest Service*, 297 F.3d 1012, 1030-31 (10th Cir. 2002). [33] *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002), *citing, Colo. Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1174-75 (1999). [34] 40 CFR Part 230.10(a). 5	***Comment #781-36*** *(ID 5130)**:*** *Purpose and Need The purpose of the Moffat Collection System Project is to develop 18,000 acre feet per year of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers.[31] FOOTNOTE: [31] U.S. Army Corps of Engineers Omaha Division (USACE). 2009. Moffat Collection System Project Draft Environmental Impact Statement (DEIS), p. 2-1. 2.1. Purpose and Need Statement In the Moffat Collection System Project DEIS, Denver Water describes its need for the expansion of storage as having four elements – a reliability need, a vulnerability need, a flexibility need, and a firm yield need. The DEIS states that Denver Water outlines these objectives in the context of its Integrated Resource Plan (IRP 1997 and 2002) which includes not only new supply, but also "aggressive conservation" and water re-use. The implication is that any "solution" to the Moffat System problems must treat these four objectives as co-equal and, thus, must deal with all in an equivalently effective manner to be acceptable to Denver Water. As stated in scoping comments, WRA is concerned that USACE takes these claims at face value without resorting to any independent assessment, and that it then limits its description of the Purpose and Need based solely and exclusively on Denver Water's stated objectives. We find nothing in the DEIS that offers any evidence that the only way to meet Denver Water's four-fold objective, valid or not, is by increasing the yield of the Moffat system. We agree that a federal agency may give deference to a private party applicant's stated purpose and need, but at the same time the agency is also required to look more broadly to ensure that it will consider reasonable alternatives.[32] Courts repeatedly find a nexus between agencies' need to develop the project's purpose and need independently on the one hand, and the agency's*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS For all of the above reasons, the purpose and need section of the DEIS cannot be constructed in a way that restricts or eliminates alternatives by restricting the purpose or misstating the need. In addition, the purpose and need statement was developed more than five years ago and is no longer supported by the assumptions and predictions on which it was based. Denver Water's 1997 IRP – subsequently updated in 2002 – segmented Denver Water's planning horizon into near-term (1996-2030) and long-term (2030 to system build-out) timeframes. The IRP also identified a near-term shortfall in water supply after analyzing existing supply and projected demand (Figure 1).  Figure 1. Near-Term Demand and Supply (DEIS Figure 1-5). To meet Denver Water's customers' near-term water demands and address the "shortfall" projected to occur in 2016, the Board's "Near-Term Strategy" includes cooperative actions with other water suppliers, system refinements, non-potable recycling, additional conservation measures, and a new water supply (Table 1). 6	*duty to identify reasonable alternatives on the other. Thus, courts will not allow an agency to define objectives so narrowly as to preclude a reasonable consideration of alternatives.[33] To be consistent with this legal requirement, the Corps must conduct its own analysis of the objectives of applicant's proposed project. FOOTNOTES: [32] Citizens Committee to Save our Canyons v. United States Forest Service, 297 F.3d 1012, 1030-31 (10th Cir. 2002). [33] Davis v. Mineta, 302 F.3d 1104 (10th Cir. 2002), citing, Colo. Environmental Coalition v. Dombeck, 185 F.3d 1162, 1174-75 (1999).* **Response #781-36:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The water demand estimates and projections provided in the Denver Water IRP were evaluated independently and in considerable detail by the Corps team. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Table 1. Near-Term Demand and Supply Strategy (DEIS Table 1-1). Category | 2002 IRP | 2030 (AF/year) Demand[a] Unrestricted Demand | 312,500 | 427,500 Less: Conservation Savings since 1980 | (27,500) | (27,500) Future Natural Replacement Savings | N/A | (24,000) Plus: 1999 Arvada Contract | N/A | 3,000 Total System Demand | 285,000 | 379,000 Supply[b] System Supply | 315,000 | 315,000 Plus: Cooperative Actions | N/A | 440 System Refinements | N/A | 13,000 Non-Potable Reuse | N/A | 17,000 Total System Supply (Nearest 1,000) | 315,000 | 345,000 Surplus/(Shortfall)[c] | 30,000 | (34,000) Plans to Meet Shortfall Additional Conservation | N/A | 16,000 New Water Supply | N/A | 18,000 The DEIS must reevaluate several of the assumptions and individual strategies listed in Table 1 – the basis of the purpose and need statement – and their acre-foot contributions to future supply, in light of common-sense, current economic conditions, more recent developments, and changed Board policies. 2.2. Unrestricted Demand The entire DEIS is based on meeting the unrestricted demand of Denver Water's customers. This is an inappropriate assumption for the Corps to use in demand planning and does not even reflect Denver Water's current operating procedures.[35] The DEIS describes analyses from Denver Water's PACSM model that project four years in which the Moffat Collection System would have run out of water, and several "other years when the Moffat Collection System would have been close to running out of water."[36] In fact, the Moffat System has never run out of water, not even in the severe drought of 2002. The Moffat System did not run out of water in 2002 because Denver Water enacted its Drought Response Plan and took pre-determined actions to reduce water use. Denver Water subsequently updated its Drought Response Plan in 2004 after lessons learned during the 2002-2003 drought. In general, Denver Water's Drought Plan describes different stages of drought based on July 1st reservoir levels, and provides several recommended responses aimed at reducing water use for each stage of drought.[37] For instance, the goal in a Stage 3 drought, with reservoir storage at 40% or lower on July 1st, is to reduce water use by 50% through measures such as limiting the amount of outdoor lawn watering. [35] Denver Water. 2009. Operating Rules - Chapter 15 - Drought Response. http://www.denverwater.org/OperatingRules/OperRules15/ [36] USACE. 2009. DEIS Chapter 1 – Purpose and Need, p. 1-19. [37] Denver Water. 2004. Drought Response Plan. May. http://www.denverwater.org/docs/assets/DD1F807E-BCDF-1R42-D5B4FD4EB681A7B3/drought_response_plan1.pdf 7	an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. Projects are to have defined purpose(s) based on need(s). The following regulations require the Corps to independently evaluate and document these: • NEPA – CEQ Regulations – 40 CFR 1508.9(b) and 1502.13 and Corps' Procedures for Implementing NEPA – 33 CFR Part 325 (Appendix B) Section 9b(4). • Section 404 – Corps Regulatory Program Regulations - 33 CFR 320.4(a)2(i), 33 CFR 325.1(d) and Section 404(b)(1) Guidelines – 40 CFR 230.10(a). For NEPA/Section 404 analysis, the Corps defines Project purpose statement in light of applicant's stated objectives as well as public's perspective (33 CFR Part 325 Appendix B, Section 9(b)(4) and formal policy guidance Plantation Landing Resort, Inc. 404(q) elevation). ***Comment #781-35*** *(ID 5129)**:*** *Finally, the USACE must keep in mind its obligations under the Section 404(b)(1) Guidelines. These Guidelines allow "… permit issuance for only the least environmentally damaging practicable alternative."[34] The emphasis is on the avoidance of impacts. The Guidelines require "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS At a minimum, the DEIS should include modeling of future demands with drought response measures in place. During the next drought, Denver Water will enact measures from its updated Drought Plan and water use will be reduced. Denver Water customers expect to decrease their water demands during times of drought – a direct result of the public education campaign initiated in drought Stage 1. To model "unrestricted demand" for all future periods is unrealistic and at odds with the Board's current policies. The DEIS should also include an economic evaluation or "willingness to pay" study of how much Denver Water customers value their unrestricted demand, before the Corps reaches a conclusion on the purported expense or economic hardship of enacting drought response measures. The DEIS implicitly backs this idea in another context, stating that "[w]ater users would be unlikely to pay more for the insurance policy of an excessive safety factor if those costs exceeded the economic or other impacts they might undergo from the shortage."[38] Are customers willing to pay for the insurance policy of the proposed Moffat Expansion? It is quite possible that customers would be willing to sacrifice a green lawn once every 15 summers – or what ever the appropriate drought recurrence interval is – rather than paying $11 million per year for the proposed project.[39] A 2005 survey of Denver Water's customers revealed that 60% of respondents said their quality of life was not affected by the 2002 drought,[40] highly suggesting that reasonable and prudent drought response measures are not burdensome to the customer base. **2.3. Total Demands** The Corps uses Denver Water's model to estimate future demands, which was created almost a decade ago and is based on water use statistics from the 1970's through 1990's. Furthermore, the demographic data used to drive the model and estimate Denver Water's future demands in the DEIS are now ten years old. Using an outdated model and outdated data cannot provide the most accurate and up to date information required in the DEIS. The Corps should recalculate Denver Water's future demands using an updated model that: 1) captures the strong role conservation has played since 2000; 2) incorporates conservation funding increases; and 3) utilizes more recent Denver Region Council of Governments (DRCOG) demographic projections that take into account the current economic downturn. Denver Water's current demand model includes a statistically significant water conservation variable. The variable accounts for monetary spending on conservation and is negative in the model, which means that more conservation spending will lead to lower demand. In Denver Water's demand projections, conservation spending is held constant at $1,116,000 for all years between 2000 and 2050.[41] Denver Water currently spends more than $10,000,000 per year on conservation,[42] implying that future demands at 2010 should be less than what is currently reported. Denver Water is likely to [38] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, p. 13. [39] Denver Water. 2009. Moffat Collection System Project Draft FERC Hydropower License Amendment Application, Table D-1. October. [40] Denver Water (BBC Research and Consulting). 2005. *Denver Water Customer Perceptions*. Final Report. June 3. [41] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, Exhibit 3. [42] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. Personal Communication. December 7, 2009. 8	*adverse environmental consequences." They also make clear that "[C]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." FOOTNOTE: [34] 40 CFR Part 230.10(a).* **Response #781-35:** The Corps is aware of its obligations under the CWA Section 404 regulations and the process and protocol for determining the LEDPA. ***Comment #781-34*** *(ID 5128)**:*** *For all of the above reasons, the purpose and need section of the DEIS cannot be constructed in a way that restricts or eliminates alternatives by restricting the purpose or misstating the need. In addition, the purpose and need statement was developed more than five years ago and is no longer supported by the assumptions and predictions on which it was based. Denver Water's 1997 IRP – subsequently updated in 2002 – segmented Denver Water's planning horizon into near-term (1996-2030) and long-term (2030 to system build-out) timeframes. The IRP also identified a near-term shortfall in water supply after analyzing existing supply and projected demand (Figure 1). [See FIGURE 1. NEAR-TERM DEMAND AND SUPPLY (DEIS Figure 1-5) in Source File.] To meet Denver Water's customers' near-term water demands and address the "shortfall" projected to occur in 2016, the Board's "Near-Term Strategy" includes cooperative actions with other water suppliers, system refinements, non-potable recycling, additional conservation measures, and a new water supply (Table 1). [See TABLE 1. NEAR-TERM DEMAND AND SUPPLY STRATEGY (DEIS TABLE 1-1.) in Source File.] The DEIS must reevaluate several of the assumptions and individual strategies listed in Table 1 – the basis of the purpose and need statement –*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS continue increasing their spending on conservation through the near-term, and this is not captured in any part of the DEIS. DRCOG demographic projections, more recent than 2000, should be use to drive estimates of future demands because the current economic downturn in Colorado's economy will have a far-reaching impact on future population growth. Population projections are the driver for increased future water demands, thus it is critical to have accurate and up-to-date projections for planning efforts. Population projections are heavily dependent on the initial rates of population growth, and errors in the first few years are compounded greatly over time. An example illustrates this compounding effect. Let's assume community A has a population of 100,000 in the year 2000 and grows at 2% per year for 50 years. In 2050, community A has approximately 269,000 people (Table 2). If an equally sized community, B, only grows at 1% for the first 10 years, and then at 2% for the remaining 40 years, its population in 2050 would be approximately 244,000. In 2010 the population in community A and B differ by only 11,000 people, but by 2050 with the same population growth over the final 40 years, the communities differ by more than 25,000 people. Thus, initial rates of population growth have a disproportionate impact on the total population at the end of any forecasting period. Table 2. Community A and B Population Growth. | | A | B | | 2000 | 100,000 | 100,000 | | 2010 | 122,000 | 110,000 | | 2020 | 149,000 | 135,000 | | 2030 | 181,000 | 164,000 | | 2040 | 221,000 | 200,000 | | 2050 | 269,000 | 244,000 | The current economic downturn will play a significant role in reducing Denver Water's estimated future water demands by decreasing population growth rates over the next few years. The current economic downturn is not within the normalcy of Colorado's historic, cyclical economic trends. This recession is the worst Colorado has experienced in the past forty years, with rates of unemployment, foreclosures, and building permits considerably outside the norm. The fact that the economic downturn is nation-wide and world-wide will dramatically slow Colorado's rate of recovery. The 2009 unemployment rate, at 7.9%, is the highest unemployment rate Colorado has experienced since 1976.[43] The change in employment from 2008 to 2009, at -4.0%, is the largest drop Colorado has experienced by more than a factor of three; in fact, this rate has only ever been negative for 4 of the past 33 years. Building permits are at their lowest level since 1970, and the percent change in building permits from 2008 to 2009 is -61.4%, the worst drop yet. These factors are the drivers for economic and population growth in the state and clearly, this is not "normal" when compared to other cyclical downturns in Colorado's recent history. [43] Colorado Water Conservation Board. 2009. State of Colorado 2050 Municipal and Industrial Water Use Projections – Appendix B, Table 1. June. 9	*and their acre-foot contributions to future supply, in light of common-sense, current economic conditions, more recent developments, and changed Board policies.* **Response #781-34:** In 2010 Denver Water updated their water demand projections based on the most recent population and demographic projections available from the DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's supplies in the year 2022. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. Additionally, Denver Water's near-term planning horizon now extends through the year 2032. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). On average, Denver Water spends $15 million per year on existing system maintenance and system refinements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Appendix A of the DEIS includes a comparison of year 2000 DRCOG demographic projections with 2004 projections, stating that "[a]lthough no formal analysis of the impact of these changes upon Denver Water's demand projections has been made, it is likely that these new projections might have increased slightly water demand projections from 2000 to 2020 and held stable or slightly reduced water demand projections by the year 2030."[44] Given the current economic situation, it is highly likely that using the most up-to-date projections will reduce future demands even further. Today's economic crisis and its long reaching impacts, represent an exceptional case where additional data and evaluation is warranted. **2.4. Cooperative Actions** Denver Water's estimate of 440 acre-feet (AF) of water supply from near-term cooperative actions is an underestimate given Denver Water's recent forward progress with the City of Aurora and South Metro water providers. Currently called the WISE Partnership, the general idea is to use excess capacity in Aurora's Prairie Waters pipeline to transport Denver Water's reusable return flows in the South Platte back up and into Denver Water's distribution system. Denver Water estimates the partnership could provide up to 5,000 AF of firm yield by 2015 and 18,000 AF of firm yield by 2050.[45] Not only does the WISE Partnership provide the opportunity to provide additional firm yield to Denver Water's system, it may also provide additional flexibility, reliability, and improvements to vulnerability – all directly related to the purpose and need of the proposed project. The USACE should consider the WISE Partnership a reasonably foreseeable action in the near-term and more fully evaluate it in the DEIS for the following reasons: • Denver Water and Aurora have spent the past four years or more determining water availability under this project and have a vested interest in its successful implementation; • The Prairie Waters pipeline will be operational by 2011, leaving almost 20 years remaining in the near-term timeframe for potential action. **2.5. Conservation Savings** The 16,000 AF of conservation savings assumed to occur by 2030 will now be reached by 2016, significantly delaying the shortfall date and likely decreasing the overall need for additional water supply in Denver Water's combined service area. In 2006, Denver Water's Board "accelerated" the pace of the near-term water conservation savings by adopting a 10-Year Conservation Plan aimed at decreasing water use 22% from pre-drought levels; this will lead to achieving the 16,000 AF of conservation savings by 2016, not 2030.[46] The DEIS must acknowledge the accelerated conservation savings – it is currently not mentioned in any part of the document – and recognize that Denver Water will very likely set a new conservation goal for the time period post-2016. Denver Water has demonstrated good conservation successes in the past, [44] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, p. 21. [45] Bennett, D., Project Manager and Little, D., Director, Denver Water Planning Division. 2010. Personal communication. January 14. [46] Denver Water. 2006. Proposed 10-Year Conservation Plan. July, 6. 10	yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS conserving upwards of 27,500 AF between 1980 and 2000 (a rate of ~1,400 AF/yr) – and an additional 13,000 AF from 2001 through 2008 (a rate of ~1,850 AF/yr).[47] A placeholder for conservation savings during the time period of 2016-2030 is appropriate to include in the DEIS. A conservative estimate of conservation at only 1,000 AF/yr, significantly lower than any rate achieved by Denver Water since 1980, would result in 14,000 AF of savings, potentially negating the near-term need for the proposed Moffat Expansion project. Communications with Denver Water staff indicate that the majority of the conservation savings achieved since 2001 are believed to be behavioral in nature.[48] Consequently, many of the rebate, incentive, and regulatory measures described in Denver Water's 10-Year Conservation Plan and several potential new conservation measures – discussed in further detail in Section 3.3: Conservation Alternative – have yet to be fully implemented and maximized. Furthermore, almost 90% of Denver Water customers live in homes built before 1996, in an age when fixtures and appliances that use large amounts of water were commonplace.[49] In short, significant technological savings are still achievable from existing customers. The DEIS is incorrect in assuming that all "the 'low hanging fruit' of conservation savings have already been achieved."[50] Denver Water continues to reap large conservation savings through basic toilet replacement programs, such as ones implemented in the Jefferson County School District and several in low-income housing. Denver Water has not come close to exhausting the easy conservation savings that exist through just this one program, let alone any number of others. 2.6. Denver Water's Four "Needs" Denver Water's reported need of the proposed Moffat Project is based on four separate needs: reliability, flexibility, vulnerability, and firm-yield. These needs require further investigation and explanation if they are to be used as the justification for the proposed project's purpose and need. 2.6.1. Reliability Denver Water reports that PACSM modeling and 2002 operations indicate that existing water demands would exceed available supplies from the Moffat Collection System during a severe drought, putting the Moffat Water Treatment Plant at a "significant level" of risk of running out of water. The DEIS must include a thorough assessment of the risk of water supply shortages, and describe what a "significant level" of risk means to Denver Water customers – an issue that was raised in the scoping process but not thoroughly described in the DEIS.[51] How is risk defined, and what does it mean? Does significant risk mean that customers will have to ration indoor water use every year if the proposed project is not built, or restrict outdoor use one in every ten years? Does the risk have a quantifiable economic impact? [47] Denver Water reports that 2008 per capita water use is 18% lower than pre-drought levels. 18% is approximately 80% of the 22% by 2016 goal, and 13,000 AF is approximately 80% of the 16,000 AF by 2016 goal. [48] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. 2009. Personal communication. December 7. [49] Denver Water (BBC Research and Consulting). 2005. *Denver Water Customer Perceptions*. Final Report. June 3. [50] USACE. 2009. DEIS Appendix A1: Review of Denver Water's IRP, p.5. [51] USACE. 2003. Scoping Summary – Moffat Collection System Project, p. 3-2. December. 11	the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,555 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). As shown in DEIS and FEIS Table 1-1, cooperative actions and other supply sources are considered when calculating Denver Water's supply shortfall. ***Comment #781-33*** *(ID 5127)**:*** *Unrestricted Demand The entire DEIS is based on meeting the unrestricted demand of Denver Water's customers. This is an inappropriate assumption for the Corps to use in demand planning and does not even reflect Denver Water's current operating procedures.[35] The DEIS describes analyses from Denver Water's PACSM model that project four years in which the Moffat Collection System would have run out of water, and several "other years when the Moffat Collection System would have been close to running out of water."[36] In fact, the Moffat System has never run out of water, not even in the severe drought of 2002. FOOTNOTES: [35] Denver Water. 2009. Operating Rules - Chapter 15 - Drought Response. http://www.denverwater.org/Operating Rules/OperRules15/ [36] USACE. 2009. DEIS Chapter 1 – Purpose and Need, p. 1-19. The Moffat System did not run out of water in 2002 because*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS The DEIS must describe how, and by how much, the proposed project would decrease the level of risk if it were built. The DEIS should describe if the proposed project decreases the level of risk of running out of water from "significant" to "acceptable", how that determination was made, and what the terms used to describe risk mean. As currently proposed, neither the proposed project nor any of the alternatives actually reduce the risk of water shortage to Denver Water's treated water customers. PACSM modeling indicates that treated water shortages would have occurred in water years similar to 1955, 1971, 1973, and 1974; however, these treated water shortages also would occur under all of the action alternatives.[52] This is because the treated water shortages are due to conveyance capacity constraints as opposed to lack of supply. The DEIS must include a description of the conveyance capacity upgrades necessary to eliminate the treated water shortage, including their timeline for completion, environmental impacts, permits required, and cost. 2.6.2. Vulnerability Denver Water reports that their overall water supply system is vulnerable to man-made and natural disasters because 90% of storage and 80% of available water supply is located in their South System. However, a simple analysis shows that storage and supply concerns are hardly changed with the addition of 18,000 AF of firm yield to the North System. Adding the proposed Moffat Expansion barely decreases Denver Water's reliance on the South System; lowering South System dependence from 81% to 77% of water supply (Table 3). Table 3. Yield of Denver Water's Systems in AF (adapted from DEIS Table 1-3). |	*Existing System*			*With Moffat Expansion*		
Source	**Supply**	**Percent**	**S. Supply**	**Supply**	**Percent**	**S. Supply**
Roberts Tunnel	93,000	27%	81%	93,000	26%	77%
South Platte	141,000	41%		141,000	39%	
Exchange/Reuse	47,000	14%		47,000	13%	
Moffat Tunnel	64,000	19%		82,000	23%	
TOTAL	**345,000**			**363,000**		| The DEIS should include an evaluation of the improvements to system vulnerability afforded by the proposed Moffat Expansion and other viable alternatives. For example, if manmade or natural disasters are a concern, one of which might be a tunnel failure (often mentioned by Denver Water), then a greater reliance on one of the tunnel systems would not seem to reduce vulnerability or increase reliability. Improvements to system-wide security (e.g. video cameras, extra patrols), or forest health (because fire is a major concern in the South Platte watershed), may prove to be more economic, and reduce vulnerability more so than any of the proposed project alternatives. [52] USACE. 2009. DEIS Appendix K – Preliminary Section 404(b)(1) Guidelines Compliance, p. K-13. 12	*Denver Water enacted its Drought Response Plan and took pre-determined actions to reduce water use. Denver Water subsequently updated its Drought Response Plan in 2004 after lessons learned during the 2002-2003 drought. In general, Denver Water's Drought Plan describes different stages of drought based on July 1st reservoir levels, and provides several recommended responses aimed at reducing water use for each stage of drought.[37] For instance, the goal in a Stage 3 drought, with reservoir storage at 40% or lower on July 1st, is to reduce water use by 50% through measures such as limiting the amount of outdoor lawn watering. FOOTNOTE: [37] Denver Water. 2004. Drought Response Plan. May. http://www.denverwater.org/docs/assets/DD1F807E-BCDF-1B42-D5B4FD4EB681A7B3/drought_response_plan1.pdf At a minimum, the DEIS should include modeling of future demands with drought response measures in place. During the next drought, Denver Water will enact measures from its updated Drought Plan and water use will be reduced. Denver Water customers expect to decrease their water demands during times of drought – a direct result of the public education campaign initiated in drought Stage 1. To model "unrestricted demand" for all future periods is unrealistic and at odds with the Board's current policies.* **Response #781-33:** Modeling water supply and annual firm (dry year) yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **2.6.3. Flexibility** The DEIS suggests that Denver Water's system is subject to outages caused by routine maintenance, pipe failures, treatment plant problems, and unpredictable occurrences that stress Denver Water's ability to meet customer demands and requires added flexibility which it does not have. Unlike many water providers, Denver Water already has three large, independent water treatment plants, any one of which is capable of meeting the vast majority of Denver Water's customers' water needs during most of the year. In addition, summer-time demands in the entire combined service area can be served by any two plants in times of drought, as evident by operations practiced in 2002. The DEIS should include a quantification of the benefits attributable to the additional flexibility provided by the proposed Moffat Expansion project. Parallel to questions surrounding the vulnerability need, there is not a clear indication that 18,000 AF of additional supply actually provides any substantive benefits to system flexibility. A helpful starting point would be to determine actual customer service interruptions attributable to the planned and non-planned outages described in Appendix C of the Purpose and Need Report[53] – while there are several listed outages, it is not apparent if any of those outages led to supply interruption at the customer level. **2.6.4. Firm Yield** Denver Water's near-term water resource strategy identified a need for 18,000 AF of new firm yield. This is an inflated need due to the inclusion of 3,000 AF of contract water to Arvada. The contract must only be fulfilled if Denver Water expands its Moffat Collection system; if water is sourced via agricultural transfers, additional conservation, aquifer recharge, or any other means, Denver Water does not have to fulfill the contract to Arvada. In light of this, and based on the questions and concerns described in the sections above – Unrestricted Demand, Total Demands, Cooperative Actions, and Conservation Savings – the DEIS does not provide a satisfactory explanation for why Denver Water requires 18,000 AF over the near-term timeframe. **2.7. Summary of Purpose and Need** Based on a close review of the Purpose and Need statement and Denver Water's justification for the proposed project, the DEIS does not conclusively prove a "need" for the proposed Moffat Expansion. Nothing in the DEIS offers any evidence that the *only* way to meet Denver Water's four-fold objective is by increasing the yield of the Moffat system. The DEIS is inadequate because it assumes Denver Water's future needs are based on meeting the unrestricted demand of Denver Water's customers. This provides an inflated estimate of future demands and does not reflect Denver Water's current operating procedures. The DEIS should revaluate future demands by including the impact of drought response measures, and by using an updated model that 1) captures the strong role conservation has played since 2000, 2) incorporates conservation funding increases, and 3) utilizes more recent DRCOG demographic projections that take into account the current economic downturn. [53] Denver Board of Water Commissioners. 2004. Purpose and Need Statement for the Moffat Collection System Project. April. 13	response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. The comment suggests that implementing the Drought Response Plan to reduce demand would reduce the shortage of supply and need for the Moffat Project. The drought events during 2002 demonstrate that is not the case. Denver Water would have run out of water if it had not implemented emergency measures to preserve and increase water in the Moffat System including mandatory restrictions, reducing minimum bypass flows on western slope streams in the Moffat Collection System, and shutting off the Moffat WTP during portions of the drought, as discussed in DEIS Section 1.4.4.1. There is a current need for new firm yield even with mandatory restrictions imposed during a drought. The reliability of Denver Water's System is severely compromised during a drought with the Moffat WTP shut down and extremely limited supplies in the Moffat System as occurred in 2002. The need for the Project would increase as Denver Water's demands continue to grow and Moffat Collection System supplies are increasingly insufficient during a drought. ***Comment #781-32*** *(ID 5126)**:*** *The DEIS should also include an economic evaluation or "willingness to pay" study of how much Denver Water customers value their unrestricted demand, before the Corps reaches a conclusion on the purported expense or economic hardship of enacting drought response measures. The DEIS implicitly backs this idea in another context, stating*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS The DEIS must reevaluate near-term cooperative actions based on Denver Water's progress on the WISE Partnership. The DEIS must also acknowledge and incorporate the accelerated conservation savings approved by Denver Water's Board that will be achieved by 2016, and recognize that Denver Water will very likely set a new conservation goal for the time period post-2016. Finally, with respect to Denver Water's four "needs", significantly more explanation must be included in the DEIS if they are to be used as the justification for the proposed project's purpose and need. 14	*that "[w]ater users would be unlikely to pay more for the insurance policy of an excessive safety factor if those costs exceeded the economic or other impacts they might undergo from the shortage."[38] FOOTNOTE: [38] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, p. 13. Are customers willing to pay for the insurance policy of the proposed Moffat Expansion? It is quite possible that customers would be willing to sacrifice a green lawn once every 15 summers – or whatever the appropriate drought recurrence interval is – rather than paying $11 million per year for the proposed project.[39] A 2005 survey of Denver Water's customers revealed that 60% of respondents said their quality of life was not affected by the 2002 drought,[40] highly suggesting that reasonable and prudent drought response measures are not burdensome to the customer base. FOOTNOTES: [39] Denver Water. 2009. Moffat Collection System Project Draft FERC Hydropower License Amendment Application, Table D-1. October. [40] Denver Water (BBC Research and Consulting). 2005. Denver Water Customer Perceptions. Final Report. June 3.* **Response #781-32:** Denver Water is a not-for-profit organization, and a significant portion of Denver Water's annual costs do not vary with the amount of water sold. When those costs increase, the costs to ratepayers increase as well. All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **3. Alternatives** NEPA regulations require that an Environmental Impact Statement (EIS) "rigorously explore and objectively evaluate all reasonable alternatives."[54] In determining the range of reasonable alternatives to be considered, the U.S. Council on Environmental Quality states: "the emphasis is on what is reasonable, rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint using common sense, rather than simply desirable from the standpoint of the applicant."[55] Under NEPA, the comparison of a full spectrum of alternatives should provide "a clear basis for choice among options for the decision maker and the public."[56] NEPA provisions requiring an examination of potential alternatives to a project or proposal is considered the "linchpin" of the impact statement.[57] If one accepts the premises that policy objectives of the Act (Section 101) can be achieved only through good planning and that the consideration of a wide range of alternatives is essential to "good" planning, then the analysis of alternatives in the EIS process is the most important measure of the effectiveness of NEPA. CEQ guidelines require an EIS to describe "[a]lternatives to the proposed action, including those not within the existing authority of the responsible agency [emphasis added]".[58] The range of alternatives must include a "no action" alternative and "non-structural" options as well as modifications of the proposed project. Based on NEPA Section 102(2)(A), the guidelines stress that "[t]he interdisciplinary approach should not be limited to the preparation of the environmental statement, but should also be used in the early planning stages [emphasis added] of the proposed action".[59] Clean Water Act the Section 404(b)(1) Guidelines are also relevant to the alternatives discussion. These Guidelines allow "… permit issuance for only the least environmentally damaging practicable alternative" and "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."[60] They also make clear that "[C]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." **3.1. Proposed Alternatives** The alternatives currently proposed in the DEIS are deficient in meeting the standards of NEPA. The claim that "[t]he five alternatives to be carried forward for EIS analysis represent a reasonable cross-section of practical alternatives, which encompass a broad range of potential water supplies and storage [54] 40 CFR 1502.14(a). [55] U.S. Council on Environmental Quality. NEPA's 40 Most Asked Questions, #2a. Accessed January 8, 2010: http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm. [56] 40 CFR 1502.14. [57] *Monroe County Conservation Council v. Volpe*, 472 F2d 693 (2nd Cir. 1972) [58] CEQ Guidelines, Section 1500.8(a)(4) [59] CEQ Guidelines, Section 1500.8(c) [60] 40 CFR Part 230.10(a). 15	fixed, per account service charge. Denver Water raised rates in February 2010, March 2011 and January 2012 to cover maintenance, repair and upgrades to existing facilities and expanding its system capacity over the next decade to meet the future needs of its customers. Plans for expansion include the utility's recycled water system, enlarging Gross Reservoir, and finishing the development of gravel pits that store water to meet downstream water requirements. A willingness to pay study is not required under the NEPA 404 permitting process, and it was not included in this EIS. Further, the presumptions in this comment are incorrect. Drought responses are intended for a short period of time and are different than a long term water supply strategy. Long term customer effects would be quite different and response to those effects would likely be different. Restrictions under the No Action Alternative would be based on a number of factors, including weather events, and would likely vary from year to year. Between 2002 and 2005, Stage 1 and 2 drought restrictions were put into place for Denver Water customers, as described in DEIS Section 2.10. However, in future years, restrictions could be more severe, including Stage 3 and potentially Stage 4 restrictions. Denver Water customers have never experienced those levels of water restrictions. In sum, the 2002 drought experience is not useful in predicting consumer response to the No Action Alternative. ***Comment #781-31*** *(ID 5125)**:*** *Total Demands The Corps uses Denver Water's model to estimate future demands, which was created almost a decade ago and is based on water use statistics from the 1970's through 1990's.*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS sites,"[61] rings hollow. Every single alternative involves a transmountain diversion of at least 8,000 AF of water from the Fraser River and at least 1,500 AF of water from the Williams Fork River. The DEIS started with a pool of over 300 potential options, a good beginning, and gradually eliminated alternatives through a series of "screens." Screen 1A eliminated alternatives by means of several broad categories including "PN3," which limited alternatives to those that "must produce a solution within the necessary near-term timeframe (by 2016)."[62] It is assumed that the 2016 date was chosen because 2016 is when the DEIS projects Denver Water to have an imbalance between demand and supply. In light of Denver Water's commitment to achieve accelerated near-term conservation savings by 2016,[63] demand will not exceed supply in 2016, and the 2016 cut-off date is no longer relevant. Thus, PN3 cannot be used to eliminate several viable alternatives. The DEIS must carry forward through the screening process the following alternatives identified in Appendix B that were improperly removed from consideration based on PN3: • #304 - Renegotiate 1940 Consolidated Ditch Agreement • #306 - Buy Back Contract Commitments • #307 - Land Purchase & Conversion to Open Space • #501 - Convert Northwest Raw Water Contracts to Treated Water Contracts With respect to option #304, Denver Water has started discussions with Consolidated and estimates that a successful renegotiation of the contract could provide a net gain of 10,000 - 15,000 AF of additional supply to Denver Water, less whatever Consolidated wants in exchange for solidifying the agreement.[64] With respect to option #501, this is the only "Demand Reduction Concept" identified in the DEIS out of more than 300 potential options. The Corps failure to consider additional conservation opportunities speaks directly to the inadequacy of the DEIS. Perhaps the DEIS's most crucial error occurred in Screen 1C, when all East Slope-only alternatives were removed from further analysis. This effectively negated the possibility of evaluating a full spectrum of alternatives in the DEIS – contrary to the requirements of NEPA and the CWA. Cost, alone, is not a viable reason to eliminate the following alternatives, which should be carried through and fully evaluated in the DEIS: • #6 – Indirect Potable Reuse Project • #7 – Reusable Water • #9 – Agricultural Water Conversion Project [61] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, p. 2-19. [62] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, Table 2-3. [63] Denver Water. 2006. Proposed 10-Year Conservation Plan. July, 6. [64] Bennett, D., Project Manager and Little, D., Director, Denver Water Planning Division. 2010. Personal communication. January 14. 16	*Furthermore, the demographic data used to drive the model and estimate Denver Water's future demands in the DEIS are now ten years old. Using an outdated model and outdated data cannot provide the most accurate and up to date information required in the DEIS. The Corps should recalculate Denver Water's future demands using an updated model that: 1) captures the strong role conservation has played since 2000; 2) incorporates conservation funding increases; and 3) utilizes more recent Denver Region Council of Governments (DRCOG) demographic projections that take into account the current economic downturn. Denver Water's current demand model includes a statistically significant water conservation variable. The variable accounts for monetary spending on conservation and is negative in the model, which means that more conservation spending will lead to lower demand. In Denver Water's demand projections, conservation spending is held constant at $1,116,000 for all years between 2000 and 2050.[41] Denver Water currently spends more than $10,000,000 per year on conservation,[42] implying that future demands at 2010 should be less than what is currently reported. Denver Water is likely to continue increasing their spending on conservation through the near-term, and this is not captured in any part of the DEIS. FOOTNOTES: [41] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, Exhibit 3. [42] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. Personal Communication. December 7, 2009. DRCOG demographic projections, more recent than 2000, should be used to drive estimates of future demands because the current economic downturn in Colorado's economy will have a far-reaching impact on future population growth. Population projections are the driver for increased future water demands, thus it is critical to have accurate and up-to-date projections for planning efforts. Population projections*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **3.2. No Action Alternative** The Corps wrongfully eliminated several non-structural concepts from evaluation in the No Action Alternative "because they did not meet the Purpose and Need."[65] By definition, the No Action Alternative is not supposed to meet the Purpose and Need, so any potential No Action Alternatives should not be constrained by it. The "numerous non-structural [and] institutional water management concepts" that were eliminated by this argument must be described in the DEIS and fully evaluated for their efficacy. The following alternatives were eliminated in Screen 1A, but could provide additional water supply to Denver Water: • 302: Integration with Northern • 309: Around the Horn The description of the No Action Alternative does not realistically represent actions that would be taken by Denver Water if a 404 permit was not granted by the Corps. The DEIS claims that the only two options for Denver Water would be to either use its strategic water reserve or enact more frequent water use restrictions. These are not the only options, and they are poorly described in the DEIS at that. The qualitative description of drought restrictions that would be enacted according to Denver Water's Drought Plan is plainly insufficient and misleading. Denver Water has established water use reduction targets for various stages of drought, and has data showing reductions accomplished during the most recent 2002-2005 drought.[66] This data can, and should, be utilized in the DEIS to perform a more rigorous and quantitative evaluation of the impact drought response measures can have on estimates of future demand. Furthermore, Denver Water's Board has also explored the concept of "reliability criteria" over the past few years and may include these criteria in their upcoming IRP – these criteria should be described in the DEIS within the context of drought response measures. Reliability criteria measure the adequacy of a utility's water deliveries in terms of the acceptable level and frequency of water use restrictions due to drought. Reliability criteria are based on recognition that it is economically impractical to supply water for all uses, all of the time, given Colorado's semi-arid climate. As an example, a hypothetical set of criteria would include restrictions on outdoor watering in the 20-year drought, and indoor use in the 200-year drought. The implication – mentioned throughout the DEIS – that "demand hardening" will lead to more severe restrictions during the next drought is misleading. Conserving water reduces system demands and subsequently slows the rate of reservoir supply depletion from year to year. Consequently, providers will be in a much better position – more full reservoirs – when the next drought hits than they would be without the implementation of long-term conservation measures. [65] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, p. 2-84. [66] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, Table 2-23. 17	*are heavily dependent on the initial rates of population growth, and errors in the first few years are compounded greatly over time. An example illustrates this compounding effect. Let's assume community A has a population of 100,000 in the year 2000 and grows at 2% per year for 50 years. In 2050, community A has approximately 269,000 people (Table 2). If an equally sized community, B, only grows at 1% for the first 10 years, and then at 2% for the remaining 40 years, its population in 2050 would be approximately 244,000. In 2010 the population in community A and B differ by only 11,000 people, but by 2050 with the same population growth over the final 40 years, the communities differ by more than 25,000 people. Thus, initial rates of population growth have a disproportionate impact on the total population at the end of any forecasting period. [See TABLE 2. COMMUNITY A AND B POPULATION GROWTH IN SOURCE FILE.] The current economic downturn will play a significant role in reducing Denver Water's estimated future water demands by decreasing population growth rates over the next few years. The current economic downturn is not within the normalcy of Colorado's historic, cyclical economic trends. This recession is the worst Colorado has experienced in the past forty years, with rates of unemployment, foreclosures, and building permits considerably outside the norm. The fact that the economic downturn is nation-wide and world-wide will dramatically slow Colorado's rate of recovery. The 2009 unemployment rate, at 7.9%, is the highest unemployment rate Colorado has experienced since 1976.[43] The change in employment from 2008 to 2009, at -4.0%, is the largest drop Colorado has experienced by more than a factor of three; in fact, this rate has only ever been negative for 4 of the past 33 years. Building permits are at their lowest level since 1970, and the percent change in building permits from 2008 to 2009 is -61.4%, the worst drop yet. These factors are the drivers for economic and*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Two quotes by highly knowledgeable and respected Colorado water professionals are worthy of including here: • "Water conservation can play a significant role in helping most water systems manage all but the most serious droughts." William DeOreo.[67] • "To build excess water supply capacity simply to facilitate cutbacks during drought can be highly uneconomic, akin to overfeeding people so that dieting will be easier." Howe and Geomans.[68] The fact that long-term conservation provides additional water that can be used to "weather" a drought is corroborated by analysis performed by several water professionals,[69] and in a report by the California Urban Water Agencies which surveyed the opinions of urban water managers throughout California.[70] According to the report, "it was the belief of most people that long-term conservation will significantly reduce the frequency and severity of shortage situations. It was the overwhelming belief of those interviewed that water supply will be much better with than without long-term conservation." In the survey, when the water managers were asked how concerned their agency was about demand hardening (on a scale of 1 [not] to 5 [very]), "[t]he answer to this question ranged from a one to a four with most agencies only giving it a one." If the DEIS chooses to include references to, and imply hardships from, demand hardening, it must also provide the data that supports this position. One can make quite a strong argument that the conservation measures enacted during the 1990s, placed Denver Water in a much better position to deal with the 2002 drought. Until that data is provided, any mention of demand hardening should be removed from the DEIS. The socioeconomic impacts of raw water shortages and water restrictions described in Chapter 4 of the DEIS are entirely qualitative and one-sided. The No Action Alternative analysis does not use the same metrics applied in evaluating the action alternatives, creating an uneven comparison between all the potential alternatives. In addition, the assumptions in the qualitative analysis focus entirely on the negative impacts to Denver Water and its customers, for example:[71] • …"restrictions would place burdens on residential and commercial customers, would result in negative perception of the Denver area in general, possibly decreasing property values, and would have an adverse impact on business activity…" One could just as easily report that watering restrictions may lead towards increased economic activity in the landscape industry as more residents seek to improve their irrigation system to use less water, or modify their landscapes to include more low water-use plant varieties. The DEIS needs to be more even-handed in its qualitative assumptions and analysis. [67] DeOreo, W. 2006. The Role of Water Conservation in a Long-Range Drought Plan. Journal AWWA. February. [68] Howe, C. & Goemans, C. 2007. Manager to Manager – The Simple Analytics of Demand Hardening. Journal AWWA, October. [69] Mayer, P. 2006. Research and Development in Water Conservation. [70] CUWA. 1994. Long-Term Water Conservation & Shortage Management Practices: Planning that Includes Demand Hardening. June. [71] USACE. 2009. DEIS Chapter 4: Environmental Consequences, Section 4.17.6. 18	*population growth in the state and clearly, this is not "normal" when compared to other cyclical downturns in Colorado's recent history. FOOTNOTE: [43] Colorado Water Conservation Board. 2009. State of Colorado 2050 Municipal and Industrial Water Use Projections – Appendix B, Table 1. June. Appendix A of the DEIS includes a comparison of year 2000 DRCOG demographic projections with 2004 projections, stating that "[a]lthough no formal analysis of the impact of these changes upon Denver Water's demand projections has been made, it is likely that these new projections might have increased slightly water demand projections from 2000 to 2020 and held stable or slightly reduced water demand projections by the year 2030."[44] Given the current economic situation, it is highly likely that using the most up-to-date projections will reduce future demands even further. Today's economic crisis and its long reaching impacts, represent an exceptional case where additional data and evaluation is warranted. FOOTNOTE: [44] USACE. 2009. DEIS Appendix A2: Supplemental Evaluation of Denver Water Demand Projections, p. 21.* **Response #781-31:** Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to

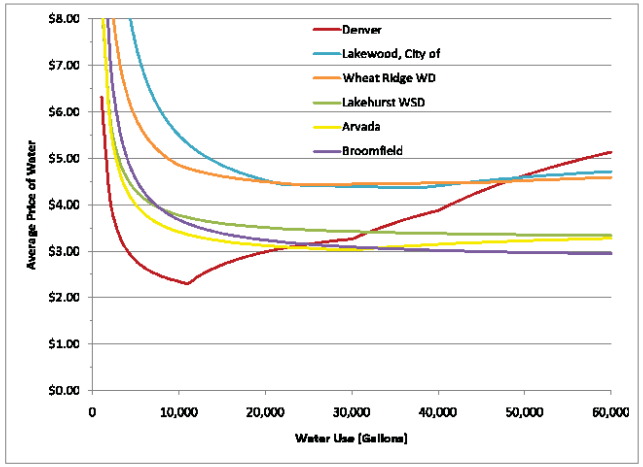
Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **3.3. Conservation Alternative** One of the essential shortfalls in the DEIS is its failure to evaluate the potential for future conservation to reduce demands, in either the No Action Alternative or as additional water supply. Prior to committing large financial resources to expanding the Moffat Collection System, Denver Water, its contractors, and suburban providers must continue to improve their demand-side management. Conservation represents a "no regrets" strategy – one that does not tie utilities to expensive infrastructure, and does not have detrimental impacts on river systems or rural communities. While conservation programs come with a price tag, it's much smaller than the one for the any of the proposed alternatives. Conservation is the cheapest, fastest, and smartest water supply strategy. Conservation measures have proven to be cost effective and a source of real water savings;[72] indeed, many studies have shown that conservation is not only cost effective, but is often less expensive per acre-foot than traditional supply development. There are several options that cost as little as $100-$200/AF and many more programs in the range of $2,000 to $7,000/AF.[73] Denver Water's own conservation master plan – the "Tap-Smart" Plan – estimates conservation will cost an average of $4,540/AF.[74] Furthermore, conservation can be adaptively managed and is inherently flexible to changing future conditions...unlike concrete. Conservation must be maximized to the greatest extent possible before any other options are pursued. If a Moffat Expansion project is approved by the Corps, permit conditions must require all beneficiaries to maximize their conservation potential. **3.3.1. Conservation Planning** Denver Water's 1997 IRP identified 16,000 AF of conservation savings to achieve by 2030, placing "conservation at the head of the line when considering how to meet future water demands."[75] In 2006, Denver Water's Board "accelerated" the pace of savings, setting a goal to achieve the 16,000 AF of conservation savings by 2016, rather than 2030.[76] According to the IRP, this would now leave Denver Water with a goal to achieve 13,000 AF of additional savings between 2016 and 2050. This is a paltry goal – 382 AF/yr – and significantly out of line with what Denver Water has historically achieved in conservation savings (Table 4). [72] Western Resource Advocates. 2008. *Smart Savings: Water Conservation Measures that Make Cents.* [73] CWCB. 2007. Colorado's Water Supply Future: State Wide Water Supply Initiative Phase 2, Table 2-1. November. [74] Denver Water. 2007. Tap-Smart: The Conservation Master Plan. April 30, 2007. [75] Denver Water. 1997. Water for Tomorrow - Integrated Resource Plan. [76] Denver Water. 2006. Proposed 10-Year Conservation Plan. July. 6. 19	examine any differences in projected population numbers or rates between the older data and the current data. The economic downturn which began in 2008 has, in fact, been within the realm of past Colorado downturns, although each economic cycle is different. Denver Water's demand model is based on variables such as population and other demographics that have reasonable rates of growth and are consistent with local and State planning agencies. Population and demographic projections have been updated to use 2010 estimates. Denver Water has evaluated and explicitly incorporated the effects of conservation as a part of the Moffat Project EIS. The water demand forecasting model explicitly recognizes the conservation spending as providing downward pressure on water use per household during the 1973 to 2000 era. Chapter 1 (Purpose and Need) states that of the projected shortfall in supplies, conservation measures would account for 16,000 AF. A reasonably aggressive conservation plan has been implemented by Denver Water to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. By 2050, Denver Water is planning a reduction in water use of 68,000 AF/yr from conservation. ***Comment #781-30*** *(ID 5124)**:*** *Cooperative Actions Denver Water's estimate of 440 acre-feet (AF) of water supply from near-term cooperative actions is an underestimate given Denver Water's recent forward progress with the City of Aurora and South Metro water providers. Currently called the WISE Partnership, the general idea is to use excess capacity in Aurora's Prairie Waters pipeline to transport Denver Water's reusable return*

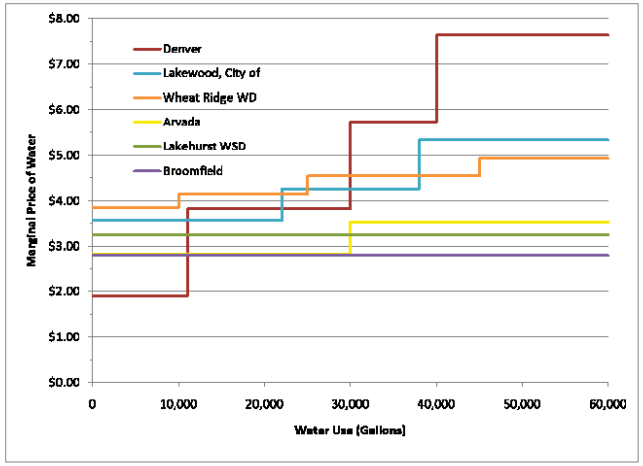
Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Table 4. Conservation Savings – Actual vs. Goals. Time Period | Savings (AF) | Rate (AF/yr) *Actual Savings Achieved* 1980 – 2000 | 27,500 | 1,400 2000 – 2008 | 13,000 | 1,850 *Goals Set* 2000 – 2016 | 16,000 | 1,000 2016 – 2050 | 13,000 | 382 The DEIS must incorporate a reasonable goal for additional conservation in the near-term (2016-2030) that is more in line with Denver Water's historic successes. In 2004, Denver Water reported that all the "low-hanging fruit" of conservation had already been achieved,[77] but this is certainly not the case. After this statement was made, residents achieved an 18% reduction in water use from 2001 to 2008. Furthermore, past reductions are no indication that future savings cannot occur – as postulated by the over-hyped concept of demand hardening. In reality, water use efficiency evolves and improves just like any other technology. The 1992 Energy Policy Act mandated 1.6 gallon per flush toilets, but there are toilets on the market today that use half that amount, and similar gains have been made with most every indoor appliance and fixture. Moreover, communications with Denver Water staff indicate that the majority of the conservation savings achieved since 2001 are believed to be behavioral in nature.[78] Consequently, many of the rebate, incentive, and regulatory measures described in Denver Water's Tap-Smart Plan have yet to be fully implemented and maximized. In short, significant savings are still achievable from existing customers, let alone the vast potential achievable from new customers. A reasonable goal to be included in the DEIS is for Denver Water to achieve an additional savings of 1,000 AF/yr from 2016 – 2030. This is significantly lower than any rate achieved by Denver Water since 1980, but is consistent with the Board's current goals (see Table 4). This level of conservation would result in 14,000 AF of savings, and may potentially negate the near-term need for the proposed Moffat Expansion project. Because planning plays such an integral role in determining the future water needs of a community, it is vitally important that all of Denver Water's contractors and suburban distributors (master meter, total service, and read and bill) comply with current state statutes regarding water conservation. The USACE should withhold granting a permit until all providers that receive water from Denver Water, and qualify as "covered entities", have approved conservation plans on file with the Colorado Water Conservation Board as required by state statute.[79] [77] USACE. 2009. DEIS Appendix A1: Review of Denver Water's IRP. p.5. [78] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. Personal Communication. December 7, 2009. [79] Colorado Revised Statute §37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines - water efficiency grant program - repeal. §5. 2004. 20	*flows in the South Platte back up and into Denver Water's distribution system. Denver Water estimates the partnership could provide up to 5,000 AF of firm yield by 2015 and 18,000 AF of firm yield by 2050.[45] FOOTNOTE: [45] Bennett, D., Project Manager and Little, D., Director, Denver Water Planning Division. 2010. Personal communication. January 14. Not only does the WISE Partnership provide the opportunity to provide additional firm yield to Denver Water's system, it may also provide additional flexibility, reliability, and improvements to vulnerability – all directly related to the purpose and need of the proposed project. The USACE should consider the WISE Partnership a reasonably foreseeable action in the near-term and more fully evaluate it in the DEIS for the following reasons: • Denver Water and Aurora have spent the past four years or more determining water availability under this project and have a vested interest in its successful implementation; • The Prairie Waters pipeline will be operational by 2011, leaving almost 20 years remaining in the near-term timeframe for potential action.* **Response #781-30:** The partnership between Denver Water, Aurora, and the SMWSA would make use of excess reusable water as it becomes available from time to time. When available, and on a space available basis, the excess reusable water would be pumped from the lower South Platte River (North of Denver) to water users upstream (South of Denver). The WISE project makes use of the same reusable water considered for Alternatives 8a, 10a, and other alternatives considered in the DEIS. While the WISE project could provide Denver Water some firm yield, it does not deliver water to where Denver Water needs the extra supply (North end). Alternatives 8a and 10a did deliver this water to North end and are considered practicable alternatives in this EIS.

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Denver Water is currently negotiating with the Colorado Water Conservation Board to provide Denver Water's suburban distributors with an exception to this statute, but a conclusion to this discussion has not been reached. It is Denver Water's position that all suburban distributors are covered under their conservation plan and have access to the rebates it provides to customers. However, it is not readily apparent from many of the distributor's websites that Denver Water has any role other than providing a source of water to local residents. It is possible that an acceptable agreement could be made between Denver Water and CWCB that achieves the goal of the statute without requiring each covered entity to submit a conservation plan. Until resolution of this issue, the following entities who receive water from Denver Water should comply with Colorado state statute:[80] • Castlewood Water & Sanitation District • City and County of Broomfield • City of Arvada • City of Englewood • City of Greenwood Village • City of Lakewood • City of Littleton • City of Westminster • Consolidated Mutual Water Company • Crestview Water & Sanitation District • East Cherry Creek Valley Water District • Hill Crest Water District • Lakehurst Water & Sanitation District • North Washington Street Water & Sanitation District • South Adams County Water & Sanitation District • Southgate Water District • Southwest Metro Water & Sanitation District • Wheat Ridge Water District Many of these utilities have implemented education and outreach measures that inform customers about the importance of water efficiency. However, several lack conservation measures beyond mere education. For example, rebates provide incentives for customers to use water more efficiently and regulations require wise water use. Conservation measures like these help to further increase efficiency, improve behavioral practices, and educate the public. The combination of multiple measures greatly improves the overall effectiveness of any conservation program. Furthermore, public perception of water conservation has drastically changed in areas where education and other measures – such as incentives, regulation and conservation pricing – are present. [80] Based on Covered Entities identified by CWCB (http://cwcb.state.co.us/Conservation/RelatedInformation/CoveredEntities/), Water Conservation Plans posted on CWCB's website as of January 12, 2010 (http://cwcb.state.co.us/Conservation/RelatedInformation/WCPs/), and the Distributors and Contractors identified in: Denver Water. 2004. Purpose and Need Statement for the Moffat Collection System. April. 21	Denver Water has "up to" 40,000 AF of excess reusable effluent. In some years, Denver Water has 0 AF of excess reusable effluent. On average, Denver Water has 8,000 AF on average of excess reusable effluent – this is the amount used when developing Alternatives 8a and 10a for the DEIS. There is currently insufficient information available to incorporate the WISE Project in Denver Water's PACSM because a variety of possible scenarios are being considered and evaluated by the Project proponents. A qualitative evaluation of this Project was added to FEIS Section 4.6.1, which describes the purpose of the Project, the participants, and generally how it would operate. While WISE would have participation from several water providers, WISE would use, in part the same water (unused Denver Water reusable effluent) as Moffat Project Alternatives 8a and 10a and various aquifers in the regions to store water similar to Alternative 10a. ***Comment #781-29*** *(ID 5123)**:*** *Conservation Savings The 16,000 AF of conservation savings assumed to occur by 2030 will now be reached by 2016, significantly delaying the shortfall date and likely decreasing the overall need for additional water supply in Denver Water's combined service area. In 2006, Denver Water's Board "accelerated" the pace of the near-term water conservation savings by adopting a 10-Year Conservation Plan aimed at decreasing water use 22% from pre-drought levels; this will lead to achieving the 16,000 AF of conservation savings by 2016, not 2030.[46] FOOTNOTE: [46] Denver Water. 2006. Proposed 10-Year Conservation Plan. July, 6. The DEIS must acknowledge the accelerated conservation savings – it is currently not mentioned in any part of the document – and recognize that Denver Water will very likely set a new conservation goal for the time period post-2016. Denver Water has*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **3.3.2. Conservation Programs** Denver Water has the opportunity to save a significant amount of additional water through refining their existing water conservation programs and starting new ones. The potential for these programs to reduce future needs must be fully evaluated in the DEIS. If water is needed in Denver Water's Northern System, an apparent requirement of the Purpose and Need, conservation can be focused in those areas – although the analysis of conservation potential should not be constrained by this boundary because conservation benefits Denver Water's entire operations in many different ways. As a starting point, the DEIS should analyze future demands if Denver Water implemented all of the programs required by its Board in its Tap-Smart Plan. A few programs that provide significant water savings that have not been implemented include: conversion to natural areas and time-of-purchase retrofits. Conversion to natural areas, whereby Denver Water replaces turf grass with natural grass and native flowers, was identified to save approximately 2,000 AF of water, and also result in less maintenance work for public agencies. Legislation requiring time-of-purchase retrofits, whereby homes are updated with water-conserving toilets, showerheads, and aerators upon sale, was abandoned by Denver Water shortly after its proposal due to push-back from the real estate community. This measure was estimated to save almost 7,000 AF of water. Similar legislation recently passed in California, suggesting that further exploration of this concept is warranted. Denver Water should maximize the effectiveness of its existing rebate programs by increasing funding levels and targeting older homes, low-income housing, and governmental properties – like they have started to do over the past few years. These often older properties contain fixtures that use large amounts of water by today's standards. Targeting larger properties is also beneficial because many fixtures can be replaced at one time; saving time and money spent on logistical planning. Denver Water should diversify its rebate programs and offer additional incentives for households to reduce outdoor water use. Denver is located in a semi-arid environment that receives far too little rain to support Kentucky bluegrass without supplemental irrigation. In fact, 62.8% of Denver residents' annual water consumption is used for outdoor irrigation, presenting a significant opportunity to reduce demand.[81] Many water-providers in the West offer a landscape retrofit rebate to replace water-thirsty turf with drought-tolerant landscaping. This type of conservation measure could be used by Denver Water to significantly reduce water use. For example, Southern Nevada Water Authority (SNWA) pays customers $1.50 for each square foot of turf removed, and estimates this program has saved over 55,000 AF between 2000 and 2007.[82,83] Denver Water should extend their existing irrigation system rebate programs to residential customers. This program has demonstrated savings in the irrigation and commercial sectors at a cost of $824/AF, [81] Western Resource Advocates. 2009. New House, New Paradigm. September. [82] SNWA. 2010. Water Smart Landscapes Rebate. Accessed January 11, http://www.snwa.com/html/cons_wal.html. [83] Western Resource Advocates. 2008. *Smart Savings: Water Conservation Measures that Make Cents.* 22	*demonstrated good conservation successes in the past, conserving upwards of 27,500 AF between 1980 and 2000 (a rate of ~1,400 AF/yr) – and an additional 13,000 AF from 2001 through 2008 (a rate of ~1,850 AF/yr).[47] FOOTNOTE: [47] Denver Water reports that 2008 per capita water use is 18% lower than pre-drought levels. 18% is approximately 80% of the 22% by 2016 goal, and 13,000 AF is approximately 80% of the 16,000 AF by 2016 goal. A placeholder for conservation savings during the time period of 2016-2030 is appropriate to include in the DEIS. A conservative estimate of conservation at only 1,000 AF/yr, significantly lower than any rate achieved by Denver Water since 1980, would result in 14,000 AF of savings, potentially negating the near-term need for the proposed Moffat Expansion project. Communications with Denver Water staff indicate that the majority of the conservation savings achieved since 2001 are believed to be behavioral in nature.[48] Consequently, many of the rebate, incentive, and regulatory measures described in Denver Water's 10-Year Conservation Plan and several potential new conservation measures – discussed in further detail in Section 3.3: Conservation Alternative – have yet to be fully implemented and maximized. Furthermore, almost 90% of Denver Water customers live in homes built before 1996, in an age when fixtures and appliances that use large amounts of water were commonplace.[49] In short, significant technological savings are still achievable from existing customers. FOOTNOTES: [48] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. 2009. Personal communication. December 7. [49] Denver Water (BBC Research and Consulting). 2005. Denver Water Customer Perceptions. Final Report. June 3. The DEIS is incorrect in assuming that all "the 'low hanging fruit' of conservation savings have already been achieved."[50] Denver Water continues to reap*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS significantly cheaper than traditional supply-side projects.[84] Denver Water should also fully explore the following programs aimed at reducing outdoor water use: • Sub-metering all irrigation use • Directly paying for inefficient customers to upgrade irrigation systems or improve landscapes • Requiring drip irrigation for all non-turf areas There is also a significant potential for Denver Water to ensure and encourage new customers' water use is low. Measures such as requiring high efficiency fixtures and appliances in new construction, and limiting turf to 40% of the irrigable landscape or using a water budget for landscapes can tremendously reduce water use compared to existing households. This type of approach has support from Denver Water's customers. In a recent survey, 71% of respondents agree or strongly agree that new homes being built should be restricted on how much grass they can water, while only 15% disagreed.[85] Today's water-smart developments across the southwest have incorporated these types of measures, resulting in water use that is 13-50% lower than their community's average.[86] With such a drastic potential to reduce future water use, it is imperative that Denver Water comprehensively explore and take full advantage of new development's role in keeping water use and future demands as low as possible. 3.3.3. Water Rates Progressive, conservation-oriented water rate structures – one of the single best conservation tools available to water providers – are capable of reducing water use 15-30%.[87] Conservation pricing is an important component of any effective demand management program and should be utilized by every community seeking new sources of water. In fact, in a poll by the American Water Works Association, responders stated that conservation oriented rates were the single best individual mechanism to get customers to use less water; greater than any other mechanism by a factor of three (Table 5).[88] Table 5. Results of AWWA Quick Poll on How to Reduce Customer Water Use. Mechanism / Respondents in Agreement Public awareness campaigns: 10% Rebates on water-efficient fixtures, appliances: 7% Consumption-based rates: 35% Voluntary use restrictions: 2% Mandatory use restrictions: 5% All of the above: 41% [84] Western Resource Advocates. 2007. Front Range Water Meter. [85] Denver Water (BBC Research and Consulting). 2005. *Denver Water Customer Perceptions*. Final Report. June 3. [86] Western Resource Advocates. 2003. New House, New Paradigm. September. [87] Mayer, P. et. al. 2008. *Water Budgets and Rate Structures: Innovative Management Tools*. American Water Works Association. Denver, CO. [88] American Water Works Association. 2008. Results of Survey "Quick Poll" *What's the best way to get customers to use less water?* Accessed August 22: http://www.awwa.org/QuickPollResults.cfm?itemnumber=1663. 23	*large conservation savings through basic toilet replacement programs, such as ones implemented in the Jefferson County School District and several in low-income housing. Denver Water has not come close to exhausting the easy conservation savings that exist through just this one program, let alone any number of others. FOOTNOTE: [50] USACE. 2009. DEIS Appendix A1: Review of Denver Water's IRP, p.5.* **Response #781-29:** The decrease in water use in 2008 compared with pre-drought levels cannot be extrapolated by itself. Single year water use is influenced by temporal conditions which are not useful in long term water demand forecasting. For instance, recollection of the previous drought, declining economic conditions and the quantity or timeliness of precipitation were influences on water use in 2008. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Many of Denver Water's contractors and suburban distributors have ineffective pricing structures that send little to no conservation price signal. This is a missed opportunity for Denver Water to achieve greater conservation savings across their service area, and should be evaluated by the Corps in the DEIS. Denver Water may be able to renegotiate contract terms for its raw water customers that would require conservation-oriented water rates, they may be able to utilize a more conservation-oriented rate structure for their master meter accounts, or they may be able to require their distributors to employ a progressive rate structure. In order for inclining block rates to be an effective conservation tool, consumers must understand that the more water they use the more they will pay per unit; this is reflected in a steep positive slope on the average price curve – where the average price of water is determined by dividing a customer's total water bill by the total amount of water they use. Under an effective rate structure, the average price of water will rise sharply as use increases, as illustrated with Denver Water's in-city rate structure (Figure 2). Ineffective pricing structures rise only faintly (contractor Arvada, master meter Wheat Ridge); not at all; or decrease as use increases (contractor Broomfield, master meter Lakehurst).  Figure 2. Average Price of Water for Denver Water and Several of Their Contractors and Distributors.[44] [44] Data compiled from the water providers' websites. Accessed January 12, 2010. 24	replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Any accelerated savings by Denver Water's conservation program is placed in its Strategic Water Reserve (SWR). By placing the accelerated savings in the SWR, Denver Water will be better prepared for system emergencies and other factors which could reduce its water supply. Additionally, Denver Water wants to make sure the savings from its water conservation program are in place for the long term. ***Comment #781-28*** *(ID 5122)**:*** *Denver Water's Four "Needs" Denver Water's reported need of the proposed Moffat Project is based on four separate needs: reliability, flexibility, vulnerability, and firm-yield. These needs require further investigation and explanation if they are to be used as the justification for the proposed project's purpose and need.* **Response #781-28:** The Purpose and Need Statement is clearly one unique and developed purpose as follows: "… to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Denver Water' commitment to its customers." Many underlying, interrelated needs can contribute to the discrete purpose of the Project. It is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing.

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS Municipalities with the most effective conservation oriented rates – i.e. structures that clearly communicate *the more you use the more it will cost per unit* – are the communities who provide an initial block of water at a low and affordable rate, and then increase rates noticeably from one block to the next. Several of Denver Water's contractors and suburban distributors have an inclining block rate structure that has a negligible price increase as marginal water use increases (Figure 3); the result is that consumers do not notice that their unit cost is greater than before, and thus have no incentive to conserve. This is the case with Arvada, Lakewood, and Wheat Ridge, whose service charges and minimal consumption price increases from one tier to the next, result in a rate structure that acts – in essence – as a flat rate structure and provides no price signal. Given the ineffectiveness of Arvada's current water rate structure in promoting conservation, it is worth exploring if they could achieve 3,000 AF of water savings through an improved rate structure, rather than seeking the 3,000 AF through the proposed Moffat Expansion.  Figure 3. Marginal Price of Water for Denver Water and Several of Their Contractors and Distributors.[90] [90] Data compiled from the water providers' websites. Accessed January 12, 2010. 25	Failing to address any one of the four issues would jeopardize Denver Water's ability to meet projected demand needs. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. System-wide vulnerability is one of the underlying needs of the Moffat Project. When there are planned or unplanned shutdowns in Denver Water's system that require more water to be treated at Moffat WTP than would otherwise have occurred, the severe existing shortage of water available to the Moffat WTP is further exacerbated. In other words, even routine maintenance activities that require operating Moffat WTP more frequently deplete further the limited amount of supply available in the Moffat Collection System. Denver Water's North and South raw water systems that provide water to the treatment plants are not connected. During periods of high demand, the raw water being provided to the Moffat WTP simply runs out because there is not a sufficient amount placed in storage. Additionally, since 90% of storage and 80% of supply is provided by the South System, the raw water systems are currently severely imbalanced. This imbalance contributes to the North System's vulnerability and unreliability. Additionally, please refer to DEIS Section 1.4.4.1 Raw Water Availability to the Moffat WTP (System Reliability), that describes the potential for the Moffat Collection System to run

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **3.4. A Real Non-Structural/Small Project Alternative** The DEIS cannot avoid developing and evaluating a small-scale alternative to a major dam or dam enlargement. Notwithstanding Denver Water's stated fourfold objective for the Moffat Collection System, the DEIS must, after accounting for conservation savings, offer an alternative that meets the real underlying need, to the extent that there is one, of increasing the supply of water to the Moffat Treatment Plant. Such an alternative can be developed by considering the integration (or fully linking) of Denver Water to other water supply systems making possible substantial opportunities for agricultural-urban cooperative water sharing agreements (AUA's). AUA's serve much the same purpose as conjunctive use scenarios – both supplement surface supplies when they are inadequate. The concept of systems integration involves the cooperative use or enhancement of several water supply systems in a manner designed to increase or maximize total combined yields. In mature river basins like the South Platte, with a large number of urban and agricultural water users that are linked, but not completely combined, system integration would enhance the opportunities for conjunctive use of surface and groundwater systems, coordinated approaches to effluent management and re-use, and Ag/Urban supply arrangements like rotational land fallowing and water leasing. The Metropolitan Water Supply Investigation (MWSI), a significant report released in 1999, had as its primary objective "the analysis of supply-side options involving the cooperative use, operation and/or linkage of existing water supply systems in a manner that would enhance water yields." In discussing systems integration, the report identified a number of procedural and substantive issues that were essential antecedents to linking systems physically and operating them in a coordinated fashion: • Create an information inventory on current water supply systems service areas, facilities, system yields, water rights portfolios, etc., that would be useful to further individual and cooperative planning efforts; • Provide an opportunity for mutual education regarding the water supply systems and the perspectives of individual water providers and geographic sub-regions of the metro Denver area; • Establish a forum where cooperative water supply ideas and information could be brought forth and openly discussed; • Explore at a strategic level a number of market-related ideas involving investment in water conservation programs, pooling or interim leasing of water rights or reuse credits, etc.; • Explore the potential utility of raw water or treated water interconnections or coordinated operations between individual water supply systems; and • Identify areas of mutual concern (such as maintenance of instream flow and/or water quality conditions in a critical stream reach) and conceptual approaches for addressing concerns. There have been sub-basin discussions in the last 10 years of mutual interests in sharing information on supply and demand and system operations and, on a larger scale, the Statewide Water Supply Initiative (SWSI, Phases I & II) has presented a number of options for water supply sharing arrangements between irrigators and urban users (e.g., interruptible supply transfers, rotational fallowing, water banks, buy/lease-back agreements, and consumptive use reduction through crop changes). In addition, SWSI-II 26	out of water in a single dry year. The vulnerability issue in the North System is adequately described and justified in the DEIS. ***Comment #781-27*** *(ID 5121)**:*** *Reliability Denver Water reports that PACSM modeling and 2002 operations indicate that existing water demands would exceed available supplies from the Moffat Collection System during a severe drought, putting the Moffat Water Treatment Plant at a "significant level" of risk of running out of water. The DEIS must include a thorough assessment of the risk of water supply shortages, and describe what a "significant level" of risk means to Denver Water customers – an issue that was raised in the scoping process but not thoroughly described in the DEIS.[51] How is risk defined, and what does it mean? Does significant risk mean that customers will have to ration indoor water use every year if the proposed project is not built, or restrict outdoor use one in every ten years? Does the risk have a quantifiable economic impact? FOOTNOTE: [51] USACE. 2003. Scoping Summary – Moffat Collection System Project, p. 3-2. December. The DEIS must describe how, and by how much, the proposed project would decrease the level of risk if it were built. The DEIS should describe if the proposed project decreases the level of risk of running out of water from "significant" to "acceptable", how that determination was made, and what the terms used to describe risk mean.* **Response #781-27:** Additional information about the risks associated with water supply shortages was included FEIS Section 5.19. However, as described in Chapter 2, Section 2.10, the level of depletion of the Strategic Water Reserve as well as the degree of severity and the frequency of water restrictions under the No Action Alternative is unknown at this time because the depletions and restriction responses depend on all

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS has developed some detail on the benefits and shortcomings of all of these concepts, which depend, almost without exception, on planned and periodic reductions in irrigation water use. These issues are also now under discussion with some regularity in the basin roundtables. Progress in these areas should not be ignored by Denver Water or the Corps in the preparation of the Moffat DEIS. Agricultural and urban land use patterns in the South Platte basin have changed dramatically in the last 30 years. Driven to some extent by rapid urban growth, but also other factors more directly related to agriculture, there has been a substantial reduction in irrigated acres from a high in 1976 of 1.02 million acres to approximately 840 thousand acres in 2005. SWSI-II believes this trend will continue. While the growing urban demand for water can be seen by agriculture as a threat, it is also an opportunity. As SWSI-II has stated more than once in the *Alternative Agricultural Water Transfer Methods to Traditional Purchase and Transfer* section, water sharing arrangements can "provide more stable incomes to agricultural users." Generating a return on a resource that has a high and ever increasing value in urban centers, while at the same time not losing control of the resource, can be very beneficial to Front Range agricultural communities. The coupling of land fallowing and water leasing is not unprecedented. It has been utilized in Colorado on both a short-term basis, such as with the Aurora-Rocky Ford High Line lease from 2004-2005, and on a long-term basis in the agreement between the Fort Morgan Water Company and Xcel Energy. The Fort Morgan-Excel agreement is a "take or pay" contract for up to 2,500 acre-feet of augmentation water for Xcel's Pawnee wells which supply cooling water to the Pawnee Power Plant. If available, Xcel purchases augmentation credits, otherwise Jackson Lake Reservoir water owned by participating Fort Morgan shareholders is delivered via canal Xcel's Pawnee Power Plant.[81] The delivery period is April through November and the monthly amount is between 200 and 500 acre-feet. From Excel's point of view, the Fort Morgan agreement has been so successful that it has now entered into a contract for 3,000 acre-feet with the North Sterling Irrigation District using the drought insurance concept in which the power company pays the district an annual premium or option payment for the right to 3,000 acre-feet at which time it pays a specified price for the water. Elsewhere in Colorado another substantial fallowing-leasing cooperative is now being established in the Arkansas Basin with the creation of the Super Ditch Company in the valley east of Pueblo. A study by HRD for the Lower Arkansas Valley Water Conservancy District estimates that in the neighborhood of 14,000 acre-feet of firm yield water could be made available based on rather conservative participation and fallowing rate assumptions without additional storage. The MWSI, within the category of cooperative use opportunities, estimated the gross quantities of dry-year water (a more conservative estimate than the annual average) that might potentially be available, by sub-basin, north of the Denver metropolitan area. The report presented two sets of estimates – dry year supplies owned by agriculture and 'clean water' dry year supplies owned by agriculture. The former estimate was 495 thousand acre-feet and the latter, limited to diversions upstream of wastewater [81] The Fort Morgan Water Company is comprised of participating shareholders in the Fort Morgan Reservoir and Irrigation Company. The agreement has been in place for 15 years and, according to both Excel and Fort Morgan Reservoir and Irrigation Company, it has worked very well and all parties are quite satisfied. Don Hatfield (Xcel Energy) and Cindy Vasalos (Fort Morgan Reservoir and Irrigation Company), personal communications, July 2009. 27	the hydrologic, climate and other conditions which would be evident at the time. These outcomes of the No Action Alternative would be dependent on a number of factors, including storage levels in existing reservoirs and weather events, and would likely vary from year to year, making quantification of risk impossible. ***Comment #781-26*** *(ID 5120)**:*** *As currently proposed, neither the proposed project nor any of the alternatives actually reduce the risk of water shortage to Denver Water's treated water customers. PACSM modeling indicates that treated water shortages would have occurred in water years similar to 1955, 1971, 1973, and 1974; however, these treated water shortages also would occur under all of the action alternatives.[52] This is because the treated water shortages are due to conveyance capacity constraints as opposed to lack of supply. The DEIS must include a description of the conveyance capacity upgrades necessary to eliminate the treated water shortage, including their timeline for completion, environmental impacts, permits required, and cost. FOOTNOTE: [52] USACE. 2009. DEIS Appendix K – Preliminary Section 404(b)(1) Guidelines Compliance, p. K-13.* **Response #781-26:** The treated water shortages that occur under all of the action alternatives in 1971, 1973, and 1974 are due to high demands, which exceed the combined treatment capacity of Denver Water's three WTPs. These shortages occur in only 10 days during those three years. These shortages are not due to conveyance capacity constraints, therefore, a description of conveyance capacity upgrades in the FEIS is not needed. The description of shortages in 1971, 1973, and 1974 in FEIS Appendix K has been revised.

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS treatment plant outfalls, was 195 thousand acre-feet. Table 6 lists the figures by sub-basin. Some fraction of this water could, in theory, be moved via agreements with irrigators under rotating fallowing contracts to the northern end of the Denver system where the Moffat Treatment Plant is located. Table 6. Estimate of Gross Supply Potential for Ag/Urban Interruptible Supply Agreements by South Platte Sub-Basin (adapted from MWSI, 1999). Sub-Basin: Average Dry Year Supplies Owned by Agriculture in AF With Diversions Above Greeley (1, 2, 3) Sub-Basin: Average Clean Dry Supplies(4) With Diversions Above Greeley (1,2,3) South Platte above Chatfield (5): 8,000 / 8,000 Bear Creek: ~0(6) / ~0(6) Cherry Creek: ~0(6) / ~0(6) Clear Creek: 13,000(7) / 4,000(7) South Platte (Chatfield to Metro): 54,000 / 0 South Platte (Metro to Big Thompson): 151,000 / 0 Boulder Creek: 49,000 / 24,000 St. Vrain / Left Hand: 49,000 / 24,000 Big Thompson: 73,000 / 47,000 Cache La Poudre: 111,000 / 74,000 TOTAL: 495,000 / 190,000 NOTES: (1) These numbers are estimates. Only major ditches have been considered. (2) Numbers listed may include ditch diversions that serve areas within a municipality's planning area. (3) Annual Dry Year Diversions based on data from 1954, 1955, 1963, 1964, 1966, 1977 and 1981 (except St. Vrain does not include 1977 or 1981) (4) "Clean" means diversion does not occur downstream of a major WWTP (5) 'S. Platte above Chatfield' includes S. Park ditches (including N.F. S. Platte) which are expressed as depletions, not diversions (6) ~0 = Insignificant (7) Average annual for period of record (Dry year numbers not readily available, values not included in total) We recognize that any AUA must meet the concerns of both the agricultural community and municipal water interests. There are no fixed rules for how such contracts must be structured, but at a minimum, they will have to recognize and deal with some fundamental concerns, some of which are identified and discussed in SWSI-II: • Temporary transfers must be protected against claims of forfeiture for non-use or in loss of priority; • Balance must be struck between farmers preference for short-term arrangements and municipal utilities interest in long term arrangements (the Super Ditch Company's rotational fallowing program intends to handle this with 40 year contracts); • Transfer obligations should be shareable among multiple participating farmers in order to provide flexibility; • Transfers must not affect the water supplies of non-participating farmers or ditch companies; • Market tiers and associated prices must be established to allow participation by entities with water of varying reliability; and 28	All of the Moffat Project alternatives reduce the risk of water shortages to Denver Water's treated water customers. During the 1950's critical drought period, Denver Water's treated water demands and raw water commitments are met without any shortage under each of the action alternatives. In contrast, total treated water and raw water shortages would be approximately 10,000 AF during the critical drought period under the No Action alternative. Shortages during the critical period under the No Action alternative are due to a lack of supply, not conveyance capacity constraints. ***Comment #781-25*** *(ID 5119)**:*** *Vulnerability Denver Water reports that their overall water supply system is vulnerable to man-made and natural disasters because 90% of storage and 80% of available water supply is located in their South System. However, a simple analysis shows that storage and supply concerns are hardly changed with the addition of 18,000 AF of firm yield to the North System. Adding the proposed Moffat Expansion barely decreases Denver Water's reliance on the South System; lowering South System dependence from 81% to 77% of water supply (Table 3). [See TABLE 3. YIELD OF DENVER WATER'S SYSTEMS IN AF (ADAPTED FROM DEIS TABLE 1-3) in the Source File.] The DEIS should include an evaluation of the improvements to system vulnerability afforded by the proposed Moffat Expansion and other viable alternatives. For example, if manmade or natural disasters are a concern, one of which might be a tunnel failure (often mentioned by Denver Water), then a greater reliance on one of the tunnel systems would not seem to reduce vulnerability or increase reliability. Improvements to system-wide security (e.g. video cameras, extra patrols), or forest health (because fire is a major concern in the South Platte watershed), may prove to be more economic, and reduce vulnerability more so than any of the proposed*

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS • The structure, if not the detail, of agreements must be standardized to reduce time and administrative commitments necessary for both their negotiation and implementation. In analyzing the potential of AUA's as an option to Denver Water's preferred alternative, we understand that such arrangements are not without their own impacts and that, at a minimum, the Moffat EIS would have to consider the degree to which AUA's result in increased diversions at upstream locations diminished flows in intervening stream reaches, which could affect water quality, environmental and recreational interests. **3.5. Summary of Alternatives** The alternatives currently proposed in the DEIS are deficient in meeting the standards of NEPA and the CWA – they simply do not represent a reasonable cross-section of practical alternatives nor are they the least environmentally damaging alternatives. Several viable options that could provide a more stable water supply to Denver Water were removed from the analysis prematurely, and should be reevaluated. In addition, the Corps description of the No Action Alternative does not realistically represent actions that would be taken by Denver Water if no Moffat Expansion project were completed, and the totally qualitative description of the No Action Alternative is blatantly one-sided and misleading. Furthermore, given Denver Water's policy to accelerate conservation savings, the DEIS totally fails to evaluate the potential for conservation programs to reduce future demands beyond 2016. Conservation is the cheapest, fastest, and smartest water supply strategy and should be maximized before the proposed Moffat Expansion project moves forward. Denver Water, its contractors, and suburban distributors can greatly improve their conservation efforts through improved conservation planning, expanded conservation programs that focus on outdoor water use, and better water rates that send a true conservation price signal. Incorporating these conservation measures should be adopted prior to committing enormous financial resources to the proposed Moffat Expansion project. WRA has provided a list of conservation and efficiency mitigation measures at the end of this document that address these concerns and should be incorporated into any permit the USACE grants on this project. Finally, the DEIS should also evaluate a small-scale alternative to meets the need for increasing the supply in the Moffat System. Such an alternative can be developed by considering the integration (or fully linking) of Denver Water to other water supply systems making possible substantial opportunities for agricultural-urban cooperative water sharing agreements. 29	*project alternatives.* **Response #781-25:** Denver Water does take action where it can to reduce system vulnerability. For example, Denver Water is involved with management of forests within its watersheds and thorough maintenance of its facilities. In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership would accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects would take place around and upstream of Denver Water reservoirs. Restoration also would help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Even with these actions, there remains a vulnerability problem as long as 80% of the entire system's supply is dependent on near perfect operation of the South System. Denver Water also has a program in place to replace water distribution pipes, fresh water reservoirs, and other infrastructure related to the delivery of water. Large conduits are inspected on a yearly basis in some cases and preventive maintenance is done as needed. System-wide vulnerability is one of the underlying needs of the Moffat Project. When there are planned or unplanned shutdowns in Denver Water's system that require more water to be treated at Moffat Treatment Plant than would otherwise have occurred, the severe existing shortage of water available to the Moffat Treatment Plant is further exacerbated. In other words, even routine maintenance activities that

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **4. Climate Change** The DEIS must consider and rigorously analyze the proposed project's contribution to climate change via greenhouse gas emissions, and the likely impacts climate change will have on the Fraser River, Williams Fork River, and South Boulder Creek. The analysis should not be limited solely to impacts on Denver Water, and should consider impacts to western slope communities, water quantity, and water quality as well. The fact that climate change issues have not been quantitatively described in the DEIS is inadequate and must be remedied. **4.1. Greenhouse Gas Emissions** The DEIS must describe the greenhouse gas emissions associated with each of the proposed alternatives. Recent comments from the Council of Environmental Quality (CEQ) state, "CEQ sees no basis" for excluding greenhouse gas emissions from the consideration of environmental effects that must be analyzed in the NEPA process.[92] CEQ further states, "it is appropriate and necessary to consider the impact of significant Federal actions on greenhouse gas emissions and the potential for climate change to affect Federal activities evaluated through NEPA and different approaches for managing those effects". In response to requests from concerned groups, CEQ recently released draft guidance on addressing greenhouse gas emissions and climate change in NEPA documents.[93] The guidance says that if a proposed federal action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of carbon dioxide equivalent annually, it would trigger a quantitative analysis – however, this is not a hard-fast number for all projects. The guidance also states that the impacts of climate change – e.g. decreased river flows in Interior West – should also be considered when designing the project. Neither of these points are adequately addressed in the current DEIS. **4.2. Data Availability** The DEIS relies on hydrologic modeling of the period between 1947 and 1991. This modeling does not include the severe droughts evidenced by tree-ring-based hydrology studies, nor does it include potential streamflow changes due to climate change. The hundreds of studies that detail climate change's impacts on water resources can be boiled down to the simple fact that past hydrology is no longer a reliable predictor of future flows. Continuing down the business-as-usual road – assuming that the hydrology of the past century is adequate enough to use in today's NEPA process – is unreasonable. The data necessary to perform a quantitative analysis of climate change impacts in the DEIS is currently available from the Colorado River Water Availability Study (CRWAS). Although much of this data has been recently compiled, it provides a majority of what Denver Water wanted in their "climate change wish list", including: • Data on changes of timing and annual volume of stream flow [92] Executive Office of the President, Council on Environmental Quality. 2009. Letter to James Inhofe and John Barasso. December 29. [93] Executive Office of the President, Council on Environmental Quality, Nancy Sutley. 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. February 18. 30	require operating Moffat Treatment Plant more frequently deplete further the limited amount of supply available in the Moffat Collection System. Denver Water's North and South raw water systems that provide water to the treatment plants are not connected. During periods of high demand, the raw water being provided to the Moffat WTP simply runs out because there is not a sufficient amount placed in storage. Additionally, since 90% of storage and 80% of supply is provided by the South System, the raw water systems are currently severely imbalanced. This imbalance contributes to the North System's vulnerability and unreliability. Additionally, please refer to DEIS Section 1.4.4.1 Raw Water Availability to the Moffat WTP (System Reliability), that describes the potential for the Moffat Collection System to run out of water in a single dry year. The Corps believes the vulnerability issue in the North System is adequately described and justified in the DEIS. On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Denver Water has been and is currently engaged in efforts to identify and protect against actual or potential threats to all of its critical infrastructure and key resources and has implemented security program initiatives to include vulnerability assessments of its facilities. Support for Denver Water's security program includes an appropriate and significant level of recurring funding, and implementation of recommended physical security improvements. Additionally, Denver Water is in direct contact with and regularly participates with local, State, and Federal agencies in training and exercises to prepare

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS • Watershed scale precipitation change data • A hydrologic model for the Colorado River basin that incorporates climate data in order to more carefully evaluate the effects of various climatic regimes and potential management strategies Results from the CRWAS, funded by the Colorado Water Conservation Board, suggest that climate change will have a far-reaching impact on western slope river flows.[84] In general, the report describes how increased temperatures and decreased summer precipitation caused by climate change will lead to earlier runoff from rivers and a general reduction in river flows. This data can, and should be used by the Corps in its evaluation of the proposed Moffat Expansion project. Notably, the CRWAS study does not take into account the impact conditional water rights would have on water availability if they are put to use (like those owned by the oil shale companies), and does not include currently planned projects like Denver Water's proposed Moffat Expansion or Northern's Windy Gap Firming Project. The projected decrease in river flows and additional large-scale development of Colorado River water casts doubt upon, and may seriously complicate, how the State of Colorado will meet its legal obligations to downstream states. Denver Water and several other Front Range water suppliers are also currently engaged in a climate change adaptation analysis. To comprehensively evaluate impacts on the river and ecosystems, both the CRWAS and Denver Water's individual efforts should be integrated into the DEIS and used to drive the Corps water supply modeling. **4.3. Climate Change Summary** One can reasonably assume that river health, and other natural uses of water such as recreation, will suffer under climate change. Therefore, it is vitally important to accurately describe how the proposed alternatives will contribute to, and be impacted by, climate change. [84] CWCB. 2009. Colorado River Water Availability Study. Presented to IBCC, December 2. http://cwcbweblink.state.co.us/DocView.aspx?Id=138498&searchId=f730d707-a3b0-47d3-bb8e-c1543bfa42c8&dbid=0 31	for a response to any adverse actions that may occur. ***Comment #781-24*** *(ID 5118)**:*** *Flexibility The DEIS suggests that Denver Water's system is subject to outages caused by routine maintenance, pipe failures, treatment plant problems, and unpredictable occurrences that stress Denver Water's ability to meet customer demands and requires added flexibility which it does not have. Unlike many water providers, Denver Water already has three large, independent water treatment plants, any one of which is capable of meeting the vast majority of Denver Water's customers' water needs during most of the year. In addition, summer-time demands in the entire combined service area can be served by any two plants in times of drought, as evident by operations practiced in 2002. The DEIS should include a quantification of the benefits attributable to the additional flexibility provided by the proposed Moffat Expansion project. Parallel to questions surrounding the vulnerability need, there is not a clear indication that 18,000 AF of additional supply actually provides any substantive benefits to system flexibility. A helpful starting point would be to determine actual customer service interruptions attributable to the planned and non-planned outages described in Appendix C of the Purpose and Need Report[53] – while there are several listed outages, it is not apparent if any of those outages led to supply interruption at the customer level. FOOTNOTE: [53] Denver Board of Water Commissioners. 2004. Purpose and Need Statement for the Moffat Collection System Project. April.* **Response #781-24:** The need for flexibility is supported by the conditions during the 2002 drought. For example, Denver Water would have been susceptible to supply interruptions in 2002 when the Moffat Collection System was out of water and Gross Reservoir was empty. If the Foothills

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **5. Hydrologic Data and PACSM Output** For a number of reasons, the impacts of the proposed alternative and other action alternatives are difficult to ascertain in the DEIS. Notably, the DEIS compares the anticipated impacts of the action alternatives not to the status quo, but to what is labeled the future "Full Use Existing System" (hereafter, FUES). Comparing the action alternatives to FUES makes ascertaining their impacts difficult. A second set of comparisons contrasting the various action alternatives to the existing condition would have been useful and should have been included throughout. In addition, given that the preferred alternative will have its greatest impacts on high flow days in wet months of wet years, the presentation of monthly averages and daily flow averages in Appendix H of the DEIS (either over the period of record or the wet flow years of the period of record) does not offer the clearest picture of any of the alternatives' effects. Daily flow effects, since they are generated by PACSM, should be presented, at least for a representative sample of high impact wet year days. Finally, there is no way, based on the data in Appendix H, of determining the interactive sequence of dry and wet years. It seem likely that a wet year following a sequence of dry years (in which an enlarged Gross Reservoir would be drawn down), would allow Denver Water to divert more water to Gross than it would if the reservoir started the runoff season relatively full. Notwithstanding the fact that the impacts are obscured, to some extent by the FUES comparison, by the averaging, and by lack of information on inter-annual effects, significant impacts are still apparent in several reaches of the Fraser River, especially at nodes like the one below Denver Water's Fraser diversion (PACSM Node No. 2120). Table H-3.2 presents the Node 2120 impacts to monthly average daily flows compared against the FUES, averaged over the period of record (average years) and also for wet years and dry years.[90] While there are no dry year differences, the average year effects for May and June, respectively, are 68% and 45% reductions in flow. For wet years, the reductions are 66% and 29%. These effects are substantial, even when masked, to some extent, by the FUES comparison and monthly averaging. PACSM is a daily time-step model and it's highly likely that the model's results contain many specific examples of more extreme impacts. PACSM output should be presented in a form (i.e., daily flows) that illuminates the full effects of the preferred alternative. [90] USACE. 2009. DEIS Appendix H: Hydrologic Data and PACSM Output, p. H-3.2. 32	WTP had gone down due to an unplanned outage there would have been significant supply interruptions to customers. The Foothills WTP has experienced major outages of the distribution system in the past, resulting in WTP load shifting to the Moffat WTP. Denver Water has evaluated the ability of each of the treatment plants (Moffat, Marston and Foothills) to meet future demand conditions when planned or unplanned outages occur. While some outages (i.e., planned outages, treatment plant outages, or distribution system outages) may seem minor when considered alone, combinations of outages frequently occur. Also, if an outage causes only one additional acre-foot of water to be treated at the Moffat WTP, that outage is problematic because of the inadequate amount of water available at the Moffat WTP. The analysis suggests that to the degree that water supply is limited and if outages occur in a dry year, Denver Water is vulnerable. The need for flexibility is supported by the conditions during the 2002 drought. For example, Denver Water would have been susceptible to supply interruptions in 2002 when the Moffat Collection System was out of water and Gross Reservoir was empty. If the Foothills WTP had gone down due to an unplanned outage there would have been significant supply interruptions to customers. The Foothills WTP has experienced major outages of the distribution system in the past, resulting in WTP load shifting to the Moffat WTP. Denver Water has evaluated the ability of each of the treatment plants (Moffat, Marston and Foothills) to meet future demand conditions when planned or unplanned outages occur. While some outages (i.e., planned outages, treatment plant outages, or distribution system outages) may seem minor when considered alone,

Comment Information	Comment	Comments and Responses
	WRA Comments on Moffat Collection System Project DEIS **6. Proposed Mitigation: Conservation and Efficiency Measures to Ensure Maximization of Existing Supplies** Western Resource Advocates proposes the following mitigation measures to be incorporated into the USACE's permit for the Moffat Collection System Project. These are WRA's current suggestions, and we may choose to add or delete from this list as a result of further discussions with Denver Water and the USACE. • Denver Water sets a goal to reduce residential per capita water use by at least 35% over the next 40 years compared to pre-drought levels. • Denver Water implements a conservation-oriented rate structure – as determined by a positive slope in the average price curve – for all customers, including master meter distributors. • Denver Water implements and maintains a holistic suite of residential indoor/outdoor, and ICI conservation incentives – including a landscape retrofit rebate program. • Denver Water builds the capacity to utilize 95% of their reusable effluent in a dry year. • Denver Water commits to spending at least 2% of their annual operational budget on conservation activities for the next 10 years. • Denver Water reports water loss according to the IWA/AWWA methodology and maintains an active water loss detection and elimination program. • Denver Water works with local governments in its service area to adopt ordinances progressive covering water waste, irrigation requirements, and standards for water-efficient new construction. • Denver Water and its suburban distributors (master meter, total service, read and bill) comply with Colorado statute 37-60-126 requiring all covered entities to submit an approved water conservation plan to the Colorado Water Conservation Board – or work towards an acceptable agreement that achieves the goal of the statute. ********** Thank you for your attention to these comments. We look forward to discussing them further. 33	combinations of outages frequently occur. Also, if an outage causes only one additional acre-foot of water to be treated at the Moffat WTP, that outage is problematic because of the inadequate amount of water available at the Moffat WTP. The analysis suggests that to the degree that water supply is limited and if outages occur in a dry year, Denver Water is vulnerable. Multiple water utilities have interconnections with Denver Water in the event that their treated water system fails. These interconnects allow the other utilities the flexibility they need when performing maintenance on treatment plants w/o an interruption in water service. However, since these interconnections are with smaller utilities and in limited locations, it is impossible for them to be used to meet Denver Water's needs in the event Denver Water has an emergency at a WTP. Presently, Denver Water has three treatment plants each of which can produce at least 180 million gallons per day (mgd) (550 mgd delivery capacity). Compared to the next largest utility in Colorado, Aurora, which has three WTPs the largest of which can produce 80 mgd (210 mgd total capacity). ***Comment #781-23*** *(ID 5117)**:*** *Firm Yield Denver Water's near-term water resource strategy identified a need for 18,000 AF of new firm yield. This is an inflated need due to the inclusion of 3,000 AF of contract water to Arvada. The contract must only be fulfilled if Denver Water expands its Moffat Collection system; if water is sourced via agricultural transfers, additional conservation, aquifer recharge, or any other means, Denver Water does not have to fulfill the contract to Arvada. In light of this, and based on the questions and concerns described in the sections above – Unrestricted Demand, Total Demands, Cooperative Actions, and Conservation Savings – the DEIS does not provide a*

Comment Information	Comment	Comments and Responses
		satisfactory explanation for why Denver Water requires 18,000 AF over the near-term timeframe. **Response #781-23:** The Purpose and Need for the Moffat Project is to provide 18,000 AF/yr of new firm annual yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. To the extent that Denver Water is able to solve its Moffat Collection System shortage problem, Denver Water is obligated to allow Arvada to purchase a percentage of increased firm yield in the Moffat System up to a maximum of 3,000 AF/yr. The EIS considered alternatives that meet Denver Water's Purpose and Need that include agricultural transfers (Alternative 13a), aquifer storage and recovery (Alternative 10a), and reusable supplies (Alternatives 8a and 10a). Even if the new firm yield to the Moffat Treatment Plant was derived entirely from reusable supplies or other water sources, Denver Water would be obligated to allow Arvada to purchase a percentage of increased firm yield in the Moffat System. Therefore, the need for 18,000 AF/yr of new firm yield is not inflated. The need for the 18,000 AF of new firm yield is explained in DEIS Section 1.4. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr, however, Arvada would still need to meet this demand. Therefore, the Corps believes it is a reasonable and conservative approach to include the 3,000 AF in the predicted 2032 demand in the analysis. There would be a shortage of water supply without a Project, but the demand would still be there. See also the responses to Comment IDs 5123 through 5127. ***Comment #781-22*** *(ID 5116)**:*** *Summary of Purpose and Need Based on a close review of the Purpose and Need statement and*

Comment Information	Comment	Comments and Responses
		Denver Water's justification for the proposed project, the DEIS does not conclusively prove a "need" for the proposed Moffat Expansion. Nothing in the DEIS offers any evidence that the only way to meet Denver Water's four-fold objective is by increasing the yield of the Moffat system. The DEIS is inadequate because it assumes Denver Water's future needs are based on meeting the unrestricted demand of Denver Water's customers. This provides an inflated estimate of future demands and does not reflect Denver Water's current operating procedures. The DEIS should revaluate future demands by including the impact of drought response measures, and by using an updated model that 1) captures the strong role conservation has played since 2000, 2) incorporates conservation funding increases, and 3) utilizes more recent DRCOG demographic projections that take into account the current economic downturn. The DEIS must reevaluate near-term cooperative actions based on Denver Water's progress on the WISE Partnership. The DEIS must also acknowledge and incorporate the accelerated conservation savings approved by Denver Water's Board that will be achieved by 2016, and recognize that Denver Water will very likely set a new conservation goal for the time period post-2016. Finally, with respect to Denver Water's four "needs", significantly more explanation must be included in the DEIS if they are to be used as the justification for the proposed project's purpose and need. **Response #781-22:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans, which are part of standard operating procedures, for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve is a supply

Comment Information	Comment	Comments and Responses
		side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. In 2010 Denver Water updated their demand projections based on the most recent population and demographic projections available from the DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. The Purpose and Need Statement is clearly one unique and developed purpose as follows: "… to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Denver Water' commitment to its customers." Many underlying, interrelated needs can contribute to the discrete purpose of the Project. It is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the four issues would jeopardize Denver Water's ability to meet projected demand needs.

Comment Information	Comment	Comments and Responses
		As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identifies a 34,000 AF/yr deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr of additional conservation. These conservation savings are considered when Denver Water estimates future demand (DEIS and FEIS Table 1-1). FEIS Section 4.5.3 has a full description of the WISE project. The unused reusable water identified by the WISE project was considered by the Moffat Project EIS and was incorporated into several Alternatives (7, 8, 10, 11, and 14) including two of the five EIS alternatives (8a and 10a). Using the unused excess capacity of Aurora's Prairie Water's Pipeline does not met the Purpose and Need of the Moffat Project as it does not deliver water to the North end of Denver Water's raw water collection system. Also, the WISE project makes use of unused capacity in Aurora's Prairie Waters Project. This unused capacity is available in the winter months only as Aurora needs the full capacity during the summer months to meet its demands. ***Comment #781-21*** *(ID 5115)**:*** *Alternatives NEPA regulations require that an Environmental Impact Statement (EIS) "rigorously explore and objectively evaluate all reasonable alternatives."[54] In determining the range of reasonable alternatives to be considered, the U.S. Council on Environmental Quality states: "the emphasis is on what is reasonable, rather than on*

Comment Information	Comment	Comments and Responses
		whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint using common sense, rather than simply desirable from the standpoint of the applicant."[55] Under NEPA, the comparison of a full spectrum of alternatives should provide "a clear basis for choice among options for the decision maker and the public."[56] FOOTNOTES: [54] 40 CFR 1502.14[a]. [55] U.S. Council on Environmental Quality. NEPA's 40 Most Asked Questions, #2a. Accessed January 8, 2010: http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm. [56] 40 CFR 1502.14. NEPA provisions requiring an examination of potential alternatives to a project or proposal is considered the "linchpin" of the impact statement.[57] If one accepts the premises that policy objectives of the Act (Section 101) can be achieved only through good planning and that the consideration of a wide range of alternatives is essential to "good" planning, then the analysis of alternatives in the EIS process is the most important measure of the effectiveness of NEPA. CEQ guidelines require an EIS to describe "[a]lternatives to the proposed action, including those not within the existing authority of the responsible agency [emphasis added]".[58] The range of alternatives must include a "no action" alternative and "non-structural" options as well as modifications of the proposed project. Based on NEPA Section 102(2)(A), the guidelines stress that "[t]he interdisciplinary approach should not be limited to the preparation of the environmental statement, but should also be used in the early planning stages [emphasis added] of the proposed action".[59] FOOTNOTES: [57] Monroe County Conservation Council v. Volpe, 472 F2d 693 (2nd Cir. 1972) [58] CEQ Guidelines, Section 1500.8(a)(4) [59] CEQ Guidelines, Section 1500.8(c) Clean Water Act the Section 404(b)(1) Guidelines are also relevant to the alternatives discussion. These Guidelines allow "…

Comment Information	Comment	Comments and Responses
		permit issuance for only the least environmentally damaging practicable alternative" and "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."[60] They also make clear that "[C]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." FOOTNOTE: [60] 40 CFR Part 230.10(a). **Response #781-21:** As stated in Comment ID 5101, the Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. Non-structural and institutional concepts, such as cooperative agreements and reallocation/exchange of water supplies, were considered in the alternative screening process. Regarding the LEDPA and No Action Alternative, please see the response to Comment ID 5101. ***Comment #781-20*** *(ID 5114)**:*** *Proposed Alternatives The alternatives currently proposed in the DEIS are deficient in meeting the standards of NEPA. The claim that "[t]he five alternatives to be carried forward for EIS analysis represent a reasonable cross-section of practical alternatives, which encompass a broad range of potential water supplies and storage sites,"[61] rings hollow. Every single alternative involves a transmountain diversion of at least 8,000 AF of water from the Fraser River and at least 1,500 AF of water*

Comment Information	Comment	Comments and Responses
		from the Williams Fork River. FOOTNOTE: [61] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, p. 2-19. The DEIS started with a pool of over 300 potential options, a good beginning, and gradually eliminated alternatives through a series of "screens." Screen 1A eliminated alternatives by means of several broad categories including "PN3," which limited alternatives to those that "must produce a solution within the necessary near-term timeframe (by 2016)."[62] It is assumed that the 2016 date was chosen because 2016 is when the DEIS projects Denver Water to have an imbalance between demand and supply. In light of Denver Water's commitment to achieve accelerated near-term conservation savings by 2016,[63] demand will not exceed supply in 2016, and the 2016 cut-off date is no longer relevant. Thus, PN3 cannot be used to eliminate several viable alternatives. FOOTNOTES: [62] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, Table 2-3. [63] Denver Water. 2006. Proposed 10-Year Conservation Plan. July, 6. The DEIS must carry forward through the screening process the following alternatives identified in Appendix B that were improperly removed from consideration based on PN3: • #304 - Renegotiate 1940 Consolidated Ditch Agreement • #306 - Buy Back Contract Commitments • #307 - Land Purchase & Conversion to Open Space • #501 - Convert Northwest Raw Water Contracts to Treated Water Contracts With respect to option #304, Denver Water has started discussions with Consolidated and estimates that a successful renegotiation of the contract could provide a net gain of 10,000 - 15,000 AF of additional supply to Denver Water, less whatever Consolidated wants in exchange for solidifying the agreement.[64] With respect to option #501, this is the only "Demand Reduction Concept" identified in the DEIS out of more than 300 potential options. The Corps failure to consider additional conservation opportunities speaks directly to the

Comment Information	Comment	Comments and Responses
		inadequacy of the DEIS. FOOTNOTE: [64] Bennett, D., Project Manager and Little, D., Director, Denver Water Planning Division. 2010. Personal communication. January 14. **Response #781-20:** Denver Water has held preliminary discussions with Consolidated. A successful renegotiation of the contract could provide 10,000 to 15,000 AF of additional reusable return flows to Denver Water, less whatever Consolidated wants in exchange for modifying the agreement. Disputes surrounding the interpretation of the 1940 Agreement have been addressed in Water Court. ***Comment #781-19*** *(ID 5113)**:*** *Perhaps the DEIS's most crucial error occurred in Screen 1C, when all East Slope-only alternatives were removed from further analysis. This effectively negated the possibility of evaluating a full spectrum of alternatives in the DEIS – contrary to the requirements of NEPA and the CWA. Cost, alone, is not a viable reason to eliminate the following alternatives, which should be carried through and fully evaluated in the DEIS: • #6 – Indirect Potable Reuse Project • #7 – Reusable Water • #9 – Agricultural Water Conversion Project* **Response #781-19:** An alternative is considered practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR 230 Subpart B). The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project. It is important to emphasize, however, that it is not a particular applicant's financial standing that is the primary consideration for determining

Comment Information	Comment	Comments and Responses
		practicability, but rather characteristics of the project and what constitutes a reasonable expense for these types of projects that are most relevant to practicability determinations. The Corps conducted a review of the cost-screen threshold, as noted in the comment and referenced in the Alternatives Screening Report (Corps 2007) as Boyle Engineering 2005b. Five projects were selected for the comparative analysis: WGFP, Northern Integrated Supply Plan, Southern Delivery System (SDS), East Cherry Creek Valley Northern Project, and Aurora South Platte Project. The estimated project costs ranged from $9,300/AF to $23,700/AF. The study concluded that a 4.0 cost threshold of $18,000/AF falls within the range of other project costs, and that a broad range of potential alternatives remained for consideration after applying the Cost Screen, The study and the Corps concluded that it is a reasonable threshold. The remaining alternatives also represent a reasonable cross-section of types of alternatives (i.e., transmountain diversion, reuse, aquifer storage, and purchase of agricultural water rights). As stated in DEIS Section 2.1.3, the Corps decided upon a cost threshold of 5.0, instead of 4.0, to be more conservative and inclusive to ensure a reasonable range of alternative remained in the EIS analysis. The Corps finds this approach consistent with the Section 404 regulations for screening alternatives. Alternatives that were formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14; therefore, almost 50% of the alternatives formulated include some component of reuse. These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The

Comment Information	Comment	Comments and Responses
		primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat WTPt. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights and storage to firm yield are two key limiting factors that affect the amount of water that could potentially be derived from this supply. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the competitive market for agricultural water rights and there is no guarantee there would be an adequate number of willing sellers under these ditch systems.

Comment Information	Comment	Comments and Responses
		Comment #781-18 *(ID 5112)**:*** *No Action Alternative The Corps wrongfully eliminated several non-structural concepts from evaluation in the No Action Alternative "because they did not meet the Purpose and Need."[65] By definition, the No Action Alternative is not supposed to meet the Purpose and Need, so any potential No Action Alternatives should not be constrained by it. The "numerous non-structural [and] institutional water management concepts" that were eliminated by this argument must be described in the DEIS and fully evaluated for their efficacy. FOOTNOTE: [65] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, p. 2-84. The following alternatives were eliminated in Screen 1A, but could provide additional water supply to Denver Water: • 302: Integration with Northern • 309: Around the Horn The description of the No Action Alternative does not realistically represent actions that would be taken by Denver Water if a 404 permit was not granted by the Corps. The DEIS claims that the only two options for Denver Water would be to either use its strategic water reserve or enact more frequent water use restrictions. These are not the only options, and they are poorly described in the DEIS at that. The qualitative description of drought restrictions that would be enacted according to Denver Water's Drought Plan is plainly insufficient and misleading. Denver Water has established water use reduction targets for various stages of drought, and has data showing reductions accomplished during the most recent 2002-2005 drought.[66] This data can, and should, be utilized in the DEIS to perform a more rigorous and quantitative evaluation of the impact drought response measures can have on estimates of future demand. FOOTNOTE: [66] USACE. 2009. DEIS Chapter 2: Proposed Action and Alternatives, Table 2-23.*

Comment Information	Comment	Comments and Responses
		Response #781-18: The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. Numerous non-structural or institutional water management concepts were considered in the preliminary alternatives screening process, including buying back contract commitments, integrating operations with other water supply providers, expanding reuse, etc. (Refer to DEIS Table B-1 in Appendix B for the long list of concepts considered.) These non-structural concepts were evaluated and eliminated from further consideration for a variety of reasons, which include LI1 (Must not require congressional action, PN1 (Must provide new firm yield), PN2 (Must supply water to Moffat Collection System, and PN3 (Must provide a solution within the

Comment Information	Comment	Comments and Responses
		necessary timeframe). These types of alternatives would not address the vulnerability and flexibility components of the Purpose and Need statement. ***Comment #781-17*** *(ID 5111)**:*** *Furthermore, Denver Water's Board has also explored the concept of "reliability criteria" over the past few years and may include these criteria in their upcoming IRP – these criteria should be described in the DEIS within the context of drought response measures. Reliability criteria measure the adequacy of a utility's water deliveries in terms of the acceptable level and frequency of water use restrictions due to drought. Reliability criteria are based on recognition that it is economically impractical to supply water for all uses, all of the time, given Colorado's semi-arid climate. As an example, a hypothetical set of criteria would include restrictions on outdoor watering in the 20-year drought, and indoor use in the 200-year drought.* **Response #781-17:** The need for reliability is described in the DEIS Chapter 1 Purpose and Need. The 2007 Supplement to Board Resource Statement, which is a policy statement issued by Denver Water, describes the Board's desire and efforts to minimize the risks from the uncertainty and volatility of providing water supply. This includes increasing the Strategic Water Reserve, which helps improve the overall reliability of the water system, but not the reliability of the north end of the system. Denver Water states that the IRP is ongoing and would conclude with the issuance of a new or updated Board Resource Statement that would address any changes the Board might make to its reliability criteria. Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project consists of: 1) meeting a water supply shortfall

Comment Information	Comment	Comments and Responses
		of 18,000 AF (i.e., the portion that conservation would not meet), 2) improving reliability in the north end of the system to avoid closure of WTPs, and 3) reducing vulnerability by balancing the water supplies in the North and South systems. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through water conservation and water conservation is a part of all alternatives. Denver Water has implemented a conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. ***Comment #781-16*** *(ID 5110)**:*** *The implication – mentioned throughout the DEIS – that "demand hardening" will lead to more severe restrictions during the next drought is misleading. Conserving water reduces system demands and subsequently slows the rate of reservoir supply depletion from year to year. Consequently, providers will be in a much better position – more full reservoirs – when the next drought hits than they would be without the implementation of long-term conservation measures. Two quotes by highly knowledgeable and respected Colorado water professionals are worthy of including here: • "Water conservation can play a significant role in helping most water systems manage all but the most serious droughts." William DeOreo.[67] FOOTNOTE: [67] DeOreo, W. 2006. The Role of Water Conservation in a Long-Range Drought Plan. Journal AWWA. February. • "To build excess water supply capacity simply to facilitate cutbacks during drought can be highly uneconomic, akin to overfeeding people so that dieting will be easier." Howe and Geomans.[68] FOOTNOTE: [68] Howe, C. & Goemans, C. 2007. Manager to Manager – The Simple Analytics of Demand Hardening. Journal*

Comment Information	Comment	Comments and Responses
		AWWA, October. The fact that long-term conservation provides additional water that can be used to "weather" a drought is corroborated by analysis performed by several water professionals,[69] and in a report by the California Urban Water Agencies which surveyed the opinions of urban water managers throughout California.[70] According to the report, "it was the belief of most people that long-term conservation will significantly reduce the frequency and severity of shortage situations. It was the overwhelming belief of those interviewed that water supply will be much better with than without long-term conservation." In the survey, when the water managers were asked how concerned their agency was about demand hardening (on a scale of 1 [not] to 5 [very]), "[t]he answer to this question ranged from a one to a four with most agencies only giving it a one." FOOTNOTES: [69] Mayer, P. 2006. Research and Development in Water Conservation. [70] CUWA. 1994. Long-Term Water Conservation & Shortage Management Practices: Planning that Includes Demand Hardening. June. If the DEIS chooses to include references to, and imply hardships from, demand hardening, it must also provide the data that supports this position. One can make quite a strong argument that the conservation measures enacted during the 1990s, placed Denver Water in a much better position to deal with the 2002 drought. Until that data is provided, any mention of demand hardening should be removed from the DEIS. **Response #781-16:** "Demand hardening" is caused through conservation. As customers become more efficient in their water use, their ability to reduce consumption during a drought under the same set of drought restrictions becomes impaired. A simple example is lawn watering efficiency. Denver Water's Stage II drought restrictions are designed to reduce lawn watering significantly but keep lawns alive. If customers

Comment Information	Comment	Comments and Responses
		become more efficient in their lawn watering through conservation, the closer their use is to just keeping lawns alive; therefore, they will not be able to reduce as much in a drought. If the conservation savings are used to serve new customers, then the water is not available to buffer against a future drought. ***Comment #781-15*** *(ID 5109)**:*** *The socioeconomic impacts of raw water shortages and water restrictions described in Chapter 4 of the DEIS are entirely qualitative and one-sided. The No Action Alternative analysis does not use the same metrics applied in evaluating the action alternatives, creating an uneven comparison between all the potential alternatives. In addition, the assumptions in the qualitative analysis focus entirely on the negative impacts to Denver Water and its customers, for example:[71] FOOTNOTE: [71] USACE. 2009. DEIS Chapter 4: Environmental Consequences, Section 4.17.6. …"restrictions would place burdens on residential and commercial customers, would result in negative perception of the Denver area in general, possibly decreasing property values, and would have an adverse impact on business activity…" One could just as easily report that watering restrictions may lead towards increased economic activity in the landscape industry as more residents seek to improve their irrigation system to use less water, or modify their landscapes to include more low water-use plant varieties. The DEIS needs to be more even-handed in its qualitative assumptions and analysis.* **Response #781-15:** The EIS quantifies the impacts of the No Action Alternative to the extent possible; however, there are a number of aspects of the No Action Alternative which are not given to quantification. The qualitative effects are equally as important as the quantifiable impacts, but the data necessary to calculate or monetize the impacts are not available. For example,

Comment Information	Comment	Comments and Responses
		the specific level of water restrictions that would be enacted and the amount of Strategic Reserve depletion that would occur in future years would vary based on a number of factors, including weather conditions. The No Action Alternative is fundamentally different from the action alternatives in terms of how future water shortages would be addressed by Denver Water, making it impossible to prepare a direct comparison between the impacts of the No Action Alternative and action alternatives. The FEIS was revised as necessary to recognize the benefits that would occur with the No Action Alternative scenarios. However, those effects would be isolated and smaller than the effects of shortages or severe water restrictions. The level of negative impact would depend on a number of factors, such as the severity of mandatory drought restrictions. ***Comment #781-14*** *(ID 5108)**:*** *Conservation Alternative One of the essential shortfalls in the DEIS is its failure to evaluate the potential for future conservation to reduce demands, in either the No Action Alternative or as additional water supply. Prior to committing large financial resources to expanding the Moffat Collection System, Denver Water, its contractors, and suburban providers must continue to improve their demand-side management. Conservation represents a "no regrets" strategy – one that does not tie utilities to expensive infrastructure, and does not have detrimental impacts on river systems or rural communities. While conservation programs come with a price tag, it's much smaller than the one for the any of the proposed alternatives. Conservation is the cheapest, fastest, and smartest water supply strategy. Conservation measures have proven to be cost effective and a source of real water savings;[72]*

Comment Information	Comment	Comments and Responses
		indeed, many studies have shown that conservation is not only cost effective, but is often less expensive per acre-foot than traditional supply development. There are several options that cost as little as $100-$200/AF and many more programs in the range of $2,000 to $7,000/AF.[73] Denver Water's own conservation master plan – the "Tap-Smart" Plan – estimates conservation will cost an average of $4,540/AF.[74] Furthermore, conservation can be adaptively managed and is inherently flexible to changing future conditions…unlike concrete. FOOTNOTES: [72] Western Resource Advocates. 2008. Smart Savings: Water Conservation Measures that Make ¢ents. [73] CWCB. 2007. Colorado's Water Supply Future: State Wide Water Supply Initiative Phase 2, Table 2-1. November. [74] Denver Water. 2007. Tap-Smart: The Conservation Master Plan. April 30, 2007. Conservation must be maximized to the greatest extent possible before any other options are pursued. If a Moffat Expansion project is approved by the Corps, permit conditions must require all beneficiaries to maximize their conservation potential. **Response #781-14:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be

Comment Information	Comment	Comments and Responses
		noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #781-13*** *(ID 5107)**:*** *Conservation Planning Denver Water's 1997 IRP identified 16,000 AF of conservation savings to achieve by 2030, placing "conservation at the head of the line when considering how to meet future water demands."[75] In 2006, Denver Water's Board "accelerated" the pace of savings, setting a goal to achieve the 16,000 AF of conservation savings by 2016, rather than 2030.[76] According to the IRP, this would now leave Denver Water with a goal to achieve 13,000 AF of additional savings between 2016 and 2050. This is a paltry goal – 382 AF/yr – and significantly out of line with what Denver Water has historically achieved in conservation savings (Table 4). FOOTNOTES: [75] Denver Water. 1997. Water for Tomorrow - Integrated Resource Plan. [76] Denver Water. 2006. Proposed 10-Year Conservation Plan. July, 6. [See TABLE 4. CONSERVATION SAVINGS – ACTUAL VS. GOALS in Source File.]* **Response #781-13:** As shown in Table 1-1 in the Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of

Comment Information	Comment	Comments and Responses
		which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #781-12*** *(ID 5106)**:*** *The DEIS must incorporate a reasonable goal for additional conservation in the near-term (2016-2030) that is more in line with Denver Water's historic successes. In 2004, Denver Water reported that all the "low-hanging fruit" of conservation had already been achieved,[77] but this is certainly not the case. After this statement was made, residents achieved an 18% reduction in water use from 2001 to 2008. Furthermore, past reductions are no indication that future savings cannot occur – as postulated by the over-hyped concept of demand hardening. In reality, water use efficiency evolves and improves just like any other technology. The 1992 Energy Policy Act mandated 1.6 gallon per flush toilets, but there are toilets on the market today that use half that amount, and similar gains have been made with most every indoor appliance and fixture. FOOTNOTE: [77] USACE. 2009. DEIS Appendix A1: Review of Denver Water's IRP, p.5. Moreover, communications with*

Comment Information	Comment	Comments and Responses
		Denver Water staff indicate that the majority of the conservation savings achieved since 2001 are believed to be behavioral in nature.[78] Consequently, many of the rebate, incentive, and regulatory measures described in Denver Water's Tap-Smart Plan have yet to be fully implemented and maximized. In short, significant savings are still achievable from existing customers, let alone the vast potential achievable from new customers. FOOTNOTE: [78] Fisher, G., Manager of Demand Planning & Elliot, M., Manager of Water Conservation, Denver Water. Personal Communication. December 7, 2009. A reasonable goal to be included in the DEIS is for Denver Water to achieve an additional savings of 1,000 AF/yr from 2016 – 2030. This is significantly lower than any rate achieved by Denver Water since 1980, but is consistent with the Board's current goals (see Table 4). This level of conservation would result in 14,000 AF of savings, and may potentially negate the near-term need for the proposed Moffat Expansion project. **Response #781-12:** As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental

Comment Information	Comment	Comments and Responses
		Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. **Comment #*781-11*** *(ID 5105)**:*** *Because planning plays such an integral role in determining the future water needs of a community, it is vitally important that all of Denver Water's contractors and suburban distributors (master meter, total service, and read and bill) comply with current state statutes regarding water conservation. The USACE should withhold granting a permit until all providers that receive water from Denver Water, and qualify as "covered entities", have approved conservation plans on file with the Colorado Water Conservation Board as required by state statute.[79] FOOTNOTE: [79] Colorado Revised Statute §37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines - water efficiency grant program - repeal. §5. 2004.* *Denver Water is currently negotiating with the Colorado Water Conservation Board to provide Denver Water's suburban distributors with an exception to this statute, but a conclusion to this discussion has not been reached. It is Denver Water's position that all suburban distributors are covered under their conservation plan and have access to the rebates it provides to customers. However, it is not readily apparent from many of the distributor's websites that Denver Water has any role*

Comment Information	Comment	Comments and Responses
		other than providing a source of water to local residents. It is possible that an acceptable agreement could be made between Denver Water and CWCB that achieves the goal of the statute without requiring each covered entity to submit a conservation plan. Until resolution of this issue, the following entities who receive water from Denver Water should comply with Colorado state statute:[80] FOOTNOTE: [80] Based on Covered Entities identified by CWCB (http://cwcb.state.co.us/Conservation/RelatedInformation/CoveredEntities/), Water Conservation Plans posted on CWCB's website as of January 12, 2010 (http://cwcb.state.co.us/Conservation/RelatedInformation/WCPs/), and the Distributors and Contractors identified in: Denver Water. 2004. Purpose and Need Statement for the Moffat Collection System. April. • Castlewood Water & Sanitation District • City and County of Broomfield • City of Arvada • City of Englewood • City of Greenwood Village • City of Lakewood • City of Littleton • City of Westminster • Consolidated Mutual Water Company • Crestview Water & Sanitation District • East Cherry Creek Valley Water District • Hill Crest Water District • Lakehurst Water & Sanitation District • North Washington Street Water & Sanitation District • South Adams County Water & Sanitation District • Southgate Water District • Southwest Metro Water & Sanitation District • Wheat Ridge Water District Many of these utilities have implemented education and outreach measures that inform customers about the importance of water efficiency. However, several lack conservation measures beyond mere education. For example, rebates provide incentives for customers to use water more efficiently and regulations require wise water use. Conservation measures like these help to further increase efficiency, improve behavioral practices, and educate the public. The combination of multiple measures greatly improves the overall effectiveness of any conservation program. Furthermore, public perception of water conservation has drastically

Comment Information	Comment	Comments and Responses
		changed in areas where education and other measures – such as incentives, regulation and conservation pricing – are present. **Response #781-11:** All of Denver Water's distributors follow Denver Water's State-approved conservation plan and customers are eligible for the same rebates and other incentives provided by Denver Water to Denver Water customers. In other words, if one receives treated water from Denver Water, one is subject to the same conservation rules and rebates as those living within the City and County of Denver. Denver Water is planning to update its conservation plan with the State and the distributors will be listed individually so readers will be able to see which water providers are covered by Denver Water's conservation plan. **Comment #*781-10*** *(ID 5104)**:*** *Conservation Programs Denver Water has the opportunity to save a significant amount of additional water through refining their existing water conservation programs and starting new ones. The potential for these programs to reduce future needs must be fully evaluated in the DEIS. If water is needed in Denver Water's Northern System, an apparent requirement of the Purpose and Need, conservation can be focused in those areas – although the analysis of conservation potential should not be constrained by this boundary because conservation benefits Denver Water's entire operations in many different ways. As a starting point, the DEIS should analyze future demands if Denver Water implemented all of the programs required by its Board in its Tap-Smart Plan. A few programs that provide significant water savings that have not been implemented include: conversion to natural areas and time-of-purchase retrofits.*

Comment Information	Comment	Comments and Responses
		Conversion to natural areas, whereby Denver Water replaces turf grass with natural grass and native flowers, was identified to save approximately 2,000 AF of water, and also result in less maintenance work for public agencies. Legislation requiring time-of-purchase retrofits, whereby homes are updated with water-conserving toilets, showerheads, and aerators upon sale, was abandoned by Denver Water shortly after its proposal due to push-back from the real estate community. This measure was estimated to save almost 7,000 AF of water. Similar legislation recently passed in California, suggesting that further exploration of this concept is warranted. Denver Water should maximize the effectiveness of its existing rebate programs by increasing funding levels and targeting older homes, low-income housing, and governmental properties – like they have started to do over the past few years. These often older properties contain fixtures that use large amounts of water by today's standards. Targeting larger properties is also beneficial because many fixtures can be replaced at one time; saving time and money spent on logistical planning. Denver Water should diversify its rebate programs and offer additional incentives for households to reduce outdoor water use. Denver is located in a semi-arid environment that receives far too little rain to support Kentucky bluegrass without supplemental irrigation. In fact, 62.8% of Denver residents' annual water consumption is used for outdoor irrigation, presenting a significant opportunity to reduce demand.[81] FOOTNOTE: [81] Western Resource Advocates. 2009. New House, New Paradigm. September. Many water-providers in the West offer a landscape retrofit rebate to replace water-thirsty turf with drought-tolerant landscaping. This type of conservation measure could be used by Denver Water to significantly reduce water use. For example, Southern Nevada Water Authority (SNWA) pays customers $1.50 for each square foot of turf removed, and estimates this program has

Comment Information	Comment	Comments and Responses
		saved over 55,000 AF between 2000 and 2007.[82,83] Denver Water should extend their existing irrigation system rebate programs to residential customers. This program has demonstrated savings in the irrigation and commercial sectors at a cost of $824/AF, significantly cheaper than traditional supply-side projects.[84] Denver Water should also fully explore the following programs aimed at reducing outdoor water use: FOOTNOTES: [82] SNWA. 2010. Water Smart Landscapes Rebate. Accessed January 11, http://www.snwa.com/html/cons_wsl.html. [83] Western Resource Advocates. 2008. Smart Savings: Water Conservation Measures that Make ¢ents. [84] Western Resource Advocates. 2007. Front Range Water Meter. • Sub-metering all irrigation use • Directly paying for inefficient customers to upgrade irrigation systems or improve landscapes • Requiring drip irrigation for all non-turf areas There is also a significant potential for Denver Water to ensure new customers' water use is low. Measures such as requiring high efficiency fixtures and appliances in new construction, and limiting turf to 40% of the irrigable landscape or using a water budget for landscapes can tremendously reduce water use compared to existing households. This type of approach has support from Denver Water's customers. In a recent survey, 71% of respondents agree or strongly agree that new homes being built should be restricted on how much grass they can water, while only 15% disagreed.[85] FOOTNOTE: [85] Denver Water (BBC Research and Consulting). 2005. Denver Water Customer Perceptions. Final Report. June 3 Today's water-smart developments across the southwest have incorporated these types of measures, resulting in water use that is 13-50% lower than their community's average.[86] With such a drastic potential to reduce future water use, it is imperative that Denver Water comprehensively explore and take full advantage of new development's

Comment Information	Comment	Comments and Responses
		role in keeping water use as low as possible. FOOTNOTE: [86] Western Resource Advocates. 2009. New House, New Paradigm. September. **Response #781-10:** As shown in FEIS Table 1-1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Denver Water explored a "Cash for Grass" program. In 2008 Denver Water held several focus groups and found that there was little interest in participating in this type of program. Therefore, Denver Water pursued other conservation measures that were more cost effective and that would have higher customer participation. Part of the issue with offering a program of this type to single family residential customers is

Comment Information	Comment	Comments and Responses
		that the majority of those customers already irrigate at a level that is below the efficiency level for turf. Replacing this turf with water efficient landscaping (that still requires irrigation) nets the utility very little water savings. This is compounded by the cost of this landscaping compared to the cost of water. The net result to the customer is that it is a costly endeavor, that even when offset by a utility rebate would take years to pay back the investment. Denver Water has concentrated its outdoor water conservation program as follows: “Use Only What You Need” – a nationally recognized conservation marketing campaign, and xeriscape – a term developed by Denver Water to describe landscaping that has little to no watering needs. Denver Water does have a program in place which provides incentives to remove bluegrass from large landscapes including park systems and those owned by business parks and homeowners associations. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area.

Comment Information	Comment	Comments and Responses
		The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures, including high-efficiency toilets. For example, from 2007-2009, Denver Water processed approximately 38,600 rebates saving nearly 1,000 AF of water. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying inefficient toilets (more than 1.6 gallons per flush) from its Home Improvement Outlet stores as an attempt to save over 40 AF/yr. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers. **Comment #*781-9*** *(ID 5103)**:*** *Water Rates Progressive, conservation-oriented water rate structures – one of the single best conservation tools available to water providers – are capable of reducing water use 15-30%.[87] Conservation pricing is an important component of any effective demand management program and should be utilized by every community seeking new sources of water. In fact, in a poll by the American Water Works Association, responders stated that conservation oriented rates were the single best individual mechanism to get customers to use less water; greater than any other mechanism by a factor of three (Table 5).[88] FOOTNOTES: [87] Mayer, P. et. al. 2008. Water Budgets and Rate Structures: Innovative Management Tools [88] American Water Works Association. 2008. Results of Survey "Quick Poll" August 22: http://www.awwa.org/QuickPollResults.cfm?itemn [See TABLE 5. RESULTS OF AWWA QUICK POLL ON HOW TO REDUCE CUSTOMER WATER USE in Source File.] Many of Denver Water's contractors and*

Comment Information	Comment	Comments and Responses
		suburban distributors have ineffective pricing structures that send little to no conservation price signal. This is a missed opportunity for Denver Water to achieve greater conservation savings across their service area, and should be evaluated by the Corps in the DEIS. Denver Water may be able to renegotiate contract terms for its raw water customers that would require conservation-oriented water rates, they may be able to utilize a more conservation-oriented rate structure for their master meter accounts, or they may be able to require their distributors to employ a progressive rate structure. In order for inclining block rates to be an effective conservation tool, consumers must understand that the more water they use the more they will pay per unit; this is reflected in a steep positive slope on the average price curve – where the average price of water is determined by dividing a customer's total water bill by the total amount of water they use. *Under an effective rate structure, the average price of water will rise sharply as use increases, as illustrated with Denver Water's in-city rate structure (Figure 2). Ineffective pricing structures rise only faintly (contractor Arvada, master meter Wheat Ridge); not at all; or decrease as use increases (contractor Broomfield, master meter Lakehurst). [See FIGURE 2. AVERAGE PRICE OF WATER FOR DENVER WATER AND SEVERAL OF THEIR CONTRACTORS AND DISTRIBUTORS.[89]] FOOTNOTE: [89] Data compiled from the water providers' websites. Accessed January 12, 2010. Municipalities with the most effective conservation oriented rates – i.e. structures that clearly communicate the more you use the more it will cost per unit – are the communities who provide an initial block of water at a low and affordable rate, and then increase rates noticeably from one block to the next. Several of Denver Water's contractors and suburban distributors have an inclining block rate structure that has a negligible*

Comment Information	Comment	Comments and Responses
		price increase as marginal water use increases (Figure 3); the result is that consumers do not notice that their unit cost is greater than before, and thus have no incentive to conserve. This is the case with Arvada, Lakewood, and Wheat Ridge, whose service charges and minimal consumption price increases from one tier to the next, result in a rate structure that acts – in essence – as a flat rate structure and provides no price signal. Given the ineffectiveness of Arvada's current water rate structure in promoting conservation, it is worth exploring if they could achieve 3,000 AF of water savings through an improved rate structure, rather than seeking the 3,000 AF through the proposed Moffat Expansion. [See FIGURE 3. MAGNITUDE OF WATER FOR DENVER WATER AND SEVERAL OF THEIR CONTRACTORS AND DISTRIBUTORS.[90]] FOOTNOTE: [90] Data compiled from the water providers' websites. Accessed January 12, 2010. **Response #781-9:** All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Arvada submitted a conservation plan to the State of Colorado and it was approved in September of 2012. ***Comment #781-8*** *(ID 5102)**:*** *A Real Non-Structural/Small Project Alternative The DEIS cannot avoid developing and evaluating a*

Comment Information	Comment	Comments and Responses
		small-scale alternative to a major dam or dam enlargement. Notwithstanding Denver Water's stated fourfold objective for the Moffat Collection System, the DEIS must, after accounting for conservation savings, offer an alternative that meets the real underlying need, to the extent that there is one, of increasing the supply of water to the Moffat Treatment Plant. Such an alternative can be developed by considering the integration (or fully linking) of Denver Water to other water supply systems making possible substantial opportunities for agricultural-urban cooperative water sharing agreements (AUA's). AUA's serve much the same purpose as conjunctive use scenarios – both supplement surface supplies when they are inadequate. The concept of systems integration involves the cooperative use or enhancement of several water supply systems in a manner designed to increase or maximize total combined yields. In mature river basins like the South Platte, with a large number of urban and agricultural water users that are linked, but not completely combined, system integration would enhance the opportunities for conjunctive use of surface and groundwater systems, coordinated approaches to effluent management and re-use, and Ag/Urban supply arrangements like rotational land fallowing and water leasing. The Metropolitan Water Supply Investigation (MWSI), a significant report released in 1999, had as its primary objective "the analysis of supply-side options involving the cooperative use, operation and/or linkage of existing water supply systems in a manner that would enhance water yields." In discussing systems integration, the report identified a number of procedural and substantive issues that were essential antecedents to linking systems physically and operating them in a coordinated fashion: *• Create an information inventory on current water supply systems service areas, facilities, system*

Comment Information	Comment	Comments and Responses
		yields, water rights portfolios, etc., that would be useful to further individual and cooperative planning efforts; • Provide an opportunity for mutual education regarding the water supply systems and the perspectives of individual water providers and geographic sub-regions of the metro Denver area; • Establish a forum where cooperative water supply ideas and information could be brought forth and openly discussed; • Explore at a strategic level a number of market-related ideas involving investment in water conservation programs, pooling or interim leasing of water rights or reuse credits, etc.; • Explore the potential utility of raw water or treated water interconnections or coordinated operations between individual water supply systems; and • Identify areas of mutual concern (such as maintenance of instream flow and/or water quality conditions in a critical stream reach) and conceptual approaches for addressing concerns. There have been sub-basin discussions in the last 10 years of mutual interests in sharing information on supply and demand and system operations and, on a larger scale, the Statewide Water Supply Initiative (SWSI, Phases I & II) has presented a number of options for water supply sharing arrangements between irrigators and urban users (e.g., interruptible supply transfers, rotational fallowing, water banks, buy/lease-back agreements, and consumptive use reduction through crop changes). In addition, SWSI-II WRA has developed some detail on the benefits and shortcomings of all of these concepts, which depend, almost without exception, on planned and periodic reductions in irrigation water use. These issues are also now under discussion with some regularity in the basin roundtables. Progress in these areas should not be ignored by Denver Water or the Corps in the preparation of the Moffat DEIS. Agricultural and urban land use patterns in the South Platte basin have changed dramatically in the last 30 years.

Comment Information	Comment	Comments and Responses
		Driven to some extent by rapid urban growth, but also other factors more directly related to agriculture, there has been a substantial reduction in irrigated acres from a high in 1976 of 1.02 million acres to approximately 840 thousand acres in 2005. *SWSI-II believes this trend will continue. While the growing urban demand for water can be seen by agriculture as a threat, it is also an opportunity. As SWSI-II has stated more than once in the Alternative Agricultural Water Transfer Methods to Traditional Purchase and Transfer section, water sharing arrangements can "provide more stable incomes to agricultural users." Generating a return on a resource that has a high and ever increasing value in urban centers, while at the same time not losing control of the resource, can be very beneficial to Front Range agricultural communities. The coupling of land fallowing and water leasing is not unprecedented. It has been utilized in Colorado on both a short-term basis, such as with the Aurora-Rocky Ford High Line lease from 2004-2005, and on a long-term basis in the agreement between the Fort Morgan Water Company and Xcel Energy. The Fort Morgan-Excel agreement is a "take or pay" contract for up to 2,500 acre-feet of augmentation water for Xcel's Pawnee wells which supply cooling water to the Pawnee Power Plant. If available, Xcel purchases augmentation credits, otherwise Jackson Lake Reservoir water owned by participating Fort Morgan shareholders is delivered via canal Xcel's Pawnee Power Plant.[91] The delivery period is April through November and the monthly amount is between 200 and 500 acre-feet. From Excel's point of view, the Fort Morgan agreement has been so successful that it has now entered into a contract for 3,000 acre-feet with the North Sterling Irrigation District using the drought insurance concept in which the power company pays the district an annual premium or option payment for the right to 3,000 acre-feet at*

Comment Information	Comment	Comments and Responses
		which time it pays a specified price for the water. FOOTNOTE: [91] *The Fort Morgan Water Company is comprised of participating shareholders in the Fort Morgan Reservoir and Irrigation Company. The agreement has been in place for 15 years and, according to both Excel and Fort Morgan Reservoir and Irrigation Company, it has worked very well and all parties are quite satisfied. Don Halffield (Xcel Energy) and Cindy Vassios (Fort Morgan Reservoir and Irrigation Company), personal communications, July 2009. Elsewhere in Colorado another substantial fallowing-leasing cooperative is now being established in the Arkansas Basin with the creation of the Super Ditch Company in the valley east of Pueblo. A study by HRD for the Lower Arkansas Valley Water Conservancy District estimates that in the neighborhood of 14,000 acre-feet of firm yield water could be made available based on rather conservative participation and fallowing rate assumptions without additional storage. The MWSI, within the category of cooperative use opportunities, estimated the gross quantities of dry-year water (a more conservative estimate than the annual average) that might potentially be available, by sub-basin, north of the Denver metropolitan area. The report presented two sets of estimates – dry year supplies owned by agriculture and 'clean water' dry year supplies owned by agriculture. The former estimate was 495 thousand acre-feet and the latter, limited to diversions upstream of wastewater treatment plant outfalls, was 195 thousand acre-feet. Table 6 lists the figures by sub-basin. Some fraction of this water could, in theory, be moved via agreements with irrigators under rotating fallowing contracts to the northern end of the Denver system where the Moffat Treatment Plant is located. [See TABLE 6. ESTIMATE OF GROSS SUPPLY POTENTIAL FOR AG/URBAN INTERRUPTIBLE SUPPLY*

Comment Information	Comment	Comments and Responses
		AGREEMENTS BY SOUTH PLATTE SUB-BASIN (ADAPTED FROM MWSI, 1999) in Source File.] We recognize that any AUA must meet the concerns of both the agricultural community and municipal water interests. There are no fixed rules for how such contracts must be structured, but at a minimum, they will have to recognize and deal with some fundamental concerns, some of which are identified and discussed in SWSI-II: • Temporary transfers must be protected against claims of forfeiture for non-use or in loss of priority; • Balance must be struck between farmers preference for short-term arrangements and municipal utilities interest in long term arrangements (the Super Ditch Company's rotational fallowing program intends to handle this with 40 year contracts); • Transfer obligations should be shareable among multiple participating farmers in order to provide flexibility; • Transfers must not affect the water supplies of non-participating farmers or ditch companies; • Market tiers and associated prices must be established to allow participation by entities with water of varying reliability; and • The structure, if not the detail, of agreements must be standardized to reduce time and administrative commitments necessary for both their negotiation and implementation. In analyzing the potential of AUA's as an option to Denver Water's preferred alternative, we understand that such arrangements are not without their own impacts and that, at a minimum, the Moffat EIS would have to consider the degree to which AUA's result in increased diversions at upstream locations diminished flows in intervening stream reaches, which could affect water quality, environmental and recreational interests. **Response #781-8:** There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights and storage to firm yield are

Comment Information	Comment	Comments and Responses
		two key limiting factors that affect the amount of water that could potentially be derived from this supply. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the competitive market for agricultural water rights and there is no guarantee there would be an adequate number of willing sellers under these ditch systems. The Corps conducted a detailed alternatives screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The alternatives screening process did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) besides transmountain diversions in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the “long list” passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. ***Comment #781-7*** *(ID 5101)**:*** *Summary of Alternatives The alternatives currently proposed in the DEIS are deficient in meeting the standards of NEPA and the CWA – they simply do not represent a reasonable cross-section of practical alternatives nor are they the least environmentally damaging alternatives. Several viable options that could provide a more stable water supply to Denver Water were removed from the analysis prematurely, and should be reevaluated. In addition, the Corps description of the No Action Alternative does not realistically represent actions that would be taken by Denver Water if no Moffat Expansion project were*

Comment Information	Comment	Comments and Responses
		completed, and the totally qualitative description of the No Action Alternative is blatantly one-sided and misleading. Furthermore, given Denver Water's policy to accelerate conservation savings, the DEIS totally fails to evaluate the potential for conservation programs to reduce future demands beyond 2016. Conservation is the cheapest, fastest, and smartest water supply strategy and should be maximized before the proposed Moffat Expansion project moves forward. Denver Water, its contractors, and suburban distributors can greatly improve their conservation efforts through improved conservation planning, expanded conservation programs that focus on outdoor water use, and better water rates that send a true conservation price signal. Incorporating these conservation measures should be adopted prior to committing enormous financial resources to the proposed Moffat Expansion project. WRA has provided a list of conservation and efficiency mitigation measures at the end of this document that address these concerns and should be incorporated into any permit the USACE grants on this project. Finally, the DEIS should also evaluate a small-scale alternative to meets the need for increasing the supply in the Moffat System. *Such an alternative can be developed by considering the integration (or fully linking) of Denver Water to other water supply systems making possible substantial opportunities for agricultural-urban cooperative water sharing agreements.* **Response #781-7:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. Additionally, small scale impoundments (i.e., gravel pits) were

Comment Information	Comment	Comments and Responses
		evaluated as a portion of the storage needs in the EIS as part of Alternatives 8a and 13a. The Corps did not identify a LEDPA in the DEIS. The Corps will make a determination of the LEDPA based on its review of the information and analysis contained in the FEIS, per the Corps' Section 404 regulations. Under NEPA, every EIS must analyze a No Action Alternative, which is what is expected to occur if the proposed Project does not get permitted. The EIS then compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps consulted with Denver Water on what steps they would take to meet its water supply needs in the absence of the Moffat Project. Denver Water assumed that growth would still occur and identified ways to meet future water demands through operational controls. The Corps feels the steps outlined for various restriction scenarios were a reasonable approach for developing the No Action Alternative. Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation

Comment Information	Comment	Comments and Responses
		and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. All Denver Water customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Regarding system integration and cooperative water sharing agreements, please see the response to Comment ID 5102. ***Comment #781-6*** *(ID 5100)**:*** *Climate Change The DEIS must consider and rigorously analyze the proposed project's contribution to climate change via greenhouse gas emissions, and the likely impacts climate change will have on the Fraser River, Williams Fork River, and South Boulder Creek. The analysis should not be limited solely to impacts on Denver Water, and should consider impacts to western slope communities, water quantity, and water quality as well. The fact that climate change issues have not been quantitatively described in the DEIS is inadequate and must be remedied. 4.1. Greenhouse Gas Emissions The DEIS must describe the greenhouse gas emissions associated with each of the proposed alternatives. Recent comments from the Council of Environmental*

Comment Information	Comment	Comments and Responses
		Quality (CEQ) state, "CEQ sees no basis" for excluding greenhouse gas emissions from the consideration of environmental effects that must be analyzed in the NEPA process.[92] CEQ further states, "it is appropriate and necessary to consider the impact of significant Federal actions on greenhouse gas emissions and the potential for climate change to affect Federal activities evaluated through NEPA and different approaches for managing those effects". FOOTNOTE: [92] Executive Office of the President, Council on Environmental Quality. 2009. Letter to James Inhofe and John Barasso. December 29. In response to requests from concerned groups, CEQ recently released draft guidance on addressing greenhouse gas emissions and climate change in NEPA documents.[93] The guidance says that if a proposed federal action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of carbon dioxide equivalent annually, it would trigger a quantitative analysis – however, this is not a hard-fast number for all projects. The guidance also states that the impacts of climate change – e.g. decreased river flows in Interior West – should also be considered when designing the project. Neither of these points are adequately addressed in the current DEIS. FOOTNOTE: [93] Executive Office of the President, Council on Environmental Quality, Nancy Sutley. 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. February 18. **Response #781-6:** The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition

Comment Information	Comment	Comments and Responses
		of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been

Comment Information	Comment	Comments and Responses
		detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). Greenhouse gas emissions from the Project have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The calculations include on-road

Comment Information	Comment	Comments and Responses
		exhaust emissions from worker commuter vehicles, delivery trucks, and all other Project construction equipment. Detailed emission calculation spreadsheets and references are presented in Appendix I. The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate. ***Comment #781-5*** *(ID 5099)**:*** *Data Availability The DEIS relies on hydrologic modeling of the period between 1947 and 1991. This modeling does not include the severe droughts evidenced by tree-ring-based hydrology studies, nor does it include potential streamflow changes due to climate change. The hundreds of studies that detail climate change's impacts on water resources can be boiled down to the simple fact that past hydrology is no longer a reliable predictor of future flows. Continuing down the business-as-usual road – assuming that the hydrology of the past century is adequate enough to use in today's NEPA process – is unreasonable. The data necessary to perform a quantitative analysis of climate change impacts in the DEIS is currently available from the Colorado River Water Availability Study (CRWAS). Although much of this data has been recently compiled, it provides a majority of what Denver Water wanted in their "climate change wish list", including: • Data on changes of timing and annual volume of stream flow • Watershed scale precipitation change data • A hydrologic model for the Colorado River basin that incorporates climate data in order to more carefully evaluate the effects of various climatic regimes and*

Comment Information	Comment	Comments and Responses
		potential management strategies Results from the CRWAS, funded by the Colorado Water Conservation Board, suggest that climate change will have a far-reaching impact on western slope river flows.[94] In general, the report describes how increased temperatures and decreased summer precipitation caused by climate change will lead to earlier runoff from rivers and a general reduction in river flows. This data can, and should be used by the Corps in its evaluation of the proposed Moffat Expansion project. FOOTNOTE: [94] CWCB. 2009. Colorado River Water Availability Study. *Presented to IBCC, December 2. http://cwcbweblink.state.co.us/DocView.aspx?id=138498&searchid=f730d707-a3b0-47d3-bb8e-c1643bfa42c8&dbid=0. Notably, the CRWAS study does not take into account the impact conditional water rights would have on water availability if they are put to use (like those owned by the oil shale companies), and does not include currently planned projects like Denver Water's proposed Moffat Expansion or Northern's Windy Gap Firming Project. The projected decrease in river flows and additional large-scale development of Colorado River water casts doubt upon, and may seriously complicate, how the State of Colorado will meet its legal obligations to downstream states. Denver Water and several other Front Range water suppliers are also currently engaged in a climate change adaptation analysis. To comprehensively evaluate impacts on the river and ecosystems, both the CRWAS and Denver Water's individual efforts should be integrated into the DEIS and used to drive the Corps water supply modeling.* **Response #781-5:** The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period

Comment Information	Comment	Comments and Responses
		and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. Three types of potential changes to the study period were considered: 1) inclusion of more recent, post-1991 hydrology (in particular, 2002); 2) use of published paleo-hydrology based on tree-ring analysis; and 3) effects of potential changes in climate. With regard to inclusion of more recent hydrology, the results of the assessment indicated that, in drought years like 2002, Denver Water would not divert additional water due to the proposed Moffat Project because Denver Water would have already diverted the maximum amount of water physically and legally available under its existing water rights without additional storage in its system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period included several series of dry years followed by wet years, which illustrated the effects of increased diversions to refill Windy Gap firming storage. For example, the DEIS study period included the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allowed for an evaluation of impacts associated with diverting additional water in wet years following

Comment Information	Comment	Comments and Responses
		dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period and consideration of tree-ring data to include additional dry years would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. While tree ring-based reconstructions of Colorado River flows may show greater hydrologic variability than that reflected in the gaged record, particularly with respect to drought, the inclusion of more severe dry years in the study period would not change the evaluation of hydrologic impacts due to the Moffat Project because the Moffat Project would not increase diversions in these years over the diversions that would take place without the Project. Consideration was also given for using the draft Phase I results of the CRWAS and other potential sources of information regarding the effects of potential climate change on native flow hydrology of the upper Colorado River Basin and on the management of water in the entire Colorado River Basin. Potential climate changes may affect Colorado's water administration in relation to the Colorado River Compact and the upper Colorado River Compact; however, the analyses available for use in the Moffat Project are still in draft form, present a wide range of preliminary results, and consider only current water uses and demand levels without taking into account likely adjustments in these uses and demands as a result of potential climate change.

Comment Information	Comment	Comments and Responses
		In summary, modifications to the modeled study period and the use of paleo-hydrology and/or draft preliminary climate change studies are not warranted. Although recent and on-going studies of paleo-hydrology and climate change have resulted in greater understanding of potential future hydrologic variability, they have not progressed to the point of adding clarity or additional certainty in assessing the effects of the Project for the Moffat FEIS. ***Comment #781-4*** *(ID 5098)**:*** *Climate Change Summary One can reasonably assume that river health, and other natural uses of water such as recreation, will suffer under climate change. Therefore, it is vitally important to accurately describe how the proposed alternatives will contribute to, and be impacted by, climate change.* **Response #781-4:** The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water

Comment Information	Comment	Comments and Responses
		before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations

Comment Information	Comment	Comments and Responses
		from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate. ***Comment #781-3*** *(ID 5097)**:*** *Hydrologic Data and PACSM Output For a number of reasons, the impacts of the proposed alternative and other action alternatives are difficult to ascertain in the DEIS. Notably, the DEIS compares the anticipated impacts of the action alternatives not to the status quo, but to what is labeled the future "Full Use Existing System" (hereafter, FUES). Comparing the action alternatives to FUES makes ascertaining*

Comment Information	Comment	Comments and Responses
		their impacts difficult. A second set of comparisons contrasting the various action alternatives to the existing condition would have been useful and should have been included throughout. In addition, given that the preferred alternative will have its greatest impacts on high flow days in wet months of wet years, the presentation of monthly averages and daily flow averages in Appendix H of the DEIS (either over the period of record or the wet flow years of the period of record) does not offer the clearest picture of any of the alternatives' effects. Daily flow effects, since they are generated by PACSM, should be presented, at least for a representative sample of high impact wet year days. Finally, there is no way, based on the data in Appendix H, of determining the interactive sequence of dry and wet years. It seem likely that a wet year following a sequence of dry years (in which an enlarged Gross Reservoir would be drawn down), would allow Denver Water to divert more water to Gross than it would if the reservoir started the runoff season relatively full. Notwithstanding the fact that the impacts are obscured, to some extent by the FUES comparison, by the averaging, and by lack of information on inter-annual effects, significant impacts are still apparent in several reaches of the Fraser River, especially at nodes like the one below Denver Water's Fraser diversion (PACSM Node No. 2120). Table H-3.2 presents the Node 2120 impacts to monthly average daily flows compared against the FUES, averaged over the period of record (average years) and also for wet years and dry years.[95] *While there are no dry year differences, the average year effects for May and June, respectively, are 68% and 45% reductions in flow. For wet years, the reductions are 66% and 29%. These effects are substantial, even when masked, to some extent, by the FUES comparison and monthly averaging. PACSM is a daily time-step model and it's highly likely that the model's results contain many specific*

Comment Information	Comment	Comments and Responses
		examples of more extreme impacts. PACSM output should be presented in a form (i.e., daily flows) that illuminates the full effects of the preferred alternative. FOOTNOTE: [95] USACE. 2009. DEIS Appendix H: Hydrologic Data and PACSM Output, p. H-3.2. **Response #781-3:** Regarding the request for a second set of comparisons contrasting the various action alternatives to the existing condition, the impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios. Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of Denver Water's Existing System reflects the best available projections of demand and supply consistent with current standards of water resource planning. Full Use of the Existing System includes RFFAs including growth in Denver Water's average annual demand to 345,000 AF/yr, which Denver Water can achieve with their existing system. Denver

Comment Information	Comment	Comments and Responses
		Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). More information on daily flow changes was added to FEIS

Comment Information	Comment	Comments and Responses
		Sections 4.1 and 5.1 to present impacts during a sequence of dry and wet years. ***Comment #781-2*** *(ID 5096)**:*** *Proposed Mitigation: Conservation and Efficiency Measures to Ensure Maximization of Existing Supplies Western Resource Advocates proposes the following mitigation measures to be incorporated into the USACE's permit for the Moffat Collection System Project. These are WRA's current suggestions, and we may choose to add or delete from this list as a result of further discussions with Denver Water and the USACE. • Denver Water sets a goal to reduce residential per capita water use by at least 35% over the next 40 years compared to pre-drought levels. • Denver Water implements a conservation-oriented rate structure – as determined by a positive slope in the average price curve – for all customers, including master meter distributors. • Denver Water implements and maintains a holistic suite of residential indoor/outdoor, and ICI conservation incentives – including a landscape retrofit rebate program. • Denver Water builds the capacity to utilize 95% of their reusable effluent in a dry year. • Denver Water commits to spending at least 2% of their annual operational budget on conservation activities for the next 10 years. • Denver Water reports water loss according to the IWA/AWWA methodology and maintains an active water loss detection and elimination program. • Denver Water works with local governments in its service area to adopt ordinances progressive covering water waste, irrigation requirements, and standards for water-efficient new construction.* *• Denver Water and its suburban distributors (master meter, total service, read and bill) comply with Colorado statute 37-60-126 requiring all covered entities to submit an approved water conservation plan to the Colorado Water Conservation Board – or*

Comment Information	Comment	Comments and Responses
		work towards an acceptable agreement that achieves the goal of the statute. **Response #781-2:** Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water – and customers are on pace to meet this goal. It is anticipated that Denver Water will continue its conservation program after the 2016 goal is met, however, no specific percentage after that date has yet been established. Denver Water prefers to establish goals within a shorter timeframe than 40 years to accommodate changes in water use, landscaping trends, technological innovation and population growth. Denver Water has a conservation-oriented rate structure that includes a positive slope in the average price curve for all of its customers except master meter distributors. Denver Water does not have the legal authority to prescribe a rate structure to its master meter distributors, but it should be noted that similar drops in water use have been observed in master meter districts, regardless of the rate structure they use. Denver Water has a holistic suite of residential indoor/outdoor and ICI conservation incentives. Denver Water does not currently have a landscape retrofit rebate program, but does provide incentive contracts to large irrigators to retrofit their landscape. Denver Water's current operating budget is $251 million and its spending on conservation programs in most years exceeds $8 million, meaning it currently spends more than 3% of its operating budget on this program. Denver Water operates almost 3,000 miles of pipes in the treated water system and has programs to monitor and maintain the distribution piping, including leak detection, corrosion monitoring, valve testing,

Comment Information	Comment	Comments and Responses
		water quality testing, pressure monitoring and fire flow testing. Denver Water's leak detection program is a crucial component of conservation and system maintenance. Year-round leak programs have been in place since 1981. The current leak detection program includes system loggers and mobile sonic detection devices, which are used to survey the system and to pinpoint leaks. Denver Water has a team dedicated to leak detection tasks, with the goal of covering all pipes every 5 years. All leaks detected are repaired. Denver Water's distribution system leak and break rate is less than half the national average. Three programs for pipe renewal have been operating since at least 1960; the main replacement program, the pipe rehabilitation (cement mortar lining) program, and the system improvements program. Collectively, these programs are geared to reducing leak losses, improving fire flow and water quality, minimizing interruptions, and maintaining high service standards. In 2009, the Denver Water Board approved major increases on the replacement and rehabilitation programs, and expenditures are expected to double over the next 10 years. Denver Water encourages local and State governments to adopt ordinances and laws for efficient water use, however Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But it does have the power to enact water rules and enforces water waste rules per its Operating Rules, including mandatory restrictions on the number and times of day irrigation can occur. Denver Water and its suburban distributors are in compliance with Colorado statute 37-60-126. ***Comment #781-1*** *(ID 5095)**:*** *Thank you for your attention to these comments. We look forward to discussing them further.* **Response #781-1:** The Corps notes the comment.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #783 Erica Stock, Outreach Director Colorado Trout Unlimited 1320 Pearl Street, Suite 320 Boulder, CO 80302	From: Erica Stock [mailto:EStock@tu.org] Sent: Wednesday, March 17, 2010 2:12 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat EIS comments Dear Scott, Please see the attached signatures from our friends. Over 1,000 individuals signed this letter and provided some additional comments. Thank you, Erica Stock Erica Stock | Outreach Director Colorado Trout Unlimited 1320 Pearl Street, Suite 320 | Boulder, CO 80302 tel: 303.440.2937 x107 | cell: 313.410.6008 email: estock@tu.org <blocked::mailto:estock@tu.org> | website: www.cotrout.org <http://www.cotrout.org/> Don't forget to get your tickets! CTU's annual Auction and Gala is March 19th! Click here <http://cotroutgala.eventbrite.com/> to buy tickets online or view some of our live auction items <http://www.cotrout.org/LinkPages/CTUGala2010/tabid/378/Default.aspx> . - Online Petition.pdf [See Submission ID #1776, the Online Petition Form Letter Template, for these signatures and additional comments.]	***Comment #783-1*** *(ID 5253)**:*** *Please see the attached signatures from our friends. Over 1,000 individuals signed this letter and provided some additional comments. - Online Petition.pdf [SEE SUBMISSION ID #1776, THE ONLINE PETITION FORM LETTER TEMPLATE, FOR THESE SIGNATURES AND ADDITIONAL COMMENTS.]* **Response #783-1:** The signatures were incorporated into the public record for the Moffat Project.

Comment Information	Comment	Comments and Responses
Comment #784 Scott E. Holwick, Attorney Lyons Gaddis Kahn & Hall, PC, on Behalf of the Water Users Association of District No. 6 P.O. Box 978 Longmont, CO 80502	From: Scott E. Holwick [mailto:SHolwick@lgkhlaw.com] Sent: Wednesday, March 17, 2010 3:15 PM To: MOFFAT.EIS@usace.army.mil Cc: 'Leslie Williams' Subject: Denver Water Draft EIS comments - Water Users Association of District No. 6 Scott, Please see the attached comments re: Denver Water's Moffat Collection System Project Draft EIS and Section 404 Permit Application submitted on behalf of the Water Users Association of District No. 6. Best regards, Scott Scott E. Holwick LYONS GADDIS KAHN & HALL, PC P.O. Box 978 Longmont, CO 80502-0978 303-776-9900; Facsimile 303-776-9100 sholwick@lgkhlaw.com <mailto:sholwick@lgkhlaw.com> www.lgkhlaw.com <http://www.lgkhlaw.com/> CONFIDENTIALITY STATEMENT: THIS E-MAIL MESSAGE AND ANY ACCOMPANYING DOCUMENTS CONTAIN INFORMATION WHICH IS ATTORNEY CLIENT PRIVILEGED, CONFIDENTIAL AND INTENDED ONLY FOR THE USE OF THE ABOVE-NAMED RECIPIENT. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION, PRINTING OR COPYING OF THIS MESSAGE IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS MESSAGE IN ERROR, PLEASE IMMEDIATELY NOTIFY US BY TELEPHONE OR RETURN THE E-MAIL MESSAGE TO US. THANK YOU. -20100317-memo draft EIS Comments (final).pdf	***Comment #784-6*** *(ID 4620)**:*** *The Water Users Association of District No. 6 (the "Water Users") is an association of senior water right owners diverting water from Boulder Creek, South Boulder Creek and their tributaries. There are more than 40' members of the Water Users, consisting of agricultural, industrial and municipal users. Members of the Water Users own almost all of the senior water rights decreed from Boulder Creek, South Boulder Creek and their tributaries. Through this letter, the Water Users provide comments on Denver Water's Moffat Collection System Draft EIS and its Section 404 permit application. As a preliminary position, the Water Users generally do not oppose Denver Water's proposed modification of Gross Reservoir provided that ultimate construction of the proposed reservoir enlargement and its future operation do not adversely affect the senior vested water rights owned by its members. The Water Users have several concerns with the project, as currently proposed. Such concerns are generally founded on the Water Users belief that the historic and ongoing operation of the Moffat Collection System, Gross Reservoir and the South Boulder Diversion Canal have changed South Boulder Creek's local hydrology, and that the structures have been operated to store or divert native water to which Denver was not entitled, to the detriment of downstream senior water users.* **Response #784-6:** The Corps understands that Gross Reservoir is operated in the same manner as most other on-stream reservoirs throughout Colorado including Green Mountain Reservoir, Pueblo Reservoir, Reudi Reservoir, Cherry Creek Reservoir, Rio Grande Reservoir, Button Rock Reservoir, Turquoise Reservoir and Twin Lakes Reservoir.

Comment Information	Comment	Comments and Responses
	Attachments: Richard N. Lyons, II Jeffrey J. Kahn John W. Gaddis Bradley A. Hall Steven P. Jeffers Anton V. Dworak Adele L. Reester Daniel F. Bernard Senior Counsel Lyons Gaddis Kahn & Hall A Professional Corporation Attorneys and Counselors Eve I. Canfield Scott E. Holwick Matthew Machado Madoline Wallace-Gross Chad A. Kupper Catherine A. Tallerico Special Counsel March 17, 2010 Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128 *VIA EMAIL: moffat.eis@usace.army.mil* *Re: Denver Water's Proposed Enlargement to Gross Reservoir – Moffat Collection System Draft EIS and Section 404 permit application* Dear Mr. Franklin: The Water Users Association of District No. 6 (the "Water Users") is an association of senior water right owners diverting water from Boulder Creek, South Boulder Creek and their tributaries. There are more than 40 members of the Water Users, consisting of agricultural, industrial and municipal users. Members of the Water Users own almost all of the senior water rights decreed from Boulder Creek, South Boulder Creek and their tributaries. Through this letter, the Water Users provide comments on Denver Water's Moffat Collection System Draft EIS and its Section 404 permit application. As a preliminary position, the Water Users generally do not oppose Denver Water's proposed modification of Gross Reservoir provided that ultimate construction of the proposed reservoir enlargement and its future operation do not adversely affect the senior vested water rights owned by its members. The Water Users have several concerns with the project, as currently proposed. Such concerns are generally founded on the Water Users belief that the historic and ongoing operation of the Moffat Collection System, Gross Reservoir and the South Boulder Diversion Canal have changed South Boulder Creek's local hydrology, and that the structures have been operated to store or divert native water to which Denver was not entitled, to the detriment of downstream senior water users. Under the project analyzed in the Draft Environmental Impact Statement ("DEIS"), Denver Water seeks approval from the US Army Corps of Engineers ("the Corps") to enlarge Gross Reservoir. 515 Kimbark Street · Second Floor · P.O. Box 978 · Longmont, CO 80502-0978 Phone: 303-776-9900 · Fax: 303-776-9100 · www.lgkhlaw.com	Furthermore, the accounting for Gross Reservoir meets the requirements of the Division Engineer, who is responsible for water rights administration in the South Platte Basin of Colorado. In the case of Gross Reservoir, the water commissioner, who works for the Division Engineer, instructs Denver Water personnel how much water to release to downstream diverters on a daily basis. Denver Water is not recommending any changes to the methods for water rights accounting or operations at Gross Reservoir after the enlargement. Denver Water would continue passing all natural inflow to which it is not entitled to downstream water users under the careful administration of the Division Engineer. ***Comment #784-5*** *(ID 4619)**:*** *Under the project analyzed in the Draft Environmental Impact Statement ("DEIS"), Denver Water seeks approval from the US Army Corps of Engineers ("the Corps") to enlarge Gross Reservoir. Denver Water has proposed a preferred action, three alternative actions, and a no-action alternative. The five project alternatives for the reservoir enlargement range in size from no change, to the smallest addition of 40,700 acre-feet, to the largest addition of 72,000 acre-feet. All enlargement alternatives would divert additional water from the South Boulder Creek basin in average and wet years. With an existing storage capacity of 41,811 acre-feet, the proposed enlargement alternatives will, at a minimum, double the reservoir's storage capacity and at a maximum, roughly triple it. The Water users acknowledge that Denver Water is also proposing mitigation that would provide for 5,000 acre feet of storage space for "Additional Environmental Storage"• through an intergovernmental agreement with the Cities of Boulder and Lafayette. Both Gross Reservoir and the South Boulder Diversion Canal are already large, on-*

Comment Information	Comment	Comments and Responses
	Lyons Gaddis Kahn & Hall A Professional Corporation — Attorneys and Counselors Scott Franklin March 17, 2010 Page 2 Denver Water has proposed a preferred action, three alternative actions, and a no-action alternative. The five project alternatives for the reservoir enlargement range in size from no change, to the smallest addition of 40,700 acre-feet, to the largest addition of 72,000 acre-feet. All enlargement alternatives would divert additional water from the South Boulder Creek basin in average and wet years. With an existing storage capacity of 41,811 acre-feet, the proposed enlargement alternatives will, at a minimum, double the reservoir's storage capacity and at a maximum, roughly triple it. The Water users acknowledge that Denver Water is also proposing mitigation that would provide for 5,000 acre feet of storage space for "Additional Environmental Storage" through an intergovernmental agreement with the Cities of Boulder and Lafayette. Both Gross Reservoir and the South Boulder Diversion Canal are already large, on-stream structures that are each located above all of the historic irrigation ditches and reservoirs on South Boulder Creek. Both structures' diversion rights are junior to nearly all of the downstream water rights held by members of the Water Users. ***Attached*** to this letter is a summary of those members of the Water Users which possess water rights below Gross Reservoir and the South Boulder Diversion Canal and which are senior in priority to Denver Water's decreed water rights for its structures. Under Colorado law, Denver Water is obligated to operate each structure efficiently in order to bypass ***all*** of the senior, native South Boulder Creek flows to prevent injury to the senior downstream water users to whom such senior water is entitled. Denver Water has historically operated and continues to operate its South Boulder Creek structures on a "river account" basis under which daily operations are considered against daily native water that Denver Water is legally obligated to pass through Gross Reservoir and pass by the South Boulder Diversion Canal. Differences between the releases calculated to fulfill its legal obligations and the actual releases made by Denver Water from Gross Reservoir to South Boulder Creek either add to or take away from the ongoing accounting balance in the structures' river account. The river account provides a daily snapshot that indicates either how much additional water Denver Water owes to South Boulder Creek because it under-released its legal obligation or indicates how much the South Boulder Creek "***owes***" Denver Water because it over-released water to the river to which the river and the downstream users were "***not legally entitled***". Except when Gross Reservoir is in priority to store under its decreed water right, the native South Boulder Creek inflows must be passed through Gross Reservoir and downstream to the senior ditch, reservoir and municipal water rights on South Boulder Creek and Boulder Creek. Native South Boulder Creek inflows to Gross are not measured directly but are calculated daily by Denver Water using an accounting system which relies on, among other things, two key assumptions and one key measurement – assumed Gross Reservoir seepage, assumed Gross Reservoir evaporation, and the "measured" daily changes to Gross Reservoir's storage content. Denver Water's accounting assumes that: (1) there is no seepage from the reservoir; (2) evaporation from the reservoir is always equal to the long-term average and that it is only a function of water surface area and not of hydrologic conditions; and (3) the reservoir staff gauge reading (and therefore the computed daily change in storage which is based on staff gauge readings) is always accurate to one one-hundredth of a foot. These three assumptions are nebulous at best. For instance, given the current size of Gross Reservoir, any wind generated wave activity (which is common) will make an accurate staff gauge reading to one one-hundredth of a foot impossible. F:\Clients\W\WUA\gross-res\20100317 - memo Draft EIS Comments.doc 3/17/2010 10:58 am	*stream structures that are each located above all of the historic irrigation ditches and reservoirs on South Boulder Creek. Both structures' diversion rights are junior to nearly all of the downstream water rights held by members of the Water Users. Attached to this letter is a summary of those members of the Water Users which possess water rights below Gross Reservoir and the South Boulder Diversion Canal and which are senior in priority to Denver Water's decreed water rights for its structures.. Under Colorado law, Denver Water is obligated to operate each structure efficiently in order to bypass all of the senior, native South Boulder Creek flows to prevent injury to the senior downstream water users to whom such senior water is entitled.* **Response #784-5:** With the Moffat Project, Denver Water would continue to operate Gross Reservoir and the South Boulder Diversion Structure as it has in the past and in accordance with Colorado water law as administered by the SEO. Please also refer to the response to Comment ID 4620. ***Comment #784-4*** *(ID 4618)*: *Denver Water has historically operated and continues to operate its South Boulder Creek structures on a "river account" basis under which daily operations are considered against daily native water that Denver Water is legally obligated to pass through Gross Reservoir and pass by the South Boulder Diversion Canal. Differences between the releases calculated to fulfill its legal obligations and the actual releases made by Denver Water from Gross Reservoir to South Boulder Creek either add to or take away from the ongoing accounting balance in the structures' river account. The river account provides a daily snapshot that indicates either how much additional water Denver Water owes to South Boulder Creek because it under-released its legal obligation or*

Comment Information	Comment	Comments and Responses
	Lyons Gaddis Kahn & Hall A Professional Corporation — Attorneys and Counselors Scott Franklin March 17, 2010 Page 3 Even with the present Gross Reservoir size, very small deviations in these factors from what is actually occurring at the reservoir can reduce the calculated reservoir inflows to the harm of the downstream water rights. For example, if on July 3, 2002 (during low river flow conditions), there was actually 1 cfs seepage from the reservoir, and actual evaporation was only 3 percent greater than calculated evaporation, and the staff gauge reading was low by only 0.01 feet, the ***calculated*** native inflow for the downstream water rights according to Denver's accounting would have been 4.1 cfs ***less*** (or more than 10 percent less) than the ***actual*** native inflow. While such minor variances are perhaps insignificant to Denver Water given the size of its South Boulder Creek operations, 4.1 cfs would swing the calling rights on South Boulder Creek between one of several senior irrigators and potentially curtail diversions at one or more "senior" (to Denver Water) water right owners. With the proposed Gross Reservoir enlargement, the water surface area will be greatly expanded, thus potentially amplifying the evaporative loss error; the bottom area and depth will be greater, thus potentially increasing seepage; and each one one-hundredth foot of change in the gauge reading will represent a much larger change in reservoir content. Therefore, errors in calculating native South Boulder Creek inflows to an enlarged Gross Reservoir, and correspondingly, errors in the calculated flow rates that are legally required to be passed through to the downstream senior water rights, will increase in magnitude with an enlargement of Gross Reservoir potentially resulting in further injury to the downstream senior water rights. The Water Users believe that Denver Water should not owe the "river", but understand that, from a practical position, it occasionally will find itself in such a position. Accordingly, the Water Users agree that it can be appropriate for Denver Water to owe the "river," but that it is never appropriate for the "river" to owe Denver Water. As stated, Denver Water is obligated to ensure that senior water rights get all of the native flow of South Boulder Creek to which they are legally entitled. Clearly, Denver Water is allowed to control as much of its west slope water delivered through the Moffat Collection System as it can, but if it errs in or is imprecise with its operations, it can not compel the holders of senior water rights to return that water at a later time. The Water Users main complaint with the DEIS, therefore, is that it fails to analyze the historical and current effects of Denver Water's reservoir operations and accounting assumptions relied upon therefor and that it additionally fails to address what effects the anticipated increased diversions of South Boulder Creek water for the expanded reservoir will be on downstream water users. A "minor" variance in Denver's calculated native inflows, which as demonstrated above, may already have a large impact on downstream senior water rights, will in the future have even a bigger ripple effect due the increased size of the reservoir. And despite the seniority of nearly all of the water rights of the members of the Water Users, Denver Water's current "river account" model and the assumptions on which it is operated can negatively affect the water availability for those owners in the late summer and fall when irrigation water is most scarce and most needed to finish crops. This shortfall may have a negative economic effect on the Water Users, which the DEIS fails to address. In a nutshell, the Water Users are not convinced that the surface water, hydrology, and economic studies provided under the DEIS adequately address the effects of Denver Water's current operations and the potential effects of the proposed project. The Water Users have long held a concern that Denver Water's historic and current operations and accounting have upset the delivery of native water to the basin's senior water right holders. The Water Users now fear that the enlargement of the Denver Water system and increased diversion of F:\Clients\W\WLA\gross-res\20100317 – memo Draft EIS Comments.doc 3/17/2010 10:58 am	*indicates how much the South Boulder Creek "owes" Denver Water because it over-released water to the river to which the river and the downstream users were "not legally entitled". Except when Gross Reservoir is in priority to store under its decreed water right, the native South Boulder Creek inflows must be passed through Gross Reservoir and downstream to the senior ditch, reservoir and municipal water rights on South Boulder Creek and Boulder Creek. Native South Boulder Creek inflows to Gross are not measured directly but are calculated daily by Denver Water using an accounting system which relies on, among other things, two key assumptions and one key measurement - assumed Gross Reservoir seepage, assumed Gross Reservoir evaporation, and the "measured" daily changes to Gross Reservoir's storage content.* *Denver Water's accounting assumes that: (1) there is no seepage from the reservoir; (2) evaporation from the reservoir is always equal to the long-term average and that it is only a function of water surface area and not of hydrologic conditions; and (3) the reservoir staff gauge reading (and therefore the computed daily change in storage which is based on staff gauge readings) is always accurate to one one-hundredth of a foot. These three assumptions are nebulous at best. For instance, given the current size of Gross Reservoir, any wind generated wave activity (which is common) will make an accurate staff gauge reading to one one-hundredth of a foot impossible. Even with the present Gross Reservoir size, very small deviations in these factors from what is actually occurring at the reservoir can reduce the calculated reservoir inflows to the harm of the downstream water rights. For example, if on July 3, 2002 (during low river flow conditions), there was actually 1 cfs seepage from the reservoir, and actual evaporation was only 3 percent greater than calculated evaporation, and the staff gauge reading was low by*

Comment Information	Comment	Comments and Responses
	Lyons Gaddis Kahn & Hall A Professional Corporation — Attorneys and Counselors Scott Franklin March 17, 2010 Page 4 native South Boulder Creek water without a corresponding study and improvement of the project's delivery capability may further injure its members' vested water rights. Accordingly, before the Final EIS is issued, the Corps should require Denver Water to assess the accuracy and efficiency of its operating and accounting systems for its South Boulder Creek operations and to provide safeguards to the downstream senior water rights that all native water is timely delivered to those entitled to it. Such assessment should include Denver Water's re-examination of its current accounting for its operations of the Moffat Tunnel structure, Gross Reservoir and the South Boulder Diversion Canal, and also the re-examination of the accounting's underlying assumptions in order to develop a more accurate model that will deliver the entirety of the South Boulder Creek native flow to downstream users on a real-time basis. Additionally, Denver Water should be required to periodically review its operational and accounting models so that future scientifically-accepted improvements in modeling can be incorporated to insure that the delivery of water to downstream senior water rights is even more accurate. Beyond this primary concern, the Water Users also request that the Corps require Denver Water to address the following: (1) insure that water quality and quantity are maintained during Denver Water's construction of the expanded reservoir; (2) because of the increased reservoir size and the anticipated increased draws on the reservoir, insure that Denver Water take measures to minimize the impacts that large water elevation variations could have on shoreline erosion and the resulting impact on water quality; (3) because the increased use of the Moffat Collection System will likely result in flow changes above the reservoir, insure that such increased flow minimally impacts South Boulder Creek's ecology, hydrology, and water quality; (4) insure that recreational uses on the enlarged reservoir's surface continue to be limited to non-motorized water craft and insure that no bodily contact be allowed for the continued protection of the water's quality; (5) because Denver Water's structures are on-stream insure that Denver Water do everything within its power to prevent the introduction of invasive species (i.e., zebra mussels and/or quagga mussels) into the reservoir; and (6) insure that Denver Water implement best management practices on the lands within the project boundary to mitigate the potential impacts that a natural (fire) or man-made event (derailed train) would have on reservoir water quality. Thank you for consideration of the Water Users' concerns. Please don't hesitate to contact the undersigned with further questions. Sincerely yours, LYONS GADDIS KAHN & HALL, PC By S.E. Holwick Scott E. Holwick shotwick@lgkhlaw.com Attch: Cc: Les Williams, President, Water Users Association of District No. 6 P:\Clients\W\WUA\gross-res\20100317 - memo Draft EIS Comments.doc 3/17/2010 10:58 am	*only 0.01 feet, the calculated native inflow for the downstream water rights according to Denver's accounting would have been 4.1 cfs less (or more than 10 percent less) than the actual native inflow. While such minor variances are perhaps insignificant to Denver Water given the size of its South Boulder Creek operations, 4.1 cfs would swing the calling rights on South Boulder Creek between one of several senior irrigators and potentially curtail diversions at one or more "senior" (to Denver Water) water right owners. With the proposed Gross Reservoir enlargement, the water surface area will be greatly expanded, thus potentially amplifying the evaporative loss error; the bottom area and depth will be greater, thus potentially increasing seepage; and each one one-hundredth foot of change in the gauge reading will represent a much larger change in reservoir content. Therefore, errors in calculating native South Boulder Creek inflows to an enlarged Gross Reservoir, and correspondingly, errors in the calculated flow rates that are legally required to be passed through to the downstream senior water rights, will increase in magnitude with an enlargement of Gross Reservoir potentially resulting in further injury to the downstream senior water rights.* **Response #784-4:** The comment states that, "evaporation from the reservoir is always equal to the long-term average and that it is only a function of water surface area and not of hydrologic conditions …" Rather,, the assumed evaporation is a function of the time of the year and the water surface area of the reservoir. The potential change in evaporative loss from Gross Reservoir is stated in DEIS Section 4.1.1.1. The potential change in seepage from the dam is discussed in DEIS Section 2.3.2.1. The accounting for Gross Reservoir is done in the same manner as most other on-stream reservoirs

Comment Information	Comment	Comments and Responses

Water Users Association District No. 6 Water Rights Below and Senior to Gross Reservoir

Name	Appropriation Date	Adjudication Date	Rate Amount (cfs)	Reservoir Name	Volume Amount (AF)
Andrews Farwell Ditch Company	6-1-1864	6-2-1882	1.35		
	4-1-1871	6-2-1882	6.26		
Base Line Land & Reservoir Company	11-4-1904	6-21-1926		Baseline Reservoir	2930
	11-29-1922	1-9-1935		Baseline Reservoir	1672
	12-31-1929	9-28-1953		Baseline Reservoir	1395
	11-30-1935	9-28-1953		Baseline Reservoir	847
Boulder & Weld County Ditch Company	5-1-1871	6-2-1882	59.4		
Butte Irrigating & Milling Company	3-1-1865	6-2-1882	110.86		
Carr & Tyler Ditch Company	6-1-1864	6-2-1882	33.73		
Community Ditch - Farmers Reservoir & Irrigation Co.	10-15-1882	3-13-1907	7	Hodgson Harris Res	44
	6-6-1885	12-19-1900	83.3		
	6-6-1885	12-19-1900		Marshall Reservoir	1349
	6-6-1885	12-19-1900		West Lake	699
	5-1-1888	12-19-1900	10	Section 19 Reservoir	88
	2-26-1900	4-10-1905	45.6	McKay Lake	956.8
	3-13-1901	4-10-1905	45.6		
	3-4-1902	6-21-1926	448	Marshall Reservoir	9251
	8-26-1903	6-21-1926	319.1		
	9-18-1906	3-13-1907	7	Hodgson Harris Re	75
	12-31-1929	9-28-1953	448	Marshall Reservoir	9053.14
	9-20-1921	6-21-1926		Marshall Reservoir	1545
Davidson Ditch & Reservoir Company	4-15-1872	6-2-1882	108.27		
	5-10-1875	6-2-1882	6.2244		
	10-1-1882	3-13-1907	30	Burke Lake	37
	2-15-1892	3-13-1907	17.38	Lafayette Res 1&2	180
	1-10-1904	3-13-1908	30	Burke Lake	52
	8-29-1915	9-28-1953	33	HECLA Reservoir	50
Dry Creek-Davidson Ditch Company, Inc.	5-1-1863	6-2-1882	25		
Dry Creek No. 2 Ditch Company	5-1-1864	6-2-1882	23.039		
East Boulder Ditch Company	4-1-1862	6-2-1882	22.967		
Enterprise Irrigating Ditch Company	2-1-1865	6-2-1882	28.0119		
Godding Ditch Company (Highland Southside Ditch)	6-1-1865	6-2-1882	99.7		
	6-1-1868	6-2-1882	52.5		

throughout Colorado including Green Mountain Reservoir, Pueblo Reservoir, Ruedi Reservoir, Cherry Creek Reservoir, Rio Grande Reservoir, Button Rock Reservoir, Turquoise Reservoir and Twin Lakes Reservoir. Furthermore, the accounting for Gross Reservoir meets the requirements of the SEO Division Engineer who is responsible for water rights administration in the South Platte Basin of Colorado. In the case of Gross Reservoir, the water commissioner, who works for the Division Engineer, instructs Denver Water personnel how much water to release to downstream diverters on a daily basis. Over or under releases of natural inflow are out of Denver Water's control.

While the method of estimating and passing the natural inflow to Gross Reservoir is not perfect, there is no systematic injury to downstream water rights. There are days when the water being released from Gross Reservoir to downstream users exceeds the natural inflow and there are days when the reverse is true. Overall, the amount of water passed to the downstream users matches their entitlement.

The phenomenon of over releases on some days and under releases on other days is true of all on-stream reservoirs because it is not possible to know the natural inflow to an on-stream reservoir until the water has already entered the reservoir. Therefore, the water commissioner must take an educated guess of what the natural inflow is going to be each day, set the release rate to that number, and compensate for any over or under release in the day or days that follow.

Denver Water is not recommending any changes to the methods for water rights accounting or operations at Gross Reservoir after the enlargement. Denver Water would continue passing all natural inflow to which it is not entitled to downstream water users in

Comment Information	Comment	Comments and Responses
		accordance with the Division Engineer requirements. ***Comment #784-3*** *(ID 4617)**:*** *The Water Users believe that Denver Water should not owe the "river", but understand that, from a practical position, it occasionally will find itself in such a position. Accordingly, the Water Users agree that it can be appropriate for Denver Water to owe the "river," but that it is never appropriate for the "river" to owe Denver Water. As stated, Denver Water is obligated to ensure that senior water rights get all of the native flow of South Boulder Creek to which they are legally entitled. Clearly, Denver Water is allowed to control as much of its west slope water delivered through the Moffat Collection System as it can, but if it errs in or is imprecise with its operations, it can not compel the holders of senior water rights to return that water at a later time. The Water Users main complaint with the DEIS, therefore, is that it fails to analyze the historical and current effects of Denver Water's reservoir operations and accounting assumptions relied upon therefor and that it additionally fails to address what effects the anticipated increased diversions of South Boulder Creek water for the expanded reservoir will be on downstream water users. A "minor" variance in Denver's calculated native inflows, which as demonstrated above, may already have a large impact on downstream senior water rights, will in the future have even a bigger ripple effect due the increased size of the reservoir. And despite the seniority of nearly all of the water rights of the members of the Water Users, Denver Water's current "river account" model and the assumptions on which it is operated can negatively affect the water availability for those owners in the late summer and fall when irrigation water is most scarce and most needed to finish crops. This shortfall may have a negative economic effect on the Water Users, which the DEIS fails to address. In a nutshell, the Water*

Name	Appropriation Date	Adjudication Date	Rate Amount (cfs)	Reservoir Name	Volume Amount (AF)
Goodhue Ditch & Reservoir Company	6-1-1873	6-2-1882	85.07		
Green Ditch Company	9-15-1862	6-2-1882	34.58		
	5-1-1863	6-2-1882	34.58		
	5-1-1864	6-2-1882	34.58		
	5-1-1865	6-2-1882	34.58		
Houck No. 1 Ditch	4-1-1863	6-2-1882	2.5		
Houck No. 2 Ditch	4-1-1861	6-2-1882	7.16		
Howell Ditch	12-1-1859	6-2-1882	5		
Jones & Donnelly Ditch Company, Inc.	5-1-1860	6-2-1882	9.5508		
Leggett Ditch & Reservoir Company	5-1-1868	6-2-1882	31.35		
	5-31-1904	6-21-1926	92	Panama Reservoir	4989
	12-31-1929	9-28-1953	65	Panama Reservoir	4989
Leyner-Cottonwood Consolidated Ditch Company	4-1-1865	6-2-1882	29.67		
	4-1-1866	6-2-1882	15.41		
	10-1-1870	6-2-1882	20.91		
Marshallville Ditch Company	6-1-1865	6-2-1882	14.368		
	6-30-1878	6-2-1882	16.4		
Martha Matthews Ditch Company	6-1-1861	6-2-1882	4.6		
McGinn Ditch Company	5-1-1860	6-2-1882	2.98		
	6-1-1865	6-2-1882	10.182		
New Consolidated Lower Boulder Reservoir & Ditch Company & New Coal Ridge Ditch Company	10-1-1859	6-2-1882	25		
	6-1-1870	6-2-1882	97		
Original Cottonwood Ditch Company	4-15-1863	6-2-1882	32.297		
Plumb & Dailey Ditch Company	3-1-1861	6-2-1882	7.24		
	4-1-1865	6-2-1882	23.198		
Rural Ditch Company	5-10-1862	6-2-1882	22.75		
	3-10-1863	6-2-1882	60.25		
Shearer Ditch Company	6-1-1860	6-2-1882	26.08		
Smith & Emmons Ditch Company	6-1-1863	6-2-1882	47.16		
South Boulder & Bear Creek Ditch Company	5-25-1862	6-2-1882	12.9		
	5-9-1865	6-2-1882	3.96		
	5-15-1868	6-2-1882	8.2		
	5-15-1871	6-2-1882	4.71		

Comment Information	Comment	Comments and Responses
		Users are not convinced that the surface water, hydrology, and economic studies provided under the DEIS adequately address the effects of Denver Water's current operations and the potential effects of the proposed project. The Water Users have long held a concern that Denver Water's historic and current operations and accounting have upset the delivery of native water to the basin's senior water right holders. The Water Users now fear that the enlargement of the Denver Water system and increased diversion of native South Boulder Creek water without a corresponding study and improvement of the project's delivery capability may further injure its members' vested water rights. Accordingly, before the Final EIS is issued, the Corps should require Denver Water to assess the accuracy and efficiency of its operating and accounting systems for its South Boulder Creek operations and to provide safeguards to the downstream senior water rights that all native water is timely delivered to those entitled to it. Such assessment should include Denver Water's re-examination of its current accounting for its operations of the Moffat Tunnel structure, Gross Reservoir and the South Boulder Diversion Canal, and also the re-examination of the accounting's underlying assumptions in order to develop a more accurate model that will deliver the entirety of the South Boulder Creek native flow to downstream users on a real-time basis. Additionally, Denver Water should be required to periodically review its operational and accounting models so that future scientifically-accepted improvements in modeling can be incorporated to insure that the delivery of water to downstream senior water rights is even more accurate. **Response #784-3:** The accounting for Gross Reservoir is done in the same manner as most other on-stream reservoirs throughout Colorado, including Green Mountain

Name	Appropriation Date	Adjudication Date	Rate Amount (cfs)	Reservoir Name	Volume Amount (AF)
South Boulder Canon Ditch Company	5-15-1870	6-2-1882	26.37		
	5-15-1871	6-2-1882	39.63		
South Boulder & Coal Creek Irrigation Ditch Company	6-1-1872	6-2-1882	54.35		
Tom Delehant Ditch	5-1-1865	6-2-1882	10		
Town of Erie	10-1-1879	3-13-1907	28	Prince Reservoir	86
	5-1-1880	3-13-1907	28	Prince Reservoir No. 2	83
	10-15-1881	3-13-1907	5	Erie Reservoir	239
	4-1-1880	3-13-1907	40	Marfell Lake No. 1	79
	4-1-1884	3-13-1907	40	Marfell Lake No. 2	25
	5-1-1891	3-13-1907	10	Thomas Reservoir	89
	4-30-1919	6-21-1926	10	Thomas Reservoir	59
	10-1-1893	3-13-1907	15	Elmwood Reservoir	170
	12-31-1893	6-21-1926	15	Elmwood Reservoir	170

Comment Information	Comment	Comments and Responses
		Reservoir, Pueblo Reservoir, Ruedi Reservoir, Cherry Creek Reservoir, Rio Grande Reservoir, Button Rock Reservoir, Turquoise Reservoir and Twin Lakes Reservoir. Furthermore, the accounting for Gross Reservoir meets the requirements of the Division Engineer, who is responsible for water rights administration in the South Platte Basin of Colorado. In the case of Gross Reservoir, the Water Commissioner, who works for the Division Engineer, instructs Denver Water personnel on how much water to release to downstream diverters on a daily basis. Over or under releases of natural inflow are not under Denver Water's control. While the method of estimating and passing the natural inflow to Gross Reservoir is not perfect, there is no systematic injury to downstream water rights. There are days when the water being released from Gross Reservoir to downstream users exceeds the natural inflow and there are days when the reverse is true. Overall, the amount of water passed to the downstream users matches their entitlement. The phenomenon of over releases on some days and under releases on other days is true of all on-stream reservoirs because it is not possible to know the natural inflow to an on-stream reservoir until the water has already entered the reservoir. Therefore, the Water Commissioner must take an educated guess of what the natural inflow is going to be each day, set the release rate to that number, and compensate for any over or under release in the day or days that follow. Denver Water is not recommending any changes to the methods for water rights accounting or operations at Gross Reservoir after the enlargement. Denver Water would continue passing all natural inflow to which it is not entitled to downstream water users in accordance with the Division Engineer.

Comment Information	Comment	Comments and Responses
		Comment #784-2 *(ID 4616)**:*** *Beyond this primary concern, the Water Users also request that the Corps require Denver Water to address the following: (1) insure that water quality and quantity are maintained during Denver Water's construction of the expanded reservoir; (2) because of the increased reservoir size and the anticipated increased draws on the reservoir, insure that Denver Water take measures to minimize the impacts that large water elevation variations could have on shoreline erosion and the resulting impact on water quality; (3) because the increased use of the Moffat Collection System will likely result in flow changes above the reservoir, insure that such increased flow minimally impacts South Boulder Creek's ecology, hydrology, and water quality; (4) insure that recreational uses on the enlarged reservoir's surface continue to be limited to non-motorized water craft and insure that no bodily contact be allowed for the continued protection of the water's quality; (5) because Denver Water's structures are on-stream insure that Denver Water do everything within its power to prevent the introduction of invasive species (i.e., zebra mussels and/or quagga mussels) into the reservoir; and (6) insure that Denver Water implement best management practices on the lands within the project boundary to mitigate the potential impacts that a natural (fire) or man-made event (derailed train) would have on reservoir water quality.* **Response #784-2:** No drawdown of the water level at the reservoir is planned during dam construction. The impact on water quality in Gross Reservoir from the Moffat Project is minor for the short term and negligible for the long term. Continued water quality monitoring at Gross Reservoir is included in Denver Water's Conceptual Mitigation Plan contained in FEIS Appendix M.

Comment Information	Comment	Comments and Responses
		Wave action on the shoreline during filling, as well as during normal operations (i.e., reservoir fluctuations), can increase suspended solids near the shoreline due to erosion. The rugged/rocky topography and geology of the reservoir basin does not lend itself to high initial or prolonged sediment / turbidity issues due to filling and drawdown, especially in comparison to many other reservoirs in nearby watersheds. The shoreline character of Gross Reservoir is described in DEIS Section 4.4.1.1 (FEIS Section 4.6.1.1) and associated mitigation measures that would minimize erosion are described in DEIS Section 4.4.7 (FEIS Section 4.6.7). The average monthly volume for Gross Reservoir would be at its lowest at the end of April (7,326 feet), reach its highest level in July (7,383 feet) and be drawn down through the fall and winter. Under the Proposed Action, Gross Reservoir contents would drop steadily by approximately 4,000 AF per month on average during winter months because the Moffat WTP would be operating at a minimum of 30 mgd. Gross Reservoir water levels have fluctuated historically, as would be expected of the operation of a water supply reservoir, but only negligible effects have been associated with the fluctuations, including little shoreline erosion or dust issues. It is anticipated that the additional fluctuations would also have negligible effects, since they are similar in kind and intensity. DEIS Table H-3.37 in Appendix H presented average, wet and dry average monthly flows at the South Boulder Creek at Pinecliffe gage. Under the Proposed Action, there would be virtually no flow increases from late summer through early spring except in infrequent, very wet years along South Boulder Creek from the Moffat Tunnel to Gross Reservoir. During runoff, monthly average flows would increase by a maximum of 106 cfs (from 620 cfs to 726 cfs) or 17% in June. The percentage increase in reservoir capacity is not indicative of the percentage change in

Comment Information	Comment	Comments and Responses
		flows that would occur along South Boulder Creek. The capacity of South Boulder Creek above Gross Reservoir is approximately 1,200 cfs at Pinecliffe. During runoff, Denver Water must limit Moffat Tunnel deliveries in order to meet this constraint and cannot deliver water through the Moffat Tunnel if natural flows exceed 1,200 cfs. Denver Water's diversions through the Moffat Tunnel would continue to be subject to that constraint with the proposed Moffat Project on-line. The reservoir would continue to operate in a similar manner, one that is characterized by seasonal changes in water levels. These effects were analyzed in the DEIS, including flow changes in South Boulder Creek above and below the reservoir. FEIS Sections 4.6.11 and 5.11 include discussions on the impacts to fish in several sections of South Boulder Creek. There would be adverse impacts to fish upstream of Gross Reservoir and beneficial impacts to fish downstream of the reservoir. Motorized boating and bodily contact such as wading and swimming are not currently allowed at Gross Reservoir pursuant to the FERC Gross Reservoir Recreation Management Plan and Denver Water has not proposed to change this condition in its FERC amendment application. The DEIS contained a discussion of invasive species. FEIS Sections 3.11, 4.6.11, and 5.11 contain revised, expanded discussions of these species in the Project area. Additionally, the proposed Project would not introduce aquatic nuisance species to any water body, nor increase the possible transport of aquatic nuisance species from one water body to another. All the diversion points, which would be used by the proposed Project to transfer water, already divert water between waterways. Denver Water and its contractor would comply with all applicable Federal, State and local regulations related

Comment Information	Comment	Comments and Responses
		to proper handling and disposal of hazardous materials. A Materials Handling Plan would be developed to properly handle and dispose of contaminated materials generated during the Project. For example, contractors would store fuel and other hazardous materials associated with construction activities away from water bodies and take appropriate precautions to avoid spilling hazardous materials or fuels during construction. Denver Water has a contract with the Colorado State Forest Service for management of Denver Water lands to reduce the risk of wildfires. In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million over a five-year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will accelerate and expand the USFS' ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Refer to FEIS Appendix G for a description of the Forests to Faucets Partnership and other cooperative efforts. ***Comment #784-1*** *(ID 4615)**:*** *Thank you for consideration of the Water Users' concerns. Please don't hesitate to contact the undersigned with further questions.* **Response #784-1:** The Corps notes the comment.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
		Comment #*784-7* *(ID 5252)**:*** *[TABLE – WATER USERS ASSOCIATION DISTRICT NO. 6 WATER RIGHTS BELOW AND SENIOR TO GROSS RESERVOIR – see attachment file.]* **Response #784-7:** With the Moffat Project, Denver Water would continue to bypass natural inflow as needed for senior water rights below Gross Reservoir and the South Boulder Diversion Canal. Please also refer to the response to Comment ID 4620.

Comment Information	Comment	Comments and Responses
Comment #789 Linda Andes-Groges Boulder County Audubon Society P.O. Box 2081 Boulder, CO 80306	**BOULDER COUNTY AUDUBON SOCIETY** PO Box 2081 • Boulder, Colorado 80306 www.boulderaudubon.org • crossbill@boulderaudubon.org RECEIVED DEC 2009 Dec. 1, 2009 Moffat EIS Project Manager Scott Franklin I represent Boulder County Audubon Society, an organization of about 1200 people who are interested in wildlife, habitat preservation, and in environmentally wise initiatives that benefit both wildlife and people. The Moffat Collection System Project may be one of the latter, but the documents are voluminous and complex: We need time to study the potential impacts before making our comments. Therefore we respectfully request that the US Army Corps of Engineers consider extending the comment deadline on the Moffat Collection System Project by 45 days, to March 14th 2009. We feel that this request is reasonable given the long length of the DEIS, as well as the timing of the release coinciding with several holidays. This short extension will ensure that citizens are able to provide substantive comments on the DEIS, which is a fundamental goal of the National Environmental Policy Act. Thank you for your consideration of our request. Yours sincerely for Audubon, Linda Andes-Groges P.S. Please relay to your consultants who set up public hearing: Clubhouse in Steamboat impossible to find – even with Mapquest – in the dark! Terrible choice; surely affected attendance...	***Comment #789-1*** *(ID 1127)**:*** *I represent Boulder County Audubon Society, an organization of about 1200 people who are interested in wildlife, habitat preservation, and in environmentally wise initiatives that benefit both wildlife and people. The Moffat Collection System Project may be one of the latter, but the documents are voluminous and complex: We need time to study the potential impacts before making our comments. Therefore we respectfully request that the US Army Corps of Engineers consider extending the comment deadline on the Moffat Collection System Project by 45 days, to March 14th 2009. We feel that this request is reasonable given the long length of the DEIS, as well as the timing of the release coinciding with several holidays. This short extension will ensure that citizens are able to provide substantive comments on the DEIS, which is a fundamental goal of the National Environmental Policy Act.* **Response #789-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended

Comment Information	Comment	Comments and Responses
		to March 17, 2010, for a combined public review period of 138 days. ***Comment #789-2*** *(ID 1128)**:*** *P.S. Please relay to your consultants who set up public hearings: Clubhouse in Gunbarrel impossible to find - even with Mapquest - in the dark! Terrible choice; surely affected attendance.* **Response #789-2:** The following criterion was used to determine the locations for the DEIS public hearings: • Venue must comfortably hold a minimum of 300 people (based on attendance of public scoping meetings held for the Moffat Project and public hearings held for other recent large water supply projects) • Venue must provide ample parking • Venue must provide enough space to host the open house and the public hearing The Corps provided a map of each public hearing venue location as an attachment to the Public Notice issued on October 30, 2009.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #793 Paige Bonaker, Staff Biologist/ GIS Specialist Center for Native Ecosystems 1536 Wynkoop, Suite 303 Denver, CO 80202	From: Paige Bonaker [mailto:paige@nativeecosystems.org] Sent: Wednesday, March 17, 2010 1:43 PM To: MOFFAT.EIS@usace.army.mil Subject: Moffat Collection System Project Dear Mr. Franklin, Please find attached Center for Native Ecosystem's comment letter and appendix 1 in regards to the Draft Environmental Impact Statement for the Moffat Collection System Project. Please let me know if you have any questions or trouble retrieving the documents. Thank you for your consideration. Sincerely, Paige Bonaker Staff Biologist/GIS Specialist Center for Native Ecosystems 1536 Wynkoop, Suite 303 Denver, CO 80202 (303) 546-0214 x 7 http://nativeecosystems.org <http://nativeecosystems.org/> Help make Colorado's highways safer for drivers and wildlife! Report I-70 wildlife sightings at www.I-70WildlifeWatch.org <http://www.i-70wildlifewatch.org/> . - CNE_Moffat_Expansion_Letter_FINAL.doc - CNE_Gross_res_screen_appendix_1.pdf	***Comment #793-2*** *(ID 4788)**:*** *On behalf of Center for Native Ecosystems, I write to you regarding the October 30, 2009 Draft Environmental Impact Statement for the Moffat Collection System Project. I am writing to you at this time to address a few concerns we have with this expansion project and to respectfully submit our objections to such a project moving forward before the following issues are addressed.* **Response #793-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #793-3*** *(ID 4789)**:*** *Sensitive Areas The proposed action and several of the other action alternatives will involve inundation of portions of the Winiger Gulch and South Boulder Creek above Gross Reservoir Colorado Natural Heritage Program (CNHP) Potential Conservation Area (PCA). The DEIS cites information from 2005 having these as two separate PCAs; Winiger Gulch being of moderate significance (B4) and South Boulder Creek being of high significance (B3) (DEIS 3-174). It appears that since the Corps' analysis in 2005, CNHP has combined these two PCAs into one PCA of high significance (B3): Winiger Gulch (alias South Boulder Creek, alias South Boulder Creek above Gross Reservoir) (CNHP 2009). According to CNHP: Winiger Gulch is a small, foothills stream that originates 3 miles upstream from the reservoir and runs through a narrow V-shaped gulch. A dirt road follows the creek down to the reservoir. The stream itself is <16.5 ft (5 m) wide through the gulch and the riparian vegetation extends 10-26 ft (3-8 m) out from either bank within the site. South Boulder Creek also flows into Gross Reservoir. This creek is wider, swift and flat bottomed with a narrow riparian area. A boulder creek bed provides rapids along most of the*

Comment Information	Comment	Comments and Responses
	Attachments: Center for Native Ecosystems *Celebrating 10 years of saving endangered plants and wildlife in the Greater Southern Rockies.* March 17, 2010 Scott Franklin Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 Re: Moffat Collection System Project Dear Mr. Franklin: On behalf of Center for Native Ecosystems, I write to you regarding the October 30, 2009 Draft Environmental Impact Statement for the Moffat Collection System Project. I am writing to you at this time to address a few concerns we have with this expansion project and to respectfully submit our objections to such a project moving forward before the following issues are addressed. **Sensitive Areas** The proposed action and several of the other action alternatives will involve inundation of portions of the Winiger Gulch and South Boulder Creek above Gross Reservoir Colorado Natural Heritage Program (CNHP) Potential Conservation Area (PCA). The DEIS cites information from 2005 having these as two separate PCAs; Winiger Gulch being of moderate significance (B4) and South Boulder Creek being of high significance (B3) (DEIS 3-174). It appears that since the Corps' analysis in 2005, CNHP has combined these two PCAs into one PCA of high significance (B3): Winiger Gulch (alias South Boulder Creek, alias South Boulder Creek above Gross Reservoir) (CNHP 2009). According to CNHP: > Winiger Gulch is a small, foothills stream that originates 3 miles upstream from the reservoir and runs through a narrow V-shaped gulch. A dirt road follows the creek down to the reservoir. The stream itself is <16.5 ft (5 m) wide through the gulch and the riparian vegetation extends 10-26 ft (3-8 m) out from either bank within the site. South Boulder Creek also flows into Gross Reservoir. This creek is wider, swift and flat bottomed with a narrow riparian area. A boulder creek bed provides rapids along most of the length of the creek. There is a mixed understory along the stream with mesic forbs dominating in some areas and a sparse graminoid cover throughout (CNHP 2009). The Winiger Gulch PCA site has high biodiversity significance because it: > supports a good (B-ranked) occurrence of a globally rare (G3/S3) thinleaf alder (*Alnus incana*) / mesic forb community, an excellent (A-ranked) occurrence of the state rare (G5?/S2S3) Sprengel's sedge (*Carex sprengelii*) and a good (B-ranked) occurrence of a state rare (G4?/S2) *Betula occidentalis / Maianthemum stellatum* riparian shrubland (CNHP 2009). The DEIS does not adequately analyze or mitigate the impacts of the various alternatives on the globally and state rare plant communities present in this PCA. The DEIS briefly describes the plant 1536 Wynkoop Street, Suite 303 Denver, Colorado 80202 303.546.0214 nativeecosystems.org	*length of the creek. There is a mixed understory along the stream with mesic forbs dominating in some areas and a sparse graminoid cover throughout (CNHP 2009). The Winiger Gulch PCA site has high biodiversity significance because it: supports a good (B-ranked) occurrence of a globally rare (G3/S3) thinleaf alder (Alnus incana) / mesic forb community, an excellent (A-ranked) occurrence of the state rare (G5?/S2S3) Sprengel's sedge (Carex sprengelii) and a good (B-ranked) occurrence of a state rare (G4?/S2) Betula occidentalis / Maianthemum stellatum riparian shrubland (CNHP 2009).* **Response #793-3:** Information on Colorado Natural Heritage Program (CNHP) Potential Conservation Areas (PCAs) has been updated in FEIS Sections 3.9 and 5.9 to reflect changes made by CNHP in PCA boundaries, designations, and descriptions. Rare plant surveys were conducted by the Special Status Species sections of the FEIS Sections 3.10 and 5.10. ***Comment #793-4*** *(ID 4790)**:*** *The DEIS does not adequately analyze or mitigate the impacts of the various alternatives on the globally and state rare plant communities present in this PCA. The DEIS briefly describes the plant communities and potential conservation areas, and the acreage of each of the potential conservation areas that will be inundated under each alternative. The DEIS does not discuss in detail the rarity of these plant communities in Colorado and globally. The DEIS should disclose the number of occurrences of each plant community that remain in the state and globally, and what the loss of all or portions of the plant communities that will be impacted by this project will mean to efforts to conserve these plant communities both within the state and at a global level. In addition, the DEIS should detail not only the acreage of each PCA that will be inundated, but should also disclose the*

Comment Information	Comment	Comments and Responses
	communities and potential conservation areas, and the acreage of each of the potential conservation areas that will be inundated under each alternative. The DEIS does not discuss in detail the rarity of these plant communities in Colorado and globally. The DEIS should disclose the number of occurrences of each plant community that remain in the state and globally, and what the loss of all or portions of the plant communities that will be impacted by this project will mean to efforts to conserve these plant communities both within the state and at a global level. In addition, the DEIS should detail not only the acreage of each PCA that will be inundated, but should also disclose the amount of each plant community that will be inundated. The PCA are generalized areas drawn around the lands necessary to support a rare plant community. The plant communities that are within this PCA are mostly along the riparian zone, and inundation will disproportionately affect these areas within the potential conservation area. Describing the acreage of the PCA that is affected does not give the reader a clear sense of how much of each plant community will be inundated and permanently lost. In addition to disclosing the amount of each plant community that will be lost, the DEIS should disclose whether there will be any additional direct, indirect or cumulative impacts to any portions of these plant communities in the PCAs that will not be inundated under each alternative. For example, there may be increased potential for invasion of any remaining portion of each plant community by noxious weeds. The DEIS should also disclose the cumulative impacts of past, present and reasonably foreseeable future actions on other occurrences of these globally and state rare plant communities. The DEIS should discuss whether there are other occurrences of these plant communities that have been or may be impacted by the past, present and reasonably foreseeable future actions. The DEIS does not proposed any measures to avoid, minimize or mitigate the impacts of the proposed alternative (or any of the other alternatives) on these globally and state rare plant communities. Given that there will be major unavoidable impacts to some of these globally and state rare plant communities due to inundation, the agency should consider requiring off-site mitigation to contribute to conservation of these state and globally rare plant communities in other locations. For example, occurrences of these communities on private lands could be purchased and/or put under conservation easement, or funding could be contributed to agencies that manage other occurrences of these species, to address threats to occurrences of these natural communities in other locations. **Raptors** A number of the alternatives may impact raptors, including burrowing owl, ferruginous hawk, peregrine falcon, bald eagle and red-tailed hawk. The U.S. Fish and Wildlife Service recently developed draft guidelines for raptor conservation in the Western United States (Whittington and Allen 2008). The Army Corps did not use these guidelines in analyzing impacts to raptors or in developing mitigation measures for raptors. These guidelines constitute the best available science on how to analyze and mitigate impacts on raptors in the Western United States. The Army Corps should follow these guidelines in analyzing impacts to raptors, designing raptor surveys which should take place for multiple years prior to construction, and developing mitigation measures. The Army Corps should utilize the recommended nest buffers and seasonal timing limitations recommended in these guidelines. 1536 Wynkoop Street, Suite 303 Denver, Colorado 80202 303.546.0214 nativecosystems.org	*amount of each plant community that will be inundated. The PCA are generalized areas drawn around the lands necessary to support a rare plant community. The plant communities that are within this PCA are mostly along the riparian zone, and inundation will disproportionately affect these areas within the potential conservation area. Describing the acreage of the PCA that is affected does not give the reader a clear sense of how much of each plant community will be inundated and permanently lost. In addition to disclosing the amount of each plant community that will be lost, the DEIS should disclose whether there will be any additional direct, indirect or cumulative impacts to any portions of these plant communities in the PCAs that will not be inundated under each alternative. For example, there may be increased potential for invasion of any remaining portion of each plant community by noxious weeds.* **Response #793-4:** More information about the relative rarity and regional occurrence of these plant communities has been added to FEIS Sections 3.7 and 5.7. Acres of impact to riparian habitat within the PCA have been added to the analysis. Impacts would occur primarily from inundation. Weeds may be introduced or spread during timber removal activities, similar to other construction areas, and would be addressed by the weed management program. Removal of trees would primarily affect adjacent forested habitats, but some impacts could occur in the riparian zone from temporary road crossings. ***Comment #793-5*** *(ID 4791)**:*** *The DEIS should also disclose the cumulative impacts of past, present and reasonably foreseeable future actions on other occurrences of these globally and state rare plant communities. The DEIS should discuss whether there are other occurrences of these plant communities that have been or may be*

Comment Information	Comment	Comments and Responses
	Preble's meadow jumping mouse As a listed species under the Endangered Species Act, impacts to the Preble's meadow jumping mouse (Preble's) and its habitat will need to be minimized. The Army Corps/Denver Water should do comprehensive new surveys for Prebles meadow jumping mouse in any potential/historic Preble's habitat. In some locations, the DEIS relies on surveys done as far back as 2005, and surveys have never been done in portions of some of the stream segments that could be impacted by the alternatives. The Army Corps/Denver Water should implement monitoring in occupied Preble's meadow jumping mouse habitat to determine whether changes in flow and other activities associated with the proposed project negatively impact Preble's meadow jumping mouse. For instance, the DEIS states that some areas of occupied habitat will have increased flows during the winter (for example DEIS 4-294). Preble's hibernate during winter. The DEIS should disclose whether the areas where they are likely to hibernate in winter could be inundated by water resulting in mortality. The Corps need to do a better job of looking at the cumulative impacts of all of the past, present and reasonably foreseeable future actions in Preble's habitat on the potential for recovery of Preble's. In addition, if Preble's habitat will be lost in any of the project areas, the Corps should propose some mitigation to benefit Preble's and its habitat. **Northern leopard frog** In June of 2006, Center for Native Ecosystems and several other environmental organizations petitioned to list the western United States population of the northern leopard frog as threatened (CNE et al. 2006). In June of 2009, the Service found that this petition presented "substantial scientific or commercial information indicating that listing the western U.S. population of northern leopard frog may be warranted" (USFWS 2009). The Service is currently doing a thorough status review of the species. By the time this expansion project moves forward, the Service could decide to list the species as threatened. The Corps does not adequately analyze the direct, indirect and cumulative impacts (like increase in invasion by noxious weeds and other invasive species (e.g. bullfrog), increases in concentrations of contaminants, etc.) of the proposed project on northern leopard frog. In the DEIS, there is no discussion of the overall status of and threats to northern leopard frog, or an assessment of how much habitat would be lost under each of the alternatives. Because the northern leopard frog could be negatively impacted under several of the alternatives, it would behoove the Corps to carefully consider mitigations for this species. The Corps should do comprehensive surveys for northern leopard frog in all of the stream segments where changes in flow, construction or reservoir inundation are proposed. The Corps should also put measures in place to avoid, minimize and mitigate impacts to northern leopard frog. **Rare Plants** The Corps has not done comprehensive surveys of all the areas where construction/inundation might disturb rare plants such as Ute ladies'-tresses orchid and Colorado butterfly plant. The Corps states themselves: "because emergent populations of Ute ladies'-tresses orchid may fluctuate from year to year, assessing population status and distribution is difficult" (DEIS 4-297). Therefore, additional surveys are necessary and important, especially for rare species such as the Ute ladies'-tresses orchid. 1536 Wynkoop Street, Suite 303 Denver, Colorado 80202 303.546.0214 nativeecosystems.org	*impacted by the past, present and reasonably foreseeable future actions.* **Response #793-5:** More information about the relative rarity and regional occurrence of these plant communities has been added to FEIS Sections 3.9 and 5.9. ***Comment #793-6*** *(ID 4792)**:*** *The DEIS does not proposed any measures to avoid, minimize or mitigate the impacts of the proposed alternative (or any of the other alternatives) on these globally and state rare plant communities. Given that there will be major unavoidable impacts to some of these globally and state rare plant communities due to inundation, the agency should consider requiring off-site mitigation to contribute to conservation of these state and globally rare plant communities in other locations. For example, occurrences of these communities on private lands could be purchased and/or put under conservation easement, or funding could be contributed to agencies that manage other occurrences of these species, to address threats to occurrences of these natural communities in other locations.* **Response #793-6:** The Corps conducted surveys for special status plant populations at Gross Reservoir during the summer of 2010 after coordination with the USFS Arapaho & Roosevelt National Forests botanist and wildlife biologist regarding the target species list, scope, and qualifications of the surveyors. The results are summarized in FEIS Sections 3.7.1 and 5.7.1, and are described in more detail in the Special Status Species Technical Report in Appendix G. While several rare plants species would be affected by inundation under all alternatives, new occurrences of all species were also documented outside of the impact area. The impacts by alternative are

Comment Information	Comment	Comments and Responses
	In several instances, the Corps states that they will survey for threatened and endangered plants before construction and comply with ESA (for example DEIS 4-297 and DEIS 4-298), but they don't specify exactly what avoidance, minimization and mitigation they will do if they find these plants. The Corps should specify whether they will re-consult with the FWS if they find plants at those locations, and exactly what protective measures will be applied. The Corps should use the rare plant guidelines used for oil and gas development for any surface disturbing activities (Elliott et al. 2009) to protect rare plants that are both listed and not listed. **Noxious weeds** According to the DEIS, construction and reservoir drawdown could result in increased opportunities for the spread of noxious weeds (for example DEIS 4-231 and DEIS 4-236). Though the Corps believes impacts from noxious weeds will be minor (DEIS 4-231), current weed problems could be exacerbated and seriously effect the various project areas if noxious weed mitigation measures are not properly planned for at all stages of the improvement project. This would not only impact the native plant communities found on in the project area, but it would also impact the many species that rely on those plants. As noxious weeds take over lands where important native grasslands currently exist, the reduction in biodiversity would cause a chain reaction of negative impacts for several species. The spread of noxious weeds not only reduces the diversity of plant species in an area but it also degrades the soil quality. This decline in habitat quality could result in a decrease in small mammal populations which rely on the presence of a variety of plant species for food and good soil for shelter. A reduction of small mammal species would then have a negative impact on important predator species such as raptors. Specific to the expansion project, the black-tailed prairie dog would be negatively affected by the spread of noxious weeds through the loss of important food sources in the project area. A decline in the prairie dog population in this area could then lead to negative impacts on ferruginous hawks which are likely to occur in the project area. In Colorado, these raptors are listed as a sensitive species on lands managed by both the Forest Service and the Bureau of Land Management. Preserving areas of intact habitat is important to slowing the decline of this important raptor. The project area is also home to many important pollinators species which are on the decline across the United States. One species in particular is the Ottoe skipper, a butterfly that has been documented in the project area (see Appendix 1). This species is recognized as a species of special concern on lands managed by the Forest Service in Colorado. It is also listed as vulnerable on the Xerces Society's Red List of butterflies which means the species is at moderate risk of extinction. According to the Colorado Natural Heritage Program, the species is imperiled in the state of Colorado. Ottoe skippers are not likely to disperse over large distances, so if the species is extirpated from the project area, the likelihood of the species repopulating the area is not high. This butterfly can be severely impacted by construction and maintenance. As this species is dependant on native prairie species for food and its reproductive cycles, the Corps needs to further document how they will minimize the spread of noxious weeds throughout the project area. To complicate the issue, approaches to controlling the spread of noxious weeds will most likely include plans for spraying thistle and other invasive species. However, the Corps will have to insure that native thistle species and other important host plants for the Ottoe skipper will not be inadvertently impacted by the spraying regiment. Finally, there is evidence that the populations of Ottoe skipper 1536 Wynkoop Street, Suite 303 Denver, Colorado 80202 303.546.0214 nativeecosystems.org	presented in FEIS Section 5.10, including an assessment of population viability in the Arapahoe National Forest adjacent to Gross Reservoir. ***Comment #793-7*** *(ID 4793)**:*** *Raptors A number of the alternatives may impact raptors, including burrowing owl, ferruginous hawk, peregrine falcon, bald eagle and red-tailed hawk. The U.S. Fish and Wildlife Service recently developed draft guidelines for raptor conservation in the Western United States (Whittington and Allen 2008). The Army Corps did not use these guidelines in analyzing impacts to raptors or in developing mitigation measures for raptors. These guidelines constitute the best available science on how to analyze and mitigate impacts on raptors in the Western United States. The Army Corps should follow these guidelines in analyzing impacts to raptors, designing raptor surveys which should take place for multiple years prior to construction, and developing mitigation measures. The Army Corps should utilize the recommended nest buffers and seasonal timing limitations recommended in these guidelines.* **Response #793-7:** The author (Whittington) was contacted during preparation of the DEIS to obtain the guidelines. According to the author, the cited draft document is no longer valid and a new version is being prepared. Since the guidelines have not been finalized, it would be premature to use them in this EIS. ***Comment #793-8*** *(ID 4794)**:*** *Preble's meadow jumping mouse As a listed species under the Endangered Species Act, impacts to the Preble's meadow jumping mouse (Preble's) and its habitat will need to be minimized. The Army Corps/Denver Water should do comprehensive new surveys for Prebles meadow jumping mouse in any potential/historic Preble's habitat. In some locations,*

Comment Information	Comment	Comments and Responses
	in the Denver-metro area and western Colorado are disjunct from the populations across the rest of the United States. Therefore, the Colorado population of Ottoe skippers may warrant protection under the Endangered Species Act. We urge the United States Army Corps of Engineers to address the above issues before moving forward with this project. Please keep us informed about this issue. Sincerely, Paige Bonaker Staff Biologist Enclosures (2) **References:** Center for Native Ecosystems, Biodiversity Conservation Alliance, Defenders of Black Hills, Forest Guardians, Center for Biological Diversity, The Ark Initiative, Native Ecosystems Council, Rocky Mountain Clean Air Action, and Jeremy Nichols. 2006. *Petition to List the Western United States Population of Northern Leopard Frog (Rana pipiens) as Threatened.* June 2006. Accessed March 15, 2010 at: http://nativeecosystems.org/wp-content/uploads/2006-6-12_final_leopard_frog_petition11.pdf Colorado Natural Heritage Program (CNHP). 2009. *Level 4 Potential Conservation Area (PCA) Report: Winiger Gulch PCA.* Fort Collins, Colorado. Accessed March 15, 2010 at: http://www.cnhp.colostate.edu/download/documents/pca/L4_PCA-Winiger%20Gulch_8-31-2009.pdf Elliott, B. A., S. Spackman Panjabi, B. Kurzel, B. Neely, R. Rondeau, M. Ewing. 2009. Recommended Best Management Practices for Plants of Concern. Practices developed to reduce the impacts of oil and gas development activities to plants of concern. Unpublished report prepared by the Rare Plant Conservation Initiative for the National Fish and Wildlife Foundation. Accessed March 16, 2010 at: http://parks.state.co.us/SiteCollectionImages/parks/Programs/CNAP/Plant%20BMPs%20FINAL%204-2-09.pdf Whittington, D. M. and G. T. Allen. 2008. *Draft guidelines for raptor conservation in the Western United States.* February 2008. Division of Migratory Bird Managment, U.S. Fish and Wildlife Service, Region 9, Washington, D.C., 156 pp. U.S. Fish and Wildlife Service (USFWS). 2009. 74 Fed Reg 31389. Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Northern Leopard Frog *(Lithobates [=Rana] pipiens)* in the Western United States as Threatened. Accessed March 15, 2010 at: http://nativeecosystems.org/wp-content/uploads/2009-15539_pi.pdf 1536 Wynkoop Street, Suite 303 Denver, Colorado 80202 303.546.0214 nativeecosystems.org	*the DEIS relies on surveys done as far back as 2005, and surveys have never been done in portions of some of the stream segments that could be impacted by the alternatives. The Army Corps/Denver Water should implement monitoring in occupied Preble's meadow jumping mouse habitat to determine whether changes in flow and other activities associated with the proposed project negatively impact Preble's meadow jumping mouse. For instance, the DEIS states that some areas of occupied habitat will have increased flows during the winter (for example DEIS 4-294). Preble's hibernate during winter. The DEIS should disclose whether the areas where they are likely to hibernate in winter could be inundated by water resulting in mortality. The Corps need to do a better job of looking at the cumulative impacts of all of the past, present and reasonably foreseeable future actions in Preble's habitat on the potential for recovery of Preble's. In addition, if Preble's habitat will be lost in any of the project areas, the Corps should propose some mitigation to benefit Preble's and its habitat.* **Response #793-8:** The surveys and other information described in Section 3.8 of the DEIS are adequate to assess impacts to Preble's meadow jumping mouse and additional surveys are not needed. The same data was used to prepare the BA that was submitted to the USFWS in February 2009, and to prepare the Revised BA for depletions and Preble's that was submitted to the USFWS in August 2013. Monitoring of changes in populations in relation to stream flows is not included as mitigation in the EIS because changes in flows are unlikely to reduce the availability of habitat for Preble's meadow jumping mouse along the river segments, and therefore are unlikely to affect populations. Increases in stream flows in the fall and winter along the North Fork South

Comment Information	Comment	Comments and Responses
	Appendix 1 - CNHP Element Occurance Records SNAME: Erynnis martialis; SCOMNAME: Mottled Dusky Wing; EORANK: ; GRANK: G3G4; SRANK: S2S3; PRECISN: G; LASTOBS: 6/14/1965; USESA: ; FEDSENS: ; SPROT: ; SNAME: Liatris ligulistylis; SCOMNAME: Gay-feather; EORANK: ; GRANK: G5?; SRANK: S1S2; PRECISN: G; LASTOBS: 8/11/9999; USESA: ; FEDSENS: ; SPROT: ; SNAME: Polites origenes; SCOMNAME: Cross-line Skipper; EORANK: ; GRANK: G5; SRANK: S3; PRECISN: G; LASTOBS: 7/11/1975; USESA: ; FEDSENS: ; SPROT: ; SNAME: Callophrys mossii schryveri; SCOMNAME: Moss's Elfin; EORANK: ; GRANK: G3G4T3; SRANK: S2S3; PRECISN: G; LASTOBS: 5/2/1959; USESA: ; FEDSENS: ; SPROT: ; SNAME: Spiranthes diluvialis; SCOMNAME: Ute Ladies' Tresses; EORANK: B; GRANK: G2; SRANK: S2; PRECISN: S; LASTOBS: 1997-08-99; USESA: LT; FEDSENS: ; SPROT: ; SNAME: Hesperia ottoe; SCOMNAME: Ottoe Skipper; EORANK: B; GRANK: G3G4; SRANK: S2; PRECISN: S; LASTOBS: 7/18/1997; USESA: ; FEDSENS: USFS; SPROT: ; SNAME: Zapus hudsonius preblei; SCOMNAME: Meadow Jumping Mouse Subsp; EORANK: E; GRANK: G5T2; SRANK: S1; PRECISN: S; LASTOBS: 2000-07-99; USESA: LT; FEDSENS: ; SPROT: T; SNAME: Spiranthes diluvialis; SCOMNAME: Ute Ladies' Tresses; EORANK: ; GRANK: G2; SRANK: S2; PRECISN: S; LASTOBS: 1997-08-99; USESA: LT; FEDSENS: ; SPROT: ; SNAME: ALNUS INCANA/MESIC FORB; SCOMNAME: Thinleaf Alder/Mesic Forb Riparian Shrubland; EORANK: B; GRANK: G3; SRANK: S3; PRECISN: S; LASTOBS: 7/18/1995; USESA: ; FEDSENS: ; SPROT: ; SNAME: BETULA OCCIDENTALIS/MESIC FORB; SCOMNAME: Foothills Riparian Shrubland; EORANK: B; GRANK: G3; SRANK: S2; PRECISN: S; LASTOBS: 7/18/1995; USESA: ; FEDSENS: ; SPROT: ; Page 1 of 1	Platte River are unlikely to affect the availability of hibernacula. Preble's meadow jumping mouse hibernation sites may be both within and outside of the 100-year flood plain, and are not confined to the stream banks. Increases in winter flows on the North Fork South Platte River would not adversely affect hibernating Preble's meadow jumping mouse because flows would be substantially higher in the fall when hibernation sites are selected (DEIS Table H.3-40). The level of impacts to Preble's meadow jumping mouse does not warrant a more detailed cumulative analysis in the EIS. ***Comment #793-9*** *(ID 4795)**:*** *Northern leopard frog In June of 2006, Center for Native Ecosystems and several other environmental organizations petitioned to list the western United States population of the northern leopard frog as threatened (CNE et al. 2006). In June of 2009, the Service found that this petition presented "substantial scientific or commercial information indicating that listing the western U.S. population of northern leopard frog may be warranted" (USFWS 2009). The Service is currently doing a thorough status review of the species. By the time this expansion project moves forward, the Service could decide to list the species as threatened. The Corps does not adequately analyze the direct, indirect and cumulative impacts (like increase in invasion by noxious weeds and other invasive species (e.g. bullfrog), increases in concentrations of contaminants, etc.) of the proposed project on northern leopard frog. In the DEIS, there is no discussion of the overall status of and threats to northern leopard frog, or an assessment of how much habitat would be lost under each of the alternatives. Because the northern leopard frog could be negatively impacted under several of the alternatives, it would behoove the Corps to carefully consider mitigations for this species. The*

Comment Information	Comment	Comments and Responses
		Corps should do comprehensive surveys for northern leopard frog in all of the stream segments where changes in flow, construction or reservoir inundation are proposed. The Corps should also put measures in place to avoid, minimize and mitigate impacts to northern leopard frog. **Response #793-9:** The information that the western population of northern leopard frog as under review for listing as threatened has been added to FEIS Section 3.10. If northern leopard frog becomes listed, a Supplemental BA may need to be prepared. Surveys for northern leopard frog were conducted at Gross Reservoir in 2010 and no individuals were found. As indicated in the DEIS, they have been previously observed at the Leyden Gulch Reservoir site. Analysis of the occurrence and impacts to northern leopard frog has been updated in FEIS Section 5.10. However, impacts to northern leopard frog are expected to be no more than minor, except at the Leyden Gulch site. ***Comment #793-10*** *(ID 4796)**:*** *Rare Plants The Corps has not done comprehensive surveys of all the areas where construction/inundation might disturb rare plants such as Ute ladies'-tresses orchid and Colorado butterfly plant. The Corps states themselves: "because emergent populations of Ute ladies'-tresses orchid may fluctuate from year to year, assessing population status and distribution is difficult" (DEIS 4-297). Therefore, additional surveys are necessary and important, especially for rare species such as the Ute ladies'-tresses orchid. In several instances, the Corps states that they will survey for threatened and endangered plants before construction and comply with ESA (for example DEIS 4-297 and DEIS 4-298), but they don't specify exactly what avoidance, minimization and mitigation they will do if they find these plants. The Corps should specify whether they will re-consult with the FWS if they find*

Comment Information	Comment	Comments and Responses
		plants at those locations, and exactly what protective measures will be applied. The Corps should use the rare plant guidelines used for oil and gas development for any surface disturbing activities (Elliott et al. 2009) to protect rare plants that are both listed and not listed. **Response #793-10:** If Ute ladies'-tresses or Colorado butterfly plant were found during pre-construction surveys, the Corps would need to re-consult with the USFWS in accordance with the Final BO. It would be premature to identify protective measures because the species are not known to occur in the Project area and are unlikely to be found during pre-construction surveys. Recommended Best Management Practices for Plants of Concern. Practices Developed to Reduce the Impacts of Oil and Gas Development Activities to Plants of Concern (Elliott et al 2009) was considered in the updated analysis of special status species in FEIS Sections 3.10 and 5.10. Some of the Best Management Practices recommended for oil and gas are not applicable to a reservoir. ***Comment #793-11*** *(ID 4797)**:*** *Noxious weeds According to the DEIS, construction and reservoir drawdown could result in increased opportunities for the spread of noxious weeds (for example DEIS 4-231 and DEIS 4-236). Though the Corps believes impacts from noxious weeds will be minor (DEIS 4-231), current weed problems could be exacerbated and seriously effect the various project areas if noxious weed mitigation measures are not properly planned for at all stages of the improvement project. This would not only impact the native plant communities found on in the project area, but it would also impact the many species that rely on those plants. As noxious weeds take over lands where important native grasslands currently exist, the reduction in biodiversity would cause a chain reaction of negative*

Comment Information	Comment	Comments and Responses
		impacts for several species. The spread of noxious weeds not only reduces the diversity of plant species in an area but it also degrades the soil quality. This decline in habitat quality could result in a decrease in small mammal populations which rely on the presence of a variety of plant species for food and good soil for shelter. A reduction of small mammal species would then have a negative impact on important predator species such as raptors. Specific to the expansion project, the black-tailed prairie dog would be negatively affected by the spread of noxious weeds through the loss of important food sources in the project area. A decline in the prairie dog population in this area could then lead to negative impacts on ferruginous hawks which are likely to occur in the project area. In Colorado, these raptors are listed as a sensitive species on lands managed by both the Forest Service and the Bureau of Land Management. Preserving areas of intact habitat is important to slowing the decline of this important raptor. **Response #793-11:** The DEIS discussed impacts to ferruginous hawk and black-tailed prairie dog in DEIS Section 4.8. Prairie dog towns and suitable habitat for ferruginous hawk only occur at some of the Project components that comprise some of the Alternatives. These include Leyden Gulch Reservoir site (Alternative 1c), Conduit 0 (Alternatives 8 and 13a), Conduit M (Alternative 10), and transfer of agricultural water rights (Alternative 13a). These areas have relatively small amounts of black-tailed prairie dogs, and are not high quality habitat for ferruginous hawk. The Proposed Action (Alternative 1a) would not have an impact on any known prairie dog towns. While noxious weeds certainly can reduce the quality of habitat for these species, weed management procedures are expected to be generally effective at avoiding and minimizing the spread of noxious

Comment Information	Comment	Comments and Responses
		weeds. Noxious weed spread from this Project is highly unlikely to have an important effect on ferruginous hawks. Additionally, as part of Denver Water's existing FERC hydropower license for Gross Reservoir (Article 406 – conditions 107 and 108), Denver Water is required to submit an annual monitoring report for noxious plants. This report includes a list of the priority species and plans to eradicate these species from the FERC Project area (which includes lands owned by the USFS and Denver Water).These weed control efforts involve the cooperation of the USFS and Denver Water, and is based on a list of noxious weeds developed by the USFS and the Colorado Department of Agriculture. ***Comment #793-12*** *(ID 4798)**:*** *The project area is also home to many important pollinators species which are on the decline across the United States. One species in particular is the Ottoe skipper, a butterfly that has been documented in the project area (see Appendix 1). This species is recognized as a species of special concern on lands managed by the Forest Service in Colorado. It is also listed as vulnerable on the Xerces Society's Red List of butterflies which means the species is at moderate risk of extinction. According to the Colorado Natural Heritage Program, the species is imperiled in the state of Colorado. Ottoe skippers are not likely to disperse over large distances, so if the species is extirpated from the project area, the likelihood of the species repopulating the area is not high. This butterfly can be severely impacted by construction and maintenance. As this species is dependent on native prairie species for food and its reproductive cycles, the Corps needs to further document how they will minimize the spread of noxious weeds throughout the project area. To complicate the issue, approaches to controlling the spread of noxious*

Comment Information	Comment	Comments and Responses
		weeds will most likely include plans for spraying thistle and other invasive species. However, the Corps will have to insure that native thistle species and other important host plants for the Ottoe skipper will not be inadvertently impacted by the spraying regiment. Finally, there is evidence that the populations of Ottoe skipper in the Denver-metro area and western Colorado are disjunct from the populations across the rest of the United States. Therefore, the Colorado population of Ottoe skippers may warrant protection under the Endangered Species Act. **Response #793-12:** Ottoe skipper is a species of native mid-grass and tallgrass prairie. The larvae feed on little and big bluestem and side-oats grama, and the adults take nectar from native thistle and other flowers. It has been recorded in a number of prairie states from Michigan to Colorado and from North Dakota to Texas. The Corps has no information that indicates that they are present in the Project area. The assessment of occurrence in the DEIS (Appendix Table G-3) considered this species to be unlikely to occur at the Leyden Gulch Reservoir site and along Conduits M and O, and to have no potential for occurrence at other facilities. Given the low potential for occurrence, there is no need to identify special mitigations to protect them. ***Comment #793-1*** *(ID 4787)**:*** *We urge the United States Army Corps of Engineers to address the above issues before moving forward with this project. Please keep us informed about this issue.* **Response #793-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #796 Adam Bergeron The Nature Conservancy and Becky Long, Water Caucus Coordinator Colorado Environmental Coalition 1536 Wynkoop Street, #5C Denver, CO 80202 and Drew Beckwith, Water Policy Analyst Western Resource Advocates and Gary Wockner Clean Water Action and Mark Easter Save the Poudre, Poudre Waterkeepers and Megan Mueller, Staff Biologist Center for Native Ecosystems	From: Becky Long [mailto:becky@cecenviro.org] Sent: Wednesday, March 17, 2010 8:50 PM To: MOFFAT.EIS@usace.army.mil Subject: Permit Application NOW-2002080762-DEN comments Colorado Envirionmental Coaliton Mr. Franklin, Attached please find comments submitted by Colorado Environmental Coalition on behalf of Colorado Environmental Coalition, Western Resource Advocates, The Nature Conservancy, Center for Native Ecosystems, San Juan Citizens Alliance, Clean Water Action, Save the Poudre, Sierra Club- Rocky Mountain Chapter. A hard copy of these comments will follow by mail later today. An acknowledgement of these comments is appreciated. Thank you! bl Becky Long Water Caucus Coordinator Colorado Environmental Coalition <http://www.ourcolorado.org/> 1536 Wynkoop St. #5C Denver, CO 80202 Becky@cecenviro.org <mailto:Becky@cecenviro.org> 303.405.6714 303.534.7063- fax - 031710 CEC Moffat DEIS Comments.pdf	***Comment #796-13*** *(ID 4884)**:*** *On behalf of the following organizations, I respectfully submit the following comments on the (Permit Application NOW-2002080762-DEN) Draft Environmental Impact Statement (DEIS) and Section 404 Permit, (collectively referred to as the "Moffat" project in this document): Colorado Environmental Coalition (CEC), Western Resource Advocates (WRA), The Nature Conservancy (TNC), Center for Native Ecosystems (CNE), San Juan Citizens Alliance (SJCA), Clean Water Action (CWA), Save the Poudre (STP) and The Sierra Club- Rocky Mountain Chapter (RMC) (see Appendix I for organizational descriptions). These organizations collectively represent thousands of Colorado citizens, and work jointly to develop and advocate for sustainable water management and supply decisions that conserve, protect and restore Colorado's rivers. In addition to the following comments we also join in the detailed comments provided to the United States Army Corps of Engineers (USACE) by Trout Unlimited, Colorado Wildlife Federation, Center for Native Ecosystems and Western Resource Advocates. Overview Our organizations have followed the Moffat project from the earliest stages, in Scoping comments from November, 2003, several of our organizations outlined concerns related to the project. These concerns included the role of conservation in meeting future demand, the need for a full accounting of all environmental impacts from the project, mechanisms to protect stream flows and water quality, cumulative impacts of this project and the Windy Gap Firming Project and that the DEIS analyze and identify a real alternative to new infrastructure for meeting this component of the region's future water needs. Many of the same issues are echoed in these comments. In 2005, CEC, Western Resource Advocates (WRA) and Trout Unlimited (TU) published the report Facing our Future.[1]*

Comment Information	Comment	Comments and Responses
and Meghan Maloney, River Campaign Director San Juan Citizens Alliance and Steve Glazer, Water and Aquatic Resources Committee, Chairs, Sierra Club, Rocky Mountain Chapter	Attachments: March 17, 2010 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 VIA Email: Moffat.eis@usace.army.mil RE: Moffat Collection System Project (Permit Application NOW-2002080762-DEN) DEIS and Section 404 Permit Comments. Dear Mr. Franklin, On behalf of the following organizations, I respectfully submit the following comments on the (Permit Application NOW-2002080762-DEN) Draft Environmental Impact Statement (DEIS) and Section 404 Permit, (collectively referred to as the "Moffat" project in this document): Colorado Environmental Coalition (CEC), Western Resource Advocates (WRA), The Nature Conservancy (TNC), Center for Native Ecosystems (CNE), San Juan Citizens Alliance (SJCA), Clean Water Action (CWA), Save the Poudre (STP) and The Sierra Club- Rocky Mountain Chapter (RMC) (see Appendix I for organizational descriptions). These organizations collectively represent thousands of Colorado citizens, and work jointly to develop and advocate for sustainable water management and supply decisions that conserve, protect and restore Colorado's rivers. In addition to the following comments we also join in the detailed comments provided to the United States Army Corps of Engineers (USACE) by Trout Unlimited, Colorado Wildlife Federation, Center for Native Ecosystems and Western Resource Advocates. Overview Our organizations have followed the Moffat project from the earliest stages, in Scoping comments from November, 2003, several of our organizations outlined concerns related to the project. These concerns included the role of conservation in meeting future demand, the need for a full accounting of all environmental impacts from the project, mechanisms to protect stream flows and water quality, cumulative impacts of this project and the Windy Gap Firming Project and that the DEIS analyze and identify a real alternative to new infrastructure for meeting this component of the region's future water needs. Many of the same issues are echoed in these comments. In 2005, CEC, Western Resource Advocates (WRA) and Trout Unlimited (TU) published the report *Facing our Future*[1]. The report conveys the vision of members of the Colorado conservation community for meeting the water needs of Colorado's Front Range for the next 25 years. The report outlines a three pronged strategy to conserve, protect, and restore our rivers and streams, and provides a number of water supply options for the South Platte and Arkansas river basins. These options include: conservation & efficiency, reuse, system integration, and new water supply projects. Among the supply projects listed in *Facing our Future*, the expansion of the Moffat project was listed as a project which our organizations [1] *Facing our Future: A Balanced Water Solution for Colorado*, Colorado Environmental Coalition, Trout Unlimited & Western Resource Advocates, 2005., http://www.ourcolorado.org/what-we-do/water/resources-links/facingourfuture-2_1ores.pdf	*The report conveys the vision of members of the Colorado conservation community for meeting the water needs of Colorado's Front Range for the next 25 years. The report outlines a three pronged strategy to conserve, protect, and restore our rivers and streams, and provides a number of water supply options for the South Platte and Arkansas river basins. These options include: conservation & efficiency, reuse, system integration, and new water supply projects. Among the supply projects listed in Facing our Future, the expansion of the Moffat project was listed as a project which our organizations saw some potential as a SMART Project.[2] In addition to mechanisms that would improve various water supply projects the organizations which produced the report pledged to work closely with water providers and conservation districts to "achieve higher levels of water conservation and efficiency, to ensure that the new or enhanced water projects described herein fulfill their potential to be smart, and to facilitate the subsequent approval and development of these projects"[3] With that commitment in mind our organizations have met with Denver Water staff a great deal over the past several years. We appreciate the opportunities we have had to discuss the Moffat project with Denver Water staff, and recognize the progress made in improving existing Denver Water operations as well as in developing creative solutions within the context of the Moffat project. FOOTNOTES: 1 Facing our Future: A Balanced Water Solution for Colorado, Colorado Environmental Coalition, Trout Unlimited & Western Resource Advocates, 2005., http://www.ourcolorado.org/what-we-do/water/resourceslinks/ facingourfuture-2_lores.pdf 2 Supra n. 1, page 38. 3 Supra n. 1, page 3 While we acknowledge the hard work done on the part of Denver Water, we also respectfully submit the following comments.*

Comment Information	Comment	Comments and Responses
	saw some potential as a SMART Project[2]. In addition to mechanisms that would improve various water supply projects the organizations which produced the report pledged to wok closely with water providers and conservation districts to "achieve higher levels of water conservation and efficiency, to ensure that the new or enhanced water projects described herein fulfill their potential to be smart, and to facilitate the subsequent approval and development of these projects"[3]. With that commitment in mind our organizations have met with Denver Water staff a great deal over the past several years. We appreciate the opportunities we have had to discuss the Moffat project with Denver Water staff, and recognize the progress made in improving existing Denver Water operations as well as in developing creative solutions within the context of the Moffat project. While we acknowledge the hard work done on the part of Denver Water, we also respectfully submit the following comments. We hope that these comments can be used to continue our dialogue with Denver Water, permitting agencies and others, as we move through the federal permitting processes. These comments address issues in the Moffat Collection System project DEIS in the context of the requirements of the National Environmental Policy Act and Section 404 of the Clean Water Act, and are grouped as follows: I. DEIS Organization & Content II. Purpose & Need Statement III. Conservation IV. Cumulative Impacts V. Conservation Pool Concept I. DEIS Organization & Content Due to the nature of the USACE website accessing the DEIS the DEIS has been quite difficult for many users, the website prompts security warnings. While users have been assured that the risks are limited, many members of our organizations had difficulty accessing the documents- and were uncomfortable with the warnings, causing some of them to forego utilizing the electronic format of the DEIS. Further the overall organization of the DEIS was confusing for readers and made it difficult to access. Overall the DEIS is confusing, making it difficult to read and respond to, information is not presented in an intuitive manner. Further technical documents are difficult to read and in some cases missing from the DEIS when it was initially released. As with many documents of this scope and scale, the DEIS is incredibly complex and technical. Because this document must serve as a complex planning document and as a permit application, the amount of technical information and writing makes it difficult for members of the public to read and understand. In some cases this has lead to confusion over what Denver Water is proposing through this DEIS. Plans for operation and mitigation are confusing when present and lacking when needed. Having this information would provide better access to the public in reading and commenting on the document. Specifically the technical modeling is highly complex, the PACSM model used in the DEIS and lacks clarity on how it is presented in the DEIS. Substantively, one thing we do know [2] *Supra n. 1, page 38.* [3] *Supra n. 1, page 3*	*We hope that these comments can be used to continue our dialogue with Denver Water, permitting agencies and others, as we move through the federal permitting processes. These comments address issues in the Moffat Collection System project DEIS in the context of the requirements of the National Environmental Policy Act and Section 404 of the Clean Water Act, and are grouped as follows: I. DEIS Organization & Content II. Purpose & Need Statement III. Conservation IV. Cumulative Impacts V. Conservation Pool Concept* **Response #796-13:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #796-14*** *(ID 4885)**:*** *DEIS Organization & Content Due to the nature of the USACE website accessing the DEIS the DEIS has been quite difficult for many users, the website prompts security warnings. While users have been assured that the risks are limited, many members of our organizations had difficulty accessing the documents- and were uncomfortable with the warnings, causing some of them to forego utilizing the electronic format of the DEIS. Further the overall organization of the DEIS was confusing for readers and made it difficult to access. Overall the DEIS is confusing, making it difficult to read and respond to, information is not presented in an intuitive manner. Further technical documents are difficult to read and in some cases missing from the DEIS when it was initially released. As with many documents of this scope and scale, the DEIS is incredibly complex and technical. Because this document must serve as a complex planning document and as a permit application, the amount of technical information and writing makes it difficult for members of the public to read and understand. In some cases this has led to*

Comment Information	Comment	Comments and Responses
		confusion over what Denver Water is proposing through this DEIS. Plans for operation and mitigation are confusing when present and lacking when needed. Having this information would provide better access to the public in reading and commenting on the document. **Response #796-14:** Corps Website The Corps' website is part of a U.S. Army website that contains special security measures, one of which is a Security Warning. The Corps communicated to commenters that it was safe to continue through the warning. Additionally, hard copies of the DEIS were available for review at the Public Hearings and at the following locations: • Denver Water • Corps Denver Regulatory Office • Arvada Library • Boulder County Main Library • Denver Central Library • Fraser Valley Library • Golden Library • Granby Library • Kremmling Library • Summit County Library North Branch • Summit County Library South Branch • Thornton Branch Library Technical Documents A conscious and significant effort was made by the Corps to include explanations and summaries of technical decisions in the main body of the DEIS and appendices, so that referrals to adjunctive technical reports might be kept to a minimum. Technical documents pertaining to geomorphology and aquatic biological resources were available for review at the

Comment Information	Comment	Comments and Responses
	about the PACSM model is that it is based upon historic data from the study period 1947 to 1991. Using such stale data to predict hydrology in 2016 and 2030 seems inadequate, especially in light of potential impacts of climate change on hydrology and water diversion patterns. Despite Denver Water's involvement in the Water Utility Climate Alliance and the Colorado Water Conservation Board's recent report called "Colorado Climate Change: A Synthesis to Support Water Resource Management and Adaptation," the DEIS fails to adequately address the potential impacts of climate change. If impacts from climate change are foreseeable, as the above-mentioned organizations have found, they should be carefully considered by the DEIS. As part of that consideration, the PACSM model should use the most recent climate and hydrologic data available, rather than use a data set that hasn't been updated in twenty years. In general the information produced by the PACSM model should be updated and presented in a clearer manner. II. Purpose and Need Statement *The purpose of the Moffat Collection System Project is to develop 18,000 acre feet per year of new annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers*[4] In the DEIS Denver Water outlines four key elements of its need to expand storage: reliability, vulnerability, flexibility and firm yield. Per the DEIS these elements are outlined in the context of Denver Water's Integrated Resource Plan (IRP). Because the Purpose and Need Statement has been written so narrowly, it leaves only a few options that can realistically meet the "needs" outlined in the DEIS, especially as each of these needs are treated as equal. The four needs bear equal weight under the DEIS, and as such drive the conclusion that the expansion of the Moffat Collection System is the only viable alternative. Yet there is little in the DEIS, if anything, to provide an independent assessment that these needs should all be equally weighted. Additionally, the purpose and need statement was developed more than 5 years ago, following closely on the heels of a severe drought. Since that time, Denver Water users have made significant shifts in how water is used. For example, demand from Denver Water customers was reduced by approximately 30% in the years following the 2002 IRP, and these changes appear to be permanent and not merely a "drought shadow". As a result, Denver Water has accelerated its conservation goals such that it intends to conserve 29,000 AF by 2016, which, as discussed below, is 13,000 AF more than the conservation estimate assumed in the DEIS. Because of these changed use patterns it seems clear that the assumptions and predictions upon which the purpose and need statement was based may no longer accurately reflect the needs of Denver Water. Indeed, these accelerated conservation savings alone could meet the vast majority of the needs identified in the DEIS. Further the DEIS reinforces what our organizations have heard in other forums, that customers of Denver Water are unwilling to further change their water usage. This is a flawed assumption, especially as it assumes that customers are more likely to accept the increasing costs of rates which will fund the Moffat project, than they are to accept periodic (once every 20-30 years) restrictions of outdoor watering. In addition [4] U.S. Army Corps of Engineers Omaha Division (USACE). 2009. Moffat Collection System Project Draft Environmental Impact Statement (DEIS), p. 2-1.	public hearings held in December 2009 and January 2010. In early February 2010, the Corps systematically uploaded batches of the actual Moffat DEIS references on the Project website as a digital index with links to the items posted. Copyrighted documents and large maps were not posted to the website, but were made available for review at the Corps Denver Regulatory Office at Chatfield Reservoir. EIS Organization The Corps made a substantial effort to organize the Project information in a logical and concise manner for the DEIS. The document begins with an Executive Summary that summarizes the No Action Alternative and action alternatives and associated impacts. DEIS Chapter 1 described the overall Purpose and Need for the Project along with some information on Denver Water operations. DEIS Chapter 2 contained detailed descriptions, maps, and figures of the No Action Alternative and action alternatives. DEIS Chapter 3 described the existing conditions of land- and water-based resources within the Project area. DEIS Chapter 4 evaluated and described potential impacts to resources within the Project area. DEIS Chapter 5 described cumulative effects and included a qualitative assessment on the impacts of climate change on water resource planning. DEIS Chapter 6 described agency and public involvement throughout the NEPA process. DEIS Chapter 7 provided a comprehensive list of references cited in the document. Where possible, information was summarized in tables or presented graphically for further clarity. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably

Comment Information	Comment	Comments and Responses
	to finding this assumption flawed, there is little information in the form of surveys or studies with customers available in the DEIS to clarify where this thinking comes from. Practical experience demonstrates to the contrary that Denver Water will impose restrictions and customers can and will reduce demand during times of water shortage. Overall the DEIS lacks detail on how conservation will occur under Denver Water's proposal, while listed as a source for half the water needed to meet their "gap" in 2030, there is little information about how this conservation will occur. That information should be reflected in the EIS process moving forward. We join the comments provided by WRA, regarding the Purpose & Need Statement in the DEIS.[5] The DEIS states that many concepts, specifically non-structural alternatives were eliminated from the No Action Alternative "because they did not meet the Purpose and Need"[6]. The No Action Alternative is by definition not supposed to meet the Purpose and Need; therefore, any No Action Alternative should not be constrained by the Purpose and Need. Numerous non-structural and institutional water management concepts were eliminated using screen 1A. Specifically this screen eliminated Alternative 302: Integration with Northern. This alternative would potentially meet a number of the needs (if not all) listed by Denver Water in the DEIS, especially in conjunction with other measures such as increased reuse, conservation or other alternatives that have been screened out. Because the No Action Alternative has been artificially narrowed by the requirement that all options meet the purpose and need, the DEIS is left with just two options: 1. use its strategic water reserve, or 2. enact more frequent water use restrictions. Not only are these not the only options available to Denver Water, but these two options are poorly described in the DEIS. III. Conservation On the whole, Denver Water deserves great credit for the leadership it has played on Conservation in Colorado and around the west. But, the DEIS lacks adequate information about what role conservation will play in meeting Denver's future needs. To their credit, Denver Water has developed numerous conservation methods, from rebates to public outreach, which are cost effective ways to conserve water. Many of these methods are organized clearly on Denver Water's website, in Denver Water's Tap-Smart Conservation Plan and additional emergency measures are outlined in Denver Water's Drought Response Plan and Denver Water staff have also been very willing to discuss their plans for conservation. Unfortunately, many of those measures and how they may continue to play a role in Denver Water's future are not adequately addressed in the DEIS. As outlined in the comments submitted by WRA[7] the use of "unrestricted demand" as a basis for establishing a need for the project is inconsistent with the sentiment of Denver Water Customers, and with ongoing and past operations of Denver Water. In times of shortage Denver Water and its customers have responded by curbing use significantly. [5] Western Resource Advocates, Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and associated § 404 Permit Application, Section 2 [6] USACE 2009 DEIS Chapter 2: Proposed Action and Alternatives, p. 2-84 [7] *Supra n. 5* and Section 3	foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #796-15*** *(ID 4886)**:*** *Specifically the technical modeling is highly complex, the PACSM model used in the DEIS and lacks clarity on how it is presented in the DEIS. Substantively, one thing we do know about the PACSM model is that it is based upon historic data from the study period 1947 to 1991. Using such stale data to predict hydrology in 2016 and 2030 seems inadequate, especially in light of potential impacts of climate change on hydrology and water diversion patterns. Despite Denver Water's involvement in the Water Utility Climate Alliance and the Colorado Water Conservation Board's recent report called "Colorado Climate Change: A Synthesis to Support Water Resource Management and Adaptation," the DEIS fails to adequately address the potential impacts of climate change. If impacts from climate change are foreseeable, as the above-mentioned organizations have found, they should be carefully considered by the DEIS. As part of that consideration, the PACSM model should use the most recent climate and hydrologic data available, rather than use a data set that hasn't been updated in twenty years. In general the information produced by the PACSM model should be updated and presented in a clearer manner.* **Response #796-15:** The model period used in the DEIS from 1947 through 1991 provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The characteristics of the study period including the number of years included, range of hydrologic conditions, and sequences of year-types is

Comment Information	Comment	Comments and Responses
	The 2002 drought provides a clear example of this response. While Denver Water staff has highlighted the 2002 drought as evidence of the system's vulnerability, on the contrary, the 2002 drought and the response (along with lessons learned) actually shows that Denver Water customers are willing and able to promptly respond in times of shortage, creating more elasticity in Denver's water supply. Per the DEIS, 16,000 AF of supply is expected to be realized through water conservation by 2030. However, as mentioned above, Denver Water actually expects to achieve these conservation savings, plus another 13,000 AF, by 2016. That is, the DEIS assumes only 16,000 AF of conservation by 2030, when it should assume 29,000 AF of conservation by 2016. Consistent with this expectation, Mayor Hickenlooper announced in the 2006 State of the City Address that the City and County of Denver, in partnership with Denver's Board of Water Commissioners, "intends to embark on the most aggressive water conservation program in the history of Colorado" seeking to achieve "a 22% reduction in system-wide water use in the next decade – accelerating their original 2050 goals by 35 years." In 2006, the Board followed through by setting a conservation goal to reduce water use to 165 gallons per person per day by 2016 by implementing the "Tap-Smart" Conservation Plan. This represents a 22% reduction from average pre-drought use of 211 gallons per person per day. Considering Denver's historical success and future commitments, Denver can and will meet conservation savings of 29,000 AF by 2016. [8]The DEIS should acknowledge this accelerated schedule for conservation and reevaluate the purpose and need for the Moffat project in the proper context. In addition to the accelerated conservations savings that were not adequately considered in the DEIS, the DEIS also fails to acknowledge the role of drought restrictions in narrowing the gap between supply and demand in times of shortage. The DEIS assumes that Denver Water will have to meet unrestricted demands in the future, totaling 420,000 AF at build-out (not including a 30,000 AF safety factor). This is a faulty assumption because the projected demand of 420,000 acre feet does not account for reductions in demand due to drought restrictions that will be imposed by Denver Water in dry years. Contrary to the assumption in the DEIS, Denver Water's build out demand during drought conditions will be less than 420,000 AF. For example, due to drought restrictions, Denver targeted a 30% reduction and actually achieved a 28.9% reduction in water use during the "moderate" drought of 2001 to 2004. If "moderate" drought conditions occur in 2050, according to Denver Water's Drought Response Plan, it will target a 30% reduction in demand, equivalent to approximately 126,000 AF.[9] Thus, during "moderate" drought conditions at build-out, the targeted demand will be 294,000 AF, not 420,000 acre feet. Given the above, the DEIS should include additional modeling including the imposition of "moderate" conservation measures (expected to provide a permanent water supply of 29,000 AF by 2016), and imposition of the drought response measures set forth in the Drought Response Plan. Contrary to the "unrestricted demand" scenario that the DEIS currently assumes, these are the expected future circumstances under which Denver Water will operate. Like the lack of detail and failure to acknowledge the pivotal role of conservation and drought response measures, there is also insufficient detail on how Denver Water might continue to utilize and expand its Reusable Water infrastructure to meet future demands. [8] Denver Water, Tap-Smart: The Conservation Master Plan, April 30, 2007. [9] See Denver Water, Drought Response Plan, Appendix to 2002 IRP.	important, whereas, the specific years in the study period are not relevant because the model relies on natural flows which remove man-made alterations to the water supply. A separate assessment of the 2002-2003 period was completed by Denver Water to determine whether inclusion of an extreme drought year would change conclusions regarding hydrologic effects due to the Moffat Project. Results of that assessment indicated that in drought years like 2002, Denver Water would not divert additional water due to the proposed Moffat Project because Denver Water would already divert the maximum amount physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. The current model study period also addresses the carry-over or recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The study period from 1947 through 1991 includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the existing study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period to include additional dry and wet years would not substantially change the predicted impacts to flows as a result of the proposed Moffat Project.

Comment Information	Comment	Comments and Responses
	Many of the alternatives around Reuse were screened out (See above section on purpose and need and No Action Alternative), however the market for Denver Water's reuse water continues to grow and will in all probability play an increased role in the future. Because of the lack of detail surrounding how the reuse operations may be utilized it is difficult to assess if Denver Water's reuse operations can truly help address the needs stated in the purpose and need. IV. Cumulative Impacts The statutory requirements of the National Environmental Policy Act (NEPA), Clean Water Act (CWA) and Council on Environmental Quality (CEQ) regulations (40 C.F.R. §1508) require that the DEIS include a full analysis of connected, cumulative and similar actions as well as direct, indirect, and cumulative impacts. However, as written the DEIS is misleading about what the impacts will be once this project is online. The DEIS does not consider what impacts development occurring between today and 2016 will have on the stream, and assumes that virtually no impact will be seen to the aquatic environment. This artificial baseline flow, thereby ignores the foreseeable likelihood that additional operations such as the Windy Gap Firming Project (WGFP) will come online before (or simultaneous to) the Moffat Project. Especially in light of the fact that the DEIS on the WGFP was released prior to the DEIS for the Moffat Project, the cumulative impacts of the two projects should be assessed under the assumption that the WGFP lies within that reasonably foreseeable future. Please refer to Trout Unlmited's comment letter specifically Section I regarding Cumulative Impacts. In addition to the lack of an analysis by the Corps, Denver Water, and the 3rd party consultant, the DEIS also fails to include existing assessments of the cumulative impacts of the Moffat Project and WGFP. Since 2006, Grand County has been working to complete the Grand County Stream Management Plan. This plan provides a range of flows which will support fisheries. This information was not included or considered by the DEIS. It is our understanding that since 2006, Grand County officials have offered to provide the Plan to Denver Water and had requested it be included in the DEIS, inclusion of this Plan or this type of analysis would have provided a better cumulative impact assessment. While this information is new, and came after portions of the DEIS were written, initial phases of the plan were completed well before the release of the Moffat DEIS. Many of the areas of concern around the cumulative impacts deal directly with flows. While the DEIS deals with both baseline flows and low flows (albeit insufficiently) there is little analysis of the impact to peak flows. Seasonal flushing flows, peak flows and channel maintenance flows have historically been vital to maintaining the health of the Fraser River. Despite the DEIS assumption that the majority of the Moffat Project diversions will occur during times of peak flow, during average to wet years, thereby cutting off the top of the hydrograph, , the DEIS fails to adequately address the project's impact on peak flows. A thorough assessment of the impacts on peak flows and associated mitigation measures should be included in the DEIS. Like peak flows the DEIS also fails to adequately assess the impacts on water quality. Were Denver Water operating in a vacuum on the Fraser River, this project might not result in additional water quality impacts. However, both the current operations on the Fraser and those proposed under this project operate in the same reality as other major transbasin diversions, and alongside local water supply efforts in the Fraser River Valley.	Climate change may alter temperature and precipitation in the upper Colorado River Basin. Potential environmental impacts from climate change and the CWCB's recent report, Colorado River Water Availability Study, are qualitatively evaluated as part of the cumulative effects evaluation discussed for applicable resources in FEIS Section 4.4. A qualitative assessment of potential impacts due to climate change is reasonable given the uncertainty with the data and methodologies typically used to quantitatively evaluate hydrologic effects associated with climate change. For example, Global Climate Change Models contain a significant amount of uncertainty and routinely fail to represent regional climate phenomena, including the southwestern U.S. monsoon. Both climate and hydrologic models use data sets that are interpolated across large spatial and temporal scales, which likely introduces significant uncertainty in terms of how accurately they predict future runoff, temperature and precipitation. ***Comment #796-16*** *(ID 4887)**:*** *Purpose and Need Statement The purpose of the Moffat Collection System Project is to develop 18,000 acre feet per year of new annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers [4] FOOTNOTE: 4 U.S. Army Corps of Engineers Omaha Division (USACE). 2009. Moffat Collection System Project Draft Environmental Impact Statement (DEIS), p. 2-1. In the DEIS Denver Water outlines four key elements of its need to expand storage: reliability, vulnerability, flexibility and firm yield. Per the DEIS these elements are outlined in the context of Denver Water's Integrated Resource Plan (IRP). Because the Purpose and Need Statement has been written so narrowly, it leaves only a few options that can realistically meet the "needs" outlined in the DEIS, especially as each of these needs are treated*

Comment Information	Comment	Comments and Responses
	All of these projects have cumulative effects on the water quality in the Fraser River. The DEIS fails to properly assess all impacts related to water quality. Increased water temperatures, sedimentation, and increased concentration of nutrients in the Fraser River should all be assessed further in the DEIS. On the whole, water quality issues are not sufficiently analyzed. The river system faces three main quality concerns: (1) high concentrations of nutrients and toxins, (2) increasing temperatures, and (3) increasingly effluent dependent stream flows. These three areas present unique challenges for the Upper Colorado and tributaries such as the Fraser River and the Williams Fork, and all are directly related to the reduction of flows. The DEIS should include a stronger assessment of water quality, including additional data from stations located further downstream of the project. The majority of sampling sites for the data referred to in the DEIS are located fairly high up in the system, with the lowest collection point at Tabernash. Because many of the water quality impacts of this project are shifted to downstream users as a result of diminished flows, additional sampling sites should be included downstream. Additionally, as outlined in the Cumulative Impacts section of this document, a more robust analysis of how cumulative impacts of projects relate to water quality is needed. While the project does not include a clear assessment of the cumulative impacts outlined above, the DEIS does discuss collaborative negotiations between Denver Water and other entities: *In addition to the proposed mitigation measures, Denver Water is pursuing additional environmental enhancement opportunities separate from, but in some instances parallel to, the EIS process that will provide additional benefits to the environment and other West and East Slope Interests.*[10] As stated these conversations are in some instances parallel to the DEIS and will potentially provide additional benefits. These conversations and opportunities should be included in the DEIS, and be subject to public review and comment. Because few details are known about many of these potential opportunities, members of the public are not able to review them and discuss whether they are merely "enhancement" efforts or if they fit into "Mitigation". V. Recreation Recreation is not only a chief reason that hundreds of thousands flock to Colorado on an annual basis, it is a key driver to many of our local communities. On the West Slope impacts to recreation center around reduced flows. Lower flows will likely lead to a reduction in most recreation activities including fishing, kayaking and rafting. Groups such as Colorado Whitewater Association and several individual recreationists voiced concerns at the Summit and Grand County meetings regarding the reduced recreational activities. Recreationists also provided comments at the Front Range meetings in Boulder and Denver. The predominant concerns voiced by those individuals in these forums centered on impacts to the stream reaches above Gross Reservoir. Concerns have been raised that the impacts outlined in the DEIS fail to assess impacts to the stretch of South Boulder Creek, specifically the lower end of a popular recreational run above the reservoir which is home to a rapid known as the RIMBY (Right In My Backyard) rapid. This section is a Class [10] USACE 2009 DEIS Executive Summary, p. ES-48	*as equal. The four needs bear equal weight under the DEIS, and as such drive the conclusion that the expansion of the Moffat Collection System is the only viable alternative. Yet there is little in the DEIS, if anything, to provide an independent assessment that these needs should all be equally weighted.* **Response #796-16:** The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the issues would jeopardize Denver Water's ability to meet projected demand needs. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations.

Comment Information	Comment	Comments and Responses
	IV and is renowned on the Front Range as one of the few challenging runs for expert boaters, and is especially attractive because of the close proximity to the metro area. Several kayakers have raised concerns that the expansion of Gross Reservoir will lead to the inundation of this section, and that the impacts of that inundation are not adequately addressed in the DEIS. Finally, we have also heard from Denver Water Staff with regard to the Conservation Pool concept (discussed below). Should this pool become a reality, the CAC recognizes that recreational benefits might be realized as a result of increased flows on South Boulder Creek below Gross Reservoir. VI. Conservation Pool Our organizations appreciate the creativity put forth by Denver Water Staff in developing the concept of a Conservation Pool. We agree that when possible our water supply systems should be utilized in a manner by which we can realize multiple benefits. This effort could provide additional benefits to both recreation and fisheries downstream of the reservoir. However, this concept should not be motivation to move the project forward, but rather a benefit to be realized should the project move forward after addressing other impacts. VII. Climate Change The DEIS lacks an assessment of what the impacts of climate change might be on this project. From our conversations with Denver Water we know that they are working to actively follow as many as 15 climate change models. We have heard from them that those models lack agreement on precipitation forecasts, however it is rational to assume that the Upper Colorado River will see some impacts under climate change. Precipitation, temperatures (both ambient and aquatic) may likely rise, and other natural uses of water are likely to suffer. It is incredibly important that the DEIS accurately describes how the proposed alternatives will be impacted by and contribute to climate change.	***Comment #796-17*** *(ID 4888)**:*** *Additionally, the purpose and need statement was developed more than 5 years ago, following closely on the heels of a severe drought. Since that time, Denver Water users have made significant shifts in how water is used. For example, demand from Denver Water customers was reduced by approximately 30% in the years following the 2002 IRP, and these changes appear to be permanent and not merely a "drought shadow". As a result, Denver Water has accelerated its conservation goals such that it intends to conserve 29,000 AF by 2016, which, as discussed below, is 13,000 AF more than the conservation estimate assumed in the DEIS. Because of these changed use patterns it seems clear that the assumptions and predictions upon which the purpose and need statement was based may no longer accurately reflect the needs of Denver Water. Indeed, these accelerated conservation savings alone could meet the vast majority of the needs identified in the DEIS. Further the DEIS reinforces what our organizations have heard in other forums, that customers of Denver Water are unwilling to further change their water usage. This is a flawed assumption, especially as it assumes that customers are more likely to accept the increasing costs of rates which will fund the Moffat project, than they are to accept periodic (once every 20-30 years) restrictions of outdoor watering. In addition to finding this assumption flawed, there is little information in the form of surveys or studies with customers available in the DEIS to clarify where this thinking comes from. Practical experience demonstrates to the contrary that Denver Water will impose restrictions and customers can and will reduce demand during times of water shortage.* **Response #796-17:** In 2010, Denver Water updated their water demand projections based on the most recent population and

Comment Information	Comment	Comments and Responses
	Conclusion Our organizations have spent an extensive amount of time over the past several years following this project. Our collective members hail from all corners of our state, many live in communities who will deal with the front line impacts of this project, while many others live in urban areas driving the need for new development. We are not advocating through our comments that the USACE should deny this permit. We are however asking that the above listed issues are adequately addressed through the USACE's response to public comments in the Final EIS. Should the project move forward, we ask that the permit conditions are clear and reflect the needs not only of Denver Water ratepayers, but of their neighbors statewide as well. Until all impacts of the project have been adequately assessed and addressed our organizations cannot provide additional conclusions. Sincerely, for Becky Long, Water Caucus Coordinator Colorado Environmental Coalition Drew Beckwith, Water Policy Analyst Western Resource Advocates Adam Bergeron The Nature Conservancy Megan Mueller, Staff Biologist Center for Native Ecosystems Meghan Maloney, River Campaign Director San Juan Citizens Alliance Gary Wockner Clean Water Action Mark Easter Save the Poudre, Poudre Waterkeepers Steve Glazer, Water and Aquatic Resources Committee, chairs Sierra Club- Rocky Mountain Chapter	demographic projections available from the DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. Even with the additional conservation measures undertaken by Denver Water and shown in DEIS and FEIS Table 1-1, Denver Water is still projecting a

Comment Information	Comment	Comments and Responses
	Appendix I: **Colorado Environmental Coalition (CEC):** Founded in 1965, the Colorado Environmental Coalition has worked to unite Coloradans to protect our natural heritage and quality of life. With over 4,000 members and 85 partner groups from across the state, CEC is dedicated to protecting Colorado's wild places, advocating for renewable energy policies, promoting responsible water initiatives, leading the way in securing mass transit and developing sensible growth plans, and providing technology expertise to partner non-profits. **Western Resource Advocates (WRA):** A regional nonprofit organization dedicated to protecting the Interior West's land, air, and water. We promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for future generations. We meet our goals in collaboration with other environmental and community groups, and by developing solutions appropriate to the environmental, economic and cultural framework of the southwestern United States. **The Nature Conservancy (TNC):** TNC is an international, nonprofit organization dedicated to the conservation of biological diversity. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Conservation work, based on sound science and strong partnerships with public and private landowners, is carried out in all 50 states and in 27 countries. TNC has helped conserve nearly 15 million acres of land in the U.S> and Canada and more than 102 Million acres with partner organizations globally. TNC has protected over 600,000 acres in Colorado. **Center for Native Ecosystems (CNE):** CNE is a nonprofit advocacy organization formed in 1999 dedicated to conserving and recovering native and naturally functioning ecosystems in the Greater Southern Rockies and Plains. We value all of the ways that humans benefit from protecting native biological diversity, including; clean water and fresh air, healthy human communities, sources of medicines and foods, and recreational opportunities. We also passionately believe that all species and their natural communities have the right to exist and thrive. CNE uses the best available science to forward its mission through participation in policy, administrative processes, legal action, public outreach and organizing, and education. We have approximately 300 members throughout the region and elsewhere. **San Juan Citizens Alliance (SJCA):** Founded in 1986, the San Juan Citizens Alliance is a grass roots organization dedicated to social, economic and environmental justice in the greater San Juan Basin. We organize San Juan Basin residents to protect our water and air, our public lands, our rural character, and our unique quality of life while embracing the diversity of our region's people, economy and ecology. **Clean Water Action (CWA):** Clean Water Action is an organization of 1.4 million members working to empower people to take action to protect America's waters, build healthy communities and make democracy work for all of us. For 36 years Clean Water Action has succeeded in winning some of the nation's most important environmental protections through grassroots organizing, expert policy research and political advocacy focused on holding elected officials accountable to the public.	supply shortfall based upon projected population growth studies completed by DRCOG, DOLA and other agencies. ***Comment #796-18*** *(ID 4889)**:*** *Overall the DEIS lacks detail on how conservation will occur under Denver Water's proposal, while listed as a source for half the water needed to meet their "gap" in 2030, there is little information about how this conservation will occur. That information should be reflected in the EIS process moving forward. We join the comments provided by WRA, regarding the Purpose & Need Statement in the DEIS. [5] FOOTNOTE: 5 Western Resource Advocates, Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and associated § 404 Permit Application, Section 2.* **Response #796-18:** DEIS and FEIS Section 1.4.1.2 describes conservation as a part of the basis for the Project Purpose and Need. Appendix A contains Denver Water's detailed conservation plan as part of the technical memoranda supporting the Purpose and Need. ***Comment #796-19*** *(ID 4890)**:*** *The DEIS states that many concepts, specifically non-structural alternatives were eliminated from the No Action Alternative "because they did not meet the Purpose and Need". [6] The No Action Alternative is by definition not supposed to meet the Purpose and Need; therefore, any No Action Alternative should not be constrained by the Purpose and Need. Numerous non-structural and institutional water management concepts were eliminated using screen 1A. Specifically this screen eliminated Alternative 302: Integration with Northern. This alternative would potentially meet a number of the needs (if not all) listed by Denver Water in the DEIS, especially in*

Comment Information	Comment	Comments and Responses
	Save the Poudre, Poudre Waterkeeper (STP): Save the Poudre is a coalition of 17 national, statewide and regional groups whose mission is to protect and restore the Cache la Poudre River of northern Colorado. **The Sierra Club- Rocky Mountain Chapter (RMC):** The Sierra Club, who's mission is to explore, enjoy and protect our natural resources, has over 630,000 members nationwide and over 18,000 members in Colorado (The Rocky Mountain Chapter). Many of our members live and recreate in the areas affected by the Moffat project and are rate payers of Denver Water. We have an interest in making sure this proposal is adequately evaluated and impacts recognized and mitigated. cc: U.S. Environmental Protection Agency, Region VIII Colorado Department of Natural Resources Colorado Division of Wildlife Colorado Wildlife Commission Colorado Water Conservation Board U.S. Senator Udall U.S. Senator Bennet U.S. Representative Salazar U.S. Representative Polis State Senator Al White State Representative Randy Bumbgardner Denver Mayor John Hickenlooper Denver Water Board Grand County Board of County Commissioners Summit County Board of County Commissioners Colorado River Water Conservation District Board Northwest Colorado Council of Governments	*conjunction with other measures such as increased reuse, conservation or other alternatives that have been screened out. FOOTNOTE: 6 USACE 2009 DEIS Chapter 2: Proposed Action and Alternatives, p. 2-84.* **Response #796-19:** Alternative 302 was screened out due the requirement of a Congressional Action, which would be time consuming and likely exceed the time allocated for planning and permitting. ***Comment #796-20*** *(ID 4891)**:*** *Because the No Action Alternative has been artificially narrowed by the requirement that all options meet the purpose and need, the DEIS is left with just two options: 1. use its strategic water reserve, or 2. enact more frequent water use restrictions. Not only are these not the only options available to Denver Water, but these two options are poorly described in the DEIS.* **Response #796-20:** The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth

Comment Information	Comment	Comments and Responses
		would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. ***Comment #796-21*** *(ID 4892)**:*** *Conservation On the whole, Denver Water deserves great credit for the leadership it has played on Conservation in Colorado and around the west. But, the DEIS lacks adequate information about what role conservation will play in meeting Denver's future needs. To their credit, Denver Water has developed numerous conservation methods, from rebates to public outreach, which are cost effective ways to conserve water. Many of these methods are organized clearly on Denver Water's website, in Denver Water's Tap-Smart Conservation Plan and additional emergency measures are outlined in Denver Water's Drought Response Plan and Denver Water staff have also been very willing to discuss their plans for conservation. Unfortunately, many of those measures and how they may continue to play a role in Denver Water's future are not adequately addressed in the DEIS. As outlined in the comments submitted by WRA [7] the use of "unrestricted demand" as a basis for establishing a need for the project is inconsistent with the sentiment of Denver Water Customers, and with ongoing and past operations of Denver Water. In times of shortage Denver Water and its customers have responded by curbing use significantly. FOOTNOTE: 7 Supra n. 5 and Section 3 The 2002 drought provides a clear example of this response. While Denver Water staff has highlighted the 2002 drought as evidence of the system's vulnerability, on the contrary, the 2002 drought and the response (along with lessons*

Comment Information	Comment	Comments and Responses
		learned) actually shows that Denver Water customers are willing and able to promptly respond in times of shortage, creating more elasticity in Denver's water supply. Per the DEIS, 16,000 AF of supply is expected to be realized through water conservation by 2030. However, as mentioned above, Denver Water actually expects to achieve these conservation savings, plus another 13,000 AF, by 2016. That is, the DEIS assumes only 16,000 AF of conservation by 2030, when it should assume 29,000 AF of conservation by 2016. Consistent with this expectation, Mayor Hickenlooper announced in the 2006 State of the City Address that the City and County of Denver, in partnership with Denver's Board of Water Commissioners, "intends to embark on the most aggressive water conservation program in the history of Colorado" seeking to achieve "a 22% reduction in system-wide water use in the next decade – accelerating their original 2050 goals by 35 years." In 2006, the Board followed through by setting a conservation goal to reduce water use to 165 gallons per person per day by 2016 by implementing the "Tap-Smart" Conservation Plan. This represents a 22% reduction from average pre-drought use of 211 gallons per person per day. Considering Denver's historical success and future commitments, Denver can and will meet conservation savings of 29,000 AF by 2016. [8]The DEIS should acknowledge this accelerated schedule for conservation and reevaluate the purpose and need for the Moffat project in the proper context. FOOTNOTE: 8 Denver Water, Tap-Smart: The Conservation Master Plan, April 30, 2007. **Response #796-21:** Please see the response to Comment ID 4889. Denver Water included new water supply projects, cooperative agreements, reuse, and conservation savings when calculating its total water supply (FEIS Table 1-1).

Comment Information	Comment	Comments and Responses
		As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Any accelerated savings by Denver Water's conservation program is placed in its Strategic Water Reserve (SWR). By placing the accelerated savings in the SWR, Denver Water will be better prepared for system emergencies and other factors which could reduce its water supply. Additionally, Denver Water wants to make sure the savings from its water conservation program are in place for the long term.

Comment Information	Comment	Comments and Responses
		Comment #796-3 *(ID 4874)**:*** *In addition to the accelerated conservations savings that were not adequately considered in the DEIS, the DEIS also fails to acknowledge the role of drought restrictions in narrowing the gap between supply and demand in times of shortage. The DEIS assumes that Denver Water will have to meet unrestricted demands in the future, totaling 420,000 AF at build-out (not including a 30,000 AF safety factor). This is a faulty assumption because the projected demand of 420,000 acre feet does not account for reductions in demand due to drought restrictions that will be imposed by Denver Water in dry years. Contrary to the assumption in the DEIS, Denver Water's build out demand during drought conditions will be less than 420,000 AF. For example, due to drought restrictions, Denver targeted a 30% reduction and actually achieved a 28.9% reduction in water use during the "moderate" drought of 2001 to 2004. If "moderate" drought conditions occur in 2050, according to Denver Water's Drought Response Plan, it will target a 30% reduction in demand, equivalent to approximately 126,000 AF. [9]Thus, during "moderate" drought conditions at build-out, the targeted demand will be 294,000 AF, not 420,000 acre feet. FOOTNOTE: 9 See Denver Water, Drought Response Plan, Appendix to 2002 IRP. Given the above, the DEIS should include additional modeling including the imposition of "moderate" conservation measures (expected to provide a permanent water supply of 29,000 AF by 2016), and imposition of the drought response measures set forth in the Drought Response Plan. Contrary to the "unrestricted demand" scenario that the DEIS currently assumes, these are the expected future circumstances under which Denver Water will operate.* **Response #796-3:** Denver Water included new water supply projects, cooperative agreements, reuse, and conservation

Comment Information	Comment	Comments and Responses
		savings when calculating its total water supply (FEIS Table 1-1). As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand will be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF will be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #796-4*** *(ID 4875)**:*** *Like the lack of detail and failure to acknowledge the pivotal role of conservation and drought response measures, there is also insufficient detail on how Denver Water might continue to utilize and expand its Reusable Water infrastructure to meet future demands. Many of the alternatives around Reuse were screened out (See above section on purpose*

Comment Information	Comment	Comments and Responses
		and need and No Action Alternative), however the market for Denver Water's reuse water continues to grow and will in all probability play an increased role in the future. Because of the lack of detail surrounding how the reuse operations may be utilized it is difficult to assess if Denver Water's reuse operations can truly help address the needs stated in the purpose and need. **Response #796-4:** All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility).

Comment Information	Comment	Comments and Responses
		Denver Water is in the process of completing a Recycling Project that will use reusable supplies to meet an annual demand of 17,500 AF. Denver Water is also in the process of constructing 30,000 AF of gravel pit reservoir storage downstream of Denver. The storage facilities will be used to manage reusable supplies by storing excess reusable supplies in time of surplus, and releasing the stored reusable supplies at times of shortage. The gravel pits will be used for the following purposes: 1. Perform exchanges to upstream facilities. In an exchange, reusable water is added to a stream at a downstream location to enable diversion of a like amount of water at an upstream location. 2. Deliver the reusable water to the Recycling Plant, treat the water, and distribute it for non-potable uses. The recycling plant requires gravel pit storage to supply reusable water to the Recycle Plant, via exchange, when reusable water is not available at Metro WWTP or Bi-City. 3. Deliver an annual supply of 5,000 AF of reusable water to South Adams County Water and Sanitation District (per agreements). 4. Use reusable water to augment raw water systems in the Denver Metropolitan area (e.g., augment the wells used to supply water to Denver parks). The reusable water needed to support these projects was included in the PACSM simulations and therefore less reusable water is available for a new project. These projects were not on-line in from 1998 to 2008 as noted in the comment, but once these projects are completed, the average annual available unused reusable effluent is estimated to be approximately 7,600 AF. This is an example of why it is

Comment Information	Comment	Comments and Responses
		inappropriate to simply rely on historical values to draw conclusions. As shown in the DEIS Table 2-9, the estimated 7,600 AF of average annual unused reusable water ranges from to zero AF some years, to as high as approximately 37,500 AF in one year. The highest year of unused return flows does occur in a dry year, but many other dry years and periods have less than the 6,700 AF average. Project alternatives that included 5,000 AF of yield using the reusable return flows were analyzed. Alternative that included more than 5,000 AF would have been even more expensive on a cost per AF basis. Also note that with PACSM, Denver Water's unused reusable return flows are used and reused to extinction. On average, Denver Water has 8,000 AF of excess reusable effluent – this is the amount used when developing Alternatives 8a and 10a for the DEIS. ***Comment #796-5*** *(ID 4876)**:*** *Cumulative Impacts The statutory requirements of the National Environmental Policy Act (NEPA), Clean Water Act (CWA) and Council on Environmental Quality (CEQ) regulations (40 C.F.R. §1508) require that the DEIS include a full analysis of connected, cumulative and similar actions as well as direct, indirect, and cumulative impacts. However, as written the DEIS is misleading about what the impacts will be once this project is online. The DEIS does not consider what impacts development occurring between today and 2016 will have on the stream, and assumes that virtually no impact will be seen to the aquatic environment. This artificial baseline flow, thereby ignores the foreseeable likelihood that additional operations such as the Windy Gap Firming Project (WGFP) will come online before (or simultaneous to) the Moffat Project. Especially in light of the fact that the DEIS on the WGFP was released prior to the DEIS for the Moffat Project, the*

Comment Information	Comment	Comments and Responses
		cumulative impacts of the two projects should be assessed under the assumption that the WGFP lies within that reasonably foreseeable future. Please refer to Trout Unlimited's comment letter specifically Section I regarding Cumulative Impacts. In addition to the lack of an analysis by the Corps, Denver Water, and the 3rd party consultant, the DEIS also fails to include existing assessments of the cumulative impacts of the Moffat Project and WGFP. Since 2006, Grand County has been working to complete the Grand County Stream Management Plan. This plan provides a range of flows which will support fisheries. This information was not included or considered by the DEIS. It is our understanding that since 2006, Grand County officials have offered to provide the Plan to Denver Water and had requested it be included in the DEIS, inclusion of this Plan or this type of analysis would have provided a better cumulative impact assessment. While this information is new, and came after portions of the DEIS were written, initial phases of the plan were completed well before the release of the Moffat DEIS. **Response #796-5:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor.

Comment Information	Comment	Comments and Responses
		Furthermore, the EIS does consider growth in Grand County and other communities within the Project area. A description of future growth can be found in FEIS Section 4.6.19. The GCSMP was reviewed and incorporated into the FEIS. The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate. ***Comment #796-6*** *(ID 4877)**:*** *Many of the areas of concern around the cumulative impacts deal directly with flows. While the DEIS deals with both baseline flows and low flows (albeit insufficiently) there is little analysis of the impact to peak flows. Seasonal flushing flows, peak flows and channel maintenance flows have historically been vital to maintaining the health of the Fraser River. Despite the DEIS assumption that the majority of the Moffat Project diversions will occur during times of peak flow, during average to wet years, thereby cutting off the top of the hydrograph, , the DEIS fails to adequately address the project's impact on peak flows. A thorough assessment of the impacts on peak flows and associated mitigation measures should be included in the DEIS.* **Response #796-6:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the

Comment Information	Comment	Comments and Responses
		Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA

Comment Information	Comment	Comments and Responses
		was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that

Comment Information	Comment	Comments and Responses
		could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. ***Comment #796-7*** *(ID 4878)**:*** *Like peak flows the DEIS also fails to adequately assess the impacts on water quality. Were Denver Water operating in a vacuum on the Fraser River, this project might not result in additional water quality impacts. However, both the current operations on the Fraser and those proposed under this project operate in the same reality as other major transbasin diversions, and alongside local water supply efforts in the Fraser River Valley. All of these projects have cumulative effects on the water quality in the Fraser River. The DEIS fails to properly assess all impacts related to water quality. Increased water temperatures, sedimentation, and increased concentration of nutrients in the Fraser River should all be assessed further in the DEIS. On the whole, water quality issues are not sufficiently analyzed. The river system faces three main quality concerns: (1) high concentrations of nutrients and toxins, (2) increasing temperatures, and (3) increasingly effluent dependent stream flows. These three areas present unique challenges for the Upper Colorado and tributaries such as the Fraser River and the Williams Fork, and all are directly related to the reduction of flows. The DEIS should include a stronger assessment of water quality, including additional data from stations located further downstream of the project. The majority of sampling sites for the data referred to in the DEIS are located fairly high up in the system, with the lowest collection point at Tabernash. Because many of the water quality impacts of this project are shifted to downstream users as a result of diminished flows, additional sampling sites should be included downstream. Additionally, as outlined in the Cumulative Impacts section of this document, a more robust analysis of how cumulative impacts of projects relate to water quality is needed.*

Comment Information	Comment	Comments and Responses
		Response #796-7: A more detailed evaluation of temperature analysis and nutrients on the Fraser River was performed and is presented in FEIS Sections 4.6.2 and 5.2. ***Comment #796-8*** *(ID 4879)**:*** *While the project does not include a clear assessment of the cumulative impacts outlined above, the DEIS does discuss collaborative negotiations between Denver Water and other entities: In addition to the proposed mitigation measures, Denver Water is pursuing additional environmental enhancement opportunities separate from, but in some instances parallel to, the EIS process that will provide additional benefits to the environment and other West and East Slope Interests. [10] FOOTNOTE: 10 USACE 2009 DEIS Executive Summary, p. ES-48 As stated these conversations are in some instances parallel to the DEIS and will potentially provide additional benefits. These conversations and opportunities should be included in the DEIS, and be subject to public review and comment. Because few details are known about many of these potential opportunities, members of the public are not able to review them and discuss whether they are merely "enhancement" efforts or if they fit into "Mitigation".* **Response #796-8:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a BO. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife

Comment Information	Comment	Comments and Responses
		Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #796-9*** *(ID 4880)**:*** *Recreation Recreation is not only a chief reason that hundreds of thousands flock to Colorado on an annual basis, it is a key driver to many of our local communities. On the West Slope impacts to recreation center around reduced flows. Lower flows will likely lead to a reduction in most recreation activities including fishing, kayaking and rafting. Groups such as Colorado Whitewater Association and several individual recreationists voiced concerns at the Summit and Grand County meetings regarding the reduced recreational activities. Recreationists also provided comments at the Front Range meetings in Boulder and Denver. The predominant concerns voiced by those individuals in these forums centered on impacts to the stream reaches above Gross Reservoir. Concerns have been raised that the impacts outlined in the DEIS fail to assess impacts to the stretch of South Boulder Creek, specifically the lower end of a popular recreational run above the reservoir which is home to a rapid known as the RIMBY (Right In My Backyard) rapid. This section is a Class IV and is renowned on the Front Range as one of the few challenging runs for expert boaters, and is especially attractive because of the close proximity to the metro area. Several kayakers have raised concerns that the expansion of Gross Reservoir will lead to the inundation of this section, and that the*

Comment Information	Comment	Comments and Responses
		impacts of that inundation are not adequately addressed in the DEIS. **Response #796-9:** DEIS Section 4.13 discloses potential impacts to boating as a result of increased flows on the upper segment of South Boulder Creek. The fact that a portion of this segment would be affected by inundation was added to FEIS Section 5.15.1.2. ***Comment #796-10*** *(ID 4881)**:*** *Finally, we have also heard from Denver Water Staff with regard to the Conservation Pool concept (discussed below). Should this pool become a reality, the CAC recognizes that recreational benefits might be realized as a result of increased flows on South Boulder Creek below Gross Reservoir.* **Response #796-10:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #796-11*** *(ID 4882)**:*** *Conservation Pool Our organizations appreciate the creativity put forth by Denver Water Staff in developing the concept of a Conservation Pool. We agree that when possible our water supply systems should be utilized in a manner by which we can realize multiple benefits. This effort could provide additional benefits to both recreation and fisheries downstream of the reservoir. However, this concept should not be motivation to move the project forward, but rather a benefit to be realized should the project move forward after addressing other impacts.*

Comment Information	Comment	Comments and Responses
		Response #796-11: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #796-12*** *(ID 4883)**:*** *Climate Change The DEIS lacks an assessment of what the impacts of climate change might be on this project. From our conversations with Denver Water we know that they are working to actively follow as many as 15 climate change models. We have heard from them that those models lack agreement on precipitation forecasts, however it is rational to assume that the Upper Colorado River will see some impacts under climate change. Precipitation, temperatures (both ambient and aquatic) may likely rise, and other natural uses of water are likely to suffer. It is incredibly important that the DEIS accurately describes how the proposed alternatives will be impacted by and contribute to climate change.* **Response #796-12:** DEIS Section 5.4 addressed climate change and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would

Comment Information	Comment	Comments and Responses
		decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation will increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term

Comment Information	Comment	Comments and Responses
		monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated FEIS Section 4.4 with more recent technical documentation, including the planning document titled, Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). NEPA does not prescribe methodology or provide further guidance on determining direct, indirect, and cumulative effects of a project. The concept of a systematic interdisciplinary approach is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate to provide defensible information to support a Corps' decision on this Project. ***Comment #796-1*** *(ID 4872)**:*** *Conclusion Our organizations have spent an extensive amount of time over the past several years following this project. Our collective members hail from all corners of our state, many live in communities who will deal with the front line impacts of this project,*

Comment Information	Comment	Comments and Responses
		while many others live in urban areas driving the need for new development. We are not advocating through our comments that the USACE should deny this permit. We are however asking that the above listed issues are adequately addressed through the USACE's response to public comments in the Final EIS. Should the project move forward, we ask that the permit conditions are clear and reflect the needs not only of Denver Water ratepayers, but of their neighbors statewide as well. Until all impacts of the project have been adequately assessed and addressed our organizations cannot provide additional conclusions. **Response #796-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #796-2*** *(ID 4873)**:*** *Appendix I: Colorado Environmental Coalition (CEC): Founded in 1965, the Colorado Environmental Coalition has worked to unite Coloradans to protect our natural heritage and quality of life. With over 4,000 members and 85 partner groups from across the state, CEC is dedicated to protecting Colorado's wild places, advocating for renewable energy policies, promoting responsible water initiatives, leading the way in securing mass transit and developing sensible growth plans, and providing technology expertise to partner non-profits. Western Resource Advocates (WRA): A regional nonprofit organization dedicated to protecting the Interior West's land, air, and water. We promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for future generations. We meet our goals in collaboration with other environmental and community groups, and by developing solutions appropriate to the environmental, economic and cultural framework of*

Comment Information	Comment	Comments and Responses
		the southwestern United States. The Nature Conservancy (TNC): TNC is an international, nonprofit organization dedicated to the conservation of biological diversity. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Conservation work, based on sound science and strong partnerships with public and private landowners, is carried out in all 50 states and in 27 countries. TNC has helped conserve nearly 15 million acres of land in the U.S. and Canada and more than 102 Million acres with partner organizations globally. TNC has protected over 600,000 acres in Colorado. Center for Native Ecosystems (CNE): CNE is a nonprofit advocacy organization formed in 1999 dedicated to conserving and recovering native and naturally functioning ecosystems in the Greater Southern Rockies and Plains. We value all of the ways that humans benefit from protecting native biological diversity, including; clean water and fresh air, healthy human communities, sources of medicines and foods, and recreational opportunities. We also passionately believe that all species and their natural communities have the right to exist and thrive. CNE uses the best available science to forward its mission through participation in policy, administrative processes, legal action, public outreach and organizing, and education. We have approximately 300 members throughout the region and elsewhere. San Juan Citizens Alliance (SJCA): Founded in 1986, the San Juan Citizens Alliance is a grass roots organization dedicated to social, economic and environmental justice in the greater San Juan Basin. We organize San Juan Basin residents to protect our water and air, our public lands, our rural character, and our unique quality of life while embracing the diversity of our region's people, economy and ecology. Clean Water Action (CWA): Clean Water Action is an organization of 1.4

Comment Information	Comment	Comments and Responses
		million members working to empower people to take action to protect America's waters, build healthy communities and make democracy work for all of us. For 36 years Clean Water Action has succeeded in winning some of the nation's most important environmental protections through grassroots organizing, expert policy research and political advocacy focused on holding elected officials accountable to the public. Save the Poudre, Poudre Waterkeeper (STP): Save the Poudre is a coalition of 17 national, statewide and regional groups whose mission is to protect and restore the Cache la Poudre River of northern Colorado. The Sierra Club- Rocky Mountain Chapter (RMC): The Sierra Club, whose mission is to explore, enjoy and protect our natural resources, has over 630,000 members nationwide and over 18,000 members in Colorado (The Rocky Mountain Chapter). Many of our members live and recreate in the areas affected by the Moffat project and are rate payers of Denver Water. We have an interest in making sure this proposal is adequately evaluated and impacts recognized and mitigated. **Response #796-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #797 Becky Long, Water Caucus Coordinator Colorado Environmental Coalition, and Chair, Denver Water Citizen Advisory Committee 1536 Wynkoop Street, #5C Denver, CO 80202	From: Becky Long [mailto:becky@ceeenviro.org] Sent: Wednesday, March 17, 2010 1:15 PM To: MOFFAT.EIS@usace.army.mil Subject: Permit Application NOW-2002080762-DEN comments from Denver Water Citizen Advisory Committee Dear Mr. Franklin, Attached please find comments on the Moffat Collection System Project from the Denver Water Citizen Advisory Committee. A hard copy of these comments will follow by mail. Acknowledgment of the receipt of these comments would be appreciated. Thank you, Becky Long Water Caucus Coordinator Colorado Environmental Coalition <http://www.ourcolorado.org> 1536 Wynkoop St. #5C Denver, CO 80202 Becky@ceeenviro.org 303.405.6714 303.534.7063- fax CC: Denver Water Board & Denver Water Citizen Advisory Committee - 031710DWCAC Moffat DEIS Comments.pdf	***Comment #797-1*** *(ID 4893)**:*** *The Denver Water Citizen Advisory Committee (CAC), respectfully submits the following comments on the Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and Section 404 Permit, collectively referred to as the "Moffat" project in this document. The CAC is a 10-member volunteer committee that meets monthly to advise Denver Water staff and the Board of Water Commissioners (Board) on a variety of issues while encouraging and coordinating public participation in the water department's policy-making process. We are comprised of 10 members representing an array of interests in the Denver Water service area, including Denver customers, suburban customers, home builders, environmental interests, public interest groups, suburban water distributors and the western slope communities. Please refer to Appendix II for specific members and representation. The CAC was formed in 1978 pursuant to an agreement that required Denver Water to form a citizens group charged with representing public interests. According to the CAC's bylaws (Appendix I), one of our major roles is to "advise the Board in planning for issues of interest to the Committee including but not limited to supply, treatment and distribution of water." The CAC is provided a substantial degree of independence, but is not and cannot be delegated with any responsibility placed upon the Board by law. The CAC has dedicated ample meeting time to discussion of the Moffat Project; we have had numerous conversations and presentations from staff of Denver Water over the past several years; we have invited key stakeholders and members of the public to attend our meetings and present their views on potential impacts of the DEIS; we have individually attended most of the recent Public Comment meetings; and we have been approached by our constituents with feedback on the DEIS.*

Comment Information	Comment	Comments and Responses
	Attachments: March 17, 2010 Scott Franklin, Moffat EIS Project Mgr US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 VIA Email: Moffat.eis@usace.army.mil RE: Moffat Collection System Project (Permit Application NOW-2002080762-DEN) DEIS and Section 404 Permit Comments. Dear Mr. Franklin, The Denver Water Citizen Advisory Committee (CAC), respectfully submits the following comments on the Moffat Collection System Project Draft Environmental Impact Statement (DEIS) and Section 404 Permit, collectively referred to as the "Moffat" project in this document. The CAC is a 10-member volunteer committee that meets monthly to advise Denver Water staff and the Board of Water Commissioners (Board) on a variety of issues while encouraging and coordinating public participation in the water department's policy-making process. We are comprised of 10 members representing an array of interests in the Denver Water service area, including Denver customers, suburban customers, home builders, environmental interests, public interest groups, suburban water distributors and the western slope communities. Please refer to Appendix II for specific members and representation. The CAC was formed in 1978 pursuant to an agreement that required Denver Water to form a citizens group charged with representing public interests. According to the CAC's bylaws (Appendix I), one of our major roles is to "advise the Board in planning for issues of interest to the Committee including but not limited to supply, treatment and distribution of water." The CAC is provided a substantial degree of independence, but is not and cannot be delegated with any responsibility placed upon the Board by law. The CAC has dedicated ample meeting time to discussion of the Moffat Project; we have had numerous conversations and presentations from staff of Denver Water over the past several years; we have invited key stakeholders and members of the public to attend our meetings and present their views on potential impacts of the DEIS; we have individually attended most of the recent Public Comment meetings; and we have been approached by our constituents with feedback on the DEIS. Given our charge of representing public interests relating to Denver Water's supply planning issues, the CAC feels that is important and appropriate to submit comments on the Moffat Project. These comments are not a statement of issues and findings and were not voted on by the CAC members. As such, these comments do not represent a consensus of our advisory group. Rather these comments are a refection of the diverse nature of the CAC and represent a collection of reactions, thoughts and ideas voiced by members of the CAC, the CAC's constituents and members of the public. We hope that you find this collection of comments helpful during your next steps in the Moffat project evaluation. General • Denver Water staff has been diligent in keeping the CAC apprised of the Moffat project since its inception. Staff have sought the input of the CAC, and made countless presentations at our monthly meetings. Staff have taken the CAC on tours of the areas that would be impacted by the Moffat Project on both the Front Range and the Western Slope, and have been generous in sharing information with our group. The CAC wishes to recognize the hard work and effort that Denver Water staff has put forth throughout this process, and thank Staff for	*Given our charge of representing public interests relating to Denver Water's supply planning issues, the CAC feels that is important and appropriate to submit comments on the Moffat Project. These comments are not a statement of issues and findings and were not voted on by the CAC members. As such, these comments do not represent a consensus of our advisory group. Rather these comments are a reflection of the diverse nature of the CAC and represent a collection of reactions, thoughts and ideas voiced by members of the CAC, the CAC's constituents and members of the public. We hope that you find this collection of comments helpful during your next steps in the Moffat project evaluation.* **Response #797-1:** The Corps notes the comment. ***Comment #797-2*** *(ID 4894)**:*** *General • Denver Water staff has been diligent in keeping the CAC apprised of the Moffat project since its inception. Staff have sought the input of the CAC, and made countless presentations at our monthly meetings. Staff have taken the CAC on tours of the areas that would be impacted by the Moffat Project on both the Front Range and the Western Slope, and have been generous in sharing information with our group. The CAC wishes to recognize the hard work and effort that Denver Water staff has put forth throughout this process, and thank Staff for being so giving of their time and resources. Finally, the CAC appreciates that Staff have actively listened to the CAC's input regarding Denver Water's supply planning future.* **Response #797-2:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 2* being so giving of their time and resources. Finally, the CAC appreciates that Staff have actively listened to the CAC's input regarding Denver Water's supply planning future. The DEIS Document and Process • Certain CAC members and their constituents felt that accessing the DEIS is quite difficult for users, and the placement on the US Army Corps of Engineers (USACE) Website prompts security warnings. While users have been assured in most cases that the risks are limited, the CAC heard many comments that members of the public were unwilling to utilize the online DEIS. • Some members of the CAC and their constituents feel that the organization of the DEIS is confusing and it is difficult to read. We made many jokes relating to the document's page count. In some cases organization and length of the DEIS has lead to confusion over what Denver Water is actually proposing, what information went into the planning and modeling and how this DEIS fits in with other planning efforts from Denver Water. Some suggested that an expanded and better organized executive summary, along with reorganization of the technical documents, would make this report more accessible to the public. Further, in some sections, such as the technical appendices on the aquatics report, vital information has been reported as missing or unavailable for public comments. • The CAC heard from constituents that certain DEIS public hearing venues were in some cases difficult to access. For example the Boulder County meeting was held in a hard to find location (for many) in North West Boulder, despite most of the potential impacts in Boulder being immediately adjacent to Gross Reservoir (in South East Boulder County). • Certain CAC members appreciated that the Denver Water team took the opportunity at the Moffat Project public hearings to inform the public about Denver Water's conservation efforts. Climate Change • Certain CAC members and their constituents felt that despite Denver Water's involvement in the Water Utility Climate Alliance and the Colorado Water Conservation Board's recent report called "Colorado Climate Change: A Synthesis to Support Water Resource Management and Adaptation," the DEIS fails to adequately address the potential impacts of climate change. If impacts from climate change are foreseeable, as the above-mentioned organizations have found, they should be carefully considered by the DEIS. Purpose and Need • Many long serving CAC members recognize and support the need for Denver Water to engage in comprehensive future supply planning options. A number of our monthly meetings have focused on supply planning issues. • Certain members of the CAC and their constituents believe that the Purpose and Need Statement has been written so narrowly that it leaves only a few options that can realistically meet the "needs" outlined in the DEIS, especially as each of these needs are treated as equal. As the CAC has reviewed and discussed the Moffat Project and the DEIS, the vulnerability and reliability needs have seemed to be the larger, more challenging needs to meet. Many members of the CAC felt that the issue of overall system reliability possibly carried more weight than the issue of overall supply and there was a great deal of support among those members for increasing flexibility and reliability within the system. Some felt that there is little	***Comment #797-3*** *(ID 4895)**:*** *The DEIS Document and Process • Certain CAC members and their constituents felt that accessing the DEIS is quite difficult for users, and the placement on the US Army Corps of Engineers (USACE) Website prompts security warnings. While users have been assured in most cases that the risks are limited, the CAC heard many comments that members of the public were unwilling to utilize the online DEIS.* **Response #797-3:** The Corps' website is part of a U.S. Army website that contains special security measures, one of which is a Security Warning. The Corps communicated to commenters that it was safe to continue through the warning. Additionally, hard copies of the DEIS were available for review at the Public Hearings and at the following locations: • Denver Water • Corps Denver Regulatory Office • Arvada Library • Boulder County Main Library • Denver Central Library • Fraser Valley Library • Golden Library • Granby Library • Kremmling Library • Summit County Library North Branch • Summit County Library South Branch • Thornton Branch Library

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 3* in the DEIS, if anything, to provide an independent assessment that these needs should all be equally weighted. • The purpose and need statement was developed more than 5 years ago, following closely on the heels of a severe drought. Since that time, Denver Water users have made significant shifts in how water is used. Because of these changed use patterns some CAC members and their constituents feel that the assumptions and predictions upon which the purpose and need statement was based may no longer accurately reflect the needs of Denver Water. The planning and thinking about why these numbers are used, instead of newer planning figures, are not clearly captured in the DEIS. • It has also been raised with the CAC, as in some of the public meetings that the No Action Alternative is overly narrow. The DEIS states that many concepts, specifically non-structural alternatives were eliminated from the No Action Alternative "because they did not meet the Purpose and Need". Because the No Action Alternative has been artificially narrowed by the requirement that all options meet the purpose and need, some believe that the DEIS is left with just two options: 1. use its strategic water reserve, or 2. enact more frequent water use restrictions. However, these not the only options available to Denver Water, and some feel that these two options are poorly described in the DEIS. Conservation • On the whole, the CAC believes Denver Water deserves great credit for the leadership it has played on water conservation in Colorado and around the west, including with respect to the preparation and planning it has expended towards advancing the Moffat Project. • Some CAC members and their constituents feel that the DEIS lacks adequate information about what role conservation will play in meeting Denver's future needs. Denver Water has developed numerous conservation methods, from rebates to public outreach, which are cost effective ways to conserve water, however, some members felt that many of those measures, and how they may continue to play a role in Denver Water's future, are not adequately addressed in the DEIS. • Some members of CAC believe that using "unrestricted demand" as a basis for establishing a need for the project is inconsistent with the sentiment of Denver Water customers, and with ongoing and past operations of Denver Water. Certain Members also felt that the DEIS fails to acknowledge the role of drought restrictions in narrowing the gap between supply and demand in times of shortage. If that information is contained in Denver Water planning or technical appendices to the DEIS, it would be helpful to have additional explanation of those estimates or plans. Finally, members of the CAC felt there was insufficient detail in the DEIS on how Denver Water might continue to utilize and expand its Reusable Water infrastructure to meet future demands. Cumulative Impacts • The DEIS uses current conditions as baseline flow, thereby ignoring the foreseeable likelihood that additional operations such as the Windy Gap Firming Project (WGFP) will come online before (or simultaneous to) the Moffat Project. Many CAC members and their constituents feel that the cumulative impacts of the two projects should be assessed together. On a tour of the Upper Colorado in 2007 some members of the CAC heard about the Grand County Stream Management Plan from representatives of Grand County, representatives of Denver Water and representatives from the Northern Colorado Water Conservancy District. This plan considers the cumulative impacts, and as we understand it, is working to provide proposed	***Comment #797-4*** *(ID 4896)**:*** *Some members of the CAC and their constituents feel that the organization of the DEIS is confusing and it is difficult to read. We made many jokes relating to the document's page count. In some cases organization and length of the DEIS has led to confusion over what Denver Water is actually proposing, what information went into the planning and modeling and how this DEIS fits in with other planning efforts from Denver Water. Some suggested that an expanded and better organized executive summary, along with reorganization of the technical documents, would make this report more accessible to the public. Further, in some sections, such as the technical appendices on the aquatics report, vital information has been reported as missing or unavailable for public comments.* **Response #797-4:** The Corps made a substantial effort to organize the Project information in a logical and concise manner for the DEIS. The document begins with an Executive Summary that summarizes the No Action Alternative and action alternatives and associated impacts. DEIS Chapter 1 described the overall Purpose and Need for the Project along with some information on Denver Water operations. DEIS Chapter 2 contained detailed descriptions, maps, and figures of the No Action Alternative and action alternatives. DEIS Chapter 3 described the existing conditions of land- and water-based resources within the Project area. DEIS Chapter 4 evaluated and described potential impacts to resources within the Project area. DEIS Chapter 5 described cumulative effects and included a qualitative assessment on the impacts of climate change on water resource planning. DEIS Chapter 6 described agency and public involvement throughout the NEPA process. DEIS Chapter 7 provided a comprehensive list of references cited in the document. Where possible, information was summarized in tables or presented graphically for further clarity.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 4* solutions to mitigate or avoid additional cumulative impacts, This plan was not addressed as part of the cumulative impacts analysis in the DEIS. Also, the DEIS contains little analysis of the impact to peak flows and water quality on the Fraser River, and how the conclusions of limited impacts to those issues were reached in the DEIS. Finally, certain CAC members and their constituents feel that the DEIS lacks a proper assessment of Water Quality within the Colorado River System, especially with regard to cumulative impacts of the Moffat Project and the proposed Windy Gap Firming Project. • The CAC has also heard from recreation interests, and some have raised serious concerns regarding impacts to recreation as a result of this project. On the West Slope impacts to recreation center around reduced flows and a lack of peak flows. Lower flows will likely lead to a reduction in most recreation activities including fishing, kayaking and rafting. Recreationists also provided comments at the Front Range meetings in Boulder and Denver, and directly to individual CAC members. The predominant concerns voiced by those individuals in these forums and to the CAC centered on impacts to the stream reaches above Gross Reservoir. Concerns have been raised that the impacts outlined in the DEIS fail to assess impacts to the stretch of Upper South Boulder Creek, specifically the lower end of a popular recreational run above the reservoir which is home to a rapid known as the RIMBY (Right In My Backyard) rapid. Several kayakers have raised concerns that the expansion of Gross Reservoir will lead to the inundation of this section, and that the impacts of that inundation are not adequately addressed in the DEIS. • The CAC appreciates the creativity put forth by Denver Water in developing the concept of a Conservation Pool. The CAC generally agrees that the concept of utilizing Gross Reservoir in a manner which can provide environmental and recreational benefits, without adding additional costs for Denver Water Customers, has value. CAC supports the potential to provide increased flows, which could restore some of the fisheries as well as recreational opportunities on South Boulder Creek. • The CAC has had the opportunity recently to tour Gross Reservoir and the surrounding neighborhoods, and recognizes that there will be significant impacts to the area (a recent tour also included a tour of some of the other alternatives discussed in the DEIS). The DEIS includes assessments of many of these impacts but certain member feel it may not have adequately assessed all of the impacts to the local area. Specifically the estimates of impacts to traffic and safety appear to be underestimated. Additional information of how the conclusions of limited impacts were reached would be helpful in understanding these conclusions.	Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #797-5*** *(ID 4897)**:*** *The CAC heard from constituents that certain DEIS public hearing venues were in some cases difficult to access. For example the Boulder County meeting was held in a hard to find location (for many) in North West Boulder, despite most of the potential impacts in Boulder being immediately adjacent to Gross Reservoir (in South East Boulder County).* **Response #797-5:** The following criterion was used to determine the locations for the DEIS public hearings: • Venue must comfortably hold a minimum of 300 people (based on attendance of public scoping meetings held for the Moffat Project and public hearings held for other recent large water supply projects) • Venue must provide ample parking • Venue must provide enough space to host the open house and the public hearing The Corps provided a map of each public hearing venue location as an attachment to the Public Notice issued on October 30, 2009.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 5* Conclusion The CAC has thoroughly discussed the Moffat Project, both in conjunction with and apart from the Board and Staff of Denver Water. Members have toured both the Front Range and Western Slope areas which will be impacted by this project. Many of us have reviewed the DEIS and listened to public comments on the project. Over the course of these meetings and discussions the CAC has not sought to make a consensus based decision either in support of or opposition to the Moffat Project. Generally, the CAC supports Denver Water's thoughtful efforts in planning for future supply needs; however many members and their constituents feel that areas of the DEIS are lacking. The CAC hopes that these issues are adequately addressed through the USACE's response to public comments in the Final EIS and that any potential permit conditions are clear and reflect the needs not only of Denver Water system fee and rate payers, but of their neighbors as well. We appreciate the time and commitment to meeting with the CAC that Denver Water has made, and hope that these comments can be just one point of continued conversation with the Board and Staff. On behalf of the Denver Water Citizen Advisory Committee, Becky Long, Chair Denver Water Citizen Advisory Committee Signing Statements Becky Long: While I enthusiastically join in the signing of these comments from the CAC, it is important to note that in addition to my volunteer membership of the CAC, my professional role is as the Water Caucus Coordinator of the Colorado Environmental Coalition (CEC). CEC will be providing additional comments to the Corps on the DEIS, which may not be consistent with the aggregate comments laid forth in this comment letter, and as such should be considered separately. David Spector: Mr. Spector has received input on the Moffat Project from his constituents, and has ensured that such comments are reflected in these aggregated comments. However for professional ethical reasons, Mr. Spector abstains from personally adopting or endorsing any of these comments in his role as a CAC Member. CC: Denver Water Board	***Comment #797-6*** *(ID 4898)**:*** *Certain CAC members appreciated that the Denver Water team took the opportunity at the Moffat Project public hearings to inform the public about Denver Water's conservation efforts.* **Response #797-6:** The Corps notes the comment. ***Comment #797-7*** *(ID 4899)**:*** *Climate Change • Certain CAC members and their constituents felt that despite Denver Water's involvement in the Water Utility Climate Alliance and the Colorado Water Conservation Board's recent report called "Colorado Climate Change: A Synthesis to Support Water Resource Management and Adaptation," the DEIS fails to adequately address the potential impacts of climate change. If impacts from climate change are foreseeable, as the above-mentioned organizations have found, they should be carefully considered by the DEIS.* **Response #797-7:** The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008).

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 6* **Appendix I: CAC Bylaws** I. **Preamble** A. The Denver Board of Water Commissioners recognizes that there is a need for full and timely public participation in the decision making process of the Board on important Board activities and, to insure that participation, it has agreed to create a Citizens Advisory Committee with a substantial degree of independence. B. Under the Denver City Charter, the Board has not and legally cannot delegate to the committee any responsibility placed upon the Board by law. II. **Mission Statement** A. It is the mission of the Citizens Advisory Committee to advise the Board: 1. on matters of interest to the Committee 2. on matters of citizen participation 3. to facilitate public review and discussion of Board plans III. **Composition of the Citizens Advisory Committee** A. Size of the Committee – 10 members. (Amended December 2007) B. Terms of Membership: 1. Term of membership is to be three years. Terms will be staggered. 2. Maximum service – A member shall be limited to two successive terms without a break in service of at least one year. C. Qualifications and Appointment of Committee Members: 1. Appointing authority. The Denver Water Board shall be the appointing authority for the Citizens Advisory Committee, subject to the recommendations which follow. 2. Committee Leadership. The Citizens Advisory Committee (CAC leadership shall be composed of two members of the Committee, a Chairperson and a Vice-Chairperson. The Chairperson and Vice-Chairperson positions shall be elected in November by members of the CAC for a term of one year running from January to December. In the event of a vacancy in the Chairperson's position, the Vice-Chair will take up the position and a new Vice-Chairperson will be elected by the CAC. Vacancies shall be filled within thirty (30) days of vacancy. 3. Nomination Procedure: a. Geographical balance – The four customer positions (three from Denver and one from the suburban service area), the suburban water distributor and the two representatives from the Western Slope all must be from those geographical areas. The person representing the public interest group must be supplied with water from Denver Water, but may live either inside or outside the City and County of Denver. The representative from the HBA of Metropolitan Denver must be an active member of the HBA. The environmental group representative must be an active member of an environmental organization. The overall composition of the CAC will consist of at least five Denver residents. (Amended December 2007) b. Required representation – The membership shall include persons who represent the following groups: Denver citizens (3), a suburban customer, a member of the HBA of metropolitan Denver, an environmental group, a public interest	If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions. The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 7* group, a suburban water distributor and two Western Slope residents; one who resides in either Summit, Grand or Eagle County and one who resides in either Mesa, Delta, Montrose or Garfield County. (Amended December 2007). c. Proposals for nominations – Proposals for nominations may be submitted to the Citizens Advisory Committee by any interested individual, organization, or governmental entity, after the existence of open positions has been publicized. d. Who makes the nominations – Nominations shall be made by the Citizens Advisory Committee itself. The Western Slope representatives shall be selected from the proposals for nomination of any interested individual, organization, or governmental entity including Regional Council of Governments from that area. e. Number of nominations – For each of the 10 positions there shall be a maximum of two nominees submitted to the Denver Water Board of Commissioners for each position. The Board shall choose the membership of the Citizens Advisory Committee from among the nominees for that position, no later than November of the year preceding the appointment. If the nominations for any particular position are deemed to be unacceptable to the Board, it is recommended, but not required, that the Board will indicate to the Committee in writing reasons for the nominees' unacceptability, and the committee will submit further nominations for the Board's consideration. (Amended December 2007) f. Selection – Interviews of candidates by the CAC shall occur at an open meeting, but deliberations regarding the candidates may be at a closed meeting. It is recommended that the Board interview nominees at an open meeting, but deliberate in choosing among the nominees in a closed meeting. g. Vacancies upon expiration of term or otherwise nominations to fill any vacancy on the committee shall be made in accordance with the provisions of this section 3; provided, that the committee may select its nominees from the proposals for nominations for the particular vacancy or vacancies to be filled if said proposals were received by the committee within 11 months prior to the making of such nominations and if said proposals were received in response to publicizing of the existence of open positions in the particular categories of eligibility in which said vacancy or vacancies are to be filled. In the event of a failure to provide nominations to the Board for any vacancy in the committee within 90 days of notification of said vacancy, the Board shall thereafter be free to appoint any person, having the qualifications set forth in these bylaws, to fill such vacancy. 4. General Qualifications. All committee members have the following general qualifications: a. Except for the representatives from the Western Slope, the Environmental Group and the HBA of Metropolitan Denver, all committee members shall be users of Denver water in their private residences. b. Each member of the Committee shall be a United States citizen and a resident of Colorado for five years or more. c. Each member of the Committee shall have contact with constituents from the group/area they represent.	The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 8* d. No employee of Denver Water or member of the Board shall be a member of the committee during the term of his/her employment or membership. e. Removal of Committee Members. Committee members shall serve in accordance with the provisions of these bylaws. Any Committee member who shall incur three consecutive absences from regular meetings without good cause shown may be removed from the Committee by the majority of the remaining members. IV. **Recommended Operating Procedures of the Citizens Advisory Committee** A. Associate Memberships and Committees: 1. In order to assure a maximum level of public participation, "associate membership" on the committee shall be available to anyone filing a written application at any time with the Citizens' Advisory Committee. By retaining such membership, an associate member would be in a position to provide opinions to the advisory committee for consideration by that committee and by the Board. There shall be a method for periodic updating of membership roles should lack of interest occur in an associate member. 2. It is anticipated that appointment of associate members to ad hoc committees and subcommittees, task forces, etc., will be undertaken and that they be utilized in various areas and for such periods of time as needed, such as: a. Conservation Programs b. Rates c. Specific Diversion and Supply Projects d. Projections e. Economic Analysis f. Extensions of the Distribution System g. Policy for New Taps h. Chanelization Projects i. Flow Management j. Coordination With Other Agencies k. Long Range Planning l. Other Areas as Necessary 3. It is intended that the Committee and Subcommittees, as well as task forces, will be citizen participatory entities in regard to the areas of concern but will not be authorized to employ consultants or engage in technical or engineering studies at Denver Water Board expense. B. Citizen Participation – Citizen participation techniques shall be stimulated by use of the following when necessary: 1. Public meetings all committee meetings shall be open to the public and the committee may receive comments from the public if it so desires. The following types of meetings should be considered: a. Working Meetings b. Open Meetings c. Forums d. Workshops e. Public Hearings	***Comment #797-8*** *(ID 4900)**:*** *Purpose and Need • Many long serving CAC members recognize and support the need for Denver Water to engage in comprehensive future supply planning options. A number of our monthly meetings have focused on supply planning issues. • Certain members of the CAC and their constituents believe that the Purpose and Need Statement has been written so narrowly that it leaves only a few options that can realistically meet the "needs" outlined in the DEIS, especially as each of these needs are treated as equal. As the CAC has reviewed and discussed the Moffat Project and the DEIS, the vulnerability and reliability needs have seemed to be the larger, more challenging needs to meet. Many members of the CAC felt that the issue of overall system reliability possibly carried more weight than the issue of overall supply and there was a great deal of support among those members for increasing flexibility and reliability within the system. Some felt that there is little in the DEIS, if anything, to provide an independent assessment that these needs should all be equally weighted.* **Response #797-8:** The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 9* 2. Other techniques: a. Written communications including articles in Denver Water publications b. Utilization of existing organizations of all types c. Monitoring developments d. Mediation contacts C. Procedures – The following procedures shall be implemented to assist in and facilitate public review and discussion of Board plans: 1. Statement of Issues and of Findings – The committee shall proceed as follows in stating issues or findings: a. Any statement of issues and any statement of findings may be delivered to the Board, to the news media or to others as appropriate, but in all instances the Board shall receive such information in sufficient time prior to its release to others to allow the Board to comment thereon to the committee. b. Statement of issues and any statement of findings shall record the vote of the members. Voting may occur when a quorum (6) is present and both the majority and minority opinions will be recorded. (Amended December 2007) c. The value of minority opinions is recognized and such opinions and reports are to be encouraged. Minority opinions and reports shall be allowed and shall be released concurrently with the majority reports. Members espousing minority viewpoints shall have access to support facilities equal to that of persons espousing majority viewpoints. 2. Access to Board data and information – Committee access to Board data and information shall be assisted. a. The Denver Water Board has agreed to make available to the members of the Citizens' Advisory Committee, and through the Committee to the public in general, its present and future plans, financial records, information and studies (with the exception of confidential information relating to property acquisition and other property matters; confidential litigation matters (judicial or administrative) and documents subject to the attorney-client privilege; personnel records; and other material exempt from disclosure by law). A program of making available to the public such plans, records, information, and studies will be developed by the Water Board in concert with its Citizens' Advisory Committee. No committee member shall copy or reveal the contents of any restricted document submitted for review. b. Requests for access by the committee to Board data and information shall be submitted by the chairperson of the committee to the President of the Board, or their official designee. V. **Role of the Citizens Advisory Committee and the Scope of its Work** A. Provide advice on the use and effectiveness of citizen participation techniques by the Board. B. Assist in and facilitate public review and discussion of Board plans. C. Participate with the Board in developing a program of making plans, records, information and studies available to the public.	The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the issues would jeopardize Denver Water's ability to meet projected demand needs. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. ***Comment #797-9*** *(ID 4901)**:*** *The purpose and need statement was developed more than 5 years ago, following closely on the heels of a severe drought. Since that time, Denver Water users have made significant shifts in how water is used. Because of these changed use patterns some CAC members and their constituents feel that the assumptions and predictions upon which the purpose and need statement was based may no longer accurately reflect the needs of Denver Water. The planning and thinking about why these numbers are used, instead of newer planning figures, are not clearly captured in the DEIS.* **Response #797-9:** In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from the DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 10* D. Advise the Board in planning for issues of interest to the Committee including but not limited to supply, treatment and distribution of water. E. Provide consultation to the Board for establishing a mechanism for assuring that the reaction of interested agencies and individuals to Board proposals, such as rate changes, conservation activities, recreation issues, distribution system extension, construction of projects to develop or expand supply facilities, etc., will be recorded and made available early in the planning process to the Board members and staff responsible for formulating decisions. F. Provide advice to the Board on minimizing adverse fishery and recreational impacts. G. Provide advice to the Board on management of stream flows. H. Provide advice on developing a program to achieve timely consultation with affected property owners and interested groups and agencies, on matters dealing with channelization or management of flows. I. It is recommended that no later than April of each year, the Committee will develop an annual work plan with specific activities defining its scope of work. The committee is not limited to these activities during the course of the year. VI. **Amendment of Bylaws** Upon adoption of these bylaws by the Water Board, they shall govern all actions of the Citizens Advisory Committee. Amendment to any provisions of these bylaws may be effected by the Board upon the recommendation of at least two thirds of the members of the committee.	***Comment #797-10*** *(ID 4902)**:*** *It has also been raised with the CAC, as in some of the public meetings that the No Action Alternative is overly narrow. The DEIS states that many concepts, specifically non-structural alternatives were eliminated from the No Action Alternative "because they did not meet the Purpose and Need". Because the No Action Alternative has been artificially narrowed by the requirement that all options meet the purpose and need, some believe that the DEIS is left with just two options: 1. use its strategic water reserve, or 2. enact more frequent water use restrictions. However, these not the only options available to Denver Water, and some feel that these two options are poorly described in the DEIS.* **Response #797-10:** Under NEPA, every EIS must analyze a No Action Alternative, which is what is expected to occur if the proposed Project does not get permitted. The EIS then compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. Denver Water assumed that growth would still occur and identified ways to meet future water demands through operational controls. The Corps did evaluate some of the numerous preliminary alternatives that were screened as possible components of the No Action Alternative. Refer to Section 2.10.2 of the DEIS. The steps outlined for various restriction scenarios were a reasonable approach for developing the No Action Alternative. Furthermore, the No Action Alternative is what an applicant would do without obtaining a Federal permit. In the case of the Moffat Project, the Federal Action is a Section 404 Permit. The other alternatives listed in the EIS would likely need some type of Federal approval. Thus, they are not practicable No Action Alternatives.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 11* **Appendix II: Membership of the CAC** **Becky Long, Chair** Representing environmental groups, Ms. Long has a strong knowledge of Colorado Water issues through her work with the Colorado Environmental Coalition. She has served as the Water Caucus Coordinator with the Coalition since June 2006, where she works with more than 15 nonprofit organizations to develop and advocate for the adoption of water supply and management decisions that are both environmentally and economically sustainable. Ms. Long received her Bachelor's degree in Political Science from Metropolitan State College and her Master's degree in Public Administration from the University of Colorado at Denver. She is a fifth generation native of Colorado and a novice angler. *-Appointed January 2009 to December 2011, second term* **David Spector, Vice Chair** Representing Denver residents, Mr. Spector is an attorney at Kaplan, Kirsch & Rockwell LLP, where his practice focuses on public sector and policy matters in land use and transportation law. David also has a background in public finance law, and has represented municipal issuers in pond transactions to finance wastewater treatment systems, among other projects. He holds a law degree from the University of California, Hastings College of Law and a Bachelor of Science degree from Georgetown University. He has a background in economic development and public policy and has worked as a research analyst with the U.S. Agency for International development. David is a Denver native, whose civic activities include serving on the board of Greater Park Hill Community Inc., and volunteering with for University of Denver Law School Lawyering Process program. *-Appointed January 2010 to December 2012, second term* **Phil Lidov** Representing, Denver Residents Mr. Lidov currently works for [redacted] as a Global Information Systems coordinator for [redacted]. Phil, who has lived in Colorado for 18 years, has 15 years of experience as a Geographic Information Systems and Management Information Systems consultant, working primarily in the fields of public infrastructure, transportation and environmental resources. He earned a bachelor's degree in history from Haverford College in Haverford, Penn., and a master's degree in geography from the University of Colorado at Boulder. *– Appointment August 2008 to December 2011, first term* **Don Shulp** Mr. Schlup represents suburban customers. Don is [redacted] and [redacted] of [redacted]. As a sod producer for over forty years, he recognizes how critical water management is in the production and maintenance of his crop. As a contractor installing thousands of lawns in the Denver metro area, Don also is aware of homeowners' concerns with water management of their trees, shrubs and grass. He understands the importance of conservation and control of water consumption while maintaining landscape investment. During the drought, Don worked with the Denver and Aurora water boards, South Adams Water, GreenCO and Rocky Mountain Sod Growers seeking solutions for contractors, consumers and water providers. It was a critical time for all, but by working together through improved communication and education, solutions were found. Don is a former Denver teacher with a	***Comment #797-11*** *(ID 4903)**:*** *Conservation • On the whole, the CAC believes Denver Water deserves great credit for the leadership it has played on water conservation in Colorado and around the west, including with respect to the preparation and planning it has expended towards advancing the Moffat Project.* **Response #797-11:** A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. ***Comment #797-12*** *(ID 4913)**:*** *Some CAC members and their constituents feel that the DEIS lacks adequate information about what role conservation will play in meeting Denver's future needs. Denver Water has developed numerous conservation methods, from rebates to public outreach, which are cost effective ways to conserve water, however, some members felt that many of those measures, and how they may continue to play a role in Denver Water's future, are not adequately addressed in the DEIS.* **Response #797-12:** DEIS and FEIS Section 1.4.1.2 describes conservation as a part of the basis for the Project Purpose and Need. Appendix A contains Denver Water's detailed conservation plan as part of the technical memoranda supporting the Purpose and Need.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 12* B.S. and M.A. in biology from Central Missouri University and is a resident of Greenwood Village. *-Appointed November 2009 to December 2012, first term* **Barry Hudson** Mr. Hudson represents suburban distributors and since 2007, he has been the manager of the Wheat Ridge Water District, a suburban distributor on the west border of Denver. He graduated from the University of Colorado Law School, and is a practicing lawyer specializing in utility matters and representing special districts. Barry has practiced law in Wheat Ridge with a utility specialization since 1974. His clients include the White Ridge Water District, Wheat Ridge Fire Protection District and the Wheat Ridge Sanitation District. Mr. Hudson is also the president of the Wheat Ridge Rotary Club. *-Appointed January 2009- December 2011, first term* **Carol Pace** Ms. Pace represents Denver residents, as a 30-year resident of Denver who has had a 35-year career in public administration and university medical department management in Colorado and California. She is a fellow at the American College of Medical Practice Executives. Ms. Pace's background is in medical practices and group homes management, as well as in clinical and basic science research. She also is an elected supervisory committee member of one of the state's largest credit unions and is an ambassador for the Public Employees Retirement Association. Carol has volunteered for more than 10 years with Volunteers for Outdoor Colorado. She is a member of the Denver Natural Resources Committee of the Denver League of Women Voters and a member of the water-related issue group of the Sierra Club. Carol received her bachelor's degree in economics, with honors, from the University of California at Santa Cruz and her master's degree in public administration from the University of California at Irvine. *-Appointment January 2009 to December 2011, first term* **Rick Sackbauer** Rick Sackbauer lives in Vail and represents Western Slope residents. He is a project manager in design and construction for the [redacted] Rick served as chairman of the Eagle River Water and Sanitation District, the second largest water provider on the Western Slope. He is president of the Eagle Park Reservoir Company. He has participated in the Statewide Water Supply Initiative and represents Colorado's recreation industry at the Colorado River Basin Roundtable. He also is a member of the Colorado River Headwater Forum, Club 20, the Colorado Water Congress and the Summit County Water Forum. Rick received a bachelor's degree in restaurant management from Kansas State University. *– Appointment January 2008 to December 2010, second term* **Mel Rettig** Melvin Rettig, a farmer on Orchard Mesa near Grand Junction, represents the Grand Valley and the Western Slope. Melvin has spent his life at the fruit and vegetable farm he currently operates. He attended Colorado State University and earned a degree in agricultural engineering specializing in irrigation and drainage. He is a current or former member of the Orchard Mesa Irrigation District, Mesa County Farm Bureau, Mesa Conservation District, Colorado State Conservation Board, noxious weed advisory committees for Colorado and	***Comment #797-13*** *(ID 4914)**:*** *Some members of CAC believe that using "unrestricted demand" as a basis for establishing a need for the project is inconsistent with the sentiment of Denver Water customers, and with ongoing and past operations of Denver Water. Certain Members also felt that the DEIS fails to acknowledge the role of drought restrictions in narrowing the gap between supply and demand in times of shortage: if that information is contained in Denver Water planning or technical appendices to the DEIS, it would be helpful to have additional explanation of those estimates or plans. Finally, members of the CAC felt there was insufficient detail in the DEIS on how Denver Water might continue to utilize and expand its Reusable Water infrastructure to meet future demands.* **Response #797-13:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require.

Comment Information	Comment	Comments and Responses
	CAC Comments to the USACE on the Moffat Draft EIS *March 17, 2010* *page 13* Mesa counties, Colorado Farm Bureau Water Committee, Colorado Ag Water Alliance Committee, Colorado Basin Round Table and the Ute Water Conservancy District. While a member of the Orchard Mesa Irrigation District, Melvin was involved in negotiations in water court concerning Wolford Mountain Reservoir and the Orchard Mesa Check Structure. – *Appointment February 2008 to December 2010, first term* **Jim Ives** Mr. Ives represents public interest groups. He currently is a board member and youth education director of the Cutthroat Chapter of Trout Unlimited. Jim is a board-certified environmental professional. He has retired after a broad, diversified management and technical career in environmental management and governmental relations spanning more than 37 years. He spent a major portion of his career with the [redacted] in Colorado and Alaska dealing with the environmental aspects of energy and mineral resources development and production. He also served a short time as the executive director of the Rocky Mountain Oil & Gas Association. More recently, he managed the environmental programs for the city of Aurora and served as project manager for the early transfer and environmental restoration project at the former Fitzsimons Army Medical Center. Jim has also worked as an environmental consultant and with federal and state environmental agencies. His current civic activities include serving as a volunteer naturalist for Roxborough State Park and volunteering at a local food pantry. Jim holds a bachelor's degree in environmental science from the University of Colorado at Boulder. Jim and his wife have lived in Centennial since 1994. – *Appointment February 2009 to December 2011, first term* **Jeff Willis** Jeff Willis represents the Homebuilders Association of Metro Denver. Jeff has more than 15 years of experience in the homebuilding and real estate development industries. Jeff is a past president of the Homebuilders Association, as well as the former chair of the Denver International Airport Partnership. He also is a former board member of the Centennial Water and Sanitation District and has been involved in several large water projects. Jeff currently works for [redacted] and is a partner in [redacted] and [redacted] LLC. He received an economics degree from Washington and Lee University and a Master of Business Administration degree from Arizona State University. Jeff and his family are residents of the City and County of Denver. – *Appointment December 2009 to December 2010, first term*	All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). Denver Water currently meets approximately 7,000 AF of annual demand from its recycling plant. Denver Water is increasing the amount of customers served by the recycling plant and once the distribution system is expanded a total of 17,500 AF of water demand will be meet with the recycling plant. Additionally, Denver Water has committed to conserve or reuse an additional 10,000 AF of water annually under the Colorado Cooperative Agreement.

Comment Information	Comment	Comments and Responses
		Comment #797-14 *(ID 4915)**:*** *Cumulative Impacts • The DEIS uses current conditions as baseline flow, thereby ignoring the foreseeable likelihood that additional operations such as the Windy Gap Firming Project (WGFP) will come online before (or simultaneous to) the Moffat Project. Many CAC members and their constituents feel that the cumulative impacts of the two projects should be assessed together. On a tour of the Upper Colorado in 2007 some members of the CAC heard about the Grand County Stream Management Plan from representatives of Grand County, representatives of Denver Water and representatives from the Northern Colorado Water Conservancy District. This plan considers the cumulative impacts, and as we understand it, is working to provide proposed solutions to mitigate or avoid additional cumulative impacts, This plan was not addressed as part of the cumulative impacts analysis in the DEIS. Also, the DEIS contains little analysis of the impact to peak flows and water quality on the Fraser River, and how the conclusions of limited impacts to those issues were reached in the DEIS. Finally, certain CAC members and their constituents feel that the DEIS lacks a proper assessment of Water Quality within the Colorado River System, especially with regard to cumulative impacts of the Moffat Project and the proposed Windy Gap Firming Project.* **Response #797-14:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years.

Comment Information	Comment	Comments and Responses
		The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. The GCSMP was reviewed and incorporated into the FEIS. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #797-15*** *(ID 4916)**:*** *The CAC has also heard from recreation interests, and some have raised serious concerns regarding impacts to recreation as a result of this project. On the West Slope impacts to recreation center around reduced flows and a lack of peak flows. Lower flows will likely lead to a reduction in most recreation activities including fishing, kayaking and rafting. Recreationists also provided comments at the Front Range meetings in Boulder and Denver, and directly to individual CAC members. The predominant concerns voiced by those individuals in these forums and to the CAC centered on impacts to the stream reaches above Gross Reservoir. Concerns have been raised that the impacts outlined in the DEIS fail to assess impacts to the stretch of Upper South Boulder Creek, specifically the lower end of a popular recreational run above the reservoir which is home to a rapid known as the RIMBY (Right In My Backyard) rapid. Several kayakers have raised concerns that the expansion of Gross Reservoir will lead to the inundation of this section, and that the impacts of that inundation are not adequately addressed in the DEIS.*

Comment Information	Comment	Comments and Responses
		Response #797-15: DEIS Section 4.13 discloses potential impacts to boating as a result of increased flows on the upper segment of South Boulder Creek. The fact that a portion of this segment would be affected by inundation was added to FEIS Section 5.15.1.2. ***Comment #797-16*** *(ID 4917)**:*** *The CAC appreciates the creativity put forth by Denver Water in developing the concept of a Conservation Pool. The CAC generally agrees that the concept of utilizing Gross Reservoir in a manner which can provide environmental and recreational benefits, without adding additional costs for Denver Water Customers, has value. CAC supports the potential to provide increased flows, which could restore some of the fisheries as well as recreational opportunities on South Boulder Creek.* **Response #797-16:** The Corps notes the comment. ***Comment #797-17*** *(ID 4918)**:*** *The CAC has had the opportunity recently to tour Gross Reservoir and the surrounding neighborhoods, and recognizes that there will be significant impacts to the area (a recent tour also included a tour of some of the other alternatives discussed in the DEIS). The DEIS includes assessments of many of these impacts but certain member feel it may not have adequately assessed all of the impacts to the local area. Specifically the estimates of impacts to traffic and safety appear to be underestimated. Additional information of how the conclusions of limited impacts were reached would be helpful in understanding these conclusions.* **Response #797-17:** The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on

Comment Information	Comment	Comments and Responses
		CR 77S, SH 72, SH 93, SH 128, US 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and Colorado 2050 RD. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Construction traffic analysis focused on the "worst case" traffic conditions generated by construction traffic as the basis for evaluating traffic impacts for the EIS. Estimates of the construction workforce and equipment for the Project were provided by Denver Water (based on CDOT data) and were independently verified and adjusted by the Corps. The CEQ regulations specify that the description of impacts in an EIS should identify how short-term uses of the environment would affect long-term productivity of resources. Short-term (temporary) is defined as the construction period through final reclamation, which is assumed to take up to 5 years. Long-term refers to the period after the Moffat Project is completed and mitigation measures are in place. Transportation impacts were classified at "temporary" since they would occur during the construction period. The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver Water. A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction. ***Comment #797-18*** *(ID 4919)**:*** *Conclusion The CAC has thoroughly discussed the Moffat Project, both in conjunction with and apart from the Board and Staff of Denver Water. Members have toured both the Front Range and Western Slope areas which will be impacted by this project. Many of*

Comment Information	Comment	Comments and Responses
		us have reviewed the DEIS and listened to public comments on the project. Over the course of these meetings and discussions the CAC has not sought to make a consensus based decision either in support of or opposition to the Moffat Project. Generally, the CAC supports Denver Water's thoughtful efforts in planning for future supply needs; however many members and their constituents feel that areas of the DEIS are lacking. The CAC hopes that these issues are adequately addressed through the USACE's response to public comments in the Final EIS and that any potential permit conditions are clear and reflect the needs not only of Denver Water system fee and rate payers, but of their neighbors as well. We appreciate the time and commitment to meeting with the CAC that Denver Water has made, and hope that these comments can be just one point of continued conversation with the Board and Staff. **Response #797-18:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #797-19*** *(ID 4920)**:*** *Becky Long: While I enthusiastically join in the signing of these comments from the CAC, it is important to note that in addition to my volunteer membership of the CAC, my professional role is as the Water Caucus Coordinator of the Colorado Environmental Coalition (CEC). CEC will be providing additional comments to the Corps on the DEIS, which may not be consistent with the aggregate comments laid forth in this comment letter, and as such should be considered separately. David Spector: Mr. Spector has received input on the Moffat Project from his constituents, and has ensured that such comments are reflected in these aggregated comments. However for professional ethical reasons, Mr. Spector abstains from personally adopting or endorsing any of*

Comment Information	Comment	Comments and Responses
		these comments in his role as a CAC Member. **Response #797-19:** The Corps notes the comment. ***Comment #797-20*** *(ID 5408)**:*** *Two enclosures: Appendix I, CAC Bylaws, and Appendix II, CAC Membership List.* **Response #797-20:** The Corps notes the inclusion of the CAC's bylaws as Appendix I, and the inclusion of the CAC Membership List as Appendix II to its comment letter.

Comment Information	Comment	Comments and Responses
Comment #798 Olivia D. Lucas, Esq., Associate Ryley Carlock & Applewhite, on Behalf of Blue Valley Ranch 1999 Broadway, Suite 1800 Denver, CO 80202 and Perry Handyside, Ranch Manager, on Behalf of [redacted] (Owner of Blue Valley Ranch) Blue Valley Ranch 6915 Highway 9, P.O. Box 1120 Kremmling, CO 80459	From: Lucas, Olivia [mailto:olucas@rcalaw.com] Sent: Wednesday, March 17, 2010 3:52 PM To: MOFFAT.EIS@usace.army.mil Cc: Perry Handyside; George Fosha; Mike Mitchell; Sanderson, James; Quinn, Patricia Subject: Comments on Denver's Moffat DEIS, 404 Permit Application NWO-2002-80762-DEN Dear Mr. Franklin, Our client, Blue Valley Ranch, has asked us to transmit to you the attached comments on Denver Water's Moffat Tunnel Draft EIS. A paper copy follows by U.S. Mail. Please don't hesitate to contact me if you have any questions. Thank you, Olivia Lucas Olivia D. Lucas, Esq. Associate Ryley Carlock & Applewhite <http://www.rcalaw.com/> 1999 Broadway, Suite 1800, Denver, CO 80202 Phone (303) 813-6725 Fax 303) 595-3159 | olucas@rcalaw.com <mailto:olucas@rcalaw.com> View Bio <http://www.rcalaw.com/View-user-profile.php?qsln=1&user=115> Download v-card <http://www.rcalaw.com/vcards/Olivia%20Lucas.vcf> rcalaw.com <http://www.rcalaw.com/> CONFIDENTIALITY NOTE: This e-mail and any attachments are confidential and may be protected by legal privilege. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of this e-mail or any attachment is prohibited. If you have received this e-mail in error, please notify us immediately by returning it to the sender and delete this copy from your system. Thank you for your cooperation. - BVR ltr re Moffat DEIS.pdf	***Comment #798-8*** *(ID 4928)**:*** *Please accept the enclosed comments on the proposed Moffat Collection System Project Draft EIS on behalf of [redacted], owner of the Blue Valley Ranch ("BVR") in Summit and Grand counties. BVR owns a significant amount of land along the Lower Blue River downstream of Green Mountain Reservoir along highway 9 from roughly somewhat upstream of Spring Creek Road to Trough Road near the confluence of the Blue River and the Colorado River. Approximately 9.5 miles of the Blue River channel are located on or adjacent to BVR. [redacted], which has owned BVR since 1994, is a conservation-minded entity and has invested significant resources toward enhancing and protecting the aquatic, riparian, wetland and upland environment. BVR has consulted Mike Mitchell of Queen of the River Consultants and George Fosha, Consulting Water Resources Engineer, to assist in preparation of these comments. Mr. Mitchell has provided the background aquatic biology analysis and projected effects of the Preferred Action Alternative ("Alternative 1a"), on the Lower Blue River below Green Mountain Reservoir. Using data provided in the draft EIS, Mr. Fosha has analyzed flow changes between Denver's modeled Current Conditions, Full Use Existing System, and Alternative 1a. Mr. Fosha has also reviewed and analyzed historic flows on the Lower Blue below Green Mountain Reservoir for comparison. BVR hopes that the enclosed comments will assist the Army Corps of Engineers and water users in clarifying potential impacts that could occur to resources on the Lower Blue River downstream of Green Mountain Reservoir as a result of the proposed project and its alternatives. We also hope that the enclosed comments provide the Army Corps of Engineers with workable ideas for project mitigation that could be cooperatively implemented with Denver Water to minimize project impacts.*

Comment Information	Comment	Comments and Responses
	Attachments: Blue Valley Ranch ***SENT VIA EMAIL To: moffat.eis@usace.army.mil*** ***AND BY USPS*** Mr. Scott Franklin, Moffat EIS Project Manager U.S. Army Corps of Engineers, Omaha District Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 Re: Comments by Blue Valley Ranch on Denver's Moffat Tunnel Collection System Draft EIS, 404 Permit Application NWO-2002-80762-DEN Dear Mr. Franklin: Please accept the enclosed comments on the proposed Moffat Collection System Project Draft EIS on behalf of [redacted], owner of the Blue Valley Ranch ("BVR") in Summit and Grand counties. BVR owns a significant amount of land along the Lower Blue River downstream of Green Mountain Reservoir along Highway 9 from roughly somewhat upstream of Spring Creek Road to Trough Road near the confluence of the Blue River and the Colorado River. Approximately 9.5 miles of the Blue River channel are located on or adjacent to BVR. [redacted], which has owned BVR since 1994, is a conservation-minded entity and has invested significant resources toward enhancing and protecting the aquatic, riparian, wetland and upland environment. BVR has consulted Mike Mitchell of Queen of the River Consultants and George Fosha, Consulting Water Resources Engineer, to assist in preparation of these comments. Mr. Mitchell has provided the background aquatic biology analysis and projected effects of the Preferred Action Alternative ("Alternative 1a"), on the Lower Blue River below Green Mountain Reservoir. Using data provided in the draft EIS, Mr. Fosha has analyzed flow changes between Denver's modeled Current Conditions, Full Use Existing System, and Alternative 1a. Mr. Fosha has also reviewed and analyzed historic flows on the Lower Blue below Green Mountain Reservoir for comparison. 1 ▪ 6915 Highway 9 ▪ P. O. Box 1120 ▪ Kremmling, CO 80459 ▪ (970) 724-3768 ▪ FAX (970) 724-0210 ▪	**Response #798-8:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #798-9*** *(ID 4929)**:*** *Description of Current Aquatic Environmental and Biological Conditions on the Blue River below Green Mountain Reservoir. 1. Algae: The Blue River below Green Mountain Reservoir has become infested with a native species of alga known as Rock Snot (Didymosphenia geminata). This plant coats lithic stream substrate and fills larger interstitial spaces destroying habitat for aquatic insects. The result is reduced abundance and especially diversity of aquatic macroinvertebrates. Aquatic macroinvertebrates are the primary food source of resident fisheries in the Blue River. Another important impact of this species is its effect on fishing quality and aesthetics. In late summer this species starts seasonal decline and decomposition. Many river enthusiasts dub this species "toilet paper algae" because of the unsightly macroscopic white pieces of spent algae that rain down the river plugging screens, discouraging river use by citizens, and fouling popular fishing gear.* **Response #798-9:** The proliferation of Didymosphenia geminata is a developing issue in the Project area. A short discussion of this invasive species was included in DEIS Sections 3.9 and 4.9. FEIS Sections 3.11 and 5.11 include more recent information on this issue and the potential impacts of the Project. Didymo is a native species that is creating water quality issues statewide. Didymo apparently prefer cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The

Comment Information	Comment	Comments and Responses
	BVR hopes that the enclosed comments will assist the Army Corps of Engineers and water users in clarifying potential impacts that could occur to resources on the Lower Blue River downstream of Green Mountain Reservoir as a result of the proposed project and its alternatives. We also hope that the enclosed comments provide the Army Corps of Engineers with workable ideas for project mitigation that could be cooperatively implemented with Denver Water to minimize project impacts. If you would like to arrange further discussion of the enclosed comments, please contact me at (970) 724-3768. Sincerely, Perry Handyside, Ranch Manager Blue Valley Ranch Cc: Grand County Board of County Commissioners Summit County Board of County Commissioners Bureau of Land Management, Kremmling Field Office United States Forest Service, Dillon Ranger District 2	similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo. ***Comment #798-10*** *(ID 4930)**:*** *2. Fishery Habitat: The conditions for fisheries in the lower Blue River, as with many rivers, are significantly defined by a variable flow intensity, timing and duration. Dramatic longitudinal and cross sectional losses in habitat availability for all fish occurs as flows diminish from 600 cubic feet per second (cfs) to 60 cfs. The difference between flows of 250-300 cfs, representing reasonable conditions and 50-100 cfs, representing conditions of very minimal sustenance, are immense. When discussing changes in the flow characteristics mentioned within this range one must realize that significant effects will occur. Brown trout (Salmo trutta) are the primary species of trout in the lower Blue River that are self sustaining. The State of Colorado has stocked "Hofer Strains" of rainbow trout (Oncorhynchus mykiss) in an attempt to re-establish this species as a self propagating wild species. Both of these species are instrumental in maintaining the "Gold Medal" status of the lower Blue as a recreational fishery. The abundance of proper sized gravels and spawning areas upstream of the confluence with the Colorado River indicate the Blue River is important for self propagation of fish that populate the Blue as well as the Colorado River. Brown trout in the Blue River typically spawn in late September through early November with the peak approximately at the 3rd and 4th weeks of October. During this period, spawning habitat is relatively abundant in the Blue River, primarily in side channels and gravel bars along the banks. These habitat areas were created by historic high flows that mobilized and deposited smaller gravels into quiescent areas that are elevated from the deeper channels of the river.*

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	Comments by Blue Valley Ranch on Moffat Collection System Draft EIS **Description of Current Aquatic Environmental and Biological Conditions on the Blue River below Green Mountain Reservoir.** 1. Algae: The Blue River below Green Mountain Reservoir has become infested with a native species of alga known as Rock Snot (Didymosphenia geminata). This plant coats lithic stream substrate and fills larger interstitial spaces destroying habitat for aquatic insects. The result is reduced abundance and especially diversity of aquatic macroinvertebrates. Aquatic macroinvertebrates are the primary food source of resident fisheries in the Blue River. Another important impact of this species is its effect on fishing quality and aesthetics. In late summer this species starts seasonal decline and decomposition. Many river enthusiasts dub this species "toilet paper algae" because of the unsightly macroscopic white pieces of spent algae that rain down the river plugging screens, discouraging river use by citizens, and fouling popular fishing gear. 2. Fishery Habitat: The conditions for fisheries in the lower Blue River, as with many rivers, are significantly defined by a variable flow intensity, timing and duration. Dramatic longitudinal and cross sectional losses in habitat availability for all fish occurs as flows diminish from 600 cubic feet per second (cfs) to 60 cfs. The difference between flows of 250-300 cfs, representing reasonable conditions and 50-100 cfs, representing conditions of very minimal sustenance, are immense. When discussing changes in the flow characteristics mentioned within this range one must realize that significant effects will occur. Brown trout (Salmo trutta) are the primary species of trout in the lower Blue River that are self sustaining. The State of Colorado has stocked "Hofer Strains" of rainbow trout (Oncorhynchus mykiss) in an attempt to re-establish this species as a self propagating wild species. Both of these species are instrumental in maintaining the "Gold Medal" status of the lower Blue as a recreational fishery. The abundance of proper sized gravels and spawning areas upstream of the confluence with the Colorado River indicate the Blue River is important for self propagation of fish that populate the Blue as well as the Colorado River. Brown trout in the Blue River typically spawn in late September through early November with the peak approximately at the 3rd and 4th weeks of October. During this period, spawning habitat is relatively abundant in the Blue River, primarily in side channels and gravel bars along the banks. These habitat areas were created by historic high flows that mobilized and deposited smaller gravels into quiescent areas that are elevated from the deeper channels of the river. **Comment 1: The Assumption that the Preferred Action Alternative Will Have a Minor Impact on the Blue River Below Green Mountain Reservoir is Faulty.** According to information gleaned from draft comments to the Draft EIS by the Kremmling Field Office of the BLM, we understand that the Draft EIS uses the assumption that any changes in stream flows of 10 percent or greater warrant a detailed analysis of impacts. By implication, the DEIS assumes stream flow changes of less than 10 percent are insignificant. Using this threshold, the proposed impacts to the streamflow along the Lower Blue River below Green Mountain Reservoir, 1	**Response #798-10:** FEIS Sections 4.6.3 and 5.3 evaluated the impacts to the channel of the lower Blue River. As discussed in FEIS Sections 4.6.11 and 5.11, the Project would have no impact on the ability of the channel to maintain spawning habitat for trout. ***Comment #798-11*** *(ID 4931)**:*** *Comment 1: The Assumption that the Preferred Action Alternative Will Have a Minor Impact on the Blue River Below Green Mountain Reservoir is Faulty. According to information gleaned from draft comments to the Draft EIS by the Kremmling Field Office of the BLM, we understand that the Draft EIS uses the assumption that any changes in stream flows of 10 percent or greater warrant a detailed analysis of impacts. By implication, the DEIS assumes stream flow changes of less than 10 percent are insignificant. Using this threshold, the proposed impacts to the streamflow along the Lower Blue River below Green Mountain Reservoir, estimated to be a 2% reduction in flows under Alternative 1a, are considered minor and do not merit detailed analysis. The percentage reduction is dependent upon the assumed baseline flows. Denver's conclusion that the annual changes in flow are less than 2% is based on a comparison to the "Full Use of Existing System" modeling scenario. When comparing the impacts against the "Current Conditions" modeling scenario or the actual historic flows, the impacts certainly exceed 10%.* **Response #798-11:** The impact analysis in the FEIS was revised to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios.

Comment Information	Comment	Comments and Responses
	Comments by Blue Valley Ranch on Moffat Collection System Draft EIS estimated to be a 2% reduction in flows under Alternative 1a, are considered minor and do not merit detailed analysis. The percentage reduction is dependent upon the assumed baseline flows. Denver's conclusion that the annual changes in flow are less than 2% is based on a comparison to the "Full Use of Existing System" modeling scenario. When comparing the impacts against the "Current Conditions" modeling scenario or the actual historic flows, the impacts certainly exceed 10%. The DEIS misrepresents to the reader the monthly significance (impacts) of the various flow projections. As discussed above, streamflow along the Lower Blue River is already below what is needed for a healthy fish habitat and aquatic environment. As described in more detail below, any further reduction in flows necessarily has a significant negative impact on the stream and therefore deserves analysis. Thus, the assumption in the DEIS is incorrect and the analysis of impacts inadequate. As a result, the public is prevented from commenting and the federal decision maker prevented from considering such impacts and taking the legally required "hard look" before making a decision. BVR suggests this legal flaw in the DEIS can be cured by conducting more detailed analysis of adverse impacts of the Moffat Collection system on the Lower Blue River below Green Mountain Reservoir and providing it in a Supplemental EIS document. **Comment 2: The Preferred Alternative Exacerbates the Rock Snot Algae Problem.** All of the flow regimes modeled by Denver on the Lower Blue below Green Mountain Reservoir are problematic for the management of Rock Snot algae. The projected flows on the lower Blue are diminished and would be considerably warmer during the March-May period when natural flow regimes are typically high and cold. Natural flows, often 10-30 times the typical base flow, scour and clean the stream bed. The predicted lower flows allow increased temperatures which, while appearing small, encourage this cold water alga to proliferate. Shallow water and warmer temperatures (within its temperature regime) help it to grow. Rock Snot is further exacerbated by proposed river operations under Alternative 1a because there is infrequent scour predicted which serves to discourage and dislodge it. **Comment 3: The Change in the Stability of Flows Between October and May Expected Under Alternative 1a Will Harm the Fishery Along the Lower Blue River Below Green Mountain Reservoir.** All of Denver's modeled hydrographs for Alternative 1a for the lower Blue River flows indicate a descending hydrograph from October through February, then a significant increase during March with an even greater decline in flows through May. With the exception of the "Dry Years", this is inconsistent with the actual recorded historical flows. The flow regimes projected by Denver represent considerable problems for the success of trout, including the flows predicted by Alternative 1a. For brown trout, historic and predicted flows in average years were 350-400 cfs with an immediate decline in November to about 250 cfs, and then flows continue to decline until the end of February below 200 cfs. By May the flows predicted will be about 100 cfs, just 25% of the flows during the spawning period in October. Brown trout spawning areas in the Blue River channel, by virtue of their higher elevation, become dewatered easily when flows diminish. Dewatering of spawning habitat that is available and utilized at 400 cfs in the fall will occur when the resulting flows during incubation and fry emergence are less than half of that flow. 2	• Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, Denver Water's average annual demand is 363,000 AF/yr and the Moffat Project would be providing 18,000 AF/yr of new firm yield. A screening criterion of 10% was developed to provide focus on stream segments within the overall study area that would experience a flow increase or decrease of greater than 10% based on average annual flow. The purpose of identifying these river segments was to focus the selection of sample sites, data collection and field work in areas that experience the greatest flow change. Because the study area covers several river basins, it was impractical to collect data on each individual sub-reach of every affected stream. Representative river reaches were identified within the Focus River Segments for detailed data collection and evaluation. A variety of representative river reaches were selected that were examples of or statistically representative of different resource conditions encountered in the study area. Data for the representative river reaches was evaluated and extrapolated to the overall study area. Identifying Focus River Segments may suggest that other river segments within the overall study area were not evaluated. That is incorrect. While the Blue River below Green Mountain Reservoir was not selected for detailed data collection and field work,

Comment Information	Comment	Comments and Responses
	Comments by Blue Valley Ranch on Moffat Collection System Draft EIS Brown trout spawning considerations should attempt to stabilize flows during the October to March period so that spawning areas chosen by adults in the fall are maintained until completion of fry emergence. Studies underway by Grand County Stream Management Plan contractors, Tetra-Tech, preliminarily indicate that a flow regime to stabilize flows in the 200-300 cfs range would provide suitable availability of weighted usable area for brown trout spawning. While the hydrograph show occasional exceedence for these flow predictions, it is imperative to understand that seasonal consistency in this flow range is most desirable for brown trout spawning success. The April-May period also represents problems for trout in the lower Blue River. For brown trout the dewatering that is predicted to occur in April-May removes critical side channel nursery shelter and feeding areas for young of the year. Given the spatial competition of Rock Snot; its heavy use of valuable inorganic nutrients; and the implied reduction of beneficial primary productivity essential to young fish; the diminished quality of nursery habitat and the feeding opportunities provided indicate the area of nursery habitat availability is critical for Blue River fishes. As flows reduce to just 100-200 cfs, young of the year and Age I brown trout fingerlings must necessarily concentrate into deep water habitats with predatory adults. The introduction of Hofer strains of rainbow trout in the Blue River is part of the Colorado Division of Wildlife's statewide plan to re-establish reproductive potential for wild rainbow trout populations. This is being done to offset the impacts of Whirling Disease (Myxobolus cerebralis) on wild trout in Colorado. The higher flows that Denver projects for March will trigger migration of rainbow trout to seek spawning areas out of the Colorado River and into the Blue and will encourage upstream migrations of resident rainbows. The significant reductions in flows that would then occur during April-May will cause dewatering of valuable spawning habitat for rainbow trout during their staging and early spawning period. Low flows will force them to choose spawning areas within the main channel. Significant increases of flows from 100-200 cfs in May to June to flows at or above 1500 cfs will place established redds in highly scoured and/or overly deep areas where redd stability, egg incubation and fry emergence will be compromised. Those rainbows that spawn in June will have access to side channel areas; however, reductions from 1500-2000 cfs to just 500 cfs in August-September will have similar impacts to rainbows spawning success that present winter flow changes represent for brown trout. The Draft EIS indicates only minor flow changes are expected during "Dry" years. For the "dry" year modeling scenarios, Denver uses the average of the years 1954, 1955, 1963, 1977 and 1981. However, the flow regime on the Lower Blue below Green Mountain Reservoir could change drastically under Alternative 1a in comparison to the historic flow conditions that BVR has actually experienced since 1994. For example, the historic average flow in May during these five "dry" years was about 173 cfs, whereas the May flow under all of Denver's modeling scenarios is only about 75 cfs. The variability of the "historic" gaged flows from November (350 cfs) through May (173 cfs) is not quite as severe and with generally higher flows the channel bed changes would not be as severe. 3	existing available information was relied to evaluate resource impacts along that reach. Flow changes and resource impacts on the segment of the Blue River below Green Mountain were evaluated in more detail in FEIS Sections 4.1 and 5.1. ***Comment #798-12*** *(ID 4932)**:*** *The DEIS misrepresents to the reader the monthly significance (impacts) of the various flow projections. As discussed above, streamflow along the Lower Blue River is already below what is needed for a healthy fish habitat and aquatic environment. As described in more detail below, any further reduction in flows necessarily has a significant negative impact on the stream and therefore deserves analysis. Thus, the assumption in the DEIS is incorrect and the analysis of impacts inadequate. As a result, the public is prevented from commenting and the federal decision maker prevented from considering such impacts and taking the legally required "hard look" before making a decision. BVR suggests this legal flaw in the DEIS can be cured by conducting more detailed analysis of adverse impacts of the Moffat Collection system on the Lower Blue River below Green Mountain Reservoir and providing it in a Supplemental EIS document.* **Response #798-12:** As stated in the DEIS and FEIS in Sections 4.6.1 and 5.1, the changes in flow in the Blue River downstream of Green Mountain Reservoir would be less than 10% much of the time and less than 5% in dry years. Most of the reductions would be during spring runoff and high flow periods, not during low flow periods. This is not a misrepresentation in the DEIS and does not prevent the public from commenting. Flow changes of this magnitude likely would have no impact on the aquatic resources of the Blue River and a harder look in the FEIS is not warranted.

Comment Information	Comment	Comments and Responses
	Comments by Blue Valley Ranch on Moffat Collection System Draft EIS Comparison of the historic average monthly flows as measured at the USGS gage for Denver's "Wet" year modeling scenarios (Denver uses the years 1952, 1962, 1983, 1984 and 1986) and Denver's modeled flows reveals a similar disparity. Again, the flow regime from November through February was historically relatively constant at approximately 370 cfs, and actually increased during March, April and May as one might expect in wet runoff years. Denver's modeled scenarios show a significantly reduced and declining hydrograph during these months. **Comment 4: The No Action Alternative as Described Does Not Appear to be a Credible No Action Alternative.** The Corps is respectfully requested to respond to these questions as to the accuracy, credibility, and reasonableness of the Draft EIS's pre- and post-project conditions and the No Action Alternative and to clarify the actual changes attributable to reasonable alternatives under consideration. The Draft EIS posits the No Action Alternative as steps Denver would take in 2030, absent actions under Alternative 1a or other proposed alternatives, to meet the projected increased demand of 18,000 acre-feet (AF) of water. The Draft EIS compares the impacts on the Blue River between Alternative 1a and the No Action Alternative and concludes that impacts on the Blue would be less under the Preferred Action Alternative (Alternative 1a) because Gross Reservoir would be expanded to address the additional demand, so Denver would not be forced to access its Strategic Water Reserve or increase diversions from its Blue River system. The assumption that Denver would be forced to meet the 18,000 AF demand absent firm yield development under any of the action alternative scenarios appears counter intuitive. One wonders why and how, if Denver could not develop the 18,000 AF proposed, Denver would seek to meet this demand at all. It seems more logical that lack of development of the 18,000AF would result in unmet demand. The Draft EIS does not adequately explain the projected demand for 18,000 AF by 2030. The Draft EIS explains the demand is derived from analysis in Denver's Integrated Resources Plan (drafted in 1997, updated in 2002), and that this demand includes both demand from "customers" and "near term water commitments." But, is this increased demand based on increased demand by current consumers and entities to which Denver has water commitments as of 2016, or increased demand via new water consumers and new water commitments not in effect prior to 2016? Assuming the latter scenario, if Denver was not able to develop the additional 18,000 AF, a true "no action" alternative would be that Denver would simply not meet the increased demand – i.e. not sell new taps for development and not enter into new water commitments. (It seems imprudent and thus unlikely that Denver would have entered into water commitment contracts already without being assured it can develop the 18,000 AF.) Effects of such an alternative have not been analyzed. Even accepting the assumption that Denver would somehow meet 18,000AF of demand without developing 18,000 additional AF of new yield, the DEIS does not adequately inform the reader why *not* building the Moffat Tunnel project causes more impacts to the Lower Blue. It makes the reader wonder whether there is indeed a reasonable set of alternatives for the decision maker to assess. The DEIS should have done a better job of explaining the use of the 2016 and 2030 planning horizons. It strikes one as an "apples vs. oranges" comparison and undermines the reasonableness 4	***Comment #798-1*** *(ID 4921)**:*** *Comment 2: The Preferred Alternative Exacerbates the Rock Snot Algae Problem. All of the flow regimes modeled by Denver on the Lower Blue below Green Mountain Reservoir are problematic for the management of Rock Snot algae. The projected flows on the lower Blue are diminished and would be considerably warmer during the March-May period when natural flow regimes are typically high and cold. Natural flows, often 10-30 times the typical base flow, scour and clean the stream bed. The predicted lower flows allow increased temperatures which, while appearing small, encourage this cold water alga to proliferate. Shallow water and warmer temperatures (within its temperature regime) help it to grow. Rock Snot is further exacerbated by proposed river operations under Alternative 1a because there is infrequent scour predicted which serves to discourage and dislodge it.* **Response #798-1:** Please see the response to Comment ID 4929. ***Comment #798-2*** *(ID 4922)**:*** *Comment 3: The Change in the Stability of Flows Between October and May Expected Under Alternative 1a Will Harm the Fishery Along the Lower Blue River Below Green Mountain Reservoir. All of Denver's modeled hydrographs for Alternative 1a for the lower Blue River flows indicate a descending hydrograph from October through February, then a significant increase during March with an even greater decline in flows through May. With the exception of the "Dry Years", this is inconsistent with the actual recorded historical flows. The flow regimes projected by Denver represent considerable problems for the success of trout, including the flows predicted by Alternative la. For brown trout, historic and predicted flows in average years were 350-400 cfs with an immediate decline in November to about 250*

Comment Information	Comment	Comments and Responses
	Comments by Blue Valley Ranch on Moffat Collection System Draft EIS The No Action Alternative appears to present a false choice; either the Moffat expansion is built or the Strategic Water Reserve is tapped. What about other alternatives, such as: restricting taps or other water supplies in the Platte River Basin? Does Denver continue to sell taps even if it lacks the water supply to meet such demand? If a part of the Reserve can be used to meet ongoing baseload demand (as opposed to an emergency), does that not undermine the need for the Moffat Expansion Project? **Comment 5: Requested Mitigation.** To address the adverse impacts of Alternative 1a on the Rock Snot Algae problem, it would be beneficial to include in the special conditions for the U.S. Army Corps of Engineers CWA 404 permit a requirement for proponents to provide a minimum of 1800 cfs discharge during the April- June period at a frequency of once every 3- 4 years that would sustain for a period of 1-2 weeks To address the adverse impacts of Alternative 1a on the flows in the Blue River below Green Mountain Reservoir on fish habitat, it would be beneficial to develop a plan that seeks to create more consistent flow conditions for trout assuring access to and maintenance of critical seasonal spawning, egg incubation and fry emergence. Without benefit of a better understanding of Denver's PACSM model and the interactive operations of Green Mountain Reservoir and Dillon Reservoir, BVR can only suggest that perhaps Denver could change its criteria for filling Dillon Reservoir such that less water would be stored in Dillon Reservoir during April and May while concurrently bypassing flows from Dillon and Green Mountain to supplement the flows in the lower Blue during these months. It may also be feasible to reduce the projected higher flows during and correspondingly increase the flows in April and May. Denver would then have to be in a position to recover these bypassed storable flows during June and July. 5	*cfs, and then flows continue to decline until the end of February below 200 cfs. By May the flows predicted will be about 100 cfs, just 25% of the flows during the spawning period in October. Brown trout spawning areas in the Blue River channel, by virtue of their higher elevation, become dewatered easily when flows diminish. Dewatering of spawning habitat that is available and utilized at 400 cfs in the fall will occur when the resulting flows during incubation and fry emergence are less than half of that flow. Brown trout spawning considerations should attempt to stabilize flows during the October to March period so that spawning areas chosen by adults in the fall are maintained until completion of fry emergence. Studies underway by Grand County Stream Management Plan contractors, Tetra-Tech, preliminarily indicate that a flow regime to stabilize flows in the 200-300 cfs range would provide suitable availability of weighted usable area for brown trout spawning. While the hydrograph show occasional exceedence for these flow predictions, it is imperative to understand that seasonal consistency in this flow range is most desirable for brown trout spawning success. The April-May period also represents problems for trout in the lower Blue River. For brown trout the dewatering that is predicted to occur in April-May removes critical side channel nursery shelter and feeding areas for young of the year. Given the spatial competition of Rock Snot; its heavy use of valuable inorganic nutrients; and the implied reduction of beneficial primary productivity essential to young fish; the diminished quality of nursery habitat and the feeding opportunities provided indicate the area of nursery habitat availability is critical for Blue River fishes. As flows reduce to just 100-200 cfs, young of the year and Age I brown trout fingerlings must necessarily concentrate into deep water habitats with predatory adults.*

Comment Information	Comment	Comments and Responses
		Response #798-2: Please see the response to Comment ID 4923. Although the existing seasonal pattern may not be ideal for brown trout spawning and rearing, the Moffat Project would not have an impact on the pattern. The historical seasonal flow pattern has been sufficient to maintain the Gold Medal fishery status. ***Comment #798-3*** *(ID 4923)**:*** *The introduction of Hofer strains of rainbow trout in the Blue River is part of the Colorado Division of Wildlife's statewide plan to re-establish reproductive potential for wild rainbow trout populations. This is being done to offset the impacts of Whirling Disease (Myxobolus cerebralis) on wild trout in Colorado. The higher flows that Denver projects for March will trigger migration of rainbow trout to seek spawning areas out of the Colorado River and into the Blue and will encourage upstream migrations of resident rainbows. The significant reductions in flows that would then occur during April-May will cause dewatering of valuable spawning habitat for rainbow trout during their staging and early spawning period. Low flows will force them to choose spawning areas within the main channel. Significant increases of flows from 100-200 cfs in May to June to flows at or above 1500 cfs will place established redds in highly scoured and/or overly deep areas where redd stability, egg incubation and fry emergence will be compromised. Those rainbows that spawn in June will have access to side channel areas; however, reductions from 1500-2000 cfs to just 500 cfs in August-September will have similar impacts to rainbows spawning success that present winter flow changes represent for brown trout.* **Response #798-3:** Flows in March, which are estimated by PACSM, are higher than have historically occurred due to operating rules included in the model for Green

Comment Information	Comment	Comments and Responses
		Mountain Reservoir. In PACSM, Green Mountain Reservoir is lowered to 50,000 AF, 60,000 AF or 70,000 AF by April 1 based upon the most probable inflow conditions. While this is consistent with the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) Annual Operating Plan, it does not always match historical operations. Historical operations show that the start-of-fill date for Green Mountain Reservoir has varied between April 1 and May 15 because snowpack and snowmelt conditions differ from year to year (particularly in wet years). Often the start-of-fill data is set retroactively months afterwards. While PACSM accurately reflects Green Mountain Reservoir operations in a dry year, it is difficult to replicate the variability in operations in wet years since model operations are driven by defined operating rules and drawdown targets. PACSM results for April and May show flows are lower than have occurred historically. This is also related to the operating rules for Green Mountain and the start-of-fill date of April 1. The bypass requirement below Green Mountain Reservoir is 60 cfs; therefore, the flow below the reservoir is often no more than 60 cfs in PACSM after April 1 until the reservoir fills. Since the start-of-fill date has historically varied between April 1 and May 15, the flows below Green Mountain Reservoir are often higher than 60 cfs if the reservoir is still being drawn down to target levels. The start-of-fill date affects the timing of flow below Green Mountain Reservoir but has little impact on the average annual volume of flow below the reservoir. For example, a later start-of-fill date results in spills later in the season; however, the volume of water spilled would be similar regardless of the start-of-fill date. While it is difficult to capture the variability in Green Mountain Reservoir operations in wet years in PACSM, the Moffat Project and other reasonably foreseeable actions would have a minor effect on

Comment Information	Comment	Comments and Responses
		flows from October through May. PACSM results show average monthly flows below Green Mountain Reservoir would range from 316 to 323 cfs in March for Current Conditions and each of the Moffat Project Alternatives. The average monthly flow in March would decrease approximately 2% between Current Conditions and the Proposed Action; therefore, there would be little change in flow caused by the Moffat Project and other reasonably foreseeable actions in that month. In April, flows would be reduced by less than 2 cfs on average under the Proposed Action compared to Current Conditions. Although the existing seasonal pattern may not be ideal for rainbow trout spawning, the Moffat Project would not impact the pattern. ***Comment #798-4*** *(ID 4924)**:*** *The Draft EIS indicates only minor flow changes are expected during "Dry" years. For the "dry" year modeling scenarios, Denver uses the average of the years 1954, 1955, 1963, 1977 and 1981. However, the flow regime on the Lower Blue below Green Mountain Reservoir could change drastically under Alternative 1a in comparison to the historic flow conditions that BVR has actually experienced since 1994. For example, the historic average flow in May during these five "dry" years was about 173 cfs, whereas the May flow under all of Denver's modeling scenarios is only about 75 cfs. The variability of the "historic" gaged flows from November (350 cfs) through May (173 cfs) is not quite as severe and with generally higher flows the channel bed changes would not be as severe. Comparison of the historic average monthly flows as measured at the USGS gage for Denver's "Wet" year modeling scenarios (Denver uses the years 1952, 1962, 1983, 1984 and 1986) and Denver's modeled flows reveals a similar disparity. Again, the flow regime from November through February was historically relatively constant at approximately 370 cfs, and actually increased*

Comment Information	Comment	Comments and Responses
		during March, April and May as one might expect in wet runoff years. Denver's modeled scenarios show a significantly reduced and declining hydrograph during these months. **Response #798-4:** Hydrologic models are used to adjust the historic record to see how the water systems and stream flows would have looked if Current Conditions including facilities, water rights, administration, and demands would have existed over the hydrologic study period. The hydrologic study period used in the Moffat EIS is 1947-1991. This 45-year period includes a variety of hydrologic conditions including very wet years and severe droughts. One would expect potentially large differences when comparing model results with historic records. It is not appropriate to compare model results to historical data because demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. For example, the model simulates Dillon Reservoir being operating for the entire hydrologic study period. In contrast to the model, historically, Dillon Dam and its associated facilities were not built until 1963, and diversions of Blue River water to the East Slope through Roberts Tunnel did not start until 1964. This explains just one of the major differences between historical hydrology and model results, but there are many other causes. For example, after Dillon Reservoir began operating, Denver Water's demand and use of Dillon Reservoir has grown over the years. Also, the population and corresponding water use in Summit County has increased considerably through the study period. Historically more water was used during the irrigation season for ranching as opposed to throughout the year for municipal use and during

Comment Information	Comment	Comments and Responses
		the winter for snow making at the ski areas. Changes in Green Mountain Reservoir operations have also occurred due to the 1983 Operating Policy adopted by Reclamation, the second refill right appropriated in 1987, and the drawdown limits because of the five active landslides on the reservoir perimeter. The changes in facilities, operations and demands during the study period, which are described above, explain the differences in historical versus modeled flows along the lower Blue River. Flows in March, which are estimated by PACSM, are higher than have historically occurred due to operating rules included in the model for Green Mountain Reservoir. In PACSM, Green Mountain Reservoir is lowered to 50,000 AF, 60,000 AF or 70,000 AF by April 1 based upon the most probable inflow conditions. While this is consistent with the Reclamation Annual Operating Plan, it does not always match historical operations. Historical operations show that the start-of-fill date for Green Mountain Reservoir has varied between April 1 and May 15 because snowpack and snowmelt conditions differ from year to year (particularly in wet years). Often the start-of-fill data is set retroactively months afterwards. While PACSM accurately reflects Green Mountain Reservoir operations in a dry year, it is difficult to replicate the variability in operations in wet years since model operations are driven by defined operating rules and drawdown targets. PACSM results for April and May show flows are lower than have occurred historically. This is also related to the operating rules for Green Mountain and the start-of-fill date of April 1. The bypass requirement below Green Mountain Reservoir is 60 cfs; therefore, the flow below the reservoir is often no more than 60 cfs in PACSM after April 1 until the reservoir fills. Since the start-of-fill date has historically varied between April 1 and May

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		15, the flows below Green Mountain Reservoir are often higher than 60 cfs if the reservoir is still being drawn down to target levels. The start-of-fill date affects the timing of flow below Green Mountain Reservoir but has little impact on the average annual volume of flow below the reservoir. For example, a later start-of-fill date results in spills later in the season; however, the volume of water spilled would be similar regardless of the start-of-fill date. While it is difficult to capture the variability in Green Mountain Reservoir operations in wet years in PACSM, the Moffat Project and other reasonably foreseeable actions would have a minor effect on flows from October through May. PACSM results show average monthly flows below Green Mountain Reservoir would range from 316 to 323 cfs in March for Current Conditions and each of the Moffat Project Alternatives. The average monthly flow in March would decrease approximately 2% between Current Conditions and the Proposed Action; therefore, there would be little change in flow caused by the Moffat Project and other reasonably foreseeable actions in that month. In April, flows would be reduced by less than 2 cfs on average under the Proposed Action compared to Current Conditions. Although the existing seasonal pattern may not be ideal for rainbow trout spawning, the Moffat Project would not impact the pattern. ***Comment #798-5*** *(ID 4925)**:*** *Comment 4: The No Action Alternative as Described Does Not Appear to be a Credible No Action Alternative. The Corps is respectfully requested to respond to these questions as to the accuracy, credibility, and reasonableness of the Draft EIS's pre- and post-project conditions and the No Action Alternative and to clarify the actual changes attributable to reasonable alternatives under consideration. The Draft EIS posits the No Action*

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		Alternative as steps Denver would take in 2030, absent actions under Alternative 1a or other proposed alternatives, to meet the projected increased demand of 18,000 acre-feet (AF) of water. The Draft EIS compares the impacts on the Blue River between Alternative 1a and the No Action Alternative and concludes that impacts on the Blue would be less under the Preferred Action Alternative (Alternative 1a) because Gross Reservoir would be expanded to address the additional demand, so Denver would not be forced to access its Strategic Water Reserve or increase diversions from its Blue River system. The assumption that Denver would be forced to meet the 18,000 AF demand absent firm yield development under any of the action alternative scenarios appears counter intuitive. One wonders why and how, if Denver could not develop the 18,000 AF proposed, Denver would seek to meet this demand at all. It seems more logical that lack of development of the 18,000 AF would result in unmet demand. The Draft EIS does not adequately explain the projected demand for 18,000 AF by 2030. The Draft EIS explains the demand is derived from analysis in Denver's Integrated Resources Plan (drafted in 1997, updated in 2002), and that this demand includes both demand from "customers" and "near term water commitments." But, is this increased demand based on increased demand by current consumers and entities to which Denver has water commitments as of 2016, or increased demand via new water consumers and new water commitments not in effect prior to 2016? Assuming the latter scenario, if Denver was not able to develop the additional 18,000 AF, a true "no action" alternative would be that Denver would simply not meet the increased demand – i.e. not sell new taps for development and not enter into new water commitments. (It seems imprudent and thus unlikely that Denver would have entered into water commitment contracts already without being assured it can develop the 18,000 AF.) Effects of such an

Comment Information	Comment	Comments and Responses
		alternative have not been analyzed. Even accepting the assumption that Denver would somehow meet 18,000 AF of demand without developing 18,000 additional AF of new yield, the DEIS does not adequately inform the reader why not building the Moffat Tunnel project causes more impacts to the Lower Blue. It makes the reader wonder whether there is indeed a reasonable set of alternatives for the decision maker to assess. The DEIS should have done a better job of explaining the use of the 2016 and 2030 planning horizons. It strikes one as an "apples vs. oranges" comparison and undermines the reasonableness The No Action Alternative appears to present a false choice; either the Moffat expansion is built or the Strategic Water Reserve is tapped. What about other alternatives, such as: restricting taps or other water supplies in the Platte River Basin? Does Denver continue to sell taps even if it lacks the water supply to meet such demand? If a part of the Reserve can be used to meet ongoing baseload demand (as opposed to an emergency), does that not undermine the need for the Moffat Expansion Project? **Response #798-5:** The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply.

Comment Information	Comment	Comments and Responses
		Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. Growth in Demand The projected need for an additional 18,000 AF/yr by 2032 is based on Denver Water's demand forecast for its combined service area (CSA). The growth in Denver Water's demand is based on future demographic growth within the CSA as opposed to new water commitments to deliver treated and/or raw water outside the CSA. By charter, Colorado Constitution, Colorado State Statute, and the Denver Charter, Denver Water is obligated to provide water to customers within the CSA. Due to this commitment, the No Action Alternative includes use of Denver Water's Strategic Water Reserve and/or increased diversions from its Blue River system to meet the additional demand. Strategic Water Reserve The need for the 30,000 AF safety factor (i.e., Strategic Water Reserve) is described in Appendix A of the DEIS (Review of Denver Water's IRP, p.11 and Supplemental Evaluation of Denver Water Demand Projections, pgs. 13-15). As stated, the safety factor is intended to protect against a host of uncertainties, including the constriction of existing supplies, a downward revision of the estimated safe annual yield from prolonged drought, challenges to historic operations of Denver Water's water rights, changes in administration of water rights resulting in adverse impacts to Denver Water's supplies, catastrophic loss of facilities, delays in the development of new

Comment Information	Comment	Comments and Responses
		supplies, or higher than anticipated demand forecasts. The 30,000 AF safety factor is reasonable to help account for these risks. Reviews of other water utilities in the nation were conducted as part of the development of the Purpose and Need. Results of these reviews show that it is a reasonable and prudent practice for a utility the size of Denver Water to maintain a water supply reserve of 8% to 12% of installed supply. Denver Water's 30,000 AF Safety Factor is about 8% of its supply. If a portion of this Safety Factor were used to solve the Moffat Collection System problems a like amount would have to be simultaneously constructed to maintain the existing protection. Therefore, the Safety Factor should not be included as a component in the action alternatives evaluated in the EIS. These risks are not accounted for in the firm yield modeling and calculations, nor are they considered in the water demand projections. The safety factor must be held apart from the derivation of the 18,000 AF shortfall to appropriately reflect the risks which occur outside the models, methods and procedures to calculate that need. The purpose of the Moffat Project is not to build a Strategic Water Reserve in the North System in addition to the existing 30,000 AF Strategic Water Reserve. However, the additional storage helps balance North and South Systems water storage. The amount of Strategic Water Reserve stored in each reservoir in Denver Water's system varies depending on hydrologic conditions and the severity of the drought. By adding storage to the North System, a portion of the Strategic Water Reserve could be stored in an enlarged Gross Reservoir because more water would be stored in the North System prior to dry-year sequences. Modeling of the No Action Alternative shows that none of the Strategic Water

Comment Information	Comment	Comments and Responses
		Reservoir is available to the North System at times during the critical drought period because storage capacity is limited at Gross Reservoir. At the end of the critical drought period, Gross Reservoir is empty and the Strategic Water Reserve is located entirely in Denver Water's South System reservoirs. Baseline The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). Chapter 4 of the FEIS displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios: • Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Watering Restrictions Please see the description of No Action Alternative in Section 2.10 of the DEIS. Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver

Comment Information	Comment	Comments and Responses
		Water is implementing a conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. Other water sources in the South Platte River Basin were analyzed during the alternative screening process as described in DEIS Section 2.1 and Appendix B. These alternatives would require some form of Federal permit and therefore cannot be a “No Action” alternative. ***Comment #798-6*** *(ID 4926)**:*** *Comment 5: Requested Mitigation. To address the adverse impacts of Alternative 1a on the Rock Snot Algae problem, it would be beneficial to include in the special conditions for the U.S. Army Corps of Engineers CWA 404 permit a requirement for proponents to provide a minimum of 1800 cfs discharge during the April- June period at a frequency of once every 3- 4 years that would sustain for a period of 1-2 weeks.* **Response #798-6:** Didymo is a native species that is creating water quality issues State-wide. Didymo apparently prefer cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of rivers in the Project area indicate that the Proposed Action and other Project alternatives would have no impact

Comment Information	Comment	Comments and Responses
		on Didymo. An expanded discussion on Didymo is included in FEIS Sections 4.6.11 and 5.11. ***Comment #798-7*** *(ID 4927)**:*** *To address the adverse impacts of Alternative 1a on the flows in the Blue River below Green Mountain Reservoir on fish habitat, it would be beneficial to develop a plan that seeks to create more consistent flow conditions for trout assuring access to and maintenance of critical seasonal spawning, egg incubation and fry emergence. Without benefit of a better understanding of Denver's PACSM model and the interactive operations of Green Mountain Reservoir and Dillon Reservoir, BVR can only suggest that perhaps Denver could change its criteria for filling Dillon Reservoir such that less water would be stored in Dillon Reservoir during April and May while concurrently bypassing flows from Dillon and Green Mountain to supplement the flows in the lower Blue during these months. It may also be feasible to reduce the projected higher flows during and correspondingly increase the flows in April and May. Denver would then have to be in a position to recover these bypassed storable flows during June and July.* **Response #798-7:** Please see the response to Comment ID 4923. DEIS Sections 3.9, 4.9 and 5.9 (FEIS Sections 3.11, 4.6.11, and 5.11) discuss the fish and benthic invertebrate resources of the Blue River and evaluated impacts to habitat with PHABSIM modeling for the section of the river between Dillon and Green Mountain reservoirs.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #826 David Nickum, Executive Director Colorado Trout Unlimited 1320 Pearl Street, Suite 320 Boulder, CO 80302	From: David Nickum [mailto:DNickum@tu.org] Sent: Wednesday, March 17, 2010 6:19 PM To: MOFFAT.EIS@usace.army.mil Cc: Mely Whiting Subject: Comment letter CTU joins in the comments submitted on behalf of Trout Unlimited by Mely Whiting. We appreciate your consideration of TU's concerns and suggestions on the Moffat Firming Environmental Impact Statement. ********** David Nickum Executive Director Colorado Trout Unlimited 1320 Pearl Street, Suite 320 Boulder, CO 80302 303-440-2937 x101 Don't forget to get your tickets! CTU's annual Auction and Gala is March 19th! Click here <http://cotroutgala.eventbrite.com/> to buy tickets online or view some of our live auction items <http://http//www.cotrout.org/LinkPages/CTUGala2010/tabid/378/Default.aspx> .	***Comment #826-1*** *(ID 3427)**:*** *CTU joins in the comments submitted on behalf of Trout Unlimited by Mely Whiting. We appreciate your consideration of TU's concerns and suggestions on the Moffat Firming Environmental Impact Statement.* **Response #826-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #837 Amelia (Mely) S. Whiting, Legal Counsel Trout Unlimited P.O. Box 1544 Pagosa Springs, CO 81147	From: Mely Whiting [mailto:MWhiting@tu.org] Sent: Wednesday, March 17, 2010 5:24 PM To: Franklin, J Scott NWO Subject: Trout Unlimited's Comments - Moffat Collection System Project Importance: High Franklin, Please find attached comments from Trout Unlimited. Thanks. Mely Whiting Trout Unlimited 720.470.4758 - Cover.pdf - TUComment404.pdf - TUMoffatNEPA.3-17-10.pdf	***Comment #837-11*** *(ID 4786)**:*** *Trout Unlimited, Colorado Trout Unlimited, and the Headwaters Chapter of Trout Unlimited (jointly referred to as "Trout Unlimited") respectfully submit the attached comments on the proposed Moffat Collection System Project ("Moffat Project") for consideration by the U.S. Army Corps of Engineers ("USACE"). Trout Unlimited is a non-profit conservation organization with approximately 150,000 members nationally, 10,000 in Colorado. Our Headwaters Chapter, based in Grand County, counts with 100 very active members. Our mission is to conserve, protect and restore coldwater fisheries and their habitat.* **Response #837-11:** The Corps notes the comment. ***Comment #837-10*** *(ID 4785)**:*** *Denver Water is seeking a CWA §404 permit to enlarge Gross Reservoir to triple its current storage capacity. Most of the water to be stored in the enlarged reservoir will be imported from the Fraser and Williams Fork river basins and will cause further depletions to the upper Colorado River, of which streams within those basins are tributary. Trout Unlimited is extremely concerned about the impacts these additional diversions will have on trout fisheries in stream systems that have already lost the majority of their native flows to transmountain diversions. Available information shows degradation already occurring. Elevated stream temperatures, excess sediment and the spread of invasive species are known problems.* *According to a study by the Colorado Division of Wildlife, once abundant stonefly and native sculpin populations in the upper Colorado River downstream of Windy Gap reservoir have dramatically declined and, in some places, have been eliminated since*

Comment Information	Comment	Comments and Responses
	Attachments: March 17, 2010 Scott Franklin Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 **VIA EMAIL**: https://www.nwo.usace.army.mil/html/od-tl/eis/moffat-eis.html **Re: Moffat Collection System Project - NWO-2002-80762-DEN** **Comments on CWA §404 Permit Application and NEPA Analysis** Dear Mr. Franklin, Trout Unlimited, Colorado Trout Unlimited, and the Headwaters Chapter of Trout Unlimited (jointly referred to as "Trout Unlimited") respectfully submit the attached comments on the proposed Moffat Collection System Project ("Moffat Project") for consideration by the U.S. Army Corps of Engineers ("USACE"). Trout Unlimited is a non-profit conservation organization with approximately 150,000 members nationally, 10,000 in Colorado. Our Headwaters Chapter, based in Grand County, counts with 100 very active members. Our mission is to conserve, protect and restore coldwater fisheries and their habitat. Denver Water is seeking a CWA §404 permit to enlarge Gross Reservoir to triple its current storage capacity. Most of the water to be stored in the enlarged reservoir will be imported from the Fraser and Williams Fork river basins and will cause further depletions to the upper Colorado River, of which streams within those basins are tributary. Trout Unlimited is extremely concerned about the impacts these additional diversions will have on trout fisheries in stream systems that have already lost the majority of their native flows to transmountain diversions. Available information shows degradation already occurring. Elevated stream temperatures, excess sediment and the spread of invasive species are known problems. According to a study by the Colorado Division of Wildlife, once abundant stonefly and native suculpin populations in the upper Colorado River downstream of Windy Gap reservoir have dramatically declined and, in some places, have been eliminated since Windy Gap, the latest transmountain diversion project, came on line. Trout biomass has been significantly reduced.	*Windy Gap, the latest transmountain diversion project, came on line. Trout biomass has been significantly reduced. We are concerned that some of these streams, including the Fraser and upper Colorado rivers, may be reaching a "tipping" point - where incremental diversions will not only exacerbate degraded conditions, but will push the streams to a point where they can no longer sustain healthy trout fisheries. The USACE recognizes the potential for such non-linear, dramatic response but declines to further evaluate it due to the difficulty of the analysis and need for additional data. No monitoring or other term or condition is currently being proposed to prevent or address such potential catastrophic response. The USACE's analysis, while lengthy and complex, fails to answer this and other critical questions necessary to understand the effects the Moffat Project's incremental depletions will have on these popular trout fisheries.* **Response #837-10:** The Corps is not aware of a known scientific threshold or "tipping point" at which negative impacts occur to aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. For example, in fully diverted

Comment Information	Comment	Comments and Responses
	We are concerned that some of these streams, including the Fraser and upper Colorado rivers, may be reaching a "tipping" point - where incremental diversions will not only exacerbate degraded conditions, but will push the streams to a point where they can no longer sustain healthy trout fisheries. The USACE recognizes the potential for such non-linear, dramatic response but declines to further evaluate it due to the difficulty of the analysis and need for additional data. No monitoring or other term or condition is currently being proposed to prevent or address such potential catastrophic response. The USACE's analysis, while lengthy and complex, fails to answer this and other critical questions necessary to understand the effects the Moffat Project's incremental depletions will have on these popular trout fisheries. Given the magnitude of depletions already experienced by the affected stream systems, obvious signs of degradation, significant additional depletions expected, and value of recreational fisheries, issuance of a CWA § 404 permit would violate NEPA and CWA, absent (1) additional, adequate evaluation of the potential for linear and non-linear responses, or (2) imposition of terms and conditions that require monitoring for and addressing any such responses. Attached, you will find two sets of comments that further detail the basis of our concerns. The first set of comments (Attachment A) addresses the USACE's evaluation of the proposed Moffat Project's compliance with CWA section 404(b)(1) Guidelines. The second set of comments (Attachment B) identifies significant deficiencies in the Draft Environmental Impacts Statement (DEIS) for the Moffat Project, which render the document incapable of informing the USACE's decision whether to issue a CWA §404 permit. Terms and conditions that we believe are the minimum necessary, should the USACE consider issuance of a permit, to protect the trout fisheries is included in the Joint Rebuttal Report. In addition to these comments, Trout Unlimited is a signatory of, and incorporates as part of its comments, the Moffat Collection System Project Joint Rebuttal Report prepared in collaboration with Grand County, Summit County, the Colorado River Water Conservation District, land owners, and others equally concerned with the impacts the proposed Moffat Project will have on the Fraser and Williams Fork river basins and on the upper Colorado River. Many of the comments provided in this letter simply summarize matters more fully discussed in that document. Trout Unlimited also joins in separate comments prepared by Western Resource Advocates, Summit County, and Grand County. We hope the USACE will carefully consider these comments and be guided by them as it decides whether to issue a CWA § 404 permit for the Moffat Project and, if so, under what terms and conditions. The continued viability of valuable recreational fisheries in the Fraser and Williams Fork river basins and in the upper Colorado River depends on it. 2	tributaries that do not contain fish and few macroinvertebrates, it is likely that the resource, immediately downstream of the diversion, is past the tipping point. In other stream segments, site-specific information was assessed to determine if the Project would create a tipping point effect. FEIS Sections 3.11, 4.6.11, and 5.11 have been revised to identify existing conditions in streams that are clearly past the tipping point based on professional judgment. ***Comment #837-9*** *(ID 4784)**:*** *Given the magnitude of depletions already experienced by the affected stream systems, obvious signs of degradation, significant additional depletions expected, and value of recreational fisheries, issuance of a CWA § 404 permit would violate NEPA and CWA, absent (1) additional, adequate evaluation of the potential for linear and non-linear responses, or (2) imposition of terms and conditions that require monitoring for and addressing any such responses. Attached, you will find two sets of comments that further detail the basis of our concerns. The first set of comments (Attachment A) addresses the USACE's evaluation of the proposed Moffat Project's compliance with CWA section 404(b)(1) Guidelines. The second set of comments (Attachment B) identifies significant deficiencies in the Draft Environmental Impacts Statement (DEIS) for the Moffat Project, which render the document incapable of informing the USACE's decision whether to issue a CWA §404 permit. Terms and conditions that we believe are the minimum necessary, should the USACE consider issuance of a permit, to protect the trout fisheries is included in the Joint Rebuttal Report. In addition to these comments, Trout Unlimited is a signatory of, and incorporates as part of its comments, the Moffat Collection System Project Joint Rebuttal Report prepared in collaboration with Grand County, Summit County, the Colorado River Water Conservation District, land owners, and others*

Comment Information	Comment	Comments and Responses
	Do not hesitate to contact me if you have any questions or wish to discuss these matters further. Sincerely, s/ Amelia S. Whiting Amelia S. Whiting Legal Counsel Trout Unlimited, Colorado Water Project P.O. Box 1544 Pagosa Springs, CO 81147 720.470.4758 mwhiting@tu.org cc: U.S. Environmental Protection Agency, Region VIII Colorado Department of Natural Resources Colorado Division of Wildlife Colorado Wildlife Commission Colorado Water Conservation Board Colorado Department of Public Health & Environment U.S. Senator Udall U.S. Senator Bennet U.S. Representative Salazar U.S. Representative Polis 3	*equally concerned with the impacts the proposed Moffat Project will have on the Fraser and Williams Fork river basins and on the upper Colorado River. Many of the comments provided in this letter simply summarize matters more fully discussed in that document. Trout Unlimited also joins in separate comments prepared by Western Resource Advocates, Summit County, and Grand County. We hope the USACE will carefully consider these comments and be guided by them as it decides whether to issue a CWA § 404 permit for the Moffat Project and, if so, under what terms and conditions. The continued viability of valuable recreational fisheries in the Fraser and Williams Fork river basins and in the upper Colorado River depends on it. Do not hesitate to contact me if you have any questions or wish to discuss these matters further.* **Response #837-9:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #837-8*** *(ID 4783)**:*** *Attachment A Trout Unlimited Comments Compliance with CWA 404(b)(1) and other USACE Regulations Moffat Collection System Project The Clean Water Act (CWA) prohibits the discharge of dredge or fill materials into waters of the United States without a permit, 33 U.S.C. § 1344(a). To issue a permit, the USACE must comply with binding CWA § 404(b)(1) Guidelines adopted jointly with the U.S. Environmental Protection Agency, and codified at 40 CFR Part 230. See 33 U.S.C. §1344(b). The USACE must also conduct a public interest review, in which "[t]he benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments." 33 CFR §320.4(a)(1). For the proposed Moffat Project, the USACE's evaluation of compliance with CWA §*

Comment Information	Comment	Comments and Responses
	Attachment A **Trout Unlimited Comments** **Compliance with CWA 404(b)(1) and other USACE Regulations** **Moffat Collection System Project** The Clean Water Act (CWA) prohibits the discharge of dredge or fill materials into waters of the United States without a permit, *33 U.S.C. § 1344(a)*. To issue a permit, the USACE must comply with binding CWA § 404(b)(1) Guidelines adopted jointly with the U.S. Environmental Protection Agency, and codified at 40 CFR Part 230. *See 33 U.S.C. §1344(b)*. The USACE must also conduct a public interest review, in which "[t]he benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments." *33 CFR §320.4(a)(1)*. For the proposed Moffat Project, the USACE's evaluation of compliance with CWA § 404(b)(1) Guidelines is included as an Appendix to the DEIS. No public interest review analysis has been made available to the public by the USACE. Based on our review of available information, the USACE's evaluation of compliance with CWA 404(b)(1) Guidelines is incomplete. Issuance of a 404 permit, as proposed, is inconsistent with the Guidelines and contrary to the public interest. Accordingly, issuance of a 404 permit, as proposed, would violate the CWA. I. **COMPLIANCE WITH CWA 404(b)(1) GUIDELINES** The Guidelines prohibit the issuance of a 404 permit if: • There is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. *40 CFR § 230.10(a);* • The discharge "causes or contributes . . . to violations of any applicable State water quality standard." *40 CFR § 230.10(b)(1);* • The discharge "will cause or contribute to significant degradation of the waters of the United States." *40 CFR § 230.10(c);* or • Appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem are not taken. *40 CFR § 230.10(d)*. To comply with these CWA § 303(d)(1) Guidelines, the USACE is required to look not only at the direct impacts of placing dredged and fill materials on a specific location, but also at the indirect impacts of that action on other affected aquatic environments – such	*404(b)(1) Guidelines is included as an Appendix to the DEIS. No public interest review analysis has been made available to the public by the USACE. Based on our review of available information, the USACE's evaluation of compliance with CWA 404(b)(1) Guidelines is incomplete. Issuance of a 404 permit, as proposed, is inconsistent with the Guidelines and contrary to the public interest. Accordingly, issuance of a 404 permit, as proposed, would violate the CWA. I. COMPLIANCE WITH CWA 404(b)(1) GUIDELINES The Guidelines prohibit the issuance of a 404 permit if: • There is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. 40 CFR § 230.10(a); • The discharge "causes or contributes . . . to violations of any applicable State water quality standard." 40 CFR § 230.10(b)(1); • The discharge "will cause or contribute to significant degradation of the waters of the United States."* *40 CFR § 230.10(c); or • Appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem are not taken. 40 CFR § 230.10(d). To comply with these CWA § 303(d)(1) Guidelines, the USACE is required to look not only at the direct impacts of placing dredged and fill materials on a specific location, but also at the indirect impacts of that action on other affected aquatic environments – such as reduction of stream flows due to a proposed water storage project. Riverside Irrigation District v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985). The USACE must deny a 404 permit application if the proposed discharge fails to meet these criteria, see e.g., 40 CFR § 320.4; 40 CFR § 323.6, or if there is insufficient information to make a reasonable judgment as to whether the proposed discharge complies with the Guidelines, 40 CFR § 230.12(a)(3)(iv)(emphasis added).*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 as reduction of stream flows due to a proposed water storage project. *Riverside Irrigation District v. Andrews*, 758 F.2d 508, 512 (10th Cir. 1985). The USACE must deny a 404 permit application if the proposed discharge fails to meet these criteria, *see e.g., 40 CFR § 320.4; 40 CFR § 323.6*, or if there is insufficient information to make a reasonable judgment as to whether the proposed discharge complies with the Guidelines, *40 CFR § 230.12(a)(3)(iv)(emphasis added)*. **A. The Moffat Project will cause or contribute to the violation of water quality standards** **1. Stream Temperature Standards Violations** The DEIS identifies three instances where operation of the Moffat Project will cause or contribute to violation of water quality standards: • Violation of the acute (lethal) standard for stream temperature in Ranch Creek • Violation of the acute (lethal) standard for stream temperature in the Fraser River • Violation of the chronic (MWAT) standard for stream temperature in the Colorado River, downstream of Windy Gap Reservoir No measures to avoid these violations have been proposed by the USACE. *See DEIS, Section 4.1.7 at 4-197-8*. Denver Water proposes to "mitigate" for these violations (*DEIS, Appendix M??*) by: • Participating in ongoing monitoring activities • Assisting in the installation of two real-time stream temperature monitoring stations in the Colorado River; and • Bypassing up to 250 acre-feet from its Fraser River Collection System after August 1 if the Moffat Project is diverting and certain temperature "thresholds" to be defined by Denver Water, the Northern Colorado Water Conservancy District and "other stakeholders," is exceeded. These measures are insufficient to ensure that the violations will not occur. Monitoring is a good first step, but insufficient to prevent violations. Moreover, participation in a general monitoring plan is insufficient. Monitoring requirements must be specifically designed to ensure no violation of water quality standards. Second, conditions triggering the proposed "bypass" are insufficient to ensure that violations will not occur because: (1) the "bypass" is triggered by unknown temperature "thresholds," rather than by the State's stream temperature standards formally adopted by the State of Colorado pursuant to its delegated authority under the Clean Water Act; (2) identified violations may occur before the artificially defined August 1 period; and (3) the 3	**Response #837-8:** FEIS Appendix K contains a Section 404(b)(1) Guidelines Analysis. As an appendix to the DEIS, the document was available for review and comment by the public during the 138-day public review period. The direct, indirect, and cumulative effects were evaluated for each resource. Changes in surface hydrology in streams and reservoirs within the Project area was the foundation of the impact analysis for water-related resources (e.g., groundwater, aquatics, wetland and riparian areas, recreation, etc.). Hydrologic changes were modeled daily for streams within the Project area as described in DEIS Section 4.1. **Comment #*837-7*** *(ID 4782)**:*** *The Moffat Project will cause or contribute to the violation of water quality standards 1. Stream Temperature Standards Violations The DEIS identifies three instances where operation of the Moffat Project will cause or contribute to violation of water quality standards: • Violation of the acute (lethal) standard for stream temperature in Ranch Creek • Violation of the acute (lethal) standard for stream temperature in the Fraser River • Violation of the chronic (MWAT) standard for stream temperature in the Colorado River, downstream of Windy Gap Reservoir No measures to avoid these violations have been proposed by the USACE. See DEIS, Section 4.1.7 at 4-197-8. Denver Water proposes to "mitigate" for these violations (DEIS, Appendix M??) by: • Participating in ongoing monitoring activities • Assisting in the installation of two real-time stream temperature monitoring stations in the Colorado River; and • Bypassing up to 250 acre-feet from its Fraser River Collection System after August 1 if the Moffat Project is diverting and certain temperature "thresholds" to be defined by Denver Water, the Northern Colorado Water Conservancy District and*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 assumption that the Moffat Project's contribution to such violations is limited to 250 acre-feet is unexplained and unjustified. The CWA 404(b)(1) Guidelines prohibit issuance of a 404 permit for projects that will cause or contribute to a violation of water quality standards. Accordingly, the only acceptable permit terms and conditions to prevent identified violations are (1) a specific monitoring plan for all streams that includes all streams from which the Moffat Project diverts, and (2) a prohibition against diversions that cause or contribute to stream temperature standards violations. **2. Insufficient information to assess additional water quality violations** The USACE lacks sufficient information to assess whether the Moffat Project will cause or contribute to additional water quality violations. As detailed in the Joint Rebuttal Statement and Appendix B to these comments, the DEIS does not provide information or analysis critical to the USACE's assessment of compliance with the Guidelines, including: • An accurate estimation of the magnitude and timing of flow depletions caused by the Project • Analysis of the Project's potential to cause or contribute to violation of the State's chronic (MWAT) stream temperature standard in streams other than the Colorado River • An evaluation of the magnitude, frequency and timing of anticipated stream temperature violations - although models are available to make this assessment, the DEIS's evaluation is only qualitative • Analysis of the Project's potential to cause or contribute to water quality violations where violations are not already occurring • Analysis of water quality impacts, including cumulative impacts, of Moffat Project depletions when added to increased depletions that will occur between now and 2016, the water quality impacts of which are not currently quantified. • Analysis of water quality impacts of operation of the Project on Grand Lake – such impacts are likely as reduced Fraser River dilution flows would be pumped into Grand Lake by the Windy Gap project, thus contributing to the ongoing degradation of water quality in the Lake. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. *See 40 CFR § 230.12(a)(3)(iv).* In the alternative, adequate terms and conditions – including an adequate monitoring plan and prohibition against Project diversions where diversions will cause or contribute to water quality standards violations – must be imposed. 4	*"other stakeholders," is exceeded. These measures are insufficient to ensure that the violations will not occur. Monitoring is a good first step, but insufficient to prevent violations. Moreover, participation in a general monitoring plan is insufficient. Monitoring requirements must be specifically designed to ensure no violation of water quality standards.* *Second, conditions triggering the proposed "bypass" are insufficient to ensure that violations will not occur because: (1) the "bypass" is triggered by unknown temperature "thresholds," rather than by the State's stream temperature standards formally adopted by the State of Colorado pursuant to its delegated authority under the Clean Water Act; (2) identified violations may occur before the artificially defined August 1 period; and (3) the assumption that the Moffat Project's contribution to such violations is limited to 250 acre-feet is unexplained and unjustified. The CWA 404(b)(1) Guidelines prohibit issuance of a 404 permit for projects that will cause or contribute to a violation of water quality standards. Accordingly, the only acceptable permit terms and conditions to prevent identified violations are (1) a specific monitoring plan for all streams that includes all streams from which the Moffat Project diverts, and (2) a prohibition against diversions that cause or contribute to stream temperature standards violations.* **Response #837-7:** A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (see Sections 4.6.2 and 5.2). In addition to monitoring stream temperatures, Denver Water has proposed to bypass additional water when stream temperatures reach a certain level. Appropriate conceptual mitigation is discussed

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 **B. The Moffat Project will cause or contribute to the significant degradation of waters of the United States** According to the CWA 404(b)(1) Guidelines, a discharge causes or contributes to significant degradation if it has significantly adverse effects on human health or welfare, on aquatic life and other wildlife dependent on aquatic ecosystems, on aquatic ecosystem diversity, productivity, and stability, or on recreational, aesthetic, and economic values. *40 CFR § 230.10(c)*. As detailed in the Joint Rebuttal Statement, transmountain diversion projects, including Denver Water's existing Moffat Tunnel diversions, have significantly altered the natural hydrograph of streams within the Fraser and Williams Fork river basins and of the Colorado River downstream of its confluence with the Fraser River. Denver Water's current Moffat Tunnel diversions take, on average, over 50% of the native streams flows of the Fraser River and completely dry up portions of several of its tributaries. In conjunction with other transmountain diversions, Denver Water's current Moffat Tunnel diversions deplete the Colorado River downstream of it confluence with the Fraser River by more than 60%, on average. Signs of degradation of these stream systems and their aquatic habitat are evident. • Stream temperature standards exceed State acute (lethal) standards in the Fraser River and some of its tributaries and in the Colorado River downstream of Windy Gap reservoir. • Violation of State dissolved oxygen standards are reported in the Williams Fork. • Excess sediment, which smothers macroinvertebrates and fish eggs, is evident in the Fraser River and some of its tributaries as well as in the Colorado River downstream of Windy Gap reservoir. • Invasive species, such as algae (*didymo*) and *tubifex worms*, cause of whirling disease, are identified in several affected streams. • Stonefly populations, which are an indicator of aquatic ecosystem health and a major food supply for trout have been decimated and, in some cases, eliminated in the Colorado River downstream of Windy Gap reservoir. • Native sculpin fish populations, also a major food supply for recreational trout fisheries, have been significantly reduced and in some cases eliminated at that location. • Trout biomass has dramatically decreased. Yet, the Fraser and Williams Fork river basins and the upper Colorado River continue to support viable trout populations and remain popular destinations for fishing and other recreational activities. 5	in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #837-6*** *(ID 4781)**:*** *Insufficient information to assess additional water quality violations The USACE lacks sufficient information to assess whether the Moffat Project will cause or contribute to additional water quality violations. As detailed in the Joint Rebuttal Statement and Appendix B to these comments, the DEIS does not provide information or analysis critical to the USACE's assessment of compliance with the Guidelines, including: • An accurate estimation of the magnitude and timing of flow depletions caused by the Project • Analysis of the Project's potential to cause or contribute to violation of the State's chronic (MWAT) stream temperature standard in streams other than the Colorado River • An evaluation of the magnitude, frequency and timing of anticipated stream temperature violations - although models are available to make this assessment, the DEIS's evaluation is only qualitative • Analysis of the Project's potential to cause or contribute to water quality violations where violations are not already occurring • Analysis of water quality impacts, including cumulative impacts, of Moffat Project depletions when added to increased depletions that will occur between now and 2016, the water quality impacts of which are not currently quantified. • Analysis of water quality impacts of operation of the Project on Grand Lake – such impacts are likely as reduced Fraser River dilution flows would be pumped into Grand Lake by the Windy Gap project, thus contributing to the ongoing degradation of water quality in the Lake. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. See 40 CFR §*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 The proposed Moffat Project alone and in conjunction other diversions, including the proposed Windy Gap Firming Project, has the potential to significantly exacerbate these degraded conditions. The proposed Moffat Project's incremental diversions have the potential to significantly degrade these conditions, including: • Increased stream temperature standards violations • Increased periods of low flows that are stressful to fish • Reduced peak flows critical to flush sediments from stream beds • More human-created drought conditions • can reduce the streamare expected to reduce peak flows, which are critical to flush sediments and prolong periods of low flows. Project diversions are expected to increase periods of low flows and stream temperatures in the upper Colorado River and in the Fraser River and some of its tributaries, and prolong dry up of portions of the Fraser River's tributaries. In spite of existing degradation and clear indication that the proposed Moffat Project may cause or contribute to further degradation of affected west slope streams, their aquatic ecosystem, and recreation, the DEIS fails to adequately identify or evaluate the impacts the Project's incremental diversions will have on these resources. Where serious impacts are identified, they are unexplainably dismissed as insignificant. **1. The DEIS recognizes degradation and arbitrarily dismisses it** The DEIS acknowledges that the proposed Moffat Tunnel diversions will cause or contribute to the degradation of streams within the Fraser River basin and of the upper Colorado River, including: • Increasing violations of State acute (lethal) stream temperature standards in Ranch Creek, the Fraser River • Increasing violations of State chronic stream temperature standards in the Colorado River, and • Prolonging the period of time streams that are dried up by current Denver Water diversions will remain dry The DEIS dismisses such degradation as "negligible." No rationale is given for such assessment. Acute stream temperature standards reflect the maximum temperature levels considered to be tolerable to trout. Stream temperatures that exceed those standards are presumed to be lethal. Accordingly, the adverse effects of Moffat Project diversions are not "negligible" they are significant. 6	*230.12(a)(3)(iv). In the alternative, adequate terms and conditions – including an adequate monitoring plan and prohibition against Project diversions where diversions will cause or contribute to water quality standards violations – must be imposed.* **Response #837-6:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Additional water quality analysis has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. **Comment #*837-5*** *(ID 4780)**:*** *The Moffat Project will cause or contribute to the significant degradation of waters of the United States According to the CWA 404(b)(1) Guidelines, a discharge causes or contributes to significant degradation if it has significantly adverse effects on human health or welfare, on aquatic life and other wildlife dependent on aquatic ecosystems, on aquatic ecosystem diversity, productivity, and stability, or on recreational, aesthetic, and economic values. 40 CFR § 230.10(c). As detailed in the Joint Rebuttal Statement, transmountain diversion projects, including Denver Water's existing Moffat Tunnel diversions, have significantly altered the natural hydrograph of streams within the Fraser and Williams Fork river basins and of the Colorado River downstream of its confluence with the Fraser River.*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 Likewise, depriving fish and macroinvertebrates of water for longer periods of time is a significant adverse impact, not a "negligible" one. **2. The DEIS provides insufficient information to assess the Moffat Project's potential to cause or contribute to additional significant degradation** a. No evaluation of potential for catastrophic threshold, non-linear responses The DEIS recognizes that transmountain diversions have had a profound impact on the hydrologic regime of the affected west slope streams. It recognizes that dramatic changes in hydrology can trigger non-linear, threshold responses, transforming stream systems to the point that they are no longer capable of supporting aquatic life. Yet, the DEIS indicates that an analysis of the potential for these threshold changes was not undertaken because such thresholds are "difficult to identify and would require abundant data collection and analyses . . . that is beyond the scope of the EIS." (DEIS at 4-311). No terms and conditions are proposed that would require monitoring for and taking steps to prevent such catastrophic response. Given the dramatic alterations of the natural hydrograph of affected streams and documented signs of ongoing deterioration of their aquatic resources, a decision to issue a 404 permit that will allow such significant incremental depletions, in the absence of this information would violate the Clean Water Act. b. No evaluation of potential for increased artificial draught conditions The DEIS looks at potential Moffat Project diversions on a modeled dry, average or wet year, and draws conclusions regarding the impacts of those diversions on water quality, sediment transport, and aquatic resources, based on these modeled predictions. What the DEIS does not evaluate, is the extent to which proposed Moffat Project diversions will increase the incidence of dry year conditions in the affected streams. Dry year conditions are particularly stressful to aquatic life, particularly when they occur on a prolonged basis (i.e., drought conditions). By increasing its storage capacity in Gross Reservoir, Denver Water will be able to significantly increase its diversions during wet and average years following dry years, when reservoir levels will likely be significantly down. The effect would be to artificially create dry year conditions in the stream, particularly when filling Gross Reservoir in an average year following a dry year. The potential for and impacts of these conditions are not evaluated in the DEIS. However, an independent evaluation of that potential indicates that the proposed Moffat Project will increase the incidence of dry year conditions in west slope streams. Such 7	*Denver Water's current Moffat Tunnel diversions take, on average, over 50% of the native streams flows of the Fraser River and completely dry up portions of several of its tributaries. In conjunction with other transmountain diversions, Denver Water's current Moffat Tunnel diversions deplete the Colorado River downstream of it confluence with the Fraser River by more than 60%, on average. Signs of degradation of these stream systems and their aquatic habitat are evident. • Stream temperature standards exceed State acute (lethal) standards in the Fraser River and some of its tributaries and in the Colorado River downstream of Windy Gap reservoir.* *• Violation of State dissolved oxygen standards are reported in the Williams Fork. • Excess sediment, which smothers macroinvertebrates and fish eggs, is evident in the Fraser River and some of its tributaries as well as in the Colorado River downstream of Windy Gap reservoir. • Invasive species, such as algae (dydmo) and tubifex worms, cause of whirling disease, are identified in several affected streams. • Stonefly populations, which are an indicator of aquatic ecosystem health and a major food supply for trout have been decimated and, in some cases, eliminated in the Colorado River downstream of Windy Gap reservoir. • Native sculpin fish populations, also a major food supply for recreational trout fisheries, have been significantly reduced and in some cases eliminated at that location. • Trout biomass has dramatically decreased. Yet, the Fraser and Williams Fork river basins and the upper Colorado River continue to support viable trout populations and remain popular destinations for fishing and other recreational activities. The proposed Moffat Project alone and in conjunction other diversions, including the proposed Windy Gap Firming Project, has the potential to significantly exacerbate these degraded conditions. The proposed Moffat Project's incremental diversions have the*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 increase in dry year conditions could have significant adverse effected on the aquatic environment. Yet, the DEIS does not evaluate it. c. No evaluation of impacts of climate change or beetle kill As further discussed in the Joint Rebuttal Statement, the DEIS does not include a meaningful evaluation of cumulative impacts of operation of the Moffat Project, climate change and the spread of pine beetle infestation. Accordingly, the USACE cannot evaluate the extent to which the Moffat Project will cause or contribute to the significant degradation of waters of the United States. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. *See 40 CFR § 230.12(a)(3)(iv)*. In the alternative, adequate terms and conditions, including an adequate monitoring and adaptive management plan –must be imposed. **3. The DEIS provides inadequate information to assess the Moffat Project's potential to cause or contribute to additional significant degradation** a. Inadequate sediment impacts analysis Peak flows are critical to flush sediments from stream beds. Excess sediment can be harmful to fisheries and macroinvertebrates. Excess sediment can also create favorable conditions for the spread of the *Tubifex* worm, responsible for whirling disease. The DEIS recognizes that the proposed Moffat Project will reduce peak flows that are necessary to flush sediments. It recognizes that decreases in peak flows due to the Moffat Project will result in decreases in sediment transport capacity. However, the DEIS concludes that sediment transport capacity is now and will be greater than the available supply and, therefore, "only minor amounts of localized sediment deposition is anticipated." (DEIS at 4-9). Relying on this analysis and conclusion, the DEIS goes on to conclude that loss of peak flows will not significantly adversely affect the west slope streams' aquatic environment or contribute to the spread of whirling disease. The DEIS's conclusion is contradicted by empirical evidence. Evidence of excess sedimentation is already present along the Fraser River and some of its tributaries as well as the Colorado River, as photographic evidence indicates. The DEIS' own information shows that "potential signs of aggradation" were observed in four out of seven reported west slope sampling sites. (DEIS, Table 3.1-19). Aggradation occurs in areas where the supply of sediment is greater than the amount of material the system is able to transport. 8	*potential to significantly degrade these conditions, including: • Increased stream temperature standards violations • Increased periods of low flows that are stressful to fish • Reduced peak flows critical to flush sediments from stream beds • More human-created drought conditions • can reduce the stream are expected to reduce peak flows, which are critical to flush sediments and prolong periods of low flows. Project diversions are expected to increase periods of low flows and stream temperatures in the upper Colorado River and in the Fraser River and some of its tributaries, and prolong dry up of portions of the Fraser River's tributaries.* *In spite of existing degradation and clear indication that the proposed Moffat Project may cause or contribute to further degradation of affected west slope streams, their aquatic ecosystem, and recreation, the DEIS fails to adequately identify or evaluate the impacts the Project's incremental diversions will have on these resources. Where serious impacts are identified, they are unexplainably dismissed as insignificant.* **Response #837-5:** FEIS Sections 4.6.2 and 5.2 has been updated to include additional water quality analysis for the Fraser and Colorado rivers. Additional channel morphology analyses were performed for the Fraser River and are described in FEIS Sections 4.6.3 and 5.3. Additional information was added to FEIS Sections 4.1 and 5.1 on the increased frequency and duration of dry year conditions and daily flow changes during a sequence of dry years followed by a wet year. FEIS Sections 3.11, 4.6.11, and 5.11 on aquatic biological resources contain revised discussions of the effects of sediment on fish and macroinvertebrates incorporating updated information from other resource areas. These sections also contain additional discussions of the distribution of sculpins and invasive species in the

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 Contrary to the DEIS's conclusion, this evidence suggests that the current flow regime is insufficient to the existing sediment load. Further reduction in peak flows can only aggravate that condition. b. Inadequate water quality analysis As discussed in above, the DEIS fails to provide needed information to assess the impacts, including cumulative impacts, of the Project on water quality. As a result, the USACE cannot properly assess the extent to which the proposed Moffat Project will cause or contribute to the degradation of waters of the United States. c. Inadequate analysis of anticipated flow reductions As discussed in the Joint Rebuttal Statement and in Attachment B, the DEIS impacts analysis relies on inaccurate and fundamentally flawed predictions of changes in flow associated with the proposed Moffat Project. Because the DEIS evaluation of impacts to the aquatic ecosystem is dependant on those predictions, the DEIS fails to adequate information needed for the USACE's assessment of whether operation of the project will result in significant degradation of waters of the United States. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. *See 40 CFR § 230.12(a)(3)(iv)*. In the alternative, adequate terms and conditions – including an adequate monitoring and adaptive management plan – must be imposed. **4. The USACE analysis does not consider or take into account Special Aquatic Resources that may be impacted by the proposed Moffat Project diversions** In evaluating whether significant degradation to the aquatic ecosystem will result, the USACE must take into account the special nature of state and federal designated areas. *40 CFR Subpart E*. The Colorado River, downstream of Windy Gap reservoir, and the Blue River between Dillon Reservoir and its confluence with the Colorado River are State designated Gold Medal fisheries and candidates for Congressional Wild and Scenic Rivers Act designation due to their outstanding fishing and boating recreation values. The Colorado River, between its confluence with the Blue River and the Eagle River is a State designated Wild Trout fishery. The Colorado River, between its confluence with the Blue River and the Roaring Fork, is a candidate for Congressional Wild and Scenic Rivers Act designation due to its outstanding fishing and boating recreation values. These Special Aquatics Resources designations reflect the extraordinary value of these recreational fisheries, based on fish reproduction, population and size. Accordingly, risks and impacts to fish and their food supply that may be otherwise deemed acceptable, could 9	Project area. FEIS Section 4.6.1 was revised to include more information on peak flow reductions, the increased frequency and duration of low flow conditions, and the increased frequency and duration that stream flows would be reduced to minimum USFS bypass flows, and tributaries without bypass requirements would be dried up. Please see the following summary on peak flows in relation to the Moffat Project below. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. Peak Flows High spring flows would still occur with Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all of Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 jeopardize the extraordinary value of these fisheries and the federal and state designations. Yet, neither the DEIS nor the USACE CWA 404(b)(1) analysis recognize Special Aquatic Resources status of these fisheries or assess impacts, including cumulative impacts, of the proposed Moffat Project in light of these special designations or the extent to which these impacts may jeopardize state and federal designations. Indeed, the DEIS entirely fails to evaluate the impacts of the proposed Project on fishing recreation, concluding without analysis, rationale or explanation, that the Project will not affect fishing recreation. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. *See 40 CFR § 230.12(a)(3)(iv)*. In the alternative, adequate terms and conditions – including an adequate monitoring and adaptive management plan – must be imposed. **C. Appropriate and practicable steps to minimize potential adverse impacts on aquatic ecosystems of west slope streams are not proposed** The USACE has proposed no specific measures to minimize the potential adverse impacts of the proposed Moffat Project on the aquatic environment of west slope streams. No measures are offered to avoid, minimize or mitigate water quality impacts, including acknowledged violation of State stream temperature standards. *See DEIS at* 4-197 to 4-198. No measures to avoid, minimize or mitigate loss of peak flows and increased sedimentation. *See DEIS at* 4-199. No measures to avoid, minimize or mitigate fishing recreation. With respect to impacts to aquatic resources, the DEIS states: "Minimization and avoidance techniques may include adjustments to operations that may benefit aquatic organisms. This would include changes to runoff flows or low winter flows to make these two critical time periods less stressful for fish and invertebrates . . ." *DEIS at* 4-335. However, the proposed measure is so vague so as to render it virtually meaningless. Appendix M to the DEIS includes Denver Water's proposed mitigation. Accordingly, the DEIS states: "All practicable steps have been taken to minimize potential adverse effects associated with construction and operation of the Proposed Action. This Mitigation Plan addresses the following unavoidable effects identified in the DEIS for the Proposed Action . . . Effects to flow and aquatic habitat in tributaries to the Fraser River." 10	Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years; however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with a Moffat Project on-line. Additional information on high flows was added to FEIS Sections 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. The analyses of stream morphology, specifically the anticipated response of the streams to projected flow changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations, and an assessment of transport capacity by substrate particle size. Analyses of the existing systems are provided in FEIS Section 3.3.

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 *DEIS at M-3.* Denver Water's proposed mitigation for west slope streams consists of: • Participation in ongoing monitoring activities and conditional bypass discussed in Section I.A.1., above; • Participation in the Colorado River Recovery Program for the benefit of endangered fish; and • Development and implementation of a plan to establish a viable Colorado River cutthroat fishery in a suitable location in Grand County. *DEIS at* M-4 to M-6. No explanation is offered why adverse effects to west slope streams are deemed to be "unavoidable." The assumption that Moffat Project impacts to west slope streams, including violation of stream temperature standards, are unavoidable is not only arbitrary, it is inconsistent with the CWA 404(b)(1) Guidelines which specifically prohibit the issuance of a 404 permit that will cause and contribute to a violation of water quality standards. With respect to the proposed mitigation measures, they are wholly insufficient to address the magnitude of potential impacts, including potential loss of valuable fisheries, which the Moffat Project, alone and in combination with other diversions will have on west slope streams. No appropriate and practicable steps to minimize the impacts of the Moffat Project are being proposed, in violation of CWA 404(b)(1) Guidelines. Accordingly, a 404 permit may not be issued until such time as such steps are proposed and made available to the public for review. **D. Least Damaging Practicable Alternatives.** Please refer to Joint Rebuttal Statement and comments by Western Resource Advocates. **II. OTHER REGULATORY REQUIREMENTS** **A. Public Interest Review.** The USACE must deny a CWA § 404 permit if the proposed project is contrary to the "public interest." *33 CFR § 320.4(a).* This evaluation requires the weighing of the benefits of the proposed project requiring a CWA § 404 permit against its impacts including, but not limited to, impacts on fish and wildlife values and recreation. The public interest review requirement is in addition to the requirement of compliance with the requirements of the CWA § 404(b)(1) Guidelines discussed above. This analysis requires the Corps to consider the "relative extent of the public and private need" for the 11	Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. **Comment #*837-4*** *(ID 4779)**:*** *The DEIS recognizes degradation and arbitrarily dismisses it The DEIS acknowledges that the proposed Moffat Tunnel diversions will cause or contribute to the degradation of streams within the Fraser River basin and of the upper Colorado River, including: • Increasing violations of State acute (lethal) stream temperature standards in Ranch Creek, the Fraser River • Increasing violations of State chronic stream temperature standards in the Colorado River; and • Prolonging the period of time streams that are dried up by current Denver Water diversions will remain dry The DEIS dismisses such degradation as "negligible." No rationale is given for such assessment. Acute stream temperature standards reflect the maximum temperature levels considered to be tolerable to trout. Stream temperatures that exceed those standards are presumed to be lethal. Accordingly, the adverse effects of Moffat Project diversions are not "negligible" they are significant. Likewise, depriving fish and macroinvertebrates of water for longer periods of time is a significant adverse impact, not a "negligible" one.* **Response #837-4:** Additional water quality analysis, including temperature, was performed for the Fraser and Colorado rivers. Please refer to FEIS Sections 4.6.2 and 5.2. DEIS Sections 4.9 and 5.9 and FEIS Sections 4.11 and 5.11 indicate that there would be minor adverse impacts to fish and macroinvertebrates in the streams with longer dry periods, rather than a

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 project and "reasonable alternative location and methods to accomplish the objective of the project. *Holy Cross Wilderness Defense Fund v. Madigan,* 960 Fed. 1515, 1524-1525, fn. 12 and 13. Please refer to Joint Rebuttal Statement and comments by Western Resource Advocates. **B. Water Quality Impacts** USACE regulations require evaluation of CWA § 404 applications for compliance with "applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity." *33 CFR § 320.4(d).* Certifications by the State regarding compliance with water quality standards is deemed conclusive by the Corps unless EPA advises of other water quality aspects need to be taken in consideration. *Id.* As previously discussed, the DEIS indicates that operation of the Moffat Project will cause or contribute to violations of State water quality standards. However, the DEIS does not provide sufficient information to fully evaluate the magnitude, extent and frequency of such violations or of such violations or the extent to which the Project will result in additional, unidentified violations. A decision with respect to the Subdistrict's CWA § 404 permit application must be postponed until such time as sufficient information to enable the State's required CWA § 401 determination and the State acts upon the requested certification in accordance with Clean Water Act and State procedures. **C. Fish and Wildlife Impacts.** The Federal Wildlife and Coordination Act (FWCA) requires federal agencies to consult with the USFWS and the State's fish and wildlife agencies when evaluating approval of projects that will impound, divert, or otherwise modify a stream or other water body. *16 U.S.C § 662(a).* The purpose of this requirement is to ensure that "wildlife conservation shall receive equal consideration with other features in the planning of Federal water resource development programs . . . putting fish and wildlife on the basis of equality with flood control, irrigation, navigation, and hydroelectric power in our water resource programs. . ." *S.Rep. No. 1981, 85th Cong.2d Sess. (July 28, 1958). 1958 U.S.Code Cong. & Admin.News, pp. 3446, 3448, 3450.1958 U.S.Code Cong. & Admin.News, at 3450.* Consultation with the fish and wildlife agencies must occur before the agencies make decisions. *See, e.g. Zabel v. Tabb,* 430 F.2d 199 (5th Cir. 1970), and their recommendations must be given proper consideration and weight. *See e.g., Sierra Club v. Alexander,* 484 F. Supp. 455, 470 (N.D.N.Y. 1980). To enable consultation, federal agencies must give the fish and wildlife agencies a meaningful opportunity to comment. *Sierra Club v. U.S. Army Corps of Engineers, 935 F. Supp. 1556, 1580 (S.D. Ala. 1996).* 12	negligible impact. **Comment #*837-3*** *(ID 4778):* *The DEIS provides insufficient information to assess the Moffat Project's potential to cause or contribute to additional significant degradation a. No evaluation of potential for catastrophic threshold, non-linear responses The DEIS recognizes that transmountain diversions have had a profound impact on the hydrologic regime of the affected west slope streams. It recognizes that dramatic changes in hydrology can trigger non-linear, threshold responses, transforming stream systems to the point that they are no longer capable of supporting aquatic life. Yet, the DEIS indicates that an analysis of the potential for these threshold changes was not undertaken because such thresholds are "difficult to identify and would require abundant data collection and analyses . . . that is beyond the scope of the EIS." (DEIS at 4-311). No terms and conditions are proposed that would require monitoring for and taking steps to prevent such catastrophic response. Given the dramatic alterations of the natural hydrograph of affected streams and documented signs of ongoing deterioration of their aquatic resources, a decision to issue a 404 permit that will allow such significant incremental depletions, in the absence of this information would violate the Clean Water Act. b.* *No evaluation of potential for increased artificial draught conditions The DEIS looks at potential Moffat Project diversions on a modeled dry, average or wet year, and draws conclusions regarding the impacts of those diversions on water quality, sediment transport, and aquatic resources, based on these modeled predictions. What the DEIS does not evaluate, is the extent to which proposed Moffat Project diversions will increase the incidence of dry year conditions in the affected streams. Dry year conditions are particularly stressful to aquatic life, particularly when*

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 As required by the Fish and Wildlife Coordination Act (FWCA), before making a decision with respect to CWA § 404 permits, the Corps must consult with the U.S. Fish and Wildlife Service (USFWS) and the State's fish and wildlife agencies "with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application." *33 CFR § 320.4(c)*. The Corps are required to "give full consideration to the views of those agencies on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits." *Id.* The DEIS provides sufficient information to warrant a determination by the USFWS and the Colorado Division of Wildlife that the proposed Moffat Project will have unacceptable impacts to aquatic resources. However, it fails to provide adequate information to understand the full magnitude and extent of the project's impacts to the resources. Accordingly, the USACE has failed to provide a meaningful opportunity for the WSFWS and the Colorado Division of Wildlife's comments, in violation of the FWCA. **D. Impacts to Historical, Cultural, Scenic, and Recreational Values** The USACE must give "due consideration" to the effect the proposed project may have on the values of special areas such as "wild and scenic rivers . . . and such other areas as may be established under federal or state law for similar and related purposes." *33 CFR § 320.4(e)*. "Action on permit applications should, insofar as possible, be consistent with, and avoid significant adverse effects on the values or purposes for which those classifications, controls, or policies were established." *Id.* As discussed above, and in detail in the Join Rebuttal Statement, the DEIS fails to provide required information or analysis needed for the USACE's assessment of the impacts of the proposed Project diversions on special state and federally designated aquatic resources, or on fishing recreation in general. **E. Other Federal, State and Local Requirements.** The USACE regulations require inclusion in 404 permits conditions that are "necessary to satisfy legal requirements or otherwise satisfy the public interest requirement." *33 CFR § 325.4(a)(1)*. If the USACE finds that special conditions are necessary to insure such compliance but those conditions would not be "reasonably implementable or enforceable, the permit application must be denied. *33 CFR § 325.4(c)*. There are serious questions regarding the legality of Denver Water's storage of Fraser and Williams Fork River basin water under its most senior water rights decrees. **F. Mitigation.** In addition to the requirements of the CWA § 404(b)(1) Guidelines, the USACE regulations require consideration of mitigation measures "throughout the permit 13	*they occur on a prolonged basis (i.e., drought conditions).* *By increasing its storage capacity in Gross Reservoir, Denver Water will be able to significantly increase its diversions during wet and average years following dry years, when reservoir levels will likely be significantly down. The effect would be to artificially create dry year conditions in the stream, particularly when filling Gross Reservoir in an average year following a dry year. The potential for and impacts of these conditions are not evaluated in the DEIS. However, an independent evaluation of that potential indicates that the proposed Moffat Project will increase the incidence of dry year conditions in west slope streams. Such increase in dry year conditions could have significant adverse effected on the aquatic environment. Yet, the DEIS does not evaluate it.* **Response #837-3:** The Corps is not aware of a known scientific threshold or "tipping point" at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts "threshold" analysis. The magnitude of impact depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. For example, in fully diverted tributaries that do not contain fish and few

Comment Information	Comment	Comments and Responses
	Trout Unlimited Comments Moffat Tunnel Collection System Project Attachment A – CWA § 404(b)(1) Analysis March 17, 2010 application review process." *33 CFR 320.4(r)*. Such mitigation includes "avoiding, minimizing, rectifying, reducing, or compensating for resource losses." *33 CFR 320.4(r)(1)*. Losses are to be avoided to the extent practicable. *Id.* As previously discussed in these comments, no meaningful mitigation measures have been offered to avoid, minimize and mitigate the impacts of the proposed Moffat Project on the aquatic and recreational resources of west slope streams (with the exception of mitigation for the benefit of the Colorado River's endangered species) V. PROPOSED MEASURES TO AVOID, MINIMIZE AND MITIGATE IMPACTS TO WEST SLOPE STREAMS Please refer to Joint Rebuttal Statement. 14	macroinvertebrates, it is likely that the resource, at least immediately below the diversion, is past the tipping point. In other stream segments, site-specific information was assessed to determine if the Project would create a tipping point effect. This information is included in FEIS Sections 3.11, 4.11 and 5.11. The flow information presented in FEIS Sections 4.6.1 and 5.1 indicates that the Fraser River would not be "flatlined" under the Project. There would be seasonal and annual variability in flows. Additional information on the increased frequency and duration of dry year conditions and daily flow changes during a sequence of dry years followed by a wet year was included in FEIS Sections 4.6.1 and 5.1. This discussion has been incorporated into the evaluation of impacts for aquatic biological resources in FEIS Sections 4.6.11 and 5.11. ***Comment #837-2*** *(ID 4777)**:*** *No evaluation of impacts of climate change or beetle kill As further discussed in the Joint Rebuttal Statement, the DEIS does not include a meaningful evaluation of cumulative impacts of operation of the Moffat Project, climate change and the spread of pine beetle infestation. Accordingly, the USACE cannot evaluate the extent to which the Moffat Project will cause or contribute to the significant degradation of waters of the United States. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. See 40 CFR § 230.12(a)(3)(iv). In the alternative, adequate terms and conditions, including an adequate monitoring and adaptive management plan must be imposed.*

Comment Information	Comment	Comments and Responses
	ATTACHMENT B **Trout Unlimited Comments** **Compliance with NEPA** **Moffat Collection System Project** The following comments address the adequacy of the draft environmental impact statement (DEIS) for the Moffat Collection System Project (Moffat Project) and the extent to which the DEIS complies with the requirements of the National Environmental Policy Act (NEPA). They summarize the analysis contained in the Joint Rebuttal Report, submitted in conjunction with these comments, with a particular focus on impacts to aquatic resources. The issues identified in the Joint Rebuttal Report are placed here in the context of NEPA's legal requirements. **CONCLUSION** The DEIS does not comply with NEPA. NEPA requires federal agencies to take a "hard look" at the direct, indirect and cumulative impacts of proposed federal action – in this case, issuance of a CWA §404 permit. To accomplish this goal, NEPA requires federal agencies to use high quality information and accurate scientific analysis to identify, *inter alia:* • Environmental impacts of the proposed action, • Any adverse environmental effects that cannot be avoided, • Any irreversible and irretrievable commitments of resources should the action be taken, and • Measures to avoid, minimize and mitigate identified impacts The DEIS does not comply with these NEPA requirements for the following reasons: • The potential for critical environmental impacts that could lead to the irreversible and irretrievable loss of valuable west slope fisheries is acknowledged but not evaluated; no measures to monitor for, avoid, minimize or mitigate such impacts are identified. • Water quality impacts that can significantly affect aquatic resources are only partially and qualitatively evaluated; where impacts are identified, they are dismissed as insignificant without explanation, in spite of sound science to the contrary. • Dry up of streams known to support macroinvertebrate and fish populations is dismissed as an insignificant impact; no measures to avoid, minimize or mitigate such impacts are identified.	**Response #837-2:** Pine Beetle Potential long-term effects of the pine beetle are many; however, the Moffat Project does not influence or impact the pine beetle epidemic. Impacts from the pine beetle on sediment supply are unknown. DEIS Section 4.1 (FEIS Section 5.1) under the subheading Sediment Supply explains in a qualitative means how pine beetle could impact river systems. Additional water quality analysis was also performed on the Fraser River and Three Lakes related to nutrients (FEIS Sections 4.6.2 and 5.2). Information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in the FEIS (Section 5.7). In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership accelerates and expands the USFS' ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects would take place around and upstream of Denver Water reservoirs. Restoration also would help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Climate Change The DEIS addressed climate change in Section 5.4 and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff:

Comment Information	Comment	Comments and Responses

	• Cumulative impacts are not evaluated, including:
	  ○ Impacts of ongoing transmountain diversions projects that divert the majority of native flows of west slope streams affected by the proposed Project;
	  ○ Impacts of significant additional west slope stream diversions that will occur before 2016, when the proposed Project is expected to come on line
	  ○ Impacts of climate change and global warming
	  ○ Impacts of beetle kill, prevalent in the watersheds from which the proposed Project will divert its water
	• Evaluation of impacts to west slope streams relies on inaccurate predictive tools to assess the extent to which the proposed Project will reduce flows that support aquatic resources, such predictions are contradicted by actual data that reveals that the predictive model significantly under-estimates the magnitude of depletions the Project will cause.
	• Evaluation of impacts of reduced peak flows on aquatic resources is incomplete, reaches conclusions that are contrary to empirical evidence and relies on obsolete and inadequate methodology.
	• Evaluation of impacts of the proposed Project on stream flow regime omits critical information, including the extent to which Project depletions will increase the length and frequency of dry year conditions that are particularly harmful to aquatic life; available, independent information reveals that the Project will indeed increase the length and frequency of dry year conditions.
	• To assess the proposed Project's impacts, the DEIS assumes a 2016 baseline hydrology but a 2006 baseline for water quality and aquatic resource conditions; as a result, resource impacts that are acknowledged will occur between 2006 and 2016 are simply ignored; no explanation for this unscientific, illogical and internally inconsistent approach is given.
	
	NEPA REQUIREMENTS
	
	NEPA represents the Nation's sweeping commitment to "prevent or eliminate damage to the environment and biosphere." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989). The statute accomplishes this goal by focusing government and public attention on the environmental effects of proposed agency action." *Id.* By doing so, NEPA "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Id.*
	
	Agencies Must Take a "Hard Look" at Environmental Consequences
	
	2
		"Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations.
		
		Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers."
		
		Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the proposed actions.

Comment Information	Comment	Comments and Responses
	The sweeping policy goals announced in § 101 of NEPA are realized through a set of action-forcing procedures that require that agencies take a 'hard look' at environmental consequences before resources are committed. *Id.* at 350-51. ***Environmental Impact Statement Requirements*** NEPA requires all federal agencies to prepare an environmental impact statement (EIS) prior to major federal action significantly affecting the quality of the environment. *42 U.S.C. § 4331; Robertson,* 490 U.S. at 348. An EIS must include a detailed statement of (1) the environmental impact of the proposed action; (2) any adverse environmental effects which cannot be avoided should the proposal be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long term productivity; and (5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. *Id.* at 348-9*; citing 42 U.S.C. § 4332.* ***Evaluation of Direct, Indirect and Cumulative Impacts Required*** NEPA requires federal agency evaluation of the "direct," "indirect," and "cumulative" impacts of a proposed federal action. *Id.* at 1508.25(c); *see also id.* at §§ 1508.7, 1508.8. Direct effects are those that "are caused by the action and occur at the same time and place." *Id.* at § 1508.8(a). Indirect impacts are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* at § 1508.8(b). A project's "cumulative impact," is > "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . . Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.* at § 1508.7. *See also Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998) (with respect to a cumulative impacts analysis, an agency must provide "some quantified or detailed information" because "[w]ithout such information, neither courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide."). ***Quality of Environmental Impact Statement Information*** Information provided in an EIS must be of high quality and must include accurate scientific analysis. *40 C.F.R. § 1500.1(b).* "The NEPA process is intended to help public officials make decisions that are based on understanding environmental consequences, and take actions that protect, restore and enhance the environment." *40 C.F.R. §1500.1(c).* "When an agency is evaluating reasonably foreseeable significant adverse 3	The 2008 Western Water Assessment report prepared for the CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean precipitation would increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 USGS Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the proposed actions, however the absence of quantified climate-induced decreases in flows related to the proposed actions makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated the FEIS (Section 4.4) with more recent technical documentation, including the joint Corps-Bureau of Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011).

Comment Information	Comment	Comments and Responses
	effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking." *40 C.F.R. § 1502.22*. If the information cannot be obtained because the overall costs would be exorbitant or the means to obtain the information unknown, the agencies must explain the relevance of the incomplete or unavailable information, provide a summary of existing credible evidence, and evaluate the impacts based on theoretical approaches or research methods generally accepted in the scientific community. *40 C.F.R. § 1502.22(b)*. ***Measures to Avoid, Minimize and Mitigate Impacts Must be Disclosed*** To fulfill the essential purposes of NEPA, federal agencies are required, to the fullest extent possible, to "use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment." *40 CFR § 1500.2*. These means include (1) avoiding the impact altogether by not taking the action; (2) minimizing the impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; (5) compensating for the impact by replacing or providing substitute resources or environments. *40 C.F.R. § 1508.20*. Mitigation measures must be fully discussed in the EIS. *40 CFR §1502.14(f) and 40 CFR § 1502.16* DISCUSSION 1. **The DEIS Fails to Evaluate the Potential for the Project to Cause or Contribute to a Catastrophic Loss of Aquatic Life** West slope streams that will be affected by the proposed Moffat Project have been significantly dewatered by existing transmountain diversion projects. Additional diversions before and after the proposed Moffat Project would come on line will significantly increase the percentage of native flows lost to these streams, in some cases, completely drying them up for a longer period of time. Degradation of some of the stream systems is already apparent and documented. In light of the historical and ongoing impacts to these streams, the critical question the DEIS must answer is not only how much of a change will the Moffat Project and other water development will have on the affected streams of today, but whether these streams can withstand any further impacts without being pushed into an alternative state, one that cannot support healthy fish populations and other aquatic life. This question is critical to evaluating the impact of future projects and is not evaluated by the DEIS. Ecologists have long recognized that many ecosystems exhibit nonlinear behavior in response to human perturbations. In other words, a continuous change in an independent 4	The concept of systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, the Act relies on the Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps as the lead Federal Agency of the Moffat Project EIS believes the analysis is adequate. Adaptive Management was considered in the FEIS as part of conceptual mitigation and will be considered if a Section 404 Permit issued as part of mitigation. ***Comment #837-1*** *(ID 4776)**:*** *The DEIS provides inadequate information to assess the Moffat Project's potential to cause or contribute to additional significant degradation a. Inadequate sediment impacts analysis Peak flows are critical to flush sediments from stream beds. Excess sediment can be harmful to fisheries and macroinvertebrates. Excess sediment can also create favorable conditions for the spread of the Tubifex worm, responsible for whirling disease. The DEIS recognizes that the proposed Moffat Project will reduce peak flows that are necessary to flush sediments. It recognizes that decreases in peak flows due to the Moffat Project will result in decreases in sediment transport capacity. However, the DEIS concludes that sediment transport capacity is now and will be greater than the available supply and, therefore, "only minor amounts of localized sediment deposition is anticipated." (DEIS at 4-9). Relying on this analysis and conclusion, the DEIS goes on to conclude that loss of peak flows will not significantly adversely affect the west slope streams' aquatic environment or contribute to the spread of whirling disease. The DEIS's conclusion is contradicted by empirical evidence. Evidence of excess sedimentation is already present along the Fraser River and some of its tributaries as well as the Colorado River, as photographic evidence indicates.*

Comment Information	Comment	Comments and Responses
	variable (e.g., a continuous decline in stream flow) may not produce smooth changes in a response variable (e.g., fish productivity). Instead, if a threshold is crossed, the system may flip from one capable of supporting trout to one that can not. The term "ecological resilience" has been used to describe the amount of disturbance required to propel the ecosystem across a threshold and into an alternative stable state (Holling 1996). Riverine ecosystems are strongly affected by external factors like stream flow, sediment, and temperature (Groffman et al. 2006). Indeed, the quantity and timing of stream flow are critical components responsible for maintaining the ecological integrity of river ecosystems (Poff et al. 1997) and stream flow is often considered a "master variable" that limits the distribution and abundance of riverine species (Resh et al. 1988). Continued reductions in stream flow quantity and changes in stream flow timing have the potential to fundamentally alter how the Colorado River ecosystem functions. The DEIS recognizes the potential for these responses, but does not evaluate them, finding that "thresholds are difficult to identify and would require abundant data collection and analyses . . . that is beyond the scope of the EIS." *(DEIS, page 4-311).* Given the impacts these streams and their aquatic habitat have been subject to and the magnitude of the proposed Moffat Project diversions and other foreseeable water development, the DEIS's failure to either evaluate the potential for such catastrophic response or to define terms and conditions to monitor for and prevent such occurrence violates the legal requirements of NEPA. **2. The DEIS fails to adequately evaluate water quality impacts that significantly impacts aquatic life.** Elevated stream temperatures are a significant concern in the Fraser River, its tributaries and the upper Colorado River. Stream temperature at various locations already periodically exceeds levels deemed to be safe for the fisheries under State stream temperature standards. Operation of the Moffat Project has the potential to significantly change the current hydrology of the Fraser and Colorado Rivers by prolonging periods of low flows in average and wet years, by creating more frequent dry-year river conditions, and by extending drought conditions across the years. These changes could significantly aggravate existing stream temperature conditions, increasing the length of time and frequency with which fisheries and other aquatic resources are exposed to the stress of high stream temperatures. Accordingly, a thorough evaluation of the impacts of the project on stream temperatures and of the impacts such increases will have on the river's aquatic resources is critical. Unfortunately the DEIS fails to do any stream temperature modeling. ***Stream temperatures are at or exceeding state standards under Current Conditions (2006).*** The DEIS indicates that the water temperatures on "St. Louis Creek and Ranch Creek exceeded the summer DM (Daily Maximum) with maximum temperatures of 21.5 °C and 23.7 °C, respectively (versus a standard of 21.2 °C)." In addition "Ranch Creek exceeded the regulatory standard in August of 2007 for the MWAT, with a maximum of 17.5 °C (versus a regulatory standard of 17.0 °C)." *DEIS at p. 3-25.* 5	*The DEIS' own information shows that "potential signs of aggradation" were observed in four out of seven reported west slope sampling sites. (DEIS, Table 3.1-19). Aggradation occurs in areas where the supply of sediment is greater than the amount of material the system is able to transport. Contrary to the DEIS's conclusion, this evidence suggests that the current flow regime is insufficient to the existing sediment load. Further reduction in peak flows can only aggravate that condition.* **Response #837-1:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in FEIS Sections 4.6.3 and 5.3. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #837-68*** *(ID 4871)**:*** *Inadequate water quality analysis As discussed in above, the DEIS fails to provide needed information to assess the impacts, including cumulative impacts, of the Project on water quality. As a result, the*

Comment Information	Comment	Comments and Responses
	In addition, a "maximum temperature of 17°C" was observed on the Williams Fork River below Williams Fork Reservoir where the "regulatory acute standard is 17°C" *DEIS at p. 3-34*. On the Colorado River, the DEIS states that "all but one station experienced a DM or MWAT temperature within 1 degree of the regulatory maximum, indicating that the river is very near regulatory standards. Changes in conditions such as lower rainfall, higher temperatures, or lower stream flows could cause an exceedance of regulatory standards." *DEIS at p. 3-41*. These water temperature violations are occurring under current stream flow conditions and the frequency of water temperature violations are likely to increase if additional water is removed from the Colorado River, the Fraser River, the Williams Fork River and their tributaries. ***Dissolved Oxygen concentrations are approaching state standards under Current Conditions (2006)*** The DEIS indicates that Dissolved Oxygen standards are already approaching state standards on both the Fraser and Williams Fork Rivers and their tributaries under current stream flow conditions at several locations. *DEIS at pgs. 3-28 and 3-34*. As with Water Temperature standards, violations of the Dissolved Oxygen standards are likely to increase as flows become more depleted on the Fraser and Williams Fork Rivers and their tributaries. ***The DEIS fails to model and evaluate the potential for stream temperature conditions that have acute or chronic impacts on aquatic resources.*** The DEIS does not model or quantitatively evaluate the extent to which operation of the proposed Moffat Project and other water development will cause increases in stream temperature that create acute or chronic conditions harmful to the river's aquatic resources. Chronic conditions include effects which, while not immediately lethal, have the potential to devastate fisheries - such as reduced growth, reduced reproduction, and reduced survivorship. The State has adopted standards that reflect temperature levels trout fisheries can tolerate, both on a daily basis (acute) and over a period of time (chronic). Chronic standards are expressed as maximum weekly average tolerance levels (MWATs). To assess whether operation of the Moffat Project and other water development will cause increases in stream temperature that will exceed acute and chronic tolerance levels, the agencies must be able to evaluate how stream temperatures will change on a daily and weekly basis. The DEIS fails to provide any water temperature modeling to predict acute and chronic temperature impacts associated with the Moffat Project. **3. The DEIS acknowledges that the Moffat Project would cause or contribute to exceedences of stream temperature standards, including acute (lethal) standards, but arbitrarily dismisses their impacts as insignificant.** The DEIS states that empirical evidence on St. Louis Creek suggests that DM water temperature standards have been exceeded when flows drop to13 cfs in August. The 6	*USACE cannot properly assess the extent to which the proposed Moffat Project will cause or contribute to the degradation of waters of the United States.* **Response #837-68:** Please see the response to Comment ID 4781. **Comment #*837-67*** *(ID 4870)**:*** *Inadequate analysis of anticipated flow reductions As discussed in the Joint Rebuttal Statement and in Attachment B, the DEIS impacts analysis relies on inaccurate and fundamentally flawed predictions of changes in flow associated with the proposed Moffat Project. Because the DEIS evaluation of impacts to the aquatic ecosystem is dependent on those predictions, the DEIS fails to adequate information needed for the USACE's assessment of whether operation of the project will result in significant degradation of waters of the United States. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. See 40 CFR § 230.12(a)(3)(iv). In the alternative, adequate terms and conditions – including an adequate monitoring and adaptive management plan – must be imposed.* **Response #837-67:** Please see the response to Comment ID 4743 regarding comparisons made to historical Moffat Tunnel diversions and Fraser River Basin stream flows shown in Table 3 of the Joint Rebuttal Report. Regarding use of Full Use of the Existing System as the baseline condition. Please see the response to Comment ID 4668. Regarding stream reaches included in the study area, please see the response to Comment ID 4723.

Comment Information	Comment	Comments and Responses
	DEIS goes on to say that PACSM data indicates that flows will drop below 13 cfs approximately 29% of the time under both the Full Use (2016) and Full Use w/Project (2030) scenarios . *DEIS at p. 4-41*. The logical conclusion from this analysis is that DM water temperature exceedances could occur 29% of the time in future Augusts. However, the DEIS concludes that "no impact is anticipated" since the percentage of exceedances doesn't increase under the Full Use w/Project (2030) scenario. The DEIS states that Ranch Creek is already experiencing DM water temperature exceedances and that "a reduction in flow due to additional diversion has the potential to increase the number of days that water temperatures exceed regulatory limits." *DEIS at p. 4-41* The DEIS concludes that "a moderate impact on Ranch Creek is anticipated." The DEIS states that the mainstem Fraser was has not yet experienced DM or MWAT temperature exceedances but that lower flows under the Full Use (2016) and Full Use w/Project (2030) may "contribute to higher water temperatures". *DEIS at p. 4-41to 4-42*. The conclusion is incorrect, the State is in the process of listing portions of the mainstem of the Fraser in its CWA 303(d) list due to stream temperature exceedences. The DEIS conclusion that impacts that were identified are "anticipated to be minor" is unfounded. The DEIS states that Ranch Creek "would likely have a moderate impact due to an increase in the number of days that temperatures exceed regulatory limits" and that the mainstem Fraser would experience "minor impacts with regards to temperature near the Town of Granby". *DEIS at p. 4-5*. The DEIS fails to describe the criteria by which the "frequency" of a stream temperature exceedence is deemed to yield a "measurable" impact for purposes of the NEPA analysis and arbitrarily concludes that impacts will be negligible, minor or moderate. The acute and chronic stream temperature standards adopted by the State define not only the levels, but also the frequency of exposure that results in lethal (daily) and chronic (weekly) impacts to trout fisheries. The DEIS's conclusion entirely disregards these standards, established by the State of Colorado after extensive analysis and formal hearings. The DEIS fails to provide <u>any</u> explanation as to why the State's frequency standard was disregarded, or what other criteria the agencies' relied upon to conclude that no "measurable" impacts resulted. The conclusion is arbitrary and capricious, and contrary to NEPA and well established State law. **4. The DEIS fails to take a "hard look" at how operation of the Moffat Project and other water development will change the hydrograph of affected streams and how those changes will impact the streams' aquatic resources.** Hydrological changes can have significant impacts on the river's aquatic resources. Flows affect the availability of habitat, water quality, and water temperature of the stream. They also affect the stream's ability to serve functions that play a critical role in supporting a healthy aquatic ecosystem, such as channel creation and maintenance and cleansing of sediments lodged in spawning beds. While recognizing the importance of 7	Additional stream morphological assessments were completed, including evaluations and modeling of new sites on the Fraser River, Colorado River, Blue River, Jim Creek and Vasquez Creek. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Mandatory watering restrictions are designed for short-term reductions in water use during drought and would not independently or reliably meet the required firm yield of 18,000 AF. Additionally, drought responses are not appropriate for long-term water supply strategies because Denver Water must always be in a position to respond to immediate, unforeseen shortages in supply. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. The City of Arvada is not an applicant or a participant in this EIS. Denver Water entered into an IGA with Arvada in 1999 to secure the rights to purchase land for Leyden Gulch Reservoir and zoning from Arvada which allowed the reservoir to be developed on that

Comment Information	Comment	Comments and Responses
	adequately predicting expected flow conditions to properly assess the project's impacts on aquatic resources, the DEIS in fact fails to do so. ***No evidence that aquatic environments are currently healthy or evaluation of most probably and potentially harmful cumulative impacts.*** The DEIS states that "Knowing whether a resource is healthy, declining, near collapse, or not functioning is necessary for determining the significance of any added impacts due to the Moffat Project" *DEIS at p. 5-3*. Unfortunately the DEIS does not make a determination regarding the current health of the resource, electing instead to apparently assume that the resource is currently healthy, not in decline or near collapse and functioning? In fact, a recent report by the Colorado Division of Wildlife (CDOW 2010) concludes that "the overall abundance and distribution of the stonefly *Pteronarcys californica* and mottled sculpin *Cottus bairdi*…is greatly reduced compared to pre-impoundment data" and that "increased future water diversions may exacerbate these trends." After electing not to quantify the current health of the resource, the DEIS attempts to determine whether impacts of the Moffat Project will be significant by defining three impact related time frames; Current (2006), Full Use (2016), and Full Use w/Project (2030). The DEIS also projects a level of demand associated with each time frame; Current Conditions (2006) = 285,000 af, Full Use (2016) = 345,000 af, and Full Use w/Project = 363,000 af. *DEIS at p. 4-1, Figure 4.1-1 and p. 5-3*. The DEIS elects to simply "disclose" water-based impacts between Current (2006) and Full Use (2016) and limit its "analysis" to the 14-year period between Full Use (2016) and Full Use w/Project (2030). *Page 4-1*. This issue reveals one of the largest flaws in the approach that was taken in the Moffat DEIS. DEIS Chapter 4 (Environmental Consequences) and Chapter 5 (Cumulative Impacts) are essentially rendered meaningless since the DEIS doesn't evaluate whether the stream system is currently "healthy" and not "near collapse" under Current Conditions (2006) or analyze the 60,000 af of additional depletions that are projected to occur between Current Conditions (2006) and Full Use (2016) which are significant and may push these rivers over the edge environmentally. The cumulative impacts section of the DEIS should be required to provide evidence that the existing aquatic environment is healthy and to analyze the potential impacts of the 60,000 af/yr of additional water development that is contemplated between 2006 and 2016 in addition to the 18,000 af of additional water development that is contemplated between 2016 and 2030. ***Dry-year and prolonged drought conditions are particularly harmful to aquatic life.*** The DEIS aquatics impacts analysis focuses on average and wet year conditions, as those conditions are defined in the PACSIM Model. Dry year impacts are glossed over because the Moffat Project is not expected to increase existing diversions during dry year conditions. *See e.g., DEIS at 4-6*. Dry-year conditions can have significant impacts on aquatic resources, particularly when they occur in consecutive years. As discussed in 8	land. In return, Arvada received the option to obtain water from the Moffat Project, the amount dependent on the size of the reservoir. Therefore the 3,000 AF Arvada would receive from the Moffat Project is a cost of the Project, consideration taken as water instead of money for Arvada's support. It is also a Project demand because Arvada's payment in water adds to the size of the total amount of water required. This is noted as such in the EIS, but Arvada's need for the 3,000 AF does not need to be proven. Water demand projections were developed through a series of models, as described in detail in the technical memoranda included in FEIS Appendix A. A number of inputs are required for the operation of the model, including economic and demographic projections developed by DRCOG, the state demographer and others. As urban areas become more developed, growth often occurs at a slower pace, and water demands would also increase at a slower rate. Therefore, it is realistic to see a smaller increase in water demands further out into the future. Denver Water's conservation plan includes additional measures in future years. The amount of conservation and natural replacement is divided into three timeframes in the EIS. The first is conservation achieved by 2010 (40,800 AF/yr); the second is 56,700 AF/yr by 2032; and the third is 68,000 AF/yr cumulatively by 2050 (see FEIS Table 1-1). The data inputs and variables used in the water demand forecasting models have been reviewed and updated, as appropriate and applicable, for the FEIS. More recent DOLA and DRCOG data, including economic and demographic projections, reflect the conditions of the past 10 years and incorporate these patterns into the projections. Regarding extension of the study period to include 2002, please see the response to Comment ID 4743.

Comment Information	Comment	Comments and Responses
	what follows, operation of the project alternatives is likely to increase the incidence of dry-year conditions and prolong drought conditions in the river. The DEIS does not ask whether or how often these dry-year and extended drought conditions will occur as a result of operation of the Moffat Project alternatives, or what impacts such conditions will have on aquatic resources. Rather, the DEIS looks at historical average and wet year depletions in general and anticipates water and aquatic resource impacts in isolation. In so doing, the DEIS fails to evaluate some of the most probably and potentially damaging effects of the project. Dry year conditions can create particularly harmful bottle-necks for aquatic life; especially in late summer and early fall as stream flows decline to critical levels. Low stream flows cause reductions in available aquatic habitat as more of the stream channel becomes desiccated and the remaining aquatic habitat becomes marginal as velocities and depths are reduced. In addition, stream temperatures fluctuate more rapidly at low flows thereby increasing the probability of exceeding both daily maximum and weekly average temperature standards. Many of the Fraser River tributaries are completely dewatered by the Moffat Project and the Colorado River below Windy Gap already experiences low stream flows and high water temperatures during most dry and some average water years. MOFFAT PROJECT could significantly exacerbate these existing problems by prolonging low flow periods in average years, increasing the frequency of dry year conditions and effectively creating prolonged drought conditions. The DEIS states that "Typically additional diversions would be greatest in wet years following dry year sequences". *DEIS at Page 4-5.* This trend would create more frequent back-to-back dry years and therefore, more frequent stress to aquatic species. As currently presented, the data does not permit an evaluation of the impacts of increasing the frequency of back-to-back dry years. The DEIS states that 1) PACSM uses a daily time step, 2) daily data was averaged by month to evaluate impacts to streamflows and reservoir contents and 3) daily data were used to determine frequency and magnitude of daily flow changes. *DEIS at Page 4-14.* Aggregating daily flow values into monthly averages eliminates extreme daily flow fluctuations from consideration. Extreme daily flow fluctuations are important considerations for evaluating impacts to aquatic habitat, especially for fish. (Fish need water everyday). Consolidating PACSM results by wet, average, and dry years does not allow the opportunity to evaluate the impacts of artificially created back-to-back dry years that may result from increased diversions in wet or average years that follow drought years when reservoirs are at minimum storage levels. ***The DEIS fails to evaluate the likelihood and frequency with which the proposed Moffat Project would increase the incidence of dry year conditions and resulting impacts to aquatic resources.*** Increased diversions during average years, particularly in those years at the lower end of the PACSIM Model average year range, could cause Fraser River tributary and Colorado River stream flows to dip into a dry year condition, resulting in a reduction in the amount of habitat which would have been 9	The PACSM study period is representative of expected hydrologic conditions. Table 5 referenced in the comment shows that 1983 and 1984, which are included in the PACSM study period and in the wet year average, were the two wettest years at almost all locations shown in the table. Table 5 also shows that at each location at least one and often two of the five driest years are included in the PACSM study period. Therefore, the DEIS includes information for years that are reflective of the some of the driest and wettest conditions that have occurred in the past. The PACSM study period does not have to include all of the five driest and wettest years at each location shown to accurately characterize hydrologic effects in dry and wet years. Averaging the five wettest and driest years as opposed to selecting the single wettest and driest year is a reasonable approach for evaluating hydrologic effects under wet and dry conditions. For example, the average of the five driest years captures a broader range of flow conditions and diversions that could be expected to occur during a dry year and better represents a typical dry year. For example, Moffat Project diversions in a dry year following a wet year may be different than a dry year following a dry year. These differences would be reflected in a dry year average that includes five years with varying hydrologic conditions in preceding years. Comparison of flows for the single driest year or the average of the five driest years would not change the predicted impacts to flows as a result of the proposed Moffat Project. Regarding the use of average statistics, the resource evaluations did not rely solely on average statistics to assess effects on resources. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual

Comment Information	Comment	Comments and Responses
	available in the absence of the project. The DEIS does not evaluate these potential impacts. The DEIS does not ask how often these conditions will re-occur as a result of Moffat Project, nor does it evaluate what impacts they will have on the river's aquatic resources. For instance, the impacts of the 2002 drought continued to be felt in 2003 and subsequent years because of the 2002 reservoir draw-downs and because the fish had already been stressed by the drought. The DEIS PACSIM study period runs from 1947 though 1991 and by failing to include the 2002/2003 conditions in the analysis, the DEIS not only ignores one of the most severe droughts on record, it completely disregards the role of Moffat Project and other reasonably foreseeable projects in extending the duration of drought conditions and the impacts this would have on the Fraser and Colorado Rivers' aquatic resources. ***The DEIS analysis relies on a hydrologic model that is inadequate as a tool to predict and assess impacts to aquatic resources.*** The DEIS estimates predicted changes in available juvenile and adult rainbow and brown trout habitat within the stream using estimated flow scenarios supplied by Denver Water's Platte and Colorado Simulation Model (PACSIM). *DEIS at 4-10.* PACSIM estimates flow changes at particular locations in the Fraser and Colorado Rivers based on pre-defined average dry, average, and wet year conditions for the study period between 1947 through 1991. Dry and wet year conditions are defined by averaging the five driest and the five wettest years of the study period, respectively *DEIS at 4-13.* Average year conditions are defined based on the averaging of all years within the study period. While perhaps adequate for municipal water development and planning purposes, the model is inadequate to estimate impacts to aquatic resources. ***The DEIS Uses Monthly and Annual Average Flow Estimates To Evaluate Hydrologic Impacts.*** PACSIM reports flow estimates in terms of daily values, however these daily flow estimates are then aggregated into monthly and annual averages. Monthly averages can mask important stream flow changes that may have significant impacts on river ecosystems, generally, and fish species in particular. For example, flows throughout August may be very low, but a single, large flood event may elevate the month's average. Accordingly, while looking at the average flow values may not reveal a potential problem, the average may be masking harmful flow conditions that occur for most of the averaged period. As the National Academy of Sciences so aptly noted in a recent report, "planners operate on a monthly basis, but fish live on a daily basis". (*National Academy Science Report, 2007*). Indeed, the Academy considered Reclamation's use of monthly average flows to be a fatal flaw in its *Natural Flow of the Upper Klamath River* study. Given that fish and other aquatic organisms respond to changes in flow that occur on much shorter time scales, it is inappropriate to evaluate changes in hydrology using monthly averages. ***The Model Overestimates Anticipated Flows.*** The Model's use of averages is likely artificially inflating predictions of flows that will be available to the fisheries and other aquatic resources in a dry, average and wet year. Because stream flow time-series 10	summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic biological resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading, Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). Regarding comparisons made in the comment to historical Moffat Tunnel diversions and historical stream flows shown in Table 3 of the Joint Rebuttal Report, please see the response to Comment ID 4743. It is appropriate to select representative dry and wet years based on natural or virgin flow hydrology. Table 1 referenced in the comment shows that 1983 and 1984, which are included in the PACSM study period and in the wet year average, were the two wettest years at almost all locations shown in the table. Table 1 also shows that at each location at least one and often two of the five driest years are included in the PACSM study period. Therefore, the DEIS includes information for years that are reflective of the some of the driest and wettest conditions that have occurred in the past. The PACSM study period does not have

Comment Information	Comment	Comments and Responses
	tend to be positively skewed (i.e., high flows tend to be much larger than low flows) the average, mean annual runoff tends to be higher than the median annual runoff (Smakhtin 2001). By using average annual discharge values in its impacts analysis, the DEIS overestimates the amount of water flowing through the river in a typical year. Median discharge values should have been used. This problem is compounded by the fact that the data used to estimate average annual flows in wet and dry years were also included in estimates of discharge in the average year. Estimates of the average flow based on the entire 45-year (1947 through 1991) record are higher than they would have been if only the 35 years that were not included in the wettest five or driest five were used. In other words, by double counting the extreme years, the DEIS further overestimates the discharge of an average year. This may not have been a problem if the DEIS had focused on median discharge values. ***The Model Yields Isolated Dry, Average and Wet Years Data.*** One of the most critical deficiencies rendering the PACSIM Model incapable of assessing the impacts of the MOFFAT PROJECT alternatives on aquatic resources is the fact that the model output is aggregated into dry, average and wet years in isolation. It does not look at how often operation of the MOFFAT PROJECT alternatives will turn what have historically been average years into dry years or wet years into average years. Nor does it look at the distribution of expected dry, average and wet years over time. Because the model does not provide the required information, the DEIS cannot and does not evaluate the most probable and potentially devastating impacts operation of the Moffat Project and other reasonably foreseeable projects will have on the river's aquatic resources: the creation of dry year conditions, extension of low flow conditions during average and wet years, and prolongation of drought (back-to-back dry year) conditions across the years. As further discussed in what follows, failure to evaluate this critical information renders the aquatic resources impacts analysis fatally flawed. **6. The DEIS fails to take a "hard look" at the impacts of habitat availability reduction on the Fraser River's aquatic resources.** The DEIS fails to evaluate the most likely and critical hydrological changes caused by operation of the Moffat Project and other foreseeable projects: an increase in the extent and frequency of low flow periods, dry year, and drought conditions. This failure translates into fatal flaws in the DEIS's habitat availability analysis. Simply put, evaluating available habitat losses or gains is not possible absent an understanding of the extent and frequency of expected low flow periods. The DEIS's habitat availability analysis is deficient in other ways. ***The DEIS Aquatics Impact Analysis Is Based On Questionable Predictive Tools including IFIM, R-2-Cross and Professional Judgment.*** The DEIS uses the Incremental Instream Flow Methodology (IFIM) to evaluate impacts to trout habitat. However, quoting from one of the peer-reviewed, scientific papers cited in the DEIS itself, "As a predictive tool for ecological management, the IFIM modeling approach has 11	to include all of the five driest and wettest years at each location shown in Table 1 to accurately characterize hydrologic effects in dry and wet years. Historical natural flows, which are based on historical gage records, represent the best available information to estimate hydrologic effects associated with the Project. The probability of similar hydrologic conditions occurring in the future is unknown. The resource evaluations did not rely solely on monthly and annual averages. Please also see the response to Comment ID 5199. The comparison of average annual flows using PACSM output completed for the UPCO (2003) under Scenario 3 is flawed. The five driest and wettest years from the PACSM study period were selected based on the natural flow or virgin flow at the USGS gage Colorado River near Kremmling whereas the five driest and wettest years from the UPCO Scenario 3 output were selected based on modeled flows. It would be more appropriate to compare averages for the same five dry and wet years. For example, the average annual flow at Fraser River near Winter Park in 1961 based on UPCO output was 4,549 AF versus 4,520 AF based on PACSM output for the Proposed Action. Therefore, to accurately compare averages at the locations shown in Table 1, the same five years (1954, 1976, 1961, 1965, and 1955) selected for UPCO data should be compared against an average of Moffat Project data for the same five years. However, there would still be differences even if the years selected coincide due to the changes made to PACSM since the modeling was completed for UPCO. The model study period used in the DEIS (1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period

Comment Information	Comment	Comments and Responses
	been criticized both in terms of the statistical validity of its physical habitat characterizations and the limited realism of its biological assumptions" (Poff et al. 1997). With regard to the Fraser and Williams Fork basins, the DEIS further admits that "IFIM data were not available for most of these tributaries, but R-2-Cross data were available for a few" and that "no hydrologic data were available for most of these tributaries". The DEIS goes on to state that on streams where "R-2-Cross information existed, potential impacts were analyzed for the tributaries using professional judgment" *DEIS 4-309*. Lastly, the DEIS once again admits to the use of "professional judgment" to evaluate changes to water quality, channel geomorphology, and riparian vegetation *DEIS at p. 4-307*. The R-2-Cross methodology is significantly less rigorous and less accepted by the scientific community than IFIM. Professional judgment is subjective and should not be used to make important decisions regarding the long term health of the aquatic environment. The use of IFIM, R-2-Cross, and professional judgment to evaluate impacts to fish habitat, water quality, channel geomorphology and riparian vegetation are insufficient to make a conclusive determination that the aquatic environments of these river basins will not be significantly degraded by the Moffat Project. The lack of available scientific data should not provide the basis for moving the Moffat Project forward. These data gaps should be filled prior to approving the project so that a complete impacts analysis can be disclosed. ***The DEIS improperly uses warm-season habitat suitability criteria to incorrectly conclude that winter habitat is more limiting to fish populations than depleted flows associated with the Moffat Project.*** In addition to the questions raised by the scientific community regarding the validity of IFIM as a predictive tool, the DEIS also admits that the IFIM analysis was based on only warm season habitat use criteria and it goes on to acknowledge that trout use different habitats between the summer and winter months. *DEIS at p. 4-308*. The DEIS indicates that "In winter, trout tend to use deeper habitat with slower velocity and slightly larger substrate and may be more oriented to cover". Based on this, the DEIS concludes that "warm-season habitat use criteria likely overestimate the habitat actually used by trout in the winter". This conclusion is incorrect. In fact, the use of warm season curves would likely underestimate the amount of habitat available in the winter months. Since trout to tend to use low velocity habitats during the winter months, the use of warm season criteria (that indicate a preference for faster velocities) in IFIM modeling would result in reduced amounts of preferred habitat as stream flows, and instream velocities, are reduced in the winter months. Using warm season habitat use criteria to simulate winter habitat availability creates an erroneous modeling result and an incorrect conclusion regarding habitat availability. The DEIS conclusion that streams are limited by low habitat availability during the winter 12	and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under its existing water rights without additional storage in its system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the DEIS study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling

Comment Information	Comment	Comments and Responses
	months is unfounded since the DEIS relies on the flawed assumption that warm season habitat use criteria overestimates the amount of available habitat in winter. ***The DEIS improperly concludes that large flows are harmful to fish and fish habitat and that Moffat Project depletions are beneficial to fish and fish habitat.*** The DEIS mischaracterizes a paper written by Poff et al. (1997) to support the idea that extremes in flow and habitat conditions act as a "bottleneck to limit population size". *Page 4-311*. In fact, the Poff paper cited in the DEIS is titled "The Natural Flow Regime: A paradigm for river conservation and restoration". The primary focus of this paper is on the value of the natural flow regime and not on how flow extremes limit fish populations. Contrary to the statements in the DEIS, Poff et al. acknowledges that "…what is "good" for the ecosystem may not consistently benefit individual species, and that what is good for individual species may not be of benefit to the ecosystem". The paper also concludes that "rivers with highly altered and regulated flows loses their ability to support natural processes and native species" (Page 780) and that "setting specific goals to restore a more natural regime in rivers with altered flows should ideally be a cooperative process involving river scientists, resource managers, and appropriate stakeholders" (Page 781); i.e., adaptive management. With regard to IFIM modeling, Poff et al state that "As a predictive tool for ecological management, the IFIM modeling approach has been criticized both in terms of the statistical validity of its physical habitat characterizations and the limited realism of its biological assumptions." The DEIS's conclusion that large flows are harmful to fish, and implication that the Moffat Project's flow reduction may actually improve fish habitat *(DEIS at p. 4-317)*, is particularly troublesome because over-bank, habitat-producing flows were historically available to the river but were dramatically reduced by operation of the original Moffat Project. Yet, the DEIS arbitrarily begins the study period in 2016, thereby ignoring the impacts this huge reduction in peak flows has had on the Fraser River, its tributaries and their aquatic resources. The Poff paper cited in the DEIS does not support the DEIS claim that extreme high and low flows are habitat bottlenecks for fish. Rather, high flows are necessary to flush sediments from gravels and maintain a healthy ecosystem. Modeling results from IFIM that predict minimal amounts of fish habitat at high and low flows and improved habitat conditions as a result of stream flow depletions associated with the Moffat Project should be ignored. ***The analysis fails to evaluate the temporal effects of habitat loss.*** The DEIS states that "Fish habitat was simulated with IFIM for average years, wet years, and dry years." *Page 4-310*. Summarizing data into average, wet and dry year categories doesn't reflect the true temporal variability in aquatic habitat that occurs sequentially between years; i.e., back-to-back dry years etc, or within years. 13	period and consideration of tree-ring data to include additional dry years would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. While tree ring-based reconstructions of Colorado River flows may show greater hydrologic variability than that reflected in the gaged record, particularly with respect to drought, the inclusion of more severe dry years in the study period would not change the evaluation of hydrologic impacts due to the Moffat Project because the Moffat Project would not increase diversions in these years over the diversions that would take place without the Project. In summary, modifications to the modeled study period and the use of paleo-hydrology is not warranted. Denver Water's Conceptual Mitigation Plan is included in FEIS Appendix M. Where required, mitigation will be prepared as part of a Section 404 Permit. The Current Conditions (2006) scenario does not present an idealized depiction of current hydrology that would maximize water demands and water diversions throughout the PACSM study period. The Full Use of the Existing System scenario demonstrates that Denver Water could meet higher average annual demand (345,000 AF/yr) and divert additional water throughout its system using its existing system infrastructure and water rights without any additional storage on-line in the Moffat System. It is not appropriate to compare Current Conditions (2006) model data to historical data for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river

Comment Information	Comment	Comments and Responses
	The conclusions of the aquatic habitat modeling are unsupported by the IFIM modeling results. The DEIS presents a few of the IFIM modeling results in Figures 4.9-1 and 4.9-2 and 4.9-3. These three figures are used to draw general conclusions about habitat impacts from Moffat Project flow reductions. The DEIS uses Figure 4.9-1 and Figure 4.9-3 to conclude that winter flows are more limiting than flows during other times of the year that may be depleted by the Moffat Project. However, as stated previously, modeled estimates of winter habitat were based on warm season habitat criteria which may underestimate the amount of habitat available to fish during the winter period. Therefore, IFIM modeling results on all streams that indicate minimal amounts of fish habitat during the winter should be ignored since habitat use during the winter is not accurately reflected in the habitat preference curves used in the IFIM modeling. The DEIS uses Figure 4.9-2 to conclude that high flows are limiting to fish and that the Moffat Project increases fish habitat by depleting high flows. This argument fails to recognize that high flows maintain a healthy ecosystem by flushing sediments from gravels and precluding non-native, habitat generalist species from invading these waters. The DEIS also fails to recognize that trout have evolved under these highly variable flow conditions and they will move into more favorable backwater habitats at times when riffles and runs are being flushed by high flows. The beneficial effects on aquatic habitat health offset the modeling results from IFIM that predict minimal amounts of fish habitat at high flows. ***The analysis reaches a number of unexplained, unsupported, and arbitrary conclusions.*** The DEIS concludes that an IFIM-modeled reduction of 10% or greater in the minimum amount of habitat available between the Full Use (2016) and Full Use w/Project (2030) warrants "further analysis". Reductions of less than 10% are "within the margin of error" and are "unlikely" to impact fish populations. *DEIS at p. 4-311*. The decision to use a "difference in minimum IFIM habitat availability of 10% or greater" to warrant further analysis is arbitrary. In a comparison of Current Conditions (2006) versus Full Use (2016), the DEIS arbitrarily concludes that "additional diversions and/or the reductions in bypass flows would have a minor detrimental effect on the fish and invertebrate communities in the upper Fraser River and in Cooper, Little Vasquez, Vasquez, St. Louis, and Main Ranch creeks". A discussion of North Fork South Platte River impacts follows where the DEIS arbitrarily concludes that a 22% increase to already high flows in this stream would have a "minor to moderate detrimental impact". *Page 4-315* These conclusions are arbitrary opinions and lack scientific rigor. The DEIS states that "the suitability of a stream to support aquatic resources is also influenced by changes to channel morphology and water quality" and that "changes in hydrology can affect water quality, such as temperature and salinity, channel morphology, and sedimentation". *Page 4-307*. Unfortunately, "differences in these 14	administration and Project operations have changed. For example, it is inaccurate to evaluate the effects of future diversions on flows in the Colorado River at the Hot Sulphur Springs gage based on a comparison with historical flows at that gage because historical flows prior to 1985 do not include the effects of the existing WGFP, which came on-line that year. The purpose of the Current Conditions (2006) scenario is to represent hydrologic conditions that would occur over the 45-year study period under Current Conditions, including facilities, operations, consumptive and non-consumptive water rights, instream flow rights, demand levels, operating rules, and other water management considerations and preferences throughout the upper Colorado River Basin. The Current Conditions (2006) scenario is not intended to replicate historical flows at USGS gages and diversions at the Moffat, Gumlick, and Roberts tunnels as suggested in the comment. The Current Conditions scenario accurately depicts the current level of diversions and does not understate the incremental change that would occur with a Project on-line. It is not appropriate to compare Current Conditions (2006) model data to historical data to evaluate effects for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. One would expect potentially large differences when comparing model results with historic records. Modeled Current Conditions (2006) Moffat Tunnel diversions (63,799 AF/yr) are higher than average annual Moffat Tunnel diversions for the period from 1984 through 2006

Comment Information	Comment	Comments and Responses
	aspects of the aquatic environment were incorporated using professional judgment of the suitability of the stream to support aquatic life." Changes in channel morphology, water quality and sedimentation are equally important in evaluating impacts from the proposed project. These impacts should be evaluated scientifically, not by professional judgment. 7. **The DEIS fails to take a hard look at the impacts of reduced peak flows on channel dynamics, including sediment transport and aquatic resources.** Peak flows are critical for maintaining healthy aquatic ecosystems. Floods of varying magnitude, duration and frequency perform different ecosystem functions such as building floodplains, forming and maintaining the active channel and scouring sediments from gravels to enhance trout spawning and macroinvertebrate habitat. Poff et al. (1997) state that "In the absence of high flushing flows, species with life stages that are sensitive to sedimentation, such as eggs and larvae of many invertebrates and fish, can suffer high mortality rates." The DEIS acknowledges that "Stream channel dynamics are affected by many factors including land usage changes, as well as increases in and decreases in stream flow or sediment production" *DEIS at p. 3-66*. Yet, it fails to adequately evaluate how these flows and stream processes will change as a result of operation of MOFFAT PROJECT and other reasonably foreseeable projects, or how these changes will impact the river's resources. The DEIS sediment transport studies generally indicate that transport capacity is greater than the sediment load. *DEIS at p4-53*. However, this conclusion is not supported by empirical field studies which indicate that sediments are currently accumulating under current hydrologic conditions. *DEIS Table 3.1-19 on p. 3-72*. More specifically, the DEIS used a representative reach approach to evaluate the balance between flow, sediment transport capacity and sediment supply. *DEIS at p. 3-66 to 3-72*. On the west slope, the DEIS used 8 sample sites to characterize sediment transport over 56 miles of river. Seven of these 8 sites are summarized in Table 3.1-19 and four of the seven indicate that "potential signs of aggradation" were observed. Aggradation occurs in areas where the supply of sediment is greater than the amount of material that the system is able to transport. Contrary to the sediment transport study findings, this observation would suggest that the current flow regime is insufficient to transport the existing sediment load. Additional depletions under the Full Use (2016) and Full Use w/Project (2030) scenarios will only exacerbate this problem. The DEIS acknowledges that Fraser River mainstem annual peak flood flows would be reduced in all years *DEIS at p. 4-51*. The DEIS states that "One important aspect of flow regimes is flushing flows and acknowledges the potential reduction of flushing flows attributable to future Project depletions. *Page 4-314* However, the DEIS fails to address this issue in detail. 15	because Current Conditions diversions reflect meeting an average annual demand for Denver Water of 285,000 AF/yr, whereas the average annual demand met during the period from 1984 through 2006 was less. In addition, there are likely differences in the averages because the periods compared are different lengths and may be hydrologically different. It is possible that the period from 1984 through 2006 is wetter overall than the period from 1947 through 1991, which could also partially explain why the historical average is lower. These reasons also apply to differences in Current Conditions (2006) versus historical Gumlick Tunnel and Roberts Tunnel diversions and flows in the Fraser and Colorado Rivers. For similar reasons, Current Conditions (2006) modeled stream flows in the Fraser River should not be compared with historical data. At some locations in the Fraser River Basin, average monthly dry year stream flows for Current Conditions are higher than actual stream flows in 2002 for several reasons. The average monthly dry year stream flow is an average of the five driest years during the study period whereas 2002 is the driest year on record in the Fraser River Basin. Furthermore, bypass flows were reduced in 2002 whereas bypass flows were not reduced in two of the five years selected for the dry year average because the agreement to reduce bypass flows was not in effect until 1970. As discussed above, one would expect potentially large differences when comparing model flows with historic records. The comparison of flows at the St. Louis Creek gage shown in Table 3.1 of BBA's letter is an excellent example of why modeled flows should not be compared to historical flows to assess hydrologic effects. Denver Water's diversions in the St. Louis Creek Basin did not commence until 1956. As a result, historical flows in 1954 and 1955 shown in Table 3.1 at the St. Louis Creek gage are

Comment Information	Comment	Comments and Responses
	The DEIS indicates that IFIM/PHABSIM and R2Cross data were available to quantify the relationship between fish habitat and stream flow and to assess the effects of the alternatives in tributary streams. *DEIS at p 3-213*. The use of fish habitat models like IFIM/PHABSIM and R2Cross generally results in a recommended range of flows that may maintain fish habitat but fail to recognize the flow requirements that are necessary to protect entire aquatic ecosystems; i.e., flushing flows, channel maintenance flows, and the timing, magnitude and duration of both peak flows and seasonal low flows. ***The DEIS does not adequately account for the benefits of large flows.*** As described above, the report does not account for or quantify the large increases in habitat that are produced when large flows overtop the banks and inundate the floodplain. ***The DEIS conclusion that the "overall pattern of the flow regime" in the Fraser River will "be the same, with highest flows during spring runoff and lowest flows in the winter…" is misleading.*** *DEIS at p. 4-316*. First, this conclusion results from the agencies' arbitrary decision to ignore pre-2016 conditions as part of the analysis.[1] Second, as illustrated previously in Figure 1, there is by no means a "little" or "insignificant" change in expected peak flows from natural flow conditions. The statement that the overall pattern of the flow regime will be maintained may be correct but it is misleading since the magnitude of the peak flows projected in 2030 are diminished to the extent that they are only slightly larger than wintertime base flows (see Figure 1). ***The DEIS only evaluates changes in peak flows between Full Use (2016) and Full Use w/Project (2030)*** As mentioned previously, peak flows are necessary to maintain channels, flush gravels and create habitat for fish and aquatic invertebrates. On the Fraser River, the DEIS states that "in all cases, peak flows for a given recurrence interval…were less than peak flows for the same recurrence interval under the Full Use of the Existing System (2016)" and that "on the mainstem, annual peak flood flows would be reduced in all years in the study". *DEIS at p 4-51* The DEIS reports similar findings on the Williams Fork above Williams Fork Reservoir *DEIS at p. 4-6*. The DEIS evaluates changes in peak flows between 2016 and 2030 but fails to consider the magnitude of the peak flow reduction between native flows (pre-1935) and modeled flows under the Full Use w/Project (2030) scenario. ***The DEIS's Stream Morphology and Sedimentation study is flawed*** The DEIS sediment transport study generally concludes that "decreases in flow would result in decrease sediment transport capacity along the Fraser River, St. Louis Creek, Ranch Creek, Williams Fork River, Blue River and Colorado River" *DEIS at p. 4-9*. The DEIS goes on to say that "for the range of flows expected, sediment transport capacity exceeds [1] This is part and parcel of the DEIS's failure to evaluate the impacts that the original Moffat Project, C-BT, Windy Gap and other pre-2016 projects have had on the river as part of its cumulative impacts analysis. The DEIS's failure to look at available, pre-2016 hydrological information also indicates a failure to use the proper baseline for analysis. [CITE BASELINE CASES]. 16	considerable higher in May, June and July than in 1963, 1977, and 1981. This explains to a large degree why monthly averages of historical flows in 1954, 1955, 1964, 1977 and 1981 are much higher than historical monthly average flows in 2002 and the modeled dry year average monthly flows for Current Conditions (2006) and Full Use of the Existing System. Furthermore, historical flows in 1954 and 1955 are not reflective of Current Conditions since they do not reflect the effects of the existing Moffat Collection System diversions from St. Louis Creek. If modeled flows with the proposed Moffat Project on-line were compared to historical flows in 1954 and 1955, the differences would reflect all the changes that have occurred since that time and not just the effects of the proposed Moffat Project. Similar to dry years, average monthly wet year stream flows for Current Conditions are lower than actual stream flows in 1984 at some locations in the Fraser River Basin because the average monthly wet year stream flow is an average of the five wettest years during the study period, whereas 1984 is the wettest year on record in the Fraser River Basin. In addition, the demand met in the five wettest years under Current Conditions (2006) is different than the demand met in 1984. Differences in the timing of filling Gross Reservoir can also result in differences in Current Conditions average wet year monthly flows versus historical flows in 1984. Modeled Current Conditions average annual flows in the Colorado River below Windy Gap are lower than historical average annual flows from 1984 through 2008 primarily because the average annual demands for several entities upstream of this location, including Denver Water and Windy Gap, have increased due to growth and are higher under Current Conditions. As a result, Denver Water's diversions and Windy Gap diversions under Current Conditions are higher on average, resulting in lower modeled flows below Windy Gap on average than historically occurred.

Comment Information	Comment	Comments and Responses
	available sediment supply and, for all but the smallest flows, sediment transport capacity is orders of magnitude greater than available sediment supply" *DEIS at p. 4-9* This conclusion is not universally accepted by the scientific community. Many experts question the methodologies used in the DEIS sediment transport study. *See Moffat Project Comment Letter from Dr. Brian Bledsoe.* ***Empirical evidence suggests that sediment is not being adequately flushed under the Current Conditions (2006) hydrology*** Appendix E4 of the DEIS provides photographic evidence of the stream channel condition under current conditions for the stream reaches affected by the Moffat Project. Several of the photos on west slope streams like the Fraser River and Colorado River are noted to have "sand deposits" *p. E-4-12, 13 &-20* and "organic material on cobbles" *p. E-4-35&36.* For the past several years Grand County has been working with aquatic consultants to collect data in support of a Grand County Stream Management Plan. The photos attached below in Figures 4 through 7 from the Fraser River, Ranch Creek, and the Colorado River show that sediment deposition is currently occurring throughout the Fraser and Colorado River basins. Additional diversions from the Moffat Project will only exacerbate this existing condition. **Figure 1. Example of sediment deposition - Fraser River d/s of DWB diversion** 17	Dry year flows are not misrepresented and the impacts of the Project are not understated in a dry year. There would be no additional diversions due to the Moffat Project in the single driest year in the study period as well as the average of the five driest years. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic biological resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading, Use of Daily and Monthly PACSM Data for Resource Evaluations). Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes (see DEIS Appendices H-4, H-5 and H-6). Averaging the five driest years as opposed to selecting the single driest year is a reasonable approach for evaluating hydrologic effects under dry conditions. The average of the five driest years captures a broader range of flow conditions and diversions that could be expected to occur during a dry year and better represents a typical dry year. For example, Moffat Project diversions in a dry year following a wet year may be different that a dry year

Comment Information	Comment	Comments and Responses
	 Figure 2. Example of sediment deposition - Fraser River near Winter Park Figure 3. Example of sediment deposition - Ranch Creek 18	following a dry year. These differences would be reflected in a dry year average that includes five years with varying hydrologic conditions in preceding years. The driest year, could be the year with the lowest total natural flow during the runoff period which extends from April through August, or it could be the year with the lowest total annual natural flow, or depending on the resource it could be the year with the lowest natural flow in a specific month. Furthermore, conditions may be more or less dry depending on the location selected. Therefore, the approach selected to average the five driest years based on the estimated natural flows at the USGS gage, Colorado River near Kremmling, takes into account the spatial and temporal variability in “dry conditions” that can occur. Even if one of the five dry years was selected for evaluation of impacts, the predicted impacts to flows as a result of the proposed Moffat Project in a dry year would not change since there would be no additional diversions associated with the Moffat Project in any of the five dry years included in the “average dry year.” Differences between Denver Water’s records of Moffat Tunnel flows at the East Portal versus records maintained by the Division of Water Resources (DWR) are most likely due to gage height calibration corrections and shift adjustments to the standard 15-foot Parshall flume rating. The State and DWR operate their own data recording devices at the gage. Occasionally, operational conditions would cause the flume to deviate from its theoretical stage-discharge relationship. At the end of the water year, DWR staff takes all available data collected and make adjustments to daily mean flows by smoothing the application of any gage height calibration corrections and shift adjustments from gage visit to gage visit. This can cause differences between DWR and Denver Water records of flows recorded for the Moffat Tunnel at the East Portal.

Comment Information	Comment	Comments and Responses
	 Figure 4. Example of sediment depostion - Colorado River below Windy Gap These photos indicate that sediment transport is already becoming a problem under exiting hydrologic conditions. Sediment deposition can only be expected to worsen as stream flows are further depleted by the Moffat Project. ***The DEIS contradicts itself.*** With regard to the sediment discussion on the Fraser River, the DEIS concludes that "sediment transport capacity for the Proposed Action remains orders of magnitude greater than sediment supply" *Page 4-52* and that "the system is sediment-limited and the morphology of the channel is not expected to be impacted by flow reductions" (*Page 4-53*). This conclusion is contrary to the information presented previously in Table 3.1-19 where "potential signs of aggradation" were observed at four of the seven study sites. If sedimentation is already occurring under the current (2006) flow regime, the problem will likely be exacerbated under a more depleted flow regime (2016 or 2030) with less power to transport sediment. The DEIS draws similar conclusions on the Williams Fork River finding that peak flows will be reduced and that less sediment will be transported but that transport capacity is greater than sediment supply. *Page 4-69 to 4-73* Once again, this conclusion is contrary to the information presented previously in Table 3.1-19 where "potential signs of aggradation" were observed at four of the seven study sites and additional depletions will likely exacerbate the existing condition. **8. The DEIS fails to evaluate other critical impacts of Moffat Project and other reasonably foreseeable projects on trout fisheries and entirely fails to evaluate impacts on other aquatic species.** 19	The comment mentions UPCO output for Scenario 3. Use of UPCO output is ineffective for comparison purposes in the Moffat EIS. The UPCO simulations were developed nearly 10 years ago and contained a different basis for the existing system, a different proposed project, different demands, and many other dissimilar conditions. Subsequent to the UPCO modeling effort, the Corps and its consultants conducted a thorough review of PACSM for use in the Moffat EIS. As a result of that review, Denver Water made numerous improvements to the model. These include changes to estimates of natural stream flow, water rights and agreements, system operations, physical system capacity, return flow timing and rates, and demands. Given these changes and improvements it would be nearly impossible to quantify the specific causes for any given difference in results between UPCO and the Moffat EIS simulations. This type of comparison is unnecessary since the review of Moffat System hydrology should rely on Moffat EIS simulations, and not outdated UPCO output. The comment incorrectly states that Denver Water has only reduced bypass flows once in the winter of 2002/2003. Bypass flow reductions have occurred several times in 1975, 1977, 1980, 2002, 2003, and 2004. FEIS Chapter 4 was revised to provide additional information on bypass flow reductions including the time of year and at which location bypasses would be reduced and potential impacts on water providers attributable to future bypass reductions. In addition, FEIS Chapter 4 was revised to include information on the increased frequency, duration and time of year that stream flows would be reduced to minimum USFS bypass flows and tributaries without bypass requirements that would be dried up.

Comment Information	Comment	Comments and Responses
	Changes in WUA and stream temperature are not the only mechanisms by which fish can be impacted. Trout can be impacted if changes in flow lead to a collapse of important food resources like the stonefly, *Pteronarcys californica*, or mottled sculpin, *Cottus bairdii*. The CDOW has already documented reductions in the stonefly and mottled sculpin populations associated with water withdrawals below Windy Gap Dam and they conclude that additional water development will likely exacerbate this problem" In addition, if reduced peak flows cause additional sediments suitable for the tubificid worm, *Tubifex tubifex*, to accumulate along the Colorado River below Windy Gap, problems with whirling disease may be exacerbated. The DEIS fails to adequately evaluate these impacts or explain why these obvious effects of changes in flows have been ignored. ***The DEIS fails to take a "hard look" at potential impacts to macroinvertebrates.*** The DEIS states that benthic invertebrate communities were evaluated based on available hydrology, geomorphology and water quality information and that no habitat simulations were conducted for invertebrates. *Page 4-313*. The DEIS concludes that "as long as flushing flows are adequate to maintain substrate composition, invertebrates would have more favorable habitat availability with reductions in peak flows". The conclusion regarding flushing flows and invertebrates is subjective and should be supported by a scientific literature citation. In fact, empirical evidence suggests that some stream segments are already experiencing aggradation/accumulation of fine sediments and water quality degradation under current flow regimes. "Poff et al. (1997) state that in the absence of high flushing flows, species with life stages that are sensitive to sedimentation, such as the eggs and larvae of many invertebrates and fish, can suffer high mortality rates". Accumulation of fine sediment and degradation of invertebrate habitat can only be expected to worsen as peak flows are reduced. ***The DEIS fails to evaluate impacts to other fish species.*** The DEIS focuses on three non-native trout species, brook, brown and rainbow trout, to the exclusion of other fish species. The DEIS states that two native species of sculpin are present within Moffat System Project Area. *DEIS Table 3.9-1at p. 3-211*. As stated previously, CDOW has already documented a decline in mottled sculpin populations that are attributable to existing water withdrawal practices In addition, non-native dace, chub darter, and sucker can also be found in these study areas. The DEIS fails to evaluate impacts of MOFFAT PROJECT on these other native and non-native fish species. ***The DEIS fails to evaluate impacts of MOFFAT PROJECT and other reasonably foreseeable projects on whirling disease and, consequently, on the Colorado River, west slope reservoirs, and east slope streams and reservoirs fisheries.*** The DEIS lists two aquatic nuisance species; whirling disease and didymo. *Page 3-214*. Transbasin diversions could effectuate the spread of these aquatic nuisance species. The DEIS fails to consider the importation of west slope invasive species into east slope aquatic habitats. 20	Additional information is included in FEIS Sections 4.6.1 and 5.1 on changes in daily diversions and stream flows for a sequence of dry years followed by a wet year. Information was added to FEIS Appendix H-6 regarding the timing and magnitude of maximum flow reductions. The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including adaptive management for mitigation. ***Comment #837-66*** *(ID 4869)*: *The USACE analysis does not consider or take into account Special Aquatic Resources that may be impacted by the proposed Moffat Project diversions In evaluating whether significant degradation to the aquatic ecosystem will result, the USACE must take into account the special nature of state and federal designated areas. 40 CFR Subpart E. The Colorado River, downstream of Windy Gap reservoir, and the Blue River between Dillon Reservoir and its confluence with the Colorado River are State designated Gold Medal fisheries and candidates for Congressional Wild and Scenic Rivers Act designation due to their outstanding fishing and boating recreation values. The Colorado River, between its confluence with the Blue River and the Eagle River is a State designated Wild Trout fishery.*

Comment Information	Comment	Comments and Responses
	From *Page 4-313 to 314* the DEIS discusses Invasive Species and concludes that conditions that result in increased sedimentation may provide additional habitat for the intermediate tubifex worm host for Whirling Disease. Reductions in the frequency and amount of flushing flows on these west slope rivers may increase sedimentation and exacerbate the Whirling Disease problem. Failure to consider the potential impacts of increased MOFFAT PROJECT depletions and transbasin diversions on the spread of whirling disease and, therefore, on the survival of trout populations in the Fraser River, its tributaries, the Colorado River and in east slope reservoirs and streams, renders the DEIS fatally deficient. **9. The DEIS fails to take a hard look at the cumulative impacts operation of the Moffat Project, combined with past, present and future reasonably foreseeable projects will have on the aquatic resources of the Colorado River.** The DEIS's cumulative impacts is deficient in a number of ways. First, it fails to evaluate the impacts ongoing project operations, including C-BT, Moffat Tunnel and Windy Gap, have had on the river's aquatic resources. Second, it fails to evaluate the cumulative impacts of reasonably foreseeable future events, such as global warming, on the hydrology of Fraser and Colorado Rivers and their aquatic resources. The DEIS states "…Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversion. **This is how Denver Water has operated in the past and plans to operate in the future**". *DEIS at p. 3-23:* The DEIS goes on to say that in wet and average years, "Denver Water diverts 100% of the water from streams that do not have minimum bypass flow requirements" and these streams are "dried up early in the runoff season similar to dry years". On *Page 3-23*,the DEIS indicates that there are no bypass requirements and the Moffat Project diverts the entire stream flow on 18 of the 31 stream segments in the Fraser basin. Similarly, there are no bypass requirements on the four headwater tributaries in the Williams Fork drainage *DEIS at p. 3-239*. Streams that are completely dewatered do not provide fish habitat and they do not promote fish passage/migration. The Moffat Project currently dewaters several headwater tributaries in the upper Fraser and Williams Fork river basins. The ongoing practice as an existing, cumulative impact in the current permitting process. On *Page 5-1* the DEIS states that the NEPA definition of cumulative impacts is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" It goes on to say that "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). On *Page 5-3* it goes on to say that "**Knowing whether a resource is healthy, declining, near collapse, or not functioning is necessary for determining significance of any added impacts due to the Moffat Project**". That said, the Cumulative Effects chapter of the DEIS provides a ½ page narrative describing the history of transbasin diversion from the Colorado River basin including the Grand River Ditch, Moffat Tunnel, C-BT, and Windy 21	*The Colorado River, between its confluence with the Blue River and the Roaring Fork, is a candidate for Congressional Wild and Scenic Rivers Act designation due to its outstanding fishing and boating recreation values. These Special Aquatics Resources designations reflect the extraordinary value of these recreational fisheries, based on fish reproduction, population and size. Accordingly, risks and impacts to fish and their food supply that may be otherwise deemed acceptable, could jeopardize the extraordinary value of these fisheries and the federal and state designations. Yet, neither the DEIS nor the USACE CWA 404(b)(1) analysis recognize Special Aquatic Resources status of these fisheries or assess impacts, including cumulative impacts, of the proposed Moffat Project in light of these special designations or the extent to which these impacts may jeopardize state and federal designations. Indeed, the DEIS entirely fails to evaluate the impacts of the proposed Project on fishing recreation, concluding without analysis, rationale or explanation, that the Project will not affect fishing recreation. Because the USACE lacks sufficient information to make a reasonable judgment whether issuance of the permit complies with the Guidelines, the permit cannot be issued until such information is developed. See 40 CFR § 230.12(a)(3)(iv). In the alternative, adequate terms and conditions – including an adequate monitoring and adaptive management plan – must be imposed.* **Response #837-66:** Please see the response to Comment ID 4863. As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in FEIS Section 3.11 indicate that there has not been

Comment Information	Comment	Comments and Responses
	Gap Projects but neglects to provide a scientific analysis of these past impacts. Clearly this is not a Cumulative Effects analysis. The DEIS goes on to provide several pages of descriptive text on Reasonably Foreseeable Future Actions but fails evaluate the effects of these projects scientifically. Nothing in the Cumulative Effects chapter attempts to address the question posed on *Page 5-3* regarding whether the "**resource is healthy, declining, near collapse or not functioning**" under the Current Conditions (2006) scenario or the Full Use (2016) scenario. The impacts of the Full Use (2016) scenario are disclosed but not evaluated and therefore it is impossible to determine what the state of the environment will be under predicted conditions in 2016. Given that no determination of the Current Condition (2006) has been made, and no evaluation of the impacts of the Full Use (2016) scenario has been rendered, the conclusions of the DEIS that the Full Use w/Project (2030) are unsupportable. ***The DEIS fails to evaluate the impacts ongoing project operations, including the existing Moffat Project operations, have had on the Fraser and Colorado River aquatic resources.*** The DEIS's cumulative impacts analysis does not evaluate the impacts large transmountain diversions, such as the Moffat Tunnel, have had on the resources of the Fraser and Colorado Rivers. The DEIS acknowledges that these and other diversions have had a profound impact on the hydrologic regime of the river. For example, the DEIS discloses that average annual flows at the Fraser River at Winter Park gage have been reduced from 32,080 af/year prior to 1935 when Moffat first came on line to just 12,890 af since 1935; a reduction in flow of 60%! The DEIS also discloses that "Denver Water diverted approximately 50% of the average annual native flow available at the Fraser River at Winter Park gage for the 30-year period from 1975 through 2004. *DEIS at p. 3-21*. Yet, the DEIS fails to evaluate the impacts these changes have had when assessing the cumulative impacts of the Moffat Project and other foreseeable actions on water and aquatic resources. Instead, the cumulative impacts analysis only analyzes impacts between some future condition described as Full Use (2016) and Full Use w/Project (2030) and neglects to evaluate impacts between Current Conditions (2006) and Full Use (2016). The DEIS does not make a determination that the existing aquatic environment is healthy, it simply assumes that the condition of the aquatic environment will be healthy in 2016, and then it analyzes only the incremental impact of its proposed depletions between 2016 and 2030. Insert "This approach is contrary to the statements on Pages 5-1 and 5-3 of the DEIS which recognize the need to evaluate, not just disclose, past, present and reasonably foreseeable actions and the existing condition of the aquatic resource in order to fully analyze the potential impacts of the Moffat Project. If the Fraser River is to avoid a death of 1,000 cuts, future changes must be placed in the broader context of the alterations that have occurred to date. ***The DEIS fails to evaluate the cumulative impacts of climate change and global warming and mountain pine beetle killed trees.*** The DEIS recognizes that "numerous studies have been conducted on the relationship between climate change and water 22	a decline in these fisheries in the last few decades. FEIS Sections 4.6.3 and 5.3 contain an evaluation of the impacts to the channel of the lower Blue River and determined the Project would have no impact on the ability of the channel to maintain fish habitat. Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including adaptive management for mitigation. ***Comment #837-65*** *(ID 4868)**:*** *Appropriate and practicable steps to minimize potential adverse impacts on aquatic ecosystems of west slope streams are not proposed The USACE has proposed no specific measures to minimize the potential adverse impacts of the proposed Moffat Project on the aquatic environment of west slope streams. No measures are offered to avoid, minimize or mitigate water quality impacts, including acknowledged violation of State stream temperature standards. See DEIS at 4-197 to 4-198. No measures to avoid, minimize or mitigate loss of peak flows and increased sedimentation. See DEIS at 4-199. No measures to avoid, minimize or mitigate fishing recreation. With respect to impacts to aquatic resources, the DEIS states: "Minimization and avoidance techniques may include adjustments to operations that may benefit aquatic organisms. This would include changes to runoff flows or low winter flows to make these two critical time periods less stressful for fish and invertebrates . . ." DEIS at 4-335. However, the proposed measure is so vague so as to render it virtually meaningless. Appendix M to the DEIS includes Denver Water's proposed mitigation. Accordingly, the DEIS states: "All practicable steps have been taken to minimize potential adverse effects associated with construction and operation of the Proposed Action. This Mitigation Plan addresses the*

Comment Information	Comment	Comments and Responses
	resources in the west and that "Most climate change models project that temperatures will continue to rise in the West". *DEIS at p. 5-34*. However, the DEIS fails to evaluate these potential impacts and simply states that "Climate change and global warming may be considered reasonably foreseeable; but currently there is no accepted scientific method of transforming the general concept of increasing temperature into incremental changes in stream flow or reservoir levels" *DEIS at p. 5-35*. Moreover, the DEIS fails to acknowledge the potential impacts of global warming on exacerbating already anticipated stream temperature problems. The failure of the DEIS to evaluate climate change and global warming is inconsistent with the conclusions reached in a recent report prepared by the Western Water Assessment for the Colorado Water Conservation Board (CWCB). This report to the CWCB concludes that "[a] warming climate will amplify Colorado's water related challenges, with potential reductions and seasonal shifts in water availability. While most water resource planning has been based on past hydrology, ***water users can no longer assume that future conditions will reflect the past. Although there are uncertainties regarding aspects of the science, enough information is available to support adaptation planning for risks associated with climate variability and change*** [emphasis added][2]. Clearly acceptable science is currently available and the DEIS should utilize this science to evaluate anticipated changes in stream flow and water temperature that may be attributable to climate change and global warming. The DEIS also recognizes that pine beetle killed trees may have implications for the Fraser and Colorado River watersheds such as increased wildfire risk resulting in increased runoff, sediment and nutrients *DEIS at 4-19* but the DEIS fails to quantitatively evaluate these impacts, particularly in terms of sedimentation and sediment transport problems, or to acknowledge potential impacts on stream temperature. **10. The DEIS fails to take a "hard look" at the effects of Moffat Project and other reasonably foreseeable projects on the special State and Federal designations of the affected reach of the Colorado River.** The Colorado and Blue River reaches impacted by the proposed Moffat Project and other foreseeable projects are subject to special designations by both the State and the Federal government. The Colorado River downstream of Windy Gap reservoir and the reach of the Blue River between Dillon Reservoir and the river's confluence with the Colorado River are Gold Medal Trout fisheries, designated by the Colorado Wildlife Commission. This designation is reserved to outstanding fisheries that meet specific fish population and size requirements.[3] There are only 10 designated Gold Medal streams in the State of Colorado. The reach of the river between Gore Canyon and State Bridge is a designated [2] Climate Change in Colorado. A Synthesis to Support Water Resources Management and Adaptation. A Report by the Western Water Assessment for the Colorado Water Conservation Board. 2008. Page 43. [3] The Colorado Wildlife Commission defines a Gold Medal Water as a lake or stream that supports a standing stock of at least 60 pounds per acre, and contains an average of at least 12 quality (14" or longer) trout per acre. *See Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008).* 23	*following unavoidable effects identified in the DEIS for the Proposed Action . . . Effects to flow and aquatic habitat in tributaries to the Fraser River." DEIS at M-3. Denver Water's proposed mitigation for west slope streams consists of: • Participation in ongoing monitoring activities and conditional bypass discussed in Section I.A.1., above; • Participation in the Colorado River Recovery Program for the benefit of endangered fish; and • Development and implementation of a plan to establish a viable Colorado River cutthroat fishery in a suitable location in Grand County. DEIS at M-4 to M-6. No explanation is offered why adverse effects to west slope streams are deemed to be "unavoidable." The assumption that Moffat Project impacts to west slope streams, including violation of stream temperature standards, are unavoidable is not only arbitrary, it is inconsistent with the CWA 404(b)(1) Guidelines which specifically prohibit the issuance of a 404 permit that will cause and contribute to a violation of water quality standards. With respect to the proposed mitigation measures, they are wholly insufficient to address the magnitude of potential impacts, including potential loss of valuable fisheries, which the Moffat Project, alone and in combination with other diversions will have on west slope streams. No appropriate and practicable steps to minimize the impacts of the Moffat Project are being proposed, in violation of CWA 404(b)(1) Guidelines. Accordingly, a 404 permit may not be issued until such time as such steps are proposed and made available to the public for review.* **Response #837-65:** The DEIS and the FEIS both discuss flow changes and diversions with the Project and the potential impacts to fish habitat and fish populations. Mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M.

Comment Information	Comment	Comments and Responses
	"Wild Trout" stream. This designation is based on the presence of naturally reproducing, wild trout.[4] In addition to the State's Gold Medal and Wild Trout designations, the Colorado River from downstream of Windy Gap reservoir to almost Glenwood Springs are candidates for Wild & Scenic Rivers Act (WSA) designation in recognition of their outstanding fishing. BLM manages these and other eligible rivers so as to not adversely affect their values pending potential WSA designation by Congress. The DEIS's analysis entirely fails to evaluate the direct, indirect and cumulative impacts of the Moffat Project on these designations. As discussed at great length in these comments, the aquatic resources impacts analysis on which the DEIS's conclusions rely is fatally flawed and, therefore, cannot provide the basis for such conclusion. Moreover, while the aquatic impacts analysis discusses potential impacts to fisheries, it does not evaluate the impacts of the project on the quality of those fisheries for recreational use. For example, the size of fish plays as critical a role in the State's designations as their numbers. Yet, the aquatic impacts analysis only describes potential impacts to fish populations. Because BLM's outstanding recreational fishing designation is largely based on the State's designation criteria, the aquatics analysis also fails to yield the information needed to assess potential impacts on designation under the WSA. **11. The DEIS fails to present an adequate mitigation measures analysis.** NEPA requires that mitigation measures be fully reviewed in the NEPA process. "[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the action-forcing function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 352. CEQ regulations require that the agencies include in the EIS a discussion of appropriate measures to mitigate adverse environmental impacts. *40 CFR §1502.14(f) and 40 CFR § 1502.16(h)*. Agencies must also state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. *40 CFR §1505.2(c)*. Mitigation must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated. *Carmel-By-The-Sea v. Dept. of Transportation*, 123 F.3d 1142, 1154 (9th Cir. 1997). A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA. *Northwest Indian Cemetery Protective Association v. Peterson*, 795 F.2d 688, 697 (9th Cir. 1986). Broad generalizations and vague references to mitigation, which fails to specify whether any mitigation measures would in fact be adopted or to provide an [4] The Colorado Wildlife Commission defines Wild Trout Water as a lake or stream that contains a wild trout population; a wild trout population is one that can sustain itself through natural reproduction and recruitment and a wild trout is a trout that completes its entire life cycle in a lake or stream. *Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008).* 24	***Comment #837-64*** *(ID 4867)**:*** *Least Damaging Practicable Alternatives. Please refer to Joint Rebuttal Statement and comments by Western Resource Advocates.* **Response #837-64:** Comment reference noted. ***Comment #837-63*** *(ID 4866)**:*** *OTHER REGULATORY REQUIREMENTS A. Public Interest Review. The USACE must deny a CWA § 404 permit if the proposed project is contrary to the "public interest." 33 CFR § 320.4(a). This evaluation requires the weighing of the benefits of the proposed project requiring a CWA § 404 permit against its impacts including, but not limited to, impacts on fish and wildlife values and recreation. The public interest review requirement is in addition to the requirement of compliance with the requirements of the CWA § 404(b)(1) Guidelines discussed above. This analysis requires the Corps to consider the "relative extent of the public and private need" for the project and "reasonable alternative location and methods to accomplish the objective of the project. Holy Cross Wilderness Defense Fund v. Madigan, 960 Fed. 1515, 1524-1525, fn. 12 and 13. Please refer to Joint Rebuttal Statement and comments by Western Resource Advocates.* **Response #837-63:** The decision whether to issue a permit is based on an "evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest" (33 CFR 320.4[a]). Per 33 CFR 320.4, General Policies for Evaluating Permit Applications, the Corps solicits input from the public in order to better evaluate the detriments and benefits of a project to the public. When the Corps acts on the permit application it considers comments received as well as any

Comment Information	Comment	Comments and Responses
	estimate of their effectiveness or why such estimate is not possible, do not meet NEPA requirements. *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380-81 (9th Cir. 1998)/ The DEIS describes three components to the west slope mitigation; • Upper Colorado Endangered Fish Recovery, • Fraser and Colorado River temperature monitoring, and • Colorado River cutthroat trout habitat improvements. *DEIS at p. M-4.* The DEIS's description of proposed mitigation measures fails to meet NEPA's requirements. The DEIS states that "Most of the impacts to aquatic resources would be indirect and **long term** through changes in stream flow" *DEIS at p. 4-307* Impacts to aquatic resources will most definitely be "long term". Several recent scientific articles (Arthington et al 2006; National Academies Press, 2004; Richter et al.1997) have stated that there is no easy answer to the question of how much water can be diverted without environmental consequence. Instead, they recommend the use of adaptive management plans to perform controlled experiments specific to individual streams and to balance stream flows and water withdrawals over time. Poff et al (1997) also conclude that "rivers with highly altered and regulated flows loses their ability to support natural processes and native species" and that "setting specific goals to restore a more natural regime in rivers with altered flows should ideally be a cooperative process involving river scientists, resource managers, and appropriate stakeholders". Because the aquatic resource impacts will certainly be long term, any permit issued for the Moffat Project should include an adaptive management plan that would require Denver to ensure that negligible impacts they predict in the DEIS are in fact realized in the Fraser River, the Colorado River and their tributaries. An adaptive management approach is also consistent with the suggestion in the DEIS that "Denver Water needs improved operational flexibility of the Moffat Collection System including being able to respond to global climate changes and adjusting operations in response to new scientific information". *DEIS at p. 5-36* The environmental community would support an **adaptive management plan** that would allow Denver to respond to global climate changes **and environmental impacts associated with its Moffat collection system** by adapting its operations in response to new scientific information. 25	responses the applicant may submit to the Corps. The major tools used to interact with the public are the public notice and public hearing. The public notice is the primary method of advising all interested parties of a proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable beneficial and detrimental impacts on the public interest. Public notices are used to announce hearings. Public notices on proposed projects always contain a statement that anyone commenting may request a public hearing. Public hearings are held if comments raise substantial issues which cannot be resolved informally and the Corps decision maker determines that information from such a hearing is needed to make a decision (see 33 CFR 327). Four public hearings were held for the Moffat Project: • December 1, 2009 - Boulder Country Club, Boulder, Colorado • December 2, 2009 – The Inn at Silver Creek, Granby, Colorado • December 3, 2009 – Double Tree Hotel, Denver, Colorado • January 7, 2010 – Beaver Run Conference Center, Breckenridge, Colorado Comments were recorded verbatim by a court reporter during the hearings. Comments were also obtained from the public via mail, fax, and email. Comments are made part of the record, and they will be considered in determining whether it would be in the public interest to proceed with this action.

Comment Information	Comment	Comments and Responses
	REFERENCES CITED Arthington, A.H., S.E Bunn, N.L Poff & R.J. Naiman. 2006. *The challenge of providing environmental flow rules to sustain river ecosystems.* Ecological Applications 16(4): 1311-1318. "Nehring, R.B., J. Ewert, & S Hebein. 2010." A review of Aquatic Invertebrate Studies and Fish Population Survey Data for the Colorado River in Middle Park, Colorado from 1980 through 2009: What does it tell us?. Groffman, P.M., J.S. Baron, T. Blett, A.J. Gold, I. Goodman, L.H. Gunderson, B.M. Levinson, M.A. Palmer, H.W. Paerl, G.D. Peterson, N.L. Poff, D.W. Rejeski, J.F. Reynolds, M.G. Turner, K.C. Weathers, and J. Wiens. 2006. *Ecological Thresholds: The key to successful environmental management or an important concept with no practical application?* Ecosystems 9:1-13. Holling, C.S. 1996. *Surprise for science, resilience for ecosystems, and incentives for people.* Ecological Applications 6(3):733-35. National Academies Press. 2004. *Adaptive management for water resources project planning.* Panel on Adaptive Management for Resource Stewardship, Committee to Assess the U.S. Army Corps of Engineers Methods of Analysis and Peer Review for Water Resources Project Planning. National Academy Press, Washington, DC. Poff, N.L., J.D. Allan, M.B. Bain, J.R. Karr, K.L. Prestegaard, B.D. Richter, R. E. Sparks & J.C. Stromberg. 1997. *The Natural Flow Regime: A Paradigm for River Conservation and Restoration.* Bioscience 47(11): 769-784. Resh, V.H., A.V. Brown, A.P. Covich, M.E. Gurtz, H.W. Li, G.W. Minshall, S.R. Reice, A.L. Sheldon, F.B. Wallace & R. Wissmar. 1988. *The role of disturbance in stream ecology.* Journal of the North American Benthological Society 7:433-455. Richter, B.D., J.V. Baumgartner, R. Wigington, & D.P. Braun. 1997. *How much water does a river need?* Freshwater Biology 37:231-249. Scheffer, M. & S. R. Carpenter. 2003. *Catastrophic regime shifts in ecosystems: linking theory to observation.* TRENDS in Ecology and Evolution 18 26	***Comment #837-62*** *(ID 4865)**:*** *Water Quality Impacts USACE regulations require evaluation of CWA § 404 applications for compliance with "applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity." 33 CFR § 320.4(d). Certifications by the State regarding compliance with water quality standards is deemed conclusive by the Corps unless EPA advises of other water quality aspects need to be taken in consideration. Id. As previously discussed, the DEIS indicates that operation of the Moffat Project will cause or contribute to violations of State water quality standards. However, the DEIS does not provide sufficient information to fully evaluate the magnitude, extent and frequency of such violations or of such violations or the extent to which the Project will result in additional, unidentified violations. A decision with respect to the Subdistrict's CWA § 404 permit application must be postponed until such time as sufficient information to enable the State's required CWA § 401 determination and the State acts upon the requested certification in accordance with Clean Water Act and State procedures.* **Response #837-62:** To quantify the magnitude, extent and frequency of potential violations to state water quality standards would require a full water quality model for every stream segment for the affected environment – a very large geographic area. Potential violations are identified and discussed for each basin. Additionally, more detailed water quality analysis was performed for the Fraser River (temperature, wastewater treatment discharge permits, and nutrients) and the Colorado River (temperature, wastewater treatment discharge permits) as presented in FEIS Sections 4.6.2 and 5.2.

Comment Information	Comment	Comments and Responses
		Comment #837-61 *(ID 4864)**:*** *Fish and Wildlife Impacts. The Federal Wildlife and Coordination Act (FWCA) requires federal agencies to consult with the USFWS and the State's fish and wildlife agencies when evaluating approval of projects that will impound, divert, or otherwise modify a stream or other water body. 16 U.S.C § 662(a). The purpose of this requirement is to ensure that "wildlife conservation shall receive equal consideration with other features in the planning of Federal water resource development programs . . . putting fish and wildlife on the basis of equality with flood control, irrigation, navigation, and hydroelectric power in our water resource programs. . ." S.Rep. No. 1981, 85th Cong.2d Sess. (July 28, 1958). 1958 U.S.Code Cong. & Admin.News, pp. 3446, 3448, 3450.1958 U.S.Code Cong. & Admin.News, at 3450. Consultation with the fish and wildlife agencies must occur before the agencies make decisions. See, e.g. Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), and their recommendations must be given proper consideration and weight. See e.g., Sierra Club v. Alexander, 484 F. Supp. 455, 470 (N.D.N.Y. 1980). To enable consultation, federal agencies must give the fish and wildlife agencies a meaningful opportunity to comment. Sierra Club v. U.S. Army Corps of Engineers, 935 F. Supp. 1556, 1580 (S.D. Ala. 1996). As required by the Fish and Wildlife Coordination Act (FWCA), before making a decision with respect to CWA § 404 permits, the Corps must consult with the U.S. Fish and Wildlife Service (USFWS) and the State's fish and wildlife agencies "with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application." 33 CFR § 320.4(c). The Corps are required to "give full consideration to the views of those agencies on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits." Id. The DEIS provides sufficient information*

Comment Information	Comment	Comments and Responses
		to warrant a determination by the USFWS and the Colorado Division of Wildlife that the proposed Moffat Project will have unacceptable impacts to aquatic resources. However, it fails to provide adequate information to understand the full magnitude and extent of the project's impacts to the resources. Accordingly, the USACE has failed to provide a meaningful opportunity for the USFWS and the Colorado Division of Wildlife's comments, in violation of the FWCA. **Response #837-61:** The Corps coordinated with the USFWS and CPW regarding the FWCA and Colorado Revised Statute (C.R.S.) 37-60-122.2., including participation in State Wildlife Commission workshops regarding Project effects on wildlife and recommended mitigation measures. This information is summarized in the FWCA Report located in FEIS Appendix G. It would have been premature to include the FWCA Report in the DEIS because the Corps had not yet received feedback from the USFWS and CPW. The Fish and Wildlife Mitigation Plan (pursuant to C.R.S. 37-60-122.2) was developed by Denver Water and was adopted by the Colorado Wildlife Commission on June 9, 2011 and by the CWCB on July 13, 2011. ***Comment #837-60*** *(ID 4863)**:*** *Impacts to Historical, Cultural, Scenic, and Recreational Values The USACE must give "due consideration" to the effect the proposed project may have on the values of special areas such as "wild and scenic rivers . . . and such other areas as may be established under federal or state law for similar and related purposes." 33 CFR § 320.4(e). "Action on permit applications should, insofar as possible, be consistent with, and avoid significant adverse effects on the values or purposes for which those*

Comment Information	Comment	Comments and Responses
		classifications, controls, or policies were established." Id. As discussed above, and in detail in the Join Rebuttal Statement, the DEIS fails to provide required information or analysis needed for the USACE's assessment of the impacts of the proposed Project diversions on special state and federally designated aquatic resources, or on fishing recreation in general. **Response #837-60:** The most recent and updated version of the Upper Colorado River Wild and Scenic Stakeholder Group Management Plan, dated January 2012, was reviewed and included as a consulted resource in the FEIS. In 2006, the Kremmling and Glenwood Springs field offices of the BLM began the eligibility phase of a Wild and Scenic Rivers evaluation as part of their RMP revision process. The Wild and Scenic Rivers study process is composed of two main components: the eligibility phase and the suitability phase. The eligibility phase involves identifying eligible rivers and stream segments, and determining a tentative classification (i.e., Wild, Scenic, or Recreational). To be eligible for designation, a river must be free flowing and contain at least one Outstandingly Remarkable Value (ORV) that is scenic, recreational, geological, fish-related, wildlife-related, historic, cultural, botanical, hydrological, paleontological, or scientific. Upon conclusion of the eligibility phase, the BLM prepared a Wild and Scenic Eligibility Report that identified five river segments within the Moffat Project EIS study area (portions of the Colorado and the Blue rivers) that were eligible for inclusion in the NWSRS (BLM 2007). The Wild and Scenic Suitability Report followed in April 2010. In the report, the BLM states: "The purpose of the suitability phase of the study process is to determine whether eligible rivers would

Comment Information	Comment	Comments and Responses
		be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection." Those segments of the Colorado River between Kremmling and Glenwood Springs were determined to be eligible. The Kremmling and Glenwood Springs field offices of the BLM addressed this issue in separate Draft RMPs/EISs that were released in 2011. The preferred alternative in both RMPs includes a determination that much of the Colorado River between Kremmling and Glenwood Springs is suitable for inclusion in the Wild and Scenic Rivers Act. A variation of the preferred alternative in both field offices would defer designation by adopting and implementing the Stakeholder Group Management Plan. If monitoring indicates that the Stakeholder Group Management Plan was not providing an adequate level of protection, BLM would initiate a process to evaluate suitability at a future date. The recreation analysis in the DEIS did evaluate effects of the Project alternatives on the Colorado River below Kremmling (see DEIS Section 4.13.1.2). The Corps coordinated with the BLM regarding the Wild and Scenic River designation process throughout the NEPA process. However, the Corps does not use its authorities to protect those segments under the BLM study for determination in a greater capacity than it does all waterways under its jurisdiction. The Corps' direct and cumulative impact analysis shows that minor impacts would result from implementation of the action alternatives. These results were then interpreted to find that the alternatives would likely not affect the suitability of the eligible segments for inclusion in the NWSRS. This conclusion was added to the FEIS. Sections of the Colorado and Blue rivers within the Project area considered eligible for Wild and Scenic Rivers designation are described in DEIS Section

Comment Information	Comment	Comments and Responses
		3.13.5 and FEIS Section 3.15.5. The Corps' Section 404 regulations require the Corps to consider degradation to waters of the U.S. and minimization of potential adverse effects to the aquatic ecosystem. Additionally, the Corps' public interest review balances both protection and utilization of natural resources and includes consideration of conservation, historic and cultural values, fish and wildlife values, aesthetics, etc. Thus, the resources recognized by the BLM as being eligible under the Wild and Scenic Rivers Eligibility study are similarly considered in the Corps' impact analysis and permitting decision. ***Comment #837-59*** *(ID 4862)**:*** *Other Federal, State and Local Requirements. The USACE regulations require inclusion in 404 permits conditions that are "necessary to satisfy legal requirements or otherwise satisfy the public interest requirement." 33 CFR § 325.4(a)(1). If the USACE finds that special conditions are necessary to insure such compliance but those conditions would not be "reasonably implementable or enforceable, the permit application must be denied. 33 CFR § 325.4(c). There are serious questions regarding the legality of Denver Water's storage of Fraser and Williams Fork River basin water under its most senior water rights decrees.* **Response #837-59:** The Corps does not administer nor interpret Colorado Water Rights. The Corps defers to the State to resolve water law issues. The Corps' analysis for the DEIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership would not be a factor in the Corps public interest decision". 33 CFR 320.4(g). Whether water rights or other property rights

Comment Information	Comment	Comments and Responses
		need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the proposed action does not preclude the Corps from permitting an otherwise practicable alternative. 40 CFR 230.10. The Corps may issue a Section 404 Permit even if other Federal, State, or local authorizations have not been obtained before the applicant has applied for a permit. ***Comment #837-58*** *(ID 4861)**:*** *Mitigation. In addition to the requirements of the CWA § 404(b)(1) Guidelines, the USACE regulations require consideration of mitigation measures "throughout the permit application review process." 33 CFR 320.4(r). Such mitigation includes "avoiding, minimizing, rectifying, reducing, or compensating for resource losses." 33 CFR 320.4(r)(1). Losses are to be avoided to the extent practicable. Id. As previously discussed in these comments, no meaningful mitigation measures have been offered to avoid, minimize and mitigate the impacts of the proposed Moffat Project on the aquatic and recreational resources of west slope streams (with the exception of mitigation for the benefit of the Colorado River's endangered species)* **Response #837-58:** Please see the response to Comment ID 4860. ***Comment #837-57*** *(ID 4860)**:*** *PROPOSED MEASURES TO AVOID, MINIMIZE AND MITIGATE IMPACTS TO WEST SLOPE STREAMS Please refer to Joint Rebuttal Statement.* **Response #837-57:** The Corps requires that impacts to the aquatic environment must first be avoided or minimized. Mitigation is then used to compensate for residual impacts after impacts have been reduced through avoidance and minimization. If a Section 404 Permit

Comment Information	Comment	Comments and Responses
		is issued for the Moffat Project, mitigation will be evaluated as required as appropriate. ***Comment #837-56*** *(ID 4859)**:*** *ATTACHMENT B Trout Unlimited Comments Compliance with NEPA Moffat Collection System Project The following comments address the adequacy of the draft environmental impact statement (DEIS) for the Moffat Collection System Project (Moffat Project) and the extent to which the DEIS complies with the requirements of the National Environmental Policy Act (NEPA). They summarize the analysis contained in the Joint Rebuttal Report, submitted in conjunction with these comments, with a particular focus on impacts to aquatic resources. The issues identified in the Joint Rebuttal Report are placed here in the context of NEPA's legal requirements. CONCLUSION The DEIS does not comply with NEPA. NEPA requires federal agencies to take a "hard look" at the direct, indirect and cumulative impacts of proposed federal action – in this case, issuance of a CWA §404 permit. To accomplish this goal, NEPA requires federal agencies to use high quality information and accurate scientific analysis to identify, inter alia: • Environmental impacts of the proposed action, • Any adverse environmental effects that cannot be avoided, • Any irreversible and irretrievable commitments of resources should the action be taken, and • Measures to avoid, minimize and mitigate identified impacts* **Response #837-56:** The Corps applied rigorous and scientifically acceptable methodologies for each resource analyzed for the Moffat Project in compliance with the CWA Section 404 Guidelines and NEPA. The direct, indirect, and cumulative effects of the Proposed Action were evaluated for each resource in DEIS Chapter 5 and FEIS Chapter 4. Additionally, impact thresholds (no impact, negligible, minor, moderate,

Comment Information	Comment	Comments and Responses
		major) were applied to each resource to allow for comparison of impacts between alternatives. ***Comment #837-55*** *(ID 4858)**:*** *The DEIS does not comply with these NEPA requirements for the following reasons: • The potential for critical environmental impacts that could lead to the irreversible and irretrievable loss of valuable west slope fisheries is acknowledged but not evaluated; no measures to monitor for, avoid, minimize or mitigate such impacts are identified.* **Response #837-55:** Mitigation of impacts is discussed throughout the FEIS and specifically in Appendix M. ***Comment #837-54*** *(ID 4857)**:*** *Water quality impacts that can significantly affect aquatic resources are only partially and qualitatively evaluated; where impacts are identified, they are dismissed as insignificant without explanation, in spite of sound science to the contrary.* **Response #837-54:** Please see the response to Comment ID 4781. ***Comment #837-53*** *(ID 4856)**:*** *Dry up of streams known to support macroinvertebrate and fish populations is dismissed as an insignificant impact; no measures to avoid, minimize or mitigate such impacts are identified.* **Response #837-53:** The comment is incorrect that the DEIS states that the existing diversions have minimal effect on aquatic resources downstream of the diversions. The DEIS and FEIS (Sections 4.6.11 and 5.11) state that the Project would have an additional minor effect on the streams compared to existing conditions. FEIS Section 3.11 has been revised to more clearly

Comment Information	Comment	Comments and Responses
		describe the existing conditions in the Fraser River tributary streams. ***Comment #837-52*** *(ID 4855)**:*** *Cumulative impacts are not evaluated, including: o Impacts of ongoing transmountain diversions projects that divert the majority of native flows of west slope streams affected by the proposed Project; o Impacts of significant additional west slope stream diversions that will occur before 2016, when the proposed Project is expected to come on line o Impacts of climate change and global warming o Impacts of beetle kill, prevalent in the watersheds from which the proposed Project will divert its water.* **Response #837-52:** Responses to pine beetle and climate change are provided as part of the responses to other portions of your letter. ***Comment #837-51*** *(ID 4854)**:*** *Evaluation of impacts to west slope streams relies on inaccurate predictive tools to assess the extent to which the proposed Project will reduce flows that support aquatic resources; such predictions are contradicted by actual data that reveals that the predictive model significantly under-estimates the magnitude of depletions the Project will cause.* **Response #837-51:** The purpose of the Current Conditions scenario is to represent hydrologic conditions that would occur over the 45-year study period under Current Conditions, including facilities, operations, consumptive and non-consumptive water rights, instream flow rights, demand levels, operating rules, and other water management considerations and preferences throughout the upper Colorado River Basin. The Current Conditions scenario is not intended to replicate historical flows at USGS gages and

Comment Information	Comment	Comments and Responses
		diversions at the Moffat, Gumlick, and Roberts Tunnels as suggested in the comment. The Current Conditions scenario accurately depicts current level of diversions and does not understate the incremental change that would occur with a Project on-line. It is not appropriate to compare Current Conditions model data to historical data to evaluate effects for several reasons. The periods compared may be of different lengths and they may be different hydrologically (e.g., more wet or dry overall). In addition, demands have changed considerably over the course of the PACSM study period, certain facilities and reservoirs were not in operation for the entire study period, and river administration and Project operations have changed. One would expect potentially large differences when comparing model results with historic records. If modeled flows with the proposed Moffat Project on-line are compared to historical flows, the differences would reflect all changes that have occurred and not just the effects of the proposed Moffat Project. Modeled Current Conditions Moffat Tunnel diversions (63,799 AF/yr) are higher than average annual Moffat Tunnel diversions for the period from 1984 through 2006 because Current Conditions diversions reflect meeting an average annual demand for Denver Water of 285,000 AF/yr whereas, the average annual demand met during the period from 1984 through 2006 was less. In addition, there are likely differences in the averages because the periods compared are different lengths and may be hydrologically different. It is possible that the period from 1984 through 2006 is wetter overall than the period from 1947 through 1991, which could also partially explain why the historical average is lower. These reasons also apply to differences in Current Conditions versus historical Gumlick Tunnel and Roberts Tunnel diversions and flows in the Fraser and Colorado Rivers. For example, at some locations in the Fraser River Basin,

Comment Information	Comment	Comments and Responses
		average monthly dry year stream flows for Current Conditions are higher than actual stream flows in 2002 for several reasons. The average monthly dry year stream flow is an average of the five driest years during the study period whereas 2002 is the driest year on record in the Fraser River Basin. Furthermore, bypass flows were reduced in 2002 whereas bypass flows were not reduced in two of the five years selected for the dry year average because storage triggers were not met. The Proposed Action would not change flows during dry years. Similar to dry years, average monthly wet year stream flows for Current Conditions are lower than actual stream flows in 1984 at some locations in the Fraser River Basin and along the Colorado River because the average monthly wet year stream flow is an average of the five wettest years during the study period, whereas 1984 is the wettest year on record at most locations in the upper Colorado River Basin. In addition, the demand met in the five wettest years under Current Conditions is different than the demand met in 1984. Differences in the timing of filling Gross Reservoir and the timing and magnitude of spills at other reservoirs in the upper Colorado River Basin can also result in differences in Current Conditions average wet year monthly flows versus historical flows in 1984. ***Comment #837-50*** *(ID 4853)**:*** *Evaluation of impacts of reduced peak flows on aquatic resources is incomplete, reaches conclusions that are contrary to empirical evidence and relies on obsolete and inadequate methodology.* **Response #837-50:** Please see the response to Comment ID 4831. ***Comment #837-49*** *(ID 4852)**:*** *Evaluation of impacts of the proposed Project on stream flow regime omits critical information, including the extent to which Project depletions will*

Comment Information	Comment	Comments and Responses
		increase the length and frequency of dry year conditions that are particularly harmful to aquatic life; available, independent information reveals that the Project will indeed increase the length and frequency of dry year conditions. **Response #837-49:** Additional information was added to FEIS Chapters 4 and 5 S on the increased frequency and duration of dry year conditions (FEIS Sections 4.6.1 and 5.1) and the associated effects on resources. Most of the additional diversions with the Project would occur in May, June, and July of wet and average years and there would be no additional diversions in dry years. Therefore, the additional diversions usually would not occur during the late summer period of low flows and highest water temperatures. This discussion has been incorporated into the evaluation of impacts for aquatic biological resources in FEIS Sections 4.6.11 and 5.11. ***Comment #837-48*** *(ID 4851)**:*** *To assess the proposed Project's impacts, the DEIS assumes a 2016 baseline hydrology but a 2006 baseline for water quality and aquatic resource conditions; as a result, resource impacts that are acknowledged will occur between 2006 and 2016 are simply ignored; no explanation for this unscientific, illogical and internally inconsistent approach is given.* **Response #837-48:** The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios.

Comment Information	Comment	Comments and Responses
		Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of Denver Water's Existing System reflects the best available projections of demand and supply consistent with current standards of water resource planning. Full Use of the Existing System includes RFFAs including growth in Denver Water's average annual demand to 345,000 AF/yr, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative. The difference in average annual Moffat Tunnel diversions between the Proposed Action (Full Use with a Project Alternative) is approximately 10,300 AF not 3,000 AF as suggested in the comment. The

Comment Information	Comment	Comments and Responses
		3,000 AF difference referenced in the comment is based on a comparison Current Conditions and Full Use of the Existing System. The Full Use of the Existing System scenario reflects hydrologic changes that would occur as Denver Water's average annual demand increases to 345,000 AF/yr. PACSM accurately reflects the conveyance limits throughout Denver Water's system including the Moffat Collection System. Denver Water's diversions under the Full Use of the Existing System scenario are constrained in PACSM by several factors: • Downstream senior water rights calls and instream/bypass flow requirements • Water right decree limitations • Available storage capacity in Denver Water's system • Conveyance limitations • Physical supply Under the Full Use of the Existing System scenario, Denver Water's diversions would increase given the constraints listed above in order to meet a higher demand in the future. Because there is limited existing storage in the Moffat System, most of the additional water diverted through the Moffat Tunnel, particularly in years that Gross Reservoir fills, would be delivered directly to meet a higher demand as opposed to being stored. PACSM was thoroughly reviewed and the results confirm the Full Use of the Existing System scenario is possible. ***Comment #837-47*** *(ID 4850)**:*** *NEPA REQUIREMENTS NEPA represents the Nation's sweeping commitment to "prevent or eliminate damage to the environment and biosphere." Marsh v. Oregon Natural Resources Council, 490*

Comment Information	Comment	Comments and Responses
		U.S. 360, 371 (1989). The statute accomplishes this goal by focusing government and public attention on the environmental effects of proposed agency action." Id. By doing so, NEPA "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." Id. Agencies Must Take a "Hard Look" at Environmental Consequences The sweeping policy goals announced in § 101 of NEPA are realized through a set of action-forcing procedures that require that agencies take a 'hard look' at environmental consequences before resources are committed. Id. at 350-51. Environmental Impact Statement Requirements NEPA requires all federal agencies to prepare an environmental impact statement (EIS) prior to major federal action significantly affecting the quality of the environment. 42 U.S.C. § 4331; Robertson, 490 U.S. at 348. An EIS must include a detailed statement of (1) the environmental impact of the proposed action; (2) any adverse environmental effects which cannot be avoided should the proposal be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long term productivity; and (5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. Id. at 348-9; citing 42 U.S.C. § 4332. Evaluation of Direct, Indirect and Cumulative Impacts Required NEPA requires federal agency evaluation of the "direct," "indirect," and "cumulative" impacts of a proposed federal action. Id. at 1508.25(c); see also id. at §§ 1508.7, 1508.8. Direct effects are those that "are caused by the action and occur at the same time and place." Id. at § 1508.8(a). Indirect impacts are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Id. at § 1508.8(b). A project's "cumulative impact," is "the impact on the

Comment Information	Comment	Comments and Responses
		environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . . Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Id. at § 1508.7. See also Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1379 (9th Cir. 1998) (with respect to a cumulative impacts analysis, an agency must provide "some quantified or detailed information" because "[w]ithout such information, neither courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide."). Quality of Environmental Impact Statement Information Information provided in an EIS must be of high quality and must include accurate scientific analysis. 40 C.F.R. § 1500.1(b). "The NEPA process is intended to help public officials make decisions that are based on understanding environmental consequences, and take actions that protect, restore and enhance the environment." 40 C.F.R. §1500.1(c). "When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking." 40 C.F.R. § 1502.22. If the information cannot be obtained because the overall costs would be exorbitant or the means to obtain the information unknown, the agencies must explain the relevance of the incomplete or unavailable information, provide a summary of existing credible evidence, and evaluate the impacts based on theoretical approaches or research methods generally accepted in the scientific community. 40 C.F.R. § 1502.22(b). Measures to Avoid, Minimize and Mitigate Impacts Must be Disclosed To fulfill the essential purposes of NEPA, federal agencies are required, to the fullest extent possible, to "use all practicable means, consistent with the requirements of the Act and other essential

Comment Information	Comment	Comments and Responses
		considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment." 40 CFR § 1500.2. These means include (1) avoiding the impact altogether by not taking the action; (2) minimizing the impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; (5) compensating for the impact by replacing or providing substitute resources or environments. 40 C.F.R. § 1508.20. Mitigation measures must be fully discussed in the EIS. 40 CFR §1502.14(f) and 40 CFR § 1502.16 **Response #837-47:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #837-46*** *(ID 4849)**:*** *DISCUSSION 1. The DEIS Fails to Evaluate the Potential for the Project to Cause or Contribute to a Catastrophic Loss of Aquatic Life West slope streams that will be affected by the proposed Moffat Project have been significantly dewatered by existing transmountain diversion projects. Additional diversions before and after the proposed Moffat Project would come on line will significantly increase the percentage of native flows lost to these streams, in some cases, completely drying them up for a longer period of time. Degradation of some of the stream systems is already apparent and documented. In light of the historical and ongoing impacts to these streams, the critical question the DEIS must answer is not only how much of a change will the Moffat Project and other water development will have on the*

Comment Information	Comment	Comments and Responses
		affected streams of today, but whether these streams can withstand any further impacts without being pushed into an alternative state, one that cannot support healthy fish populations and other aquatic life. This question is critical to evaluating the impact of future projects and is not evaluated by the DEIS. Ecologists have long recognized that many ecosystems exhibit nonlinear behavior in response to human perturbations. In other words, a continuous change in an independent variable (e.g., a continuous decline in stream flow) may not produce smooth changes in a response variable (e.g., fish productivity). Instead, if a threshold is crossed, the system may flip from one capable of supporting trout to one that can not. The term "ecological resilience" has been used to describe the amount of disturbance required to propel the ecosystem across a threshold and into an alternative stable state (Holling 1996). Riverine ecosystems are strongly affected by external factors like stream flow, sediment, and temperature (Groffman et al. 2006). Indeed, the quantity and timing of stream flow are critical components responsible for maintaining the ecological integrity of river ecosystems (Poff et al. 1997) and stream flow is often considered a "master variable" that limits the distribution and abundance of riverine species (Resh et al. 1988). Continued reductions in stream flow quantity and changes in stream flow timing have the potential to fundamentally alter how the Colorado River ecosystem functions. The DEIS recognizes the potential for these responses, but does not evaluate them, finding that "thresholds are difficult to identify and would require abundant data collection and analyses . . . that is beyond the scope of the EIS." (DEIS, page 4-311). Given the impacts these streams and their aquatic habitat have been subject to and the magnitude of the proposed Moffat Project diversions and other foreseeable water development, the DEIS's failure to either evaluate the potential for such catastrophic response or to define terms and

Comment Information	Comment	Comments and Responses
		conditions to monitor for and prevent such occurrence violates the legal requirements of NEPA. **Response #837-46:** Please see the response to Comment ID 4785. ***Comment #837-45*** *(ID 4848)**:*** *The DEIS fails to adequately evaluate water quality impacts that significantly impacts aquatic life. Elevated stream temperatures are a significant concern in the Fraser River, its tributaries and the upper Colorado River. Stream temperature at various locations already periodically exceeds levels deemed to be safe for the fisheries under State stream temperature standards. Operation of the Moffat Project has the potential to significantly change the current hydrology of the Fraser and Colorado Rivers by prolonging periods of low flows in average and wet years, by creating more frequent dry-year river conditions, and by extending drought conditions across the years. These changes could significantly aggravate existing stream temperature conditions, increasing the length of time and frequency with which fisheries and other aquatic resources are exposed to the stress of high stream temperatures. Accordingly, a thorough evaluation of the impacts of the project on stream temperatures and of the impacts such increases will have on the river's aquatic resources is critical. Unfortunately the DEIS fails to do any stream temperature modeling. Stream temperatures are at or exceeding state standards under Current Conditions (2006). The DEIS indicates that the water temperatures on "St. Louis Creek and Ranch Creek exceeded the summer DM (Daily Maximum) with maximum temperatures of 21.5 ºC and 23.7 ºC, respectively (versus a standard of 21.2 ºC)." In addition "Ranch Creek exceeded the regulatory standard in August of 2007 for the MWAT, with a maximum of 17.5 ºC (versus a regulatory standard of 17.0 ºC)." DEIS at p. 3-25. In addition, a*

Comment Information	Comment	Comments and Responses
		"maximum temperature of 17 ºC" was observed on the Williams Fork River below Williams Fork Reservoir where the "regulatory acute standard is 17 ºC" DEIS at p. 3-34. On the Colorado River, the DEIS states that "all but one station experienced a DM or MWAT temperature within 1 degree of the regulatory maximum, indicating that the river is very near regulatory standards. Changes in conditions such as lower rainfall, higher temperatures, or lower stream flows could cause an exceedance of regulatory standards." DEIS at p. 3-41. These water temperature violations are occurring under current stream flow conditions and the frequency of water temperature violations are likely to increase if additional water is removed from the Colorado River, the Fraser River, the Williams Fork River and their tributaries. Dissolved Oxygen concentrations are approaching state standards under Current Conditions (2006) The DEIS indicates that Dissolved Oxygen standards are already approaching state standards on both the Fraser and Williams Fork Rivers and their tributaries under current stream flow conditions at several locations. DEIS at pgs. 3-28 and 3-34. As with Water Temperature standards, violations of the Dissolved Oxygen standards are likely to increase as flows become more depleted on the Fraser and Williams Fork Rivers and their tributaries. The DEIS fails to model and evaluate the potential for stream temperature conditions that have acute or chronic impacts on aquatic resources. The DEIS does not model or quantitatively evaluate the extent to which operation of the proposed Moffat Project and other water development will cause increases in stream temperature that create acute or chronic conditions harmful to the river's aquatic resources. Chronic conditions include effects which, while not immediately lethal, have the potential to devastate fisheries - such as reduced growth, reduced reproduction, and reduced survivorship. The State has adopted standards that reflect temperature levels

Comment Information	Comment	Comments and Responses
		trout fisheries can tolerate, both on a daily basis (acute) and over a period of time (chronic). Chronic standards are expressed as maximum weekly average tolerance levels (MWATs). To assess whether operation of the Moffat Project and other water development will cause increases in stream temperature that will exceed acute and chronic tolerance levels, the agencies must be able to evaluate how stream temperatures will change on a daily and weekly basis. The DEIS fails to provide any water temperature modeling to predict acute and chronic temperature impacts associated with the Moffat Project. **Response #837-45:** Please see the response to Comment ID 4782. DEIS Section 4.9.1.2 contained a discussion of water temperatures in these streams and the effects on aquatic biological resources. The FEIS contains a more detailed discussion in FEIS Sections 4.6.11 and 5.11. ***Comment #837-44*** *(ID 4847)**:*** *The DEIS acknowledges that the Moffat Project would cause or contribute to exceedences of stream temperature standards, including acute (lethal) standards, but arbitrarily dismisses their impacts as insignificant. The DEIS states that empirical evidence on St. Louis Creek suggests that DM water temperature standards have been exceeded when flows drop to 13 cfs in August. The DEIS goes on to say that PACSM data indicates that flows will drop below 13 cfs approximately 29% of the time under both the Full Use (2016) and Full Use w/Project (2030) scenarios. DEIS at p. 4-41. The logical conclusion from this analysis is that DM water temperature exceedances could occur 29% of the time in future Augusts. However, the DEIS concludes that "no impact is anticipated" since the percentage of*

Comment Information	Comment	Comments and Responses
		exceedances doesn't increase under the Full Use w/Project (2030) scenario. The DEIS states that Ranch Creek is already experiencing DM water temperature exceedances and that "a reduction in flow due to additional diversion has the potential to increase the number of days that water temperatures exceed regulatory limits." DEIS at p. 4-41 The DEIS concludes that "a moderate impact on Ranch Creek is anticipated." The DEIS states that the mainstem Fraser was has not yet experienced DM or MWAT temperature exceedances but that lower flows under the Full Use (2016) and Full Use w/Project (2030) may "contribute to higher water temperatures". DEIS at p. 4-41 to 4-42. The conclusion is incorrect, the State is in the process of listing portions of the mainstem of the Fraser in its CWA 303(d) list due to stream temperature exceedences. The DEIS conclusion that impacts that were identified are "anticipated to be minor" is unfounded. The DEIS states that Ranch Creek "would likely have a moderate impact due to an increase in the number of days that temperatures exceed regulatory limits" and that the mainstem Fraser would experience "minor impacts with regards to temperature near the Town of Granby". DEIS at p. 4-5. The DEIS fails to describe the criteria by which the "frequency" of a stream temperature exceedence is deemed to yield a "measurable" impact for purposes of the NEPA analysis and arbitrarily concludes that impacts will be negligible, minor or moderate. The acute and chronic stream temperature standards adopted by the State define not only the levels, but also the frequency of exposure that results in lethal (daily) and chronic (weekly) impacts to trout fisheries. The DEIS's conclusion entirely disregards these standards, established by the State of Colorado after extensive analysis and formal hearings. The DEIS fails to provide any explanation as to why the State's frequency standard was disregarded, or what other criteria the agencies' relied upon to conclude that no

Comment Information	Comment	Comments and Responses
		"measurable" impacts resulted. The conclusion is arbitrary and capricious, and contrary to NEPA and well established State law. **Response #837-44:** Please see the response to Comment ID 4781. ***Comment #837-43*** *(ID 4846)**:*** *The DEIS fails to take a "hard look" at how operation of the Moffat Project and other water development will change the hydrograph of affected streams and how those changes will impact the streams' aquatic resources. Hydrological changes can have significant impacts on the river's aquatic resources. Flows affect the availability of habitat, water quality, and water temperature of the stream. They also affect the stream's ability to serve functions that play a critical role in supporting a healthy aquatic ecosystem, such as channel creation and maintenance and cleansing of sediments lodged in spawning beds. While recognizing the importance of adequately predicting expected flow conditions to properly assess the project's impacts on aquatic resources, the DEIS in fact fails to do so. No evidence that aquatic environments are currently healthy or evaluation of most probably and potentially harmful cumulative impacts. The DEIS states that "Knowing whether a resource is healthy, declining, near collapse, or not functioning is necessary for determining the significance of any added impacts due to the Moffat Project" DEIS at p. 5-3. Unfortunately the DEIS does not make a determination regarding the current health of the resource, electing instead to apparently assume that the resource is currently healthy, not in decline or near collapse and functioning? In fact, a recent report by the Colorado Division of Wildlife (CDOW 2010) concludes that "the overall abundance and distribution of the stonefly Pteronarcys californica and mottled sculpin Cottus bairdi…is greatly reduced compared to pre-impoundment data" and that*

Comment Information	Comment	Comments and Responses
		"increased future water diversions may exacerbate these trends." After electing not to quantify the current health of the resource, the DEIS attempts to determine whether impacts of the Moffat Project will be significant by defining three impact related time frames; Current (2006), Full Use (2016), and Full Use w/Project (2030). The DEIS also projects a level of demand associated with each time frame; Current Conditions (2006) = 285,000 af, Full Use (2016) = 345,000 af, and Full Use w/Project = 363,000 af. DEIS at p. 4-1, Figure 4.1-1 and p. 5-3. The DEIS elects to simply "disclose" water-based impacts between Current (2006) and Full Use (2016) and limit its "analysis" to the 14-year period between Full Use (2016) and Full Use w/Project (2030). Page 4-1. This issue reveals one of the largest flaws in the approach that was taken in the Moffat DEIS. DEIS Chapter 4 (Environmental Consequences) and Chapter 5 (Cumulative Impacts) are essentially rendered meaningless since the DEIS doesn't evaluate whether the stream system is currently "healthy" and not "near collapse" under Current Conditions (2006) or analyze the 60,000 af of additional depletions that are projected to occur between Current Conditions (2006) and Full Use (2016) which are significant and may push these rivers over the edge environmentally. **Response #837-43:** Please see the responses to Comment IDs 4845 and 4822. ***Comment #837-42*** *(ID 4845)**:*** *The cumulative impacts section of the DEIS should be required to provide evidence that the existing aquatic environment is healthy and to analyze the potential impacts of the 60,000 af/yr of additional water development that is contemplated between 2006 and 2016 in addition to the 18,000 af of additional water development that is contemplated between 2016 and 2030. Dry-year and prolonged*

Comment Information	Comment	Comments and Responses
		drought conditions are particularly harmful to aquatic life. The DEIS aquatics impacts analysis focuses on average and wet year conditions, as those conditions are defined in the PACSIM Model. Dry year impacts are glossed over because the Moffat Project is not expected to increase existing diversions during dry year conditions. See e.g., DEIS at 4-6. Dry-year conditions can have significant impacts on aquatic resources, particularly when they occur in consecutive years. As discussed in what follows, operation of the project alternatives is likely to increase the incidence of dry-year conditions and prolong drought conditions in the river. The DEIS does not ask whether or how often these dry-year and extended drought conditions will occur as a result of operation of the Moffat Project alternatives, or what impacts such conditions will have on aquatic resources. Rather, the DEIS looks at historical average and wet year depletions in general and anticipates water and aquatic resource impacts in isolation. In so doing, the DEIS fails to evaluate some of the most probably and potentially damaging effects of the project. Dry year conditions can create particularly harmful bottle-necks for aquatic life; especially in late summer and early fall as stream flows decline to critical levels. Low stream flows cause reductions in available aquatic habitat as more of the stream channel becomes desiccated and the remaining aquatic habitat becomes marginal as velocities and depths are reduced. In addition, stream temperatures fluctuate more rapidly at low flows thereby increasing the probability of exceeding both daily maximum and weekly average temperature standards. Many of the Fraser River tributaries are completely dewatered by the Moffat Project and the Colorado River below Windy Gap already experiences low stream flows and high water temperatures during most dry and some average water years. MOFFAT PROJECT could significantly exacerbate these existing problems by prolonging low

Comment Information	Comment	Comments and Responses
		flow periods in average years, increasing the frequency of dry year conditions and effectively creating prolonged drought conditions. The DEIS states that "Typically additional diversions would be greatest in wet years following dry year sequences". DEIS at Page 4-5. This trend would create more frequent back-to-back dry years and therefore, more frequent stress to aquatic species. As currently presented, the data does not permit an evaluation of the impacts of increasing the frequency of back-to-back dry years. **Response #837-42:** Please see the responses to Comment IDs 4842 and 4843. The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios: Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water.

Comment Information	Comment	Comments and Responses
		Comment #837-41 *(ID 4844)**:*** *The DEIS states that 1) PACSM uses a daily time step, 2) daily data was averaged by month to evaluate impacts to streamflows and reservoir contents and 3) daily data were used to determine frequency and magnitude of daily flow changes. DEIS at Page 4-14. Aggregating daily flow values into monthly averages eliminates extreme daily flow fluctuations from consideration. Extreme daily flow fluctuations are important considerations for evaluating impacts to aquatic habitat, especially for fish. (Fish need water everyday). Consolidating PACSM results by wet, average, and dry years does not allow the opportunity to evaluate the impacts of artificially created back-to-back dry years that may result from increased diversions in wet or average years that follow drought years when reservoirs are at minimum storage levels. The DEIS fails to evaluate the likelihood and frequency with which the proposed Moffat Project would increase the incidence of dry year conditions and resulting impacts to aquatic resources. Increased diversions during average years, particularly in those years at the lower end of the PACSIM Model average year range, could cause Fraser River tributary and Colorado River stream flows to dip into a dry year condition, resulting in a reduction in the amount of habitat which would have been available in the absence of the project. The DEIS does not evaluate these potential impacts. The DEIS does not ask how often these conditions will re-occur as a result of Moffat Project, nor does it evaluate what impacts they will have on the river's aquatic resources. For instance, the impacts of the 2002 drought continued to be felt in 2003 and subsequent years because of the 2002 reservoir draw-downs and because the fish had already been stressed by the drought. The DEIS PACSIM study period runs from 1947 through 1991 and by failing to include the 2002/2003 conditions in the analysis, the DEIS not only ignores one of the most severe*

Comment Information	Comment	Comments and Responses
		droughts on record, it completely disregards the role of Moffat Project and other reasonably foreseeable projects in extending the duration of drought conditions and the impacts this would have on the Fraser and Colorado Rivers' aquatic resources. **Response #837-41:** Please see the responses to Comment IDs 4842 and 4843. The model period used in the DEIS from 1947 through 1991 provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. A separate assessment of the 2002-2003 period was completed by Denver Water to determine whether inclusion of an extreme drought year would change conclusions regarding hydrologic effects due to the Moffat Project. Results of that assessment indicated that in drought years like 2002, Denver Water would not divert additional water due to the proposed Moffat Project because Denver Water would already divert the maximum amount physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that for Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. Extension of the modeling period would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. ***Comment #837-40*** *(ID 4843)**:*** *The DEIS analysis relies on a hydrologic model that is inadequate as a tool to predict and assess impacts to aquatic resources. The DEIS estimates predicted changes in available juvenile and adult rainbow and brown trout habitat within the stream using estimated flow scenarios supplied by Denver Water's Platte and Colorado Simulation Model (PACSIM). DEIS at 4-10.*

Comment Information	Comment	Comments and Responses
		PACSIM estimates flow changes at particular locations in the Fraser and Colorado Rivers based on pre-defined average dry, average, and wet year conditions for the study period between 1947 through 1991. Dry and wet year conditions are defined by averaging the five driest and the five wettest years of the study period, respectively DEIS at 4-13. Average year conditions are defined based on the averaging of all years within the study period. While perhaps adequate for municipal water development and planning purposes, the model is inadequate to estimate impacts to aquatic resources. The DEIS Uses Monthly and Annual Average Flow Estimates To Evaluate Hydrologic Impacts. PACSIM reports flow estimates in terms of daily values, however these daily flow estimates are then aggregated into monthly and annual averages. Monthly averages can mask important stream flow changes that may have significant impacts on river ecosystems, generally, and fish species in particular. For example, flows throughout August may be very low, but a single, large flood event may elevate the month's average. Accordingly, while looking at the average flow values may not reveal a potential problem, the average may be masking harmful flow conditions that occur for most of the averaged period. As the National Academy of Sciences so aptly noted in a recent report, "planners operate on a monthly basis, but fish live on a daily basis". (National Academy Science Report, 2007). Indeed, the Academy considered Reclamation's use of monthly average flows to be a fatal flaw in its Natural Flow of the Upper Klamath River study. Given that fish and other aquatic organisms respond to changes in flow that occur on much shorter time scales, it is inappropriate to evaluate changes in hydrology using monthly averages. **Response #837-40:** Impacts to daily flow rates (wet, average and dry years where applicable) are displayed graphically in hydrographs included in Appendix H-4. Daily flow

Comment Information	Comment	Comments and Responses
		data is also presented in the form of flow duration curves in Appendix H-5 DEIS and the percentage of days that daily flow increases and decreases of varying magnitudes would occur is presented in Appendix H-6 of the DEIS. Additional information on daily flow changes was included in FEIS Sections 4.1, 5.1 and Appendix H. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see DEIS Section 4.1, subheading Use of Daily and Monthly PACSM Data for Resource Evaluations). Averaging the five driest and wettest years as opposed to selecting the single driest or wettest year is a reasonable approach for evaluating hydrologic effects under dry and wet conditions. For example, the average of the five driest years captures a broader range of flow conditions and diversions that could be expected to occur during a dry year and better represents a typical dry year. For example, Moffat Project diversions in a dry year following a wet year may be different than a dry year following a dry

Comment Information	Comment	Comments and Responses
		year. These differences would be reflected in a dry year average that includes five years with varying hydrologic conditions in preceding years. Comparison of flows for the single driest year or the average of the five driest years would not change the predicted impacts to flows as a result of the proposed Moffat Project. The time step used in PHABSIM modeling was a daily time step for creating a daily time series for fish habitat. This information was used for impact evaluation in the DEIS and FEIS, and was not based on monthly flow data. ***Comment #837-39*** *(ID 4842)**:*** *The Model Overestimates Anticipated Flows. The Model's use of averages is likely artificially inflating predictions of flows that will be available to the fisheries and other aquatic resources in a dry, average and wet year. Because stream flow time-series tend to be positively skewed (i.e., high flows tend to be much larger than low flows) the average, mean annual runoff tends to be higher than the median annual runoff (Smakhtin 2001). By using average annual discharge values in its impacts analysis, the DEIS overestimates the amount of water flowing through the river in a typical year. Median discharge values should have been used. This problem is compounded by the fact that the data used to estimate average annual flows in wet and dry years were also included in estimates of discharge in the average year. Estimates of the average flow based on the entire 45-year (1947 through 1991) record are higher than they would have been if only the 35 years that were not included in the wettest five or driest five were used. In other words, by double counting the extreme years, the DEIS further overestimates the discharge of an average year. This may not have been a problem if the DEIS had focused on median discharge values. The Model Yields Isolated Dry, Average and Wet Years Data. One of the most critical deficiencies rendering the PACSIM Model incapable*

Comment Information	Comment	Comments and Responses
		of assessing the impacts of the MOFFAT PROJECT alternatives on aquatic resources is the fact that the model output is aggregated into dry, average and wet years in isolation. It does not look at how often operation of the MOFFAT PROJECT alternatives will turn what have historically been average years into dry years or wet years into average years. Nor does it look at the distribution of expected dry, average and wet years over time. Because the model does not provide the required information, the DEIS cannot and does not evaluate the most probable and potentially devastating impacts operation of the Moffat Project and other reasonably foreseeable projects will have on the river's aquatic resources: the creation of dry year conditions, extension of low flow conditions during average and wet years, and prolongation of drought (back-to-back dry year) conditions across the years. As further discussed in what follows, failure to evaluate this critical information renders the aquatic resources impacts analysis fatally flawed. **Response #837-39:** The use of wet, dry, and average year hydrology is an accepted practice in preparing EIS's and is a reasonable method to use in the Moffat Project EIS. Additional information on the increased frequency and duration of dry year conditions and daily flow changes during a sequence of dry years followed by a wet year was included in FEIS Sections 4.6.1, and 5.1. This discussion has been incorporated into the evaluation of impacts for aquatic biological resources in FEIS Sections 4.6.11 and 5.11. ***Comment #837-38*** *(ID 4841)**:*** *The DEIS fails to take a "hard look" at the impacts of habitat availability reduction on the Fraser River's aquatic resources. The DEIS fails to evaluate the most likely and critical hydrological changes caused by operation of the Moffat Project and other*

Comment Information	Comment	Comments and Responses
		foreseeable projects: an increase in the extent and frequency of low flow periods, dry year, and drought conditions. This failure translates into fatal flaws in the DEIS's habitat availability analysis. Simply put, evaluating available habitat losses or gains is not possible absent an understanding of the extent and frequency of expected low flow periods. The DEIS's habitat availability analysis is deficient in other ways. The DEIS Aquatics Impact Analysis Is Based On Questionable Predictive Tools including IFIM, R-2-Cross and Professional Judgment. The DEIS uses the Incremental Instream Flow Methodology (IFIM) to evaluate impacts to trout habitat. However, quoting from one of the peer-reviewed, scientific papers cited in the DEIS itself, "As a predictive tool for ecological management, the IFIM modeling approach has been criticized both in terms of the statistical validity of its physical habitat characterizations and the limited realism of its biological assumptions" (Poff et al. 1997). With regard to the Fraser and Williams Fork basins, the DEIS further admits that "IFIM data were not available for most of these tributaries, but R-2-Cross data were available for a few" and that "no hydrologic data were available for most of these tributaries". The DEIS goes on to state that on streams where "R-2-Cross information existed, potential impacts were analyzed for the tributaries using professional judgment" DEIS 4-309. Lastly, the DEIS once again admits to the use of "professional judgment" to evaluate changes to water quality, channel geomorphology, and riparian vegetation DEIS at p. 4-307. The R-2-Cross methodology is significantly less rigorous and less accepted by the scientific community than IFIM. Professional judgment is subjective and should not be used to make important decisions regarding the long term health of the aquatic environment. The use of IFIM, R-2-Cross, and professional judgment to evaluate impacts to fish habitat, water quality, channel geomorphology and riparian vegetation are insufficient to make a

Comment Information	Comment	Comments and Responses
		conclusive determination that the aquatic environments of these river basins will not be significantly degraded by the Moffat Project. The lack of available scientific data should not provide the basis for moving the Moffat Project forward. These data gaps should be filled prior to approving the project so that a complete impacts analysis can be disclosed. **Response #837-38:** Please see the response to Comment ID 4838. The use of PHABSIM for impact evaluation in EIS's has a long history in Colorado and is appropriate for use with the Moffat EIS. PHABSIM, including much of the same information used in the DEIS and FEIS, is also an important tool used in the GCSMP. R-2-Cross information has been used as appropriate in the discussions in the FEIS in light of the limitations of this technique. ***Comment #837-37*** *(ID 4840)**:*** *The DEIS improperly uses warm-season habitat suitability criteria to incorrectly conclude that winter habitat is more limiting to fish populations than depleted flows associated with the Moffat Project. In addition to the questions raised by the scientific community regarding the validity of IFIM as a predictive tool, the DEIS also admits that the IFIM analysis was based on only warm season habitat use criteria and it goes on to acknowledge that trout use different habitats between the summer and winter months. DEIS at p. 4-308. The DEIS indicates that "In winter, trout tend to use deeper habitat with slower velocity and slightly larger substrate and may be more oriented to cover". Based on this, the DEIS concludes that "warm-season habitat use criteria likely overestimate the habitat actually used by trout in the winter". This conclusion is incorrect. In fact, the use of warm season curves would likely*

Comment Information	Comment	Comments and Responses
		underestimate the amount of habitat available in the winter months. Since trout to tend to use low velocity habitats during the winter months, the use of warm season criteria (that indicate a preference for faster velocities) in IFIM modeling would result in reduced amounts of preferred habitat as stream flows, and instream velocities, are reduced in the winter months. Using warm season habitat use criteria to simulate winter habitat availability creates an erroneous modeling result and an incorrect conclusion regarding habitat availability. The DEIS conclusion that streams are limited by low habitat availability during the winter months is unfounded since the DEIS relies on the flawed assumption that warm season habitat use criteria overestimates the amount of available habitat in winter. **Response #837-37:** Please see the response to Comment ID 4837. ***Comment #837-36*** *(ID 4839)**:*** *The DEIS improperly concludes that large flows are harmful to fish and fish habitat and that Moffat Project depletions are beneficial to fish and fish habitat. The DEIS mischaracterizes a paper written by Poff et al. (1997) to support the idea that extremes in flow and habitat conditions act as a "bottleneck to limit population size". Page 4-311. In fact, the Poff paper cited in the DEIS is titled "The Natural Flow Regime: A paradigm for river conservation and restoration". The primary focus of this paper is on the value of the natural flow regime and not on how flow extremes limit fish populations. Contrary to the statements in the DEIS, Poff et al. acknowledges that "…what is "good" for the ecosystem may not consistently benefit individual species, and that what is good for individual species may not be of benefit to the ecosystem". The paper also concludes that "rivers with highly altered and regulated flows loses their ability to support natural processes and native species" (Page 780)*

Comment Information	Comment	Comments and Responses
		and that "setting specific goals to restore a more natural regime in rivers with altered flows should ideally be a cooperative process involving river scientists, resource managers, and appropriate stakeholders" (Page 781); i.e., adaptive management. With regard to IFIM modeling, Poff et al state that "As a predictive tool for ecological management, the IFIM modeling approach has been criticized both in terms of the statistical validity of its physical habitat characterizations and the limited realism of its biological assumptions." The DEIS's conclusion that large flows are harmful to fish, and implication that the Moffat Project's flow reduction may actually improve fish habitat (DEIS at p. 4-317), is particularly troublesome because over-bank, habitat-producing flows were historically available to the river but were dramatically reduced by operation of the original Moffat Project. Yet, the DEIS arbitrarily begins the study period in 2016, thereby ignoring the impacts this huge reduction in peak flows has had on the Fraser River, its tributaries and their aquatic resources. The Poff paper cited in the DEIS does not support the DEIS claim that extreme high and low flows are habitat bottlenecks for fish. Rather, high flows are necessary to flush sediments from gravels and maintain a healthy ecosystem. Modeling results from IFIM that predict minimal amounts of fish habitat at high and low flows and improved habitat conditions as a result of stream flow depletions associated with the Moffat Project should be ignored. **Response #837-36:** The citation of Poff's work in the aquatic resources section of the DEIS appropriately attributed the work in the context of available, short-term habitat for aquatic populations, especially fish and macroinvertebrates This is also consistent with applications of PHABSIM and with observations of fish and invertebrate dynamics in streams that members of the Corps team have followed for

Comment Information	Comment	Comments and Responses
		decades. This discussion has been slightly modified in the FEIS to help clarify this issue. The discussion does not contradict the channel dynamics context of Poff's work, and the need for flows that maintain the channel. However, as discussed in the DEIS and FEIS, high flows can simultaneously have detrimental effects to populations while having beneficial effects to the channel. Channel maintenance, flushing flows, and sediment deposition are discussed in the FEIS Section 3.3 and 5.4 and were taken into account and incorporated into the biological discussions and impact evaluation in both the DEIS (see page 4-307) and FEIS Section 4.6.11. IFIM and PHABSIM have been criticized as discussed in the DEIS and FEIS. However this technique is widely used in EIS projects and for fisheries management, such as in the GCSMP. The results of PHABSIM modeling in the DEIS and FEIS indicate that reduced peak runoff flows in some streams result in greater habitat availability. This information was evaluated along with the results of the geomorphology evaluations in the DEIS and FEIS concerning channel maintenance, and sedimentation. Ignoring the biological, science-based PHABSIM information and using only geomorphological information to predict impacts to biological communities is not reasonable or accurate. ***Comment #837-35*** *(ID 4838)**:*** *The analysis fails to evaluate the temporal effects of habitat loss. The DEIS states that "Fish habitat was simulated with IFIM for average years, wet years, and dry years." Page 4-310. Summarizing data into average, wet and dry year categories doesn't reflect the true temporal variability in aquatic habitat that occurs sequentially between years; i.e., back-to-back dry years etc., or within years.*

Comment Information	Comment	Comments and Responses
		Response #837-35: The use of wet, dry, and average year hydrology is an accepted practice in preparing EIS's and is a reasonable method to use in the Moffat Project EIS. Additional information was added to Chapters 4 and 5 of the FEIS on the increased frequency and duration of dry year conditions (FEIS Sections 4.6.1 and 5.1) and the associated effects on resources. Most of the additional diversions with the Project would occur in May, June, and July of wet and average years and the Proposed Project would not divert water in dry years. Therefore, the additional diversions usually would not occur during the late summer period of low flows and highest water temperatures. This discussion has been incorporated into the evaluation of impacts for aquatic biological resources in FEIS Sections 4.6.11 and 5.11. ***Comment #837-34*** *(ID 4837)**:*** *The conclusions of the aquatic habitat modeling are unsupported by the IFIM modeling results. The DEIS presents a few of the IFIM modeling results in Figures 4.9-1 and 4.9-2 and 4.9-3. These three figures are used to draw general conclusions about habitat impacts from Moffat Project flow reductions. The DEIS uses Figure 4.9-1 and Figure 4.9-3 to conclude that winter flows are more limiting than flows during other times of the year that may be depleted by the Moffat Project. However, as stated previously, modeled estimates of winter habitat were based on warm season habitat criteria which may underestimate the amount of habitat available to fish during the winter period. Therefore, IFIM modeling results on all streams that indicate minimal amounts of fish habitat during the winter should be ignored since habitat use during the winter is not accurately reflected in the habitat preference curves used in the IFIM modeling.*

Comment Information	Comment	Comments and Responses
		Response #837-34: The discussion of winter habitat modeling in this comment does not warrant changing the results presented in the FEIS. One of the criticisms of using PHABSIM is that modeled habitat may not always reflect actual habitat use by fish. Although trout may actually use somewhat higher velocity habitat in warmer seasons and lower velocity habitat in winter, the suitability curves used in PHABSIM modeling for the DEIS and FEIS and winter preference curves both indicate similar use of low velocity habitat in both seasons. The DEIS and the FEIS both discuss this issue and the use of winter curves in PHABSIM modeling likely would not change model output appreciably. Therefore, the original assumption in the DEIS is correct. ***Comment #837-33*** *(ID 4836)**:*** *The DEIS uses Figure 4.9-2 to conclude that high flows are limiting to fish and that the Moffat Project increases fish habitat by depleting high flows. This argument fails to recognize that high flows maintain a healthy ecosystem by flushing sediments from gravels and precluding non-native, habitat generalist species from invading these waters. The DEIS also fails to recognize that trout have evolved under these highly variable flow conditions and they will move into more favorable backwater habitats at times when riffles and runs are being flushed by high flows. The beneficial effects on aquatic habitat health offset the modeling results from IFIM that predict minimal amounts of fish habitat at high flows.* **Response #837-33:** Reductions in high flows can be beneficial in the context of available, short-term habitat for aquatic populations, especially fish and macroinvertebrates This is also consistent with applications of PHABSIM and with observations of fish and invertebrate dynamics in streams that members of the Corps team

Comment Information	Comment	Comments and Responses
		have followed for decades. This discussion has been slightly modified in the FEIS to help clarify this issue. The discussion does not contradict the channel dynamics context of high flows and the need for flows that maintain the channel. However, as discussed in the DEIS and FEIS, high flows can simultaneously have detrimental effects to populations while having beneficial effects to the channel. Channel maintenance, flushing flows, and sediment deposition are discussed in the FEIS Section 3.3 and 5.4 and were taken into account and incorporated into the biological discussions and impact evaluation in both the DEIS (see page 4-307) and FEIS Section 4.6.11. ***Comment #837-32*** *(ID 4835)**:*** *The analysis reaches a number of unexplained, unsupported, and arbitrary conclusions. The DEIS concludes that an IFIM-modeled reduction of 10% or greater in the minimum amount of habitat available between the Full Use (2016) and Full Use w/Project (2030) warrants "further analysis". Reductions of less than 10% are "within the margin of error" and are "unlikely" to impact fish populations. DEIS at p. 4-311. The decision to use a "difference in minimum IFIM habitat availability of 10% or greater" to warrant further analysis is arbitrary.* **Response #837-32:** Fish communities naturally vary in abundance over time by more than 10%, as demonstrated in many instances in the DEIS (Section 3.9) and FEIS (Section 3.11) with sampling data from the streams in the Project area. Therefore, small changes in flow with the Project likely would have no effect on fish populations relative to natural variability. Therefore, the Corps had to choose a level of difference that seemed appropriate to determine the effects of the Project and account for noise in modeling and hydrology. Ten %seems reasonable and is a threshold that has been used in other EIS's, notably

Comment Information	Comment	Comments and Responses
		the SDS EIS under the U.S. Bureau of Reclamation and the Two Forks EIS. ***Comment #837-31*** *(ID 4834)**:*** *In a comparison of Current Conditions (2006) versus Full Use (2016), the DEIS arbitrarily concludes that "additional diversions and/or the reductions in bypass flows would have a minor detrimental effect on the fish and invertebrate communities in the upper Fraser River and in Cooper, Little Vasquez, Vasquez, St. Louis, and Main Ranch creeks". A discussion of North Fork South Platte River impacts follows where the DEIS arbitrarily concludes that a 22% increase to already high flows in this stream would have a "minor to moderate detrimental impact". Page 4-315 These conclusions are arbitrary opinions and lack scientific rigor.* **Response #837-31:** The conclusions in the DEIS and FEIS are not arbitrary. They follow from reasonable, science-based evaluations of the available data. The finding of "moderate impact" to the reach of the North Fork is appropriate. A definition of impact intensity has been added to FEIS Section 4.6.11. ***Comment #837-30*** *(ID 4833)**:*** *The DEIS states that "the suitability of a stream to support aquatic resources is also influenced by changes to channel morphology and water quality" and that "changes in hydrology can affect water quality, such as temperature and salinity, channel morphology, and sedimentation". Page 4-307. Unfortunately, "differences in these aspects of the aquatic environment were incorporated using professional judgment of the suitability of the stream to support aquatic life." Changes in channel morphology, water quality and sedimentation are equally important in evaluating impacts from the proposed project. These impacts should be evaluated*

Comment Information	Comment	Comments and Responses
		scientifically, not by professional judgment. **Response #837-30:** There is no available specific technique or model that can incorporate water quality, channel morphology, sedimentation, and other factors to predict impacts to the streams in the Project area. Professional judgment incorporating these factors is necessary and reasonable. ***Comment #837-29*** *(ID 4832)**:*** *The DEIS fails to take a hard look at the impacts of reduced peak flows on channel dynamics, including sediment transport and aquatic resources. Peak flows are critical for maintaining healthy aquatic ecosystems. Floods of varying magnitude, duration and frequency perform different ecosystem functions such as building floodplains, forming and maintaining the active channel and scouring sediments from gravels to enhance trout spawning and macroinvertebrate habitat. Poff et al. (1997) state that "In the absence of high flushing flows, species with life stages that are sensitive to sedimentation, such as eggs and larvae of many invertebrates and fish, can suffer high mortality rates." The DEIS acknowledges that "Stream channel dynamics are affected by many factors including land usage changes, as well as increases in and decreases in stream flow or sediment production" DEIS at p. 3-66. Yet, it fails to adequately evaluate how these flows and stream processes will change as a result of operation of MOFFAT PROJECT and other reasonably foreseeable projects, or how these changes will impact the river's resources. The DEIS sediment transport studies generally indicate that transport capacity is greater than the sediment load. DEIS at p 4-53. However, this conclusion is not supported by empirical field studies which indicate that sediments are currently accumulating under current hydrologic conditions. DEIS Table 3.1-19 on*

Comment Information	Comment	Comments and Responses
		p. 3-72. More specifically, the DEIS used a representative reach approach to evaluate the balance between flow, sediment transport capacity and sediment supply. DEIS at p. 3-66 to 3-72. On the west slope, the DEIS used 8 sample sites to characterize sediment transport over 56 miles of river. Seven of these 8 sites are summarized in Table 3.1-19 and four of the seven indicate that "potential signs of aggradation" were observed. Aggradation occurs in areas where the supply of sediment is greater than the amount of material that the system is able to transport. Contrary to the sediment transport study findings, this observation would suggest that the current flow regime is insufficient to transport the existing sediment load. Additional depletions under the Full Use (2016) and Full Use w/Project (2030) scenarios will only exacerbate this problem. The DEIS acknowledges that Fraser River mainstem annual peak flood flows would be reduced in all years DEIS at p. 4-51. The DEIS states that "One important aspect of flow regimes is flushing flows and acknowledges the potential reduction of flushing flows attributable to future Project depletions. Page 4-314 However, the DEIS fails to address this issue in detail. **Response #837-29:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is

Comment Information	Comment	Comments and Responses
		downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes.

Comment Information	Comment	Comments and Responses
		Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in FEIS Sections 4.6.3 and 5.3. ***Comment #837-28*** *(ID 4831)**:*** *The DEIS indicates that IFIM/PHABSIM and R2Cross data were available to quantify the relationship between fish habitat and stream flow and to assess the effects of the alternatives in tributary streams. DEIS at p 3-213. The use of fish habitat models like IFIM/PHABSIM and R2Cross generally results in a recommended range of flows that may maintain fish habitat but fail to recognize the flow requirements that are necessary to protect entire aquatic ecosystems; i.e., flushing flows, channel maintenance flows, and the timing, magnitude and duration of both peak flows and seasonal low flows.* **Response #837-28:** The implication in this comment that the importance of high flows was ignored in the DEIS is incorrect. Additional evaluations of sediment transport and accumulation including flows required to mobilize multiple particle sizes were conducted and results were provided in Section 5.3 of the FEIS. High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the

Comment Information	Comment	Comments and Responses
		Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes.

Comment Information	Comment	Comments and Responses
		FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. In many diverted tributaries, there was a finding of adverse impact for some of the reasons noted in this comment. ***Comment #837-27*** *(ID 4830)**:*** *The DEIS does not adequately account for the benefits of large flows. As described above, the report does not account for or quantify the large increases in habitat that are produced when large flows overtop the banks and inundate the floodplain.* **Response #837-27:** Information on changes to flows at longer return intervals than two years has been added to FEIS Section 5.8.1.2. ***Comment #837-26*** *(ID 4829)**:*** *The DEIS conclusion that the "overall pattern of the flow regime" in the Fraser River will "be the same, with highest flows during spring runoff and lowest flows in the winter…" is misleading. DEIS at p. 4-316. First, this conclusion results from the agencies' arbitrary decision to ignore pre-2016 conditions as part of the analysis.[1] Second, as illustrated previously in Figure 1, there is by no means a "little" or "insignificant" change in expected peak flows from natural flow conditions. The statement that the overall pattern of the flow regime will be maintained may be correct but it is misleading since the magnitude of the peak flows projected in 2030 are diminished to the extent that they are only slightly larger than wintertime base flows (see Figure 1). FOOTNOTE: [1] This is part and parcel of the DEIS's failure to evaluate the impacts that the original Moffat Project, CBT, Windy Gap and other pre-2016 projects have had on the river as part of its cumulative impacts analysis. The DEIS's failure to look at available, pre-*

Comment Information	Comment	Comments and Responses
		2016 hydrological information also indicates a failure to use the proper baseline for analysis. [CITE BASELINE CASES.] **Response #837-26:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be reduced from 190 cfs to 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all of Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would drop from 1,243 cfs to 1,152 cfs under the Proposed Action, a reduction by 91 cfs or 7% with little change in the timing of the peak flow. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years; however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line.

Comment Information	Comment	Comments and Responses
		Additional information on high flows was added to FEIS Sections 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, IHA, a computer model used to calculate the characteristics of altered hydrologic regimes), was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. FEIS Sections 4.6.11 and 5.11 were revised to evaluate any changes in the timing of peak flows. ***Comment #837-25*** *(ID 4828)**:*** *The DEIS only evaluates changes in peak flows between Full Use (2016) and Full Use w/Project (2030) As mentioned previously, peak flows are necessary to maintain channels, flush gravels and create habitat for fish and aquatic invertebrates. On the Fraser River, the DEIS states that "in all cases, peak flows for a given recurrence interval…were less than peak flows for the same recurrence interval under the Full Use of the Existing System (2016)" and that "on the mainstem, annual peak flood flows would be reduced in all years in the study". DEIS at p 4-51 The DEIS reports similar findings on the Williams Fork above Williams Fork Reservoir DEIS at p. 4-6. The DEIS evaluates changes in peak flows between 2016 and 2030 but fails to consider the magnitude of the peak flow reduction between native flows (pre-1935) and modeled flows under the Full Use w/Project (2030) scenario.* **Response #837-25:** The impact analysis was revised in the FEIS to present total environmental effects based on a

Comment Information	Comment	Comments and Responses
		comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios. Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of the Existing System includes RFFAs including growth in Denver Water's average annual demand to 345,000 AF/yr, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative.

Comment Information	Comment	Comments and Responses
		High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was

Comment Information	Comment	Comments and Responses
		included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail

Comment Information	Comment	Comments and Responses
		in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #837-24*** *(ID 4827)**:*** *The DEIS's Stream Morphology and Sedimentation study is flawed The DEIS sediment transport study generally concludes that "decreases in flow would result in decrease sediment transport capacity along the Fraser River, St. Louis Creek, Ranch Creek, Williams Fork River, Blue River and Colorado River" DEIS at p. 4-9. The DEIS goes on to say that "for the range of flows expected, sediment transport capacity exceeds available sediment supply and, for all but the smallest flows, sediment transport capacity is orders of magnitude greater than available sediment supply" DEIS at p. 4-9 This conclusion is not universally accepted by the scientific community. Many experts question the methodologies used in the DEIS sediment transport study. See Moffat Project Comment Letter from Dr. Brian Bledsoe.* **Response #837-24:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in FEIS Sections 4.6.3 and 5.3.

Comment Information	Comment	Comments and Responses
		The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos and sensitivity analysis of sediment supply and sediment transport equations. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #837-23*** *(ID 4826)**:*** *Empirical evidence suggests that sediment is not being adequately flushed under the Current Conditions (2006) hydrology Appendix E4 of the DEIS provides photographic evidence of the stream channel condition under current conditions for the stream reaches affected by the Moffat Project. Several of the photos on west slope streams like the Fraser River and Colorado River are noted to have "sand deposits" p. E-4-12, 13 &-20 and "organic material on cobbles" p. E-4-35&36. For the past several years Grand County has been working with aquatic consultants to collect data in support of a Grand County Stream Management Plan. The photos attached below in Figures 4 through 7 from the Fraser River, Ranch Creek, and the Colorado River show that sediment deposition is currently occurring throughout the Fraser and Colorado River basins. Additional diversions from the Moffat Project will only exacerbate this existing condition. [SEE SOURCE FILE FOR FIGURE 1, EXAMPLE OF SEDIMENT DEPOSITION - FRASER RIVER D/S OF DWB DIVERSION.] [SEE SOURCE FILE FOR FIGURE 2, EXAMPLE OF SEDIMENT DEPOSITION - FRASER RIVER NEAR WINTER PARK.] [SEE SOURCE FILE FOR FIGURE 3, EXAMPLE OF SEDIMENT DEPOSITION - RANCH CREEK.] [SEE SOURCE*

Comment Information	Comment	Comments and Responses
		FILE FOR FIGURE 4, EXAMPLE OF SEDIMENT DEPOSITION - COLORADO RIVER BELOW WINDY GAP.] These photos indicate that sediment transport is already becoming a problem under exiting hydrologic conditions. Sediment deposition can only be expected to worsen as stream flows are further depleted by the Moffat Project. **Response #837-23:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in Sections 4.6.3 and 5.3. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos and sensitivity analysis of sediment supply and sediment transport equations. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. ***Comment #837-22*** *(ID 4825)**:*** *The DEIS contradicts itself. With regard to the sediment discussion on the Fraser River, the DEIS concludes that "sediment transport capacity for the Proposed Action remains orders of magnitude greater than sediment supply" Page 4-52 and that "the system is sediment-limited and the morphology of the channel is not expected to be impacted by flow reductions" (Page 4-53). This conclusion is contrary*

Comment Information	Comment	Comments and Responses
		to the information presented previously in Table 3.1-19 where "potential signs of aggradation" were observed at four of the seven study sites. If sedimentation is already occurring under the current (2006) flow regime, the problem will likely be exacerbated under a more depleted flow regime (2016 or 2030) with less power to transport sediment. The DEIS draws similar conclusions on the Williams Fork River finding that peak flows will be reduced and that less sediment will be transported but that transport capacity is greater than sediment supply. Page 4-69 to 4-73 Once again, this conclusion is contrary to the information presented previously in Table 3.1-19 where "potential signs of aggradation" were observed at four of the seven study sites and additional depletions will likely exacerbate the existing condition. **Response #837-22:** The presence of sediment at a site, particularly during low flows, does not mean that overall a channel is aggrading. Numerical analyses were supplemented with an evaluation of historic data to better assess channel morphology. Results of the historic analysis are presented in FEIS Section 4.6.3. Predicted changes in channel morphology are presented in FEIS Sections 4.6.3 and 5.3. ***Comment #837-21*** *(ID 4824)**:*** *The DEIS fails to evaluate other critical impacts of Moffat Project and other reasonably foreseeable projects on trout fisheries and entirely fails to evaluate impacts on other aquatic species. Changes in WUA and stream temperature are not the only mechanisms by which fish can be impacted. Trout can be impacted if changes in flow lead to a collapse of important food resources like the stonefly, Pteronarcys californica, or mottled sculpin, Cottus bairdii. The CDOW has already documented reductions in the stonefly and mottled sculpin populations associated with water*

Comment Information	Comment	Comments and Responses
		withdrawals below Windy Gap Dam and they conclude that additional water development will likely exacerbate this problem" In addition, if reduced peak flows cause additional sediments suitable for the tubificid worm, Tubifex tubifex, to accumulate along the Colorado River below Windy Gap, problems with whirling disease may be exacerbated. The DEIS fails to adequately evaluate these impacts or explain why these obvious effects of changes in flows have been ignored. **Response #837-21:** Please see the response to Comment ID 4821. Invasive species and whirling disease were discussed in the DEIS. An expanded, updated discussion is included in the FEIS in sections 3.11, 4.6.11, and 5.11. The CPW report (Nehring 2010) discussing sculpins and Pteronarcys was released after the DEIS was completed. The Corps is aware of the Nehring report and is has been included in FEIS Section 5.11. ***Comment #837-20*** *(ID 4823)**:*** *The DEIS fails to take a "hard look" at potential impacts to macroinvertebrates. The DEIS states that benthic invertebrate communities were evaluated based on available hydrology, geomorphology and water quality information and that no habitat simulations were conducted for invertebrates. Page 4-313. The DEIS concludes that "as long as flushing flows are adequate to maintain substrate composition, invertebrates would have more favorable habitat availability with reductions in peak flows". The conclusion regarding flushing flows and invertebrates is subjective and should be supported by a scientific literature citation. In fact, empirical evidence suggests that some stream segments are already experiencing aggradation/accumulation of fine sediments and water quality degradation under*

Comment Information	Comment	Comments and Responses
		current flow regimes. "Poff et al. (1997) state that in the absence of high flushing flows, species with life stages that are sensitive to sedimentation, such as the eggs and larvae of many invertebrates and fish, can suffer high mortality rates". Accumulation of fine sediment and degradation of invertebrate habitat can only be expected to worsen as peak flows are reduced. **Response #837-20:** The assumption in the DEIS that substrate in high gradient streams, such as the streams in the Project area, is more suitable for macroinvertebrates with effective flushing flows is reasonable and this assumption was retained in the FEIS. The assumption that lower peak flows can benefit macroinvertebrates is also reasonable and has been supported with literature citations in FEIS Section 4.6.11. The aquatic resources sections of the FEIS incorporate updated analyses of flushing flows and sediment accumulation from Sections 4.6.2 and 5.2. ***Comment #837-19*** *(ID 4822)**:*** *The DEIS fails to evaluate impacts to other fish species. The DEIS focuses on three non-native trout species, brook, brown and rainbow trout, to the exclusion of other fish species. The DEIS states that two native species of sculpin are present within Moffat System Project Area. DEIS Table 3.9-1 at p. 3-211. As stated previously, CDOW has already documented a decline in mottled sculpin populations that are attributable to existing water withdrawal practices In addition, non-native dace, chub darter, and sucker can also be found in these study areas. The DEIS fails to evaluate impacts of MOFFAT PROJECT on these other native and non-native fish species.*

Comment Information	Comment	Comments and Responses
		Response #837-19: The CPW report (Nehring 2010) discussing sculpins was released after the DEIS was completed. The Corps is aware of the Nehring report and is has been included in FEIS Section 5.11. Habitat for sculpins is not typically modeled in EIS documents for Colorado projects. Habitat modeling with PHABSIM focused on the recreationally and economically important species (e.g., trout) which has been typically done with other EIS documents in Colorado and is reasonable for the purposes of the Moffat Project EIS. Many of the other non-native species listed in this comment occur only sporadically and only in limited sections of the Project area and evaluation is not warranted. ***Comment #837-18*** *(ID 4821)**:*** *The DEIS fails to evaluate impacts of MOFFAT PROJECT and other reasonably foreseeable projects on whirling disease and, consequently, on the Colorado River, west slope reservoirs, and east slope streams and reservoirs fisheries. The DEIS lists two aquatic nuisance species; whirling disease and didymo. Page 3-214. Transbasin diversions could effectuate the spread of these aquatic nuisance species. The DEIS fails to consider the importation of west slope invasive species into east slope aquatic habitats. From Page 4-313 to 314 the DEIS discusses Invasive Species and concludes that conditions that result in increased sedimentation may provide additional habitat for the intermediate tubifex worm host for Whirling Disease. Reductions in the frequency and amount of flushing flows on these west slope rivers may increase sedimentation and exacerbate the Whirling Disease problem. Failure to consider the potential impacts of increased MOFFAT PROJECT depletions and transbasin diversions on the spread of whirling disease and, therefore, on the survival of trout populations in the Fraser River, its*

Comment Information	Comment	Comments and Responses
		tributaries, the Colorado River and in east slope reservoirs and streams, renders the DEIS fatally deficient. **Response #837-18:** Invasive species were discussed in the DEIS. An expanded, updated discussion is included in FEIS Sections 3.11, 4.6.11, and 5.11. Didymo is a native species that is creating water quality issues state-wide. Didymo apparently prefers cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo. An expanded discussion on Didymo is included in FEIS Sections 4.6.11 and 5.11. Whirling disease is a state-wide epidemic being managed by the CPW and it does not appear to be associated with stream diversions. Whirling disease is discussed in Section 3.9.0 of the DEIS. Moffat Project diversions occur in high mountain systems (e.g., upper Clear Creek, Vasquez Creek) that are generally free from whirling disease, so it is unlikely that the proposed Project would increase the spread of the disease. The proposed Project would not introduce aquatic nuisance species to any water body, nor increase the possible transport of aquatic nuisance species from one water body to another as the proposed Project. All the diversion points, which would be used by the proposed Project to transfer water, already divert water between waterways.

Comment Information	Comment	Comments and Responses
		Comment #837-17 *(ID 4820)**:*** *The DEIS fails to take a hard look at the cumulative impacts operation of the Moffat Project, combined with past, present and future reasonably foreseeable projects will have on the aquatic resources of the Colorado River. The DEIS's cumulative impacts is deficient in a number of ways. First, it fails to evaluate the impacts ongoing project operations, including C-BT, Moffat Tunnel and Windy Gap, have had on the river's aquatic resources. Second, it fails to evaluate the cumulative impacts of reasonably foreseeable future events, such as global warming, on the hydrology of Fraser and Colorado Rivers and their aquatic resources. The DEIS states "…Denver Water, at times, diverts all the stream flow from tributaries in the Fraser River basin that do not have minimum bypasses. This results in no stream flow for some distance below the diversion. This is how Denver Water has operated in the past and plans to operate in the future". DEIS at p. 3-23: The DEIS goes on to say that in wet and average years, "Denver Water diverts 100% of the water from streams that do not have minimum bypass flow requirements" and these streams are "dried up early in the runoff season similar to dry years". On Page 3-23, the DEIS indicates that there are no bypass requirements and the Moffat Project diverts the entire stream flow on 18 of the 31 stream segments in the Fraser basin. Similarly, there are no bypass requirements on the four headwater tributaries in the Williams Fork drainage DEIS at p. 3-239. Streams that are completely dewatered do not provide fish habitat and they do not promote fish passage/migration. The Moffat Project currently dewaters several headwater tributaries in the upper Fraser and Williams Fork river basins. The ongoing practice as an existing, cumulative impact in the current permitting process.* *On Page 5-1 the DEIS states that the NEPA definition of cumulative impacts is "the impact on the*

Comment Information	Comment	Comments and Responses
		environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" It goes on to say that "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). On Page 5-3 it goes on to say that "Knowing whether a resource is healthy, declining, near collapse, or not functioning is necessary for determining significance of any added impacts due to the Moffat Project". That said, the Cumulative Effects chapter of the DEIS provides a ½ page narrative describing the history of transbasin diversion from the Colorado River basin including the Grand River Ditch, Moffat Tunnel, C-BT, and Windy Gap Projects but neglects to provide a scientific analysis of these past impacts. Clearly this is not a Cumulative Effects analysis. The DEIS goes on to provide several pages of descriptive text on Reasonably Foreseeable Future Actions but fails evaluate the effects of these projects scientifically. Nothing in the Cumulative Effects chapter attempts to address the question posed on Page 5-3 regarding whether the "resource is healthy, declining, near collapse or not functioning" under the Current Conditions (2006) scenario or the Full Use (2016) scenario. The impacts of the Full Use (2016) scenario are disclosed but not evaluated and therefore it is impossible to determine what the state of the environment will be under predicted conditions in 2016. Given that no determination of the Current Condition (2006) has been made, and no evaluation of the impacts of the Full Use (2016) scenario has been rendered, the conclusions of the DEIS that the Full Use w/Project (2030) are unsupportable. **Response #837-17:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions

Comment Information	Comment	Comments and Responses
		occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #837-16*** *(ID 4819)**:*** *The DEIS fails to evaluate the impacts ongoing project operations, including the existing Moffat Project operations, have had on the Fraser and*

Comment Information	Comment	Comments and Responses
		Colorado River aquatic resources. The DEIS's cumulative impacts analysis does not evaluate the impacts large transmountain diversions, such as the Moffat Tunnel, have had on the resources of the Fraser and Colorado Rivers. The DEIS acknowledges that these and other diversions have had a profound impact on the hydrologic regime of the river. For example, the DEIS discloses that average annual flows at the Fraser River at Winter Park gage have been reduced from 32,080 af/year prior to 1935 when Moffat first came on line to just 12,890 af since 1935; a reduction in flow of 60%! The DEIS also discloses that "Denver Water diverted approximately 50% of the average annual native flow available at the Fraser River at Winter Park gage for the 30-year period from 1975 through 2004. DEIS at p. 3-21. *Yet, the DEIS fails to evaluate the impacts these changes have had when assessing the cumulative impacts of the Moffat Project and other foreseeable actions on water and aquatic resources. Instead, the cumulative impacts analysis only analyzes impacts between some future condition described as Full Use (2016) and Full Use w/Project (2030) and neglects to evaluate impacts between Current Conditions (2006) and Full Use (2016). The DEIS does not make a determination that the existing aquatic environment is healthy, it simply assumes that the condition of the aquatic environment will be healthy in 2016, and then it analyzes only the incremental impact of its proposed depletions between 2016 and 2030. Insert "This approach is contrary to the statements on Pages 5-1 and 5-3 of the DEIS which recognize the need to evaluate, not just disclose, past, present and reasonably foreseeable actions and the existing condition of the aquatic resource in order to fully analyze the potential impacts of the Moffat Project. If the Fraser River is to avoid a death of 1,000 cuts, future changes must be placed in the broader context of the alterations that have occurred to date.*

Comment Information	Comment	Comments and Responses
		Response #837-16: CEQ interprets NEPA regulations on cumulative effects as requiring analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the action and its alternatives may have a continuing, additive and significant relationship to those effects (CEQ Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005). The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action that an agency is considering. Thus, review of past actions is required to the extent that this review informs agency decision-making regarding the proposed action. The Corps has considered that past water-related actions, such as impoundments and diversions, have affected the Colorado River and are accounted for in the analysis of Current Conditions. The DEIS catalogues a list of past projects in Section 5.2. These projects were included in the PACSM to sufficiently account for and represent past actions. In addition, effects of past actions on existing flows are accounted for and disclosed in DEIS Chapter 3, Affected Environment, specifically in Section 3.1, Hydrology. The Corps provided additional information on past actions in FEIS Section 4.2. This was accomplished by qualitatively assessing the environment approximately 200 feet upstream and downstream of representative Denver Water diversions. The upstream conditions were meant to coincide with pre-diversion conditions. A combination of streams with and without bypass flows were evaluated (e.g., St. Louis Creek, Jim Creek, etc.) using historic photo documentation and aerial photography.

Comment Information	Comment	Comments and Responses
		Additionally, FEIS Section 3.1.5 was expanded to include a discussion of virgin flows and the percentage of monthly virgin flows in the Fraser and Williams Fork river basins diverted by Denver Water. This will allow the reader to compare the percentage of natural flows with past diversions at each of Denver Water's diversion locations modeled in PACSM under Current Conditions, Full Use of the Existing System, and for each of the Moffat Project alternatives. Additional discussion of the affected environment related to water quality, 303(d) listings, and discharge permits has also been included in FEIS Section 3.2. FEIS Chapter 4 was revised to present the total environmental effects of the Moffat Project alternatives in combination with other RFFAs. FEIS Section 4.2.1 discusses the past water-based actions in the streams in the Project area. FEIS Chapter 4 includes a comparison of Current Conditions and Full Use with a Project Alternative (2032) as described below. Current Conditions (2006) reflects the Denver Water-related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations under the Current Conditions (2006) scenario. Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, Denver Water's average annual demand is 363,000 AF/yr and the Moffat Project would be providing 18,000 AF/yr of new firm yield.

Comment Information	Comment	Comments and Responses
		Total environmental effects due to future Moffat Project diversions in combination with other reasonably foreseeable actions was based on a comparison with modeled Current Conditions, which reflect Denver Water diversions that are indicative of the current administration of the river, demands, infrastructure, and operations. ***Comment #837-15*** *(ID 4818)**:*** *The DEIS fails to evaluate the cumulative impacts of climate change and global warming and mountain pine beetle killed trees. The DEIS recognizes that "numerous studies have been conducted on the relationship between climate change and water resources in the west and that "Most climate change models project that temperatures will continue to rise in the West". DEIS at p. 5-34. However, the DEIS fails to evaluate these potential impacts and simply states that "Climate change and global warming may be considered reasonably foreseeable; but currently there is no accepted scientific method of transforming the general concept of increasing temperature into incremental changes in stream flow or reservoir levels" DEIS at p. 5-35. Moreover, the DEIS fails to acknowledge the potential impacts of global warming on exacerbating already anticipated stream temperature problems. The failure of the DEIS to evaluate climate change and global warming is inconsistent with the conclusions reached in a recent report prepared by the Western Water Assessment for the Colorado Water Conservation Board (CWCB). This report to the CWCB concludes that "[a] warming climate will amplify Colorado's water related challenges, with potential reductions and seasonal shifts in water availability. While most water resource planning has been based on past hydrology, water users can no longer assume that future conditions will reflect the past. Although there are uncertainties regarding aspects of the science, enough information is available to support adaptation planning for risks*

Comment Information	Comment	Comments and Responses
		associated with climate variability and change [emphasis added] [2]. Clearly acceptable science is currently available and the DEIS should utilize this science to evaluate anticipated changes in stream flow and water temperature that may be attributable to climate change and global warming. FOOTNOTE: [2] Climate Change in Colorado. A Synthesis to Support Water Resources Management and Adaptation. A Report by the Western Water Assessment for the Colorado Water Conservation Board. 2008. Page 43. **Response #837-15:** Please see the response to Comment ID 4777. Additional water quality analysis, including temperature, has been performed on the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #837-14*** *(ID 4817)**:*** *The DEIS also recognizes that pine beetle killed trees may have implications for the Fraser and Colorado River watersheds such as increased wildfire risk resulting in increased runoff, sediment and nutrients DEIS at 4-19 but the DEIS fails to quantitatively evaluate these impacts, particularly in terms of sedimentation and sediment transport problems, or to acknowledge potential impacts on stream temperature.* **Response #837-14:** The effects as a result of pine beetle infestation alone would not impact channel morphology, however forest lost and vegetation community changes from the beetle could potentially have several impacts. Pine beetle kills could result in decreased sediment

Comment Information	Comment	Comments and Responses
		supply as dying forests decrease overhead shading resulting in increased groundcover and mid-story vegetation, therefore decreasing erosion potential. Pine beetle could also result in increased sediment supply if a large fire were to occur, fueled by the killed timber increasing erosion potential. Impacts of both pine beetle infestation coupled with large scale fires are speculative and resulting channel morphological responses were not quantified. In the event of a large scale fire, sediment supply would likely significantly increase for a finite amount of time. Sediment deposition from increased erosion would be expected to occur in streams during this time. As groundcover and the forest regenerates, sediment supply would be reduced and likely return to levels near Current Conditions. As revegetation occurs, sediment supply would decrease and at some point during the revegetation process sediment supply would once again drop below sediment transport capacity. When sediment transport capacity exceeds sediment supply, sediment that had been deposited as a result of the fire would begin to erode and transport downstream. The system would continue along this erosional process until it returned to its equilibrium. The proposed Project would result in decreased sediment transport capacity. Following a major fire it can therefore be predicted that either with or without the Project, the river system would eventually return to the same dynamic state. The duration of time required for the stream to return to equilibrium would likely be greater with the proposed Project. ***Comment #837-13*** *(ID 4816)**:*** *The DEIS fails to take a "hard look" at the effects of Moffat Project and other reasonably foreseeable projects on the special State and Federal designations of the affected reach of the Colorado River. The Colorado and Blue River reaches*

Comment Information	Comment	Comments and Responses
		impacted by the proposed Moffat Project and other foreseeable projects are subject to special designations by both the State and the Federal government. The Colorado River downstream of Windy Gap reservoir and the reach of the Blue River between Dillon Reservoir and the river's confluence with the Colorado River are Gold Medal Trout fisheries, designated by the Colorado Wildlife Commission. This designation is reserved to outstanding fisheries that meet specific fish population and size requirements. [3] There are only 10 designated Gold Medal streams in the State of Colorado. The reach of the river between Gore Canyon and State Bridge is a designated "Wild Trout" stream. This designation is based on the presence of naturally reproducing, wild trout.[4] FOOTNOTES: [3] The Colorado Wildlife Commission defines a Gold Medal Water as a lake or stream that supports a standing stock of at least 60 pounds per acre, and contains an average of at least 12 quality (14" or longer) trout per acre. See Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008). [4] The Colorado Wildlife Commission defines Wild Trout Water as a lake or stream that contains a wild trout population; a wild trout population is one that can sustain itself through natural reproduction and recruitment and a wild trout is a trout that completes its entire life cycle in a lake or stream. Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008). In addition to the State's Gold Medal and Wild Trout designations, the Colorado River from downstream of Windy Gap reservoir to almost Glenwood Springs are candidates for Wild & Scenic Rivers Act (WSA) designation in recognition of their outstanding fishing. BLM manages these and other eligible rivers so as to not adversely affect their values pending potential WSA designation by Congress. The DEIS's analysis entirely fails to

Comment Information	Comment	Comments and Responses
		evaluate the direct, indirect and cumulative impacts of the Moffat Project on these designations. As discussed at great length in these comments, the aquatic resources impacts analysis on which the DEIS's conclusions rely is fatally flawed and, therefore, cannot provide the basis for such conclusion. Moreover, while the aquatic impacts analysis discusses potential impacts to fisheries, it does not evaluate the impacts of the project on the quality of those fisheries for recreational use. For example, the size of fish plays as critical a role in the State's designations as their numbers. Yet, the aquatic impacts analysis only describes potential impacts to fish populations. Because BLM's outstanding recreational fishing designation is largely based on the State's designation criteria, the aquatics analysis also fails to yield the information needed to assess potential impacts on designation under the WSA. **Response #837-13:** A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (see Sections 4.6.2 and 5.2). The DEIS contained a discussion of water temperatures in these streams and the effects on aquatic biological resources. FEIS Sections 4.6.11 and 5.11 now contain a more detailed discussion. The DEIS did not evaluate the Colorado River in depth because the flow changes would be much less than 10% on an annual basis and impacts to the resources listed in this comment were unlikely. However, the FEIS has been modified to include the Colorado River as a focus reach with an expanded discussion of existing conditions and impacts evaluation in Sections 3.11, 4.6.11, and 5.11.

Comment Information	Comment	Comments and Responses
		As discussed in FEIS Sections 4.6.11 and 5.11, the fisheries in the Fraser and Colorado rivers would continue to survive if the Project is implemented. The Gold Medal reaches on the Colorado River are expected to continue to merit Gold Medal status. Data presented in DEIS and FEIS Section 3.11 indicate that there has not been a decline in these fisheries in the last few decades. Impacts to the quality of the fishing experience are strongly influenced by the quality and health of the fisheries, which was addressed in DEIS Section 4.9.1. At most locations, the analysis of aquatic biological resources concluded that impacts to the health of the fishery would be minor or negligible. Therefore, impacts to the recreational experience would also be minor. The FEIS has been reviewed and conclusions regarding the health of the fisheries, including the quality of fish, were considered for consistency in revisions to FEIS Section 5.15.1.2. FEIS Section 3.17.5.6 includes a description of Grand County's tourism economy, including the impacts of tourism spending. However, the description was expanded in the FEIS to further address the number of tourism-related businesses in the county. FEIS Section 3.13.5 addresses fishing on various river segments in Grand County. FEIS Section 5.19 addresses socioeconomic impacts to Grand County businesses and residents. This text has been expanded for the FEIS as appropriate and applicable to provide clarification of impact conclusions. ***Comment #837-12*** *(ID 4815)**:*** *The DEIS fails to present an adequate mitigation measures analysis. NEPA requires that mitigation measures be fully reviewed in the NEPA process. "[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the action-forcing function of NEPA. Without such a*

Comment Information	Comment	Comments and Responses
		discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." Robertson v. Methow Valley Citizens Council, 490 U.S. at 352. CEQ regulations require that the agencies include in the EIS a discussion of appropriate measures to mitigate adverse environmental impacts. 40 CFR §1502.14(f) and 40 CFR § 1502.16(h). Agencies must also state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. 40 CFR §1505.2(c). Mitigation must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated. Carmel-By-The-Sea v. Dept. of Transportation, 123 F.3d 1142, 1154 (9th Cir. 1997). A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA. Northwest Indian Cemetery Protective Association v. Peterson, 795 F.2d 688, 697 (9th Cir. 1986). Broad generalizations and vague references to mitigation, which fails to specify whether any mitigation measures would in fact be adopted or to provide an estimate of their effectiveness or why such estimate is not possible, do not meet NEPA requirements. Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1380-81 (9th Cir. 1998)/ The DEIS describes three components to the west slope mitigation; • Upper Colorado Endangered Fish Recovery, • Fraser and Colorado River temperature monitoring, and • Colorado River cutthroat trout habitat improvements. DEIS at p. M-4. *The DEIS's description of proposed mitigation measures fails to meet NEPA's requirements. The DEIS states that "Most of the impacts to aquatic resources would be indirect and long term through changes in stream flow" DEIS at p. 4-307 Impacts to aquatic resources will most definitely be "long term". Several recent scientific articles (Arthington et al*

Comment Information	Comment	Comments and Responses
		2006; National Academies Press, 2004; Richter et al.1997) have stated that there is no easy answer to the question of how much water can be diverted without environmental consequence. Instead, they recommend the use of adaptive management plans to perform controlled experiments specific to individual streams and to balance stream flows and water withdrawals over time. Poff et al (1997) also conclude that "rivers with highly altered and regulated flows loses their ability to support natural processes and native species" and that "setting specific goals to restore a more natural regime in rivers with altered flows should ideally be a cooperative process involving river scientists, resource managers, and appropriate stakeholders". Because the aquatic resource impacts will certainly be long term, any permit issued for the Moffat Project should include an adaptive management plan that would require Denver to ensure that negligible impacts they predict in the DEIS are in fact realized in the Fraser River, the Colorado River and their tributaries. An adaptive management approach is also consistent with the suggestion in the DEIS that "Denver Water needs improved operational flexibility of the Moffat Collection System including being able to respond to global climate changes and adjusting operations in response to new scientific information". DEIS at p. 5-36 The environmental community would support an adaptive management plan that would allow Denver to respond to global climate changes and environmental impacts associated with its Moffat collection system by adapting its operations in response to new scientific information. **Response #837-12:** Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required.

Comment Information	Comment	Comments and Responses
Comment #868 Todd Nelson, Chairman Blue Valley Acres Metro 56 Grand County Road 1014 Silverthorne, CO 80498	2-10-10 Blue Valley Acres metro 56 GCR 1014 silverthorne co 80498 RECEIVED FEB 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Sir: In 2007, the U. S. Army Corps of Engineers (Corps) participated in the 10th international River Symposium and International Environmental Flows Conference in Brisbane, Australia. That conference produced summary findings and a global action agenda to address the urgent need to protect rivers globally. The concept of "environmental flows" is key to that agenda. Environmental flows *"describe the quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems."* The Moffat Firming Project is a prime opportunity for the Corps needs to apply the principles of the Brisbane Action Agenda. For the sake of the Fraser River, please ACT on these principles! **Estimate environmental flow needs immediately.** Scientifically credible methodologies quantify the variable - not just minimum - flows needed for each water body by *explicitly* linking environmental flows to specific ecological functions and social values. Recent advances enable rapid, region-wide, scientifically credible environmental flow assessments. **Integrate environmental flow management into every aspect of land and water management.** Environmental flow assessment and management should be a of Integrated Water Resource Management (IWRM); environmental impact assessment (EIA); strategic environmental assessment (SEA); infrastructure and industrial development and certification; and land-use, water-use, and energy production strategies. **Establish institutional frameworks.** Consistent integration of environmental flows into land and water management requires laws, regulations, policies and programs that: (1) recognize environmental flows as integral to sustainable water management, (2) establish precautionary limits on allowable depletions and alterations of natural flow, (3) treat ground water and surface water as a single hydrologic resource, and (4) maintain environmental flows across	***Comment #868-1*** *(ID 1136)**:*** *In 2007, the U. S. Army Corps of Engineers (Corps) participated in the 10th International River Symposium and International Environmental Flows Conference in Brisbane, Australia. That conference produced summary findings and a global action agenda to address the urgent need to protect rivers globally. The concept of "environmental flows" is key to that agenda. Environmental flows "describe the quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems." The Moffat Firming Project is a prime opportunity for the Corps needs to apply the principles of the Brisbane Action Agenda. For the sake of the Fraser River, please ACT on these principles! Estimate environmental flow needs immediately. Scientifically credible methodologies quantify the variable - not just minimum - flows needed for each water body by explicitly linking environmental flows to specific ecological functions and social values. Recent advances enable rapid, region-wide, scientifically credible environmental flow assessments. Integrate environmental flow management into every aspect of land and water management. Environmental flow assessment and management should be a of Integrated Water Resource Management (IWRM); environmental impact assessment (EIA); strategic environmental assessment (SEA); infrastructure and industrial development and certification; and land-use, water-use, and energy-production strategies. Establish institutional frameworks. Consistent integration of environmental flows into land and water management requires laws, regulations, policies and programs that: (1) recognize environmental flows as integral to sustainable water management, (2) establish precautionary limits on allowable depletions and alterations of natural flow, (3) treat ground water and surface water as a single hydrologic resource, and (4)*

Comment Information	Comment	Comments and Responses
	political boundaries. **Implement and enforce environmental flow standards.** Expressly limit the depletion and alteration of natural water flows according to physical and legal availability, and accounting for environmental flow needs. Where flows are already highly altered, utilize management strategies, including water trading, conservation, floodplain restoration, and dam re-operation, to restore environmental flows to appropriate levels. Your review of the Moffat Firming Project is critical to the future of the Fraser and Colorado Rivers, their tributaries and the residents of Grand County. Please require Denver Water to address environmental flows and adaptive management in their EIS. Sincerely, Chairman Representing Joe Residents Cc: U. S. Environmental Protection Agency Colorado Division of Wildlife Sen. Mark Udall Rep. Jared Polis	*maintain environmental flows across political boundaries. Implement and enforce environmental flow standards. Expressly limit the depletion and alteration of natural water flows according to physical and legal availability, and accounting for environmental flow needs. Where flows are already highly altered, utilize management strategies, including water trading, conservation, floodplain restoration, and dam re-operation, to restore environmental flows to appropriate levels. Your review of the Moffat Firming Project is critical to the future of the Fraser and Colorado Rivers, their tributaries and the residents of Grand County. Please require Denver Water to address environmental flows and adaptive management in their EIS.* **Response #868-1:** The Corps has complied and will comply with all Federal regulations for the preparation of the EIS and the Section 404 Permit, including appropriate mitigation and adaptive management requirements.

Comment Information	Comment	Comments and Responses
Comment #905 Canton O'Donnell, President Three Lakes Watershed Association P.O. Box 1718 Grand Lake, CO 80447	THREE LAKES WATERSHED ASSOCIATION P.O. BOX 1718 GRAND LAKE, CO 80447 November 30, 2009 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Sir: THREE LAKES WATERSHED ASSOCIATION has over 200 members consisting of business owners and residents of the area around Grand Lake, Shadow Mountain Reservoir, and Granby Reservoir in Colorado. Our efforts are directed at the maintenance of the quality of life in our area. Currently, we are concentrated on the quality of the water in our three lakes or reservoirs. We have studied the high points of the Draft EIS for the Moffat Firming Project. Nowhere in that Draft is there any mention of the Colorado Big Thompson system which is closely linked to the Moffat Project since Fraser River waters end up in the CBT system by virtue of pumping from Windy Gap into Granby Reservoir. Shadow Mountain Reservoir and Grand Lake are already severely impacted by the pumping of water from Granby through these two water bodies. We are opposing the Windy Gap Firming Project until a long term solution to our water problems commences; we oppose the Moffat Firming Project for all of the same reasons in addition to the fact that front range communities have failed to implement water conservation programs that will allow sufficient water to remain in Grand County and downstream. We believe that your EIS in its final form must take into consideration the impacts on the CBT system, the fact of the Windy Gap Firming Project, and the effects of both of the increases in water diversions upon the waters of Grand County. We encourage you to extend the comment period as well. Respectfully, Canton O'Donnell, President	***Comment #905-1*** *(ID 1147)**:*** *THREE LAKES WATERSHED ASSOCIATION has over 200 members consisting of business owners and residents of the area around Grand Lake, Shadow Mountain Reservoir, and Granby Reservoir in Colorado. Our efforts are directed at the maintenance of the quality of life in our area. Currently, we are concentrated on the quality of the water in our three lakes or reservoirs. We have studied the high points of the Draft EIS for the Moffat Firming Project. Nowhere in that Draft is there any mention of the Colorado Big Thompson system which is closely linked to the Moffat Project since Fraser River waters end up in the CBT system by virtue of pumping from Windy Gap into Granby Reservoir. Shadow Mountain Reservoir and Grand Lake are already severely impacted by the pumping of water from Granby through these two water bodies. We are opposing the Windy Gap Firming Project until a long term solution to our water problems commences; we oppose the Moffat Firming Project for all of the same reasons in addition to the fact that front range communities have failed to implement water conservation programs that will allow sufficient water to remain in Grand County and downstream.* **Response #905-1:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology,

Comment Information	Comment	Comments and Responses
		are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. ***Comment #905-2*** *(ID 1148)**:*** *We believe that your EIS in its final form must take into consideration the impacts on the CBT system, the fact of the Windy Gap Firming Project, and the effects of both of the increases in water diversions upon the waters of Grand County. We encourage you to extend the comment period as well.* **Response #905-2:** The combined effects of the WGFP and the Moffat Project were evaluated as part of the cumulative effects analysis in the DEIS. Additionally, flow changes resulting from the WGFP were included in the hydrologic modeling for the Project. Additional analysis of the combined effects of the projects on water quality in Grand Lake was evaluated and described in FEIS Sections 4.6.1 and 4.6.2. The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period

Comment Information	Comment	Comments and Responses
		(October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #917 Thomas Kalan, Board of Directors Winter Park Ranch Water and Sanitation District	Thomas Kalan [redacted] February 10, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 RECEIVED FEB 2010 Dear Mr. Franklin I am on the board of directors of the Winter Park Ranch Water and Sanitation District and I am writing to you of my concern about the Moffat Firming project. You have by now heard of all the various reasons why residents of Fraser Valley object to this project. I agree with these objections, but I would like to re-emphasize that the lack of water conservation along the Front Range is for me the most glaring deficiency of this proposal. According to the latest survey, 62% of single family residential water use in the Front Range is for outdoor lawn watering. This is a completely unacceptable situation. While Fraser River, the 3rd most endangered river in the United States, is to be drained even further, the residents in the Front Range are allowed to water their non-native grasses at will. As long as more stringent conservation measures are not imposed on this wasteful use of water in our semi-arid climate, I stand with other residents of Fraser Valley in opposition to the Moffat Firming project. Sincerely, Thomas Kalan	***Comment #917-1*** *(ID 1179)**:*** *I am on the board of directors of the Winter Park Ranch Water and Sanitation District and I am writing to you of my concern about the Moffat Firming project. You have by now heard of all the various reasons why residents of Fraser Valley object to this project. I agree with these objections, but I would like to re-emphasize that the lack of water conservation along the Front Range is for me the most glaring deficiency of this proposal. According to the latest survey, 62% of single family residential water use in the Front Range is for outdoor lawn watering. This is a completely unacceptable situation. While Fraser River, the 3d most endangered river in the United States, is to be drained even further, the residents in the Front Range are allowed to water their non-native grasses at will. As long as more stringent conservation measures are not imposed on this wasteful use of water in our semi-arid climate, I stand with other residents of Fraser Valley in opposition to the Moffat Firming project.* **Response #917-1:** The opposition to the Moffat Project is noted.

Comment Information	Comment	Comments and Responses
Comment #926 Todd Nelson, Chairman Blue Valley Acres Metro 56 Grand County Road 1014 Silverthorne, CO 80498	Blue Valley Acres Metro 2-10-10 56 GCR 1014 Silverthorne Co 80498 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: Denver's City Fathers had the foresight years ago to acquire water rights to provide for public need. In those days, environmental impacts were not considered. We took water from where it was abundant and diverted it to where it was needed without considering the consequences. It is now obvious that diversions from the upper Fraser River Valley have had a significant impact on everything downstream -- water temperature, water quality, wildlife habitat—from Winter Park to Grand Lake to Kremmling and beyond. Denver's current leadership needs to have the foresight to implement stringent controls on the use of this finite resource. There is not an endless supply. We cannot continue to deplete and degrade Grand County's waters. Future use requires careful planning and monitoring. To protect future generations the Moffat Firming Project EIS must provide for adaptive management that requires careful monitoring and a proactive response to maintain the health of the river over the long term. This would include a process for independent monitoring of water quality and impacts on aquatic life as well as funding for avoiding, minimizing or mitigating impacts in response to needs identified by monitoring. The Stream Management Plan developed by expert consultants for Grand County is the most scientifically reliable means of insuring that diversions, both current and future, do not kill the Fraser and Colorado River ecosystems. The Corps' main responsibility is neither to Grand County nor to Denver Water, but to the environment and to future generations. Please protect the life and health of the Fraser and Colorado Rivers. Sincerely, Todd Nelson Chairman Representing 300 Residents Cc: U. S. Environmental Protection Agency Colorado Division of Wildlife Sen. Mark Udall Rep. Jared Polis RECEIVED FEB 2010	***Comment #926-1*** *(ID 1218)**:*** *Denver's City Fathers had the foresight years ago to acquire water rights to provide for public need. In those days, environmental impacts were not considered. We took water from where it was abundant and diverted it to where it was needed without considering the consequences. It is now obvious that diversions from the upper Fraser River Valley have had a significant impact on everything downstream -- water temperature, water quality, wildlife habitat-from Winter Park to Grand Lake to Kremmling and beyond. Denver's current leadership needs to have the foresight to implement stringent controls on the use of this finite resource. There is not an endless supply. We cannot continue to deplete and degrade Grand County's waters. Future use requires careful planning and monitoring. To protect future generations the Moffat Firming Project EIS must provide for adaptive management that requires careful monitoring and a proactive response to maintain the health of the river over the long term. This would include a process for independent monitoring of water quality and impacts on aquatic life as well as funding for avoiding, minimizing or mitigating impacts in response to needs identified by monitoring. The Stream Management Plan developed by expert consultants for Grand County is the most scientifically reliable means of insuring that diversions, both current and future, do not kill the Fraser and Colorado River ecosystems.* **Response #926-1:** If a Section 404 Permit is issued for the proposed Project, a complete list of mitigation requirements will be included. The GCSMP has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section

Comment Information	Comment	Comments and Responses
		4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required, including adaptive management for mitigation. ***Comment #926-2*** *(ID 1219)**:*** *The Corps' main responsibility is neither to Grand County nor to Denver Water, but to the environment and to future generations. Please protect the life and health of the Fraser and Colorado Rivers.* **Response #926-2:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #928 Glenn E. Porzak, General Counsel Porzak Browning & Bushong LLP on Behalf of the Clinton Ditch & Reservoir Company and the Eagle Park Reservoir Company 929 Pearl Street, Suite 300 Boulder, CO 80302	Porzak Browning & Bushong LLP Attorneys at Law *Please direct all correspondence to the Boulder office* RECEIVED JAN 2010 Glenn E. Porzak Michael F. Browning Steven J. Bushong P. Fritz Holleman Kristin Howse Moseley Kevin J. Kinnear Thomas W. Kurver* Eli A. Feldman Katherine A. D. Ryan Karen L. Henderson *Also Admitted in Wyoming *Boulder Office:* 929 Pearl Street, Suite 300 Boulder, CO 80302 303 443-6800 Tel. 303 443-6864 Fax. *Vail Office:* 953 S. Frontage Road W Suite 202 Vail, CO 81657 970-476-5295 Tel. 970-476-5309 Fax. January 21, 2010 Scott Franklin Moffat EIS Project Manager US Army Corps of Engineers 9307 South Wadsworth Blvd, Littleton, CO 80128 ***By email*: moffat.eis@usace.army.mil** **Re: Moffat Collection System Project (NOW-2002080762 DEN)** **Request for Extension of Time for Public Comments on DEIS and CWA section 404 Permit** Dear Mr. Franklin, We are writing on behalf of the undersigned organizations to request an extension of time for public comments on the draft Environmental Impact Statement (DEIS) and proposed Clean Water Act § 404 permit for the Moffat Collection System Project. The current deadline for public comments is March 1, 2010. The reason for our request is that critical technical documents that provide the bases for the DEIS' analysis and conclusions have not yet been made available for public review, making meaningful public comment impossible at this time. Since the date when such documents will be made available for public review is unknown at this time, we request that the comment period be extended to 30 days after the USACE publishes the availability of all technical documents relied upon in the DEIS for public review. NEPA was enacted to ensure that information on the environmental impacts of federal action is available to public officials and citizens before decisions are made and actions taken. "Accurate scientific analysis, expert agency comments and public scrutiny are essential to implementing NEPA." *40 CFR 1500.1(b).* To achieve this goal, CEQ regulations require federal agencies to support their environmental impact statements with "evidence that [the] agencies have made the necessary environmental analyses." *40 CFR 1500.2(b).* Such evidence may be incorporated by reference into the document. *40 CFR 1502.21.* However, "[n]o material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." *Id.* The DEIS relies upon dozens of technical documents which are not available to the public. Many of these documents were prepared specifically for the DEIS analysis –	***Comment #928-1*** *(ID 1230)**:*** *We are writing on behalf of the undersigned organizations to request an extension of time for public comments on the draft Environmental Impact Statement (DEIS) and proposed Clean Water Act Section404 Permit for the Moffat Collection System Project. The current deadline for public comments is March 1, 2010. The reason for our request is that critical technical documents that provide the bases for the DEIS' analysis and conclusions have not yet been made available for public review, making meaningful public comment impossible at this time. Since the date when such documents will be made available for public review is unknown at this time, we request that the comment period be extended to 30 days after the USACE publishes the availability of all technical documents relied upon in the DEIS for public review.* **Response #928-1:** The following is a summary of the initial public comment period time frame and subsequent extensions. A NOA of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second NOA was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments, and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days.

Comment Information	Comment	Comments and Responses
	including technical memoranda containing critical information regarding hydrological model assumptions, impacts to aquatic life, water quality, channel conditions, sediment transport and cumulative impacts of the project. Others contain essential baseline data – including flow, water quality, aquatic life, and channel condition data - that can be subject to differing interpretations. Other documents include studies, academic and theoretical information that is not readily available to the public and which the DEIS relies upon in drawing conclusions regarding the project's potential impacts. These documents are also subject to interpretation. Since publication of the DEIS, the undersigned organizations as well as other interested parties have requested copies of missing documents on a piecemeal basis. Some of the documents have been provided by the USACE, others are yet to be provided. In any event, this piecemeal approach makes the review of the DEIS very expensive, difficult, and time-consuming. Every time a missing, needed document is identified, a request to the USACE needs to be made and the reviewer must await USACE submission of the information to complete review. The problem is compounded by the fact that sometimes the missing document includes additional references to data, reports or other information that are themselves not available, initiating yet another cycle of requests. Perhaps mindful of the problem, on January 12, 2010, the USACE included a list of "Selected Draft EIS Reference Documents" in its Moffat Tunnel Collection Project website and has begun the process of populating the list with links to the actual documents. Unfortunately, at this time, only a handful of documents have been made so available. We truly appreciate the USACE's previous 30-day extension of time and recent efforts to make all pertinent information available to the public. Unfortunately, such effort will not enable the public to provide timely comments under the current deadline. Accordingly, we request an initial extension of time for public comments on the DEIS and proposed Clean Water Act section 404 permit until 30 days after the date when all technical documents relied upon in the DEIS are made available to the public. As the missing documents are provided and the magnitude of review better ascertained, we may request and additional extension of time. Thank you in advance for your consideration. Do not hesitate to contact us with questions. CLINTON DITCH & RESERVOIR COMPANY EAGLE PARK RESERVOIR COMPANY By: _____ Glenn E. Porzak, General Counsel 2	A conscious and significant effort was made by the Corps to include explanations and summaries of technical decisions in the main body of the DEIS and appendices so that referrals to adjunctive technical reports might be kept to a minimum. Technical documents pertaining to geomorphology and aquatic biological resources were available for review at the public hearings held in December 2009 and January 2010. In early February 2010, the Corps systematically uploaded batches of the actual Moffat DEIS references on the Project website as a digital index with links to the items posted. Copyrighted documents and large maps were not posted to the website, but were made available for review at the Corps Denver Regulatory Office at Chatfield Reservoir. ***Comment #928-2*** *(ID 1231)**:*** *NEPA was enacted to ensure that information on the environmental impacts of federal action is available to public officials and citizens before decisions are made and actions taken. "Accurate scientific analysis, expert agency comments and public scrutiny are essential to implementing NEPA." 40 CFR 1500.1b). To achieve this goal, CEQ regulations require federal agencies to support their environmental impact statements with "evidence that [the] agencies have made the necessary environmental analyses." 40 CFR 1500.2b). Such evidence may be incorporated by reference into the document. 40 CFR 1502.21. However, "[n]o material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." Id. The DEIS relies upon dozens of technical documents which are not available to the public. Many of these documents were prepared specifically for the DEIS analysis – including technical memoranda containing critical information regarding hydrological model assumptions, impacts to aquatic life, water quality,*

Comment Information	Comment	Comments and Responses
		channel conditions, sediment transport and cumulative impacts of the project. Others contain essential baseline data - including flow, water quality, aquatic life, and channel condition data - that can be subject to differing interpretations. Other documents include studies, academic and theoretical information that is not readily available to the public and which the DEIS relies upon in drawing conclusions regarding the project's potential impacts. These documents are also subject to interpretation. Since publication of the DEIS, the undersigned organizations as well as other interested parties have requested copies of missing documents on a piecemeal basis. Some of the documents have been provided by the USACE, others are yet to be provided. In any event, this piecemeal approach makes the review of the DEIS very expensive, difficult, and time-consuming. Every time a missing, needed document is identified, a request to the USACE needs to be made and the reviewer must await USACE submission of the information to complete review. The problem is compounded by the fact that sometimes the missing document includes additional references to data, reports or other information that are themselves not available, initiating yet another cycle of requests. Perhaps mindful of the problem, on January 12,20 10, the USACE included a list of "Selected Draft EIS Reference Documents" in its Moffat Tunnel Collection Project website and has begun the process of populating the list with links to the actual documents. Unfortunately, at this time [January 21, 2010], only a handful of documents have been made so available. **Response #928-2:** A conscious and significant effort was made by the Corps to include explanations and summaries of technical decisions in the main body of the DEIS and appendices, so that referrals to adjunctive technical reports might be kept to a minimum. Technical

Comment Information	Comment	Comments and Responses
		documents pertaining to geomorphology and aquatic biological resources were available for review at the public hearings held in December 2009 and January 2010. In early February 2010, the Corps systematically uploaded batches of the actual Moffat DEIS references on the Project website as a digital index with links to the items posted. Copyrighted documents and large maps were not posted to the website, but were made available for review at the Corps Denver Regulatory Office at Chatfield Reservoir. ***Comment #928-3*** *(ID 1232)**:*** *We truly appreciate the USACE'S previous 30-day extension of time and recent efforts to make all pertinent information available to the public. Unfortunately, such effort will not enable the public to provide timely comments under the current deadline. Accordingly, we request an initial extension of time for public comments on the DEIS and proposed Clean Water Act section 404 permit until 30 days after the date when all technical documents relied upon in the DEIS are made available to the public. As the missing documents are provided and the magnitude of review better ascertained, we may request and additional extension of time.* **Response #928-3:** Please see the response to Comment ID 1230.

Comment Information	Comment	Comments and Responses
Comment #953 Samuel C. Doyle, [redacted]	[redacted] Samuel C. Doyle [redacted] RECEIVED March 1, 2010 Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin: As a member of Colorado Trout Unlimited I am aware of its ***Keep the Colorado River Alive - Don't Flatline the Fraser*** petition. In conjunction with those efforts, I wanted to take the opportunity to express my support of their actions. Even though there is apparently an agreement in place, continuing to pull water out of the Fraser River will impact the habitat throughout that region. I would suggest that an independent analysis be performed to determine precisely what that impact is. Denver Water customers should be focused on conservation as opposed to draining our beautiful rivers. The most important consideration must be: What are we leaving for our children and their children where there aren't rivers or habitats in our mountains for future generations to visit and enjoy? We must be able to look at ourselves, and at our children, and say that we have done our best for the environment not just for our lifetime, but for future generations. Thank you for the opportunity to communicate my concerns. I would be happy to discuss these issues in greater depth, or in another forum. Sincerely, Samuel C. Doyle [redacted] [redacted] Colorado • Florida • Idaho • Illinois • Kansas • Minnesota • Missouri • Montana • Nebraska • Oklahoma • Oregon • Pennsylvania • Utah • Washington • Wyoming [redacted]	***Comment #953-1*** *(ID 1558)**:*** *As a member of Colorado Trout Unlimited I am aware of its Keep the Colorado River Alive - Don't Flatline the Fraser petition. In conjunction with those efforts, I wanted to take the opportunity to express my support of their actions.* **Response #953-1:** The Corps notes the comment. ***Comment #953-2*** *(ID 1559)**:*** *Even though there is apparently an agreement in place, continuing to pull water out of the Fraser River will impact the habitat throughout that region. I would suggest that an independent analysis be performed to determine precisely what that impact is.* **Response #953-2:** The environmental effects of additional diversions associated with the proposed Moffat Project were evaluated and are presented in FEIS Chapter 5. ***Comment #953-3*** *(ID 1560)**:*** *Denver Water customers should be focused on conservation as opposed to draining our beautiful rivers.* **Response #953-3:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver

Comment Information	Comment	Comments and Responses
		Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #953-4*** *(ID 1561)**:*** *The most important consideration must be: What are we leaving for our children and their children where there aren't rivers or habitats in our mountains for future generations to visit and enjoy? We must be able to look at ourselves, and at our children, and say that we have done our best for the environment not just for our lifetime, but for future generations. Thank you for the opportunity to communicate my concerns. I would be happy to discuss these issues in greater depth, or in another forum.* **Response #953-4:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Responses
Comment #989 Scott Hammond [redacted]	February 22, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Sir: I am writing to you to express my concern regarding Denver Water's attempt to divert more water from our Fraser River. I understand that they must obtain a permit to be able to do this and that your agency is the one who has the responsibility to issue this permit. We, the people of Grand County, are hoping you will consider the impact the granting of the permit will give Denver Water. Over the years waters diverted to the Front Range has caused sediment to collect in our once pristine Grand Lake and the statistics are very disturbing. As 60 percent of water from the Fraser River is now being used to 'water' the Front Range, one can certainly see what just this amount of water being taken has affected the flow of the river and damage to Grand Lake. As a citizen of Grand County for 16 years, I am urging you to carefully review all the ramifications allowing Denver Water to take more water from our part of Colorado. We will be forever grateful to you as you study all the proposals before you. Sincerely, Scott Hammond [redacted]	**Comment #*989-3*** *(ID 1902)**:*** *I am writing to you to express my concern regarding Denver Water's attempt to divert more water from our Fraser River. I understand that they must obtain a permit to be able to do this and that your agency is the one who has the responsibility to issue this permit. We, the people of Grand County, are hoping you will consider the impact the granting of the permit will give Denver Water.* **Response #989-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. **Comment #*989-2*** *(ID 1901)**:*** *Over the years waters diverted to the Front Range has caused sediment to collect in our once pristine Grand Lake and the statistics are very disturbing. As 60 percent of water from the Fraser River is now being used to 'water' the Front Range, one can certainly see what just this amount of water being taken has affected the flow of the river and damage to Grand Lake.* **Response #989-2:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #989-1*** *(ID 1900)**:*** *As a citizen of Grand County for 16 years, I am urging you to carefully review all the ramifications allowing Denver Water to take more water from our part of Colorado. We will be forever grateful to you as you study all the proposals before you.* **Response #989-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #991 Gary M. Hammond, [redacted]	February 22, 2010 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Sir: I am writing to you to express my concern regarding Denver Water's attempt to divert more water from our Fraser River. I understand that they must obtain a permit to be able to do this and that your agency is the one who has the responsibility to issue this permit. We, the people of Grand County, are hoping you will consider the impact the granting of the permit will give Denver Water. Over the years waters diverted to the Front Range has caused sediment to collect in our once pristine Grand Lake and the statistics are very disturbing. As 60 percent of water from the Fraser River is now being used to 'water' the Front Range, one can certainly see what just this amount of water being taken has affected the flow of the river and damage to Grand Lake. As a citizen of Grand County for 24 years, I am urging you to carefully review all the ramifications allowing Denver Water to take more water from our part of Colorado. We will be forever grateful to you as you study all the proposals before you. Sincerely, Gary M. Hammond [redacted]	***Comment #991-3*** *(ID 1905)**:*** *I am writing to you to express my concern regarding Denver Water's attempt to divert more water from our Fraser River. I understand that they must obtain a permit to be able to do this and that your agency is the one who has the responsibility to issue this permit. We, the people of Grand County, are hoping you will consider the impact the granting of the permit will give Denver Water.* **Response #991-3:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #991-2*** *(ID 1904)**:*** *Over the years waters diverted to the Front Range has caused sediment to collect in our once pristine Grand Lake and the statistics are very disturbing. As 60 percent of water from the Fraser River is now being used to 'water' the Front Range, one can certainly see what just this amount of water being taken has affected the flow of the river and damage to Grand Lake.* **Response #991-2:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #991-1*** *(ID 1903)**:*** *As a citizen of Grand County for 24 years, I am urging you to carefully review all the ramifications allowing Denver Water to take more water from our part of Colorado. We will be forever grateful to you as you study all the proposals before you.* **Response #991-1:** The Corps notes the comment.

Comment Information	Comment	Comments and Responses
Comment #1041 [redacted]	[redacted] Richard A. Johnson [redacted] BOULDER WINTER PARK February 22, 2010 *Via E-mail (moffat.eis@usace.army.mil) and U.S. Mail* Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Re: *Moffat Collection System Project/Comments to Draft Environmental Impact Statement* Dear Mr. Franklin: This firm represents [redacted] owner of a 29.68 acre parcel in Boulder County, Colorado, located just east of the Town of Eldorado Springs and straddling both sides of South Boulder Creek. The [redacted] property is located downstream from Gross Reservoir. Thank you for the opportunity to comment on the Draft Environmental Impact Statement ("Draft EIS") for Denver Water's proposed Moffat Collection System Project. After reviewing the Draft EIS we remain very concerned that (i) Denver Water should mitigate the adverse impacts to the cold water fishery by providing meaningful winter releases to South Boulder Creek, and (ii) the storage of additional water in Gross Reservoir will have a detrimental effect on South Boulder Creek flushing flows which are important to aquatic life and habitat. The flows in South Boulder Creek during fall and winter drop dangerously low and are a real threat to the fishery (primarily brown trout). A meaningful effort to mitigate impacts to South Boulder Creek streamflows (particularly winter flows) must be a part of any permit issued in connection with this project. We are also concerned that the FRICO diversion essentially sweeps all the water in South Boulder Creek, and so, if meaningful winter releases are made they need to get past the FRICO diversion to truly benefit South Boulder Creek. Therefore, as part of Denver Water's mitigation efforts we believe a bypass structure should be installed at FRICO's diversion point to ensure that flows are in fact bypassed down stream. [illegible]	***Comment #1041-5*** *(ID 1926)**:*** *This firm [redacted] represents [redacted], owner of a 29.68 acre parcel in [redacted], located just east of the Town of Eldorado Springs and straddling both sides or South Boulder Creek. The Mesa Trail Ranch, LLC property is located downstream from Gross Reservoir. Thank you for the opportunity to comment on the Draft Environmental Impact Statement ("Draft EIS") for Denver Water's proposed Moffat Collection System Project.* **Response #1041-5:** The Corps notes the comment. ***Comment #1041-4*** *(ID 1925)**:*** *After reviewing the Draft EIS we remain very concerned that (i) Denver Water should mitigate the adverse impacts to the cold water fishery by providing meaningful winter releases to South Boulder Creek* **Response #1041-4:** As described in FEIS Appendix M, Denver Water has proposed mitigation to off-set impacts to the fishery in South Boulder Creek with the creation of an Environmental Pool in Gross Reservoir (see the response to Comment ID 1923). ***Comment #1041-3*** *(ID 1924)**:*** *The storage of additional water in Gross Reservoir will have a detrimental effect on South Boulder Creek flushing flows which are important to aquatic life and habitat. The flows in South Boulder Creek during fall and winter drop dangerously low and are a real threat to the fishery (primarily brown trout). A meaningful effort to mitigate impacts to South Boulder Creek streamflows (particularly winter flows) must be a part of any permit issued in connection with this project.*

Comment Information	Comment	Comments and Responses
	Scott Franklin February 22, 2010 Page 2 Thank you for your consideration of our comments and please notify us of further developments with respect to this project. Very truly yours, Richard A. Johnson RAJ:bae cc: Brian Boone 00013527.(1)	**Response #1041-3:** As documented in FEIS Sections 4.6.11 and 5.11, the flows in South Boulder Creek with the Project would result in a moderate beneficial impact on aquatic resources. Winter flows would be much higher than with Current Conditions, alleviating the poor winter habitat conditions that now exist. There would be no need for mitigation in this section of South Boulder Creek. Additionally, Denver Water's proposed mitigation for stream impacts above Gross Reservoir is the creation of a 5,000 AF Environmental Pool in Gross Reservoir. This pool, which would be filled with water using the cities of Boulder and Lafayette water rights, would increase stream flows below Gross Reservoir during the late fall and winter months in an effort to meet the minimum stream flow of 7 cfs in South Boulder Creek. ***Comment #1041-2*** *(ID 1923)**:*** *We are also concerned that the FRICO diversion essentially sweeps all the water in South Boulder Creek, and so, if meaningful winter releases are made they need to get past the FRICO diversion to truly benefit South Boulder Creek. Therefore, as part of Denver Water's mitigation efforts we believe a bypass structure should be installed at FRICO's diversion point to ensure that flows are in fact bypassed down stream.* **Response #1041-2:** The proposed "Environmental Pool" will provide a minimum flow of approximately 5 to 7 cfs from Gross Dam to the confluence of South Boulder Creek. This water would not be available for diversion by water right holders below Gross Dam as it would be a delivery of water from Gross Dam to the cities of Boulder and Lafayette. Additionally, Denver Water is required by its FERC license to pass at minimum flow of 7 cfs, or the natural inflow (whichever is less) on a year-round basis from Gross Dam. These delivers of

Comment Information	Comment	Comments and Responses
		water would be administered under Colorado water law by the SEO. ***Comment #1041-1*** *(ID 1922)**:*** *Thank you for your consideration of our comments and please notify us of further developments with respect to this project.* **Response #1041-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1045 Michael J. Kortendick, [redacted]	[redacted] February 17, 2010 U.S. Army Corps of Engineers **ATTN.:** Mr. Scott Franklin 9307 S. Wadsworth Blvd. Littleton, CO 80128 Denver Water Board **ATTN.:** Mr. Brian Gogas Mail Code 415 600 W. 12th Ave. Denver, CO 80204 FERC **ATTN.:** Ms. Kimberly Bose 888 First Street N.E. Washington, DC 20426 **Re: Gross Reservoir Expansion in Arvada, Colorado** Dear Mr. Franklin, Mr. Gogas and Ms. Bose: The purpose of this correspondence is to provide you with my formal position relative to the contemplated expansion of the Gross Reservoir, situated in Arvada, Colorado. As a Certified Land Planner I understand the need for such an expansion and believe that this physical location appears to represent an optimal additional water storage solution from an environmental standpoint. I have long been a proponent of additional water storage within the Denver Metropolitan area and was pleased to learn of this proposed action. Should you wish to further discuss this matter, simply contact me using any of the information that is contained on this letterhead. Thank you for providing me with an opportunity to respond. Sincerely, Michael J. Kortendick, A.I.C.P. [redacted]	***Comment #1045-1*** *(ID 1950)**:*** *The purpose of this correspondence is to provide you with my formal position relative to the contemplated expansion of the Gross Reservoir, situated in Arvada, Colorado. As a Certified Land Planner I understand the need for such an expansion and believe that this physical location appears to represent an optimal additional water storage solution from an environmental standpoint. I have long been a proponent of additional water storage within the Denver Metropolitan area and was pleased to learn of this proposed action. Should you wish to further discuss this matter, simply contact me using any of the information that is contained on this letterhead. Thank you for providing me with an opportunity to respond.* **Response #1045-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1048 Connie Leavenworth [redacted]	2-7-10 RECEIVED FEB 2010 [redacted] Dear Sirs: I am writing to vehemently object to the Gross Dam expansion. We have lived in Coal Creek Canyon - off of Gross Dam Road since 1970. We drive Gross Dam Road and Highway 72 everyday. I have a coronary aneurysm and may need the aid of emergency vehicles and the response time would be critical. I am very concerned about the traffic congestion and slow traffic with the heavy equipment on the roads - Gross Dam + Highway 72. (Both are 2 lane roads) Our quality of life would be very affected by the noise pollution, the air pollution - the dust we would breathe constantly - and we would hear the traffic off of Gross Dam Road constantly. The deer, foxes, Bears, mountain lions, coyotes, dogs and cats would be endangered with such heavy, constant traffic. The reasons for living in this area would all be affected negatively - and the reasons for this expansion are not worth these consequences!! Thank you, Sincerely Connie Leavenworth [redacted]	***Comment #1048-4*** *(ID 1971)**:*** *I am writing to vehemently object to the Gross Dam expansion. We have lived in Coal Creek Canyon – off of Gross Dam Road since 1970. We drive Gross Dam Road and Highway 72 everyday. I have a coronary aneurysm and may need the aid of emergency vehicles and the response time would be critical. I am very concerned about the traffic congestion and slow traffic with the heavy equipment on the roads – Gross Dam and Highway 72 (both are 2 lane roads).* **Response #1048-4:** Denver Water met with CDOT to discuss the potential increase in truck traffic on SH 72 during construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns. Emergency vehicles would have access to the same response routes during construction that currently exist. If an emergency vehicle needed access to a closed road, access would be granted. Additionally, construction contractors would pull over to allow emergency response vehicles to pass as needed. ***Comment #1048-3*** *(ID 1970)**:*** *Our quality of life would be very affected by the noise pollution, the air pollution – the dust we would breathe constantly – and we would hear the traffic off of Gross Dam Road constantly.* **Response #1048-3:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring

Comment Information	Comment	Comments and Responses
		that Colorado attains, maintains, and enforces NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, will require that construction activities conform to Colorado State Air Quality standards. For purposes of EIS analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. Denver Water would comply with applicable noise ordinances. ***Comment #1048-2*** *(ID 1969)**:*** *The deer, foxes, bears, mountain lions, coyotes, dogs and cats would be endangered with such heavy, constant traffic.* **Response #1048-2:** An analysis of impacts from construction traffic on wildlife along CR 77 South and other access routes has been added to the wildlife analysis in FEIS Section 5.9. ***Comment #1048-1*** *(ID 1968)**:*** *The reasons for living in this area would all be affected negatively – and the reasons for this expansion are not worth these consequences!!* **Response #1048-1:** FEIS Section 5.19 provided additional analysis and discussion as appropriate regarding impacts to communities surrounding Gross Reservoir.

Comment Information	Comment	Comments and Responses
Comment #1071 J.D. Peterson, D.D.S., P.C. (RET) [redacted]	J.D. PETERSON, D.D.S., P.C. (RET) [redacted] [redacted] [redacted] February 25, 2010 RECEIVED MAR 2010 Mr. Scott Franklin,Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO. 80218 Dear Sir: The Denver Water Board along with the Northern Water Conservancy District are the ten thousand pound gorillas in this proposed project. Both entities have far greater financial resources and political influence then the Colorado West Slope land owners and population along with the fish, and related water and wetland flora, insect, and animal life of the river system. The present diversions have already taken a toll on both the Colorado and Fraser drainages. Please remember that the original compact was flawed from the get go due to a very short sampling period along with higher then normal river flows due to high rainfall and snow-packs during the study period. The Colorado and Fraser have not the volumes as to what the study calculated in the early 1900's. The East Slope has a greater potential to reduce water demand and recycle the quantity of water already taken by existing facilities. Many of the counties and cities along with their residents assume their geographical local is a Midwest high precipitation zone rather then the high plains desert zone that is the East Slope. Reduced flows to both the Colorado and Fraser rivers will in time mean death to both river systems. Present flows to the west at present cannot maintain downstream projects and reservoirs in the western U.S. Mitigation requirements and respective agreements would mean next to nothing in dry years if actions were required to reduce East Slope draws. The multiple layers of Denver Water attorneys along with NWCD'S appealing and delaying actions in civil and water courts would result in no resolution until the damage will be beyond correction. Reduced spring flushing flows and high water temperatures due to reduced flows already stress the river ecology and streamside vegetation, This action will result in death and disease to the fish and river insect life .Please remember the Black Canyon decision established the right of a river and respective inhabitants and wildlife to have enough flow to maintain a healthy system.	***Comment #1071-6*** *(ID 2061)**:*** *The Denver Water Board along with the Northern Water Conservancy District are the ten thousand pound gorillas in this proposed project. Both entities have far greater financial resources and political influence then the Colorado West Slope land owners and population along with the fish, and related water and wetland flora, insect, and animal life of the river system.* **Response #1071-6:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1071-5*** *(ID 2060)**:*** *The present diversions have already taken a toll on both the Colorado and Fraser drainages. Please remember that the original compact was flawed from the get go due to a very short sampling period along with higher than normal river flows due to high rainfall and snow-packs during the study period. The Colorado and Fraser have not the volumes as to what the study calculated in the early 1900's.* **Response #1071-5:** The Colorado River Compact and the studies associated with it are not subject to revision by the Corps. The Corps does not administer water rights or compact calls, which are under the administration of the SEO. For the proposed Project, the Colorado SEO would also administer water rights and any compact curtailments. ***Comment #1071-4*** *(ID 2059)**:*** *The East Slope has a greater potential to reduce water demand and recycle the quantity of water already taken by existing facilities. Many of the counties and cities along with their residents assume their geographical local is a Midwest high*

Comment Information	Comment	Comments and Responses
	J.D. PETERSON, D.D.S., P.C. (RET.) [redacted] [redacted] [redacted] This project is only one of the water grabs of many in DWR'S plans. If they get this project on the West Slope they will soon be back at the table for more. The water is just not available for diversion. The bottom-less well is dry. Increased water diversion from the West Slope will limit the quality of life and growth potential for the area. I encourage your office to deny the project. Sincerely: J.D. Peterson DDS	*precipitation zone rather than the high plains desert zone that is the East Slope. Reduced flows to both the Colorado and Fraser rivers will in time mean death to both river systems. Present flows to the west at present cannot maintain downstream projects and reservoirs in the western U.S.* **Response #1071-4:** Water conservation is part of the solution for the Moffat Project. Almost half (16,000 AF/yr) of the identified supply short-fall would be met with additional conservation savings. Denver Water plans to reduce its demand by 16,000 AF/yr by 2032 with additional conservation measures, which are anticipated to achieve long-term sustainable reductions in water use. An independent review of the projected conservation savings of 16,000 AF/yr was conducted as part of the EIS analysis. Even though Denver Water is not required by any regulations to implement conservation, Denver Water is relying upon these future savings in its demand projections to calculate the need for 18,000 AF/yr of new yield. Refer to FEIS Sections 1.4.1.2 and 1.4.3.1 and Appendix A for a discussion of Denver Water's conservation efforts. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps

Comment Information	Comment	Comments and Responses
		track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,555 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility). ***Comment #1071-3*** *(ID 2058)**:*** *Mitigation requirements and respective agreements would mean next to nothing in dry years if actions were required to reduce East Slope draws. The multiple layers of Denver Water attorneys along with NWCD'S appealing and delaying actions in civil and water courts would result in no resolution until the damage will be beyond correction.* **Response #1071-3:** Additional Moffat Tunnel diversions would occur in average and wet years and would be concentrated during the runoff months in May, June and July. Typically, additional diversions would be greatest in wet years following dry years. There would be no additional diversions in dry years because Denver water would divert the maximum amount physically and legally available under their existing water rights and infrastructure without additional storage in its system. ***Comment #1071-2*** *(ID 2057)**:*** *Reduced spring flushing flows and high water temperatures due to reduced flows already stress the river ecology and streamside vegetation, This action will result in death and disease to the fish and river*

Comment Information	Comment	Comments and Responses
		insect life .Please remember the Black Canyon decision established the right of a river and respective inhabitants and wildlife to have enough flow to maintain a healthy system. **Response #1071-2:** Additional evaluations of sediment transport and accumulation including flows required to mobilize multiple particle sizes were conducted and results were provided in FEIS Section 5.3. High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While stream flows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins

Comment Information	Comment	Comments and Responses
		due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to FEIS Section 4.1 and 5.1. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. In many diverted tributaries, there was a finding of adverse impact for some of the reasons noted in this comment. ***Comment #1071-1*** *(ID 2056)**:*** *This project is only one of the water grabs of many in DWB'S plans. If they get this project on the West Slope they will soon be back at the table for more. The water is just not available for diversion. The bottom-less well is dry. Increased water diversion from the West Slope will limit the quality of life and growth potential for the area. I encourage your office to deny the project.* **Response #1071-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1073 Michael E. Queen, President The Consolidated Mutual Water Company 12700 West 27th Avenue Lakewood, CO 80215	**Scott Franklin, Moffat EIS Project Manager** **Corps Denver Regulatory Office** **9307 S. Wadsworth Blvd.** **Littleton, CO 80128** **moffat.eis@usace.army.mil** **Name:** **Michael E. Queen, President** **Address:** **12700 W 27th Avenue, Lakewood, Colorado 80215** **Representing:** **The Consolidated Mutual Water Company** **Comments:** The Consolidated Mutual Water Company (Company) serves approximately 90,000 customers through 21,000 tap connections in Lakewood, Wheat Ridge and unincorporated portions of central Jefferson County, Colorado. Our Company is a distributor of Denver Water. 70% of our service area is served with treated water purchased annually from Denver Water and, as a result, we have participated with all of Denver Water's conservation efforts. The remaining 30% of our service area is served with water rights owned by the Company and we have participated with conservation efforts within the economic constraints of our water conservation budget. We have seen a 14% decline in per household water usage since 2002. However, even with significant conservation efforts, we still need additional water supply. The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Stronita Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System. Our Company is obligated to provide water to all customers in our service area who front any of our mains and only after they become stockholders of the Company. While there is debate about growth issues, those debates are best handled by the legislative process and not by water providers. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not *if* we will need this water; it's *when*. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project. It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water. Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system. We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.	***Comment #1073-6*** *(ID 2069)**:*** *The Consolidated Mutual Water Company (Company) serves approximately 90,000 customers through 21,000 tap connections in Lakewood, Wheat Ridge and unincorporated portions of central Jefferson County, Colorado. Our Company is a distributor of Denver Water. 70% of our service area is served with treated water purchased annually from Denver Water and, as a result, we have participated with all of Denver Water's conservation efforts. The remaining 30% of our service area is served with water rights owned by the Company and we have participated with conservation efforts within the economic constraints of our water conservation budget. We have seen a 14% decline in per household water usage since 2002. However, even with significant conservation efforts, we still need additional water supply.* **Response #1073-6:** The Corps notes the comment. ***Comment #1073-5*** *(ID 2068)**:*** *The 2002 drought showed the vulnerabilities in the north end of Denver Water's system. Treated water for the south side of the system had to be delivered through a makeshift system that included open ditches. The treated water had to be re-treated before being used on the north end of the system. If there are natural disasters that affect Strontia Springs Reservoir, such as the 2002 Hayman Fire, the Moffat System would become .the sole water supply for all Denver Water and its distributors. Currently 80 percent of Denver Water's raw water supply flows through Strontia Springs Reservoir on Denver Water's south end, highlighting the need for additional supply on Denver Water's north end in the Moffat Collection System.*

Comment Information	Comment	Comments and Responses
		Response #1073-5: This is an accurate statement. ***Comment #1073-4*** *(ID 2067)**:*** *Our Company is obligated to provide water to all customers in our service area who front any of our mains and only after they become stockholders of the Company. While there is debate about growth issues, those debates are best handled by the legislative process and not by water providers. Denver Water has identified a water supply shortfall of 34,000 acre-feet of water by 2030. The question is not if we will need this water; it's when. Denver Water plans to address roughly 16,000 acre-feet per year of the shortfall through conservation measures. The additional 18,000 acre-feet is expected to be addressed with the Moffat Collection System Project.* **Response #1073-4:** The Corps notes the comment. ***Comment #1073-3*** *(ID 2066)**:*** *It is our understanding the Denver Water Board will use some of the conservation savings to increase its strategic reserves. The reserves are needed as issues such as climate change and forest fires create a need for increased reserves. As uncertainties increase, so should the strategic reserve of raw water.* **Response #1073-3:** Any accelerated savings by Denver Water's conservation program are placed in its Strategic Water Reserve (SWR). By placing the accelerated savings in the SWR, Denver Water would be better prepared for system emergencies and other factors which could reduce its water supply. Additionally, Denver Water wants to make sure the savings from its water conservation program are in place for the long term.

Comment Information	Comment	Comments and Responses
		Comment #1073-2 *(ID 2065)**:*** *Conservation and Denver Water's recycled water system have decreased the demand for some of that new supply, but there is a need for additional supply, especially on the north end of Denver Water's system.* **Response #1073-2:** The Corps notes the comment. ***Comment #1073-1*** *(ID 2064)**:*** *We support the Moffat Collection System Project because it will help us continue to provide the water our customers need. We also support Denver Water's efforts to enhance the environment while mitigating environmental issues this project may create on the West Slope and in Boulder County.* **Response #1073-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1082 Bob Scott, [redacted]	22 January 2010 Dear Mr. Franklin, As a member of the Three Lakes Watershed Association, I am writing to express my concerns & opposition to the two water projects currently being considered: The Windy Gap & Moffat Firming projects. I have been a Grand Lake resident since the 1960s & have seen first hand the damage done to our Grand Lake as a result of the contamination from pumping processes. Please help us by not compounding an already bad situation. Respectfully, Bob Scott [redacted]	***Comment #1082-1*** *(ID 2141)**:*** *As a member of the Three Lakes Watershed Association, I am writing to express my concerns, in opposition to the two water projects currently being considered: The Windy Gap and Moffat Firming projects. I have been a Grand Lake resident since the 1960s and have seen first hand the damage done to our Grand Lake as a result of the contamination from pumping processes. Please help us by not compounding an already bad situation.* **Response #1082-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1085 Anne Bensard, 1L Public Comment Assistant Environmental Law Society, University of Colorado Law School Wolf Law Building, 401 UCB Boulder, CO 80309 [See the Colorado Resident Form Letters Report for the Noted Enclosed Comments.]	RECEIVED MAR 2010 March 11, 2010 Scott Franklin Moffat EIS Project Manager Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Boulevard Littleton, Colorado 80128 RE: Comments regarding Moffat Firming Project Draft Environmental Impact Statement. Dear Mr. Franklin, Enclosed please find comments submitted by students at the University of Colorado Law School. These comments oppose the Moffat Firming Project Draft Environmental Impact Statement in its current form. Thank you for your consideration. Sincerely, Anne Bensard 1L Public Comment Assistant Environmental Law Society University of Colorado Law School Wolf Law Building 401 UCB Boulder, Colorado 80309	***Comment #1085-1*** *(ID 3459)**:*** *Enclosed please find comments submitted by students at the University of Colorado Law School. These comments oppose the Moffat Firming Project Draft Environmental Impact Statement in its current form. ATTACHMENTS NOTE TO FILE: TWENTY-EIGHT "COLORADO RESIDENT" FORM LETTERS WERE RECEIVED WITH THIS LETTER. EACH FORM LETTER HAS BEEN INPUT IN TO THE DATABASE AS A SEPARATE SUBMISSION ID, UNIQUE OR STANDARD, AS APPROPRIATE.* **Response #1085-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part A)

Comment Information	Comment	Comments and Responses
Comment #1191 -- --	FROM : FAX NO. : Mar. 14 2010 3:28PM P1 RECEIVED MAR 2010 March 14, 2010 Scott Franklin, Moffat EIS Project Manager Corps of Engineers, Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Fax 303-979-0602 Dear Sir: Early explorers of the region we live in termed it "The Great American Desert;" nevertheless anomalously wet periods do occur here such as the one in the 1920's when the Colorado River Compact was created to divide up that river's waters. Currently we on the western slope are experiencing another anomaly, temporarily increased runoff of rain and snow melt due to dead lodgepole pine forests that no longer transpire water into the atmosphere, and once again experts have assembled to further divert the flows of our rivers while assuring us that there is sufficient water for all. While the whole concept of conveying more Western Slope water east of the Front Range disturbs me the following points are particularly vexing: **Two Firming Projects** - How can anyone be certain that the Fraser and Colorado rivers can withstand additional diversions when the two firming projects presently on the table, Windy Gap and Moffat Tunnel, fail to take in to account the joint effects of both on the rivers? This is unconscionable and suggests that all involved realize that neither project could pass muster if the joint impact of both was properly vetted. The EIS reports for both firming projects should be redone to include any and all water diversions envisioned for the upper Colorado River Basin and especially the combined effects of these diversions on the Fraser River. Please correct this egregious error of omission. MAR-14-2010 03:40PM From: ID:TRI LAKES Page:001 R=90%	***Comment #1191-1*** *(ID 4419)**:*** *Early explorers of the region we live in termed it "The Great American Desert;" nevertheless anomalously wet periods do occur here such as the one in the 1920's when the Colorado River Compact was created to divide up that river's waters. Currently we on the western slope are experiencing another anomaly, temporarily increased runoff of rain and snow melt due to dead lodgepole pine forests that no longer transpire water into the atmosphere, and once again experts have assembled to further divert the flows of our rivers while assuring us that there is sufficient water for all. While the whole concept of conveying more Western Slope water east of the Front Range disturbs me the following points are particularly vexing: Two Firming Projects - How can anyone be certain that the Fraser and Colorado rivers can withstand additional diversions when the two firming projects presently on the table, Windy Gap and Moffat Tunnel, fail to take in to account the joint effects of both on the rivers? This is unconscionable and suggests that all involved realize that neither project could pass muster if the joint impact of both was properly vetted. The EIS reports for both firming projects should be redone to include any and all water diversions envisioned for the upper Colorado River Basin and especially the combined effects of these diversions on the Fraser River. Please correct this egregious error of omission.* **Response #1191-1:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry

Comment Information	Comment	Comments and Responses
		years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT system. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment Information	Comment	Comments and Responses
Comment #1192 Michael Welk, Chairman of the Board jcar 950 Wadsworth Boulevard Lakewood, CO 80214	March 12, 2010 Mr. Scott Franklin Moffat EIS Project Manager Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, CO 80128 Subject: Comments on the Moffat Collection System Project The Jefferson County Association of REALTORS represents more than 2,000 REALTORS and members from affiliated industries. We believe that a stable, long-term supply of water is necessary for the quality of life of our residents and for our economy to thrive. The long-standing policy of our Association is to support the development of additional storage capacity based on a cost-benefit analysis that includes societal and environmental impacts, the cost of the project, and well as the cost of inaction. The proposal to expand the capacity of Gross Reservoir and the other elements of the Moffat Collection System Project proposed by Denver Water meets the goals of providing water to a growing population while mitigating the environmental impacts. The northern part of our county receives its water from Denver Water's Moffat Collection System, which contains 10% of the storage capacity for the system. The remaining 90 percent is provided in the southern system. If there is a serious drought or interruption of supply from the southern system, the families and businesses who rely on the northern system are in serious jeopardy of having an inadequate supply of water. As the 2002 drought demonstrated the ability of Denver Water to provide service to the northern part of Jefferson County is severely limited in drought years. The system is also vulnerable to natural and other disasters. Increasing the capacity of Gross Reservoir combined with the mitigation components of the plan and Denver Water's on-going conservation efforts are important steps toward assuring a providing a safe, reliable water system for a growing population. The plan provides the most benefits at the least cost, while mitigating the environmental impacts. Therefore, we urge the Army corps of Engineers to issue a favorable Record of Decision on the Moffat Project. Sincerely, Michael Welk Chairman of the Board JEFFERSON COUNTY ASSOCIATION OF REALTORS® 950 Wadsworth Blvd. Lakewood, CO 80214 tel 303-233-7831 fax 303-233-7898 www.jcar.com	***Comment #1192-1*** *(ID 4087)**:*** *The Jefferson County Association of REALTORS represents more than 2,000 REALTORS and members from affiliated industries. We believe that a stable, long-term supply of water is necessary for the quality of life of our residents and for our economy to thrive.* **Response #1192-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1192-2*** *(ID 4088)**:*** *The long-standing policy of our Association is to support the development of additional storage capacity based on a cost-benefit analysis that includes societal and environmental impacts, the cost of the project, and well as the cost of inaction. The proposal to expand the capacity of Gross Reservoir and the other elements of the Moffat Collection System Project proposed by Denver Water meets the goals of providing water to a growing population while mitigating the environmental impacts. The northern part of our county receives its water from Denver Water's Moffat Collection System, which contains 10% of the storage capacity for the system. The remaining 90 percent is provided in the southern system. If there is a serious drought or interruption of supply from the southern system, the families and businesses who rely on the northern system are in serious jeopardy of having an inadequate supply of water. As the 2002 drought demonstrated the ability of Denver Water to provide service to the northern part of Jefferson County is severely limited in drought years. The system is also vulnerable to natural and other disasters. Increasing the capacity of Gross Reservoir combined with the mitigation components of the plan and Denver Water's on-going conservation efforts are important steps toward assuring a*

Comment Information	Comment	Comments and Responses
		providing a safe, reliable water system for a growing population. The plan provides the most benefits at the least cost, while mitigating the environmental impacts. Therefore, we urge the Army corps of Engineers to issue a favorable Record of Decision on the Moffat Project. **Response #1192-2:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

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Organizations/Stakeholders Part B

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
ORGANIZATIONS/STAKEHOLDERS PART B		
Comment #1232 Judith Green for The Environmental Group of Coal Creek Canyon, on its Own Behalf and that of Coal Creek Canyon Improvement Association, Friends of the Foothills, and Concerned Citizens of the Gross Reservoir Community [redacted] and Paul Zogg Law Office of Paul Zogg 1221 Pearl Street Boulder, CO 80302	**Comments of The Environmental Group of Coal Creek Canyon, on its own behalf and that of Coal Creek Canyon Improvement Association, Friends of the Foothills, and concerned citizens of the Gross Reservoir Community** **on** **Draft Environmental Impact Statement for the Moffat Collection System Project** **March 17, 2010** RECEIVED MAR 2010	***Comment #1232-51*** *(ID 5368)**:*** *Pursuant to 40 C.F.R. §1503.1(4) and 33 C.F.R. §325.3, The Environmental Group of Coal Creek Canyon hereby officially submits its comments on the Draft Environmental Impact Statement ("DEIS") for the Moffat Collection System Project and the proposed issuance of a Clean Water Act Section 404 dredge and fill permit in association with this project. The Environmental Group is a non-profit organization, founded in 1990 for "the purpose of actively dealing with current and future environmental issues that affect the community and the world around us." Members of The Environmental Group and the other groups listed above live in the vicinity of Gross Reservoir and stand to be profoundly and adversely affected by this proposed project in numerous ways, on a daily, indeed, 24-hour, 7-day-a-week basis. We submit these comments on behalf of all of these citizens.* **Response #1232-51:** The U.S. Army Corps of Engineers (Corps) notes the comment. ***Comment #1232-50*** *(ID 5367)**:*** *Thank you for this opportunity to comment. Thank you also for the information provided in the DEIS. While we appreciate the efforts made, The Environmental Group must comment that the DEIS appears to be inadequate to support a record of decision to approve a Section 404 permit for this project in compliance with the National Environmental Policy Act, the Clean Water Act, the Clean Water Act regulatory guidance and other pertinent laws and regulations. The Environmental Group submits that under the National Environmental Policy Act regulations, should the Denver Water Board wish to proceed, the Corps would need to prepare a "revised" DEIS pursuant to 40 C.F.R. 1502.9(a) since this initial draft is "so inadequate as to preclude meaningful analysis." Under this regulation, draft*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments March 17, 2010 VIA PERSONAL DELIVERY Scott Franklin, Moffat EIS Project Manager U.S. Army Corps of Engineers, Omaha District 9307 South Wadsworth Blvd. Littleton, CO 80128 Re: Comments of The Environmental Group of Coal Creek Canyon, on its own behalf and that of Coal Creek Canyon Improvement Association, Friends of the Foothills, and concerned citizens of Gross Reservoir Community on Draft Environmental Impact Statement for the Moffat Collection System Project Dear Mr. Franklin: Pursuant to 40 C.F.R. §1503.1(4) and 33 C.F.R. §325.3, The Environmental Group of Coal Creek Canyon hereby officially submits its comments on the Draft Environmental Impact Statement ("DEIS") for the Moffat Collection System Project and the proposed issuance of a Clean Water Act Section 404 dredge and fill permit in association with this project. The Environmental Group is a non-profit organization, founded in 1990 for "the purpose of actively dealing with current and future environmental issues that affect the community and the world around us." Members of The Environmental Group and the other groups listed above live in the vicinity of Gross Reservoir and stand to be profoundly and adversely affected by this proposed project in numerous ways, on a daily, indeed, 24-hour, 7-day-a-week basis. We submit these comments on behalf of all of these citizens. Thank you for this opportunity to comment. Thank you also for the information provided in the DEIS. While we appreciate the efforts made, The Environmental Group must comment that the DEIS appears to be inadequate to support a record of decision to approve a Section 404 permit for this project in compliance with the National Environmental Policy Act, the Clean Water Act, the Clean Water Act regulatory guidance and other pertinent laws and regulations. The Environmental Group submits that under the National Environmental Policy Act regulations, should the Denver Water Board wish to proceed, the Corps would need to prepare a "revised" DEIS pursuant to 40 C.F.R. 1502.9(a) since this initial draft is "so inadequate as to preclude meaningful analysis." Under this regulation, draft environmental impact statements "must fulfill and satisfy to the fullest extent possible the requirements established for final statements" in NEPA. The DEIS here does not meet that standard. Under NEPA, in preparing an EIS the Corps must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed project, including a No Action alternative. 42 U.S.C. 4332(C)(iii); 40 C.F.R. §1502.14. "This section is the heart of the environmental impact statement." "In determining the scope of alternatives to be considered, the emphasis is on what is 1	*environmental impact statements "must fulfill and satisfy to the fullest extent possible the requirements established for final statements" in NEPA. The DEIS here does not meet that standard.* **Response #1232-50:** Per 40 Code of Federal Regulations (CFR) 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document was not prepared for the Moffat Collection System Project (Moffat Project or Project). ***Comment #1232-49*** *(ID 5366)**:*** *Under NEPA, in preparing an EIS the Corps must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed project, including a No Action alternative. 42 U.S.C. 4332(C)(iii); 40 C.F.R. §1502.14. "This section is the heart of the environmental impact statement." "In determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative." CEQ Guidance, 46 Fed. Reg. 18026, 18027 (March 23, 1981). Under Section 404 regulations, no dredge and fill permit shall be permitted "if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" or if a permitted operation "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. §230.10(a), (c). When considering a Section 404 permit application, the Corps has significant and very broad authority to consider the public interest and to weigh and balance "the national concern for both*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative." CEQ Guidance, 46 Fed.Reg. 18026, 18027 (March 23, 1981). Under Section 404 regulations, no dredge and fill permit shall be permitted "if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" or if a permitted operation "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. §230.10(a), (c). When considering a Section 404 permit application, the Corps has significant and very broad authority to consider the public interest and to weigh and balance "the national concern for both protection and utilization of important resources." 33 C.F.R.§325.3(c)(1). Furthermore, the proposal must be the "least environmentally damaging practicable alternative." The alternative promoted here by Denver Water as the most reasonable and least costly, is the largest expansion of Gross Dam and Reservoir, diverting more water from the Western Slope river basins. No other additional water sources or storage facilities are included. This is the Proposed Action. Need for Gross dam expansion. Denver Water presents four needs and purposes for the expansion of Gross Reservoir by 72,000 acre feet (AF) to 113,000 AF, with 18,000 AF/yr firm yield: (1) projected gradual increasing shortfall beginning in 2016 reaching 18,000 AF/yr by 2030 (including 3,000AF/yr contracted to the City of Arvada if the project goes forth); (2) need for "balance" between the "north system" and the "south system;" this issue is related to (3) drought protection and (4) protection against "equipment" failure resulting in a temporary shut-down of a south system water treatment plant. We address these needs and related issues in Sections I-IV. In Section V we consider impacts, such as traffic safety, that must be addressed further in the EIS. In Section VI we describe mitigation issues and other concerns. Because we are opposed to the Proposed Action but are in favor of Denver Water's focus on water supply for the future, we present eight alternatives to the Proposed Action in Section VII. In the Conclusion we summarize our reasons and rationale for requesting that the Corps deny the Section 404 permit to Denver Water for the Proposed Action. The Corps should be clear that it is the agency, not the project proponent, which must determine the "purpose" and "need" of the project. **Section I: Projected Shortfall** Under NEPA regulations, information in an EIS "must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." 40 C.F.R. §1500.1(b). The DEIS fails on several accounts on this front. A. **Sources of error: models, data and assumptions used to project the shortfall** 1. Shortfall. The projected shortfall of 18,000 AF/yr by 2030 (3,000 AF/yr is contracted to Arvada if the project goes forth) is based on forecast models that use time-series regression 2	*protection and utilization of important resources." 33 C.F.R.§325.3(c)(l). Furthermore, the proposal must be the "least environmentally damaging practicable alternative." The alternative promoted here by Denver Water as the most reasonable and least costly, is the largest expansion of Gross Dam and Reservoir, diverting more water from the Western Slope river basins. No other additional water sources or storage facilities are included. This is the Proposed Action.* **Response #1232-49:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Corps did not identify a least environmentally damaging practicable alternative (LEDPA) in the Draft Environmental Impact Statement (DEIS). The Corps will make a determination of the LEDPA based on its review of the information and analysis contained in the Final Environmental Impact Statement (FEIS), per the Corps' Section 404 regulations. ***Comment #1232-34*** *(ID 5365)**:*** *Need for Gross dam expansion. Denver Water presents four needs and purposes for the expansion of Gross Reservoir by 72,000 acre feet (AF) to 113,000 AF, with 18,000 AF/yr firm yield: (1) projected gradual increasing shortfall beginning in 2016 reaching 18,000 AF/yr by 2030 (including 3,000 AF/yr contracted to the City of Arvada if the project goes forth); (2) need for "balance" between the "north system" and the "south system;" this issue is related to (3) drought protection and (4) protection against "equipment" failure resulting in a temporary shut-down of a south system water treatment plant.*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments analysis, based on 1973-1999 water use. Backcasting revealed that the models over-predict or under-predict demand, but a 5% increase in demand was added "to compensate for systematic error." This upward compensation is without merit and biases the results. 2. Data. The data used in the models are from demographic and economic analyses prepared by Denver Regional Council of Governments (DRCOG) in 2000 and used by Denver Water in its 2002 IRP. The memorandum prepared by Harvey Economics (HE) (Appendix A, Jan. '04 p. 4) says, "The drawback to these models is the requirement for voluminous and accurate data necessary to conduct meaningful regression analysis." And "In truth, there is little opportunity for testing the accuracy of demographic and economic forecasts. Such forecasts are inherently very uncertain." In the memorandum of Aug. '04 p. 2 "The information provided by Denver Water was represented and accepted without audit of the original data sources." a. Bias. Harvey Economics memorandum, Jan. 04 p. 7 (Appendix A), " ... to overcome the "growth agenda" bias, DRCOG now focuses on a "consistent consensus from among the larger group." **Consensus does not automatically overcome a bias**, of any kind. Most of the DRCOG entities have a compact to increase urban density 10% by 2020. b. Faulty assumptions. As described in the Harvey Economics memoranda (Appendix A), DRCOG based the projections used by Denver Water on many assumptions that today have proven sadly errant: (1) **increasing full-employment** growth path; (2) **expansionary** fiscal policy, state and federal; (3) increasing consumption; (4) **no economic shocks**; (5) federal budget **surplus** for the next ten years (from 2000). The Proposed Action by Denver Water is based on assumptions and data from 2000 that are clearly outdated. c. Failure to validate. Harvey Economics (HE) was contracted by Denver Water to determine the validity of its purpose and need projections, to be used in the Environmental Impact Statement. In fact, HE used the identical models, the identical data, crunched the numbers and came up with the identical figures as Denver Water (Appendix A, p. 8 Exhibit 4). This is a test of calculation reliability and is **not a test of validity**. Yet, HE ultimately concluded that the models and the data, and extrapolations, are reasonable and appropriate, and thus Denver Water's projections can be used in the Environmental Impact Statement. d. Old data. The 2002 data used as the foundation for the projected supply and demand estimates for 2030 (Ch. 1, Table 1-1) are outdated and do not reflect current conservation goals and practices. These data therefore underestimate the power of conservation to reduce demand by 2030. Furthermore, data on system refinements and non-potable reuse are not accurate. For example, non-potable reuse was estimated to be 17,000 AF by 2030, included as "supply" on Table 1-1. In fact, "The goal is to expand the recycled water program to 17,500 acre feet per year by **2020**" (GreenPrint Committee, October 20, 2009). **This faulty data-base is the foundation upon which the Proposed Action is anchored and must be amended.** 3. Denver Water contracts and obligations. The DEIS includes in the Purpose and Needs section, and in the projected demand, the total contracted "fixed account" water demand of treated and raw water customers. This may be overestimated. For example, every year Denver Water renews a contract with the US Department of Energy for Rocky Flats for 1,396 AF/yr. Rocky Flats is closed but the contract continues on the books and is included in total demand projections for 2030. This is misleading and all such contracts must be 3	**Response #1232-34:** The Corps notes the comment. ***Comment #1232-54*** *(ID 5364)**:*** *We address these needs and related issues in Sections I-IV. In Section V we consider impacts, such as traffic safety, that must be addressed further in the EIS. In Section VI we describe mitigation issues and other concerns. Because we are opposed to the Proposed Action but are in favor of Denver Water's focus on water supply for the future, we present eight alternatives to the Proposed Action in Section VII. In the Conclusion we summarize our reasons and rationale for requesting that the Corps deny the Section 404 permit to Denver Water for the Proposed Action. The Corps should be clear that it is the agency, not the project proponent, which must determine the "purpose" and "need" of the project.* **Response #1232-54:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to the National Environmental Policy Act of 1969, as amended (NEPA). ***Comment #1232-53*** *(ID 5363)**:*** *Under NEPA regulations, information in an EIS "must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." 40 C.F.R. §1500.1(b). The DEIS fails on several accounts on this front.* **Response #1232-53:** Impact Analysis The Corps applied rigorous and scientifically acceptable methodologies for each resource analyzed for the Moffat Project in compliance with the Clean Water Act (CWA) Section 404 guidelines and NEPA. The direct, indirect, and cumulative effects of the Proposed Action were evaluated for each resource in DEIS and FEIS

Comment Information	Comment	Comments and Response
	TEG DEIS Comments eliminated from demand totals, whether or not they are renewed, and must be represented as such in the DEIS. 4. Additional water sources not considered. a. The DEIS, (Chapter 2, p. 24) describes an intriguing water source, **unused return flows**, with values from 0 to 37,555 AF/yr (Table 2-9, 1947-1999). The DEIS states that if new storage and conveyance facilities were available, "The reusable flows could be combined with other water sources to meet the entire 18,000AF/yr of new firm yield needed." Although the Platte and Colorado Simulation Model (PACSM) was used to estimate the availability of unused reusable water, the DEIS does not state the impact on supply, nor is it included as a "deduction" in Table 1-1. Chapter 1, p. 6 " . . .return flows of reusable water can be used over and over to extinction." **This supply source must be investigated before the Proposed Action is considered.** b. Chatfield Reservoir. Chatfield Reservoir is operated by the Corps and was built principally for flood control. Currently an agreement is being worked out with 15 entities and the Corps to increase storage in Chatfield and reallocate an amount of water for municipal and industrial use (Chatfield Reservoir Reallocation Project, Colorado Water Conservation Board). the reallocation addresses water supply needs within the South Platte River basin. Although Denver Water is not an entity requesting storage, it is an "interested stakeholder." We can assume that the reallocation will positively affect the overall demand on Denver Water. c. Rueter-Hess Reservoir. This reservoir is being expanded to 72,000 AF and is described in DEIS Chapter 5, p. 13, "The purpose of the enlarged reservoir is to provide sufficient storage of Denver Basin groundwater and the associated reuse water from Denver Basin (to be used) for selected south metropolitan Denver water providers." This project will also recharge the Denver aquifer. d. The Denver Basin aquifers. In the past the Denver aquifer was an important source of water for the metropolitan area but as use exceeded recharge, well levels dropped and today less is taken from the wells, and recharge is increasing (USGS, HA 730-C). The Denver Basin aquifers are massive, with storage of 270,000,000 AF and are a potential water source for future need. e. Prairie Waters Pipeline. The City of Aurora will complete the Prairie Waters pipeline and begin delivering water to the Aurora reservoir in 2011. Excess capacity in the pipeline can be used to transport reusable return flows in the South Platte River into Denver Water's distribution system. This cooperative partnership between Aurora and Denver Water has the potential of providing 5,000 AF firm yield by 2015 and 18,000 AF firm yield by 2050. This potential must be considered in supply estimates (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). f. Augmentation of South Platte River Wells. As described in the DEIS, Ch. 5, p. 14, "The augmentation plans typically involve the diversion and storage of water from the South Platte River when the relatively junior water rights are in-priority (high flows and during the winter) and/or the purchasing or leasing of trans-basin return flows." The augmentation plans are not represented in the DEIS supply estimates. 5. Denver Water's Near-Term Strategy (Ch. 1, p.16-17). The DEIS lists five strategies that Denver Water is implementing to "resolve" the projected shortfall (beginning in 2016 and reaching 18,000 AF/yr by 2030). The DEIS concludes, "With this multiple project approach, Denver Water is d	Chapter 4. Additionally, impact thresholds (no impact, negligible, minor, moderate, major) were applied to each resource to allow for comparison of impacts between alternatives. Agency and Public Input The Corps initiated the scoping process to provide for an early and open process to gather information from the public and interested agencies on the issues and alternatives evaluated in the Environmental Impact Statement (EIS). The major tools used to interact with the public are the public notice and public hearing. The public notice is the primary method of advising all interested parties of a proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable beneficial and detrimental impacts on the public interest. Public notices are used to announce hearings. Public notices on proposed projects always contain a statement that anyone commenting may request a public hearing. During the public scoping process, the Corps gathered public comments at the public scoping meetings, and through electronic mail, mail, and facsimile. There were three public scoping meetings. Twenty-six members of the public attended the October 7, 2003 meeting at Fairview High School in Boulder, Colorado; 13 came to the one at the Highlands Masonic Lodge in Denver, Colorado on October 8, 2003; and 21 attended the public meeting at the Inn at Silver Creek in Silver Creek, Colorado on October 9, 2003. An agency scoping meeting was held on October 7, 2003 in Littleton, Colorado. Representatives from the following agencies attended the meeting: • Corps – Omaha District and Denver Regulatory Office • U.S. Environmental Protection Agency (EPA)

Comment Information	Comment	Comments and Response
	TEG DEIS Comments projecting to have **sufficient supplies** until 2030." This contradiction is significant. Nonetheless, the DEIS continues, "The Corps independently reviewed Denver Water's Near-Term Strategy and concluded that the development of 18,000 AF/yr of new firm yield is the only action to be analyzed in the EIS." In fact, the Corps **did not** review, in any meaningful sense, the near-term strategies saying, "Implementation of the near-term strategies described in the IRP is beyond the scope of this EIS because there is no Federal nexus with the components that would require a Corps action, decision, or permit." In short, this Federal agency, mandated to evaluate the proposed actions of Section 404 permit applicants, fails to evaluate key variables that could affect the need and purpose of the proposed action. Had this been done, the Corps would have known that the projections are invalid. This in itself, casts doubt on the entire process and must be addressed. NEPA regulations make clear that an agency must consider reasonable alternatives including even those that are "not within the jurisdiction of the lead agency." 40 C.F.R.§1502.14(c). **Conclusion:** Both the purpose and need for the Proposed Action by Denver Water regarding "shortfall" are unsubstantiated and must be revised. The projection models used to determine future water supply and demand necessitate "voluminous and accurate" data. The data used are biased, outdated and possibly invalid, and the projections are based on assumptions that, unfortunately, are incorrect. The projected demand and shortfall of 18,000 AF/yr in 2030 are incorrectly **over-estimated** and invalid, and are not properly evaluated by the Corps. In addition, increased supply through a variety of sources was not included. These supply sources must be included in the DEIS, and water supply and demand projections for 2016 and 2030 revised accordingly. **B. Failure to Evaluate Innovative Conservation as the most reasonable, practical, common sense, least environmentally damaging and cost-effective alternative.** Early in the scoping and selection process, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (1) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Water conservation is addressed but with a minimal expectation of 16,000 AF/yr savings by 2030. Furthermore, demand is calculated on a basis of "**unrestricted**" use in all projections, a clear bias toward over-estimation and blatantly denies the effects of enhanced conservation and efficiency over time. 1. Considerations. a. Data used by Denver Water and therefore in the DEIS, are from "pre-drought" years and "backcasting" over a period of time when conservation was far from the public awareness and certainly not an "ethic" as it is beginning to be today. As noted above, these data used for projection do not reflect current conservation practices and therefore are not accurate. b. In 2002, Denver Water projected a water "savings" of 16,000 AF/yr by 2030 through conservation, which as noted, led to the projected shortfall of 18,000 AF/yr, including the 3,000 AF/yr to Arvada if the proposed action moves forward. [If additional water is not available from Gross Reservoir, the Arvada contract is suspended and the projected shortfall is 15,000 AF/yr.] There are no data to support this savings projection and it appears to be a considerable **underestimation**. In the document "Denver Water's 2010 Strategic Rate Initiative" the projections are for " . . achieving 16,000 acre-feet of conservation savings by 2016 and **29,000** acre-feet of 5	• Federal Energy Regulatory Commission (FERC) • U.S. Forest Service (USFS) • CDPHE/Water Quality Control Division (WQCD) • Grand County Other agencies that participated in the scoping process, but were not at the agency scoping meeting, include the U.S. Fish and Wildlife Service (USFWS), Colorado Parks and Wildlife (CPW) (previously called Colorado Division of Wildlife), State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation, Boulder County, and Jefferson County. FERC and EPA acted as cooperating agencies and Grand County acted as a Consulting Agency throughout the NEPA process and provided input during development of the Purpose and Need, alternative screening, and reviewed a preliminary version of the DEIS. Public hearings are held if comments raise substantial issues which cannot be resolved informally and the Corps decision maker determines that information from such a hearing is needed to make a decision (see 33 CFR 327). Four public hearings were held for the Moffat Project to solicit feedback on the DEIS: • December 1, 2009 – Boulder Country Club, Boulder, Colorado • December 2, 2009 – The Inn at Silver Creek, Granby, Colorado • December 3, 2009 – Double Tree Hotel, Denver, Colorado • January 7, 2010 – Beaver Run Conference Center, Breckenridge, Colorado Comments were recorded verbatim by a court reporter during the hearings. Comments were also obtained from the public via mail, fax, and email. Comments were

Comment Information	Comment	Comments and Response
	TEG DEIS Comments conservation savings by 2045." **It appears that Denver Water has increased its conservation savings estimate substantially, invalidating the projections used in the DEIS.** c. Misleading information. Throughout the DEIS the projected shortfall in 2030 is stated as 34,000 AF/yr. This is false. The projected shortfall is 18,000 AF/yr. Similarly, the projected demand in 2030 is often given as 379,000 AF/yr, and this is false. The actual projected demand is 363,000 AF/yr. In each case, the projected conservation saving of 16,000 AF/yr, which automatically reduces demand since water conserved is not demanded, is excluded to give the higher number. This is done to exaggerate the problem and it casts doubt on the authenticity of the DEIS. This is like saying that 12 gallons of gasoline must be in the tank to drive from Denver to Kansas City, but actually the trip begins in Goodland so only eight is needed, but call it twelve anyway. The DEIS also misleads by comparing projected supply and demand in 2016, called "full use" with projections for 2030. "Full use" is a speculative concept derived from the projection that by 2016 supply and demand will meet—supply will be in "full use." This comparison of supposed "full use" in 2016 as a baseline, to 2030, decreases the calculated impacts of the Proposed Project on river systems since it is assumed that increased diversions will occur in the next four years anyway. This is fallacious on two counts (1) full use will not occur in 2016 and (2) it cannot be argued that impacts will be less because by 2016 conditions will already be worse. d. A strong **bias against conservation** is evidenced throughout the DEIS. For example, in the Harvey Economics memorandum, Jan. '04, p. 5, the ". . . low hanging fruit of conservation savings have already been achieved." **This was false then**, and is today. In the Harvey Economics memorandum, August '04, one of the variables used in the demand model is "annual conservation expenditures" over five decades, beginning in 2000 (Appendix A, Exhibit 3) The projected expenditures are identical for each decade. This is incorrect. The No Action alternative addresses only two possibilities if Gross Reservoir is not expanded, **in times of drought or emergency,** (1) draw down the strategic water reserve or, (2) " . . . mandatory severe restrictions" or both. During the recent drought Denver Water maintained a substantial surplus, but ". . . they enacted severe and mandatory restrictions on their customers' use of water" (Executive Summary, p. 14). **This is false.** The drought level never exceeded Stage 2 restrictions. The loaded word "restrictions" is used repeatedly, and the DEIS (Ch. 4, p. 449) claims that restrictions will result in a negative perception of the Denver area, would lead to decreasing property values and adverse effects on business and, ". . .consumers may feel they experience a reduced quality of life." Speculation in the DEIS continues: under the No Action alternative and without the Proposed Action, Level 4 drought restrictions could be enforced (a level that has never been defined) and businesses might have to cut-back or even shut down (Ch. 4, p. 502). This doomsday scenario is without warrant but exemplifies the extremism evidenced in the No Action alternative discussion. "Where a choice of 'no action' by the agency would result in predictable actions by others, this consequence of the 'no action alternative should be included in the analysis." CEQ Guidance, 46 Fed. Reg. 18026, 18027 (March 23, 1981). e. We highlight **in times of drought or emergency** because the DEIS states, "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the 4-5 year construction project—with destruction of 450 acres of land and up to 30,000 trees, and reduced quality of life for those in the area (with no benefits to them)—is for the few years, perhaps 5 in 45 years (Appendix E, 1-1) when Denver Water customers might experience a Level 2 shortage. Predictions of a major shortage to **raw water customers in the northern system** could be once in 6	made part of the record, and they will be considered in determining whether it would be in the public interest to proceed with this action. ***Comment #1232-32*** *(ID 5362)**:*** *Sources of error: models, data and assumptions used to project the shortfall 1. Shortfall. The projected shortfall of 18,000 AF/yr by 2030 (3,000 AF/yr is contracted to Arvada if the project goes forth) is based on forecast models that use time-series regression analysis, based on 1973-1999 water use. Backcasting revealed that the models over-predict or under-predict demand, but a 5% increase in demand was added "to compensate for systematic error." This upward compensation is without merit and biases the results.* **Response #1232-32:** The commentor is correct in stating the data and time period referred to in the comment were related to the regression model specification, not the growth or water demand projections. The 1973 to 2000 period included severe economic dislocations. The water demand projections were updated for the FEIS to incorporate more recent economic and demographic data as developed by the State Demographer's Office, Denver Regional Council of Governments (DRCOG) and other entities. There is, in fact, reason and merit to the 5 percent (%) upward adjustment to the model regarding the Project shortfall. This adjustment is based on the average annual model under-prediction between 1985 and 2000, as explained in the technical memoranda included in Appendix A of the DEIS (Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS). Harvey Economics reviewed the Board of Water Commissioners' (Denver Water's) model and found this adjustment to be reasonable. The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver

Comment Information	Comment	Comments and Response
	TEG DEIS Comments 45 years (Ch. 4, p 499), or once in 300 years. In its drought plan, the City of Boulder says, "The 2002-2003 drought is considered to be a **1-in-300 year drought** within the Boulder Creek and the Colorado River basins, which simply means it is extremely uncommon in its high degree of severity" (City of Boulder, Colorado Drought Plan, Vol. 1, 2003 Drought Response Plan, p. 6). f. **The concept of "demand hardening" is invalid.** To justify the Proposed Action vs. No Action, the authors of the DEIS refer to this speculative "hardening" of conservation efforts, saying that because water customers are already conserving water, in times of drought no more could be conserved, unless severe mandatory restrictions were enforced, perhaps Stage 4 restrictions—therefore Gross Reservoir must be expanded. This concept is contrary to Denver Water's goals of conservation savings of 16,000 AF/yr by 2016 and **29,000 AF/yr** by 2045 (see reference above). Clearly, **Denver Water does not anticipate "demand hardening."** The concept is pure speculation and carries little weight with water managers elsewhere (California Urban Water Agencies report, www.cuwa.org/publications.html). g. Although off to a good start, water conservation is in its infancy. The projected savings of 16,000 AF/yr by 2030 to offset the projected shortfall was pessimistic when calculated in 2002, and by today's standards, is false. In fact, Denver Water's planning estimates used throughout the DEIS as a basis for need, **use a conservation estimate from 1997** (Ch. 1, p. 12). In spite of upbeat talk about conservation today, Denver Water has yet to effectively tackle both residential and commercial water use. Even so, Denver Water established the goal of reducing overall water use 22% by 2016 (Appendix A, Solutions). This goal is based on conservation and efficiency practices that were not in place when the IRPs were written and are not incorporated in the supply and demand projections used as a rationale for the Proposed Action. h. Water shortfall increases slowly over time, which is why Denver Water projected a shortfall of 18,000 AF/yr by 2030. Water saving through conservation can also increase over time, and will. It is clear from a brief look at conservation data that good conservation, practiced year-round, would negate the projected shortfall and increase the strategic water reserve. The concept of "strict mandatory restrictions" used repeatedly in the DEIS, has no place in this discussion because it implicitly assumes that prevention cannot occur through good, on-going conservation practices. This is a false assumption. i. As recently as 2006, (Denver Water, July 6, 2006, "Proposed 10-Year Conservation Plan") Denver Water established the goal of reducing total water use in its service area by 22%, as noted above. The plan relies almost exclusively on voluntary reductions in water use and rebates and incentives, with only four "regulatory" steps: metered irrigation, low-flow urinals in new buildings, retrofits of toilets, etc., and water efficiency rating for new customers. These efforts are laudable, and customers have done better than expected. In 2008 Denver Water reported a 30% decrease in water use from pre-drought levels. **These data substantiate the fact that the projection of supply equaling demand in 2016 is wrong.** Furthermore, enhanced efficiency products and creative water conservation will evolve beyond the 2006 measures in use today. Again, supply and demand projections in the DEIS, upon which Denver Water makes a case for the Proposed Action, are outdated and invalid. Also not included in the DEIS projections is Denver Water's current focus on locating "leaks" in the system and replacing failing infrastructure. This saving is significant. In 2004 Harvey Economics (memorandum, August '04, p.4, Appendix A) estimated a 6% system loss, approximately **16,000 AF/yr**. j. During the 2002-04 drought, Denver Water customers conserved approximately 22 % over pre-drought levels even though the conservation requirements **did not exceed Stage 2** 7	and to serve the permanent contracts Denver Water has outside Denver. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, Colorado Department of Local Affairs (DOLA) or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #1232-57*** *(ID 5361)**:*** *Data. The data used in the models are from demographic and economic analyses prepared by Denver Regional Council of Governments (DRCOG) in 2000 and used by Denver Water in its 2002 IRP. The memorandum prepared by Harvey Economics (HE) (Appendix A, Jan. '04 p. 4) says, "The drawback to these models is the requirement for voluminous and accurate data necessary to conduct meaningful regression analysis." And "In truth, there is little opportunity for testing the accuracy of demographic and economic forecasts. Such forecasts are inherently very uncertain." In the memorandum of Aug. '04 p. 2 "The information provided by Denver Water was represented and accepted without audit of the original data sources."* **Response #1232-57:** The memorandum and models referred to in this comment are discussing a different topic than the data referred to in the first sentence of this comment. The inputs to the water demand forecasting model were reviewed and updated as appropriate for the FEIS. The model referred to in this comment exhibits the drawbacks indicated in this comment, but the model is superior to other forecasting techniques and all long term forecasts suffer similar limitations. Given its limitations, the model is appropriate for use in this EIS.

Comment Information	Comment	Comments and Response
	TEG DEIS Comments drought level (the primary conservation measure was mandatory reduction of outdoor watering). The fact that conservation continues suggests that it is no longer a foreign concept and customers, residential and commercial, will do more. Denver Water customers are demonstrating that they do not need a drought to do better. k. Before granting a permit to proceed with the Proposed Action, Denver Water should be required to assure the Corps that all of its customers, in all categories, have a conservation plan on file with the Colorado Water Conservation Board, and are **following that plan**. Failure to comply should be met with penalties—not further diversions from Western Slope rivers and destructive expansion of Gross Reservoir. To date, 18 "entities" receiving water from Denver Water have not filed an approved conservation plan, including the City of Arvada, contracted to gain 3,000 AF/yr if the Proposed Action proceeds (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). In the next two decades, as innovative and effective conservation practices become routine, or mandatory, these entities will increasingly contribute to demand reduction. This factor is not accounted for in the DEIS, other than in the global 16,000 AF/yr savings projection for 2030. A savings of 1,000 AF/yr from each should be required, eliminating the supposed shortfall and the need for the Proposed Action. l. Conservation plans often include **rate increases**, sending a message regarding the need to conserve and the preciousness of water, and covering the costs of conservation incentives and practices offered to customers. So far, Denver Water has not used this approach and for customers, "Denver Water is a good buy compared to water rates in other jurisdictions" said John Wright, Manager of Rate Administration (GreenPrint Committee, October 20, 2009, p. 3). Rates for single-family residential customers inside the city increased in January 2010 from $1.91 to $2.11 **per 1,000 gallons**, for "block 1" families using less than 11,999 gallons a month. Households in block 2, using 12,000-30,000 gallons a month saw a rate increase of 40 cents/1,000 gallons, from $3.82 to $4.22. Rate increases were comparable for all customer categories. Denver Water is a very good buy. Clearly there is room for rate increases that would really send a message while facilitating the development of innovative conservation and new infrastructure. Denver Water however, has no plan to "impact" its customers by asking them to pay for the expansion of Gross Dam and Reservoir, a massive and destructive project solely for their benefit. In Ch. 4, Socioeconomics, page 444 we learn that average cost per 1,000 gallons of water might increase 3% over the next decade. This is considered to be a minor impact. Similarly, increase in system development charges is considered a minor impact. The DEIS assures Denver Water customers that they will suffer no impacts from the Proposed Action. 2. Data: two examples of conservation/efficiency savings that reduce demand and increase supply, not considered in the DEIS. a. Denver Water (www.denverwater.org: Conservation) estimates that by watering a few minutes less, customers could conserve 2 billion gallons of water in a typical summer, **one billion more** than Denver Water estimated for 2009. Two billion gallons is 6,138 AF. In fact, in the summer of 2009, with conservation and wet weather, **9 billion** gallons (27,000 AF) of water were not used. More than 20,000 AF stayed in the reservoirs; a savings that was not anticipated. While the DEIS and Denver Water project drought scenarios as the basis for the Proposed Action, savings during wet years are not included in projections. Yet, a single wet year like 2009 would contribute at least 6% to the total supply for 2030 and is **greater than the projected shortfall for that year.** 8	***Comment #1232-56*** *(ID 5360)**:*** *Bias. Harvey Economics memorandum, Jan. 04 p. 7 (Appendix A), " ... to overcome the "growth agenda" bias, DRCOG now focuses on a "consistent consensus from among the larger group." Consensus does not automatically overcome a bias, of any kind. Most of the DRCOG entities have a compact to increase urban density 10% by 2020.* **Response #1232-56:** The consensus effort undertaken by DRCOG is intended to avoid double-counting growth in the region. The total growth projected in the Denver region is developed by forecasters independent of the DRCOG members. As described in the memo cited in the comment, DRCOG has worked to refine and improve its long range forecasting process over recent years. That memo goes on to describe that the DRCOG methodology was reviewed and states that the DRCOG projections meet the standards for long-range projections. DRCOG projections are currently used and relied upon by Federal, State, and local government agencies as well as by many private businesses, as described on page 15 of the second memo in Appendix A. However, since several years have passed since the development of the projections in the DEIS, the data inputs to the water demand forecasting model was reviewed and updated as appropriate for the FEIS. ***Comment #1232-55*** *(ID 5359)**:*** *Faulty assumptions. As described in the Harvey Economics memoranda (Appendix A), DRCOG based the projections used by Denver Water on many assumptions that today have proven sadly errant: (1) increasing full-employment growth path; (2) expansionary fiscal policy, state and federal; (3) increasing consumption; (4) no economic shocks; (5) federal budget surplus for the next ten years (from 2000). The Proposed Action by Denver Water is based on assumptions and data from 2000 that are clearly*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments Landscape watering is 54% of total residential water use (Denver Water, Key Facts; Exhibit 1), followed by toilets at 13%. Landscape watering, with a peak in the summer, forces Denver Water to "oversize" facilities, **"Because of this summertime spike in demand, Denver Water's storage, treatment, distribution and other facilities need to be oversized"** (Denver Water's 2010 Strategic Rate Initiative, page 3). Total residential use increased on average from 119 gpd in February to 320 gpd in July (2005-2008). Single-family homes account for about half of all categories of users, therefore **landscape watering is about 25% of total annual water use**. Based on total use of 265,000/yr AF, this is **more than 66,000 AF/yr**. For those of us who live in the foothills, do not have lawns, and are not allowed to use our well water for outdoor purposes, this is maddening. We know that if the projected shortfall in 2030 were correct, it would be inexcusable and totally preventable. In the 2009 pamphlet "Solutions: Saving water for the future" Denver Water acknowledges that among survey respondents two-thirds say, " . . the prestige and pride associated with green lawns is an important consideration for them." However, rather than initiating a campaign to change this unsustainable perception, Denver Water is hoping to accommodate it with larger reservoirs and attempts to increase water conservation by **educating** people on more efficient watering. This effort is referred to as "coaxing" (Solutions, 2009, Denver Water). Within the next two decades this excessive use of water will be mitigated, by more than 18,000 AF/yr. By this means alone, **the projected shortfall will evaporate**. It would be incorrect to claim that this potential savings was already taken into account in the DEIS. b. In the projected total demand for 2030, Denver Water included a savings of 23,000 AF/yr (footnote, Harvey Economics memorandum, Aug. '04 p. 12) due to "natural replacement" of 5.1 gallon per flush toilets to low flow (the high efficiency toilet was not invented). This estimate was made before the 10-year conservation plan was created, and was used by Harvey Economics in approving the projected Need and Purpose statement for the DEIS. In fact, replacement of plumbing fixtures is now included in the rebate/incentive conservation plan that was not in place in 2002. This savings projection is underestimated. **Conclusion**: The demand and supply projections in the DEIS are invalid, due to outdated information, possible "development bias" and failure to accurately estimate conservation savings, all falsely inflating demand. Furthermore, failure to consider innovative conservation and enhanced efficiency as a reasonable, practicable and common sense approach to water supply **invalidates** the "shortfall" rationale for expansion of Gross Dam and Reservoir. The foundation upon which the proposed action rests is weak. We find however, that **the shortfall projection has been accepted without question and critical analysis.** We also find a clear bias against conservation. The fact that Denver Water is now focusing on conservation, and customers will be increasingly successful in saving water, has not been taken into account, and the meager 16,000 AF/yr by 2030 projection made in 2002, is false. The use of conservation data from 1997 invalidates both the projected shortfall beginning in 2016, and the shortfall of 18,000 AF/yr projected for 2030. Most importantly, the "mandatory" firm yield of 18,000 AF/yr derived from the latter projection is invalid. We also find here a **fundamental contradiction**. As described in the DEIS, Denver Water projects a shortfall of 18,000 AF, **annually**. On this metric, the need for 72,000 AF additional storage in Gross Reservoir was calculated, and the Proposed Action was designed. In fact, it is stated repeatedly in the DEIS that the Proposed Action is for storage, for use during dry years; it is not for annual supply. The No Action scenario of "severe and mandatory" restrictions during 9	*outdated.* **Response #1232-55:** Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver Primary Metropolitan Statistical Area (PMSA) between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #1232-31*** *(ID 5358)**:*** *Failure to validate. Harvey Economics (HE) was contracted by Denver Water to determine the validity of its purpose and need projections, to be used in the Environmental Impact Statement. In fact, HE used the identical models, the identical data, crunched the numbers and came up with the identical figures as Denver Water (Appendix A, p. 8 Exhibit 4). This is a test of calculation reliability and is not a test of validity. Yet, HE ultimately concluded that the models and the data, and extrapolations, are reasonable and appropriate, and thus Denver Water's projections can be used in the Environmental Impact Statement.* **Response #1232-31:** The data and the assumptions used to develop the demand projections for the EIS have been independently reviewed by the Corps and revised to

Comment Information	Comment	Comments and Response
	TEG DEIS Comments drought without the Proposed Action, substantiates this purpose. Therefore, the supposed supply shortfall rationale for the project is further cast in doubt, as is the entire basis for the Proposed Action. It is clear that in the scoping process, in the elimination of reasonable alternatives and during the preparation of the DEIS, the Corps failed to critically evaluate the evidence presented by Denver Water for the purpose and need of the Proposed Action. **At this point, this serious omission, and the contradiction noted above, can only be rectified by denying the Section 404 permit on the grounds that the stated purpose and need regarding supply and demand are not substantiated and the rationale for the Proposed Action is unclear.** **Section II: Need to "balance" the north and south systems** The north and south systems have served Denver Water customers reliably for years, even when Gross and Ralston reservoirs are low and the Moffat Water Treatment Plant (WTP) is not running. With enhanced conservation during dry years Denver Water maintained its strategic water reserve. Nonetheless, increasing demand, the hypothetical shortfall, and fears of drought and equipment failure of a south treatment water plant, convince Denver Water that increasing Gross Reservoir by 72,000 AF is essential. While these concerns seem reasonable, the expansion of Gross Dam and Reservoir, with the ensuing destruction, degradation of quality of life of those in the area during construction—and main purpose for storage—demand an examination of this need. A. Misleading demarcation of north and south systems (Ch. 1, Figure 1-1). At first glance Figure 1-1 appears to verify the so-called "imbalance" of the small north system, relying entirely on Gross and Ralston reservoirs, and the very large south system. Based on this division, Denver Water states that the "north" system holds 10% total storage and the south holds 90%. There is however, a middle system, with a reservoir capacity exceeding all others—Dillon reservoir and the rivers that feed it. Dillon is indeed "middle" and Roberts Tunnel carries water into the North Fork of the South Platte River where it is carried by conduit to the two "south" treatment plants. The true "south" system is comprised of the drainages on the east side of the continental divide, entering into Antero and Eleven Mile Canyon reservoirs, the South Platte River and Cheesman and Strontia reservoirs. In fact, the middle system holds 48% of the total storage capacity, and supply, available to Denver Water customers. Therefore, storage capacity is distributed across these three systems and the storage "imbalance" of north vs. south is not meaningful. B. 4:1 ratio. Although no rationale or data are given to verify this "mandatory" storage to firm yield ratio, Denver Water and the Corps used this ratio to determine additional storage needed in Gross Reservoir. Given the presumed shortfall of 18,000 AF/yr in 2030 and the alternative selection criterion that 18,000 AF/yr firm yield must come from Gross Reservoir, the ratio led to the conclusion that Gross Reservoir must be expanded by 72,000 AF, (or 77,000 AF with the environmental pool for Boulder and Lafayette), bringing the reservoir to 113,000 AF (or 118,000 AF). However, even if the 4:1 storage to firm yield ratio is justified, **the expansion figure is questionable**. Gross Reservoir already holds 30,000 AF above minimum pool level so to meet the 4:1 ratio, the reservoir would need **72,000 AF total**, increasing by 42,000 AF. Denver Water argues however, that the current capacity of Gross Reservoir cannot be included because it is already "contracted" (personal communication, Project Manager, Travis Bray). The definition of 10	consider currently available data as appropriate as part of the model update and reanalysis for the FEIS. ***Comment #1232-61*** *(ID 5357)**:*** *Old data. The 2002 data used as the foundation for the projected supply and demand estimates for 2030 (Ch. 1, Table 1-1) are outdated and do not reflect current conservation goals and practices. These data therefore underestimate the power of conservation to reduce demand by 2030. Furthermore, data on system refinements and non-potable reuse are not accurate. For example, non-potable reuse was estimated to be 17,000 AF by 2030, included as "supply" on Table 1-1. In fact, "The goal is to expand the recycled water program to 17,500 acre feet per year by 2020" (GreenPrint Committee, October 20,2009). This faulty data-base is the foundation upon which the Proposed Action is anchored and must be amended.* **Response #1232-61:** Please see the response to Comment Identification (ID) 5350. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. FEIS Table 1-1 has been revised and now has future non-potable reuse at 17,500 acre-feet per year (AF/yr). As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring

Comment Information	Comment	Comments and Response
	TEG DEIS Comments "firm yield" is: "The measure of a water collection system's ability to reliably supply water to meet demand during drought periods" (Glossary, page 3). The projected demand in 2030 includes current demand, and current supply in the reservoir is part of the "reliable supply." The logic of excluding the 30,000 AF currently available is unclear and must be explained. C. "Balancing" supply is misleading. "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the expanded reservoir, with double the surface area and evaporation (nearly 1,000 AF/yr), is not for supply, rather it is for storage in case of a dry year or years. This suggests that the need for "balance" is overstated and the massive expansion of Gross dam and reservoir is not justified. 1. The storage issue. The DEIS notes repeatedly that if Denver Water had more storage capacity in Gross Reservoir, it could divert more water from the Western Slope river basins—it has the legal right to do so—but without storage it cannot. As noted, the increased diversion would be primarily for storage, to be used during dry years, or if the two south WTPs were so disabled that they could not meet customers needs. We highlight this storage issue to separate it from a supply issue. Denver Water uses the supply shortfall argument to justify the massive expansion of Gross Reservoir, but supply would not be its main function. Other alternatives for storage, as parts of alternatives 1c, 8A, and 10A are valid, see Section VII. **Section III: Drought and the "what if" scenario** Drought is a natural concern for any water supplier because, if unprepared, increased conservation may not be easy to orchestrate and customers " . . . would likely become frustrated by restrictions and with their water utilities as a result" (Ch.4, p.449), and sales would decrease. It is not particularly cynical to note that there is an inevitable "conflict of interest" between needing to sell water and needing to encourage customers to conserve it. [Ironically, wet summers have the same financial impact.] If the Proposed Action goes forward, Denver Water customers will not have to rely on "restrictions" and decreased water use in times of drought. In fact, the expansion of Gross Reservoir is primarily for storage in case of drought. This is a win-win for customers and Denver Water, but a lose-lose for Western Slope river basins and residents in the area surrounding the reservoir. Currently, Denver Water maintains a Strategic Water Reserve of 120,000 AF in storage at all times which " . . . provides a hedge against unforeseen circumstances such as infrastructure failure and higher than expected water use." This is 33% of projected supply of 345,000 AF in 2030 and far exceeds the recommended 10% "safety factor" suggested by Harvey Economics (Appendix A, memorandum of Aug. '04). The proposed expansion of Gross Reservoir, from 41,000 AF to 113,000 AF (or 118,000 AF) for use in a dry year or series of dry years, is clearly "overkill." With increased supply and storage capacity through other means, and with demand reduction through conservation and enhanced efficiency, **which can be achieved in spite of growth**, (see "New House New Paradigm" Western Resource Advocates, September '09), the Proposed Action is not justified. We are also concerned about the "moral hazard" of water bailout. The recent bank bailouts raised the issue of so-called moral hazard, whereby banks, knowing that they would be bailed out in the future, continue risky and ultimately destructive behavior. To protect their customers from possible drought restrictions, Denver Water proposes to ensure supply, regardless of drought—a 11	and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr of additional conservation and the 18,000 AF/yr proposed Project (72,000 acre-feet [AF] enlargement of Gross Reservoir). Additionally, when Denver Water estimates its future demand future conservation savings are included. As shown in FEIS Table 1-1, future and additional conservation are considered when estimating supply shortfalls. ***Comment #1232-60*** *(ID 5356)**:*** *Denver Water contracts and obligations. The DEIS includes in the Purpose and Needs section, and in the projected demand, the total contracted "fixed account" water demand of treated and raw water customers. This may be overestimated. For example, every year Denver Water renews a contract with the US Department of Energy for Rocky Flats for 1,396 AF/yr. Rocky Flats is closed but the contract continues on the books and is included in total demand projections for 2030. This is misleading and all such contracts must be eliminated from demand totals, whether or not they are renewed, and must be represented as such in the DEIS.* **Response #1232-60:** Denver Water serves customers within the City and County of Denver as well as a number of suburban distributors in surrounding counties (portions of Adams, Arapahoe, Broomfield, Douglas and Jefferson counties) in addition to special contracts. Denver Water's customers are described in Section 1.3.3. Figure 1-4 shows Denver Water's Combined Service Area (CSA), which includes the City and County of Denver as well as the portions of other counties served by Denver Water. Denver Water also has a number of contracts with entities outside the CSA, which are perpetual obligations. Denver Water was requested to keep the

Comment Information	Comment	Comments and Response
	TEG DEIS Comments drought bailout—while further endangering Western Slope rivers, ecosystems, quality of life of the Gross Reservoir community and the reservoir environment. As with the financial system, this is not a bogus concern. This "bailout" mentality is also evidenced by the failure of Denver Water to ask its customers to pay more than a "minor" amount for their insurance of plentiful water supply during drought conditions in spite of the enormous cost of expanding Gross Reservoir. The Corps must consider this "unintended consequence" in its evaluation of the Proposed Action. **Section IV: Need for "flexibility" in the event of equipment failure or emergency.** Denver Water runs three water treatment plants, one in the north system and two in the south. Chapter 1, p. 8, "During periods of low demand, it is possible for any of the three treatments plants to serve most areas within the CSA. In general, the Foothills WTP is the primary treatment plant used to meet treated water demands . . . the Marston and Moffat WTPs are primarily peaking plants . . " Further, "The (south) system is designed for dual feed to any area to minimize service interruption and to maintain fire protection capability." In addition, Denver Water plans to improve the south distribution system so that **both plants are running at full capacity** by 2016. Nonetheless, Denver Water argues that the massive expansion of Gross Dam and Reservoir is necessary because a failure or maintenance shut-down of a south system plant would threaten reliable water supply. Denver Water further argues that with the expansion of the reservoir, the Moffat WTP would operate at the minimum output throughout the winter, "shifting" the burden slightly from the south plants. [Currently Gross Reservoir is low during winter months and the Moffat WTP shuts down from mid October until April.] It seems certain however, that the combined "dual feed" system and greater capacity of the Marston and Foothills WTPs reduces the need for more flexibility and balance between the north and south systems. The massive expansion of Gross Reservoir would be a minor contribution. In comparison to the negative impacts of the Proposed Action, this shift and added flexibility are insubstantial. **Conclusion.** While the importance of adequate water supply during a drought is clear, the DEIS does not address the equal importance of innovative conservation and efficiency to maintain adequate supply, in case of drought. Instead, the solution to the **possibility** of water shortage is "build a bigger dam." Secondly, the absolute necessity of having greater surplus in the north system is not demonstrated. The Corps must examine the "balance" and "flexibility" concerns to determine both the legitimacy of these "needs" and alternative solutions, before proceeding. **Section V: Impacts** The DEIS uses an impact scale from negligible to major, and short-term to long-term. In general, the impacts of the Proposed Action on the environment and residents in the area are minimized. Some impacts, such as highway congestion, are described as minor and temporary. Nothing about a 4-5 year construction project is "temporary." A. Traffic in Coal Creek Canyon. There will be haul trucks, lumber trucks and worker vehicles up and down the canyon, in varying numbers, for over four years. This is a major impact, and is not "temporary" any more that being sick for four years would be temporary. The DEIS estimates a maximum of 44-74 haul truck trips/day (260 days a year, 8am-3pm or longer) and 202 worker vehicle trips/day. An estimate of number and frequency of trucks hauling fly ash and 12	Rocky Flats contract open in the event more remediation is needed in association with the closure of Rocky Flats. ***Comment #1232-48*** *(ID 5355)**:*** *Additional water sources not considered. a. The DEIS, (Chapter 2, p. 24) describes an intriguing water source, unused return flows, with values from 0 to 37,555 AF/yr (Table 2-9, 1947-1999). The DEIS states that if new storage and conveyance facilities were available, "The reusable flows could be combined with other water sources to meet the entire 18,000 AF/yr of new firm yield needed." Although the Platte and Colorado Simulation Model (PACSM) was used to estimate the availability of unused reusable water, the DEIS does not state the impact on supply, nor is it included as a "deduction" in Table 1-1. Chapter 1, p. 6 " …return flows of reusable water can be used over and over to extinction." This supply source must be investigated before the Proposed Action is considered. b. Chatfield Reservoir. Chatfield Reservoir is operated by the Corps and was built principally for flood control. Currently an agreement is being worked out with 15 entities and the Corps to increase storage in Chatfield and reallocate an amount of water for municipal and industrial use (Chatfield Reservoir Reallocation Project, Colorado Water Conservation Board). the reallocation addresses water supply needs within the South Platte River basin. Although Denver Water is not an entity requesting storage, it is an "interested stakeholder." We can assume that the reallocation will positively affect the overall demand on Denver Water. c. Rueter-Hess Reservoir. This reservoir is being expanded to 72,000 AF and is described in DEIS Chapter 5, p. 13, "The purpose of the enlarged reservoir is to provide sufficient storage of Denver Basin groundwater and the associated reuse water from Denver Basin (to be used) for selected south metropolitan Denver water providers." This project will also recharge the Denver aquifer. d. The Denver Basin aquifers. In the past the*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments cement **is not given.** If trees are ground up it would take **2,174** truck-loads to haul away the debris (Tree Removal Plan, FERC application). Clearly the number of truck trips/day would be much higher than stated. To evaluate this impact, the DEIS must be precise. The claims, " . . number and duration of delays will be negligible" (Ch. 4, p. 341), with "No significant indirect impacts" are false. If stress is an indirect impact, then there will be significant indirect impact. The DEIS claims that the cost of producing sand-sized material on site is "very high" (Ch. 2, page 33) but gives no supporting data and assumes that 40% of the aggregate would have to be imported. In fact, mineral industry sources indicate that concrete sand has been produced on site for dams in Colorado at Durango and Parker in a cost range of $2.50-6.50/ton. This compares with the typical cost of purchased concrete sand of $5.50-7.50/ton plus hauling costs. Hauling costs can easily amount to 50% of the material cost so the total cost of purchased sand could approximate $10/ton, significantly higher than sand produced on site. Producing sand on-site must be reevaluated. B. Traffic safety. The haul route through the narrow and winding canyon on Hwy 72 is of great concern. There are only two short passing areas, the shoulders are rough and narrow, there are few pull-outs on the uphill side of the highway. During the summer, Hwy 72 is popular with cyclists who use the highway for recreation and training. Groups of cyclists tour the canyon, hugging the side of the road as best they can; there is no bike lane and getting past bikers in a car is nerve-racking. The danger to bicyclists by constant haul truck traffic will escalate. However, the DEIS mentions bicyclists once, in passing, " . . temporary moderate adverse impact on recreation experience and safety to road bicyclists" (Ch. 4, p. 370). No more is said about that. A **moderate safety impact is intolerable.** There will be deaths. Hwy 72 is also a favorite route for motorcyclists, often traveling in groups and every summer tourists travel up and down the canyon. Enlarging the pull-out areas will not solve the traffic safety issue. Large, slow trucks going up and down the canyon will be an agonizing hazard that has not been addressed in the DEIS. The dimensions of the haul and logging trucks are not given; long vehicles may have difficulty navigating within the lane on many of the sharp curves. Also, the numerous sharp curves on Hwy 72 will require braking and down-shifting repeatedly; the canyon will be clogged with diesel smoke; people living along the road will be subjected to both smoke and noise. The dust impact along Gross Dam Road cannot be fully mitigated, and the road will become rutted in this the DEIS is accurate. The Corps should not proceed with the permit process until traffic safety is addressed and mitigation measures described, (see Section VI, Mitigation). Due to the seriousness of this long-term impact, Denver Water should be required to reevaluate the possibility of using the railroad for hauling. Rail should be seriously considered, to avoid construction-related traffic hazards, energy consumption, air pollution and haul costs. Industry sources indicate that rail costs for bulk hauling of materials like sand could be as low as 10% of truck haul costs. In addition, railroad hauling makes sense because the plan is to stockpile the sand ahead of construction, thus reducing the use of the railroad. C. Destruction of land. The destruction from the excavation of a quarry on the edge of the reservoir, which will not be reclaimed, is correctly described as "permanent and major." In all, 30 acres for the quarry will be destroyed and not reclaimed (Ch. 4, p. 403). Thirty eight acres of trees will be destroyed and 465 acres of land will be inundated. This entire project is contrary to the 13	*Denver aquifer was an important source of water for the metropolitan area but as use exceeded recharge, well levels dropped and today less is taken from the wells, and recharge is increasing (USGS, HA 730-C). The Denver Basin aquifers are massive, with storage of 270,000,000 AF and are a potential water source for future need. e. Prairie Waters Pipeline. The City of Aurora will complete the Prairie Waters pipeline and begin delivering water to the Aurora reservoir in 2011. Excess capacity in the pipeline can be used to transport reusable return flows in the South Platte River into Denver Water's distribution system. This cooperative partnership between Aurora and Denver Water has the potential of providing 5,000 AF firm yield by 2015 and 18,000 AF firm yield by 2050. This potential must be considered in supply estimates (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). f. Augmentation of South Platte River Wells. As described in the DEIS, Ch. 5, p. 14, "The augmentation plans typically involve the diversion and storage of water from the South Platte River when the relatively junior water rights are in-priority (high flows and during the winter) and/or the purchasing or leasing of trans-basin return flows." The augmentation plans are not represented in the DEIS supply estimates.* **Response #1232-48:** All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro

Comment Information	Comment	Comments and Response
	TEG DEIS Comments goals of the Federal Energy Regulatory Commission, Boulder County, and the National Forest Plan to maintain the land as "forested" and natural (Ch. 3, p. 294). 1. Winiger Ridge. The Proposed Action will destroy more than 230 acres of Winiger Ridge. There is a USFS trail along Forsythe Creek to the inlet of Gross Reservoir. Near the eastern end the trail skirts a lovely waterfall (see photo, Exhibit 1) and below is an area where people picnic at the finger of Gross Reservoir. All of this will be inundated. Importantly, it will also disrupt a major elk migration route that leads from the mountains above Eldora down along Winiger Ridge and onto the peninsula. Part of the herd winters in this area, as the residents can testify. The USFS Boulder Ranger District has long planned that the best use of Winiger Ridge is for wildlife conservation, and has managed roads, trails and fire mitigation with consideration of the elk population. Given the skittish nature of elk, there can be no doubt that the 4-5 year construction period of the Proposed Action in their wintering ground would be extremely harmful and would probably drive them from these grounds. This would be a major long-term impact but is not addressed as such in the DEIS. However, "NEPA requires each agency to undertake research needed to adequately expose environmental harms." *Sierra Club v. Norton*, 207 F.Supp. 2d 1310, 1335 (S.D. Ala. 2002). D. Inundation of plant communities. Two **globally rare plant** communities will be destroyed by inundation in Winiger Gulch and South Boulder Creek (Ch. 4, p. 232). The South Boulder Creek community is rated as "high significance" by Colorado Natural Heritage Program. 43% of the Winiger Gulch Potential Conservation Areas and 30% of the South Boulder Creek PCA would be inundated. The DEIS says, "Inundation of the central portions of these PCAs would have a moderate to major impact." Appendix K-27 states, " . . . it is the opinion of the Corps that the activities will not cause or contribute to significant degradation of waters of the US including . . . ecosystem diversity . ." Nothing is said regarding **the loss of biodiversity** if these areas are destroyed, and the global and state ratings of these plant species are not given. In the case of wetland loss, the suggested mitigation—buying mitigation credits—does not solve the local loss. The DEIS should state the mitigation plan if credits are not available. E. The loss of 20,000-30,000 trees. 1. Tree removal is a major, permanent impact. From an environmental point of view, the fact that the land will be inundated with water is irrelevant. Unlike the DEIS, the FERC license amendment application by Denver Water includes considerable information on the complications of tree removal. In the Tree Removal Plan for Pool Enlargement, Feb., 2008, Map A – Slope, Pool Line & Stands, shows that about 50% of the 11.2 mile shoreline has a slope of 40% or greater. This is significant because "40% slope is a usual guide to help determine whether ground-based logging systems are appropriate . . ." In other words, it will be necessary to use "complex tree removal systems" and to construct access roads. This includes helicopter yarding and hydro-axing due to steep slopes and heavy rock. The impacts on the human environment from this type of tree removal are not assessed. Noise disturbance will be significant and must be disclosed and mitigated. 2. Pine beetle warning. Everyone in the Coal Creek and South Boulder Creek drainages knows that the pine beetle is now over the continental divide and moving east. Some of us are already using expensive mitigation techniques, many of us have taken pine beetle workshops and know when to cut wood and how to dispose of it, and never do so when the beetles are flying. As the U.S. Forest Service reminds us, "Beetles fly in July." We are very cautious and 12	Wastewater Treatment Plant (WWTP) and the Littleton–Englewood (Bi-City) Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,555 AF/yr. Refer to FEIS Section 1.3.1 (subheading, Non-Potable Recycling Facility). Both Rueter-Hess Reservoir (ID 199P) and Chatfield Reservoir (ID 215) were included in the alternative screening evaluation. Rueter-Hess Reservoir was eliminated by Screening Criterion LG3 (logistics-geographic location) (must be outside lands or sites known to be integral to development plans of other entities). Rueter-Hess Reservoir is owned and operated by Parker Water & Sanitation District, and is located outside of Denver Water's service area. It is not practical to convey Denver Water's West Slope water to Rueter-Hess Reservoir for storage and pump it back for delivery to the north end of Denver Water's system. Chatfield Reservoir was eliminated by Screening Criteria LI1 (logistics-institutional issues) (must not require Congressional action). To consider raising Chatfield dam would require Congressional action to authorize. The Corps is currently studying alternatives to reallocate the storage in Chatfield Reservoir. The Draft Feasibility Study/Environmental Impact Statement for the Chatfield Reservoir Storage Reallocation was issued for public comment in June 2012. There are currently 15 participants that would potentially benefit from the yield associated with reallocating a portion of

Comment Information	Comment	Comments and Response
	TEG DEIS Comments very worried. We know that tree cutting is the best way to attract beetles but find no discussion of the pine beetle threat in the DEIS and therefore no plan to protect the area above the reservoir from this potential destruction and major long-term impact. Until the Corps can be assured that the destruction of trees at Gross Reservoir will be done at the right time of year, and will not increase the risk of pine beetle infestation, the Proposed Action should not be permitted. 3. The carbon footprint. The "carbon footprint" of the entire project is ignored in the DEIS. The Corps should reject Denver Water's application until this is addressed. It is inexcusable that up to 30,000 trees could be destroyed, tons of carbon put into the atmosphere from destruction of this carbon sink and use of many diesel engines on site, and diesel trucks, and the only concern in the DEIS is air quality. 4. Replanting following vegetation destruction. Mitigation will not begin until after Gross Reservoir is filled. Under the Proposed Action the reservoir would gain 18,500 AF/yr. If this represents actual net gain, it would take at least four years to fill the additional 72,000 AF (evaporation loss is approximately 1,000 AF/yr when full, Appendix H-8.1). During this time the unsightly visual impact remains, as well as the potential for erosion. The buffer zone and cleared forest and vegetation areas (465 acres) could remain barren for years. When the reservoir is full, planting will begin, with seeds primarily. In this mountain environment restoration will take many years to complete. A single heavy rain could destroy the process. During this time the area will not comply with the standards established by the Forest Service and Boulder County. The DEIS should fully disclose this long-term impact. F. Noise. There is nothing "temporary and minor" about the sound of diesel engines, blasting and rock crushing, a concrete plant, air compressors, generators and earth moving equipment, day and night (two or three shifts at times), over four years. During concrete placement periods, four 12 cubic yard mixers and six 100 horsepower diesel engine/generator sets would operate April-November, 24/7 for three years (Ch 2, p. 33). In total, 15 diesel/generator sets will be used, of 50-150 hp (Appendix I). The rock-crushing operation will run 24 hours a day, 20% of the time, five months a year for three years. The least costly and therefore most likely tree disposal method is to use air curtain destructors, with diesel engines. In the draft FERC license amendment application, "Tree Removal Plan for Pool Enlargement" it is estimated that it would take over four months with four destructors, operating 12 hours a day, seven days a week to burn the trees. The grinding whole tree method would take about three months. It is extremely unfortunate that the blasting, logging, crushing and the manufacture and pouring concrete must be done in the warm summer months. Summer is precious here, for recreation and enjoying the outdoors. This will be destroyed. To minimize this impact however, the DEIS claims, "At a distance greater than 50 ft. noise levels diminish rapidly." **This is nonsense.** As every boater knows, water surface conducts sound, and at this altitude sound carries easily through the dry air. Most significantly, sound travels upward. The residents living in the area all live above the reservoir. For some the noise may be muffled, for others it will be obtrusive, but for everyone it will be a constant background annoyance. Nonetheless, the DEIS excludes mitigation of the noise impact. Denver Water should not be permitted to expand Gross Dam until noise mitigation is addressed satisfactorily. G. Air quality. "During the construction phase of the PA, air quality impacts would be minor" (Ch. 4. p.350). Residents in the air space above Gross Reservoir have reason to be very concerned 15	the storage in Chatfield Reservoir. Denver Water is not one of these entities. The project was initiated in 1986 and the completion date is unknown. It is reasonable to assume that this alternative would not meet criterion PN3 (Purpose and Need) (provide a solution by 2016) or criterion LP2 (logistics-practicality issues) (supply at least 20% of the firm yield required) since the yield of reallocation up to 20,600 AF of storage would be dividing among 15 participants, not including Denver Water. The partnership between Denver Water, Aurora, and the South Metro Water Supply Authority would make use of excess reusable water as it becomes available from time to time. When available, and on a space available basis, the excess reusable water would be pumped from the lower South Platte River via Aurora's Prairie Waters pipeline (north of Denver) to water users upstream (south of Denver). The Water Infrastructure and Supply Efficiency (WISE) project makes use of the same reusable water considered for Alternatives 8a, 10a, and other alternatives considered in the DEIS. While the WISE project could provide Denver Water some firm yield, it does not deliver water to where Denver Water needs the extra supply (north end). Alternatives 8a and 10a did deliver this water to north end and are considered practicable alternatives in this EIS. The WISE project was considered a reasonably foreseeable future action (RFFA) and a discussion can be found in FEIS Section 4.5-3. The EIS evaluated Alternative 10a, which consists of Gross Reservoir Expansion (additional 52,000 AF), use of reusable return flows, and Denver Basin Aquifer Storage (20,000 AF). As described in Section 5.3.1, a portion of out-of-priority tributary well pumping may be replaced with reusable municipal return flows acquired from upstream entities. As municipalities like Denver Water are able to more

Comment Information	Comment	Comments and Response
	TEG DEIS Comments about potential poor air quality when a temperature inversion smothers the usual updraft and particulates and emissions from construction equipment concentrate in the low-lying reservoir and construction site. Because the **average annual** carbon monoxide and oxides of nitrogen are estimated to be above 100 tons per year, the Proposed Action would undergo a general conformity analysis (Ch. 4, p. 350). However, "average annual" level is irrelevant on bad pollution days and concentration would be much higher. In all, 40 pieces of heavy duty construction equipment, engine/generators and vehicles will be on site, at times running 24 hours a day. The Corps must examine this air quality problem and use meteorological models to determine pollution and the level of mitigation needed to reverse it, such as shutting down operations. 1. Implications of concrete production on air quality and hazardous materials. The DEIS fails to discuss the impacts of the on-site concrete batch plant operation. In the process of making concrete, hazardous particulate emissions can occur, including mercury and lead. Additional emissions from cement and fly ash storage can occur; high winds in the area increase the potential of this hazard. This should be fully examined and mitigation procedures described. H. Quality of life. The "quality of life" of Denver Water customers is repeatedly addressed under the No Action alternative, regarding the supposed hardships of water restrictions during drought that will ensue if Gross Reservoir is not expanded. **Quality of life of those exposed to the construction of the dam, for years, is ignored.** Driving in the canyon is already stressful and everything that is stressful about it will be compounded. Living with background noise is antithetical to our chosen life-style, and those of us who enjoyed boating and fishing on the reservoir will have to give that up for many years—major construction will occur in summer and no one would want to be in the area for recreation. In exchange for this, we find nothing in the DEIS to encourage us to support this project; we bear the brunt but the benefits are all downstream. I. Home prices. In a single sentence, two impacts are minimized, "Construction activities would be temporary and would not affect home prices" (Ch.4, p.435). The DEIS gives no data to support this. We know that home-buyers in this area are savvy enough to investigate potential threats to the environment, and would not purchase anywhere near the reservoir for 4-5 years without a drop in home prices. A drop in home prices is an incentive to buy, and it would occur. Anyone living near the reservoir and planning to sell within the next seven years can anticipate a drop in home value. We find it humorous and illustrative of the No Action Alternative bias that in Chapter 4, Socioeconomic impacts, (p. 508) we are warned that if the Proposed Action is not approved, property values will drop due to reduced recreational opportunities and negative visual impact of lowered water levels. The same logic was not applied to home prices during construction. In fact, "no action" is occurring now and home prices are stable or rising. J. Western Slope rivers. The river basins on the Western Slope that feed Gross Reservoir are already being depleted. Adding 72,000 AF to Gross Reservoir from the Western Slope is a major impact. For example, in May-July, in average and wet years the upper Fraser river will be depleted 38%, with a decrease of 17% at the Granby gage. Overall, the Fraser River will be depleted by 80% of natural flow. The Fraser River is already ranked as the third most endangered river in the U.S. by American Rivers (Colorado Trout Unlimited). The entire river basin system will be depleted to varying degrees at varying times, affecting sediment disposition and flooding flows. Perhaps in this context, the concept of "demand hardening" is applicable. The rivers, and 16	fully use its reusable effluent through its reuse projects, less reusable effluent would be available for acquisition. Therefore, it is likely that augmentation supplies would be acquired from purchased senior agricultural rights or junior water rights would be used to store South Platte River water in which case stream flows in the lower South Platte River would likely increase. However, if augmentation supplies are acquired from purchased senior agricultural rights or junior water rights are used to store South Platte River water, stream flows in the lower South Platte River would likely increase. The augmentation of South Platte River wells are not included in supply estimates and are not represented in Platte and Colorado Simulation Model (PACSM) since it is not a reliable water supply source. ***Comment #1232-47*** *(ID 5354)**:*** *Denver Water's Near-Term Strategy (Ch. 1, p. 16-17). The DEIS lists five strategies that Denver Water is implementing to "resolve" the projected shortfall (beginning in 2016 and reaching 18,000 AF/yr by 2030). The DEIS concludes, "With this multiple project approach, Denver Water is projecting to have sufficient supplies until 2030." This contradiction is significant. Nonetheless, the DEIS continues, "The Corps independently reviewed Denver Water's Near-Term Strategy and concluded that the development of 18,000 AF/yr of new firm yield is the only action to be analyzed in the EIS." In fact, the Corps did not review, in any meaningful sense, the near-term strategies saying, "Implementation of the near-term strategies described in the IRP is beyond the scope of this EIS because there is no Federal nexus with the components that would require a Corps action, decision, or permit." In short, this Federal agency, mandated to evaluate the proposed actions of Section 404 permit applicants, fails to evaluate key variables that could affect the need and purpose of the proposed action. Had this been done, the Corps would have known that the projections are invalid. This in itself, casts doubt on the entire process*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments the people of the Western Slope, can only give so much. Denver Water has the legal right to take this water, if it has storage capacity i.e. expanded Gross Reservoir. **Having the legal right however, does not make it right.** We are in full support of the Western Slope groups who oppose the expansion of Gross Reservoir. They are the experts on direct impacts and cumulative impacts on these river basins and environment, and we leave that discussion to them. K. Earthquake potential. Gross Reservoir lies in Seismic Zone 1, (Ch 4, p.216) which refers to a 1/10 chance that an earthquake with an acceleration of 1/10 the acceleration of gravity would occur in the next 50 years. "In general, reservoirs with depths greater than 300 ft may potentially induce seismicity" and "The water loads at Gross Reservoir would not change water content in faults at depths of a few miles." The depth of the expanded reservoir will be 421 ft. (including the environmental pool). The conclusion in the DEIS is that the load of the reservoir would not affect water lubricated faults. Zone 1 refers to probability and acceleration but does not relate to depth of faults. To evaluate this potential, the DEIS must include fault depth and recalculate earthquake probability along the Livingston Sheer Zone and Fault, and the Copeland Fault, which runs under Gross Reservoir (see Exhibit 2). Unimaginable destruction would occur if an earthquake caused a breach in the dam. L. Urban sprawl. The City of Arvada and local developers are eagerly waiting to begin developing a large tract near the base of Coal Creek Canyon. Although the Corps should address growth and development in the Environmental Impact Statement, under Cumulative Effects, growth and development are briefly mentioned but not in the context of impacts. And although the causal relationship between water availability and development is denied in the DEIS, (Ch. 4, p.391) the relationship is causal when city ordinances make it so, and if not causal, water and development are correlated. In the Coal Creek Canyon area, development of land annexed by the City of Arvada and the expansion of Gross Reservoir, (with the 3,000 AF/yr of water for Arvada, contingent upon it), go hand in hand. Greater storage capacity in Gross Reservoir is not what the City of Arvada is looking for. The complex issue of urban and suburban development and growth is a serious concern to forward-looking managers; water-grab cannot go on forever. NEPA specifically states that achieving a balance between population and resource use is a goal. Furthermore, "An EIS must contain a detailed discussion of "indirect effects" of a proposed project" 40 C.F.R., 1502.16. Indirect effects include effects that may induce growth and increases in population. Development management, in conjunction with water management, must be addressed by Denver Water before granting the permit for the Proposed Action. The DEIS must describe a "mitigation" plan through which development will not outpace water supply. These reasonably foreseeable indirect and cumulative effects must be fully explored and considered in the EIS. **Conclusion.** The impacts of the Proposed Action to Western Slope rivers are significant and long-term; the impacts to the local environment and residents are numerous, over a 4-5 year period, with traffic safety being the greatest personal concern and destruction of land and trees being the greatest environmental concern. Negative impacts must be weighed against need. We find that the need and purpose of the Proposed Action by Denver Water are not substantiated, can be addressed through other programs, and ultimately lack vision. We conclude that the project, with so many negative impacts, is not justified. 17	*and must be addressed. NEPA regulations make clear that an agency must consider reasonable alternatives including even those that are "not within the jurisdiction of the lead agency." 40 C.F.R.§1502.14(c).* **Response #1232-47:** The data and the assumptions used to develop the demand projections for the EIS have been reviewed and revised to consider currently available data as appropriate as part of the model update and reanalysis for the FEIS. The Corps completed a technical memorandum in 2004 entitled Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS. This document is included in Appendix A of the DEIS. The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. ***Comment #1232-26*** *(ID 5353)**:*** *Conclusion: Both the purpose and need for the Proposed Action by Denver Water regarding "shortfall" are unsubstantiated and must be revised. The projection models used to determine future water supply and demand necessitate "voluminous and accurate" data. The data used are biased, outdated and possibly invalid, and the projections are based on assumptions that, unfortunately, are incorrect. The projected demand and shortfall of 18,000 AF/yr in 2030 are incorrectly over-estimated and invalid, and are not properly evaluated by the Corps. In addition, increased supply through a variety of sources was not included. These supply sources must be included in the DEIS, and water supply and demand projections for 2016 and 2030 revised accordingly.*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments **Section VI. Mitigation Plans and Other Considerations.** The discussion of mitigation measures in an EIS "must be 'reasonably complete' in order to 'properly evaluate the severity of the adverse effects,' and the agency may not merely list potential mitigation measures." *San Juan Citizens Alliance v. Norton*, 586 F.Supp.2d 1270, 1290 (D.N.M. 2008). Throughout the DEIS, mitigation plans are sketchy or: "to be developed;" "standard construction practices;" "best management practices." No description of these "mitigation" practices is given. Furthermore, because many impacts are minimized, mitigation is not considered, such as the impact of construction noise. This is unsatisfactory and prevents thorough analysis of direct and indirect impacts. DEIS, Appendix M repeats the "conceptual" nature of the mitigation plan, i.e. procedural details are not provided, saying the detail will be submitted to the Corps prior to issuance of the Section 404 permit. Consequently, the public cannot fully review mitigation plans. The DEIS states, "All practicable steps have been taken to minimize potential adverse effects associated with construction and operation of the Proposed Action" (Appendix M-2) but this is difficult to assess, and we doubt that "all" have been taken. Here we review the mitigation steps suggested in this document, and add to this important topic as follows: 1. Traffic safety. We believe that improving the few pull-out areas on Hwy 72 will not solve this problem. A paved bike lane should be added to both sides of the highway. An uphill passing lane should be added where possible. Truck drivers should be required to follow the canyon-courtesy practice of pulling over when a vehicle is following and has no opportunity to pass. During snow and icy conditions hauling should be stopped. There should be no hauling on weekends. Construction workers should be transported to the work site in vans and the park-and-ride at the base of the canyon should be enlarged to accommodate more vehicles. 2. Destruction of land and vegetation, including wetlands. The best "mitigation" is destroying less. This is achieved by all the alternatives described below including an expansion of Gross Reservoir but to a lesser extent. Tree cutting must not occur during July and August and trees must be hauled immediately. Seeding and replanting must be done by experts and managed professionally. 3. Noise. To mitigate this obtrusive impact mufflers on construction equipment and diesel engines must be used, operations should not exceed eight hours a day, and no construction work of any kind should be done on weekends or holidays. Sound barriers should be installed where possible. 4. Air Quality. Construction equipment and vehicles, and haul trucks should be "above and beyond" emission standards, using advanced technology to reduce emissions from all equipment. Air quality should be monitored, and all construction stopped during thermal inversions and other causes of pollution. Mitigation for the concrete batch plant emissions must be described and enforced. 5. Gross Dam Road and other dirt roads. Gross Dam Road dirt road will be rutted and turned into continual washboard. Denver Water should pay Boulder County for periodic repair. 18	**Response #1232-26:** In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's available supplies in the year 2022. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #1232-46*** *(ID 5352)**:*** *Failure to Evaluate Innovative Conservation as the most reasonable, practical, common sense, least environmentally damaging and cost-effective alternative. Early in the scoping and selection process, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (1) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Water conservation is addressed but with a minimal expectation of 16,000 AF/yr savings by 2030. Furthermore, demand is calculated on a basis of "unrestricted" use in all projections, a clear bias toward overestimation and blatantly denies the effects of enhanced conservation and efficiency over time.*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments To prevent fugitive dust impacts, this entire road and all other dirt roads used for construction and logging, should be surfaced with high-quality road base immediately after the heavy construction equipment is in place. Residents along Gross Dam Road should be interviewed and their specific impacts from dust and traffic should be mitigated, as recommended by them. 6. It is not possible to compensate for 4-5 years of reduced quality of life. Nonetheless, residents could benefit from the expansion of Gross Reservoir by receiving a share of the 16% increase in hydroelectric generation, either through the utility companies or through direct payment by Denver Water. This should be pursued vigorously. 7. Hazardous materials. Material Safety Data Sheets required by OSHA must be completed before the Corps makes a decision, not after. Likewise, the Hazardous Handling Plan should be developed and make public. Epoxies, concrete sealants and curing compounds have toxic substances and are messy to use. Full disclosure of risks and mitigation is essential. 8. Disclosure. Disclosure of all cumulative impacts and other impacts "embedded" in the project, such as the affect of the Eldorado wastewater treatment plant on South Boulder Creek, is mandatory. The location and safety of holding ponds below the dam, and the exact location and impact of the auxiliary spillway should be described. The location of the private property to be purchased should be revealed, and the impact of this purchase and inundation on the Miramonte conservation area fully described, with mitigation plans (see Colorado Open Lands, CCA Projects). This purchase would further decrease the severe winter range for elk and must be disclosed. Changes to South Boulder Creek diversion canal must be disclosed. The DEIS does not disclose awareness and consideration of the Magnolia Environmental Protection Plan (MEPP), or the fact that the USFS closes roads west of the reservoir November to May. Boulder County Commissioners incorporated MEPP into the County Comprehensive Plan in 2000. At this point we raise another issue that is not included in the Proposed Action, even though, if the project goes forward, it determines the outcome. In the DEIS, the Proposed Action and all calculations associated with it, are based on increasing the height of Gross Dam by 125 feet, with 72,000 AF new water. In fact, the dam will be raised 131 feet, with 79,000 AF new water. In the draft license amendment application to FERC this is the Proposed Project, and the lower height is referred to as the alternative. The additional six feet are needed to accommodate the "environmental pool" of 5,000 AF/yr for the cities of Boulder and Lafayette, through an IGA with Denver Water, approved in February, 2010. This additional expansion is discussed in Appendix M of the DEIS, as "mitigation" although "compensation" is the better word. The language describing this arrangement is so convoluted that it is difficult to determine who owns the water and where it is coming from, but obviously it reaches the reservoir through the Moffat Tunnel and South Boulder Creek. Given that the height of the dam will be raised 131 feet, **every calculation in the DEIS, from river flows and inundation levels to construction time, is incorrect**. Can this be anything other than failure-to-disclose? Denver Water claims that because the extra 5,000 AF is not related to the purpose and need of the Proposed Action, it was not necessary to include it in the Section 404 permit application. We find it unconscionable that the U.S. Army Corps of Engineers, with its fastidious attention to detail, would allow the permitting process to go forward with this misrepresentation. The calculations must be corrected in the final EIS. 19	**Response #1232-46:** Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of

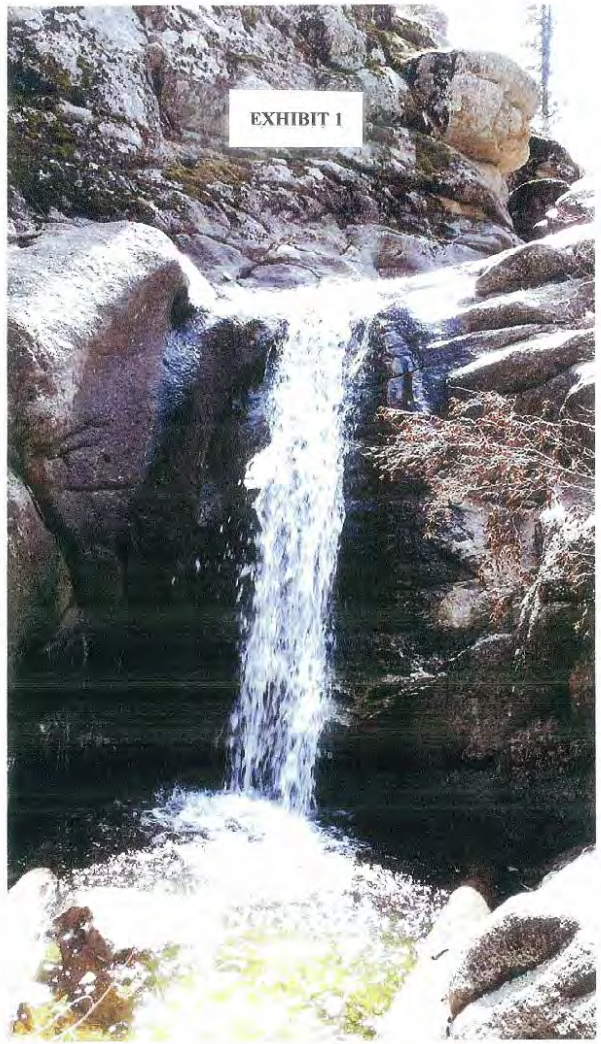
Comment Information	Comment	Comments and Response
	TEG DEIS Comments **Section VII. Suggested Alternatives** The projected shortfall, reaching 18,000 AF/yr by 2030, is over-estimated and the **time-period can be off-set by many years.** During this time great progress will be made in efficiency and water conservation, thus reducing water demand and maintaining supply. Currently the key concern for Denver Water is storage, in case of drought; supply from the Western Slope and elsewhere is readily available. Denver Water's total usable water supply in reservoirs and other storage facilities far exceeds projected demand in 2030, **not** including the strategic water reserve of 120,000 AF (Water Watch Report). Nonetheless, without limits on population growth and development, we can imagine that eventually supply and demand will meet, but certainly not in 2016 as claimed. As noted above, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (1) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Also excluded were viable alternatives such as 11a, *Deep and Shallow Aquifer Storage of Reusable Supplies.* This alternative was excluded because it was determined that it could not deliver 18,000 AF firm yield (Ch 2, p. 15) but it has the advantage of no loss from evaporation. In light of current data that negate the DEIS predictions for 2016 and 2030, the Corps should reassess all reasonable and practicable alternatives that were excluded. Alternatives 1-7 are based on no expansion of Gross Reservoir. If Gross Reservoir is not enlarged, then the contract with the City of Arvada for 3,000 AF/yr, contingent upon the expansion, is suspended and the supposed shortfall would be 15,000 AF/yr (with the possible exception of Alternative 2). **Alternative 1** Invest in innovation conservation and efficiency tools and practices. Conservation and enhanced efficiency are the keys to sustainable water supply. Eventually every home and multifamily residence will have in-house grey water processing for outdoor use; every home and multifamily residence will have reverse osmosis membrane units and recycling systems to reuse household water for indoor needs; eventually toilets everywhere (currently the major indoor water use) will be an adaptation of airplane style vacuum toilets. Eventually grass will be engineered to be green and drought-resistant. Eventually Southwestern landscaping in Denver will be beautiful. Eventually the daily luxury shower will be a thing of the past—showerheads will have timers as well as flow control; perhaps the art of taking a one gallon Sun Shower sponge bath will be in. The list goes on (for example, see Exhibit 3, *American Water's Visionaire Project Receives Environmental Award*, Water Online). The possibilities are limited only by lack of creativity and incentive. Because the timing of the projected shortfall is miscalculated, **there is time** to invest in conservation and efficiency. The idea that "the low hanging fruit of conservation" has already been picked is false. Mandatory conservation and efficiency practices for new development in particular, will be in place. In several years it will be possible to make projections of demand with greater accuracy. The estimated $353 million to expand Gross Dam and Reservoir could fund 20	conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #1232-59*** *(ID 5351)**:*** *Considerations. a. Data used by Denver Water and therefore in the DEIS, are from "pre-drought" years and "backcasting" over a period of time when conservation was far from the public awareness and certainly not an "ethic" as it is beginning to be today. As noted above, these data used for projection do not reflect current conservation practices and therefore are not accurate.*

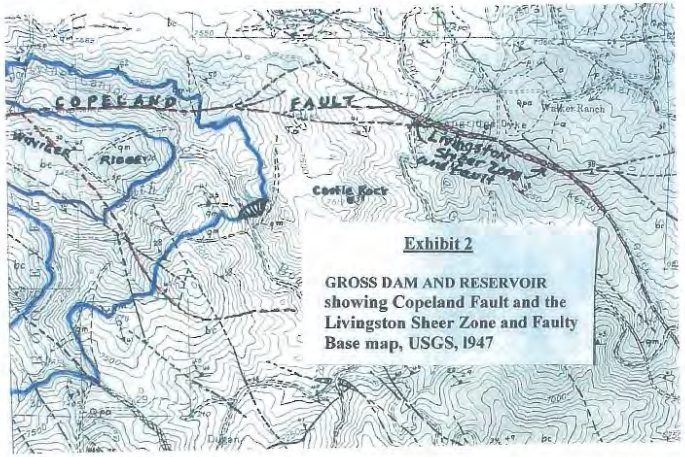
Comment Information	Comment	Comments and Response
	TEG DEIS Comments innovative conservation R & D that would serve Denver Water customers for years to come. A bigger dam cannot do this. If Denver Water can raise funds to build a bigger dam, it can raise funds for conservation and efficiency. The data suggest however, that funding to the level of $353 million is not needed. Perhaps it is fortunate that landscape watering accounts for nearly 25% of total water use. Reducing landscape watering by (1) watering less, through regulations and/or rate increases if necessary, and (2) by changing the landscape to xeriscape, through incentives if necessary, would solve the drought problem that the bigger dam is expected to solve. **Alternative 2** Stand-alone Leyden Gulch Reservoir. This alternative is to construct a "stand-alone" Leyden Gulch Reservoir, which was an earlier consideration according to a Western Resource Advocates study in 2005: > Another storage reservoir that Denver is considering building as an alternative, or in addition to the Gross Reservoir enlargement, would be off-channel at Leyden Gulch. This reservoir could be sized between 31,300-60,200 acre-feet. Denver could use Leyden Gulch simply as a storage alternative to Gross enlargement or it could be used in conjunction with its potable reuse strategy for blending raw and reused water. Either option would increase Denver's northern storage capacity so that it could increase Moffat collection system diversions in wet years into Front Range storage, ultimately for use in dry periods. > http://www.westernresourceadvocates.org/facingourfuture/facingourfuture_lowres.pdf p. 65 This alternative should be given serious consideration. As noted throughout this document, the estimates of demand for 2016 and 2030 are not substantiated, and with conservation and efficiency measures now in place and anticipated, water use can be significantly reduced and/or supplied by other means than Gross Dam and Reservoir expansion. Moreover, this alternative appears to offer flexibility to accommodate Denver Water's potable reuse strategy that the Proposed Action would not. In addition to avoiding other significant impacts associated with Proposed Action, the Leyden Gulch alternative suggested here would avoid the environmental impacts associated with concrete production since an earthen dam is planned. Also, because borrow material would be obtained on site, the massive multi-year haul truck effort envisioned by the Gross Reservoir expansion would be eliminated with all of its energy consumption, pollution, noise and adverse traffic impacts. In addition, destruction of land and trees would be avoided. Based on cost estimates for Alternative 1c, (table Summary of Estimated Costs (2006), ES-42), and excluding the expansion of Gross Dam and Reservoir element of 1c, this suggested alternative appears to the least costly of all, with the exception of Alternative 1. The contract to provide the City of Arvada 3,000 AF/yr would probably be in effect and could be fulfilled by this new reservoir. 31	**Response #1232-59:** As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr of additional conservation and the 18,000 AF/yr proposed Project (72,000 AF enlargement of Gross Reservoir). Additionally, when Denver Water estimates its future demand future conservation savings are included. As shown in FEIS Table 1-1, future and additional conservation are considered when estimating supply shortfalls. ***Comment #1232-45*** *(ID 5350)**:*** *In 2002, Denver Water projected a water "savings" of 16,000 AF/yr by 2030 through conservation, which as noted, led to the projected shortfall of 18,000 AF/yr, including the 3,000 AF/yr to Arvada if the proposed action moves forward. [If additional water is not available from Gross Reservoir, the Arvada contract is suspended and the projected shortfall is 15,000 AF/yr.] There are no data to support this savings projection and it appears to be a considerable underestimation. In the document "Denver Water's 2010 Strategic Rate Initiative" the projections are for" .. achieving 16,000 acre-feet of conservation savings by 2016 and 29,000 acre-feet of conservation savings by 2045." It appears that Denver Water has increased its conservation savings estimate substantially, invalidating the projections used in the DEIS.*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments **Alternative 3** Alternatives 8a and 10a have a storage component and were selected for review because they are "reasonable and practicable." Alternative 8a increases reusable return flows with gravel pit storage of 20,000 AF, and 5,000 AF firm yield. Alternative 10a uses the return flows for storage in Denver Basin Aquifer, adding 20,000 AF, with 5,000 AF firm yield. A review of Figure 2-1, Appendix C suggests that by extending Conduit O south to the AWTP for 10a, it would be possible to use both water sources and storage facilities of 8a and 10a, carrying the treated water in the combined O and M conduit to Moffat WTP. This would give 10,000 AF firm yield. **Alternative 4** Purchase and transfer of agriculture water, option contracts for temporary use of irrigation water rights and leasing are important elements in a comprehensive approach to water supply (see Exhibit 4, *Mixed Water Portfolio Helps Thirsty Cities*, Water Online). These "mixed portfolio" approaches do not involve excessive and costly storage, and are being developed and used, particularly in western states. In Colorado, the primacy of water for agriculture is historic, embodied in "senior" water rights. However, urbanization and growth, and the nature of agriculture itself, have permanently changed the "landscape" and innovative transfer methods involving interruptible supply agreements and water banks are being studied (see Colorado Water Conservation Board, transfer grants program in progress). This alternative must be fully investigated by the Corps and Denver Water before proceeding. Transfer of agricultural water rights and gravel pit storage is a component of Alternative 13a, although the proposed yield is small. However, combined with 8a and 10a above, the total firm yield is 13,000 AF. In addition, the augmentation plans for the Lower South Platte River wells contribute to the overall effectiveness of this alternative. **Alternative 5** This alternative combines the water sources of Alternatives 8a, 10a and 13a. However, rather than constructing the proposed AWTP, the Moffat WPT should be upgraded to process water from these sources to meet standards for potable water. Advantages: the impacts of the Proposed Action to Western Slope rivers and the Gross Reservoir environment are avoided; water sources are dispersed, unlike the Proposed Action which puts all the new water "in one basket;" funds are used to upgrade Moffat WTP rather than build a new AWTP; the issue of "balance" is solved because the additional firm yield is from the Moffat WTP; the time-period is 2.5 years, versus 3.1 years (Ch. 2, Table 2-16) or 4.1 years of construction with the Proposed Action. **Alternative 6** Denver Water could use the $353 million not invested in expanding Gross Reservoir to upgrade and enhance the efficiency of the conduit/canal system for moving water from the Marston WTP to the Moffat Water Treatment Plant. The two south system WTPs are linked as a 22	**Response #1232-45:** As described in DEIS Section 1.4.3.1, conservation measures are designed to achieve long-term sustainable reductions in water use. There is a considerable amount of uncertainty when implementing conservation programs as there is no way to be certain the predicted savings would occur. However, monitoring and program adjustment can help assure anticipated conservation changes would be achieved. The Moffat Project identified a 34,000 AF/yr. deficit in Denver Water's supply compared to projected demand. This shortfall would be met by 16,000 AF/yr. of additional conservation and the 18,000 AF/yr. of a proposed Project alternative. Denver Water's 2010 Strategic Rate initiative described how Denver Water would increase conservation by its customers. The plan combined several conservation goals into one plan which described Denver Water's conservation goals for the future. Included in these goals for conservation was the goal described in the 2002 Integrated Resources Plan (IRP) of 29,000 AF and the goal of an additional 16,000 AF of conservation as described in DEIS Section 1.4.1.3. As shown in FEIS Table 1-1, these conservation goals have been considered when Denver Water predicts its future demand. ***Comment #1232-15*** *(ID 5349)**:*** *Misleading information. Throughout the DEIS the projected shortfall in 2030 is stated as 34,000 AF/yr. This is false. The projected shortfall is 18,000 AF/yr. Similarly, the projected demand in 2030 is often given as 379,000 AF/yr, and this is false. The actual projected demand is 363,000 AF/yr. In each case, the projected conservation saving of 16,000 AF/yr, which automatically reduces demand since water conserved is not demanded, is excluded to give the higher number. This is done to exaggerate the problem and it casts doubt on the authenticity of the DEIS. This is like saying*

Comment Information	Comment	Comments and Response
	TEG DEIS Comments "dual system" and in case of a shut-down of one, or an increased need during "peak" demand, water could be delivered to the north system. This approach would be less costly that some of the others suggested here. **Alternative 7** As noted in Section 1, the DEIS describes a source of water that was not explored as an alternative—use of reusable water. This should be fully described, including storage and conveyance facilities needed to take advantage of this supply. The amount of unused reusable supply varies year to year, but can be as much as 37,555 AF (Table 2-9). As demand increases and more water is diverted through Roberts Tunnel, more reusable water is available, thus enhancing supply. **Alternative 8** Re-evaluate the 4:1 storage to firm yield ratio and "mandatory need" that Gross Reservoir supply 18,000 AF **during a drought year.** To meet this ratio and 18,000 AF/yr firm yield Gross Reservoir needs to have a capacity of 72,000 AF. Assuming that this must be above minimum pool level, the additional capacity would be 42,000 AF, not 72,000 AF as proposed. Gross Reservoir already holds 30,000 AF above minimum pool level. Raising the dam to provide an additional 42,000 AF would not eliminate the impacts but would decrease construction time and diversion of water from the Western Slope river basins would be reduced. In addition to the many adverse impacts, the Proposed Action and this alternative have a serious drawback, evaporation. At the Proposed Action level, Gross Reservoir would lose nearly 1,000 AF/yr. Given that the primary use is storage, this loss would be significant, year after year. **Conclusion** The Proposed Action, for which Denver Water is seeking a Section 404 permit from the US Army Corps of Engineers is based on outdated and possibly invalid data, unfounded assumptions and failure to accurately incorporate the power of conservation and efficiency measures in supply and demand projections. New sources of water are not included in the projections. The "shortfall" foundation upon which the "mandatory" 18,000 AF/yr firm yield and the Proposed Action are based, is not substantial and does not warrant a Section 404 permit. The contradiction of basing the Proposed Action on a projected **annual** shortfall, but planning for storage, casts serious doubt on the rationale for the project. Furthermore, the Proposed Action fails to meet the Clean Water Act guidelines as the least environmentally damaging practicable alternative. The need for "flexibility" and "balance" between the north and south systems is over-stated and can be achieved through alternative means. Weighed against the serious and long-term impacts to the Western Slope rivers, and to the environment and community affected by the construction, the proposed massive expansion of Gross Reservoir, primarily for storage, cannot be justified. "What if" drought and equipment failure scenarios do not provide sufficient reason to permit the Proposed Action. In addition, the negative impacts of the Proposed Action are consistently minimized and mitigation plans are not provided, or are sketchy. Failure to adequately address traffic safety during construction is a key example. 23	*that 12 gallons of gasoline must be in the tank to drive from Denver to Kansas City, but actually the trip begins in Goodland so only eight is needed, but call it twelve anyway.* **Response #1232-15:** As shown in DEIS Table 1-1, the demand of 379,000 AF/yr in 2032 is anticipated to be reduced by 16,000 AF/yr due to additional conservation measures that would be implemented as shown under Plans to Meet Shortfall as discussed in Section 1.4.3.1. Denver Water's demand in 2032 would be 360,000 AF/yr, which is 379,000 AF/yr less the 16,000 AF/yr of savings due to additional conservation measures that would be implemented, less 3,000 AF/yr of demand associated with the Arvada contract. ***Comment #1232-42*** *(ID 5348)**:*** *The DEIS also misleads by comparing projected supply and demand in 2016, called "full use" with projections for 2030. "Full use" is a speculative concept derived from the projection that by 2016 supply and demand will meet-supply will be in "full use." This comparison of supposed "full use" in 2016 as a baseline, to 2030, decreases the calculated impacts of the Proposed Project on river systems since it is assumed that increased diversions will occur in the next four years anyway. This is fallacious on two counts (1) full use will not occur in 2016 and (2) it cannot be argued that impacts will be less because by 2016 conditions will already be worse.* **Response #1232-42:** The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 4 displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios.

Comment Information	Comment	Comments and Response
	TEG DEIS Comments We request that the US Army Corps of Engineers deny the Section 404 permit. Denver Water should go back to the drawing board with current water use data, accurate demographic and economic assumptions, and make innovative conservation and enhanced efficiency the most reasonable, common-sense and cost-effective approach to water supply, now and as the population grows. Western Slope rivers and streams cannot continue to be the water-bearer for Front Range development. The "build a bigger dam" approach is antiquated and the purpose and need for the expansion of Gross Reservoir have not been demonstrated. Please keep us apprised of and notify us of all developments and future public notices pertaining to this project. Thank you again for the opportunity to comment. Respectfully submitted, FOR THE ENVIRONMENTAL GROUP OF COAL CREEK CANYON Judith Green [redacted] LAW OFFICE OF PAUL ZOGG Paul Zogg 1221 Pearl Street Boulder, CO 80302 (303) 546-9970 cc: Senator Mark Udall Senator Michael Bennet U.S. Representative Jared Polis Boulder County Commissioners 24	• Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. • Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. Full Use of Denver Water's Existing System reflects the best available projections of demand and supply consistent with current standards of water resource planning. Full Use of the Existing System includes RFFAs including growth in Denver Water's average annual demand to 345,000 AF/yr, which Denver Water can achieve with their existing system. Denver Water's existing system is capable of meeting an average annual demand of 345,000 AF/yr, therefore, the hydrologic effects associated with additional diversions that would occur as Denver Water's demand grows to that level are not an impact of the proposed Moffat Project. Denver Water is not responsible for mitigating for the effects of other reasonably foreseeable actions since they are not caused by the Moffat Project. FEIS Chapter 5 presents the effects attributable to the Moffat Project based on a comparison of Full Use of the Existing System and Full Use with a Project Alternative (2032). ***Comment #1232-44*** *(ID 5347)**:*** *A strong bias against conservation is evidenced throughout the DEIS. For example, in the Harvey Economics memorandum, Jan. '04, p. 5, the "... low*

Comment Information	Comment	Comments and Response
		*hanging fruit of conservation savings have already been achieved." This was false then, and is today. In the Harvey Economics memorandum, August '04, one of the variables used in the demand model is "annual conservation expenditures" over five decades, beginning in 2000 (Appendix A, Exhibit 3). The projected expenditures are identical for each decade. This is incorrect. The No Action alternative addresses only two possibilities if Gross Reservoir is not expanded, in times of drought or emergency, (1) draw down the strategic water reserve or, (2) " ... mandatory severe restrictions" or both. During the recent drought Denver Water maintained a substantial surplus, but "... they enacted severe and mandatory restrictions on their customers' use of water" (Executive Summary, p. 14). This is false. The drought level never exceeded Stage 2 restrictions. The loaded word "restrictions" is used repeatedly, and the DEIS (Ch. 4, p. 449) claims that restrictions will result in a negative perception of the Denver area, would lead to decreasing property values and adverse effects on business and, "...consumers may feel they experience a reduced quality of life." Speculation in the DEIS continues: under the No Action alternative and without the Proposed Action, Level 4 drought restrictions could be enforced (a level that has never been defined) and businesses might have to cut-back or even shut down (Ch. 4, p. 502). This doomsday scenario is without warrant but exemplifies the extremism evidenced in the No Action alternative discussion. "Where a choice of 'no action' by the agency would result in predictable actions by others, this consequence of the 'no action alternative should be included in the analysis." CEQ Guidance, 46 Fed. Reg. 18026, 18027 (March 23, 1981). e. We highlight in times of drought or emergency because the DEIS states, "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the 4-5 year construction project-with destruction of 450 acres of land and up to 30,000*

Comment Information	Comment	Comments and Response
		*trees, and reduced quality of life for those in the area (with no benefits to them)-is for the few years, perhaps 5 in 45 years (Appendix E, 1-1) when Denver Water customers might experience a Level 2 shortage. Predictions of a major shortage to raw water customers in the northern system could be once in 45 years (Ch. 4, P 499), or once in 300 years. In its drought plan, the City of Boulder says, "The 2002-2003 drought is considered to be a l-in-300 year drought within the Boulder Creek and the Colorado River basins, which simply means it is extremely uncommon in its high degree of severity" (City of Boulder, Colorado Drought Plan, Vol. 1,2003 Drought Response Plan, p. 6).* **Response #1232-44:** Under NEPA, every EIS must analyze a No Action Alternative, which is what is expected to occur if the proposed Project does not get permitted. The EIS then compares the environmental effects of the action alternatives to those resulting from the No Action alternative. In developing the No Action Alternative for the Moffat Project, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. Denver Water assumed that growth would still occur and identified ways to meet future water demands through operational controls. The Corps feels the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative. Furthermore, during the 2002 drought Denver Water's annual water supply was 345,000 AF and the annual water demand was 285,000 AF. ***Comment #1232-43*** *(ID 5346)**:*** *The concept of "demand hardening" is invalid. To justify the Proposed Action vs. No Action, the authors of the DEIS refer to this speculative "hardening" of conservation efforts, saying that because water*

Comment Information	Comment	Comments and Response
	 EXHIBIT 3 Search: Articles Share RSS American Water's Visionaire Project Receives Environmental Award January 19, 2010 American Water, the largest investor-owned U.S. water and wastewater utility company, announced recently that it has earned a Project Merit award in the 2009 Environmental Business Journal (EBJ) Business Achievement Awards. American Water was recognized in the Water/Wastewater category for developing a sustainable water treatment solution at the Visionaire, a luxury residential condominium in New York City's Battery Park City. The 2009 EBJ awards will be presented in a ceremony at Environmental Industry Summit VIII, an annual three-day event, in Coronado, Calif. on March 3, 2010. The Visionaire is the fifth in a series of green residential buildings with water recycling systems designed and operated by American Water's Applied Water Management Group. Developed by the Albanese Organization and designed by architect Rafael Pelli, the Visionaire is a 33-story, 251-unit tower that is considered to be the greenest high-rise residential condominium in the United States. The Visionaire features a central water filtration system and advanced wastewater treatment system with a capacity to recycle 25,000 gallons per day for toilet flushing and air-conditioning cooling systems, and a stormwater collection system that captures and stores up to 12,000 gallons to irrigate the building's rooftop gardens and adjacent park. These water-saving measures along with energy and water efficient appliances allow the Visionaire to use 55 percent less potable water than a residential development of similar size. "It is gratifying to see the Visionaire receive this recognition from the environmental community," said Tim Davies, President of Applied Water Management. "We hope that our work in this area helps pave the way for more residential developments to implement water recycling systems to help achieve sustainability and ease the strain on water infrastructure and supplies." This is the second time American Water has been recognized by the EBJ awards. In 2006, the Solaire, which was the first of these five green residential buildings in Battery Park City, was awarded a Project Merit in the Water/Wastewater category. The Environmental Business Journal Achievement Awards annually recognize companies and executives for environmental achievements seen as outperforming the market. American Water will be among the winners featured in Environmental Business Journal's Executive Review issue in late January. About The Applied Water Management Group Of American Water The Applied Water Management Group of American Water is headquartered in Hillsborough, N.J., and provides customized water and wastewater management solutions to real estate developers, industrial clients, and small to midsized communities. The company is a wholly owned subsidiary of American Water. Founded in 1886, American Water is the largest investor owned U.S. water and wastewater utility company. With headquarters in Voorhees, N.J., the company employs more than 7,000 dedicated professionals who provide drinking water, wastewater and other related services to approximately 10 million people in 32 states and Ontario, Canada. For more information, visit: www.amwater.com. SOURCE: American Water Need Help Finding Solutions?	*customers are already conserving water, in times of drought no more could be conserved, unless severe mandatory restrictions were enforced, perhaps Stage 4 restrictions-•-therefore Gross Reservoir must be expanded. This concept is contrary to Denver Water's goals of conservation savings of 16,000 AF/yr by 2016 and 29,000 AF/yr by 2045 (see reference above). Clearly, Denver Water does not anticipate "demand hardening." The concept is pure speculation and carries little weight with water managers elsewhere (California Urban Water Agencies report, www.cuwa.org/publications.html).* **Response #1232-43:** "Demand hardening" is caused through conservation. As customers become more efficient in their water use, their ability to reduce consumption during a drought under the same set of drought restrictions becomes impaired. A simple example is lawn watering efficiency. Denver Water's Stage II drought restrictions are designed to reduce lawn watering significantly but keep lawns alive. If customers become more efficient in their lawn watering through conservation, the closer their use is to just keeping lawns alive; therefore, they will not be able to reduce as much in a drought. If the conservation savings are used to serve new customers, then the water is not available to buffer against a future drought. ***Comment #1232-41*** *(ID 5345)**:*** *Although off to a good start, water conservation is in its infancy. The projected savings of 16,000 AF/yr by 2030 to offset the projected shortfall was pessimistic when calculated in 2002, and by today's standards, is false. In fact, Denver Water's planning estimates used throughout the DEIS as a basis for need, use a conservation estimate from 1997 (Ch. 1, p. 12). In spite of upbeat talk about conservation today, Denver Water has yet to effectively tackle both residential and commercial water use. Even so, Denver Water established the goal of reducing overall water use 22%*

Comment Information	Comment	Comments and Response
	 EXHIBIT 4 Articles Mixed Water Portfolio Helps Thirsty Cities January 21, 2010 Computer simulations for drought-prone areas reveal that when urban water planners combine three approaches of buying water -- permanent rights, options and leases -- the city avoids surplus water and high costs, and reduces shortages, according to civil engineers. "Just like with stock portfolios, if you buy diverse stocks, you diversify your risk," said Patrick Reed, associate professor of civil engineering, Penn State. "Right now, cities don't necessarily diversify their risk through the ways in which they buy water." Reed and his colleagues are trying to understand the benefits and trade-offs associated with buying water using a mix of market instruments in the Lower Rio Grande Valley of southern Texas. Those models incorporated the various purchasing options, along with variables such as cost, amount of surplus water and the probability of water shortages. The researchers found that when cities in the region rely solely on permanent rights, they could incur high costs – $13M a year – and require lots of surplus water yet still face significant supply failures in drought years. Alternatively, a careful mix of permanent rights, options and leases can dramatically lower costs – $10M a year – increase water available to the environment and avoid supply failures during droughts. A major focus of the research is to provide decision-makers with water planning models that graphically illustrate how options, leases and permanent rights affect cost, surplus water and probability of water shortages. "This work not only demonstrates how we can combine multiple objectives to solve a problem, but also visualize the problem and learn from it," said Reed. "It is an innovative hybrid between engineering and policy to create highly adaptive and resilient water supply systems." Most cities that buy water rely on permanent rights to ensure reliable water supply. It is like buying a percent of the water flowing into a reservoir. "But you do not know what the inflows are going to be so you are essentially buying a percent of a question mark," Reed added. Often the city ends up buying a lot of water to cover potential shortages, resulting in extra cost and surplus water that is not available for other uses. If a city fears there will be shortages, it can purchase a monthly lease to cover the shortfall. But because demand is already high by then, the city pays a high price for the water. The other choice for urban planners is to use options, which let them buy water at lower prices at a later date. "It takes the volatility out of pricing and they (planners) can buy a volume of water at the original price later in summer when demand is high," said Reed. The researchers reported their findings in a recent issue of Water Resources Research. Reed says the team's findings are especially relevant in the face of growing population and climate change. The team tested its model against the worst drought on record in the Lower Rio Grande Valley. It found that the city made significant savings and averted water shortages when it used a diverse set of market instruments to buy water. "We were able to find a solution that does not have any critical water shortages, without having surplus water or substantive costs," Reed explained. Researchers say the simulations present utility companies with a variety of solutions for efficient water management, along with the implications of each solution. The simulations also suggest that utilities that start off with a less diverse portfolio begin to use more of the market when drought happens and the city starts running out of water. In contrast, when utilities use more of the market at the start, the city saves money and avoids water shortages in a drought. "Economic instruments such as leases and options provide a lot of flexibility to urban water planners, particularly in the western United States," said Reed. "They provide the utility to be resilient to droughts." Other researchers on the project include Joseph Robert Kasprzyk, graduate student in civil engineering, Penn State, and Gregory W. Characklis, associate professor of civil engineering and Brian R. Kirsch, graduate research assistant, both at University of North Carolina at Chapel Hill. The National Science Foundation supported this work. SOURCE: Penn State Water Online | WaterMarkets, Inc. | Contact Water Online Legal | Privacy Statement Copyright © 1996 - 2010, WaterMarkets, Inc. All rights reserved.	*by 2016 (Appendix A, Solutions). This goal is based on conservation and efficiency practices that were not in place when the IRPs were written and are not incorporated in the supply and demand projections used as a rationale for the Proposed Action.* **Response #1232-41:** The Corps recognizes that Denver Water is currently developing a new IRP that would help guide water management over the next 40 years. Development of the new IRP is in the early stages and they are currently soliciting input from various stakeholders. The Corps will consider the information in the new IRP when it is finalized by Denver Water. As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver

Comment Information	Comment	Comments and Response
		Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #1232-40*** *(ID 5344)**:*** *Water shortfall increases slowly over time, which is why Denver Water projected a shortfall of 18,000 AF/yr by 2030. Water saving through conservation can also increase over time, and will. It is clear from a brief look at conservation data that good conservation, practiced year-round, would negate the projected shortfall and increase the strategic water reserve. The concept of "strict mandatory restrictions" used repeatedly in the DEIS, has no place in this discussion because it implicitly assumes that prevention cannot occur through good, on-going conservation practices. This is a false assumption.* **Response #1232-40:** Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Denver Water is implementing an aggressive conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. Therefore, future conservation is assumed in all of the alternatives evaluated in the EIS. ***Comment #1232-39*** *(ID 5343)**:*** *As recently as 2006, (Denver Water, July 6, 2006, "Proposed 10-Year Conservation Plan") Denver Water established the goal of reducing total water use in its service area by 22%, as noted above. The plan relies almost exclusively on voluntary reductions in water use and rebates and incentives, with only four "regulatory" steps: metered irrigation, low-flow urinals in new*

Comment Information	Comment	Comments and Response
		buildings, retrofits of toilets, etc., and water efficiency rating for new customers. These efforts are laudable, and customers have done better than expected. In 2008 Denver Water reported a 30% decrease in water use from pre-drought levels. These data substantiate the fact that the projection of supply equaling demand in 2016 is wrong. Furthermore, enhanced efficiency products and creative water conservation will evolve beyond the 2006 measures in use today. Again, supply and demand projections in the DEIS, upon which Denver Water makes a case for the Proposed Action, are outdated and invalid. Also not included in the DEIS projections is Denver Water's current focus on locating "leaks" in the system and replacing failing infrastructure. This saving is significant. In 2004 Harvey Economics (memorandum, August '04, p.4, Appendix A) estimated a 6% system loss, approximately 16,000 AF/yr. **Response #1232-39:** The decrease in water use in 2008 compared with pre-drought levels cannot be extrapolated by itself. Single year water use is influenced by temporal conditions which are not useful in long term water demand forecasting. For instance, recollection of the previous drought, declining economic conditions and the quantity or timeliness of precipitation was an influence on water use in 2008. System loss includes unaccounted for water such as fire hydrants, etc. As well as leakage. The system loss level of 6% is relatively low for older systems such as Denver's, and elimination of all system loss would be impossible. Denver water's efforts to reduce leakage are reflected in future conservation savings. All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial,

Comment Information	Comment	Comments and Response
		commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. ***Comment #1232-20*** *(ID 5342)**:*** *During the 2002-04 drought, Denver Water customers conserved approximately 22 % over pre-drought levels even though the conservation requirements did not exceed Stage 2 drought level (the primary conservation measure was mandatory reduction of outdoor watering). The fact that conservation continues suggests that it is no longer a foreign concept and customers, residential and commercial, will do more. Denver Water customers are demonstrating that they do not need a drought to do better.* **Response #1232-20:** The Corps notes the comment. ***Comment #1232-38*** *(ID 5341)**:*** *Before granting a permit to proceed with the Proposed Action, Denver Water should be required to assure the Corps that all of its customers, in all categories, have a conservation plan on file with the Colorado Water Conservation Board, and are following that plan. Failure to comply should be met with penalties-not further diversions from Western Slope rivers and destructive expansion of Gross Reservoir. To date, 18 "entities" receiving water from Denver Water have not filed an*

Comment Information	Comment	Comments and Response
		approved conservation plan, including the City of Arvada, contracted to gain 3,000 AF/yr if the Proposed Action proceeds (incorporated by reference, Western Resource Advocates, Comments on Moffat Collection System Project DEIS). In the next two decades, as innovative and effective conservation practices become routine, or mandatory, these entities will increasingly contribute to demand reduction. This factor is not accounted for in the DEIS, other than in the global 16,000 AF/yr savings projection for 2030. A savings of 1,000 AF/yr from each should be required, eliminating the supposed shortfall and the need for the Proposed Action. 1. Conservation plans often include rate increases, sending a message regarding the need to conserve and the preciousness of water, and covering the costs of conservation incentives and practices offered to customers. So far, Denver Water has not used this approach and for customers, "Denver Water is a good buy compared to water rates in other jurisdictions" said John Wright, Manager of Rate Administration (GreenPrint Committee, October 20,2009, p. 3). Rates for single-family residential customers inside the city increased in January 2010 from $1.91 to $2.11 per 1,000 gallons, for "block 1" families using less than 11,999 gallons a month. Households in block 2, using 12,000-30,000 gallons a month saw a rate increase of 40 cents/1,000 gallons, from $3.82 to $4.22. Rate increases were comparable for all customer categories. Denver Water is a very good buy. Clearly there is room for rate increases that would really send a message while facilitating the development of innovative conservation and new infrastructure. Denver Water however, has no plan to "impact" its customers by asking them to pay for the expansion of Gross Dam and Reservoir, a massive and destructive project solely for their benefit. In Ch. 4, Socioeconomics, page 444 we learn that average cost per 1,000 gallons of water might increase 3% over the next decade. This is considered to be a minor impact. Similarly, increase in system development charges is

Comment Information	Comment	Comments and Response
		considered a minor impact. The DEIS assures Denver Water customers that they will suffer no impacts from the Proposed Action. **Response #1232-38:** All of Denver Water's distributors follow Denver Water's State-approved conservation plan and customers are eligible for the same rebates and other incentives provided by Denver Water to Denver Water customers. In other words, if one receives treated water from Denver Water, one is subject to the same conservation rules and rebates as those living within the City and County of Denver. Denver Water is planning to update its conservation plan with the State and the distributors would be listed individually so readers would be able to see which water providers are covered by Denver Water's conservation plan. Arvada submitted a conservation plan to the State of Colorado and it was approved in September of 2012. All Denver Water Customers are metered. Denver Water implements a Block Census Rate Structure (i.e., the more one uses, the more one pays). Rates are based on a cost of service analysis comprised of customer classes (e.g., residential, industrial, commercial, and institutional) and by whether customers live inside or outside the City and County of Denver. Costs are recovered from each customer class in proportion to the cost of providing the service to each class. Rates consist of a consumption charge per 1,000 gallons consumed a fixed, per account service charge. ***Comment #1232-37*** *(ID 5340)**:*** *Data: two examples of conservation/efficiency savings that reduce demand and increase supply, not considered in the DEIS. a. Denver Water (www.denverwater.org: Conservation) estimates that by watering a few minutes less, customers could conserve 2 billion gallons of water in a typical summer, one billion*

Comment Information	Comment	Comments and Response
		more than Denver Water estimated for 2009. Two billion gallons is 6,138 AF. In fact, in the summer of 2009, with conservation and wet weather, 9 billion gallons (27,000 AF) of water were not used. More than 20,000 AF stayed in the reservoirs; a savings that was not anticipated. While the DEIS and Denver Water project drought scenarios as the basis for the Proposed Action, savings during wet years are not included in projections. Yet, a single wet year like 2009 would contribute at least 6% to the total supply for 2030 and is greater than the projected shortfall for that year. Landscape watering is 54% of total residential water use (Denver Water, Key Facts; Exhibit 1), followed by toilets at 13%. Landscape watering, with a peak in the summer, forces Denver Water to "oversize" facilities, "Because of this summertime spike in demand, Denver Water's storage, treatment, distribution and other facilities need to be oversized" (Denver Water's 2010 Strategic Rate Initiative, page 3). Total residential use increased on average from 119 gpd in February to 320 gpd in July (2005-2008). Single-family homes account for about half of all categories of users, therefore landscape watering is about 25% of total annual water use. Based on total use of 265,000/yr AF, this is more than 66,000 AF/yr. For those of us who live in the foothills, do not have lawns, and are not allowed to use our well water for outdoor purposes, this is maddening. We know that if the projected shortfall in 2030 were correct, it would be inexcusable and totally preventable. In the 2009 pamphlet "Solutions: Saving water for the future" Denver Water acknowledges that among survey respondents two-thirds say, " .. the prestige and pride associated with green lawns is an important consideration for them." However, rather than initiating a campaign to change this unsustainable perception, Denver Water is hoping to accommodate it with larger reservoirs and attempts to increase water conservation by educating people on more efficient watering. This effort is referred to as "coaxing" (Solutions, 2009, Denver Water). Within the next two decades this

Comment Information	Comment	Comments and Response
		excessive use of water will be mitigated, by more than 18,000 AF/yr. By, this means alone, the projected shortfall will evaporate. It would be incorrect to claim that this potential savings was already taken into account in the DEIS. b. In the projected total demand for 2030, Denver Water included a savings of 23,000 AF/yr (footnote, Harvey Economics memorandum, Aug. '04 p. 12) due to "natural replacement" of 5.1 gallon per flush toilets to low flow (the high efficiency toilet was not invented). This estimate was made before the 10-year conservation plan was created, and was used by Harvey Economics in approving the projected Need and Purpose statement for the DEIS. In fact, replacement of plumbing fixtures is now included in the rebate/incentive conservation plan that was not in place in 2002. This savings projection is underestimated. **Response #1232-37:** Denver Water's total water demand varies from year to year based upon weather and drought induced restrictions. The "average" annual demand is expected to increase to 379,000 AF by 2032. This figure was used when calculating Denver Water's future water shortfall (see FEIS Table 1-1). The current conservation goal of 68,000 AF per year was included in the calculation of Denver Water's future water demand. In order to retain the "savings" from wet year's sufficient reservoir storage must be in place. Presently, during wet years Denver Water bypasses water from its collection system as Denver Water does not have enough storage space. The Moffat Project would allow Denver Water to capture water during the high flow period of average and wet years for use by its customers during dry years. Denver Water's "natural replacement" program accounts for customers switching to the current 1.6 gallons per flush toilets. Ultra-low flow toilets (1.28 gallons per flush) are considered in Denver Water's conservation program and rebates are offered for

Comment Information	Comment	Comments and Response
		customers who purchase these toilets. ***Comment #1232-36*** *(ID 5339)**:*** *Conclusion: The demand and supply projections in the DEIS are invalid, due to outdated information, possible "development bias" and failure to accurately estimate conservation savings, all falsely inflating demand. Furthermore, failure to consider innovative conservation and enhanced efficiency as a reasonable, practicable and common sense approach to water supply invalidates the "shortfall" rationale for expansion of Gross Dam and Reservoir. The foundation upon which the proposed action rests is weak. We find however, that the shortfall projection has been accepted without question and critical analysis. We also find a clear bias against conservation. The fact that Denver Water is now focusing on conservation, and customers will be increasingly successful in saving water, has not been taken into account, and the meager 16,000 AF/yr by 2030 projection made in 2002, is false. The use of conservation data from 1997 invalidates both the projected shortfall beginning in 2016, and the shortfall of 18,000 AF/yr projected for 2030. Most importantly, the "mandatory" firm yield of 18,000 AF/yr derived from the latter projection is invalid. We also find here a fundamental contradiction. As described in the DEIS, Denver Water projects a shortfall of 18,000 AF, annually. On this metric, the need for 72,000 AF additional storage in Gross Reservoir was calculated, and the Proposed Action was designed. In fact, it is stated repeatedly in the DEIS that the Proposed Action is for storage, for use during dry years; it is not for annual supply. The No Action scenario of "severe and mandatory" restrictions during drought without the Proposed Action, substantiates this purpose. Therefore, the supposed supply shortfall rationale for the project is further cast in doubt, as is the entire basis for the Proposed Action. It is clear that in the scoping process, in the elimination of reasonable alternatives and during the preparation of the DEIS, the Corps failed to critically*

Comment Information	Comment	Comments and Response
		evaluate the evidence presented by Denver Water for the purpose and need of the Proposed Action. At this point, this serious omission, and the contradiction noted above, can only be rectified by denying the Section 404 permit on the grounds that the stated purpose and need regarding supply and demand are not substantiated and the rationale for the Proposed Action is unclear. **Response #1232-36:** In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, the Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's available supplies in the year 2022. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by

Comment Information	Comment	Comments and Response
		Denver Water is provided in Table 1-2 of the DEIS and FEIS. ***Comment #1232-19*** *(ID 5338)**:*** *The north and south systems have served Denver Water customers reliably for years, even when Gross and Ralston reservoirs are low and the Moffat Water Treatment Plant (WTP) is not running. With enhanced conservation during dry years Denver Water maintained its strategic water reserve. Nonetheless, increasing demand, the hypothetical shortfall, and fears of drought and equipment failure of a south treatment water plant, convince Denver Water that increasing Gross Reservoir by 72,000 AF is essential. While these concerns seem reasonable, the expansion of Gross Dam and Reservoir, with the ensuing destruction, degradation of quality of life of those in the area during construction- and main purpose for storage--demand an examination of this need. A. Misleading demarcation of north and south systems (Cho 1, Figure 1-1). At first glance Figure 1-1 appears to verify the so-called "imbalance" of the small north system, relying entirely on Gross and Ralston reservoirs, and the very large south system. Based on this division, Denver Water states that the "north" system holds 10% total storage and the south holds 90%. There is however, a middle system, with a reservoir capacity exceeding all others-Dillon reservoir and the rivers that feed it. Dillon is indeed "middle" and Roberts Tunnel carries water into the North Fork of the South Platte River where it is carried by conduit to the two "south" treatment plants. The true "south" system is comprised of the drainages on the east side of the continental divide, entering into Antero and Eleven Mile Canyon reservoirs, the South Platte River and Cheesman and Strontia reservoirs. In fact, the middle system holds 48% of the total storage capacity, and supply, available to Denver Water customers. Therefore, storage capacity is distributed across these three systems and the storage "imbalance" of north vs. south is not meaningful. B. 4:1 ratio. Although no*

Comment Information	Comment	Comments and Response
		rationale or data are given to verify this "mandatory" storage to firm yield ratio, Denver Water and the Corps used this ratio to determine additional storage needed in Gross Reservoir. Given the presumed shortfall of 18,000 AF/yr in 2030 and the alternative selection criterion that 18,000 AF/yr firm yield must come from Gross Reservoir, the ratio led to the conclusion that Gross Reservoir must be expanded by 72,000 AF, (or 77,000 AF with the environmental pool for Boulder and Lafayette), bringing the reservoir to 113,000 AF (or 118,000 AF). However, even if the 4:1 storage to firm yield ratio is justified, the expansion figure is questionable. Gross Reservoir already holds 30,000 AF above minimum pool level so to meet the 4:1 ratio, the reservoir would need 72,000 AF total, increasing by 42,000 AF. Denver Water argues however, that the current capacity of Gross Reservoir cannot be included because it is already "contracted" (personal communication, Project Manager, Travis Bray). The definition of "firm yield" is: "The measure of a water collection system's ability to reliably supply water to meet demand during drought periods" (Glossary, page 3). The projected demand in 2030 includes current demand, and current supply in the reservoir is part of the "reliable supply." The logic of excluding the 30,000 AF currently available is unclear and must be explained. C. "Balancing" supply is misleading. "In general, the majority of "new" water diverted to Gross Reservoir would be kept in storage until a dry year or sequence of below average years occur (Ch. 4, p. 25). In other words, the expanded reservoir, with double the surface area and evaporation (nearly 1,000 AF/yr), is not for supply, rather it is for storage in case of a dry year or years. This suggests that the need for "balance" is overstated and the massive expansion of Gross dam and reservoir is not justified. 1. The storage issue. The DEIS notes repeatedly that if Denver Water had more storage capacity in Gross Reservoir, it could divert more water from the Western Slope river basins-it has the legal right to do so--but without storage it cannot. As

Comment Information	Comment	Comments and Response
		noted, the increased diversion would be primarily for storage, to be used during dry years, or if the two south WTPs were so disabled that they could not meet customers needs. We highlight this storage issue to separate it from a supply issue. Denver Water uses the supply shortfall argument to justify the massive expansion of Gross Reservoir, but supply would not be its main function. Other alternatives for storage, as parts of alternatives 1c, 8A, and 10A are valid, see Section VII. **Response #1232-19:** While Denver Water was able to meet all demand with the existing system during the 2002 drought, the demand on the system during this timeframe was only 285,000 AF and the system is designed to meet a demand of 345,000 AF. In other words, in 2002 Denver Water had excess supplies of 60,000 AF in addition to the strategic water reserve of 30,000 AF (90,000 AF of unused supplies). However, Denver Water was still at risk of not being able to meet demands even with the Strategic Water Reserve if one of the South System treatment plants experienced an unplanned outage. This was because the Strategic Water Reserve was almost entirely in Denver Water's South System reservoirs due to the imbalance in their system. These unused supplies could not be distributed to the customers on the north end. Thus, the north end of the systems came very close to running out of water in 2002. The North System versus South System imbalance is a result of 90% of reservoir storage and 80% of water supply being above Strontia Springs Reservoir. Water can only be delivered from the "middle system" (Dillon Reservoir and Roberts Tunnel) to Strontia Springs Reservoir. Thus, the "South" System is comprised of Antero, Eleven Mile Canyon, Cheesman, Dillon, and Strontia Springs reservoirs.

Comment Information	Comment	Comments and Response
		In order to provide an additional 18,000 AF of yield, Gross Reservoir would need to be enlarged by 72,000 AF to a total capacity of 114,000 AF (the Environmental Pool would add another 5,000 AF). This new capacity would allow Denver Water to meet demand during a 4 year drought period. For Denver Water's planning purposes to plan for a severe drought, it calculates the amount of water needed stored in its reservoirs to get through a 4-year-long drought. Four years is approximately the length of the critical period in Denver Water's PACSM simulation period; therefore, new reservoir storage must supply a firm yield over a 4 year period (a 4:1 storage to firm yield ratio). In other words, based on hydrologic modeling, Denver Water needs 4 years' worth of supply in storage as a "savings account" to ensure it can provide water each year (i.e., firm yield) to its customers. Thus, the 4:1 storage to yield ratio. The existing capacity of Gross Reservoir is already included in the supply estimates. Presently, Denver Water estimates that 345,000 AF of demand can be met from its collection system. This estimate includes the current size of Gross Reservoir (41,811 AF). The expansion of Gross Reservoir would allow for additional supply to be diverted during "average" and "wet" years to meet customer demand. Then, in dry years, the water in storage would be used to meet customer demand. On average, the expansion of Gross Reservoir would divert an additional 12,000 AF of water. However, in dry years, no additional water would be diverted. Denver Water is proposing to enlarge Gross Reservoir for two reasons (supply and flexibility) as explained in DEIS Chapter 1. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure

Comment Information	Comment	Comments and Response
		structural components including agricultural water transfer, municipal reuse, and various storage locations. These alternatives were narrowed to five practicable alternatives through a series of screens (DEIS Appendix B). ***Comment #1232-35*** *(ID 5337)**:*** *Drought is a natural concern for any water supplier because, if unprepared, increased conservation may not be easy to orchestrate and customers " ... would likely become frustrated by restrictions and with their water utilities as a result" (Ch. 4, p. 449), and sales would decrease. It is not particularly cynical to note that there is an inevitable "conflict of interest" between needing to sell water and needing to encourage customers to conserve it. [Ironically, wet summers have the same financial impact.] If the Proposed Action goes forward, Denver Water customers will not have to rely on "restrictions" and decreased water use in times of drought. In fact, the expansion of Gross Reservoir is primarily for storage in case of drought. This is a win-win for customers and Denver Water, but a lose-lose for Western Slope river basins and residents in the area surrounding the reservoir. Currently, Denver Water maintains a Strategic Water Reserve of 120,000 AF in storage at all times which " .. . provides a hedge against unforeseen circumstances such as infrastructure failure and higher than expected water use." This is 33% of projected supply of 345,000 AF in 2030 and far exceeds the recommended 10% "safety factor" suggested by Harvey Economics (Appendix A, memorandum of Aug. '04). The proposed expansion of Gross Reservoir, from 41,000 AF to 113,000 AF (or 118,000 AF) for use in a dry year or series of dry years, is clearly "overkill." With increased supply and storage capacity through other means, and with demand reduction through conservation and enhanced efficiency, which can be achieved in spite of growth, (see "New House New Paradigm" Western Resource Advocates, September '09), the Proposed Action is not justified. We are also*

Comment Information	Comment	Comments and Response
		concerned about the "moral hazard" of water bailout. The recent bank bailouts raised the issue of so-called moral hazard, whereby banks, knowing that they would be bailed out in the future, continue risky and ultimately destructive behavior. To protect their customers from possible drought restrictions, Denver Water proposes to ensure supply, regardless of drought-a drought bailout-while further endangering Western Slope rivers, ecosystems, quality of life of the Gross Reservoir community and the reservoir environment. As with the financial system, this is not a bogus concern. This "bailout" mentality is also evidenced by the failure of Denver Water to ask its customers to pay more than a "minor" amount for their insurance of plentiful water supply during drought conditions in spite of the enormous cost of expanding Gross Reservoir. The Corps must consider this "unintended consequence" in its evaluation of the Proposed Action. **Response #1232-35:** Denver Water maintains a 30,000 AF safety factor (i.e., Strategic Water Reserve). The safety factor is intended to protect against a host of uncertainties, including the constriction of existing supplies, a downward revision of the estimated safe annual yield from prolonged drought, challenges to historic operations of Denver Water's water rights, changes in administration of water rights resulting in adverse impacts to Denver Water's supplies, catastrophic loss of facilities, delays in the development of new supplies, or higher than anticipated demand forecasts. The 30,000 AF safety factor is reasonable to help account for these risks. A safety factor is a commonly accepted practice for major water utilities. ***Comment #1232-33*** *(ID 5336)**:*** *Section IV: Need for "flexibility" in the event of equipment failure or emergency. Denver Water runs three water treatment plants, one in the north system and two in the south. Chapter 1, p. 8, "During periods of low demand, it is possible for any of the three*

Comment Information	Comment	Comments and Response
		treatments plants to serve most areas within the CSA. In general, the Foothills WTP is the 'primary treatment plant used to meet treated water demands ... the Marston and Moffat WTPs are primarily peaking plants .. " Further, "The (south) system is designed for dual feed to any area to minimize service interruption and to maintain fire protection capability." In addition, Denver Water plans to improve the south distribution system so that both plants are running at full capacity by 2016. Nonetheless, Denver Water argues that the massive expansion of Gross Dam and Reservoir is necessary because a failure or maintenance shut-down of a south system plant would threaten reliable water supply. Denver Water further argues that with the expansion of the reservoir, the Moffat WTP would operate at the minimum output throughout the winter, "shifting" the burden slightly from the south plants. [Currently Gross Reservoir is low during winter months and the Moffat WTP shuts down from mid October until April.] It seems certain however, that the combined "dual feed" system and greater capacity of the Marston and Foothills WTPs reduces the need for more flexibility and balance between the north and south systems. The massive expansion of Gross Reservoir would be a minor contribution. In comparison to the negative impacts of the Proposed Action, this shift and added flexibility are insubstantial. Conclusion. While the importance of adequate water supply during a drought is clear, the DEIS does not address the equal importance of innovative conservation and efficiency to maintain adequate supply, in case of drought. Instead, the solution to the possibility of water shortage is "build a bigger dam." Secondly, the absolute necessity of having greater surplus in the north system is not demonstrated. The Corps must examine the "balance" and "flexibility" concerns to determine both the legitimacy of these "needs" and alternative solutions, before proceeding.

Comment Information	Comment	Comments and Response
		Response #1232-33: To address the two major issues (timeliness and location), Denver Water is pursuing the proposed Moffat Project to provide 18,000 AF per year of new firm yield to the Moffat Water Treatment Plant (WTP). The proposed Project would address both the overall near-term water supply shortage, and the imbalance in water storage and supply between the North and South systems. The need for 'balance' is substantiated in that during periods of high demand, the raw water being provided to the Moffat WTP simply runs out because there is not a sufficient amount placed in storage. Additionally, since 90% of storage and 80% of supply is provided by the South System (note that Denver Water's North and South raw water systems that provide water to the treatment plants are not connected), the raw water systems are currently severely imbalanced. This imbalance contributes to the North System's unreliability. Additionally, please refer to DEIS Section 1.4.4.1 Raw Water Availability to the Moffat WTP (System Reliability), which describes the potential for the Moffat Collection System to run out of water in a single dry year. The reliability issue in the North System is adequately described in the DEIS. The primary purpose of Denver Water's reservoirs is to store water during high flows so water is available during times of shortage. The capacity of the Marston and Foothills WTPs and the south distribution system do not add more water supply to the Moffat Collection System. The North System which serves the Moffat WTP and the South System which serves Foothills and the Marston WTPs are geographically distinct and are not physically connected. This imbalance results in an unreliable water supply for the Moffat WTP and Moffat Collection System raw water customers, system-wide vulnerability issues, and limited operational flexibility of the treated water system. In order to ensure that

Comment Information	Comment	Comments and Response
		customer demand can be met at a time when the Foothills and/or Marston WTPs are shut down for regular maintenance or emergency conditions, the Moffat WTP needs to be operated at a minimum “idle” rate of 30 million gallons per day (mgd) between mid-October and April. The reason for this rate is based on several factors. If the plant is completely shut down, it takes too long to prime the chemical feeds and prepare the filters before the plant could operate and meet customer demand. A minimum idle is also important for winter months during low customer demand. In addition, if the idle rate is too low, upsets in water quality could occur if the plant rate is increased too rapidly. The Moffat WTP needs to be capable of meeting full indoor demand in the CSA for several weeks in the winter of a dry year to account for routine and/or unexpected outages. This plant must be capable of operating at full capacity during this period. Although during periods of low treated water demand it is physically possible for any of the three treatments plants to serve most of the CSA, this is not a dependable operating practice. It is common to shut down one of the plants during portions of the winter for maintenance. The remaining two plans need to continue operating in case of an upset at either plant. Also, the two South System plants do not provide any water to the North System raw water contracts. To ensure efficient use of water system infrastructure and proper system flexibility, supply needs to be more evenly positioned and accessible to each treatment plant. In the spring of 2003 after the 2002 drought, the amount of usable water remaining in Denver Water’s major reservoirs totaled about 227,000 AF of which, only 12,000 AF (about 5%) was available to the Moffat WTP (whereas the Moffat Water WTP accounts for about 25% of Denver Water total treatment capacity). The lack of a reliable water supply accessible to the Moffat WTP in a single dry year illustrates both the need for new firm yield and a way to deliver it to the Moffat WTP. Adding 18,000 AF/yr of new firm yield to the

Comment Information	Comment	Comments and Response
		Moffat WTP would significantly improve the reliability of the Moffat Collection System. Water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in Table 1-2 of the DEIS and FEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities.

Comment Information	Comment	Comments and Response
		Comment #1232-18 *(ID 5335)**:*** *The DEIS uses an impact scale from negligible to major, and short-term to long-term. In general, the impacts of the Proposed Action on the environment and residents in the area are minimized. Some impacts, such as highway congestion, are described as minor and temporary. Nothing about a 4-5 year construction project is "temporary."* **Response #1232-18:** The Council of Environmental Quality (CEQ) regulations specify that the description of impacts in an EIS should identify how short-term uses of the environment would affect long-term productivity of resources. Short-term (temporary) is defined as the construction period through final reclamation, which is assumed to take up to 5 years. Long-term refers to the period after the Moffat Project is completed and mitigation measures are in place. Transportation impacts were classified at “temporary” since they would occur during the construction period. ***Comment #1232-29*** *(ID 5334)**:*** *Traffic in Coal Creek Canyon. There will be haul trucks, lumber trucks and worker vehicles up and down the canyon, in varying numbers, for over four years. This is a major impact, and is not "temporary" any more that being sick for four years would be temporary. The DEIS estimates a maximum of 44-74 haul truck trips/day (260 days a year, 8am-3pm or longer) and 202 worker vehicle trips/day. An estimate of number and frequency of trucks hauling fly ash and cement is not given. If trees are ground up it would take 2,174 truck-loads to haul away the debris (Tree Removal Plan, FERC application). Clearly the number of truck trips/day would be much higher than stated. To evaluate this impact, the DEIS must be precise. The claims, " .. number and duration of delays will be negligible" (Ch. 4, p. 341), with "No significant indirect impacts" are false. If stress is an indirect impact, then there will be significant indirect*

Comment Information	Comment	Comments and Response
		impact. The DEIS claims that the cost of producing sand-sized material on site is "very high" (Ch. 2, page 33) but gives no supporting data and assumes that 40% of the aggregate would have to be imported. In fact, mineral industry sources indicate that concrete sand has been produced on site for dams in Colorado. at Durango and Parker in a cost range of $2.50-6.50/ton. This compares with the typical cost of purchased concrete sand of $5.50-7.50/ton plus hauling costs. Hauling costs can easily amount to 50% of the material cost so the total cost of purchased sand could approximate $10/ton, significantly higher than sand produced on site. Producing sand on-site must be reevaluated. **Response #1232-29:** The CEQ regulations specify that the description of impacts in an EIS should identify how short-term uses of the environment would affect long-term productivity of resources. Short-term (temporary) is defined as the construction period through final reclamation, which is assumed to take up to 5 years. Long-term refers to the period after the Moffat Project is completed and mitigation measures are in place. Transportation impacts were classified as temporary since they would occur during the construction period. Capital costs for construction were developed from feasibility-level designs of the components for each alternative. These costs include materials, supplies, labor, contractor mobilization, and contractor overhead. The 60% portion of aggregate material that would be obtained from off-site sources consists of sand, fly-ash, and concrete. Denver Water cannot produce fly-ash and concrete on-site. As much sand-sized material as possible would be produced on-site; however, the exact amount of material needed and the amount available would not be known until the final dam design is complete and quarry activities begin. It is unknown at this time the volume of trees that would be hauled off-

Comment Information	Comment	Comments and Response
		site and the associated number of trucks. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the USFS, Colorado State Forest Service, and Boulder County. Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of FERC in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC. Denver Water does not plan to use a traditional slash pile-and-burn method because of air quality concerns and regulations. Also, Denver Water intends to landfill only a portion of the residue. ***Comment #1232-30*** *(ID 5333)**:*** *Traffic safety. The haul route through the narrow and winding canyon on Hwy 72 is of great concern. There are only two short passing areas, the shoulders are rough and narrow, there are few pull-outs on the uphill side of the highway. During the summer, Hwy 72 is popular with cyclists who use the highway for recreation and training. Groups of cyclists tour the canyon, hugging the side of the road as best they can; there is no bike lane and getting past bikers in a car is nerve-*

Comment Information	Comment	Comments and Response
		racking. The danger to bicyclists by constant haul truck traffic will escalate. However, the DEIS mentions bicyclists once, in passing, " .. temporary moderate adverse impact on recreation experience and safety to road bicyclists" (Ch. 4, p. 370). No more is said about that. A moderate safety impact is intolerable. There will be deaths. Hwy 72 is also a favorite route for motorcyclists, often traveling in groups and every summer tourists travel up and down the canyon. Enlarging the pull-out areas will not solve the traffic safety issue. Large, slow trucks going up and down the canyon will be an agonizing hazard that has not been addressed in the DEIS. The dimensions of the haul and logging trucks are not given; long vehicles may have difficulty navigating within the lane on many of the sharp curves. Also, the numerous sharp curves on Hwy 72 will require braking and down-shifting repeatedly; the canyon will be clogged with diesel smoke; people living along the road will be subjected to both smoke and noise. The dust impact along Gross Dam Road cannot be fully mitigated, and the road will become rutted-in this the DEIS is accurate. The Corps should not proceed with the permit process until traffic safety is addressed and mitigation measures described, (see Section VI, Mitigation). Due to the seriousness of this long-term impact, Denver Water should be required to reevaluate the possibility of using the railroad for hauling. Rail should be seriously considered, to avoid construction-related traffic hazards, energy consumption, air pollution and haul costs. Industry sources indicate that rail costs for bulk hauling of materials like sand could be as low as 10% of truck haul costs. In addition, railroad hauling makes sense because the plan is to stockpile the sand ahead of construction, thus reducing the use of the railroad. **Response #1232-30:** Denver Water met with Colorado Department of Transportation (CDOT) to discuss the potential increase in truck traffic on State Highway (SH) 72 during

Comment Information	Comment	Comments and Response
		construction as well as options for managing and mitigating Project-related traffic. Denver Water is evaluating alternatives for reducing construction traffic delays, including improving turnouts on SH 72 for slow-moving traffic. Denver Water will work with Jefferson and Boulder counties to address local traffic concerns. Denver Water hired an independent consultant to evaluate using the railroad to transport material to the site. The consultant found that using the railroad would not be feasible for the Project because of the technical, logistical, topographical and cost problems associated with unloading material at the existing railroad siding. Based on discussions with Union Pacific Railroad, the consultant determined that new infrastructure would need to be constructed to accommodate the rail cars and avoid conflicts with the coal train traffic on the mainline; handle unloading of the various materials into trucks, which would be needed to transport the material to the dam site; and avoid conflicts with traffic on Gross Dam Road. A new siding would be very difficult and expensive (approximately $20 million) to construct due to the constraints of the existing topography and would require a significant amount of material to be hauled to the siding by truck on SH 72. The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the National Ambient Air Quality Standards (NAAQS). Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare.

Comment Information	Comment	Comments and Response
		For purposes of EIS analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. Denver Water would comply with all applicable noise ordinances. Denver Water met with CDOT regarding establishment of a bike path. However, Denver Water's consultant and CDOT evaluated this option and determined that establishing a bike path would not be feasible due to safety concerns, and space and cost constraints. The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver Water. A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction. ***Comment #1232-28*** *(ID 5332)**:*** *Destruction of land. The destruction from the excavation of a quarry on the edge of the reservoir, which will not be reclaimed, is correctly described as "permanent and major." In all, 30 acres for the quarry will be destroyed and not reclaimed (Ch. 4, p. 403). Thirty eight acres of trees will be destroyed and 465 acres of land will be inundated. This entire project is contrary to the goals of the Federal Energy Regulatory Commission, Boulder County, and the National Forest Plan to maintain the land as "forested" and natural (Ch. 3, p. 294). 1. Winiger Ridge. The Proposed Action will destroy more than 230 acres of Winiger Ridge. There is a USFS trail along Forsythe Creek to the inlet of Gross Reservoir. Near the eastern end the trail skirts a lovely waterfall (see photo, Exhibit 1) and below is an area where people picnic at the finger of Gross Reservoir. All of this will be inundated. Importantly, it will also disrupt a major elk migration route that leads from the mountains above Eldora down along Winiger Ridge and onto the*

Comment Information	Comment	Comments and Response
		peninsula. Part of the herd winters in this area, as the residents can testify. The USFS Boulder Ranger District has long planned that the best use of Winiger Ridge is for wildlife conservation, and has managed roads, trails and fire mitigation with consideration of the elk population. Given the skittish nature of elk, there can be no doubt that the 4-5 year construction period of the Proposed Action in their wintering ground would be extremely harmful and would probably drive them from these grounds. This would be a major long-term impact but is not addressed as such in the DEIS. However, "NEPA requires each agency to undertake research needed to adequately expose environmental harms." Sierra Club v. Norton, 207 F.Supp. 2d 1310, 1335 (S.D. Ala. 2002). **Response #1232-28:** As described in FEIS Section 2.3.2.1, mitigation for the quarry site includes a range of techniques, such as rock sculpting (shaping the exposed rock to mimic a natural rock face) and selective planting to break up the scale of the exposed area and soften the contrasts with adjacent areas. The use of rock staining would also be considered, provided a determination by Denver Water that its application would not create any water quality concerns. An additional mitigation measure has been added to FEIS Section 5.7.7 to address reclamation of the quarry site. The proposed quarry site and any alternative quarry sites would be located on USFS and Denver Water land. Denver Water would work with the Corps and USFS to ensure appropriate revegetation of these sites based on site conditions. The waterfall would be inundated under all alternatives. Winiger Ridge would be used as a staging area for tree removal. The main access points would include SH 72, Gross Dam Road, and across Winiger Ridge using Forest Road (FR) 359 and County Road (CR) 68. Winiger Ridge is used by elk as severe winter range and winter concentration area, but is not identified as

Comment Information	Comment	Comments and Response
		elk calving habitat (see DEIS Figure 3.7-2). Additionally, the proposed Project would inundate only the edges of Winiger Ridge and the majority of habitat would remain intact. Tree removal would be concurrent with other construction activities and would not take place during winter months. Additional information has been added to the FEIS regarding the elk migration corridor near Gross Reservoir. An analysis of displacement effects to elk during construction has also been added to the wildlife analysis in FEIS Sections 3.9 and 5.9. ***Comment #1232-25*** *(ID 5331)**:*** *Inundation of plant communities. Two globally rare plant communities will be destroyed by inundation in Winiger Gulch and South Boulder Creek (Ch. 4, p. 232). The South Boulder Creek community is rated as "high significance" by Colorado Natural Heritage Program. 43% of the Winiger Gulch Potential Conservation Areas and 30% of the South Boulder Creek PCA would be inundated. The DEIS says, "Inundation of the central portions of these PCAs would have a moderate to major impact." Appendix K-27 states, " ... it is the opinion of the Corps that the activities will not cause or contribute to significant degradation of waters of the US including ... ecosystem diversity .." Nothing is said regarding the loss of biodiversity if these areas are destroyed, and the global and state ratings of these plant species are not given. In the case of wetland loss, the suggested mitigation-buying mitigation credits-does not solve the local loss. The DEIS should state the mitigation plan if credits are not available.* **Response #1232-25:** The Colorado Natural Heritage Program has revised its designation of Potential Conservation Areas (global and State ranks) in the Gross Reservoir area and the updated information is provided in FEIS Section 3.9. Additionally, more information is provided about Project

Comment Information	Comment	Comments and Response
		effects on biodiversity. The Corps conducted additional surveys for USFS sensitive plant species in the summer of 2010 and this information has been added to FEIS Section 5.10.1. Use of mitigation banks is a standard means of mitigating for wetland impacts. The Corps' and USEPA's compensatory mitigation rule (Federal Register Vol. 73, No. 70, April 10, 2008, 19670) establishes a priority for the use of available credits from an approved wetland mitigation bank over permittee-responsible mitigation. If credits are not available, an alternative would be creation of new wetlands in the South Boulder Creek watershed by Denver Water (see DEIS Appendix M). A mitigation plan for wetland losses would be finalized according to the Mitigation Rule before issuance of a Section 404 Permit. ***Comment #1232-27*** *(ID 5330)**:*** *The loss of 20,000-30,000 trees. 1. Tree removal is a major, permanent impact. From an environmental point of view, the fact that the land will be inundated with water is irrelevant. Unlike the DEIS, the FERC license amendment application by Denver Water includes considerable information on the complications of tree removal. In the Tree Removal Plan for Pool Enlargement, Feb., 2008, Map A - Slope, Pool Line & Stands, shows that about 50% of the 11.2 mile shoreline has a slope of 40% or greater. This is significant because "40% slope is a usual guide to help determine whether ground-based logging systems are appropriate ..." In other words, it will be necessary to use "complex tree removal systems" and to construct access roads. This includes helicopter yarding and hydro-axing due to steep slopes and heavy rock. The impacts on the human environment from this type of tree removal are not assessed. Noise disturbance will be significant and must be disclosed and mitigated. 2. Pine beetle warning. Everyone in the Coal Creek and*

Comment Information	Comment	Comments and Response
		South Boulder Creek drainages knows that the pine beetle is now over the continental divide and moving east. Some of us are already using expensive mitigation techniques, many of us have taken pine beetle workshops and know when to cut wood and how to dispose of it, and never do so when the beetles are flying. As the U.S. Forest Service reminds us, "Beetles fly in July." We are very cautious and very worried. We know that tree cutting is the best way to attract beetles but find no discussion of the pine beetle threat in the DEIS and therefore no plan to protect the area above the reservoir from this potential destruction and major long-term impact. Until the Corps can be assured that the destruction of trees at Gross Reservoir will be done at the right time of year, and will not increase the risk of pine beetle infestation, the Proposed Action should not be permitted. 3. The carbon footprint. The "carbon footprint" of the entire project is ignored in the DEIS. The Corps should reject Denver Water's application until this is addressed. It is inexcusable that up to 30,000 trees could be destroyed, tons of carbon put into the atmosphere from destruction of this carbon sink and use of many diesel engines on site, and diesel trucks, and the only concern in the DEIS is air quality. 4. Replanting following vegetation destruction. Mitigation will not begin until after Gross Reservoir is filled. Under the Proposed Action the reservoir would gain 18,500 AF/yr. If this represents actual net gain, it would take at least four years to fill the additional 72,000 AF (evaporation loss is approximately 1,000 AF/yr when full, Appendix H-8.1). During this time the unsightly visual impact remains, as well as the potential for erosion. The buffer zone and cleared forest and vegetation areas (465 acres) could remain barren for years. When the reservoir is full, planting will begin, with seeds primarily. In this mountain environment restoration will take many years to complete. A single heavy rain could destroy the process. During this time the area will not comply with the standards established by the Forest Service and Boulder County. The DEIS

Comment Information	Comment	Comments and Response
		should fully disclose this long-term impact. **Response #1232-27:** The forests at Gross Reservoir have not been affected by the current outbreak of mountain pine beetle in the Rockies, and have a moderate to good chance of not being affected. Therefore, it is not appropriate to forecast the potential changes in forest structure in the FEIS. Information about the relationship of the Project and mountain pine beetle has been added to the to the vegetation analysis in FEIS Sections 4.6.7 and 5.7. Furthermore, the proposed Project would not affect the current pine beetle outbreak. Denver Water would also work with the USFS to ensure that forest clearing and revegetation would be consistent with National Forest Standards. In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million over a five-year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will accelerate and expand the USFS' ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. Refer to FEIS Appendix G for a description of the Forests to Faucets Partnership and other cooperative efforts. Impacts from tree removal were addressed in the DEIS for transportation, air quality, noise, and visual resources, as well as for soils and biological resources. The effects of tree removal on noise were analyzed in DEIS Section 4.12.1. Impacts were assessed as

Comment Information	Comment	Comments and Response
		temporary and moderate, and would be similar to other construction noise. Greenhouse gas emissions from the Project have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. The calculations include on-road exhaust emissions from worker commuter vehicles, delivery trucks, and all other Project construction equipment. Detailed emission calculation spreadsheets and references are presented in FEIS Appendix I. Information about the carbon value of the trees at Gross Reservoir has been added to the vegetation analysis in FEIS Section 5.7. Denver Water evaluated several tree removal options. Limited road access to the reservoir shore, steep slopes and large rock outcrops complicate tree removal in most areas along the shoreline. Ground-based systems are proposed where roads exist or where temporary road construction is possible. Hydro-axing is proposed in the upper reaches of Forsythe Canyon due to steep slopes and heavy rock. Helicopter yarding is proposed where road access is not available or impossible to construct. The tree removal plan shows several possible landing sites for helicopters during tree removal and some of these are below the Lakeshore neighborhood. Due to the expense of using helicopters, Denver Water would keep the use of helicopters to a minimum. Denver Water would develop the final tree removal plan in cooperation with the USFS, Colorado State Forest Service, and Boulder County. Denver Water has proposed working with the USFS to identify recycling opportunities. The current Forest Management Plan is under the authority of FERC in a joint effort with the USFS. The Corps believes that Denver Water would comply with any conditions required by FERC. Revegetation of the cleared area above the inundation line would be done in the first appropriate season following timber removal, and there would not be a gap

Comment Information	Comment	Comments and Response
		of several years between clearing and revegetation. Within the expanded inundation area, there could be a gap of several years between timber removal and inundation. Removal of trees in the new inundation area would create a temporary major visual impact until the reservoir fills, which was described in DEIS Section 4.15. Control of wind and water erosion would be addressed in the CDPHE WQCD Stormwater Discharge Permit (refer to DEIS Section 4.1.7), and the APCD Fugitive Dust Control Plan (refer to DEIS Section 4.11.7), which would incorporate Best Management Practices to prevent soil loss during construction. Denver Water would work closely with the USFS to ensure that forest clearing and revegetation would be consistent with National Forest standards. ***Comment #1232-24*** *(ID 5329)**:*** *Noise. There is nothing "temporary and minor" about the sound of diesel engines, blasting and rock crushing, a concrete plant, air compressors, generators and earth moving equipment, day and night (two or three shifts at times), over four years. During concrete placement periods, four 12 cubic yard mixers and six 100 horsepower diesel engine/generator. sets would operate April/November, 24/7 for three years (Ch 2, p. 33). In total, 15 diesel/generator sets will be used, of 50-150 hp (Appendix I). The rock-crushing operation will run 24 hours a day, 20% of the time, five months a year for three years. The least costly and therefore most likely tree disposal method is to use air curtain destructors, with diesel engines. In the draft FERC license amendment application, "Tree Removal Plan for Pool Enlargement" it is estimated that it would take over four months with four destructors, operating 12 hours a day, seven days a week to burn the trees. The grinding whole tree method would take about three months. It is extremely unfortunate that the blasting, logging, crushing and the manufacture and pouring concrete must be done in the warm summer months. Summer is precious here, for recreation and enjoying the outdoors.*

Comment Information	Comment	Comments and Response
		This will be destroyed. To minimize this impact however, the DEIS claims, "At a distance greater than 50 ft. noise levels diminish rapidly." This is nonsense. As every boater knows, water surface conducts sound, and at this altitude sound carries easily through the dry air. Most significantly, sound travels upward. The residents living in the area all live above the reservoir. For some the noise may be muffled, for others it will be obtrusive, but for everyone it will be a constant background annoyance. Nonetheless, the DEIS excludes mitigation of the noise impact. Denver Water should not be permitted to expand Gross Dam until noise mitigation is addressed satisfactorily. **Response #1232-24:** All Gross Reservoir construction and operation activity would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the EPA, as summarized in FEIS Table 5.14-1. On-site construction noise may periodically exceed the EPA noise threshold of 70 decibels, A-weighted for public exposure, but the public would not be exposed to these levels on a continuous basis. The noise levels described in the EIS are predicted at distances of less than 50 feet from the source and would be temporary and remote. Sound travels omni-directionally (i.e., does not travel upward or downward), which means that it dissipates outward in all directions the further away from its source it travels. As a general rule, when the radius or distance that a sound wave travels has doubled, the sound level is reduced by 6 dB. ***Comment #1232-23*** *(ID 5328)**:*** *Air quality. "During the construction phase of the PA, air quality impacts would be minor" (Ch. 4, p. 350). Residents in the air space above Gross Reservoir have reason to be very concerned about potential poor air quality when a temperature inversion smothers the usual updraft and particulates and emissions from*

Comment Information	Comment	Comments and Response
		construction equipment concentrate in the low-lying reservoir and construction site. Because the average annual carbon monoxide and oxides of nitrogen are estimated to be above 100 tons per year, the Proposed Action would undergo a general conformity analysis (Ch. 4, p. 350). However, "average annual" level is irrelevant on bad pollution days and concentration would be much higher. In all, 40 pieces of heavy duty construction equipment, engine/generators and vehicles will be on site, at times running 24 hours a day. The Corps must examine this air quality problem and use meteorological models to determine pollution and the level of mitigation needed to reverse it, such as shutting down operations. 1. Implications of concrete production on air quality and hazardous materials. The DEIS fails to discuss the impacts of the on-site concrete batch plant operation. In the process of making concrete, hazardous particulate emissions can occur, including mercury and lead. Additional emissions from cement and fly ash storage can occur; high winds in the area increase the potential of this hazard. This should be fully examined and mitigation procedures described. **Response #1232-23:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, will require that construction activities conform to Colorado State Air Quality standards. A site-specific analysis of wind conditions in the Gross Reservoir area has been added to FEIS Section 3.13. The Fugitive Dust Control Plan that would be required

Comment Information	Comment	Comments and Response
		by the CDPHE Land Development Air Quality Permit is discussed in FEIS Section 5.13.7, and specific control measures are listed in Table 5.13-9. Relevant to the concern of high winds in the Gross Reservoir area is the control measure anticipated for active construction areas: “Under extreme conditions (e.g., high winds), temporary curtailment of earth-moving activity may be deemed necessary.” One of the control measures in CDPHE’s general land development permit GP03 is the following: “No earthwork activities shall be performed when the wind speed exceeds 30 miles per hour.” As discussed in FEIS Section 5.13.7, a Land Development Construction Permit would be required from the CDPHE APCD prior to beginning the land clearing activities. The operating terms and conditions of a Land Development Construction Permit include a Fugitive Dust Control Plan to control emissions of particulate matter (dust). The Fugitive Dust Control Plan would define specific control measures, such as those listed in FEIS Table 5.13-9, that would be complied with by Denver Water and its contractors throughout the Project to minimize the release of fugitive dust. Cement kilns are a significant source of mercury emissions, but concrete plants are not. The Project would not include a cement kiln; it would include a concrete batch plant. Concrete batch plants mix sand, aggregate, cement and water (either in a mix truck or a stationary mixer) to produce concrete. Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the primary pollutant of concern. Particulate emissions from the Project’s concrete batch plant would be controlled by devices such as baghouses (i.e., fabric filters used to filter exhaust air during pneumatic transfers of material). The air emissions from the concrete batch plant have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13.

Comment Information	Comment	Comments and Response
		Comment #1232-22 *(ID 5327)**:*** *Quality of life. The "quality of life" of Denver Water customers is repeatedly addressed under the No Action alternative, regarding the supposed hardships of water restrictions during drought that will ensue if Gross Reservoir is not expanded. Quality of life of those exposed to the construction of the dam, for years, is ignored. Driving in the canyon is already stressful and everything that is stressful about it will be compounded. Living with background noise is antithetical to our chosen life-style, and those of us who enjoyed boating and fishing on the reservoir will have to give that up for many years-major construction will occur in summer and no one would want to be in the area for recreation. In exchange for this, we find nothing in the DEIS to encourage us to support this project; we bear the brunt but the benefits are all downstream.* **Response #1232-22:** Construction-related impacts are addressed in the FEIS. FEIS Section 5.19 provides additional analysis and discussion as appropriate, regarding impacts to communities surrounding Gross Reservoir. ***Comment #1232-21*** *(ID 5326)**:*** *Home prices. In a single sentence, two impacts are minimized, "Construction activities would be temporary and would not affect home prices" (Ch. 4, p. 435). The DEIS gives no data to support this. We know that home-buyers in this area are savvy enough to investigate potential threats to the environment, and would not purchase anywhere near the reservoir for 4-5 years without a drop in home prices. A drop in home prices is an incentive to buy, and it would occur. Anyone living near the reservoir and planning to sell within the next seven years can anticipate a drop in home value. We find ii humorous and illustrative of the No Action Alternative bias that in Chapter 4, Socioeconomic impacts, (p. 508) we are warned that if the Proposed Action is not approved, property values will drop due to*

Comment Information	Comment	Comments and Response
		reduced recreational opportunities and negative visual impact of lowered water levels. The same logic was not applied to home prices during construction. In fact, "no action" is occurring now and home prices are stable or rising. **Response #1232-21:** An expanded analysis of impacts to communities surrounding Gross Reservoir was included in FEIS Section 5.19, including an evaluation of impacts to property values. ***Comment #1232-17*** *(ID 5325)**:*** *Western Slope rivers. The river basins on the Western Slope that feed Gross Reservoir are already being depleted. Adding 72,000 AF to Gross Reservoir from the Western Slope is a major impact. For example, in May-July, in average and wet years the upper Fraser river will be depleted 38%, with a decrease of 17% at the Granby gage. Overall, the Fraser River will be depleted by 80% of natural flow. The Fraser River is already ranked as the third most endangered river in the U.S. by American Rivers (Colorado Trout Unlimited). The entire river basin system will be depleted to varying degrees at varying times, affecting sediment disposition and flooding flows. Perhaps in this context, the concept of "demand hardening" is applicable. The rivers, and the people of the Western Slope, can only give so much. Denver Water has the legal right to take this water, if it has storage capacity i.e. expanded Gross Reservoir. Having the legal right however, does not make it right. We are in full support of the Western Slope groups who oppose the expansion of Gross Reservoir. They are the experts on direct impacts and cumulative impacts on these river basins and environment, and we leave that discussion to them.* **Response #1232-17:** DEIS Table 3.1-10 summarizes the effects of historical Moffat Collection System diversions on native flow at

Comment Information	Comment	Comments and Response
		the Fraser River at Winter Park gage. On average, Denver Water diverted approximately 50% of the average annual native flow at the Fraser River at Winter Park gage for the 30-year period from 1975 through 2004. The percentage of native flow diverted by Denver Water depends on the location in the basin. Denver Water would divert over 90% of the native flow with the Moffat Project on-line from some small tributaries that do not have bypass flow requirements. Denver Water would divert about 76% of the native flow at the Winter Park gage with the Moffat Project on-line. At the Granby gage located near the mouth of the Fraser River, Denver Water's average annual Moffat Collection System diversions represent approximately 41% of the native flow. Tables showing the percentage of native flow diverted by Denver Water under Current Conditions, Full Use of the Existing System and the proposed Moffat Project flow were added to FEIS Appendix H. Information gained from www.americanrivers.org indicates that American Rivers reviews nominations for the "America's Most Endangered Rivers" report from river groups and concerned citizens across the country. Per the website, the report is not a list of the nation's "worst" or most polluted rivers, but rather it highlights rivers facing management decisions. Since it appears that American Rivers' criteria for evaluation of river condition is subjective, that portion of the comment is simply noted. ***Comment #1232-16*** *(ID 5324)**:*** *Earthquake potential. Gross Reservoir lies in Seismic Zone 1, (Ch 4, p. 216) which refers to a 1/10 chance that an earthquake with an acceleration of 1/10 the acceleration of gravity would occur in the next 50 years. "In general, reservoirs with depths greater than 300 ft may potentially induce seismicity" and "The water loads at Gross Reservoir would not change water content in faults at depths of a few miles." The depth of the*

Comment Information	Comment	Comments and Response
		expanded reservoir will be 421 ft. (including the environmental pool). The conclusion in the DEIS is that the load of the reservoir would not affect water lubricated faults. Zone 1 refers to probability and acceleration but does not relate to depth of faults. To evaluate this potential, the DEIS must include fault depth and recalculate earthquake probability along the Livingston Sheer Zone and Fault, and the Copeland Fault, which runs under Gross Reservoir (see Exhibit 2). Unimaginable destruction would occur if an earthquake caused a breach in the dam. **Response #1232-16:** Section 4.3.1.1 of the DEIS states: "In summary, the proposed dam raise and expansion of Gross Reservoir may increase the potential for reservoir-induced seismicity, but not at substantial levels. Potential issues related to geologic resources will be addressed through geotechnical and seismic studies in the design and construction phases." Additionally, Table 4.20-1 states "Dam raise and expansion may slightly increase the potential for reservoir-induced seismicity." Detailed geotechnical and seismic studies would be conducted as part of the final design and construction phases of the Project. The Livingston Sheer Zone and Fault, the Rogers Fault, and the Copeland Fault are not mapped as potentially active and therefore unlikely to create earthquake activity near Gross Reservoir (Kirkham and Rogers 1981). Faults that have been identified in the vicinity of the dam have been deemed inactive so there is little chance that the activation of theses faults is possible. ***Comment #1232-14*** *(ID 5323)**:*** *Urban sprawl. The City of Arvada and local developers are eagerly waiting to begin developing a large tract near the base of Coal Creek Canyon. Although the Corps should address growth and development in the Environmental Impact Statement, under Cumulative*

Comment Information	Comment	Comments and Response
		Effects, growth and development are briefly mentioned but not in the context of impacts. And although the causal relationship between water availability and development is denied in the DEIS, (Ch. 4, p. 391) the relationship is causal when city ordinances make it so, and if not causal, water and development are correlated. In the Coal Creek Canyon area, development of land annexed by the City of Arvada and the expansion of Gross Reservoir, (with the 3,000 AF/yr of water for Arvada, contingent upon it), go hand in hand. Greater storage capacity in Gross Reservoir is not what the City of Arvada is looking for. The complex issue of urban and suburban development and growth is a serious concern to forward-looking managers; water-grab cannot go on forever. NEPA specifically states that achieving a balance between population and resource use is a goal Furthermore, "An EIS must contain a detailed discussion of "indirect effects" of a proposed project" 40 C.F.R., 1502.16. Indirect effects include effects that may induce growth and increases in population. Development management, in conjunction with water management, must be addressed by Denver Water before granting the permit for the Proposed Action. The DEIS must describe a "mitigation" plan through which development will not outpace water supply. These reasonably foreseeable indirect and cumulative effects must be fully explored and considered in the EIS. **Response #1232-14:** The Corps analyzed demand in the Project area based on demographic projections from various Federal and local sources. The Corps also independently evaluated the demand projections stated in Denver Water's IRP, which would help guide water management over the next 40 years. As stated in DEIS Section 4.14 and FEIS Section 5.16: "Several recent studies have suggested that there is no substantive causal relationship between population growth and the development of water, or vice versa. One such study is summarized as follows: The relationship between water and growth in the modern West is often misunderstood. Historically, it has

Comment Information	Comment	Comments and Response
		been assumed that water development was a necessary precursor to growth and, similarly, that a lack of water development could act as a deterrent to growth. While these premises may have been true at one time, recent experience in Colorado and other western states shows both ideas are now unsupportable. To the contrary, many of the regions showing the highest rates of growth in the West – from Douglas County, Colorado to Las Vegas, Nevada – show the opposite trend; growth is actually highest in some of the driest regions. Similarly the veto of the proposed Two Forks Dam on the East Slope by the EPA in 1990 certainly did not deter growth in the Denver Metropolitan area. Examples also suggest that an abundance of water is often insufficient to stimulate growth. The experience of Pueblo is illustrative. (Nichols et al. 2001). Numerous other studies analyzing the relationship between growth and water reach similar conclusions, such as Western Land Use Trends and Policy: Implications for Water Resources (Riebsame 1997); Atlas of the New West (Center of the American West 1997); and Water in the West: The Challenge for the Next Century (Western Water Policy Review Advisory Commission 1998). This growth issue was evaluated and dismissed by the Corps during the NEPA analysis of the Two Forks Dam and Reservoir Project in 1988 – "As a result of including the No Federal Action scenario, the Corps was able to answer a major question then being asked – would growth continue in the Denver Metropolitan area without Federal approval of a major water supply project. The evaluation of the No Federal Action scenario determined that growth would occur regardless of Federal action." (Corps 1998, Page 3-3 of the FEIS Metropolitan Denver Water Supply EIS, Volume 1.)" Independent studies, such as the State-wide Water Supply Initiative, commissioned by the State of Colorado anticipate high growth rates for Colorado,

Comment Information	Comment	Comments and Response
		including the East Slope. These high growth rates are likely to occur regardless of what water projects are constructed. If a project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. However, Arvada would still have this demand to be met without an identified supply. Therefore, the Corps believes it is a reasonable and conservative approach to include the 3,000 AF/yr in the predicted 2032 demand in the analysis. ***Comment #1232-58*** *(ID 5322)**:*** *Conclusion. The impacts of the Proposed Action to Western Slope rivers are significant and long-term; the impacts to the local environment and residents are numerous, over a 4-5 year period, with traffic safety being the greatest personal concern and destruction of land and trees being the greatest environmental concern. Negative impacts must be weighed against need. We find that the need and purpose of the Proposed Action by Denver Water are not substantiated, can be addressed through other programs, and ultimately lack vision. We conclude that the project, with so many negative impacts, is not justified.* **Response #1232-58:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1232-13*** *(ID 5321)**:*** *Section VI. Mitigation Plans and Other Considerations. The discussion of mitigation measures in an EIS "must be 'reasonably complete' in order to 'properly evaluate the severity of the adverse effects,' and the agency may not merely list potential mitigation measures." San Juan Citizens Alliance v. Norton, 586 F.Supp.2d 1270, 1290 (D.N.M. 2008). Throughout the DEIS, mitigation plans*

Comment Information	Comment	Comments and Response
		are sketchy or: "to be developed;" "standard construction practices;" "best management practices." No description of these "mitigation" practices is given. Furthermore, because many impacts are minimized, mitigation is not considered, such as the impact of construction noise. This is unsatisfactory and prevents thorough analysis of direct and indirect impacts. DEIS, Appendix M repeats the "conceptual" nature of the mitigation plan, i.e. procedural details are not provided, saying the detail will be submitted to the Corps prior to issuance of the Section 404 permit. Consequently, the public cannot fully review mitigation plans. The DEIS states, "All practicable steps have been taken to minimize potential adverse effects associated with construction and operation of the Proposed Action" (Appendix M2) but this is difficult to assess, and we doubt that "all" have been taken. Here we review the mitigation steps suggested in this document, and add to this important topic as follows: **Response #1232-13:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental and social effects according to NEPA and the Corps' CWA Section 404 regulations. Appropriate conceptual mitigation components were incorporated into FEIS Appendix M. If a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated as required and as appropriate. ***Comment #1232-52*** *(ID 5320)**:*** *Traffic safety. We believe that improving the few pull-out areas on Hwy 72 will not solve this problem. A paved bike lane should be added to both sides of the highway. An uphill passing lane should be added where possible. Truck drivers should be required to follow the canyon-courtesy practice of pulling over when a vehicle is following and has no opportunity to pass. During snow and icy conditions hauling should be stopped. There should be no hauling on weekends. Construction workers should be transported to the work site in vans*

Comment Information	Comment	Comments and Response
		and the park-and ride at the base of the canyon should be enlarged to accommodate more vehicles. **Response #1232-52:** The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on CR 77S, SH 72, SH 93, SH 128, U.S. Highway 287 (US 287), Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water met with CDOT regarding establishment of a bike path. However, Denver Water's consultant and CDOT evaluated this option and determined that establishing a bike path would not be feasible due to safety concerns, and space and cost constraints. The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver Water. A contractor hired by Denver Water would be in charge of construction activity, including safety compliance. Denver Water also plans to have staff on-site during construction. ***Comment #1232-12*** *(ID 5319)**:*** *Destruction of land and vegetation, including wetlands.*

Comment Information	Comment	Comments and Response
		The best "mitigation" is destroying less. This is achieved by all the alternatives described below including an expansion of Gross Reservoir but to a lesser extent. Tree cutting must not occur during July and August and trees must be hauled immediately. Seeding and replanting must be done by experts and managed professionally. **Response #1232-12:** Most of the areas of tree removal are on USFS land and Denver Water would consult with the USFS regarding appropriate removal methods and timing. Revegetation of the cleared area above the inundation line would be done in the first appropriate season following timber removal, and there would not be a gap of several years between clearing and revegetation. Within the expanded inundation area, there could be a gap of several years between timber removal and inundation, and no revegetation would be conducted below the new high water line. Denver Water would work with the USFS to ensure that forest clearing and revegetation would be consistent with National Forest standards. Removal of trees in the new inundation area would create a temporary major visual impact until the reservoir fills, which was described in DEIS Section 4.15. The revegetation plan for Gross Reservoir would be prepared after completion of the FEIS and prior to construction for those areas above the new high water line. ***Comment #1232-11*** *(ID 5318)**:*** *Noise. To mitigate this obtrusive impact mufflers on construction equipment and diesel engines must be used, operations should not exceed eight hours a day, and no construction work of any kind should be done on weekends or holidays. Sound barriers should be installed where possible.* **Response #1232-11:** All Gross Reservoir construction and operation activity

Comment Information	Comment	Comments and Response
		would be conducted within the applicable noise standards and guidelines as administered by Boulder County and the EPA, as summarized in FEIS Table 5.14-1. ***Comment #1232-10*** *(ID 5317)**:*** *Air Quality. Construction equipment and vehicles, and haul trucks should be "above and beyond" emission standards, using advanced technology to reduce emissions from all equipment. Air quality should be monitored, and all construction stopped during thermal inversions and other causes of pollution. Mitigation for the concrete batch plant emissions must be described and enforced.* **Response #1232-10:** The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the CDPHE APCD in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces NAAQS. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. A Corps' Section 404 Permit, if issued for one of the Moffat EIS alternatives, would require that construction activities conform to Colorado State Air Quality standards. For purposes of EIS analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. Denver Water would comply with applicable noise ordinances. Concrete batch plants mix sand, aggregate, cement and water (either in a mix truck or a stationary mixer) to produce concrete. Particulate matter, consisting primarily of cement and pozzolan dust but including some aggregate and sand dust emissions, is the

Comment Information	Comment	Comments and Response
		primary pollutant of concern. Particulate emissions from the Project's concrete batch plant would be controlled by devices such as baghouses (i.e., fabric filters used to filter exhaust air during pneumatic transfers of material). The air emissions from the concrete batch plant have been estimated and incorporated in the summary tables of construction emissions presented in FEIS Section 5.13. ***Comment #1232-9*** *(ID 5316)**:*** *Gross Dam Road and other dirt roads. Gross Dam Road dirt road will be rutted and turned into continual washboard. Denver Water should pay Bounder County for periodic repair. To prevent fugitive dust impacts, this entire road and all other dirt roads used for construction and logging, should be surfaced with high-quality road base immediately after the heavy construction equipment is in place. Residents along Gross Dam Road should be interviewed and their specific impacts from dust and traffic should be mitigated, as recommended by them.* **Response #1232-9:** As discussed in FEIS Section 5.13.7, a land development construction permit would be required from the CDPHE APCD prior to beginning the land clearing activities. The operating terms and conditions of a land development permit include a Fugitive Dust Control Plan to control emissions of particulate matter (dust). The Fugitive Dust Control Plan would define specific control measures, such as those listed in FEIS Table 5.13 9, that must be complied with by Denver Water and its contractors throughout the Project to minimize the release of fugitive dust. While a Corps' Section 404 Permit would require that construction activities conform to Colorado State Air Quality standards, the Corps would not require a compensation plan as a permit condition. Denver Water currently maintains Gross Dam Road

Comment Information	Comment	Comments and Response
		from the railroad track crossing to Flagstaff Road. During construction, Denver Water or its contractors would be responsible for maintaining all of Gross Dam Road. Denver Water would work with Jefferson and Boulder counties to address local traffic concerns. Denver Water would develop a plan to prevent and control erosion from stormwater runoff, such as erecting silt fences and sedimentation basins. This plan would meet CDPHE requirements. Denver Water also would comply with the CDPHE APCD to minimize dust during construction. Possible control measures include watering unpaved roads and enforcing speed limits for trucks on haul roads, among other measures. ***Comment #1232-8*** *(ID 5315)**:*** *It is not possible to compensate for 4-5 years of reduced quality of life. Nonetheless, residents could benefit from the expansion of Gross Reservoir by receiving a share of the 16% increase in hydroelectric generation, either through the utility companies or through direct payment by Denver Water. This should be pursued vigorously.* **Response #1232-8:** The Corps notes the comment. ***Comment #1232-7*** *(ID 5314)**:*** *Hazardous materials. Material Safety Data Sheets required by OSHA must be completed before the Corps makes a decision, not after. Likewise, the Hazardous Handling Plan should be developed and make public. Epoxies, concrete sealants and curing compounds have toxic substances and are messy to use. Full disclosure of risks and mitigation is essential.* **Response #1232-7:** Denver Water and its contractor would comply with all applicable Federal, State, and local regulations related to proper handling and disposal of hazardous materials. A Materials Handling Plan would be developed to

Comment Information	Comment	Comments and Response
		identify ways to properly handle and dispose of contaminated materials generated during the Project. For example, contractors would store fuel and other hazardous materials associated with construction activities away from water bodies and take appropriate precautions to avoid spilling hazardous materials or fuels during construction. ***Comment #1232-6*** *(ID 5313)**:*** *Disclosure. Disclosure of all cumulative impacts and other impacts "embedded" in the project, such as the affect of the Eldorado wastewater treatment plant on South Boulder Creek, is mandatory. The location and safety of holding ponds below the dam, and the exact location and impact of the auxiliary spillway should be described. The location of the private property to be purchased should be revealed, and the impact of this purchase and inundation on the Miramonte conservation area fully described, with mitigation plans (see Colorado Open Lands, CCA Projects). This purchase would further decrease the severe winter range for elk and must be disclosed. Changes to South Boulder Creek diversion canal must be disclosed. The DEIS does not disclose awareness and consideration of the Magnolia Environmental Protection Plan (MEPP), or the fact that the USFS closes roads west of the reservoir November to May. Boulder County Commissioners incorporated MEPP into the County Comprehensive Plan in 2000.* **Response #1232-6:** The EIS describes the potential cumulative effects that would result from the Moffat Project combined with other projects and activities based on NEPA and Section 404(b)(1) criteria. The regulations for implementing NEPA define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFFAs and regardless of what agency (Federal or non-Federal) or person undertakes

Comment Information	Comment	Comments and Response
		such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). This regulation refers only to the cumulative impact of direct and indirect effects of the Proposed Action and its alternatives when added to the aggregate effects of past, present, and RFFAs. The most likely impact to WWTP dischargers would be attributed to changes in flow, particularly decreases in flow. Two permitted wastewater dischargers exist downstream of Gross Reservoir to SH 93 (downstream of the Project area); the Eldorado Springs WWTP, with a maximum permitted flow of 0.032 mgd (0.050 cubic foot per second [cfs]), and the San Souci Mobile Home Park, with a maximum permitted flow of 0.018 mgd (0.028 cfs). San Souci Mobile Home Park is located downstream of Eldorado Springs. The PACSM modeling at Node 57180, South Boulder Creek near the Eldorado Springs gage, provided the lowest monthly flow of 6.9 cfs under Current Conditions (2006) and 8.3 cfs under Full Use with a Project Alternative (2032) conditions. Both dischargers are minor dischargers with flow rates less than the 100:1 dilution test as used by CDPHE for determination of anti-degradation. The lowest monthly flow would increase under the Proposed Action and no potential impact to either WWTP is anticipated from the Moffat Project. The dam and ancillary facilities were designed at a conceptual level for purposes of analysis and disclosure of potential impacts in the EIS. The Corps coordinated with the USFWS and CPW regarding the Fish and Wildlife Coordination Act and Colorado Revised Statute (C.R.S.) 37-60-122.2., including participation in State Wildlife Commission Workshops regarding Project effects on wildlife and recommended mitigation measures. This information is summarized in the Fish and Wildlife Coordination Act

Comment Information	Comment	Comments and Response
		Report located in FEIS Appendix G. It would have been premature to include the Fish and Wildlife Coordination Act Report in the DEIS because the Corps had not yet received feedback from the USFWS and CPW. The Fish and Wildlife Mitigation Plan (pursuant to C.R.S. 37-60-122.2) was developed by Denver Water and was adopted by the Colorado Wildlife Commission on June 9, 2011, and by the Colorado Water Conservation Board (CWCB) on July 13, 2011. Winiger Ridge would be used as a staging area for tree removal. The main access points would include SH 72, Gross Dam Road, and across Winiger Ridge using FR 359 and CR 68. Winiger Ridge is used by elk as severe winter range and winter concentration area, but is not identified as elk calving habitat (see DEIS Figure 3.7-2). Additionally, the proposed Project would inundate only the edges of Winiger Ridge and the majority of habitat would remain intact. Tree removal would be concurrent with other construction activities and would not take place during winter months. Additional information has been added to the FEIS regarding the elk migration corridor near Gross Reservoir. An analysis of displacement effects to elk during construction has also been added to the wildlife analysis in FEIS Sections 3.9 and 5.9. The recommendations in the Magnolia Environmental Preservation Plan (MEPP) were reviewed and are summarized in FEIS Section 3.16. The Moffat Project would not result in major conflicts with the recommendations contained in the MEPP and the MEPP considered the possibility of Gross Reservoir being enlarged (Magnolia Environmental Protection, Section 3.3, Surface Water, Subsection 3.3.1, Gross Reservoir).

Comment Information	Comment	Comments and Response
		Comment #1232-5 *(ID 5312)**:*** *At this point we raise another issue that is not included in the Proposed Action, even though, if the project goes forward, it determines the outcome. In the DEIS, the Proposed Action and all calculations associated with it, are based on increasing the height of Gross Dam by 125 feet, with 72,000 AF new water. In fact, the dam will be raised 131 feet, with 79,000 AF new water. In the draft license amendment application to FERC this is the Proposed Project, and the lower height is referred to as the alternative. The additional six feet are needed to accommodate the "environmental pool" of 5,000 AF/yr for the cities of Boulder and Lafayette, through an IGA with Denver Water, approved in February, 2010. This additional expansion is discussed in Appendix M of the DEIS, as "mitigation" although "compensation" is the better word. The language describing this arrangement is so convoluted that it is difficult to determine who owns the water and where it is coming from, but obviously it reaches the reservoir through the Moffat Tunnel and South Boulder Creek. Given that the height of the dam will be raised 131 feet, every calculation in the DEIS, from river flows and inundation levels to construction time, is incorrect. Can this be anything other than failure-to-disclose? Denver Water claims that because the extra 5,000 AF is not related to the purpose and need of the Proposed Action, it was not necessary to include it in the Section 404 permit application. We find it unconscionable that the U.S. Army Corps of Engineers, with its fastidious attention to detail, would allow the permitting process to go forward with this misrepresentation. The calculations must be corrected in the final EIS.* **Response #1232-5:** The Environmental Pool was included in DEIS Appendix M. The Corps evaluated the potential impacts of the Environmental Pool in relation to hydrology, aquatic biological resources, and recreational activities at Gross Reservoir; this analysis was also disclosed in Appendix

Comment Information	Comment	Comments and Response
		M. To provide clarification, a description of the Environmental Pool is included in FEIS Section 2.3.2.1. Additionally, a column was added to FEIS Table 2-11 that summarizes the Gross Dam and Reservoir features associated with the Environmental Pool. None of Denver Water's existing or future water supply would be stored in this 5,000-AF Environmental Pool. Denver Water is proposing to raise the dam an additional 6 feet beyond the proposed 125 foot raise. The proposed water elevation with this Environmental Pool would be 7,406 feet and the increase in dam height would be 131 feet. The storage and release of this additional water would be managed under an Intergovernmental Agreement (IGA) between Denver Water, Boulder, and Lafayette. ***Comment #1232-3*** *(ID 5311)**:*** *Section VII. Suggested Alternatives The projected shortfall, reaching 18,000 AF/yr by 2030, is over-estimated and the time period can be off-set by many years. During this time great progress will be made in efficiency and water conservation, thus reducing water demand and maintaining supply. Currently the key concern for Denver Water is storage, in case of drought; supply from the Western Slope and elsewhere is readily available. Denver Water's total usable water supply in reservoirs and other storage facilities far exceeds projected demand in 2030, not including the strategic water reserve of 120,000 AF (Water Watch Report). Nonetheless, without limits on population growth and development, we can imagine that eventually supply and demand will meet, but certainly not in 2016 as claimed. As noted above, Denver Water and the Corps decided that any approach to Denver Water's projected shortfall and other concerns must include (l) expansion of Gross Reservoir and (2) must generate 18,000 AF/yr firm yield. These criteria automatically excluded innovative conservation and enhanced efficiency as an alternative. Also excluded were viable alternatives such as 11a, Deep and Shallow Aquifer Storage of Reusable*

Comment Information	Comment	Comments and Response
		Supplies. This alternative was excluded because it was determined that it could not deliver 18,000 AF firm yield (Ch 2, p. 15) but it has the advantage of no loss from evaporation. In light of current data that negate the DEIS predictions for 2016 and 2030, the Corps should reassess all reasonable and practicable alternatives that were excluded. Alternatives 1-7 are based on no expansion of Gross Reservoir. If Gross Reservoir is not enlarged, then the contract with the City of Arvada for 3,000 AF/yr, contingent upon the expansion, is suspended and the supposed shortfall would be 15,000 AF/yr (with the possible exception of Alternative 2). Alternative 1 Invest in innovation conservation and efficiency tools and practices. Conservation and enhanced efficiency are the keys to sustainable water supply. Eventually every home and multifamily residence will have in-house grey water processing for outdoor use; every home and multifamily residence will have reverse osmosis membrane units and recycling systems to reuse household water for indoor needs; eventually toilets everywhere (currently the major indoor water use) will be an adaptation of airplane style vacuum toilets. Eventually grass will be engineered to be green and drought-resistant. Eventually Southwestern landscaping in Denver will be beautiful. Eventually the daily luxury shower will be a thing of the past-showerheads will have timers as well as flow control; perhaps the art of taking a one gallon Sun Shower sponge bath will be in. The list goes on (for example, see Exhibit 3, American Water's Visionary Project Receives Environmental Award, Water Online). The possibilities are limited only by lack of creativity and incentive. Because the timing of the projected shortfall is miscalculated, there is time to invest in conservation and efficiency. The idea that "the low hanging fruit of conservation" has already been picked is false. Mandatory conservation and efficiency practices for new development in particular, will be in place. In several years it will be possible to make projections of demand with greater accuracy. The estimated $353

Comment Information	Comment	Comments and Response
		million to expand Gross Dam and Reservoir could fund innovative conservation R & D that would serve Denver Water customers for years to come. A bigger dam cannot do this. If Denver Water can raise funds to build a bigger dam, it can raise funds for conservation and efficiency. The data suggest however, that funding to the level of $353 million is not needed. Perhaps it is fortunate that landscape watering accounts for nearly 25% of total water use. Reducing landscape watering by (1) watering less, through regulations and/or rate increases if necessary, and (2) by changing the landscape to xeriscape, through incentives if necessary, would solve the drought problem that the bigger dam is expected to solve. Alternative 2 Stand-alone Leyden Gulch Reservoir. This alternative is to construct a "stand-alone" Leyden Gulch Reservoir, which was an earlier consideration according to a Western Resource Advocates study in 2005: Another storage reservoir that Denver is considering building as an alternative, or in addition to the Gross Reservoir enlargement, would be off-channel at Leyden Gulch. This reservoir could be sized between 31,300-60,200 acre-feet. Denver could use Leyden Gulch simply as a storage alternative to Gross enlargement or it could be used in conjunction with its potable reuse strategy for blending raw and reused water. Either option would increase Denver's northern storage capacity so that it could increase Moffat collection system diversions in wet years into Front Range storage, ultimately for use in dry periods. http://www.westernresourceadvocates.org/facingourfuture/facingourfuture lowres.pdf p. 65 This alternative should be given serious consideration. As noted throughout this document, the estimates of demand for 2016 and 2030 are not substantiated, and with conservation and efficiency measures now in place and anticipated, water use can be significantly reduced and/or supplied by other means than Gross Dam and Reservoir expansion. Moreover, this alternative appears to offer flexibility to accommodate Denver Water's potable reuse strategy that the Proposed Action would

Comment Information	Comment	Comments and Response
		not. In addition to avoiding other significant impacts associated with Proposed Action, the Leyden Gulch alternative suggested here would avoid the environmental impacts associated with concrete production since an earthen dam is planned. Also, because borrow material would be obtained on site, the massive multi-year haul truck effort envisioned by the Gross Reservoir expansion would be eliminated with all of its energy consumption, pollution, noise and adverse traffic impacts. In addition, destruction of land and trees would be avoided. Based on cost estimates for Alternative 1c, (table Summary of Estimated Costs (2006), ES-42), and excluding the expansion of Gross Dam and Reservoir element of 1c, this suggested alternative appears to the least costly of all, with the exception of Alternative 1. The contract to provide the City of Arvada 3,000 AF/yr would probably be in effect and could be fulfilled by this new reservoir. Alternative 3 Alternatives 8a and 10a have a storage component and were selected for review because they are "reasonable and practicable." Alternative 8a increases reusable return flows with gravel pit storage of 20,000 AF, and 5,000 AF firm yield. Alternative 10a uses the return flows for storage in Denver Basin Aquifer, adding 20,000 AF, with 5,000 AF firm yield. A review of Figure 2-1, Appendix C 'suggests that by extending Conduit 0 south to the AWTP for 10a, it would be possible to use both water sources and storage facilities of 8a and 10a, carrying the treated water in the combined O and M conduit to Moffat WTP. This would give 10,000 AF firm yield. Alternative 4 Purchase and transfer of agriculture water, option contracts for temporary use of irrigation water rights and leasing are important elements in a comprehensive approach to water supply (see Exhibit 4, Mixed Water Portfolio Helps Thirsty Cities, Water Online). These "mixed portfolio" approaches do not involve excessive and costly storage, and are being developed and used, particularly in western states. In Colorado, the primacy of water for agriculture is historic, embodied in "senior" water rights. However,

Comment Information	Comment	Comments and Response
		urbanization and growth, and the nature of agriculture itself, have permanently changed the "landscape" and innovative transfer methods involving interruptible supply agreements and water banks are being studied (see Colorado Water Conservation Board, transfer grants program in progress). This alternative must be fully investigated by the Corps and Denver Water before proceeding. Transfer of agricultural water rights and gravel pit storage is a component of Alternative 13a, although the proposed yield is small. However, combined with 8a and 10a above, the total firm yield is 13,000 AF. In addition, the augmentation plans for the Lower South Platte River wells contribute to the overall effectiveness of this alternative. Alternative 5 This alternative combines the water sources of Alternatives 8a, 10a and 13a. However, rather than constructing the proposed AWTP, the Moffat WTP should be upgraded to process water from these sources to meet standards for potable water. Advantages: the impacts of the Proposed Action to Western Slope rivers and the Gross Reservoir environment are avoided; water sources are dispersed, unlike the Proposed Action which puts all the new water "in one basket;" funds are used to upgrade Moffat WTP rather than build a new AWTP; the issue of "balance" is solved because the additional firm yield is from the Moffat WTP; the time-period is 2.5 years, versus 3.1 years (Ch. 2, Table 2-16) or 4.1 years of construction with the Proposed Action. Alternative 6 Denver Water could use the $353 million not invested in expanding Gross Reservoir to upgrade and enhance the efficiency of the conduit/canal system for moving water :from the Marston WTP to the Moffat Water Treatment Plant. The two south system WTPs are linked as a "dual system" and in case of a shut-down of one, or an increased need during "peak" demand, water could be delivered to the north system. This approach would be less costly that some of the others suggested here. Alternative 7 As noted in Section 1, the DEIS describes a source of water that was not explored as an alternative-use of reusable water. This should be fully

Comment Information	Comment	Comments and Response
		described, including storage and conveyance facilities needed to take advantage of this supply. The amount of unused reusable supply varies year to year, but can be as much as 37,555 AF (Table 2-9). As demand increases and more water is diverted through Roberts Tunnel, more reusable water is available, thus enhancing supply. Alternative 8 Re-evaluate the 4:1 storage to firm yield ratio and "mandatory need" that Gross Reservoir supply 18,000 AF during a drought year. To meet this ratio and 18,000 AF/yr firm yield Gross Reservoir needs to have a capacity of 72,000 AF. Assuming that this must be above minimum pool level, the additional capacity would be 42,000 AF, not 72,000 AF as proposed. Gross Reservoir already holds 30,000 AF above minimum pool level. Raising the dam to provide an additional 42,000 AF would not eliminate the impacts but would decrease construction time and diversion of water from the Western Slope river basins would be reduced. In addition to the many adverse impacts, the Proposed Action and this alternative have a serious drawback, evaporation. At the Proposed Action level, Gross Reservoir would lose nearly 1,000 AF/yr. Given that the primary use is storage, this loss would be significant, year after year. **Response #1232-3:** Please refer to the reorganized format of the FEIS, which provides a revised baseline for a more detailed discussion of Project-related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other RFFAs) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components

Comment Information	Comment	Comments and Response
		(Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the “long list” passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water ([ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the Criterion LG1, “Must be Within the State of Colorado and in the South Platte and Mainstem Colorado River Basins.” The justification for this criterion, as stated in FEIS Table 2-1, is still valid: “Exploring options outside the South Platte and mainstem Colorado River Basin would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need.” This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in FEIS Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2

Comment Information	Comment	Comments and Response
		for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented. A stand-alone Leyden Gulch Reservoir alternative would not supply an annual firm yield of 18,000 AF based on the 4:1 ratio. Denver Water's firm yield and its system storage to firm ratio of 4:1 were estimated using PACSM. The study period used in PACSM extends 45 years from 1947 through 1991 and includes Denver Water's critical drought period from 1953 through 1957. The critical drought period is the time span from the last time the storage reservoirs are full to the time all reservoir water is completely depleted and the reservoirs begin to refill. Denver Water's firm yield was determined to be 345,000 AF/yr (not including the 30,000-AF Strategic Water Reserve) based on implementation of a non-potable recycling project, system refinements, and cooperative projects that Denver Water assumes would be fully implemented in the near-future. At this level of demand, PACSM results show that Denver Water's reservoirs were essentially full at the start of the critical drought period in 1953 and empty in April 1957 without causing any shortfall in meeting demand. Based on the total storage in Denver Water's system, its overall storage to firm yield ratio was estimated to be approximately 4:1. Four years is approximately the length of the critical period in Denver Water's PACSM simulation period; therefore, new reservoir storage must supply a firm yield over a 4-year period (a 4:1 storage-to-firm yield ratio). For example, the Proposed Action requires 72,000 AF storage at Gross Reservoir (4 times 18,000 AF firm yield). The storage required for the Proposed Action is estimated based on storage of surface water available from existing Denver Water rights for the Moffat Collection System. While a useful rule of thumb for storage in the Moffat Collection System, this ratio is

Comment Information	Comment	Comments and Response
		sensitive to the location of the storage within Denver Water's system and the source of supply and cannot be universally applied to other portions of Denver Water's system or to other water systems. The storage to firm ratio was adequately analyzed using PACSM. On average, Denver Water spends $15 million per year on existing system maintenance and improvements to efficiency. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures, including high-efficiency toilets. For example, from 2007-2009, Denver Water processed approximately 38,600 rebates saving nearly 1,000 AF of

Comment Information	Comment	Comments and Response
		water. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying inefficient toilets (more than 1.6 gallons per flush) from its Home Improvement Outlet stores as an attempt to save over 40 AF/yr. Since 1991, all toilets sold in the U.S. and Colorado have been “low-flow” toilets (1.6 gallons per flush). Ultra low-flush toilets (1.1 gallons per flush) are promoted by Denver Water and any homeowner who installs these toilets is eligible for a one-time rebate. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. While extending Conduit O down to the gravel pits in Alternative 10a would provide more storage, it would not provide more unused reusable effluent. On average, 8,000 AF of reusable water is unused and the additional

Comment Information	Comment	Comments and Response
		storage would not create 10,000 AF of yield. Alternative 13a was evaluated in the EIS and consists of a combination of water supplies derived from agricultural water rights transfers and Denver Water's Moffat Collection System. There are many factors, in addition to cost, which affect the amount of water that could be provided by agricultural water rights transfers. The availability of agricultural water rights is a key limiting factor that affects the amount of water that could potentially be derived from this supply. The ability to purchase a significant portion of the shares in these ditches is uncertain because of the competitive market for agricultural water rights and there is no guarantee there would be an adequate number of willing sellers under these ditch systems. Alternatives 5 evaluated during the screening process incorporated an interconnection between the South System and North System. In addition, portions of Conduit X were included in several alternatives (Alternatives 2, 3, 4, 5, 10c, 10d, 10e, and 11). However, Conduit X in its entirety was not considered in lieu of the South System interconnects included in Alternatives 5. South System interconnects from Dillon Reservoir to the Clear Creek drainage were included in lieu of Conduit X to address the location component of the Purpose and Need statement. New firm yield must be provided to the Moffat Treatment Plant to address reliability, vulnerability, and operational flexibility issues. The lower in the South Platte River system the interconnect is located, the more vulnerable and potentially less reliable Denver Water’s system is due to unplanned outages, including natural and manmade disasters. As discussed in DEIS Section 2.2, the Moffat WTP was built in 1937 and is designed to treat raw water that is of high quality. The proposed water sources for Alternatives 8a, 10a, 13a, and 14 are unused reusable water or agricultural water for the South Platte River.

Comment Information	Comment	Comments and Response
		Water quality of the South Platte River is considerably different than the Moffat Collection System raw water. Constituents in the South Platte River would pose problems for the Moffat WTP and it would have to be upgraded to provide advanced treatment capabilities. Upgrading the Moffat WTP to treat for these constituents would be costly and constructing a smaller (AWTP would be more cost effective as a smaller volume of water would be treated by the higher cost treatment method. Denver Water's Collection System is vulnerable to natural and manmade disasters and system failures because approximately 90% of available reservoir storage and 80% of available water supplies rely on the unimpeded operation of Denver Water's South System. Loss of operation of any portion of the South System could require more water from the Moffat Collection System to meet customer's water demands. If an interconnect was located downstream of several of Denver Water's critical South System facilities, including Roberts Tunnel, Dillon Reservoir, Eleven Mile Reservoir, Cheesman Reservoir, Antero Reservoir, and Strontia Springs Reservoir, Denver Water's system would remain vulnerable to unplanned outages. Loss of operation to these South Platte River facilities could affect the ability to deliver water to a downstream interconnect. Alternatives that were formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14; therefore, almost 50% of the alternatives formulated include some component of reuse. These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The primary difference between these alternatives and Alternatives 6a and 6b is that treated reusable water is not stored in

Comment Information	Comment	Comments and Response
		Gross, Ralston or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat WTP. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The minimum pool level (i.e., dead pool) at Gross Reservoir cannot be used as a water source because it serves a distinct operational purpose. The bottom of Gross Reservoir has a narrow V-shaped canyon which would allow the sediment plume at the inlet to Gross Reservoir to move towards Gross Dam if mobilized. Past studies have shown that the top level of this sediment plume is at an elevation of 7,169 feet (12,000 AF of storage). If the reservoir is drawn down below this point, it is likely the sediment plume would become mobilized and move closer to the outlet works of Gross Dam. If the sediment plume reaches Gross Dam, the outlet works could become plugged. Additionally, the outlet works valves and hydro-power turbines are not designed to pass the material in the sediment plume and extreme damage to the components would likely

Comment Information	Comment	Comments and Response
		occur if the sediment plume were to pass through the outlet works. From a dam safety perspective, the existing reservoir drawdown limitation of 7,169 feet (12,000 AF) should remain in effect to prevent the sediment plume from becoming mobilized. ***Comment #1232-4*** *(ID 5310)**:*** *The Proposed Action, for which Denver Water is seeking a Section 404 permit from the US Army Corps of Engineers is based on outdated and possibly invalid data, unfounded assumptions and failure to accurately incorporate the power of conservation and efficiency measures in supply and demand projections. New sources of water are not included in the projections. The "shortfall" foundation upon which the "mandatory" 18,000 AF/yr firm yield and the Proposed Action are based, is not substantial and does not warrant a Section 404 permit. The contradiction of basing the Proposed Action on a projected annual shortfall, but planning for storage, casts serious doubt on the rationale for the project. Furthermore, the Proposed Action fails to meet the Clean Water Act guidelines as the least environmentally damaging practicable alternative. The need for "flexibility" and "balance" between the north and south systems is over-stated and can be achieved through alternative means. Weighed against the serious and long-term impacts to the Western Slope rivers, and to the environment and community affected by the construction, the proposed massive expansion of Gross Reservoir, primarily for storage, cannot be justified. "What if' drought and equipment failure scenarios do not provide sufficient reason to permit the Proposed Action. In addition, the negative impacts of the Proposed Action are consistently minimized and mitigation plans are not provided, or are sketchy. Failure to adequately address traffic safety during construction is a key example.* **Response #1232-4:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is

Comment Information	Comment	Comments and Response
		to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The water demand estimates and projections provided by Denver Water were evaluated independently and in considerable detail by the Corps. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. It was concluded that the demand forecasting model was appropriate for the EIS and its reliability sound. In 2010, Denver Water updated its water demand projections based on the most recent population and demographic projections available from Denver

Comment Information	Comment	Comments and Response
		Regional Council of Governments (DRCOG), the Colorado State Demographer's Office and other relevant sources of demographic data. These data sources are widely recognized and used by numerous Federal, State, local and private agencies, as described in the technical memoranda included in DEIS Appendix A. The Corps has no reason to discount these projections as biased. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Corps evaluated compliance with NEPA and CWA Section 404 regulations (FEIS Appendix K) and has not yet determined the LEDPA. The final LEDPA determination will be made as part of the combined FEIS/Section 404 Permit/Record of Decision. Denver Water's Conceptual Mitigation Plan is contained in FEIS Appendix M and incorporates the State of Colorado's approved Fish and Wildlife Mitigation Plan for the Project. The Corps assumes that construction contractors would comply with health and safety plans and codes instituted by their respective companies and Denver Water. A contractor hired by Denver Water would be in charge of construction activity, including traffic and safety compliance. Denver Water also plans to have staff on-site during construction. ***Comment #1232-2*** *(ID 5309)**:*** *We request that the US Army Corps of Engineers deny the Section 404 permit. Denver Water should go back to the drawing board with current water use data, accurate demographic and economic assumptions, and make innovative conservation and enhanced efficiency the*

Comment Information	Comment	Comments and Response
		most reasonable, common-sense and cost-effective approach to water supply, now and as the population grows. Western Slope rivers and streams cannot continue to be the water-bearer for Front Range development. The "build a bigger dam" approach is antiquated and the purpose and need for the expansion of Gross Reservoir have not been demonstrated. **Response #1232-2:** Prior to making decisions on the proposed Moffat Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. The Purpose and Need Statement is clearly one unique and developed purpose as follows: "… to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers." Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the four issues would jeopardize Denver Water's ability to meet projected demand needs. The Moffat Project is being developed to address three problems: 1) The lack of a reliable water supply for the Moffat WTP and raw water customers upstream of the treatment plant; 2) The imbalance in Denver Water's raw water supply system; and 3) A shortfall in the entire supply system in the near-future for meeting customer needs as growth occurs in the CSA. All three of these problems are addressed with one solution: the addition of 18,000 AF of new firm yield available to the North System.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
		Comment #1232-1 *(ID 5308)**:*** *Please keep us apprised of and notify us of all developments and future public notices pertaining to this project. Thank you again for the opportunity to comment.* **Response #1232-1:** Project information is available at the following two links: http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado/EISMoffat.aspx and http://www.denverwater.org/SupplyPlanning/WaterSupplyProjects/Moffat/.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1493 Fritz Holleman, Attorney Porzak Browning and Bushong LLP, on Behalf of Chimney Rock Ranch 929 Pearl Street, Suite 300 Boulder, CO 80302 and Eli A. Feldman, Attorney Porzak Browning and Bushong LLP, on Behalf of Chimney Rock Ranch 929 Pearl Street, Suite 300 Boulder, CO 80302	*FROM CHIMNEY ROCK RANCH.* MOFFAT COLLECTION SYSTEM PROJECT; Public Comments Concerning the Draft Environmental Impact Statement dated October 30, 2009 ("DEIS") and compliance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-70f, and the Clean Water Act ("CWA"), 33 U.S.C. §§ 1251-1387.	***Comment #1493-5*** *(ID 1416)**:*** *We are writing on behalf of Chimney Rock Ranch ("CRR") to express our serious concerns with the sufficiency of the Moffat Collection System Project ("Project") DEIS. In general, CRR believes that the DEIS relies on stale hydrologic data and outdated water demand projections, fails to adequately scrutinize the purpose and need for the Project, and fails to objectively consider alternatives to the Project. In so doing, the DEIS grossly understates the adverse environmental impacts, which CRR will suffer first-hand, and overstates the benefits of the Project. The DEIS fails to comply with the basic procedural requirements of NEPA, and further fails to prove substantively under the CWA that the Project is (a) the least damaging practicable alternative ("LEDPA") and (b) in the best interest of the Nation. CRR urges the Corps to reconsider the need for the Project, consider other alternatives if any need remains, expand the scope of the impacts analysis, collect more data, update its hydrologic modeling and Denver's demand projections, and prepare a supplemental EIS that permits informed public comment on the Project. Only a supplemental EIS can provide sufficient information to determine whether a Section 404 permit can be issued.* **Response #1493-5:** Supplemental DEIS Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document was not prepared for the Moffat Project.

Comment Information	Comment	Comments and Response
	Porzak Browning & Bushong LLP Attorneys • at • Law *Please direct all correspondence to the Boulder office* Glenn E. Porzak Michael F. Browning Steven J. Bushong P. Fritz Holleman Kristin Howse Moseley Kevin J. Kilmer Thomas W. Korver* Eli A. Feldman Katherine A. D. Ryan Karen L. Henderson *Also Admitted in Wyoming *Boulder Office:* 929 Pearl Street, Suite 300 Boulder, CO 80302 303 443-6800 Tel. 303 443-6864 Fax. *Vail Office:* 953 S. Frontage Road W. Suite 202 Vail, CO 81657 970-476-5295 Tel. 970-476-5309 Fax. March 17, 2010 VIA EMAIL and HAND DELIVERY Mr. Scott Franklin Moffat EIS Project Manager U.S. Army Corps of Engineers 9307 South Wadsworth Blvd Littleton, CO 80128 RECEIVED MAR 2010 Re: MOFFAT COLLECTION SYSTEM PROJECT; Public Comments Concerning the Draft Environmental Impact Statement dated October 30, 2009 ("DEIS") and compliance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-70f, and the Clean Water Act ("CWA"), 33 U.S.C. §§ 1251-1387. Dear Mr. Franklin: We are writing on behalf of Chimney Rock Ranch ("CRR") to express our serious concerns with the sufficiency of the Moffat Collection System Project ("Project") DEIS. In general, CRR believes that the DEIS relies on stale hydrologic data and outdated water demand projections, fails to adequately scrutinize the purpose and need for the Project, and fails to objectively consider alternatives to the Project. In so doing, the DEIS grossly understates the adverse environmental impacts, which CRR will suffer first-hand, and overstates the benefits of the Project. The DEIS fails to comply with the basic procedural requirements of NEPA, and further fails to prove substantively under the CWA that the Project is (a) the least damaging practicable alternative ("LEDPA") and (b) in the best interest of the Nation. CRR urges the Corps to reconsider the need for the Project, consider other alternatives if any need remains, expand the scope of the impacts analysis, collect more data, update its hydrologic modeling and Denver's demand projections, and prepare a supplemental EIS that permits informed public comment on the Project. Only a supplemental EIS can provide sufficient information to determine whether a section 404 permit can be issued. In addition to the comments set forth herein, CRR supports and incorporates herein the comments and concerns of Grand County, Summit County, the Colorado River 37021 1	However, additional data was collected and analyzed for the following resources in the FEIS: water quality (Section 5.2), geomorphology (Section 5.3), groundwater (Section 5.4), aquatic biological resources (Section 5.11), wetland and riparian areas (Section 5.8), wildlife (Section 5.9), sensitive species (Section 5.10), air quality (Section 5.13), and socioeconomics (Section 5.19). The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. LEDPA The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Corps evaluated compliance with NEPA and the CWA Section 404 regulations (FEIS Appendix K) and has not yet determined the LEDPA. The Final LEDPA determination will be made as part of the combined EIS/404 Record of Decision. Public Interest Review As stated in 33 CFR Part 320, which are, in part, the Federal regulations governing the Corps' review of Section 404 of the CWA, the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. That decision reflects the national concern for both protection and utilization of important resources.

Comment Information	Comment	Comments and Response
	Water Conservation District, Trout Unlimited, the Eagle Park Reservoir Company, the Clinton Ditch and Reservoir Company, and the comments contained in the "Joint Rebuttal Report" submitted by several west slope entities (collectively, "Public Comments") which have been submitted to the Corps under separate cover. **Ranch Description** CRR begins about one mile downstream of the existing Windy Gap Reservoir on the Colorado River. CRR owns land on both sides of the Colorado River for about 5 miles. As currently configured, the ranch is a combination of other historic ranches. The earliest irrigation water rights for the ranch have a 1904 priority date. The historic irrigation and cattle ranching operations continue at CRR. The Colorado River is the heart of the ranch. It is the source of the irrigation water, an extraordinary aesthetic asset, and, importantly, is designated a "Gold Medal" trout stream by the Colorado Division of Wildlife ("CDOW") in the vicinity of the ranch. The "Gold Medal" designation is reserved for "the highest quality cold water habitats that have the capability to produce many quality size (14 inches or longer) trout."[1] **CRR Comments on DEIS** The purpose of an EIS prepared under NEPA is to accurately inform both the public and federal decision makers concerning the environmental impacts of any proposed federal action. *See Baltimore Gas & Elec. Co. v. Natural Resources Defense Council*, 462 U.S. 87, 97 (1983); *Sierra Club v. United States Dep't of Energy*, 287 F.3d 1256, 1262 (10th Cir. 2002). For all of the reasons below and those set forth in the Public Comments, CRR is concerned that the DEIS serves neither of these purposes. **1. The cumulative impacts analysis in the DEIS is inadequate.** The Project will cause significant degradation to the Colorado River, the trout fishery and the environment in the vicinity of CRR. Not only will the Project itself have adverse impacts on the aquatic ecosystem, it is only one of several transbasin diversion projects that combine to drastically reduce streamflow. The DEIS barely acknowledges, and quickly dismisses the Project's impacts on aquatic resources when it states, "overall, the cumulative effects of reasonably foreseeable projects and the Moffat Project on surface water is minor..." (DEIS 5-39). Yet, the DEIS also states that in combination with the Windy Gap Firming Project ("WGFP") and Shoshone Call reduction, the average annual flows of the Colorado River will decrease by approximately 60,600 AF or 9% from the baseline condition. (Id.). The DEIS also acknowledges adverse impacts on water quality, sediment transport and water temperature. (DEIS 5-40). Contrary to the conclusion of the DEIS, however, these are hardly "minor" impacts, particularly when viewed in light of the hundreds of thousands of AF already transported out of the basin to [1] COLORADO WILDLIFE COMMISSION POLICY: "Wild and Gold Medal Trout Management," September 18, 1992, rev'd June 12, 2008. 37021 2	Factors relevant to the proposed Project that were considered in the public interest include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Data The model study period is suitable for estimating hydrologic effects associated with the Project alternatives because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period to include more recent data would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under its existing water rights without additional storage in its system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950s drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950s drought than at the end of 2002. The model study period used in the EIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The EIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage.

Comment Information	Comment	Comments and Response
	the degradation of the river, the ecosystem, and CRR under pre-existing transmountain diversion projects. In this regard, the DEIS contains an insufficient discussion of the serious environmental impacts that Colorado-Big Thompson, Windy Gap, existing Moffat project and other transmountain diversion projects have already had on the Colorado River and its environs. According to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and the Moffat Project are implemented. CRR is at ground zero for the impact of these past diversions. CRR has witnessed the degradation of the fishery over the past thirty years, including increased nutrient loading, decreased peak flows, decreased minimum stream flows, increased temperatures resulting in fish mortality, water quality degradation, didmyo (or "rock snot" – a nonnative algae creating thick, slippery mats on what was formerly a rock and gravel river bottom), and the virtual elimination of the stonefly *Pteronarcys californica* over the pasty thirty years.[2] CRR has also suffered the devastating impact of the whirling disease ("WD") epidemic and the associated complete loss of the Colorado River rainbow trout fishery in the vicinity of the ranch. After this sustained assault on the aquatic ecosystem, another 60,600 AF of depletions could very well cause the ecosystem to pass the tipping point. The past diversions and their impacts are not adequately addressed in the DEIS. It is the Corps' responsibility to evaluate "piecemeal changes [that] can result in major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems." § 404(b) 230.11.g.1; *see* 40 C.F.R. § 1508.7 ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . .); *see also Lands Council v. U.S. Forest Service*, 395 F.3d 1019, 1028 (9th Cir. 2004). Unless and until these cumulative impacts are measured and described in detail in a supplemental EIS, they cannot be properly accounted for in the decision making process. Moreover, the DEIS focused primarily on the average monthly streamflows to evaluate impacts to aquatic resources. Since the Project is designed to capture the highest flows in wet and average years, CRR suspects that it would have much more significant impacts on the peak flows than it has on the average flows. Major reductions of the already constrained peak flows are perhaps more important indicators of stream health than average flows. Similarly, the focus on average monthly streamflows may mask impacts to minimum stream flows, which, like peak flows, must be evaluated [2] Attached as **Exhibit A** hereto is "A Review of Aquatic Invertebrate Studies and Fish Population Survey Data for the Colorado River in Middle Park, Colorado from 1908 through 2009: What Does it Tell Us," by R. Barry Nehring et. al., CDOW, dated January 2010. Attached as **Exhibit B** hereto is "Benthic Field Studies For the Windy Gap Study Reach, Colorado River, Colorado, Fall, 1980 to Fall, 1981," by Dr. Robert C. Erickson, Ph.D., dated June 1983. 27021 3	For example, the EIS study period includes the mid-1950s drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980s. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. ***Comment #1493-6*** *(ID 1417)**:*** *In addition to the comments set forth herein, CRR supports and incorporates herein the comments and concerns of Grand County, Summit County, the Colorado River Water Conservation District, Trout Unlimited, the Eagle Park Reservoir Company, the Clinton Ditch and Reservoir Company, and the comments contained in the "Joint Rebuttal Report" submitted by several west slope entities (collectively, "Public Comments") which have been submitted to the Corps under separate cover. Ranch Description CRR begins about one mile downstream of the existing Windy Gap Reservoir on the Colorado River. CRR owns land on both sides of the Colorado River for about 5 miles. As currently configured, the ranch is a combination of other historic ranches. The earliest irrigation water rights for the ranch have a 1904 priority date. The historic irrigation and cattle ranching operations continue at CRR. The Colorado River is the heart of the ranch. It is the source of the irrigation water, an extraordinary aesthetic asset, and, importantly, is designated a "Gold Medal" trout stream by the Colorado Division of Wildlife ("CDOW") in the vicinity of the ranch. The "Gold Medal" designation is reserved for "the highest quality cold water habitats that have the capability to produce many quality size (14 inches or longer) trout."[1] FOOTNOTE: [1] COLORADO WILDLIFE COMMISSION POLICY: "Wild and Gold Medal Trout Management," September 18, 1992, rev'd June 12, 2008.*

Comment Information	Comment	Comments and Response
	independently. Accordingly, CRR urges the Corps to take a hard look at the specific impacts of the Project on peak flows and minimum stream flows. CRR notes that in response to the WD crisis, it has worked extensively with CDOW and Colorado State University on numerous studies and programs to address WD and habitat issues in the Colorado River in the vicinity of the ranch. Most recently, CRR is working with CDOW on the introduction of a new strain of rainbow trout with greater resistance to the disease. CDOW hopes to use this new strain as brood stock in the rest of the State to replace the rainbow trout lost to WD. While CRR is doing everything within its power to reclaim the health of the fishery, all of those efforts may be futile if the average streamflow is slashed by another 9%, and peak flows and minimum stream flows precipitously decline. Finally, before committing irretrievable resources to this Project, the Corps should evaluate its impacts in connection with the impacts of the reasonably foreseeable WGFP in a single combined EIS. This is the only way to guarantee a complete understanding of the cumulative impact these future projects will have on stream flow and the environment in the vicinity of CRR. **2. The DEIS fails to meaningfully consider any alternatives other than the enlargement of Gross Reservoir.** The statement of purpose and need defines the objectives in terms so unreasonably narrow that they can be accomplished only by one alternative: the enlargement of Gross Reservoir. In keeping with this predetermined result, every single alternative in the DEIS, except for the "No Action Alternative," includes a major enlargement of Gross Reservoir - from 40,700 AF up to 72,000 AF. These are not mutually exclusive alternatives, but minor variations on one and the same Project. Given that the "heart" of an EIS is the document's consideration of alternatives, and this DEIS fails to consider any alternatives other than the enlargement of Gross Reservoir, it is inadequate. 40 C.F.R. § 1502.14. **3. The No Action Alternative grossly mischaracterizes the conditions that will exist if no action is taken.** Denver will not run out of water in 2016 if no action is taken. In finding that Denver is in danger of running dry within six years, the Corps is overly reliant on Denver's own models and projections of supply and demand, including the 2002 IRP and the PACSM model. The Corps' reliance on the applicant's data and predictions, without sufficient independent evaluation, undercuts the entire DEIS by presenting an inaccurate baseline from which to measure the impacts of the Project. 40 C.F.R § 1506.5(c). Consequently, even the serious impacts that are explained in the DEIS to the average annual river flow, the water quality and temperature, and the fish habitat are all underestimated. 37021 4	**Response #1493-6:** The Corps notes the comment. ***Comment #1493-2*** *(ID 1418)**:*** *The purpose of an EIS prepared under NEPA is to accurately inform both the public and federal decision makers concerning the environmental impacts of any proposed federal action. See Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, 462 U.S. 87, 97 (1 983); Sierra Club v. United States Dep't of Energy, 287 F.3d 1256, 1262 (10th Cir. 2002). For all of the reasons below and those set forth in the Public Comments, CRR is concerned that the DEIS serves neither of these purposes.* **Response #1493-2:** As required by NEPA, the Corps provided for an open dialogue with agencies and the public that was initiated early in the EIS process to determine the scope of significant issues to be addressed in the document. Table 6-1 provides a list of agencies and organizations involved in that dialogue. To identify the issues and concerns related to the Moffat Project, the Corps provided agency and public scoping as follows: • An agency scoping meeting was held on October 7, 2005 at the Corps-Denver Regulatory Office in Littleton, Colorado, to review the Moffat Project Purpose and Need, preliminary alternatives, key environmental issues and agency concerns, and data availability and data/field study needs. Representatives from the following agencies attended the meeting: Corps – Omaha District and Denver Regulatory Office; EPA; FERC; USFS; CDPHE WQCD, and Grand County.

Comment Information	Comment	Comments and Response
	The DEIS is wholly dependent on the PACSM model for its estimates of environmental impacts. PACSM is a hydrologic model that was designed and run by Denver, based on hydrologic data from the study period of 1947 through 1991. First, PACSM carries potential biases due the fact that it was designed and run by the Project proponent. Second, by the time the Project would go online in 2016, that data would be 25 years old. Third, the data set only includes 44 years of record. In this regard, it fails to account for recent variability in climate and hydrologic conditions which are known to have occurred since 1991 and which may continue in the future. Evidence recently presented by the Colorado Water Conservation Board indicates that drier periods than shown in the recent record may have occurred in the past and may be likely to occur in the future, notwithstanding any specific impacts from climate change. Until a new DEIS with an analysis of the impacts of the Project against an accurate baseline is presented, including the best available hydrologic data, federal decision-makers and the interested public have no basis to understand the actual environmental impacts of the Project or its alternatives. *See Half Moon Bay Fishermans' Mktg Ass'n v. Carlucci*, 875 F.2d 505, 510 (9th Cir. 1988)("Without establishing the base line conditions which exist, there is simply no way to comply with NEPA."). Consequently, they have no reliable foundation on which to base a permitting decision under § 404(b) of the CWA. **4. The Corps failed to discuss the inconsistency between the water reuse requirement of the Blue Rive Decree and the proposed Project.** The Blue River Decree (Findings of Fact and Conclusions of Law and Final Decree, Consolidated Cases, Civil Action Nos. 2782, 5016, & 5017, U.S. District Court for the District of Colorado, October 12, 1955) addressed, among other things, the water rights of the United States for the Colorado-Big Thompson Project, including rights to water from the Blue River for Green Mountain Reservoir. Included in the Findings of Fact is a Stipulation of October 5, 1955, agreed to by all parties that contains provisions relating to Denver's use of returns flows from its Colorado River Basin water. ¶ 4(e), (f), &(g). This Stipulation, being approved by the Federal Court, is Federal law. The Blue River Decree requires Denver to make full use, within legal limitations and subject to economic feasibility, of return flows from its Blue River water rights. Failure to so use such return flows, by exchange or otherwise, is to result in a corresponding reduction of Denver's Blue River diversion rights. Considering this obligation, in *Denver v. Fulton Irrigating Ditch Co.*, 506 P.2d 144 (Colo. 1973), the Colorado Supreme Court stated: "In order to minimize the amount of water removed from Western Colorado, eastern slope importers should, to the maximum extent feasible, reuse and make successive uses of the foreign water." The reuse requirement was adopted in 1955 to ensure that Denver and other Front Range water suppliers do not take water from Western Slope streams unless and until absolutely necessary to meet actual requirements. The failure to even consider this historical balance and legal obligation is as fundamental flaw of the DEIS. The Corps 37021 5	Representatives from the USFWS, CPW, Colorado SHPO, Advisory Council on Historic Preservation, Boulder County, and Jefferson County were unable to attend the meeting, but have participated as needed throughout the NEPA process. Additionally, the Corps and the Bureau of Land Management have coordinated throughout the NEPA process. Cooperating Agencies: FERC, EPA and Colorado Department of Natural Resources are participating in the NEPA process as cooperating agencies (40 CFR 1501.6 and 1508.51). Consulting Agency: Grand County was granted Consulting Agency status relative to effects on County resources. The Corps received comment letters from Federal, tribal, State, and local agencies during the scoping period. Comments received from the agencies are summarized in the Scoping Summary, Moffat Project (Corps 2003). • A Notice of Intent to prepare an EIS for the Moffat Project initiated the 45-day scoping period and was published in the Federal Register on September 17, 2003. The comment period was extended until November 7, 2003. Public notices were published on September 17 and 18, 2003 in The Denver Post/Rocky Mountain News, The Boulder Daily Camera, The Arvada Sentinel, and The Winter Park Manifest. Refer to FEIS Appendix J for a copy of those public notices.

Comment Information	Comment	Comments and Response
	should not issue a permit to Denver to construct the Project unless and until compliance with the Blue River Decree is established and independently confirmed by the Corps. *See* 40 C.F.R. §§ 1508.27, 1502.16(c), 1506.2(d). Anything less would betray the reasonable expectations of CRR in relying on the United State's promises, and allow cast slope entities to keep coming back for more, and more, without limitation.[3] **5. The DEIS fails to address the negative impact of the Project on private fishing, and private property values in the most impacted reach.** Finally, the DEIS completely fails to consider the economic consequences that the environmental impacts of the Project will have on CRR and other private lands along the Colorado River. Water is generally an essential component of the tourist, agricultural, and recreation economy in Grand County, but also a major component of the value of the private ranches like CRR. While the DEIS superficially acknowledges the adverse economic impacts of the Project on many forms of public recreation, it is completely silent on the impact to private property values. The DEIS must honestly address those impacts, including whether the proposal will effect the "Gold Medal" trout fishery designation, and discuss what impact that would have for private property values, and tax revenues in Grand County. Those possible economic effects are directly related to the environmental impact of the project and should be studied. 40 C.F.R. § 1508.14. **Conclusion** The DEIS does not contain a sufficient analysis of the environmental impacts of the proposed Project. It is silent on some very important points, such as the impact of the Project on private property values. Worse, in other critical respects, the DEIS is affirmatively misleading, as with the use of outdated water supply and demand projections, and streamflow modeling that were supplied by the applicant. That data and modeling was not accurate and should not have been accepted at face value. The document we have reviewed simply does not comply with the basic informational purpose of NEPA, and cannot be used to make a determination under [3] Given that the WGFP is reasonably foreseeable and its impacts would collide with the impacts of the Moffat Project as the combined depletions simultaneously hit CRR, the Corps should consider whether the Moffat Project implicates and complies with Senate Document 80 (50 Stat. 564, 595). Senate Document 80, together with the Operating Policy for Green Mountain Reservoir, as published in the Federal Register on December 22, 1983, as amended, and the Blue River Decree, collectively govern the use and operation of Colorado-Big Thompson ("CBT") facilities, including Green Mountain Reservoir. Green Mountain Reservoir was authorized to provide replacement water for senior downstream diversion rights in Western Colorado when water is diverted for use in eastern Colorado through the CBT project. Senate Document 80 sets out "primary purposes" for the operation and management of the CBT project, as follows: (1) to preserve the vested and future rights in irrigation; (2) to preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and Rocky Mountain National Park; (3) to preserve the present surface elevations of the water in Grand Lake and to prevent a variation in these elevations greater than their normal fluctuations ....; (5) to maintain conditions of river flow for the benefit of domestic and sanitary uses of this water. If the issuance of a permit for the Moffat Project would implicate Senate Document 80, the Corps should determine whether the Project is consistent with these primary purposes. 57021 6	• Three public scoping meetings were held to present the Moffat Project to the public and solicit public and agency comments. The meetings were held in Boulder, Colorado, on October 7, in Denver, Colorado, on October 8, and in Silver Creek, Colorado, on October 9, 2003. Documents made available at the meetings included: (1) Scoping Document prepared by the Corps describing the scoping process, agency involvement, EIS process, and information on how to submit comments; and (2) Moffat Project Information Document prepared by Denver Water describing the Moffat Project and problem statement, Purpose and Need, and potential alternatives. The Corps received written and oral comments during the public meetings as well as written comment letters from the public during the scoping period. Comments received from the public are summarized in the Scoping Summary (Corps 2003). • A Scoping Summary was prepared by the Corps documenting the scoping process for the Moffat Project (Corps 2003). The document describes the scoping process; summarizes the issues and concerns raised by agencies and the public; and includes a copy of attendance sheets from the public meeting, Federal Register notices and other public notices, and comment letters received on the Moffat Project. The Scoping Summary was mailed to the participating agencies, all attendees at the public scoping meetings, individuals who submitted comments and individuals who contacted the Corps requesting to be on the mailing list. DEIS Section 1.6 summarizes the comments received during public and agency scoping.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
	section 404(b) of the CWA. These problems and omissions can only be cured by a new DEIS or supplemental EIS, with adequate opportunity for federal decision makers and the impacted public to review and comment on the new document. In connection therewith, CRR strongly encourages the Corps to work with Grand County and the Colorado Division of Wildlife to evaluate and implement an adaptive management plan that will fully protect the aquatic resources of the Upper Colorado River as a condition to any section 404 permit. Thank you for the opportunity to comment. CRR looks forward to continued involvement in the EIS process to make sure there exists a real need for the Project and, if so, that the environmental impacts of the Project are mitigated. CHIMNEY ROCK RANCH By: _____ Fritz Holleman Eli A. Feldman *Attorneys for CRR* cc: Bud Issacs 3/021 7	The following is a summary of the initial public comment period time frame for the DEIS and subsequent extensions. A Notice of Availability of a DEIS and Public Notice announcing the receipt and evaluation of a CWA Section 404 Permit application from Denver Water for the Moffat Project was issued on October 30, 2009, which included an initial 90-day comment period (October 30, 2009 to January 27, 2010). A second Notice of Availability was issued on December 18, 2009. During the comment period, the Corps received numerous requests to again extend the comment period on the DEIS and permit application. Based on the public's need to review additional documents referenced in the DEIS, to allow ample opportunity for the public to provide substantive comments and to facilitate a timely and efficient review process, Omaha District Commander Colonel Robert J. Ruch determined that an additional 16-day extension was warranted and reasonable. Thus, the comment period was extended to March 17, 2010, for a combined public review period of 138 days. The Corps held four public hearings for the Moffat Project as part of the NEPA process: • December 1, 2009 - Boulder Country Club, Boulder, Colorado • December 2, 2009 – The Inn at Silver Creek, Granby, Colorado • December 3, 2009 – Double Tree Hotel, Denver, Colorado • January 7, 2010 – Beaver Run Conference Center, Breckenridge, Colorado An Open House was held at these events from 4:00 – 6:00 pm. The Corps was explicitly available during the Open Houses to answer the public's questions on the Moffat Project.

Comment Information	Comment	Comments and Response
		Comment #1493-3 *(ID 1419)**:*** *The Project will cause significant degradation to the Colorado River, the trout fishery and the environment in the vicinity of CRR. Not only will the Project itself have adverse impacts on the aquatic ecosystem, it is only one of several transbasin diversion projects that combine to drastically reduce streamflow. The DEIS barely acknowledges, and quickly dismisses the Project's impacts on aquatic resources when it states, "overall, the cumulative effects of reasonably foreseeable projects and the Moffat Project on surface water is minor ..." (DEIS 5-39). Yet, the DEIS also states that in combination with the Windy Gap Firming Project ("WGFP") and Shoshone Call reduction, the average annual flows of the Colorado River will decrease by approximately 60,600 AF or 9% from the baseline condition. (Id.). The DEIS also acknowledges adverse impacts on water quality, sediment transport and water temperature. (DEIS 5-40). Contrary to the conclusion of the DEIS, however, these are hardly "minor" impacts, particularly when viewed in light of the hundreds of thousands of AF already transported out of the basin to the degradation of the river, the ecosystem, and CRR under pre-existing transmountain diversion projects.* *In this regard, the DEIS contains an insufficient discussion of the serious environmental impacts that Colorado-Big Thompson, Windy Gap, existing Moffat project and other transmountain diversion projects have already had on the Colorado River and its environs. According to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and the Moffat Project are implemented. CRR is at ground zero for the impact of these past diversions. CRR has witnessed the degradation of the fishery over the past thirty years, including increased nutrient loading, decreased peak flows, decreased minimum stream flows, increased temperatures resulting in fish mortality, water quality*

Comment Information	Comment	Comments and Response
		degradation, didmyo (or "rock snot" – a nonnative algae creating thick, slippery mats on what was formerly a rock and gravel river bottom), and the virtual elimination of the stonefly Pteronarcys californica over the pasty thirty years.[2] CRR has also suffered the devastating impact of the whirling disease ("WD") epidemic and the associated complete loss of the Colorado River rainbow trout fishery in the vicinity of the ranch. FOOTNOTE: [2] Attached as Exhibit A hereto is "A Review of Aquatic Invertebrate Studies and Fish Population Survey Data for the Colorado River in Middle Park, Colorado from 1908 through 2009: What Does it Tell Us," by R. Barry Nehring et. al., CDOW, dated January 2010. Attached as Exhibit B hereto is "Benthic Field Studies For the Windy Gap Study Reach, Colorado River, Colorado, Fall, 1980 to Fall, 1981," by Dr. Robert C. Erickson, Ph.D., dated June 1983. After this sustained assault on the aquatic ecosystem, another 60,600 AF or depletions could very well cause the ecosystem to pass the tipping point. The past diversions and their impacts are not adequately addressed in the DEIS. It is the Corps' responsibility to evaluate "piecemeal changes [that] can result in major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems." § 404(b) 230.11.g.1; see 40 C.F.R. § 1508.7 ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . .); see also Lands Council v. US. Forest Service, 395 F.3d 1019, 1028 (9th Cir. 2004). Unless and until these cumulative impacts are measured and described in detail in a supplemental EIS, they cannot be properly accounted for in the decision making process. Moreover, the DEIS focused primarily on the average monthly streamflows to evaluate impacts to aquatic resources. Since the Project is designed to capture the highest flows in wet and average years, CRR suspects that it would have much more significant impacts on the peak flows than it has on the average flows. Major reductions of the already constrained peak flows are perhaps more important indicators of stream health than

Comment Information	Comment	Comments and Response
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Comment Information	Comment	Comments and Response
		water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: “The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the Colorado-Big Thompson (C-BT) Project, and the Windy Gap Project.” Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT System. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Data obtained from Northern Colorado Water Conservancy District (NCWCD) was generated using the WGFP Model for the WGFP EIS. Model results were provided for the Proposed Action, Chimney Hollow Reservoir with prepositioning, which was analyzed in the EIS. Monthly WGFP Model output provided by NCWCD includes Adams Tunnel C-BT and Windy Gap deliveries (separately), Windy Gap demands, Windy Gap deliveries from Chimney Hollow and Granby Reservoir to meet demands, Windy Gap pumping, Willow Creek Feeder Canal diversions, Willow Creek Reservoir end-of-month storage contents, Granby Reservoir end-of-month storage contents by account (C-BT, Windy Gap, and dead storage), and flow data at the Colorado River below Granby Reservoir gage (09019500), Colorado River below the Windy Gap Diversion, Willow Creek at the confluence with the Colorado River, and Fraser River at the Granby gage (09034000). PACSM was configured to reflect similar Windy Gap demands, diversions, and deliveries. This was accomplished by modifying the demands placed at the Windy Gap and Adams Tunnel nodes in PACSM to match the data provided by NCWCD.

Comment Information	Comment	Comments and Response
		It would be inappropriate to combine the EIS documents for the Moffat Project and WGFP since the projects consist of two different applicants with distinct project purposes and two different lead regulatory agencies. The WGFP is included in the cumulative effects analysis for the Moffat Project. Additionally, the Corps and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) have coordinated closely with regards to the cumulative effects and mitigation of both projects on the western slope. Didymo and Whirling Disease Didymo is a native species that is creating water quality issues State-wide, not just in Grand County. Didymo apparently prefers cool temperatures and moderate to fast waters with relatively high base flows during the low flow part of the year (Kumar et al. 2009). Reduced flows or higher temperatures may discourage Didymo. The similarities in base flows in late summer and in the sediment transport (flushing) capabilities of the Fraser River indicate that the Proposed Action and other Project alternatives would have no impact on Didymo. An expanded discussion on Didymo is included in FEIS Section 5.11. Whirling disease is a State-wide epidemic being managed by the CPW and it does not appear to be associated with stream diversions. Whirling disease is discussed in DEIS Section 3.9.0. Moffat Project diversions occur in high mountain systems (e.g., upper Clear Creek, Vasquez Creek) that are generally free from whirling disease, so it is unlikely that the proposed Project would increase the spread of the disease. Tipping Point The Corps is not aware of a scientific threshold or “tipping point” at which negative impacts occur to resources like water quality or aquatic species nor is the Corps aware of any model or technique available that conducts “threshold” analysis. The magnitude of impact

Comment Information	Comment	Comments and Response
		depends on the current state of that resource and factors that influence that resource. For example, aquatic resources respond to minimum flows and other conditions that sustain their habitat and are incrementally affected by temperature and water quality changes. The evaluation of effects on aquatic resources considered the current state of that resource including species composition, relative abundance, benthic macroinvertebrates, and habitat availability and factors that affect that resource such as minimum flows, temperature, and water quality to assess the magnitude of impact. The direct impact discussion for aquatic resources (DEIS Section 4.9) identifies minor impacts are anticipated to occur as a result of the Project, particularly since Denver Water would not divert additional West Slope water in dry years. Additionally, diversions during winter months would occur in 2 years during the 45-year study period. In winter months when additional diversions take place, bypass flows would usually be equal to or higher than the average winter flows and always higher than the minimum flow. Aquatics Analysis Monthly flow data was used a screening-level tool to narrow down the Project area. The Colorado River was not identified to have big flow changes on a percentage basis, therefore no daily flow analysis was conducted. Daily flow data, however, was used for habitat modeling for other river segments in the Project area. There have been no recorded broad-scale fish kills related to high temperatures and low flows in the Colorado River. Some studies claim that some fish are less healthy and may die an earlier due to high temperatures, but the Corps is unaware of this evidence and the current science states that the temperatures are not too high to sustain fish populations.

Comment Information	Comment	Comments and Response
		The Corps is aware of the Nehring report and it has been included in FEIS Section 5.11. Conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1493-4*** *(ID 1420)**:*** *The statement of purpose and need defines the objectives in terms so unreasonably narrow that they can be accomplished only by one alternative: the enlargement of Gross Reservoir. In keeping with this predetermined result, every single alternative in the DEIS, except for the "No Action Alternative," includes a major enlargement of Gross Reservoir - from 40,700 AF up to 72,000 AF. These are not mutually exclusive alternatives, but minor variations on one and the same Project. Given that the "heart" of an EIS is the document's consideration of alternatives, and this DEIS fails to consider any alternatives other than the enlargement of Gross Reservoir, it is inadequate. 40 C.F.R. § 1502.14.* **Response #1493-4:** The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several

Comment Information	Comment	Comments and Response
		underlying needs into one defined purpose, since the multiple needs of the applicant are not “independent” but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the issues would jeopardize Denver Water’s ability to meet projected demand needs. Therefore, supplying water to the Moffat Collection System was appropriately used as a criterion for alternative screening. The Corps did not determine that the Proposed Action is the LEDPA in the DEIS. The Corps will make a determination of the LEDPA based on its review of the information and analysis contained in the FEIS, per the Corps’ Section 404 regulations. The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the “long list” passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1, Must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: “Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need.” This is also a

Comment Information	Comment	Comments and Response
		reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented. ***Comment #1493-7*** *(ID 1421)**:*** *Denver will not run out of water in 201 6 if no action is taken. In finding that Denver is in danger of running dry within six years, the Corps is overly reliant on Denver's own models and projections of supply and demand, including the 2002 IRP and the PACSM model. The Corps' reliance on the applicant's data and predictions, without sufficient independent evaluation, undercuts the entire DEIS by presenting an inaccurate baseline from which to measure the impacts of the Project. 40 C.F.R § 1506.5(c). Consequently, even the serious impacts that are explained in the DEIS to the average annual river flow, the water quality and temperature, and the fish habitat are all underestimated. The DEIS is wholly dependent on the PACSM model for its estimates of environmental impacts. PACSM is a hydrologic model that was designed and run by Denver, based on hydrologic data from the study period of 1947 through 1991. First, PACSM carries potential biases due the fact that it was designed and run by the Project proponent. Second, by the time the Project would go online in 2016, that data would be 25 years old. Third, the data set only includes 44 years of record. In this regard, it*

Comment Information	Comment	Comments and Response
		fails to account for recent variability in climate and hydrologic conditions which are known to have occurred since 199 1 and which may continue in the future. Evidence recently presented by the Colorado Water Conservation Board indicates that drier periods than shown in the recent record may have occurred in the past and may be likely to occur in the future, notwithstanding any specific impacts from climate change. Until a new DEIS with an analysis of the impacts of the Project against an accurate baseline is presented, including the best available hydrologic data, federal decision-makers and the interested public have no basis to understand the actual environmental impacts of the Project or its alternatives. See Half Moon Bay Fishermans' Mktg Ass 'n v. Carlucci, 875 F.2d 505, 5 10 (9th Cir. 1988)("Without establishing the base line conditions which exist, there is simply no way to comply with NEPA."). Consequently, they have no reliable foundation on which to base a permitting decision under § 404(b) of the CWA. **Response #1493-7:** PACSM An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle Engineering 2003 and 2004). As a component of the Upper Colorado River Study (UPCO), an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities in Grand and Summit Counties (UPCO PACSM Review Committee 1999).

Comment Information	Comment	Comments and Response
		The need to extend the study period prior to 1947 was evaluated. To assess the availability of diversion and streamflow data, Denver Water reviewed a sampling of streamflow records and diversion records for the Colorado and South Platte river basins. Based on a review of data availability, a study period that begins prior to the 1940s would require a significant amount of streamflow and diversion data estimation. To assess the statistical properties of the study period chosen, the annual natural flows at four gaging stations (two in the Colorado River Basin and two in the South Platte River Basin) was compared for the following three study periods: 1916-1990, 1940-1991, and 1950-1991. The average annual natural flow and standard deviation for the two shorter study periods are similar to the statistics for the long-term period from 1916 through 1990. In addition, at each gage the one-year, three-year and five-year duration droughts are exactly the same years for each study period. This demonstrates that the shortest period captures the statistical properties of the long-term period, and that the additional work to estimate missing data from the early 1940s is not warranted. Denver Water also investigated whether the study period from 1947 through 1991 is representative of a longer period of record (1916-1997), and to evaluate the level of reliability the study period provided for analysis of the supply system based on a statistical analysis of the recurrence intervals of wet and dry periods. It was concluded that the study period from 1947 through 1991 is representative of the long-term record with respect to streamflow characteristics on both an annual and monthly basis for all years, including wet and dry years. It was also concluded that the critical period within the long-term period is the 1950s drought, which has an overall composite recurrence interval on the order of 30 to 50 years.

Comment Information	Comment	Comments and Response
		Baseline The impact analysis was revised in the FEIS to present total environmental effects based on a comparison of Current Conditions (2006) and Full Use with a Project Alternative (2032). Chapter 4 of the FEIS displays the total environmental effects of the Moffat Project alternatives in combination with other RFFAs based on a comparison of the following scenarios: Current Conditions (2006) reflects the related current administration of the Colorado and South Platte river basins, demands, infrastructure, and operations. Under the Current Conditions (2006) scenario, Denver Water's existing average annual demand is 285,000 AF/yr. Full Use with a Project Alternative (2032) reflects conditions in Denver Water's system when the Moffat Project is completed and in full use in 2032. This scenario reflects each action alternative in combination with other RFFAs. Under this scenario, the Moffat Project would be providing 18,000 AF/yr of new firm yield. The FEIS includes an updated 2032 water demand projection for Denver Water. ***Comment #1493-11*** *(ID 1422)**:*** *The Blue River Decree (Findings of Fact and Conclusions of Law and Final Decree, Consolidated Cases, Civil Action Nos. 2782, 5016, & 5017, U.S. District Court for the District of Colorado, October 12, 1955) addressed, among other things, the water rights of the United States for the Colorado-Big Thompson Project, including rights to water from the Blue River for Green Mountain Reservoir. Included in the Findings of Fact is a Stipulation of October 5, 1955, agreed to by all parties that contains provisions relating to Denver's use of returns flows from its Colorado River Basin water. ¶ 4(e), (f), &(g). This Stipulation, being approved by the Federal Court, is Federal law. The Blue River Decree requires Denver to make full use, within legal limitations and subject to economic feasibility, of return flows from*

Comment Information	Comment	Comments and Response
		its Blue River water rights. Failure to so use such return flows, by exchange or otherwise, is to result in a corresponding reduction of Denver's Blue River diversion rights. Considering this obligation, in Denver v. Fulton Irrigating Ditch Co., 506 P.2d 144 (Colo. 1973), the Colorado Supreme Court stated: "In order to minimize the amount of water removed from Western Colorado, eastern slope importers should, to the maximum extent feasible, reuse and make successive uses of the foreign water." The reuse requirement was adopted in 1955 to ensure that Denver and other Front Range water suppliers do not take water from Western Slope streams unless and until absolutely necessary to meet actual requirements. The failure to even consider this historical balance and legal obligation is as fundamental flaw of the DEIS. The Corps should not issue a permit to Denver to construct the Project unless and until compliance with the Blue River Decree is established and independently confirmed by the Corps. See 40 C.F.R. §§ 1508.27, 1502.16(c), 1506.2(d). Anything less would betray the reasonable expectations of CRR in relying on the United State's promises, and allow east slope entities to keep coming back for more, and more, without limitation.[3] FOOTNOTE: [3] Given that the WGFP is reasonably foreseeable and its impacts would collide with the impacts of the Moffat Project as the combined depletions simultaneously hit CRR, the Corps should consider whether the Moffat Project implicates and complies with Senate Document 80 (50 Stat. 564, 595). Senate Document 80, together with the Operating Policy for Green Mountain Reservoir, as published in the Federal Register on December 22, 1983, as amended, and the Blue River Decree, collectively govern the use and operation of Colorado-Big Thompson ("CBT") facilities, including Green Mountain Reservoir. Green Mountain Reservoir was authorized to provide replacement water for senior downstream diversion rights in Western Colorado when water is diverted for use in eastern Colorado through the CBT project. Senate Document 80 sets out "primary

Comment Information	Comment	Comments and Response
		purposes" for the operation and management of the CBT project, as follows: (1) to preserve the vested and future rights in irrigation; (2) to preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and Rocky Mountain National Park; (3) to preserve the present surface elevations of the water in Grand Lake and to prevent a variation in these elevations greater than their normal fluctuations . . . .; (5) to maintain conditions of river flow for the benefit of domestic and sanitary uses of this water. If the issuance of a permit for the Moffat Project would implicate Senate Document 80, the Corps should determine whether the Project is consistent with these primary purposes. **Response #1493-11:** The issuance of a Section 404 Permit does not absolve an applicant from meeting other related or independent legal obligations, including Senate Document 80. Denver Water asserts that it has and would continue to fully comply with its obligation to and requirements of the Blue River Decree. Denver Water currently uses its reusable supplies for exchanges, augmentation, contract deliveries, and its non-potable system to the extent it can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water related resources such as

Comment Information	Comment	Comments and Response
		water quality, aquatic biological resources, and stream morphology. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT System. Please refer to Sections 4.6.2 and 5.2 of the FEIS for a discussion of this analysis. ***Comment #1493-12*** *(ID 1423)**:*** *Finally, the DEIS completely fails to consider the economic consequences that the environmental impacts of the Project will have on CRR and other private lands along the Colorado River. Water is generally an essential component of the tourist, agricultural, and recreation economy in Grand County, but also a major component of the value of the private ranches like CRR. While the DEIS superficially acknowledges the adverse economic impacts of the Project on many forms of public recreation, it is completely silent on the impact to private property values. The DEIS must honestly address those impacts, including whether the proposal will effect the "Gold Medal" trout fishery designation, and discuss what impact that would have for private property values, and tax revenues in Grand County. Those possible economic effects are directly related to the environmental impact of the project and should be studied. 40 C.F.R. § 1508.14.* **Response #1493-12:** The socioeconomic impacts in Grand County are driven in part by the conclusions about impacts upon other resources (recreation, visual resources, surface water, etc.) and the resulting impacts upon overall tourism and economic activities that occur in the county. The Moffat

Comment Information	Comment	Comments and Response
		Project impacts to stream flows and therefore to fish and fishing in this area are expected to be negligible and so the Gold Medal trout fishery designation would not be lost as a result of the Moffat Project. Hence, there would be little or no economic effect in this instance. The analysis of socioeconomic impacts to Grand County was reviewed and expanded as appropriate in FEIS Section 5.19 to revise or support the socioeconomic conclusions. ***Comment #1493-8*** *(ID 1424)**:*** *The DEIS does not contain a sufficient analysis of the environmental impacts of the proposed Project. It is silent on some very important points, such as the impact of the Project on private property values. Worse, in other critical respects, the DEIS is affirmatively misleading, as with the use of outdated water supply and demand projections, and streamflow modeling that were supplied by the applicant. That data and modeling was not accurate and should not have been accepted at face value.* **Response #1493-8:** Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data.

Comment Information	Comment	Comments and Response
		An expanded analysis of impacts to communities surrounding Gross Reservoir was included in FEIS Section 5.19, including an evaluation of impacts to property values. ***Comment #1493-9*** *(ID 1425)**:*** *The document we have reviewed simply does not comply with the basic informational purpose of NEPA, and cannot be used to make a determination under Section 404(b) of the CWA. These problems and omissions can only be cured by a new DEIS or supplemental EIS, with adequate opportunity for federal decision makers and the impacted public to review and comment on the new document.* **Response #1493-9:** Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document will not be prepared for the Moffat Project. As a result of comments received on the DEIS, however, new analysis was conducted for the following resources in the FEIS: water quality (FEIS Section 5.2), groundwater (FEIS Section 5.4), aquatic biological resources (FEIS Section 5.11), wetlands and riparian areas (FEIS Section 5.8), wildlife (FEIS Section 5.9), special status species (FEIS Section 5.10), air quality (FEIS Section 5.13), and socioeconomics (FEIS Section 5.19). ***Comment #1493-10*** *(ID 1426)**:*** *In connection therewith, CRR strongly encourages the Corps to work with Grand County and the Colorado Division of Wildlife to evaluate and implement an adaptive management plan that will fully protect the aquatic resources of the Upper Colorado River as a condition to any Section 404 permit.*

Comment Information	Comment	Comments and Response
		Response #1493-10: Appropriate conceptual mitigation components were incorporated into FEIS Appendix M and, if a Section 404 Permit is issued for the Moffat Project, mitigation will be evaluated and required. The Corps has consulted with USFWS and CPW to ensure compliance with wildlife protection regulations (e.g., Endangered Species Act, Fish and Wildlife Coordination Act, Migratory Bird Act) and by identifying appropriate mitigation measures to minimize and avoid impacts to wildlife. Pursuant to C.R.S. 37-60-122.2, Denver Water submitted a Fish and Wildlife Mitigation Plan to the Colorado Wildlife Commission on June 9, 2011, and the CWCB on July 13, 2011; both agencies adopted the proposed mitigation plan. Project impacts to elk habitat and appropriate mitigation measures are being evaluated with the USFWS and CPW per the Corps' obligations under the Fish and Wildlife Coordination Act. Grand County is a Consulting Agency on the Moffat Project and has provided the Corps with suggested mitigation measures for the Moffat Project. ***Comment #1493-1*** *(ID 1427)**:*** *Thank you for the opportunity to comment. CRR looks forward to continued involvement in the EIS process to make sure there exists a real need for the Project and, if so, that the environmental impacts of the Project are mitigated.* **Response #1493-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1531 Glenn E. Porzak, General Counsel Porzak Browning & Bushong LLP, on Behalf of the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company 929 Pearl Street, Suite 300 Boulder, CO 80302	*FROM EAGLE PARK RESERVOIR COMPANY AND CLINTON DITCH AND RESERVOIR COMPANY.* MOFFAT COLLECTION SYSTEM PROJECT; Public Comments Concerning the Draft Environmental Impact Statement dated October 30, 2009 and compliance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-70f, and the Clean Water Act ("CWA"), 33 U.S.C. §§ 1251-1387.	***Comment #1531-1*** *(ID 1382)**:*** *This firm represents the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company (collectively, the "Reservoir Companies"). As detailed below, the Reservoir Companies are interested stakeholders in the Moffat Collection System Project (the "Project"). On behalf of the principal shareholders and the boards of directors of the Reservoir Companies, we submit the following comments to the U.S. Army Corps of Engineers (the "Corps") concerning the Draft Environmental Impact Statement for the Project dated October 30, 2009 (the "DEIS"), detailing its inadequacy under both NEPA and CWA. The City and County of Denver, acting by and through its Board of Water Commissioners, is the Project proponent, and is referred to herein as "Denver." It should be noted at the outset that the Reservoir Companies are engaged in negotiations with Denver regarding the terms and conditions necessary to mitigate the impacts from the Moffat Project. Inasmuch as these negotiations are ongoing and have not been concluded, the Reservoir Companies provide the following comments. I. Clinton Ditch and Reservoir Company The Clinton Ditch and Reservoir Company is the owner and operator of Clinton Gulch Reservoir, and the water rights thereto. The current shareholders consist of the Town of Breckenridge; Copper Mountain Metropolitan District; Powdr - Copper Mountain, LLC; the Town of Dillon; Dundee Realty U.S.A., Inc. d/b/a Arapahoe Basin Ski Area; the Town of Silverthorne; the Board of County Commissioners of Summit County; Vail Summit Resorts, Inc. d/b/a Breckenridge Ski Resort; Vail Summit Resorts, Inc. d/b/a Keystone Resort; and Winter Park Recreational Association. These shareholders represent every major water user and water provider in Summit County and the largest ski resort in Grand County. II. Eagle Park Reservoir Company The Eagle Park Reservoir Company is the owner and operator of Eagle Park Reservoir, and the water rights thereto.*

Comment Information	Comment	Comments and Response
	Porzak Browning & Bushong LLP Attorneys at Law *Please direct all correspondence to the Boulder office* Glenn E. Porzak Michael F. Browning Steven J. Bushong P. Fritz Holleman Kristin Howse Moseley Kevin J. Kinnear ——— Thomas W. Kopver* Eli A. Feldman Katherine A. D. Ryan Karen L. Henderson *Also Admitted in Wyoming *Boulder Office:* 929 Pearl Street, Suite 300 Boulder, CO 80302 303 443-6800 Tel. 303 443-6864 Fax. ——— *Vail Office:* 953 S. Frontage Road W Suite 202 Vail, CO 81657 970 476-5295 Tel. 970-476-3309 Fax. March 17, 2010 RECEIVED MAR 2010 VIA EMAIL and HAND DELIVERY Mr. Scott Franklin Moffat EIS Project Manager U.S. Army Corps of Engineers 9307 South Wadsworth Blvd Littleton, CO 80128 Re: MOFFAT COLLECTION SYSTEM PROJECT; Public Comments Concerning the Draft Environmental Impact Statement dated October 30, 2009 and compliance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-70f, and the Clean Water Act ("CWA"), 33 U.S.C. §§ 1251-1387. Dear Mr. Franklin: This firm represents the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company (collectively, the "Reservoir Companies"). As detailed below, the Reservoir Companies are interested stakeholders in the Moffat Collection System Project (the "Project"). On behalf of the principal shareholders and the boards of directors of the Reservoir Companies, we submit the following comments to the U.S. Army Corps of Engineers (the "Corps") concerning the Draft Environmental Impact Statement for the Project dated October 30, 2009 (the "DEIS"), detailing its inadequacy under both NEPA and CWA. The City and County of Denver, acting by and through its Board of Water Commissioners, is the Project proponent, and is referred to herein as "Denver." It should be noted at the outset that the Reservoir Companies are engaged in negotiations with Denver regarding the terms and conditions necessary to mitigate the impacts from the Moffat Project. Inasmuch as these negotiations are ongoing and have not been concluded, the Reservoir Companies provide the following comments. **I. Clinton Ditch and Reservoir Company** The Clinton Ditch and Reservoir Company is the owner and operator of Clinton Gulch Reservoir, and the water rights thereto. The current shareholders consist of the Town of Breckenridge; Copper Mountain Metropolitan District; Powdr – Copper Mountain, LLC; the	*The principal shareholders consist of the Eagle River Water and Sanitation District; the Upper Eagle Regional Water Authority; the Colorado River Water Conservation District; and Vail Associates, Inc. The Eagle River Water and Sanitation District and Upper Eagle Regional Water Authority comprise the second largest municipal water provider on the West Slope, serving approximately 60,000 customers in Eagle County, with a service area that extends from the Town of Vail to Wolcott. The Colorado River Water Conservation District is a public water policy agency chartered by the Colorado General Assembly in 1937 to be "the appropriate agency for the conservation, use and development of the water resources of the Colorado River and its principal tributaries in Colorado." The Colorado River Water Conservation District is comprised of 15 West Slope counties in which a majority of the Colorado River Basin in the State of Colorado exists. Vail Associates, Inc., is a wholly owned subsidiary of Vail Resorts, Inc. which, in turn, owns and operates the Vail, Beaver Creek and Arrowhead ski areas and related resort properties.* **Response #1531-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1531-23*** *(ID 1383)**:*** *The Reservoir Companies and their shareholders collectively own hundreds of decreed water rights and water storage and conveyance facilities throughout the Colorado River basin. The Reservoir Companies and their shareholders also have significant interest in the protection of the recreational and environmental values of the Colorado River basin and its tributaries. To summarize the comments below, the Reservoir Companies believe that the DEIS relies on outdated hydrologic data and water demand projections, fails to adequately scrutinize the purpose and need for the Project, and fails to objectively consider alternatives to*

Comment Information	Comment	Comments and Response
	Town of Dillon; Dundee Realty U.S.A., Inc. d/b/a Arapahoe Basin Ski Area; the Town of Silverthorne; the Board of County Commissioners of Summit County; Vail Summit Resorts, Inc. d/b/a Breckenridge Ski Resort; Vail Summit Resorts, Inc. d/b/a Keystone Resort; and Winter Park Recreational Association. These shareholders represent every major water user and water provider in Summit County and the largest ski resort in Grand County. **II. Eagle Park Reservoir Company** The Eagle Park Reservoir Company is the owner and operator of Eagle Park Reservoir, and the water rights thereto. The principal shareholders consist of the Eagle River Water and Sanitation District; the Upper Eagle Regional Water Authority; the Colorado River Water Conservation District; and Vail Associates, Inc. The Eagle River Water and Sanitation District and Upper Eagle Regional Water Authority comprise the second largest municipal water provider on the West Slope, serving approximately 60,000 customers in Eagle County, with a service area that extends from the Town of Vail to Wolcott. The Colorado River Water Conservation District is a public water policy agency chartered by the Colorado General Assembly in 1937 to be "the appropriate agency for the conservation, use and development of the water resources of the Colorado River and its principal tributaries in Colorado." The Colorado River Water Conservation District is comprised of 15 West Slope counties in which a majority of the Colorado River Basin in the State of Colorado exists. Vail Associates, Inc., is a wholly owned subsidiary of Vail Resorts, Inc. which, in turn, owns and operates the Vail, Beaver Creek and Arrowhead ski areas and related resort properties. **III. Summary of Comments** The Reservoir Companies and their shareholders collectively own hundreds of decreed water rights and water storage and conveyance facilities throughout the Colorado River basin. The Reservoir Companies and their shareholders also have significant interest in the protection of the recreational and environmental values of the Colorado River basin and its tributaries. To summarize the comments below, the Reservoir Companies believe that the DEIS relies on outdated hydrologic data and water demand projections, fails to adequately scrutinize the purpose and need for the Project, and fails to objectively consider alternatives to the Project. The DEIS is so lacking in fundamental ways that it fails to comply with the basic procedural requirements of NEPA and fails to prove substantively under the CWA that the Project is (a) the least damaging practicable alternative ("LEDPA") and (b) in the best interest of the Nation. The Reservoir Companies urge the Corps to reconsider the need for the Project, consider other alternatives if any need remains, expand the scope of the impacts analysis, collect more data, update its hydrologic modeling and demand projections, and prepare a supplemental EIS that permits informed public comment on the Project and provides sufficient information to determine whether a section 404 permit can be issued. In addition to the comments set forth herein, the Reservoir Companies also support and incorporate herein the comments and concerns of Eagle County, Grand County, Summit County, and the Colorado River Water Conservation District, which have each submitted extensive comments to the Corps under separate cover. 36579A v2 2	*the Project. The DEIS is so lacking in fundamental ways that it fails to comply with the basic procedural requirements of NEPA and fails to prove substantively under the CWA that the Project is (a) the least damaging practicable alternative ("LEDPA") and (b) in the best interest of the Nation. The Reservoir Companies urge the Corps to reconsider the need for the Project, consider other alternatives if any need remains, expand the scope of the impacts analysis, collect more data, update its hydrologic modeling and demand projections, and prepare a supplemental EIS that permits informed public comment on the Project and provides sufficient information to determine whether a Section 404 permit can be issued. In addition to the comments set forth herein, the Reservoir Companies also support and incorporate herein the comments and concerns of Eagle County, Grand County, Summit County, and the Colorado River Water Conservation District, which have each submitted extensive comments to the Corps under separate cover.* **Response #1531-23:** Supplemental DEIS Per 40 CFR 1502.9(c)(1), since the Corps will not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document was not prepared for the Moffat Project. However, additional data was collected and analyzed for the following resources in the FEIS: water quality (Section 5.2), geomorphology (Section 5.3), groundwater (Section 5.4), aquatic biological resources (Section 5.11), wetland and riparian areas (Section 5.8), wildlife (Section 5.9), sensitive species (Section 5.10), air quality (Section 5.13), and socioeconomics (Section 5.19). The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current

Comment Information	Comment	Comments and Response
	IV. Relevant Information From Case No. 02CW125, Water Division No. 5 Some of the shareholders of the Reservoir Companies were party to Case No. 02CW125, Water Division No. 5, which concerned Denver's Eagle-Piney/Eagle-Colorado Project. (See **Exhibit A** hereto, Trial Management Order ("TMO") for Summary of Issues, Stipulated Facts, Witness Lists and Exhibit Lists). During the course of that case, which went to trial in June 2007, the details of Denver's water supply and demand projections, modeling assumptions and other operational matters were established through depositions and trial testimony of Denver's consultants, staff and management.[1] Much of that testimony is directly relevant to the statement of purpose and need in the Moffat DEIS, and the Reservoir Companies urge the Corps to review said documents prior to issuing a supplemental or final EIS for the Project. As a general matter, the DEIS is vitally dependent upon the 2002 Integrated Resource Plan ("IRP"), and its projections for water demand and supply. However, as set forth herein, the 2002 IRP is outdated and no longer contains reliable information. In this regard, Denver had planned to release updates to its IRP every five years, and had specifically stated that it was preparing to release an update in 2007. (Depo. Trans., G. Fisher at 4-5). Yet, as of March 2010, for unexplained reasons, no update of the IRP has been released. Instead, Denver and the Corps continue to rely on the outdated supply and demand projections in the 2002 IRP, which are merely updates from projections in the 1997 IRP. The DEIS is equally dependent on the PACSM model for its estimates of environmental impacts. PACSM is a hydrologic model that was designed and run by Denver, based on hydrologic data from the study period of 1947 through 1991. By the time the Project would go online in 2016, that data would be 25 years old. PACSM carries potential biases due the fact that it was designed and run by the Project proponent and its data set is outdated. In this regard, it fails to account for recent variability in climate and hydrologic conditions which are known to have occurred since 1991 and which are expected to continue in the future. The IRP and PACSM are essentially the two legs that the entire DEIS stands on. Yet, both are biased, outdated and unreliable. The lack of up-to-date information prevents the Corps from making accurate assessments of the need for the Project, the environmental impacts of the Project, and from considering practicable alternatives, which are its basic obligations under NEPA and the CWA. The Corps simply cannot carry out its governmental function until it has independently evaluated and reconciled the IRP and PACSM with the most current and best available scientific data and information. [1] A collection of trial testimony and deposition transcripts from Case No. 02CW125 are attached hereto as **Exhibit B**. Exhibit B contains testimony for the following employees of Denver Water: John Bambei, Jr. - Chief of Engineering, H.J. Barry - Manager, William Bates - Water Resource Engineer, Greg Fisher - Chief Planner, Kathryn Kempke – Manager of Treasury Operations, David Little – Manager of Water Resources and General Planning, Steven Schmitzer – Chief of Water Resources Analysis. The deposition transcript of Douglas Leavons – Director, BBC Research and Consulting, is also attached for purposes of explaining the econometric demand model that is used by Denver to project future water demands. This collection of transcripts and testimony is submitted for the review and consideration of the Corps and cooperating agencies and is intended to become part of the administrative record herein. References to Trial Transcripts and Deposition Transcripts herein are references to the above-described documents. 26579.v2 3	population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. LEDPA The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The Corps evaluated compliance with NEPA and the Clean Water Act Section 404 regulations (FEIS Appendix K) and has not yet determined the LEDPA. The Final LEDPA determination will be made as part of the combined EIS/404 Record of Decision. Public Interest Review As stated in 33 CFR Part 320, which are, in part, the Federal regulations governing the Corps' review of Section 404 of the Clean Water Act, the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. That decision reflects the national concern for both protection and utilization of important resources. Factors relevant to the proposed Project that were considered in the public interest include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Data The model study period is suitable for estimating hydrologic effects associated with the Project alternatives because it includes a broad range of

Comment Information	Comment	Comments and Response
	V. THE DEIS DOES NOT COMPLY WITH NEPA A. Standards of Law Under NEPA NEPA has twin aims: (1) "it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action"; and (2) "it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Ecology Center, Inc. v. U.S. Forest Service*, 451 F.3d 1183, 1189 (10th Cir. 2006); *Baltimore Gas and Electric Co. v. Natural Resources Defense Council*, 462 U.S. 87, 97 (1983). The EIS process provides the public with assurance that that the agency has "considered environmental concerns in its decisionmaking process . . . and, perhaps more significantly, provides a springboard for public comment." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); *Utahns for Better Transportation v. U.S. Dep't of Trans.*, 305 F.3d 1152, 1162-63 (10th Cir. 2002). "NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Robertson*, 490 U.S. at 349. The requirement of preparing an EIS "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts [and] guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *Id.* Highlighting the importance of a robust alternatives analysis, the Tenth Circuit Court of Appeals recently stated: > The "heart" of an EIS is its exploration of possible alternatives to the action an agency wishes to pursue. 40 C.F.R. § 1502.14. Every EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded. *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 708 (10th Cir. 2009). The "scope" of an EIS is defined as "the range of action, alternatives, and impacts to be considered in an environmental impact statement." 40 C.F.R. § 1508.25. While an agency may restrict its analysis to alternatives that suit the "basic policy objectives" of a planning action, *Seattle Audubon Soc'y v. Moseley*, 80 F.3d 1401, 1404 (9th Cir. 1996), it may do so only as long as "the statements of purpose and need drafted to guide the environmental review process ... are not unreasonably narrow." *Richardson*, 565 F.3d at 709 (citing *Colo. Env. Coalition v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999); *see also Utahns for Better Transportation v. U.S. Dept. of Transportation*, 305 F.3d 1152 (10th Cir. 2002). 66379.v2 4	average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period to include more recent data would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under its existing water rights without additional storage in its system. Denver Water's analysis also concluded that, for Denver Water's system, the mid-1950s drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950s drought than at the end of 2002. The model study period used in the EIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The EIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the EIS study period includes the mid-1950s drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980s. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. ***Comment #1531-6*** *(ID 1384)**:*** *Some of the shareholders of the Reservoir Companies were party to Case No. 02CW125, Water Division No. 5, which concerned Denver's Eagle-Piney/Eagle-Colorado Project. (See Exhibit A hereto, Trial Management Order ("TMO) for Summary of Issues, Stipulated Facts,*

Comment Information	Comment	Comments and Response
	In *Richardson*, the Tenth Circuit found that the Bureau of Land Management violated NEPA by failing to consider all reasonable alternatives. Similarly, "The Seventh Circuit, and other courts, have interpreted this requirement to preclude agencies from defining the objectives of their actions in terms so unreasonably narrow they can be accomplished by only one alternative (*i.e.*, the applicant's proposed project)." *Dombeck*, 185 F.3d at 1175; *see, e.g., Simmons v. U.S. Army Corps of Eng'rs*, 120 F.3d 664, 669 (7th Cir. 1997); *see also Davis v. Mineta*, 302 F.3d 1104, 112-13 (10th Cir. 2002) (holding that federal agency violated NEPA by prejudging NEPA issues and failing to analyze any alternatives other than the preferred alternative); *Wyoming v. U.S. Dept. of Agriculture*, 570 F.Supp2d 13090, 1339 (D. Wyo. 2008) (holding that the existence of a reasonable, but unexamined alternative, renders the EIS inadequate). **B. The Statement of Purpose and Need is Inappropriately Narrow and the Corps Failed to Objectively Consider Practicable Alternatives** In the Moffat DEIS, the statement of purpose and need defines the objectives in terms so unreasonably narrow that they can be accomplished only by one alternative: the enlargement of Gross Reservoir. The DEIS accurately cites the CEQ regulations concerning its required alternatives analysis to the effect that "the emphasis is on what is reasonable rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint using common sense, rather than simply desirable from the standpoint of the applicant." (DEIS at 2.0 citing "Forty Most Asked Questions Concerning NEPA," Question 2a). But, the DEIS fails to apply that law. It accommodates the specific desire of the applicant to enlarge Gross Reservoir rather than the applicant's basic policy need to meet water demands within its service area. The scope of the alternatives considered in the DEIS is simply too narrow to inform agency deliberation and facilitate public involvement. In this regard, the DEIS is result-oriented In keeping with this predetermined result, every single alternative in the DEIS, except for the "No Action Alternative," includes a major enlargement of Gross Reservoir - from 40,700 AF up to 72,000 AF. These are not mutually exclusive alternatives, but minor variations on one and the same Project. This, among other things, demonstrates that the DEIS fails to rigorously explore and objectively evaluate all reasonable alternatives, such as the other 150 water supply, cooperative actions, conservation, drought response and water reuse projects identified in the IRP. Given that the "heart" of an EIS is the document's consideration of alternatives, and this DEIS fails to meaningfully consider any alternatives other than the enlargement of Gross Reservoir, it is fundamentally flawed and inadequate. **C. The No Action Alternative Mischaracterizes the Status Quo** One of the alternatives that must be considered under NEPA is the alternative of "no action." (40 C.F.R. §1502.14(d))(hereinafter "No Action Alternative"). The No Action Alternative, generally, "may be thought of in terms of continuing with the present course of action until that action is changed." (46 Fed.Reg. 18026, 18027 (Mar. 23, 1981)). An accurate description of the status quo is critical to an EIS because the No Action Alternative establishes 46579.62 5	*Witness Lists and Exhibit Lists). During the course of that case, which went to trial in June 2007, the details of Denver's water supply and demand projections, modeling assumptions and other operational matters were established through depositions and trial testimony of Denver's consultants, staff and management.[1] Much of that testimony is directly relevant to the statement of purpose and need in the Moffat DEIS, and the Reservoir Companies urge the Corps to review said documents prior to issuing a supplemental or final EIS for the Project. [1] A collection of trial testimony and deposition transcripts from Case No. 02CW125 are attached hereto as Exhibit B. Exhibit B contains testimony for the following employees of Denver Water: John Bambei, Jr. - Chef of Engineering, H.J. Bany - Manager, William Bates - Water Resource Engineer, Greg Fisher - Chief Planner, Kathryn Kempke - Manager of Treasury Operations, David Little - Manager of Water Resources and General Planning, Steven Schmitzer - Chief of Water Resources Analysis. The deposition transcript of Douglas Jeavons - Director, BBC Research and Consulting, is also attached for purposes of explaining the econometric demand model that is used by Denver to project future water demands. This collection of transcripts and testimony is submitted for the review and consideration of the Corps and cooperating agencies and is intended to become part of the administrative record herein. References to Trial Transcripts and Deposition Transcripts herein are references to the above-described documents. As a general matter, the DEIS is vitally dependent upon the 2002 Integrated Resource Plan ("IRP"), and its projections for water demand and supply. However, as set forth herein, the 2002 IRP is outdated and no longer contains reliable information. In this regard, Denver had planned to release updates to its IRP every five years, and had specifically stated that it was preparing to release an update in 2007. (Depo. Trans., G. Fisher at 4-5). Yet, as of March 2010, for unexplained reasons, no update of the IRP has been released. Instead,*

Comment Information	Comment	Comments and Response
	the baseline against which the proposed action and its alternatives are measured. *Friends of Se.'s Future v. Morrison*, 153 F.3d 1059, 1065-66 (9th Cir. 1998). The No Action Alternative in the Moffat DEIS fails to accurately depict the status quo. The main premise on which the DEIS and No Action Alternative rely is that the demand in Denver Water's system is expected to exceed supply in 2016. (DEIS, ES-13, 1-11, K-5). This premise is false. First, Denver's projections of supply and demand have undergone major changes since the 2002 IRP was released. Specifically, Denver's conservation goals have been accelerated by 35 years, which pushes back the date at which demands will exceed supplies well beyond 2016. Second, Denver can and will impose drought restrictions during times of water scarcity. Denver's Drought Response Plan has been successfully employed in the past to reduce demand by approximately 30% during times of water shortage. It should be expected to perform equally well during future droughts. Third, any shortfall between supplies and demands exists only when comparing dry year supplies to unrestricted average year demands. The DEIS does not present any evidence that a shortfall would exist if Denver compared dry year demands to dry year supplies or average year demands to average year supplies. Fourth, a major source of water yield, the Shoshone Agreement between Denver and Xcel Energy, was excluded from the expected water supplies, despite being recognized in the DEIS as a reasonably foreseeable action. Fifth, after running its complex econometric demand model, Denver arbitrarily increased its output by 5%. A 5% increase in projected demand amounts to approximately 17,000 AF, which is nearly the same firm yield that the Project seeks to develop. Sixth, the No Action Alternative erroneously includes 3,000 AF of demand for the City of Arvada. Denver is not obligated to supply this 3,000 AF if the Project is not constructed (i.e. if no action is taken). All of the above demonstrate that Denver's demand is not going to exceed supply in 2016, that Denver's alleged need for the Project is greatly overstated, and that the No Action Alternative seriously mischaracterizes the status quo. **1. Denver Accelerated Conservation Goals By 35 Years** According to the 2002 IRP, upon which the DEIS relies without much objective analysis, 16,000 AF of supply is expected to be realized through water conservation by 2030. However, Denver actually expects to achieve these 16,000 AF of conservation savings, plus another 13,000 AF, by 2016. In other words, the DEIS assumes only 16,000 AF of conservation by 2030, when it should assume 29,000 AF of conservation by 2016. (*See* Denver's "Tap-Smart" Conservation Plan attached as **Exhibit C**). Consistent with this expectation, Mayor Hickenlooper announced in the 2006 State of the City Address that the City and County of Denver, in partnership with Denver's Board of Water Commissioners (the "Board"), "intends to embark on the most aggressive water conservation program in the history of Colorado" seeking to achieve "a 22% reduction in system-wide water use in the next decade – accelerating their original 2050 goals by 35 years." In 2006, the Board followed through on its promise by setting a conservation goal to reduce water use to 165 gallons per person per day by 2016 by implementing the "Tap-Smart" Conservation Plan. This represents a 22% reduction from average pre-drought use of 211 gallons per person per day. 3657Doc2 6	*Denver and the Corps continue to rely on the outdated supply and demand projections in the 2002 IRP, which are merely updates from projections in the 1997 IRP.* **Response #1531-6:** The comment letter was included in the Moffat Project Response to Comments database. The supporting documents referenced in the comment (i.e., trial transcripts) were reviewed and filed at the Corps Denver Regulatory Office. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. The Corps also conducted an independent evaluation of Denver Water's modeling approach and concluded it is a widely accepted approach and is reasonable for evaluating a water utility's ability to meet needs under varying hydrologic conditions. Although Denver Water has not updated its 2002 IRP, additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #1531-17*** *(ID 1385)**:*** *The DEIS is equally dependent on the PACSM model for its estimates of environmental impacts. PACSM is a*

Comment Information	Comment	Comments and Response
	Considering Denver's historical success in conservation and future commitments to increase spending and accelerate its goals, Denver can and will meet conservation savings on the order of 29,000 AF by 2016. The DEIS identifies a total of 15,000 AF of unmet demand in Denver's near term. Given that the accelerated conservation savings alone will supply 13,000 AF of this demand (Denver considers conservation as new supply rather than as demand reduction), Denver's allegedly unmet demand in 2016 is no more than 2,000 AF. An unmet demand of 2,000 AF does not justify the construction of 72,000 AF of storage and the resulting environmental, economic and recreational impacts associated with increased transbasin diversions. The DEIS should acknowledge this accelerated schedule for conservation and reevaluate the purpose and need for the Moffat project using the most current data and demand projections. Otherwise, its entire analysis, including the Section 404 analysis in Appendix K of the DEIS, rests on outdated and inaccurate projections of supply and demand and a faulty assumption that a major water supply shortage will occur in 2016. The outdated data also mischaracterizes the baseline conditions under the No Action Alternative and thereby underestimates the negative impacts of the Project and overestimates its benefits. **2. Denver Will Not Be Required to Meet "Unrestricted Demands" During Dry Years** The DEIS assumes that Denver Water will have to meet "unrestricted demands" in the future, totaling 345,000 AF by 2016. (DEIS at H1-1). It further concludes that a water supply shortfall will occur because Denver's dry year yield will be less than 345,000 AF at that time. (*Id.*). This is a faulty assumption because the projected demand of 345,000 AF in 2016 does not account for reductions in demand due to drought restrictions that will be imposed in dry years. (*See* IRP, Drought Response Appendix). Denver will not have to meet "unrestricted demand" during drought conditions in the future. Since the 1970's Denver has instituted voluntary and mandatory watering restrictions in response to drought. (Depo. Trans., D. Jeavons at 37). Denver currently has a Drought Response Plan that it can and will employ in times of water shortage. (2004 Drought Response Plan, attached hereto as **Exhibit D**). According to the Plan, "If continued low stream flows stress water supplies, Denver Water will work with customers to implement this Drought Response Plan." (*Id.* at Introduction). The Plan provides: > Actual water supply and supply projections trigger drought response. The severity of the water supply picture determines the stage of drought declared and the corresponding level of response. The Drought Response Plan recommends a progressive response to worsening drought conditions. Recommended drought response measures are aimed at reducing water use by varying percentages, based on predicted reservoir storage. (*Id.* at Exec. Sum.). 86979.92 7	*hydrologic model that was designed and run by Denver, based on hydrologic data from the study period of 1947 through 1991. By the time the Project would go online in 2016, that data would be 25 years old. PACSM carries potential biases due the fact that it was designed and run by the Project proponent and its data set is outdated. In this regard, it fails to account for recent variability in climate and hydrologic conditions which are known to have occurred since 1991 and which are expected to continue in the future. The IRP and PACSM are essentially the two legs that the entire DEIS stands on. Yet, both are biased, outdated and unreliable. The lack of up-to-date information prevents the Corps from making accurate assessments of the need for the Project, the environmental impacts of the Project, and from considering practicable alternatives, which are its basic obligations under NEPA and the CWA. The Corps simply cannot carry out its governmental function until it has independently evaluated and reconciled the IRP and PACSM with the most current and best available scientific data and information.* **Response #1531-17:** The model study period used in the DEIS (from 1947 through 1991) provides a broad range of average, wet, and dry flow conditions for evaluating hydrologic impacts. The potential of extending the study period and/or using additional periods for comparative analyses was considered in relation to whether these alternative hydrologic inputs would change conclusions regarding the yield of the Moffat System and/or change conclusions related to effects on hydrologic and other resource areas. With regard to inclusion of more recent hydrology, Denver Water would not divert additional water due to the proposed Moffat Project in drought years like 2002 because Denver Water would have already diverted the maximum amount of water physically and legally available under their existing water rights without additional storage in their system. Denver Water's analysis also concluded that, for

Comment Information	Comment	Comments and Response
	The Drought Response Plan has proven to work extremely well in the past and should be expected to perform similarly in the future. For example, during the "moderate" drought of 2001 to 2004, Denver imposed drought restrictions, targeting a 30% reduction and actually achieving a 29% reduction in water use. (Trial Trans., June 14, 2007, p.49). If "moderate" drought conditions occur in 2030, according to Denver Water's Drought Response Plan, it will target the same 30% reduction in demand, equivalent to approximately 104,700 AF. (See *Id.* at pp. 51-56). Thus, during "moderate" drought conditions in 2030, the targeted demand will be on the order of 244,300 AF, not 345,000 AF. Moreover, Mr. Jeavons, Denver's expert demand modeling consultant, stated that Denver's "future demands will be lower if they increase conservation expenditures in real terms." (Depo. Trans., D. Jeavons at 41). We now know that Denver has drastically increased its conservation expenditures. (*See* 2007 Tap-Smart Conservation Plan). Yet, the demand projection from the 2002 IRP has not been adjusted accordingly. **3. Denver's Alleged Supply Shortfall Only Exists When Comparing Dry Year Yield to Average Year Demands** Another issue that was addressed in detail in Case No. 02CW125 was the method by which Denver estimates its firm annual yield. (See TMO, Stip. Fact Nos. 53-55; Trial Trans., Testimony of S. Schmitzer, June 14, 2007). The DEIS recognizes that "firm yield" is a "measure of a system's ability to reliably supply water to meet demand during drought periods..." (DEIS at 1.4.2). Denver calculates its firm yield with the hydrologic model known as PACSM which determines the firm annual yield of its existing system by calculating the maximum average water demand, without drought restrictions, that could be met during the hydrologic study period of water years 1947 through 1991. The critical drought period, late summer 1953 to the spring of 1957, is the most limiting hydrologic factor for the firm annual yield of Denver's system based upon the 1947-1991 study period. (TMO, Stip. Fact No. 55). In other words, Denver's firm annual yield is based on the yield of its system during drought conditions, not average conditions.[2] As set forth above and throughout the DEIS, unrestricted average annual demand is defined by Denver as the amount of water under average weather conditions and absent any emergency water use restrictions that may be imposed as a result of drought or other operational conditions. Denver's demand forecast is based on a model that uses historic water usage from the years 1973 to 1999. In other words, Denver's demand forecast is based on unrestricted demands during average weather conditions. (TMO, Stip. Fact No. 51; Trial Trans., G. Fisher, June 14, 2007, at 44).[1] Any shortfall between supplies and demands exists only when comparing dry year supplies to unrestricted average year demands. The DEIS does not present any evidence that a shortfall would exist if Denver compared dry year demands to dry year supplies. In this regard, Douglas Jeavons, the main consultant that developed Denver's econometric demand model, [2] Denver's average year yield is greater that its firm annual yield. [1] Denver's demand during a dry year will be less than its demand during an average year because Denver will impose drought restrictions on its customers. 36579/v2 8	Denver Water's system, the mid-1950's drought is a more severe drought period than the recent drought. In other words, given full-use water demands, supplies, and facilities, there would be less water in Denver Water's storage at the end of the 1950's drought than at the end of 2002. The model study period used in the DEIS also addressed the carry-over and recovery effects of additional Denver Water diversions in wet years following dry years like 2002 and 2003. The DEIS study period includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill storage. For example, the DEIS study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980's. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives for both direct effects and cumulative effects because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. Extension of the modeling period to include additional dry years and more recent data would not substantially change the range of hydrologic conditions or the predicted impacts to flows as a result of the proposed Moffat Project. In summary, modifications to the modeled study period are not warranted. Consideration was given for using the draft Phase I results of the Colorado River Water Availability Study and other potential sources of information regarding the effects of potential climate change on native flow hydrology of the upper Colorado River Basin and on the management of water in the entire Colorado River Basin. Potential climate changes may affect Colorado's

Comment Information	Comment	Comments and Response
	stated that he would compare dry year supplies to dry year demands if he wanted to know how Denver's system would perform during a drought. (Depo. Trans., D. Jeavons at p.16). The DEIS fails to make that comparison. Likewise, Steven Schmitzer, Denver's Chief of Water Resources Analysis, admitted that Denver has not compared dry year supplies to dry year demands, or compared average year supplies to average year demands. (Trial Trans., June 14, 2007, pp.141-146). Thus, any shortfall that may exist between supply and demand is a result of a flawed comparison of apples to oranges. The Corps should objectively analyze whether any water supply shortfall would exist if dry year supplies were compared to dry year demands, and average year supplies were compared to average year demands. **4. The Yield From the Shoshone Agreement Should Be Included In Denver's Dry Year Supply** In addition to the Drought Response Plan, Denver also has an agreement with Xcel Energy to reduce the call of the Shoshone Power Plant during dry years. (DEIS at 5-20). The DEIS states that the reduction of the Shoshone Call is likely to occur in 1 out of every 6 or 7 years. (DEIS at 5-47). Yet, the DEIS provides "The future operation of the Shoshone Call reduction was not reflected in PACSM because it would only occur under certain conditions which are difficult to include in the model ..." (DEIS at 5-20). The Reservoir Companies find this explanation unavailing. During a deposition of Denver's staff in Case No. 02CW125, it was established that the reduction of the Shoshone Call in 2003 resulted in 11,586 AF of increased yield to Denver. (Depo. Trans., W. Bates, p.182-83). Accordingly, the effect of the Shoshone Agreement is to increase the dry year yield of Denver's system by something on the order of 11,500 AF. The agreement is effective through 2032 and is included as a "reasonably foreseeable" water based action in the DEIS. Given that the Corps knows when the call reduction will occur, the likely (even if approximate) increase in yield as a result of the call reduction and the frequency of its occurrence, there is no reason not to include the increased yield in Denver's reasonably foreseeable supplies. The Shoshone Agreement alone is likely to satisfy two thirds of the alleged need that the Project is designed to meet. **5. Denver's Demand Forecast Was Arbitrarily Increased by 5%** Denver used a complex econometric demand model to estimate its future demands. (*See* Depo. Trans., D. Jeavons at 9-13). The model was carefully crafted to determine future demands based on household income, Denver Regional Council of Governments population estimates, housing density and other detailed parameters. (*Id.*). Yet, after running the econometric demand model, Denver arbitrarily increased its output by 5%, supposedly to account for historical inconsistencies between predicted and actual demand. (*Id.* at 22, 27-29; see also Trial Trans., G. Fisher, June 14, 2007, at 39-42). The explanation for the 5% "calibration" was that the model, when "back-cast" against historic demands, would have underpredicted demand from the 1980's to 1999. (*Id.*). However, just as the model would have systematically underpredicted demand from the 1980's to 1999, it would have overpredicted demands from 1973 to the 1980's. (Depo. Trans., D. Jeavons at 28-29). It was arbitrary for Denver to "calibrate" the model based only on the period that the model underpredicted demands, which resulted in an overinflated future demand projection. 36579.v2 9	water administration in relation to the Colorado River Compact and the upper Colorado River Compact, however, the analyses available for use in the Moffat Collection System EIS are still in draft form, present a wide range of preliminary results, and consider only current water uses and demand levels without taking into account likely adjustments in these uses and demands as a result of potential climate change. Use of draft preliminary climate change studies is not warranted. Although recent and on-going studies of climate change have resulted in greater understanding of potential future hydrologic variability, they have not progressed to the point of adding clarity or additional certainty in assessing the effects of the Project for this EIS. An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle Engineering 2003 and 2004). As a component of UPCO, an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities in Grand and Summit Counties (UPCO PACSM Review Committee 1999). ***Comment #1531-12*** *(ID 1386)**:*** *NEPA has twin aims: (1) "it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action"; and (2) "it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." Ecology Center, Inc. v. US. Forest Service, 45 1 F.3d 1 183, 1 189 (10th Cir. 2006); Baltimore Gas and Electric Co. v. Natural Resources*

Comment Information	Comment	Comments and Response
	To put this "calibration" in perspective, 5% amounts to approximately 17,000 AF. (Trial Trans., G. Fisher, June 14, 2007, at 39-42). This is in addition to the 30,000 AF safety factor that is also added to the calculated demand model output. ((Depo. Trans., D. Jeavons at 21). Absent the arbitrary increase of 5%, Denver has no a need for new water supplies either in the near term or the long term. (*Id.*, see also IRP, Demand Appendix). **6. No Action Alternative Erroneously Includes 3,000 AF of Demand for Arvada** If the Project is not constructed, Denver is not obligated to supply an additional 3,000 AF to the City of Arvada. In other words, if no action is taken, there is no need to supply this 3,000 AF. This 3,000 AF of demand should therefore be excluded from the statement of purpose and need, and should be excluded from the No Action Alternative. To include this additional 3,000 AF of demand in the No Action Alternative is a clear error that renders the baseline conditions inaccurate and unreliable. In turn, all analyses of environmental impacts comparing the other alternatives to the No Action Alternative are flawed and erroneous. This error has the effect of overstating the benefits and understating the adverse impacts of the Project. To summarize, the DEIS should include additional modeling including: (1) the most up-to-date conservation expenditures and goals (expected to supply 29,000 AF by 2016); (2) the imposition of the drought response measures set forth in the Drought Response Plan (expected to reduce demand by 30% during a "moderate" drought); (3) the reduction of the Shoshone Call when reservoirs are at or below 80% of storage on July 1 of any given year (expected to increase yield by 11,500 AF); (4) a fair and realistic comparison of dry year yield to dry year supplies (this would eliminate any water supply shortfall); (5) a fair and realistic projection of future demand that is not arbitrarily increased by 5% (this would reduce the demand projection by 17,000 AF); and (6) the removal of the 3,000 AF of demand for Arvada in the No Action Alternative. Contrary to the scenario that the DEIS currently assumes as the status quo under the No Action Alternative, Denver will not run out of water in 2016. Accordingly, Denver does not need this Project. 36579/92 10	*Defense Council, 462 U.S. 87, 97 (1983). The EIS process provides the public with assurance that that the agency has "considered environmental concerns in its decisionmaking process . . . and, perhaps more significantly, provides a springboard for public comment." Robertson v. Methow Valley Citizens Council, 490 U.S. 332,349 (1989); Utahns for Better Transportation v. US. Dep't of Trans., 305 F.3d 1152, 1162-63 (10th Cir. 2002). "NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." Robertson, 490 U.S. at 349. The requirement of preparing an EIS "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts [and] guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." Id. Highlighting the importance of a robust alternatives analysis, the Tenth Circuit Court of Appeals recently stated: The "heart" of an EIS is its exploration of possible alternatives to the action an agency wishes to pursue. 40 C.F.R. § 1502.14. Every EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. 1502.14(a). Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded. New Mexico ex rel. Richardson v. Bureau of Land Management, 565 F.3d 683, 708 (10th Cir. 2009). The "scope" of an EIS is defined as "the range of action, alternatives, and impacts to be considered in an environmental impact statement." 40 C.F.R. 1508.25. While an agency may restrict its analysis to alternatives that suit the "basic policy objectives" of a planning action, Seattle Audubon Soc 'y v. Moseley, 80 F.3d 1401, 1404 (9th Cir. 1996), it may do so only as long as "the statements of purpose and need drafted to guide*

Comment Information	Comment	Comments and Response
	D. The Corps Failed to Independently Evaluate the Project 40 C.F.R § 1506.5(c) provides: > [A]ny environmental impact statement prepared pursuant to the requirements of NEPA shall be prepared directly by or by a contractor selected by the lead agency .... If the document is prepared by contract, the responsible Federal official shall furnish guidance and participate in the preparation and shall independently evaluate the statement prior to its approval and take responsibility for its scope and contents. In *Utahns for Better Transportation*, the 10th Circuit Court found the EIS inadequate because the Corps relied too heavily on the Utah Department of Transportation ("UDOT") and contractors hired by UDOT to prepare the EIS, without sufficient independent analysis. 305 F.3d at 1186-87 (citing 40 C.F.R. 1506.5(c)). The Court's concern in this regard was "whether the breach compromised the objectivity and integrity of the NEPA process..." *Id.* Similarly, in *Davis v. Mineta*, 302 F.3d 1104, 112-13 (10th Cir. 2002), the Court of Appeals held that federal agencies prejudged NEPA issues. In *Davis*, a municipality had contracted with a city for a predetermined result and the federal agencies failed to exercise independent review and failed to analyze any alternatives other than the preferred alternative. Id. The Reservoir Companies have the same concerns with the Moffat Project DEIS, because the Project proponent has supplied all of the modeling and data that the Corps is relying on to make its determinations under both NEPA and the CWA. For one, the 2002 IRP was prepared by Denver and its consultants, and the Corps has relied on its conclusions and projections with merely superficial independent evaluation. An independent evaluation of Denver's water demand projections, as required by § 1506.5(c), should have uncovered and evaluated the issues mentioned above that led to an overstated water supply shortfall and fabricated a need for the Project. Its failure to do so is evidence that the Corps failed to independently evaluate the data and modeling that was supplied by Denver. Second, the PACSM model and its underlying data form the basis of the entire NEPA analysis, including Denver's firm yield and stream flow projections, which, in turn project the environmental impacts on aquatic resources. PACSM is a model designed and run by Denver. Its outputs are taken at face value in the DEIS, without independent analysis or evaluation by the Corps or its contractors. **E. PACSM Data are Stale and Unreliable** Not only is PACSM designed and run by Denver, its data set is outdated and fails to account for recent changes in climate and hydrology. In this regard, PACSM is based on hydrologic data from the study period of water years 1947 through 1991. (TMO, Stip. Fact No. 53). Yet, the Project is not expected to go online until 2016. Accordingly, the scientific data relied upon to estimate water yield and impacts on aquatic ecosystems will be at least 25 years old as of the time the Project is expected to go online. The Reservoir Companies wonder 36579.v2 11	*the environmental review process ... are not unreasonably narrow." Richardson, 565 F.3d at 709 (citing Colo. Env. Coalition v. Dombeck, 185 F.3d 1 162, 1 175 (1 0th Cir. 1999); see also Utahns for Better Transportation v. US. Dept. of Transportation, 305 F.3d 1152 (10th Cir. 2002). In Richardson, the Tenth Circuit found that the Bureau of Land Management violated NEPA by failing to consider all reasonable alternatives. Similarly, "The Seventh Circuit, and other courts, have interpreted this requirement to preclude agencies from defining the objectives of their actions in terms so unreasonably narrow they can be accomplished by only one alternative (i.e., the applicant's proposed project)." Dombeck, 185 F.3d at 1175; see, e.g., Simmons v. US. Army Corps of Eng'rs, 120 F.3d 664,669 (7th Cir. 1997); see also Davis v. Mineta, 302 F.3d 1 104, 1 12- 13 (1 0" Cir. 2002) (holding that federal agency violated NEPA by prejudging NEPA issues and failing to analyze any alternatives other than the preferred alternative); Wyoming v. US. Dept. of Agriculture, 570 F.Supp2d 13090, 1339 (D. Wyo. 2008) (holding that the existence of a reasonable, but unexamined alternative, renders the EIS inadequate).* **Response #1531-12:** The Corps conducted a detailed alternative screening process for the Moffat Project that considered over 300 water sources and infrastructure structural components (Alternatives Screening Report, Corps 2007) including agricultural water transfer, municipal reuse, and various storage locations. The major tools used to interact with the public are the public notice and public hearing. The public notice is the primary method of advising all interested parties of a proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable beneficial and detrimental impacts on the public interest. Public notices are used to announce hearings. Public notices on proposed

Comment Information	Comment	Comments and Response
	whether the PACSM model can accurately predict water yield and stream conditions in 2016 and beyond when it is based on data that is a quarter-century old. Further, the question of whether the PACSM data ending in water year 1991 are reliable is of particular concern in light of potential impacts of climate change on the hydrologic cycle of the Upper Colorado and its tributaries. Denver is among several major water utilities that have joined the Water Utility Climate Alliance ("WUCA"). The WUCA released a white paper on climate change in January 2010 (attached as **Exhibit E**) that explains a major shift in how water supply planning was done in the past, and should be done in the future. Namely, traditional water supply planning "has used recorded weather and hydrology to represent future supply conditions." (WUCA at p.1). "One core assumption behind traditional water resource planning is that climate exhibits *stationarity*. *Stationarity* means that the statistical properties of climate variables in future periods will be similar to past periods." (*Id.* at 7). "The potential for significant changes in climate in the future has called into question the viability of only using historical hydrologic, weather, and demand information to make decisions regarding water supply and infrastructure investment." (*Id.*). The potential impacts of climate change on Colorado River basin hydrology has been documented by the Colorado Water Conservation Board in its report titled "Climate Change in Colorado: A Synthesis to Support Water Resources Management and Adaptation." (the "CWCB Report," attached as **Exhibit F**). As the DEIS acknowledges, the CWCB Report concludes that temperatures in Colorado have increased about two degrees during the last 30 years. (CWCB Report at, Exec. Sum.; DEIS at 5-34). Since the PACSM data stopped in 1991, it would have missed two thirds of this temperature increase. More importantly, the CWCB found that "the lowest five-year period of Colorado River natural flow since records began in the late 1800's occurred in 2000 to 2004 (9.9 million acre feet per year)." (*Id.*). Again, this critical data set is outside the purview of the PACSM model. Further, "Recent hydrologic studies of the Upper Colorado River Basin project multi-model average decreases in runoff ranging from 6% to 20% by 2050 compared to the 20th century average, although one statistical flow model projects a 45% decline by 2050." (*Id.*). *Stationarity* is no longer a valid assumption in a major water resources analysis. If the PACSM model fails to account for recent variability in the hydrologic cycle, it will not provide reliable estimates of stream flow or firm annual yield. This defect would pervade almost every aspect of the DEIS, which fundamentally relies on the model's output. The Corps seems to accept that climate change will cause greater variability and greater extremes in water systems, but does not even attempt to quantify the impacts on water resources. (DEIS at 5-35). But, the lack of hard and fast data on the specific effects of climate change do not prevent the Corps from at least qualitatively analyzing the likely impacts on aquatic ecosystems, which would probably include negative impacts on fisheries, water quality, water temperature and minimum stream flows during the late summer and fall. The Corps has an obligation to rigorously and independently evaluate the Project, the scope of alternatives and the environmental impacts. As an example, the October 2007 EIS for the "Colorado River Interim Guidelines" prepared by the Bureau of Reclamation's Lower Colorado office contained a 100-page appendix evaluating the state of climate science, potential 3657pw2 12	projects always contain a statement that anyone commenting may request a public hearing. Public hearings are held if comments raise substantial issues which cannot be resolved informally and the Corps decision maker determines that information from such a hearing is needed to make a decision (see 33 CFR 327). Four public hearings were held for the Moffat Project, including an open house held at each of these events. ***Comment #1531-13*** *(ID 1387)**:*** *In the Moffat DEIS, the statement of purpose and need defines the objectives in terms so unreasonably narrow that they can be accomplished only by one alternative: the enlargement of Gross Reservoir. The DEIS accurately cites the CEQ regulations concerning its required alternatives analysis to the effect that "the emphasis is on what is reasonable rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint using common sense, rather than simply desirable from the standpoint of the applicant." (DEIS at 2.0 citing "Forty Most Asked Questions Concerning NEPA," Question 2a). But, the DEIS fails to apply that law. It accommodates the specific desire of the applicant to enlarge Gross Reservoir rather than the applicant's basic policy need to meet water demands within its service area. The scope of the alternatives considered in the DEIS is simply too narrow to inform agency deliberation and facilitate public involvement. In this regard, the DEIS is result-oriented In keeping with this predetermined result, every single alternative in the DEIS, except for the "No Action Alternative," includes a major enlargement of Gross Reservoir - from 40,700 AF up to 72,000 AF. These are not mutually exclusive alternatives, but minor variations on one and the same Project. This, among other things, demonstrates that the DEIS fails to rigorously explore and objectively*

Comment Information	Comment	Comments and Response
	impacts of climate change on the Colorado River Basin, and options for evaluating the effects of climate change on reservoir operations. In contrast, this DEIS dismisses the potential impacts of climate change in relation to the preferred alternative in a single page. (DEIS at 5-35). The Reservoir Companies urge the Corps not to base its entire DEIS, including the impacts analysis that will form the basis of a permit decision under § 404 of the CWA, on a self-serving model supplied by the applicant, that is based upon stale and increasingly irrelevant data. In addition, after recognizing the increased range of hydrologic variability that may result in the Upper Colorado River due to climate change, the Corps should address this variability by proposing adaptive management measures to cope with stream conditions and environmental impacts as they actually occur in the future, not as they are predicted to occur. Given that outdated and unreliable models form the basis of the DEIS, any § 404 permit should be conditioned on Denver's compliance with a detailed adaptive management plan. **F. The Corps Failed to Identify Conflicts With State and Federal Laws** NEPA regulations require that: To better integrate environmental impact statements into State or local planning processes, statement shall discuss any inconsistency of a proposed action with any approved State or local plan and laws ... [w]here an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law. 40 C.F.R. § 1506.2(d). Colorado water law governs the use and administration of water in this state. The DEIS fails to consider inconsistencies between Colorado water law and the Project. As only one example, the water right decrees for the Moffat Tunnel Collection System do not permit water diverted through the Gumlick Tunnel to be redirected into the Moffat Tunnel and delivered to Gross Reservoir. But there is no discussion of how the Project conflicts with Colorado water law or how the Corps intends to reconcile its inconsistencies. In addition, and more importantly, the Corps failed to discuss the inconsistency between the water reuse requirement of the Blue Rive Decree and the proposed Project. The Blue River Decree (Findings of Fact and Conclusions of Law and Final Decree, Consolidated Cases, Civil Action Nos. 2782, 5016, & 5017, U.S. District Court for the District of Colorado, October 12, 1955) addressed, among other things, the water rights of the United States for the Colorado-Big Thompson Project, including rights to water from the Blue River for Green Mountain Reservoir. Included in the Findings of Fact is a Stipulation of October 5, 1955, agreed to by all parties that contains provisions relating to Denver's use of returns flows from its Colorado River Basin water. ¶ 4(c), (f), &(g). This Stipulation, being approved by the Federal Court, is Federal law. The intent of the Project is to export additional water out of the Colorado River Basin for use on the Front Range of Colorado. If constructed, the Moffat Project would join with other 36579.v2 13	*evaluate all reasonable alternatives, such as the other 150 water supply, cooperative actions, conservation, drought response and water reuse projects identified in the IRP. Given that the "heart" of an EIS is the document's consideration of alternatives, and this DEIS fails to meaningfully consider any alternatives other than the enlargement of Gross Reservoir, it is fundamentally flawed and inadequate.* **Response #1531-13:** The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Many underlying, interrelated needs can contribute to the discrete purpose of the Project. The Corps disagrees that the Purpose and Need statement is too narrow. Rather the Corps believes it is appropriate to integrate several underlying needs into one defined purpose, since the multiple needs of the applicant are not "independent" but rather are interconnected in the water supply issues that Denver Water is facing. Failing to address any one of the four issues would jeopardize Denver Water's ability to meet projected demand needs. Therefore, supplying water to the Moffat Collection System was appropriately used as a criterion for alternative screening. The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage components other than Gross Reservoir. These various

Comment Information	Comment	Comments and Response
	existing projects constructed by Denver Water on the West Slope that transport water out of the Colorado River Basin across the Continental Divide for use in and around Denver. Approximately half of Denver's water supply presently comes from the West Slope. Paragraph 4(c) establishes the requirement that importation of Blue River water shall be reduced by the quantity of Colorado River System return flow water above that quantity imported in the 1955 water year that is not utilized by exchange or otherwise: (e) To the extent that the importation and the use of water from the Colorado River System, over and above the quantity of water diverted from that source during the last year being October 1st, 1954 to September 30, 1955, by reason of the return flow from the municipal systems of said cities increase the amount of water said cities may lawfully utilize from all sources in order to supply their municipal needs, through exchange or otherwise, to that same extent the right to divert water from the Blue River shall be correspondingly decreased, if such exchange is not exercised; provided, however, that the obligation to utilize water from the Colorado River System by exchange or otherwise shall be subject to the conditions, limitations, and safeguards set forth in the following subdivision, the same being subdivision (f) of this paragraph. Paragraph 4(f) requires Denver to submit annual reports to the Secretary of the Interior showing, by month, the quantities of return flow from Colorado River water to the South Platte and the steps taken during the period to utilize such return flows to minimize Denver's demands for Blue River water: (f) In order to accomplish the objectives set forth in the immediately preceding subdivision hereof, the same being lettered (e), each city undertakes to exercise due diligence, within legal limitation and subject to economic feasibility. To that end, [Denver] and [Colorado Springs] shall, respectively, submit to the Secretary of the Interior on or before December 31st of each calendar year, beginning with the year 1957, a report showing by months for the water year ended September 30th last past, the quantities of water diverted … and whether and to what extent such water was used directly or placed in storage. After each city commences use of Blue River water said report shall also show by months for the same period the quantities of return flow from their municipal uses of such Colorado River water accruing to the South Platte River and to Fountain Creek respectively… Each such shall also show what steps, by legal action or otherwise, the reporting city has taken during the period covered by the report to utilize such return flow by exchange or otherwise to the extent water of the Colorado River system is included therein, so as to 36579.v2 14	water sources and 29 storage components from the "long list" passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1, Must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: "Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need." This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented.

Comment Information	Comment	Comments and Response
	reduce or minimize the demands of such city upon Blue River water. The United States of America reserves the right … to apply to this court for injunctive or other remedial orders, suspending or proportionately reducing diversions or imposing conditions upon the taking of Blue River water … if the United States shall establish as a fact that the city has failed to exercise due diligence in taking, with respect to return flow of water of the Colorado River System, all steps which, in view of legal limitations and economic feasibility, might reasonably be required of such city in establishing, enforcing, utilizing or operating a plan designed to accomplish said reduction by such city of its Blue River water use. The Blue River Decree requires Denver to make full use, within legal limitations and subject to economic feasibility, of return flows from its Blue River water rights. Failure to so use such return flows, by exchange or otherwise, is to result in a corresponding reduction of Denver's Blue River diversion rights. The stated purpose of this requirement is "to reduce or minimize the demands of such city upon Blue River water." In *Denver v. Fulton Irrigating Ditch Co.*, 506 P.2d 144 (Colo. 1973), the Colorado Supreme Court stated: "In order to minimize the amount of water removed from Western Colorado, eastern slope importers should, to the maximum extent feasible, reuse and make successive uses of the foreign water." While the specific purpose of these provisions of the Blue River Decree is to reduce or minimize Denver's transmountain diversions of Blue River water, the broader purpose as stated by the Supreme Court in *Fulton Ditch* is to ensure that Denver and other Front Range water suppliers do not take water from Western Slope streams unless and until absolutely necessary to meet actual requirements. The need for the Project and its impacts cannot be evaluated in isolation. It must be evaluated in light of the history and laws surrounding transbasin diversions from the Colorado River basin. The appropriate balance between efficient water use and reuse on the east slope, and additional diversions from the west slope, was established in 1955 by the Blue River Decree. The failure to even consider this historical balance and legal water reuse obligation is as fundamental flaw of the DEIS. The Corps should not issue a permit to Denver to construct the Project unless and until compliance with the Blue River Decree is established and independently confirmed by the Corps. **VI. THE DEIS DOES NOT COMPLY WITH THE CLEAN WATER ACT** **A. Standards of Law Under CWA** Section 404 of the Clean Water Act ("CWA"), 33 U.S.C. § 1344, prohibits the filling or dredging of wetlands without first receiving a § 404(b) permit from the Corps. "A permit may not be issued if (i) there is a practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences, (ii) the discharge will result in significant degradation, (iii) the discharge does not include all appropriate and practicable measures to minimize the potential harm, or (iv) there does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Corps'] 26579\W2 15	***Comment #1531-24*** *(ID 1388)**:*** *One of the alternatives that must be considered under NEPA is the alternative of "no action." (40 C.F.R. § 1502.14(d))(hereinafter "No Action Alternative"). The No Action Alternative, generally, "may be thought of in terms of continuing with the present course of action until that action is changed." (46 Fed.Reg. 18026, 18027 (Mar. 23, 198 1)). An accurate description of the status quo is critical to an EIS because the No Action Alternative establishes the baseline against which the proposed action and its alternatives are measured. Friends of Se. 's Future v. Morrison, 153 F.3d 1059. 1065-66 (9th Cir. 1998). The No Action Alternative in the Moffat DEIS fails to accurately depict the status quo. The main premise on which the DEIS and No Action Alternative rely is that the demand in Denver Water's system is expected to exceed supply in 2016. (DEIS, ES-13, 1-1 1, K-5). This premise is false. First, Denver's projections of supply and demand have undergone major changes since the 2002 IRP was released. Specifically, Denver's conservation goals have been accelerated by 35 years, which pushes back the date at which demands will exceed supplies well beyond 2016. Second, Denver can and will impose drought restrictions during times of water scarcity. Denver's Drought Response Plan has been successfully employed in the past to reduce demand by approximately 30% during times of water shortage. It should be expected to perform equally well during future droughts. Third, any shortfall between supplies and demands exists only when comparing dry year supplies to unrestricted average year demands. The DEIS does not present any evidence that a shortfall would exist if Denver compared dry year demands to dry year supplies or average year demands to average year supplies. Fourth, a major source of water yield, the Shoshone Agreement between Denver and Xcel Energy, was excluded from the expected water supplies, despite being recognized in the DEIS as a reasonably foreseeable action. Fifth, after running its*

Comment Information	Comment	Comments and Response
	Guidelines for permit issuance." *Utahns for Better Transportation v. U.S. Dept. of Transportation*, 305 F.3d 1152, 1163 (10th Cir. 2002) (citing 40 C.F.R. § 230.12(a)(3)(i-iv)). "The burden of proof to demonstrate compliance with the § 404(b) permit Guidelines rests with the applicant; where insufficient information is provided to determine compliance, the Guidelines require that no permit be issued." *Id.* (citing 61 Fed.Reg. 30, 990, 30, 998 (June 18, 1996)). Further, issuance of a permit with insufficient information would be considered arbitrary and capricious. *Id.* If the Corps finds the Project to be the least environmentally damaging practicable alternative ("LEDPA"), the Corps must also determine that the Project is in the public interest before it can issue a § 404 permit. 33 C.F.R. § 320.4(a)(1). In conducting a public interest review, the Corps is required to balance "benefits which reasonably may be expected to accrue from the proposal" against the "reasonably foreseeable detriments." *Id.* The decision to grant or deny a permit should reflect "national concern for both protection and utilization of important resources." *Id.* Thus, the federal regulations place the burden on the Corps to prove that (a) the Project is the LEDPA and (b) the Project is in the best interest of the nation. **B. The NEPA documents must be supplemented to comply with the CWA** "For actions subject to NEPA, the analysis of alternatives required for the NEPA environmental documents will in most cases provide the information for the evaluation of alternatives under the CWA Guidelines. If, however, the NEPA documents do not consider the alternatives in sufficient detail to respond to the requirements of the Guidelines, it may be necessary to supplement NEPA documents with additional information." *Id.* (citing 40 C.F.R. § 230.10(a)(4)). In this case, the Corps has stated that it intends to rely on the NEPA documents to inform its decision under § 404 of the CWA. (DEIS, App. K). However, for all of the reasons set forth in Section V above, which are incorporated herein equally as objections to the Corps' satisfaction of the CWA guidelines, the NEPA documents are fundamentally flawed. The problems that pervade the NEPA documents undercut any § 404 permit decision that would be based on the NEPA documents. Such flaws include (1) the statement of purpose and need is unreasonably narrow, (2) the scope of alternatives that were considered is unreasonably narrow, (3) the No Action Alternative fails to accurately depict the status quo, (4) the Corps failed to independently evaluate and verify the PACSM model and the data and projections from the 2002 IRP, (5) the Corps failed to identify and reconcile conflicts between the Project and Colorado water law, and (6) the Corps failed to identify and reconcile conflicts between the Project and the reuse requirement of the Blue River Decree. Since the DEIS is inadequate under NEPA, its analysis of environmental impacts is also inadequate to inform a decision under § 404 of the CWA. The Reservoir Companies urge the Corps to supplement the NEPA documents to comply with the substantive standards of the CWA, to objectively and rigorously evaluate whether there is a legitimate need for the Project, and to determine whether the Project is truly the LEDPA after considering all practicable alternatives, including water reuse, conservation, cooperative agreements, and all other projects and mechanisms available to meet Denver's basic policy objective, which is to supply water to 36379v2 16	*complex econometric demand model, Denver arbitrarily increased its output by 5%. A 5% increase in projected demand amounts to approximately 17,000 AF, which is nearly the same firm yield that the Project seeks to develop. Sixth, the No Action Alternative erroneously includes 3,000 AF of demand for the City of Arvada. Denver is not obligated to supply this 3,000 AF if the Project is not constructed (i.e. if no action is taken). All of the above demonstrate that Denver's demand is not going to exceed supply in 201 6, that Denver's alleged need for the Project is greatly overstated, and that the No Action Alternative seriously mischaracterizes the status quo.* **Response #1531-24:** The No Action Alternative is one which results in no construction requiring a Corps Section 404 Permit. It may be brought by (1) Denver Water electing to modify its proposal to eliminate work under the jurisdiction of the Corps or (2) by the denial of a Section 404 Permit. An appropriate evaluation of the No Action Alternative was made in accordance with NEPA Regulations (40 CFR 1502.14(d)) and Section 404 Regulations (33 CFR 325 Appendix B.9.b(5)(b)).The EIS compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps required that Denver Water develop an alternative that did not require a Corps permit, yet did manage supply and demand to meet 15,000 AF/yr of supply. Since it is unrealistic to assume no future growth would occur and unrealistic that Denver Water would implement no changes to meet future water supply needs, the Corps consulted with Denver Water on what steps they would take to meet their water supply needs in the absence of the Moffat Project. The Corps believes the steps outlined for various restriction scenarios was a reasonable approach for developing the No Action Alternative.

Comment Information	Comment	Comments and Response
	its customers. Otherwise, the issuance of a permit with insufficient information would be considered arbitrary and capricious. **C. The DEIS fails to prove that the Project is the LEDPA.** An alternative is practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." *Id.* (citing 40 C.F.R. § 230.10(a)(2)). Unlike NEPA, which is a procedural statute, the CWA has substantive requirements. "The CWA test is not ... whether features of a proposal would make a more desirable project. Rather, the Applicant and the [Corps] are obligated to determine the feasibility of the least environmentally damaging alternatives that serve the basic project purpose. If such an alternative exists ... then the CWA compels that the alternative be considered and selected unless proven impracticable." *Id.* at 1188 (emphasis added). Like the Corps failure to comply with NEPA, the Corps' failure to comply with the CWA also stems in large part from an improperly narrow and unexamined statement of purpose and need. The basic project purpose should be generally defined as meeting Denver's water supply obligations, rather than narrowly defined as constructing a major enlargement of Gross Reservoir. Put simply, the Corps cannot prove that enlargement of Gross Reservoir is the LEDPA, and satisfy its obligations under the § 404 guidelines when it hasn't considered anything other than the enlargement of Gross Reservoir. In addition to the overly narrow, result-oriented statement of purpose and need, the DEIS fails to prove that the Project is the LEDPA because (a) an aggressive water conservation plan, which has already been adopted by Denver, should eliminate most of the alleged need for the Project, (b) executing the existing drought response plan will eliminate the alleged water supply shortfall in times of drought, (c) exercising Denver's rights under the Shoshone Agreement should satisfy most or all of the alleged water supply shortfall, and (d) an independent analysis of the Denver's supply and demand projections would show that there is no real or immediate need for additional water supplies given the 30,000 safety factor, the 5% arbitrary increase in the demand model, and flawed comparison of dry year supply to average year demand. Beyond the nonstructural alternatives to a major reservoir expansion and increased transbasin diversions, Denver has other means of generating additional firm yield, such as cooperative projects with neighboring municipalities, lawn irrigation return flows, water reuse, gravel pit storage and a number of other less damaging alternatives. While the identification and evaluation of these alternatives are the responsibility of the Corps, the Reservoir Companies urge the Corps to rigorously evaluate the potential of the above alternatives, particularly potable and non-potable water reuse, which is technically and economically feasible *and* legally required, as explained above in the context of the Blue River Decree. As one example of many practicable alternatives to the Project that were not adequately considered in the DEIS, the Reservoir Companies anticipate that Denver can meet most, if not all, of its projected demand deficit, if any, with re-usable return flows. Based on historical reuse of Roberts Tunnel return flows from 2000 through 2004, Denver generated about 20,000 AF of unused return flows that could have been legally reused to extinction. (See Summary of 16879.v2 17	Denver Water is implementing a conservation plan in order to achieve sustainable long-term reductions in demand. The expected savings from the conservation plan were subtracted from the projected demand in calculating the need for 18,000 AF of new reliable firm yield. Mandatory watering restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Therefore, Denver Water has assumed future increases in conservation in its water demand projections as part of its Purpose and Need. A discussion of the relaxation of the Shoshone Power call has been included in Section 4.5.3 of the FEIS. Arvada The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow the City of Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. With a new Project, the need is for an additional 15,000 AF/yr of water supply for Denver Water's customers plus 3,000 AF/yr for Arvada. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water supply for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. The water demand estimates and projections provided in the Denver Water IRP were evaluated independently and in considerable detail by the Corps team. The demand forecasting model, the specifications of that model, and the independent variables that drove that model were independently examined and validated.

Comment Information	Comment	Comments and Response
	Denver's Reports to USBR attached as **Exhibit G**). As Denver maximizes use of its Blue River water rights, the Reservoir Companies estimate that Denver will own on the order of 66,000 AF of reusable return flows. (*See Id.*). The DEIS even acknowledges that some of Denver's return flows remain available for other uses and that "the reusable return flows could be combined with other water sources to meet the entire needed 18,000 AF/yr of new firm yield." (DEIS at K-8). But the analysis of this potential source, and practicable alternative to the Project, inexplicably ends there. As part of the Denver's reuse obligation, it can and will reuse return flows from residential lawn irrigation. While Denver would need to construct infrastructure to capture, treat and pipe lawn irrigation return flows ("LIRFs") back into its system, LIRFs have the ability to provide up to 12,000 AF of firm annual yield. (Depo. Trans., W. Bates at 173-180; Trial Trans., Day 2 at p. 127). Yet, the 2002 IRP and DEIS assume only 500 AF of supply from LIRFS. Capturing LIRFs is apparently technically and economically feasible, and would add significant firm annual yield to Denver's system. Denver plans on capturing LIRFs as it has adjudicated that source in Water Court, and has spent roughly $2 Million Dollars quantifying the source. (Trial Trans., Day 2, p. 12-13). The DEIS assumption in this regard (500 AF for LIRFs) is yet another example of a gross underestimate of Denver's water supplies, that leads to an imaginary water supply shortfall. Potable and non-potable reuse (not merely reuse by exchange) of excess return flows, including LIRFs, is economically, technically, and legally feasible, as evidenced by Denver's construction of it water reuse facility and adjudication of LIRFs. More importantly, Denver is legally obligated under the Blue River Decree to reuse its return flows before it constructs projects that would divert additional Western Slope water. Given the technical and economic feasibility, coupled with the preexisting legal requirement of the Blue River Decree, the Corps has the obligation to rigorously evaluate the potential of water reuse to satisfy Denver's demands and provide supplemental information to the public in this regard. **D. The DEIS fails to prove that the Project is in the best interest of the nation.** The Corps is obligated to consider whether the Project is in the best interest of the nation, not just whether it is desirable for Denver. By finding, based on stale, unreliable and biased data and modeling, that the environmental impacts of the Project are generally insignificant, the Corps essentially ignores all impacts on the west slope as negligible. The Colorado River and its tributaries are the lifeblood of recreation and agriculture for the west slope. It has been diverted and pumped to the Front Range for decades, by dozens of transbasin projects. While the impact of each of the existing and foreseeable transbasin diversion projects may be compartmentalized, the Colorado River is subject to death by a thousand cuts. The Corps must reevaluate, based on the most current and best available data and information, whether the Colorado River and its tributaries are at a tipping point, at which even relatively minor impacts can lead to major adverse ecological and economic consequences. There is no question that the Project would cause significant degradation to the Colorado River. Not only would the Project itself have adverse impacts on the aquatic ecosystem, it is only one of several transbasin diversion projects that combine to drastically reduce streamflow. 26579v2 18	Demand Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data were collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. ***Comment #1531-27*** *(ID 1389)**:*** *According to the 2002 IRP, upon which the DEIS relies without much objective analysis, 16,000 AF of supply is expected to be realized through water conservation by 2030. However, Denver actually expects to achieve these 16,000 AF of conservation savings, plus another 13,000 AF, by 2016. In other words, the DEIS assumes only 16,000 AF of conservation by 2030, when it should assume 29,000 AF of conservation by 2016. (See Denver's "Tap-Smart" Conservation Plan attached as Exhibit C). Consistent with this expectation, Mayor Hickenlooper announced in the 2006 State of the City Address that the City and County of Denver, in partnership with Denver's Board of Water Commissioners (the "Board"), "intends to embark on the most aggressive water conservation program in the history of Colorado" seeking to achieve "a 22% reduction in system-wide water use in the next decade - accelerating their original 2050 goals by 35 years." In 2006, the Board followed through on its promise by setting a conservation goal to reduce water use to 165*

Comment Information	Comment	Comments and Response
	The DEIS barely acknowledges, and quickly dismisses the Project's impacts on aquatic resources when it states, "overall, the cumulative effects of reasonably foreseeable projects and the Moffat Project on surface water is minor..." (DEIS 5-39). Yet, the DEIS also states that in combination with the Windy Gap Firming Project ("WGFP") and Shoshone Call reduction, the average annual flows of the Colorado River will decrease by approximately 60,600 AF or 9%. (Id.). The DEIS also acknowledges adverse impacts on water quality, sediment transport and water temperature. (DEIS 5-40). Contrary to the conclusion of the DEIS, however, these are hardly "minor" impacts, particularly when viewed in light of the hundreds of thousands of AF already transported out of the basin and degradation of the ecosystem caused by pre-existing projects. Indeed, according to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and the Moffat Project are implemented. Moreover, the DEIS focused primarily on the average monthly streamflows to evaluate impacts to aquatic resources. Since the Project is designed to capture the highest flows in wet and average years, the Reservoir Companies suspect that it would have much more significant impacts on the peak flows than it has on the average flows. Major reductions of the already constrained peak flows are perhaps more important indicators of stream health than average flows. Similarly, the focus on average monthly streamflows may mask impacts to minimum stream flows, which, like peak flows, must be evaluated independently. Accordingly, in its supplemental analysis, the Reservoir Companies urge the Corps to take a hard look at the specific impacts of the Project on peak flows and minimum stream flows. Demonstrating the Corps' failure to focus on the most significant environmental impacts - which will occur in the sending basin, not the receiving basin - Appendix M to the DEIS considers a 5,000 AF "Environmental Pool" for the benefit of streamflows on 17 miles of South Boulder Creek. There is no corollary for mitigation of impacts on the Colorado River and its tributaries. While the Reservoir Companies support the concept of mitigating impacts to South Boulder Creek, they are concerned with the absence of specific mitigation to improve the environmental conditions of a source area that is already massively depleted of native streamflow along approximately 57 miles of rivers and creeks. The "best interest of the nation" must include both sides of the Continental Divide. **VII. Conclusion** The data relied upon in the DEIS are outdated, including the supply and demand projections from the 2002 IRP and the data set that informs all of the PACSM model runs. Further reducing the reliability of the DEIS, these data and models were supplied by the project proponent and were not given sufficient independent evaluation by the Corps. The Corps failure in this regard is obvious due to its failure to identify most of the glaring errors and omissions identified above. Contrary to a fundamental premise of the DEIS, Denver will not run out of water in 2016. No water supply shortfall would exist absent the faulty comparison of dry year yield to average, unrestricted demand, an arbitrary 5% increase in demand projections on top of a 30,000 AF 365VLV2 19	*gallons per person per day by 2016 by implementing the "Tap-Smart" Conservation Plan. This represents a 22% reduction from average pre-drought use of 21 1 gallons per person per day. Considering Denver's historical success in conservation and future commitments to increase spending and accelerate its goals, Denver can and will meet conservation savings on the order of 29,000 AF by 2016. The DEIS identifies a total of 15,000 AF of unmet demand in Denver's near term. Given that the accelerated conservation savings alone will supply 13,000 AF of this demand (Denver considers conservation as new supply rather than as demand reduction), Denver's allegedly unmet demand in 2016 is no more than 2,000 AF. An unmet demand of 2,000 AF does not justify the construction of 72,000 AF of storage and the resulting environmental, economic and recreational impacts associated with increased transbasin diversions. The DEIS should acknowledge this accelerated schedule for conservation and reevaluate the purpose and need for the Moffat project using the most current data and demand projections. Otherwise, its entire analysis, including the Section 404 analysis in Appendix K of the DEIS, rests on outdated and inaccurate projections of supply and demand and a faulty assumption that a major water supply shortage will occur in 2016. The outdated data also mischaracterizes the baseline conditions under the No Action Alternative and thereby underestimates the negative impacts of the Project and overestimates its benefits.* **Response #1531-27:** As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of

Comment Information	Comment	Comments and Response
	safety factor, failure to acknowledge LIRFs, the Shoshone Agreement and Denver's accelerated conservation goals. These are the conditions under which the statement of purpose and need should be rewritten. The failure of the DEIS to accurately depict the status quo in the No Action Alternative also pervades every aspect of the DEIS, in that it forces environmental comparisons of alternatives to an erroneous baseline condition. Put simply, the LEDPA cannot be determined when the environmental impacts are not known. Likewise, the Corps cannot make a sound decision regarding the nation's best interest, when its entire analysis rests on stale, biased and unreliable data. Once the Corps has an objective understanding of Denver's real water demands and supplies, and documents them in a supplemental EIS, it can then meaningfully evaluate whether any unmet demands would remain. If any demands would remain unmet with no action, then the Corps should consider real "alternatives," rather than minor variations of the Project. In so doing, the Corps should rigorously consider cooperative arrangements, LIRFs, gravel pit storage and particularly, potable and non-potable water reuse of transbasin water, which is already a legal requirement under the Blue River Decree. The Reservoir Companies thank you for your consideration and response to the above comments, and urge you to take the steps that are necessary to ensure the Project is rigorously and objectively evaluated with the most current scientific data and under the most realistic operating scenarios. CLINTON DITCH & RESERVOIR COMPANY EAGLE PARK RESERVOIR COMPANY By: _____ Glenn E. Porzak, General Counsel cc w/out encl: Eagle Park Reservoir Company Board of Directors Clinton Ditch and Reservoir Company Board of Directors Eric Gross, Federal Energy Regulatory Commission Andrea Parker, URS Corporation 36379A/2 20	another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data.

Comment Information	Comment	Comments and Response
		Comment #1531-8 *(ID 1390)**:*** *The DEIS assumes that Denver Water will have to meet "unrestricted demands" in the future, totaling 345,000 AF by 2016. (DEIS at HI-1). It further concludes that a water supply shortfall will occur because Denver's dry year yield will be less than 345,000 AF at that time. (Id.). This is a faulty assumption because the projected demand of 345,000 AF in 2016 does not account for reductions in demand due to drought restrictions that will be imposed in dry years. (See IRP, Drought Response Appendix). Denver will not have to meet "unrestricted demand" during drought conditions in the future. Since the 1970's Denver has instituted voluntary and mandatory watering restrictions in response to drought. (Depo. Trans., D. Jeavons at 37). Denver currently has a Drought Response Plan that it can and will employ in times of water shortage. (2004 Drought Response Plan, attached hereto as Exhibit D). According to the Plan, "If continued low stream flows stress water supplies, Denver Water will work with customers to implement this Drought Response Plan." (Id. at Introduction). The Plan provides: Actual water supply and supply projections trigger drought response. The severity of the water supply picture determines the stage of drought declared and the corresponding level of response. The Drought Response Plan recommends a progressive response to worsening drought conditions.* *Recommended drought response measures are aimed at reducing water use by varying percentages, based on predicted reservoir storage. (Id. at Exec. Sum.). The Drought Response Plan has proven to work extremely well in the past and should be expected to perform similarly in the future. For example, during the "moderate" drought of 2001 to 2004, Denver imposed drought restrictions, targeting a 30% reduction and actually achieving a 29% reduction in water use. (Trial Trans., June 14,2007, p.49). If "moderate" drought conditions occur in 2030, according to Denver Water's*

Comment Information	Comment	Comments and Response
		Drought Response Plan, it will target the same 30% reduction in demand, equivalent to approximately 104,700 AF. (See Id. at pp. 51-56). Thus, during "moderate" drought conditions in 2030, the targeted demand will be on the order of 244,300 AF, not 345,000 AF. Moreover, Mr. Jeavons, Denver's expert demand modeling consultant, stated that Denver's "future demands will be lower if they increase conservation expenditures in real terms." (Depo. Trans., D. Jeavons at 41). We now know that Denver has drastically increased its conservation expenditures. (See 2007 Tap-Smart Conservation Plan). Yet, the demand projection from the 2002 IRP has not been adjusted accordingly. **Response #1531-8:** When Denver Water estimated future demand in the 2002 IRP past and future conservation savings were considered and are shown in DEIS and FEIS Table 1-1E. Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require.

Comment Information	Comment	Comments and Response
		In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's available supplies in the year 2022. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS. In addition to 2002, there were four single dry years in the 45-year study period (1947-1991) when the Moffat Collection System would have run out of water. Additionally, there are other years when the Moffat Collection System would have been close to running out of water. Actual Moffat Collection System operations in 2002 demonstrate the lack of a reliable water supply. Denver Water would have run out of water if it had not implemented emergency measures to preserve and increase water in the Moffat Collection System, including mandatory restrictions, strict surcharges for water use, reducing minimum bypass flows on western slope streams, shutting off the Moffat WTP during portions of the drought, and constructing infrastructure and pumping treated water from the South System into inefficient ditches for delivery and re-treatment by raw water customers. These types of emergency operations are inefficient, expensive tactics that do not provide an adequate permanent solution for the lack of water supply available to the Moffat WTP. Further, one of three treatment plants was unavailable during peak demand season when a minimum of two plants were needed to meet demands. If an unplanned outage had occurred at one of the remaining operational plants, service to customers would have been interrupted. The conventional approach to analyzing Denver Water's water supply is based on the 1947-1991 hydrologic study period. The variation in natural snowmelt runoff

Comment Information	Comment	Comments and Response
		during this 45-year period is representative of the stream gage records that are available since 1916. Further, the conventional approach assumes unrestricted demands during drought periods. Denver Water's conventional approach to water supply planning and system reliability is to develop enough water supplies to be able to meet an unrestricted water demand for the entire hydrologic study period, with the understanding that restrictions would be available for the Board to use as a safety buffer. In addition, the Board maintains a 30,000 AF Strategic Water Reserve in its collection system for droughts worse than this 45-year period, higher demand than expected, and for other unplanned system failures or emergencies. Denver Water's existing collection system can meet an unrestricted annual demand of approximately 345,000 AF while maintaining the Strategic Water Reserve. At this level of demand, Denver Water's available reservoir storage contents would be empty at the end of the mid-1950s drought, and then the reservoirs would begin to refill. Assuming unrestricted demand during a drought is a reasonable approach to partially compensate for the limited gage records and hydrologic study period. Hydrological events have occurred in the more distant past that were more severe than what has been recorded by gage data, and changes or variations in future climate could also affect Denver Water's water supply reliability. Future hydrological events could be more severe than the mid-1950s drought. By planning to have enough water to meet an unrestricted demand, some protection against more extreme droughts is provided. Also, it is assumed that all treated and raw water facilities would operate trouble-free and at full capacities throughout the model period. In reality, natural and man-made problems occur, and usable reservoir capacities have decreased

Comment Information	Comment	Comments and Response
		over time. The expected yield could also be reduced by an unfavorable court ruling on a water right or agreement. Finally, future customer water demands could be higher than the values estimated. In short, the conventional approach cannot account for all these uncertainties. Consequently, for analysis purposes, this approach uses the simplifying assumption that customer demands would not be restricted during a drought and sets aside a Strategic Water Reserve as a way to compensate for issues not specifically accounted for in the approach. ***Comment #1531-9*** *(ID 1391)**:*** *Another issue that was addressed in detail in Case No. 02CW125 was the method by which Denver estimates its firm annual yield. (See TMO, Stip. Fact Nos. 53-55; Trial Trans., Testimony of S. Schmitzer, June 14,2007). The DEIS recognizes that "firm yield" is a "measure of a system's ability to reliably supply water to meet demand during drought periods ..." (DEIS at 1.4.2). Denver calculates its firm yield with the hydrologic model known as PACSM which determines the firm annual yield of its existing system by calculating the maximum average water demand, without drought restrictions, that could be met during the hydrologic study period of water years 1947 through 1991. The critical drought period, late summer 1953 to the spring of 1957, is the most limiting hydrologic factor for the firm annual yield of Denver's system based upon the 1947-1991 study period. (TMO, Stip. Fact No. 55). In other words, Denver's firm annual yield is based on the yield of its system during drought conditions, not average conditions.[2] FOOTNOTE: [2] Denver's average year yield is greater that its firm annual yield. As set forth above and throughout the DEIS, unrestricted average annual demand is defined by Denver as the amount of water under average weather conditions and absent any emergency water use restrictions that may be imposed as a result of drought or other operational*

Comment Information	Comment	Comments and Response
		conditions. Denver's demand forecast is based on a model that uses historic water usage from the years 1973 to 1999. In other words, Denver's demand forecast is based on unrestricted demands during average weather conditions. (TMO, Stip. Fact No. 51; Trial Trans., G. Fisher, June 14, 2007, at 44).[3] FOOTNOTE: [3] Denver's demand during a dry year will be less than its demand during an average year because Denver will impose drought restrictions on its customers. Any shortfall between supplies and demands exists only when comparing dry year supplies to unrestricted average year demands. The DEIS does not present any evidence that a shortfall would exist if Denver compared dry year demands to dry year supplies. In this regard, Douglas Jeavons, the main consultant that developed Denver's econometric demand model, stated that he would compare dry year supplies to dry year demands if he wanted to know how Denver's system would perform during a drought. (Depo. Trans., D. Jeavons at p. 16). The DEIS fails to make that comparison. Likewise, Steven Schmitzer, Denver's Chief of Water Resources Analysis, admitted that Denver has not compared dry year supplies to dry year demands, or compared average year supplies to average year demands. (Trial Trans., June 14, 2007, pp. 141-146). Thus, any shortfall that may exist between supply and demand is a result of a flawed comparison of apples to oranges. The Corps should objectively analyze whether any water supply shortfall would exist if dry year supplies were compared to dry year demands, and average year supplies were compared to average year demands. **Response #1531-9:** Please see the response to Comment ID 1390. The Corps verified Denver Water's PACSM and conducted an independent evaluation of Denver Water's modeling approach and determined they are reasonable.

Comment Information	Comment	Comments and Response
		Denver Water's reasoning for modeling water supply and annual firm yield on the basis of unrestricted demand and purposefully excluding consideration of drought response plans was explained to the Corps. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. The Corps concluded that Denver Water's approach is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions. ***Comment #1531-7*** *(ID 1392)**:*** *In addition to the Drought Response Plan, Denver also has an agreement with Xcel Energy to reduce the call of the Shoshone Power Plant during dry years. (DEIS at 5-20). The DEIS states that the reduction of the Shoshone Call is likely to occur in 1 out of every 6 or 7 years. (DEIS at 5-47). Yet, the DEIS provides "The future operation of the Shoshone Call reduction was not reflected in PACSM because it would only occur under certain conditions which are difficult to include in the model ..." (DEIS at 5-20).* *The Reservoir Companies find this explanation unavailing. During a deposition of Denver's staff in Case No. 02CW125, it was established that the reduction of the Shoshone Call in 2003 resulted in 1 1,586 AF of increased yield to Denver. (Depo. Trans., W. Bates, p. 182-83). Accordingly, the effect of the Shoshone Agreement is to increase the dry year yield of Denver's system by something on the order of 11,500 AF. The agreement is effective through 2032 and is included as*

Comment Information	Comment	Comments and Response
		a "reasonably foreseeable" water based action in the DEIS. Given that the Corps knows when the call reduction will occur, the likely (even if approximate) increase in yield as a result of the call reduction and the frequency of its occurrence, there is no reason not to include the increased yield in Denver's reasonably foreseeable supplies. The Shoshone Agreement alone is likely to satisfy two thirds of the alleged need that the Project is designed to meet. **Response #1531-7:** The Shoshone Call reduction and potential increase in yield is not included in determining Denver Water's supply because it cannot be committed to meeting customer demand. The Shoshone Agreement is a temporary agreement (25-year contract), therefore, Denver Water does not consider the potential yield from this agreement to be firm or reliable since it is not a permanent supply available to permanently meet customer demand. Also, the Shoshone Agreement does not provide additional water to the Moffat Collection System and would not reduce the risk of running out of water in a single dry year. This is because Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. The Shoshone Agreement temporarily increases Denver Water's ability to exchange water to Dillon Reservoir and Roberts Tunnel thereby temporarily increasing the supply in Denver Water's South System, however, it would not reduce the amount of water needed in the Moffat System to meet the purpose and need for the Project. Furthermore, the current Shoshone relaxation agreement has two triggers that must be met prior to reducing the call. The first is Denver Water's predicted reservoir storage on July 1 and the second is the forecasted flow for the Colorado River at Dotsero (which is difficult to predict). For all of the reasons listed above, it is unreasonable to model the possible change in hydrology from the temporary relaxation of the

Comment Information	Comment	Comments and Response
		Shoshone Call. The Corps does consider the relaxation of the Shoshone call in the FEIS and as noted by the commenter, a description can be found in the DEIS. ***Comment #1531-10*** *(ID 1393)**:*** *Denver used a complex econometric demand model to estimate its future demands. (See Depo. Trans., D. Jeavons at 9-13). The model was carefully crafted to determine future demands based on household income, Denver Regional Council of Governments population estimates, housing density and other detailed parameters. (Id.). Yet, after running the econometric demand model, Denver arbitrarily increased its output by 5%, supposedly to account for historical inconsistencies between predicted and actual demand. (Id. at 22,27-29; see also Trial Trans., G. Fisher, June 14,2007, at 39-42). The explanation for the 5% "calibration" was that the model, when "back-cast" against historic demands, would have underpredicted demand from the 1980's to 1999. (Id.). However, just as the model would have systematically underpredicted demand from the 1980's to 1999, it would have overpredicted demands from 1973 to the 1980's. (Depo. Trans., D. Jeavons at 28-29). It was arbitrary for Denver to "calibrate" the model based only on the period that the model underpredicted demands, which resulted in an overinflated future demand projection. To put this "calibration" in perspective, 5% amounts to approximately 17,000 AF. (Trial Trans., G. Fisher, June 14,2007, at 39-42). This is in addition to the 30,000 AF safety factor that is also added to the calculated demand model output. ((Depo. Trans., D. Jeavons at 21). Absent the arbitrary increase of 5%, Denver has no a need for new water supplies either in the near term or the long term. (Id., see also IRP, Demand Appendix).* **Response #1531-10:** There is, in fact, reason and merit to the 5% upward adjustment to the model regarding the Project shortfall. This adjustment is based on the average annual model

Comment Information	Comment	Comments and Response
		under-prediction between 1985 and 2000, as explained in the technical memoranda included in Appendix A of the DEIS (Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS). Harvey Economics reviewed Denver Water's model and found this adjustment to be reasonable. The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. In response to the comments regarding the validity of data sources and faulty assumptions: a) DRCOG projections are widely recognized and used by numerous Federal, State, local and private agencies, as described in the technical memoranda included in Appendix A of the DEIS. The Corps has no reason to discount these projections as biased; b) the data and the assumptions used to develop the projections for the EIS have been reviewed and revised to consider current and available data (since 2000) as appropriate as part of the model update and reanalysis for the FEIS; c) Harvey Economics independently reviewed the Denver Water models and evaluated them for validity and reasonableness; it was concluded that the demand forecasting model was appropriate and its reliability sound. ***Comment #1531-25*** *(ID 1394)**:*** *If the Project is not constructed, Denver is not obligated to supply an additional 3,000 AF to the City of Arvada. In other words, if no action is taken, there is no need to supply this 3,000 AF. This 3,000 AF of demand should therefore be excluded from the statement of purpose and need, and should be excluded from the No Action Alternative. To include this additional 3,000 AF of demand in the No Action Alternative is a clear error that renders the baseline conditions inaccurate and unreliable. In turn, all analyses of environmental impacts comparing the other alternatives to the No*

Comment Information	Comment	Comments and Response
		Action Alternative are flawed and erroneous. This error has the effect of overstating the benefits and understating the adverse impacts of the Project. **Response #1531-25:** The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. With a new Project, the need is for an additional 15,000 AF/yr of water supply for Denver Water's customers plus 3,000 AF/yr for Arvada. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water supply for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. ***Comment #1531-18*** *(ID 1395)**:*** *To summarize, the DEIS should include additional modeling including: (1) the most up-to-date conservation expenditures and goals (expected to supply 29,000 AF by 2016); (2) the imposition of the drought response measures set forth in the Drought Response Plan (expected to reduce demand by 30% during a "moderate" drought); (3) the reduction of the Shoshone Call when reservoirs are at or below 80% of storage on July 1 of any given year (expected to increase yield by 11,500 AF); (4) a fair and realistic comparison of dry year yield to dry year supplies (this would eliminate any water supply shortfall); (5) a fair and realistic projection of future demand that is not arbitrarily increased by 5% (this would reduce the demand projection by 17,000 AF); and (6) the removal of the 3,000 AF of demand for Arvada in the No Action Alternative. Contrary to the scenario that the DEIS currently assumes as the status quo under the No Action Alternative, Denver will not run out of water in*

Comment Information	Comment	Comments and Response
		201 6. Accordingly, Denver does not need this Project. **Response #1531-18:** As shown in Table 1-1 in FEIS Section 1.4.1, the 379,000 AF of demand in 2032 already reflects 29,000 AF of water savings from conservation measures between 1980 and 2000, and an additional 27,700 AF of savings from natural replacement (customers replacing items with more water efficient devices). As Denver Water looks to the future and how anticipated demand would be met, Denver Water has a goal of another 29,000 AF of conservation, of which 16,000 AF would be achieved by 2032. The additional 68,000 AF of demand reduction (natural replacement and additional conservation) was considered when calculating the amount of additional supply Denver Water would need to meet future demand. The Corps reviewed Denver Water's estimates of savings from natural replacement as described in FEIS Appendix A (Supplemental Evaluation of Denver Water Demand Projections) and research from the American Water Works Association was incorporated into the calculations of natural replacement savings. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing

Comment Information	Comment	Comments and Response
		System and Full Use with a Project Alternative (2032). Additional data were collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. The Shoshone Call reduction and potential increase in yield is not included in determining Denver Water's supply because it cannot be committed to meeting customer demand. The Shoshone Agreement is a temporary agreement (25-year contract), therefore, Denver Water does not consider the potential yield from this agreement to be firm or reliable since it is not a permanent supply available to permanently meet customer demand. Also, the Shoshone Agreement does not provide additional water to the Moffat Collection System and would not reduce the risk of running out of water in a single dry year. This is because Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System. The Shoshone Agreement temporarily increases Denver Water's ability to exchange water to Dillon Reservoir and Roberts Tunnel thereby temporarily increasing the supply in Denver Water's South System, however, it would not reduce the amount of water needed in the Moffat System to meet the purpose and need for the Project. Furthermore, the current Shoshone relaxation agreement has two triggers that must be met prior to reducing the call. The first is Denver Water's predicted reservoir storage on July 1 and the second is the forecasted flow for the Colorado River at Dotsero (which is difficult to predict). For all of the reasons listed above, it is unreasonable to model the possible change in hydrology from the

Comment Information	Comment	Comments and Response
		temporary relaxation of the Shoshone Call. The Corps does consider the relaxation of the Shoshone call in the FEIS and as noted by the commenter, a description can be found in the DEIS. When Denver Water estimated future demand in the 2002 IRP past and future conservation savings were considered and are shown in DEIS and FEIS Table 1-1E. Modeling water supply and annual firm yield on the basis of unrestricted demand purposefully excludes consideration of drought response plans for several reasons. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The updated demands are expected to exceed Denver Water's available supplies in the year 2022. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS.

Comment Information	Comment	Comments and Response
		In addition to 2002, there were four single dry years in the 45-year study period (1947-1991) when the Moffat Collection System would have run out of water. Additionally, there are other years when the Moffat Collection System would have been close to running out of water. Actual Moffat Collection System operations in 2002 demonstrate the lack of a reliable water supply. Denver Water would have run out of water if it had not implemented emergency measures to preserve and increase water in the Moffat Collection System, including mandatory restrictions, strict surcharges for water use, reducing minimum bypass flows on western slope streams, shutting off the Moffat WTP during portions of the drought, and constructing infrastructure and pumping treated water from the South System into inefficient ditches for delivery and re-treatment by raw water customers. These types of emergency operations are inefficient, expensive tactics that do not provide an adequate permanent solution for the lack of water supply available to the Moffat WTP. Further, one of three treatment plants was unavailable during peak demand season when a minimum of two plants were needed to meet demands. If an unplanned outage had occurred at one of the remaining operational plants, service to customers would have been interrupted. The conventional approach to analyzing Denver Water's water supply is based on the 1947-1991 hydrologic study period. The variation in natural snowmelt runoff during this 45-year period is representative of the stream gage records that are available since 1916. Further, the conventional approach assumes unrestricted demands during drought periods. Denver Water's conventional approach to water supply planning and system reliability is to develop enough water supplies to be able to meet an unrestricted water demand for the entire hydrologic study period, with the understanding that restrictions would be available for the Board to use as a safety buffer. In addition, the Board maintains a 30,000 AF Strategic Water Reserve

Comment Information	Comment	Comments and Response
		in its collection system for droughts worse than this 45-year period, higher demand than expected, and for other unplanned system failures or emergencies. Denver Water's existing collection system can meet an unrestricted annual demand of approximately 345,000 AF while maintaining the Strategic Water Reserve. At this level of demand, Denver Water's available reservoir storage contents would be empty at the end of the mid-1950s drought, and then the reservoirs would begin to refill. Assuming unrestricted demand during a drought is a reasonable approach to partially compensate for the limited gage records and hydrologic study period. Hydrological events have occurred in the more distant past that were more severe than what has been recorded by gage data, and changes or variations in future climate could also affect Denver Water's water supply reliability. Future hydrological events could be more severe than the mid-1950s drought. By planning to have enough water to meet an unrestricted demand, some protection against more extreme droughts is provided. Also, it is assumed that all treated and raw water facilities would operate trouble-free and at full capacities throughout the model period. In reality, natural and man-made problems occur, and usable reservoir capacities have decreased over time. The expected yield could also be reduced by an unfavorable court ruling on a water right or agreement. Finally, future customer water demands could be higher than the values estimated. In short, the conventional approach cannot account for all these uncertainties. Consequently, for analysis purposes, this approach uses the simplifying assumption that customer demands would not be restricted during a drought and sets aside a Strategic Water Reserve as a way to compensate for issues not specifically accounted for in the approach. The Corps verified Denver Water's PACSM and conducted an independent evaluation of Denver

Comment Information	Comment	Comments and Response
		Water's modeling approach and determined they are reasonable. Denver Water's reasoning for modeling water supply and annual firm yield on the basis of unrestricted demand and purposefully excluding consideration of drought response plans was explained to the Corps. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve which is a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. The Corps concluded that Denver Water's approach is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions. There is, in fact, reason and merit to the 5% upward adjustment to the model regarding the Project shortfall. This adjustment is based on the average annual model under-prediction between 1985 and 2000, as explained in the technical memoranda included in Appendix A of the DEIS (Supplemental Evaluation of Denver Water Demand Projections for the Moffat Project EIS). Harvey Economics reviewed Denver Water's model and found this adjustment to be reasonable. The Purpose and Need for the Moffat Project includes the anticipated amount of water needed to serve customers in Denver and to serve the permanent contracts Denver Water has outside Denver. In response to the comments regarding the validity of data sources and faulty assumptions: a) DRCOG projections are widely recognized and used by numerous Federal, State, local and private agencies, as

Comment Information	Comment	Comments and Response
		described in the technical memoranda included in Appendix A of the DEIS. The Corps has no reason to discount these projections as biased; b) the data and the assumptions used to develop the projections for the EIS have been reviewed and revised to consider current and available data (since 2000) as appropriate as part of the model update and reanalysis for the FEIS; c) Harvey Economics independently reviewed the Denver Water models and evaluated them for validity and reasonableness; it was concluded that the demand forecasting model was appropriate and its reliability sound. The need for the Project is 18,000 AF/yr instead of 15,000 AF/yr because Denver Water agreed to allow Arvada to purchase a percentage of increased firm yield that Denver Water is able to achieve in the Moffat Collection System, up to a maximum of 3,000 AF/yr. With a new Project, the need is for an additional 15,000 AF/yr of water supply for Denver Water's customers plus 3,000 AF/yr for Arvada. The discussion of the No Action Alternative states that the Strategic Water Reserve would be reduced to help meet the need for up to an additional 15,000 AF/yr of water supply for Denver Water customers. If a Project is not developed (No Action Alternative), Denver Water does not have an obligation to provide Arvada with up to 3,000 AF/yr. ***Comment #1531-3*** *(ID 1396)**:*** *The Corps Failed to Independently Evaluate the Project 40 C.F.R 5 1506.5(c) provides: [A]ny environmental impact statement prepared pursuant to the requirements of NEPA shall be prepared directly by or by a contractor selected by the lead agency .... If the document is prepared by contract, the responsible Federal official shall furnish guidance and participate in the preparation and shall independently evaluate the statement prior to its approval and take responsibility for its scope and contents. In Utahns for Better Transportation, the 10th Circuit Court found the EIS*

Comment Information	Comment	Comments and Response
		inadequate because the Corps relied too heavily on the Utah Department of Transportation ("UDOT") and contractors hired by UDOT to prepare the EIS, without sufficient independent analysis. 305 F.3d at 1 186-87 (citing 40 C.F.R. 1506.5(c)). The Court's concern in this regard was "whether the breach compromised the objectivity and integrity of the NEPA process ..." Id. Similarly, in Davis v. Mineta, 302 F.3d 1 104, 1 12- 13 (10th Cir. 2002), the Court of Appeals held that federal agencies prejudged NEPA issues. In Davis, a municipality had contracted with a city for a predetermined result and the federal agencies failed to exercise independent review and failed to analyze any alternatives other than the preferred alternative. Id. The Reservoir Companies have the same concerns with the Moffat Project DEIS, because the Project proponent has supplied all of the modeling and data that the Corps is relying on to make its determinations under both NEPA and the CWA. For one, the 2002 IRP was prepared by Denver and its consultants, and the Corps has relied on its conclusions and projections with merely superficial independent evaluation. An independent evaluation of Denver's water demand projections, as required by 5 1506.5(c), should have uncovered and evaluated the issues mentioned above that led to an overstated water supply shortfall and fabricated a need for the Project. Its failure to do so is evidence that the Corps failed to independently evaluate the data and modeling that was supplied by Denver. *Second, the PACSM model and its underlying data form the basis of the entire NEPA analysis, including Denver's firm yield and stream flow projections, which, in turn project the environmental impacts on aquatic resources. PACSM is a model designed and run by Denver. Its outputs are taken at face value in the DEIS, without independent analysis or evaluation by the Corps or its contractors.* **Response #1531-3:** The Corps has complied and will comply with all Federal regulations for the preparation of the described EIS and the Section 404 Permit, including an appropriate Project

Comment Information	Comment	Comments and Response
		effects analysis and evaluation of proponent-supplied information. The water demand estimates and projections provided in the Denver Water IRP were evaluated independently and in considerable detail by the Corps. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the older data and the current data. An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle Engineering 2003, 2004). As a component of UPCO, an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities in Grand and Summit counties (UPCO PACSM Review

Comment Information	Comment	Comments and Response
		Committee 1999). ***Comment #1531-22*** *(ID 1397)**:*** *Not only is PACSM designed and run by Denver, its data set is outdated and fails to account for recent changes in climate and hydrology. In this regard, PACSM is based on hydrologic data from the study period of water years 1947 through 199 1. (TMO, Stip. Fact No. 53). Yet, the Project is not expected to go online until 2016. Accordingly, the scientific data relied upon to estimate water yield and impacts on aquatic ecosystems will be at least 25 years old as of the time the Project is expected to go online. The Reservoir Companies wonder whether the PACSM model can accurately predict water yield and stream conditions in 2016 and beyond when it is based on data that is a quarter-century old. Further, the question of whether the PACSM data ending in water year 1991 are reliable is of particular concern in light of potential impacts of climate change on the hydrologic cycle of the Upper Colorado and its tributaries. Denver is among several major water utilities that have joined the Water Utility Climate Alliance ("WUCA"). The WUCA released a white paper on climate change in January 2010 (attached as Exhibit E) that explains a major shift in how water supply planning was done in the past, and should be done in the future. Namely, traditional water supply planning "has used recorded weather and hydrology to represent future supply conditions." (WUCA at p.1). "One core assumption behind traditional water resource planning is that climate exhibits stationarity. Stationarity means that the statistical properties of climate variables in future periods will be similar to past periods." (Id. at 7). "The potential for significant changes in climate in the future has called into question the viability of only using historical hydrologic, weather, and demand information to make decisions regarding water supply and infrastructure investment." (Id.). The potential impacts of climate change on Colorado River basin hydrology has been documented by the Colorado Water*

Comment Information	Comment	Comments and Response
		Conservation Board in its report titled "Climate Change in Colorado: A Synthesis to Support Water Resources Management and Adaptation." (the "CWCB Report," attached as Exhibit F). As the DEIS acknowledges, the CWCB Report concludes that temperatures in Colorado have increased about two degrees during the last 30 years. (CWCB Report at. Exec. Sum.; DEIS at 5-34). Since the PACSM data stopped in 199 1, it would have missed two thirds of this temperature increase. More importantly, the CWCB found that "the lowest five-year period of Colorado River natural flow since records began in the late 1800's occurred in 2000 to 2004 (9.9 million acre feet per year)." (Id.). Again, this critical data set is outside the purview of the PACSM model. Further, "Recent hydrologic studies of the Upper Colorado River Basin project multi-model average decreases in runoff ranging from 6% to 20% by 2050 compared to the 20th century average, although one statistical flow model projects a 45% decline by 2050." (Id.). Stationarity is no longer a valid assumption in a major water resources analysis. If the PACSM model fails to account for recent variability in the hydrologic cycle, it will not provide reliable estimates of stream flow or firm annual yield. This defect would pervade almost every aspect of the DEIS, which fundamentally relies on the model's output. The Corps seems to accept that climate change will cause greater variability and greater extremes in water systems, but does not even attempt to quantify the impacts on water resources. (DEIS at 5-35). But, the lack of hard and fast data on the specific effects of climate change do not prevent the Corps from at least qualitatively analyzing the likely impacts on aquatic ecosystems, which would probably include negative impacts on fisheries, water quality, water temperature and minimum stream flows during the late summer and fall. The Corps has an obligation to rigorously and independently evaluate the Project, the scope of alternatives and the environmental impacts. As an example, the October 2007 EIS for the "Colorado River Interim Guidelines" prepared by the Bureau of

Comment Information	Comment	Comments and Response
		Reclamation's Lower Colorado office contained a 100-page appendix evaluating the state of climate science, potential impacts of climate change on the Colorado River Basin, and options for evaluating the effects of climate change on reservoir operations. In contrast, this DEIS dismisses the potential impacts of climate change in relation to the preferred alternative in a single page. (DEIS at 5-35). The Reservoir Companies urge the Corps not to base its entire DEIS, including the impacts analysis that will form the basis of a permit decision under § 404 of the CWA, on a self-serving model supplied by the applicant, that is based upon stale and increasingly irrelevant data. In addition, after recognizing the increased range of hydrologic variability that may result in the Upper Colorado River due to climate change, the Corps should address this variability by proposing adaptive management measures to cope with stream conditions and environmental impacts as they actually occur in the future, not as they are predicted to occur. Given that outdated and unreliable models form the basis of the DEIS, any § 404 permit should be conditioned on Denver's compliance with a detailed adaptive management plan. **Response #1531-22:** The model study period used in the DEIS (1947 through 1991) provides a broad range of average, wet, and dry flow conditions and sequences of years that include dry years followed by wet years, in which case it is suitable for estimating hydrologic effects associated with the Moffat Project EIS alternatives. DEIS Section 5.4 addressed climate change and described the impacts of expected yield of the Moffat Collection System related to earlier and more concentrated spring runoff: "Many scientific studies have predicted an increase in temperatures, resulting in changes in the composition of

Comment Information	Comment	Comments and Response
		winter precipitation and the timing of spring snowmelt. In other words, as temperatures rise the West could receive more winter precipitation in the form of rain versus snow and the snow that does accumulate would melt earlier in the spring than in past years. In Colorado, the onset of stream flows from melting snow has shifted earlier by two weeks between 1978 and 2004 and the timing of runoff is projected to shift earlier in the spring (Western Water Assessment 2008). If this were to occur, it is likely that the yield of the Moffat Collection System would decrease due to existing capacity constraints. The Moffat Collection System canals and tunnels are only capable of transporting a certain amount of water before reaching hydraulic limitations. Additionally, South Boulder Creek is only capable of transporting approximately 1,200 cfs at Pinecliffe before flooding concerns arise. If runoff were to occur in a condensed timeframe, it is likely that hydrological limitations in the Moffat Collection System could decrease Denver Water's yield. Furthermore, a condensed timeframe for runoff would likely mean a reduction in the number of days Denver Water's water rights is in priority to divert water. This could result in Denver Water building additional replacement sources to ensure an adequate supply of water for its customers." Although there is valid concern in the scientific community that global climate change may affect future water supplies in Colorado, there is little quantitative or even qualitative data with which to accurately predict or portray these changes, and consequently with which to integrate reasonably predictable cumulative effects of the Proposed Action. The 2008 Western Water Assessment report prepared for CWCB, Climate Change in Colorado, indicates that, "In all parts of Colorado, no consistent long-term trends in annual precipitation have been detected. Variability is high, which makes detection of trends difficult. Climate model projections do not agree whether annual mean

Comment Information	Comment	Comments and Response
		precipitation will increase or decrease in Colorado by 2050. The multi-model average projection shows little change in annual mean precipitation." The 2009 U.S. Geological Survey Circular 1331, Climate Change and Water Resources Management: A Federal Perspective, indicates that climate change has the potential to affect many sectors in which water resource managers play an active role, including water availability. The study concedes two pertinent points: 1) the best available scientific evidence based on observations from long-term monitoring networks indicates that climate change is occurring, although the effects differ regionally; and 2) climate change could affect all sectors of water resources management, since it may require changed design and operational assumptions about resource supplies, system demands or performance requirements, and operational constraints. These studies reflect general trends that there is concern regarding the effect of climate change on the Proposed Action, however the absence of quantified climate-induced decreases in flows related to the Proposed Action makes it impossible to evaluate the changes with more than a speculative quality. Climate change is an evolving science, as such the Corps updated FEIS Section 4.4 with more recent technical documentation, including the Reclamation planning document titled Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information (Brekke 2011). The concept of a systematic interdisciplinary approach to cumulative effects is central to NEPA analysis, but is only defined in very general terms. Accordingly, NEPA relies on Federal agencies to establish their own methods and procedures within the framework of the regulatory requirements. Therefore, the Corps, as the lead Federal agency of the Moffat Project EIS, believes the analysis is adequate.

Comment Information	Comment	Comments and Response
		Comment #1531-4 *(ID 1398)**:*** *The Corps Failed to Identify Conflicts With State and Federal Laws NEPA regulations require that: To better integrate environmental impact statements into State or local planning processes, statement shall discuss any inconsistency of a proposed action with any approved State or local plan and laws ... [w]here an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law. 40 C.F.R. 5 1506.2(d). Colorado water law governs the use and administration of water in this state. The DEIS fails to consider inconsistencies between Colorado water law and the Project. As only one example, the water right decrees for the Moffat Tunnel Collection System do not permit water diverted through the Gumlick Tunnel to be redirected into the Moffat Tunnel and delivered to Gross Reservoir. But there is no discussion of how the Project conflicts with Colorado water law or how the Corps intends to reconcile its inconsistencies. In addition, and more importantly, the Corps failed to discuss the inconsistency between the water reuse requirement of the Blue Rive Decree and the proposed Project.* *The Blue River Decree (Findings of Fact and Conclusions of Law and Final Decree, Consolidated Cases, Civil Action Nos. 2782, 501 6, & 501 7, U.S. District Court for the District of Colorado, October 12, 1955) addressed, among other things, the water rights of the United States for the Colorado-Big Thompson Project, including rights to water from the Blue River for Green Mountain Reservoir. Included in the Findings of Fact is a Stipulation of October 5, 1955, agreed to by all parties that contains provisions relating to Denver's use of returns flows from its Colorado River Basin water. ¶4(e), (f), &(g). This Stipulation, being approved by the Federal Court, is Federal law. The intent of the Project is to export additional water out of the Colorado River Basin for use on the Front Range of Colorado. If constructed, the Moffat Project would join with other existing projects constructed by Denver Water on the*

Comment Information	Comment	Comments and Response
		West Slope that transport water out of the Colorado River Basin across the Continental Divide for use in and around Denver. Approximately half of Denver's water supply presently comes from the West Slope. Paragraph 4(e) establishes the requirement that importation of Blue River water shall be reduced by the quantity of Colorado River System return flow water above that quantity imported in the 1955 water year that is not utilized by exchange or otherwise: (e) To the extent that the importation and the use of water from the Colorado River System, over and above the quantity of water diverted from that source during the last year being October 1st, 1954 to September 30, 1955, by reason of the return flow from the municipal systems of said cities increase the amount of water said cities may lawfully utilize from all sources in order to supply their municipal needs, through exchange or otherwise, to that same extent the right to divert water from the Blue River shall be correspondingly decreased, if such exchange is not exercised; provided, however, that the obligation to utilize water from the Colorado River System by exchange or otherwise shall be subject to the conditions, limitations, and safeguards set forth in the following subdivision, the same being subdivision (f) of this paragraph. *Paragraph 4(f) requires Denver to submit annual reports to the Secretary of the Interior showing, by month, the quantities of return flow from Colorado River water to the South Platte and the steps taken during the period to utilize such return flows to minimize Denver's demands for Blue River water: (f) In order to accomplish the objectives set forth in the immediately preceding subdivision hereof, the same being lettered (e), each city undertakes to exercise due diligence, within legal limitation and subject to economic feasibility. To that end, [Denver] and [Colorado Springs] shall, respectively, submit to the Secretary of the Interior on or before December 31st of each calendar year, beginning with the year 1957, a report showing by months for the*

Comment Information	Comment	Comments and Response
		water year ended September 30th last past, the quantities of water diverted . . . and whether and to what extent such water was used directly or placed in storage. After each city commences use of Blue River water said report shall also show by months for the same period the quantities of return flow from their municipal uses of such Colorado River water accruing to the South Platte River and to Fountain Creek respectively.. . Each such shall also show what steps, by legal action or otherwise, the reporting city has taken during the period covered by the report to utilize such return flow by exchange or otherwise to the extent water of the Colorado River system is included therein, so as to reduce or minimize the demands of such city upon Blue River water. The United States of America reserves the right . . . to apply to this court for injunctive or other remedial orders, suspending or proportionately reducing diversions or imposing conditions upon the taking of Blue River water . . . if the United States shall establish as a fact that the city has failed to exercise due diligence in taking, with respect to return flow of water of the Colorado River System, all steps which, in view of legal limitations and economic feasibility, might reasonably be required of such city in establishing, enforcing, utilizing or operating a plan designed to accomplish said reduction by such city of its Blue River water use. *The Blue River Decree requires Denver to make full use, within legal limitations and subject to economic feasibility, of return flows from its Blue River water rights. Failure to so use such return flows, by exchange or otherwise, is to result in a corresponding reduction of Denver's Blue River diversion rights. The stated purpose of this requirement is "to reduce or minimize the demands of such city upon Blue River water." In Denver v. Fulton Irrigating Ditch Co., 506 P.2d 144 (Colo. 1973), the Colorado Supreme Court stated: "In order to minimize the amount of water removed from Western Colorado, eastern slope importers should, to*

Comment Information	Comment	Comments and Response
		the maximum extent feasible, reuse and make successive uses of the foreign water." While the specific purpose of these provisions of the Blue River Decree is to reduce or minimize Denver's transmountain diversions of Blue River water, the broader purpose as stated by the Supreme Court in Fulton Ditch is to ensure that Denver and other Front Range water suppliers do not take water from Western Slope streams unless and until absolutely necessary to meet actual requirements. The need for the Project and its impacts cannot be evaluated in isolation. It must be evaluated in light of the history and laws surrounding transbasin diversions from the Colorado River basin. The appropriate balance between efficient water use and reuse on the east slope, and additional diversions from the west slope, was established in 1955 by the Blue River Decree. The failure to even consider this historical balance and legal water reuse obligation is as fundamental flaw of the DEIS. The Corps should not issue a permit to Denver to construct the Project unless and until compliance with the Blue River Decree is established and independently confirmed by the Corps. **Response #1531-4:** The Corps relies on administration and enforcement of the State water laws to ensure water rights are protected and utilized properly. If possible, a Section 404 Permit would attempt to not impose conditions on the operation of the Project contrary to jurisdiction of Colorado Water Law. The Corps defers to the State to resolve water law issues. The Corps' analysis for the EIS is based on diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership will not be a factor in the Corps public interest decision" (33 CFR Part 320.4[g]). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an

Comment Information	Comment	Comments and Response
		otherwise practicable alternative (40 CFR Part 230.10). According to Denver Water, the waters that would be stored in the proposed Gross Reservoir enlargement were adjudicated by courts in C.A. No. 657, C.A. No. 1430, and C.A. 12111 for municipal use on the East Slope. Refer to FEIS Section 3.1 for a discussion of Denver Water's water rights by river segment. In order to accomplish the objectives of utilizing the return flows from the Colorado River, through exchange or otherwise, the Blue River Decree requires Denver Water to undertake the exercise of due diligence within legal limitations and subject to economic feasibility. Pursuant to the stipulation and decree, Denver Water files an annual report with the Secretary of the Interior that describes what steps, by legal action or otherwise, Denver Water has taken to utilize Colorado River return flows by exchange or otherwise, so as to reduce or minimize the demands of such city upon Blue River water. The Secretary of the Interior is charged with the responsibility of determining whether Denver Water has failed to exercise due diligence in taking all steps in view of legal limitations and economic feasibility which might reasonably be required in establishing, enforcing, utilizing or operating a plan with respect to return flow of water from the Colorado River System. Contrary to the comment, the Blue River Decree does not require "full use" of return flows from its Blue River water rights. Denver Water has filed the annual Colorado River Return Flow Report detailing its steps for utilizing its Colorado River return flows with the Secretary of the Interior since 1957 and the Secretary has never made a determination that Denver Water was not in compliance with its obligations under paragraphs 4(e) or (f) of the Blue River Stipulation.

Comment Information	Comment	Comments and Response
		Denver Water asserts that it has and would continue to fully comply with the requirements of the Blue River Decree. Denver Water currently uses its reusable supplies for exchanges, augmentation, contract deliveries, and its non-potable system to the extent it can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. ***Comment #1531-15*** *(ID 1399)**:*** *Standards of Law Under CWA Section 404 of the Clean Water Act ("CWA"), 33 U.S.C. § 1344, prohibits the filling or dredging of wetlands without first receiving a § 404(b) permit from the Corps. "A permit may not be issued if (i) there is a practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences, (ii) the discharge will result in significant degradation, (iii) the discharge does not include all appropriate and practicable measures to minimize the potential harm, or (iv) there does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Corps'] Guidelines for permit issuance." Utahns for Better Transportation v. US. Dept. of Transportation, 305 F.3d 1152, 1163 (10th Cir. 2002) (citing 40 C.F.R. § 230.12(a)(3)(i-iv)). "The burden of proof to demonstrate compliance with the § 404(b) permit Guidelines rests with the applicant; where insufficient information is provided to determine compliance, the Guidelines require that no permit be issued." Id. (citing 61 Fed.Reg. 30, 990, 30, 998 (June 18, 1996)). Further, issuance of a permit with insufficient information would be considered arbitrary and capricious. Id. If the Corps finds the Project to be the least environmentally damaging practicable alternative ("LEDPA"), the Corps must also determine that the Project is in the public interest before it can issue a § 404 permit. 33 C.F.R. § 320.4(a)(l). In conducting a public interest review, the Corps is*

Comment Information	Comment	Comments and Response
		required to balance "benefits which reasonably may be expected to accrue from the proposal" against the "reasonably foreseeable detriments." Id. The decision to grant or deny a permit should reflect "national concern for both protection and utilization of important resources." Id. Thus, the federal regulations place the burden on the Corps to prove that (a) the Project is the LEDPA and (b) the Project is in the best interest of the nation. **Response #1531-15:** The Corps did not identify an LEDPA in the DEIS. The Corps will make a determination of the LEDPA based on its review of the information and analysis contained in the FEIS, per the Corps' Section 404 regulations. The Section 404 regulations require the Corps to consider degradation to the waters of the United States and minimization of potential adverse effects to the aquatic ecosystem. Additionally, the Corps' public interest review balances both protection and utilization of natural resources and includes consideration of conservation, historic and cultural values, fish and wildlife values, aesthetics, etc. The decision whether to issue a permit is based on an evaluation of the probable impacts of the proposed activity and its intended use on the public interest (33 CFR 320.4(a)). Per 33 CFR 320.4 General Policies for Evaluating Permit Applications, the Corps solicits input from the public in order to better evaluate the detriments and benefits of a project to the public. When the Corps acts on the permit application it considers comments received as well as any responses the applicant may submit to the Corps. The major tools used to interact with the public are the public notice and public hearing. The public notice is the primary method of advising all interested parties of a proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable beneficial and detrimental

Comment Information	Comment	Comments and Response
		impacts on the public interest. Public notices are used to announce hearings. Public notices on proposed projects always contain a statement that anyone commenting may request a public hearing. Public hearings are held if comments raise substantial issues which cannot be resolved informally and the Corps decision maker determines that information from such a hearing is needed to make a decision (see 33 CFR 327). Four public hearings were held for the Moffat Project: • December 1, 2009 – Boulder Country Club, Boulder, CO • December 2, 2009 – The Inn at Silver Creek, Granby, CO • December 3, 2009 – Double Tree Hotel, Denver, CO • January 7, 2010 – Beaver Run Conference Center, Breckenridge, CO Comments were recorded verbatim by a court reporter during the hearings. Comments were also obtained from the public via mail, fax, and email. Comments were made part of the record, and they are also being considered in determining whether it would be in the public interest to proceed with this action. ***Comment #1531-16*** *(ID 1400)**:*** *"For actions subject to NEPA, the analysis of alternatives required for the NEPA environmental documents will in most cases provide the information for the evaluation of alternatives under the CWA Guidelines. If, however, the NEPA documents do not consider the alternatives in sufficient detail to respond to the requirements of the Guidelines, it may be necessary to supplement NEPA documents with additional information." Id. (citing 40 C.F.R. § 230.1 O(a)(4)). In this case, the Corps has stated that it*

Comment Information	Comment	Comments and Response
		intends to rely on the NEPA documents to inform its decision under § 404 of the CWA. (DEIS, App. K). However, for all of the reasons set forth in Section V above, which are incorporated herein equally as objections to the Corps' satisfaction of the CWA guidelines, the NEPA documents are fundamentally flawed. The problems that pervade the NEPA documents undercut any § 404 permit decision that would be based on the NEPA documents. Such flaws include (1) the statement of purpose and need is unreasonably narrow, (2) the scope of alternatives that were considered is unreasonably narrow, (3) the No Action Alternative fails to accurately depict the status quo, (4) the Corps failed to independently evaluate and verify the PACSM model and the data and projections from the 2002 IRP, (5) the Corps failed to identify and reconcile conflicts between the Project and Colorado water law, and (6) the Corps failed to identify and reconcile conflicts between the Project and the reuse requirement of the Blue River Decree. Since the DEIS is inadequate under NEPA, its analysis of environmental impacts is also inadequate to inform a decision under § 404 of the CWA. The Reservoir Companies urge the Corps to supplement the NEPA documents to comply with the substantive standards of the CWA, to objectively and rigorously evaluate whether there is a legitimate need for the Project, and to determine whether the Project is truly the LEDPA after considering all practicable alternatives, including water reuse, conservation, cooperative agreements, and all other projects and mechanisms available to meet Denver's basic policy objective, which is to supply water to its customers. Otherwise, the issuance of a permit with insufficient information would be considered arbitrary and capricious. **Response #1531-16:** Regarding Purpose and Need, please see the response to Comment ID 1387.

Comment Information	Comment	Comments and Response
		Regarding alternatives, please see the response to Comment ID 1386. No Action Alternative Under NEPA, every EIS must analyze a No Action Alternative, which is what is expected to occur if the proposed Project does not get permitted. The EIS then compares the environmental effects of the action alternatives to those resulting from the No Action Alternative. In developing the No Action Alternative for the Moffat Project, the Corps consulted with Denver Water on what steps they would take to meet its water supply needs in the absence of the Moffat Project. Denver Water assumed that growth would still occur and identified ways to meet future water demands through operational controls. The Corps feels the steps outlined for various restriction scenarios were a reasonable approach for developing the No Action Alternative. IRP and PACSM The water demand estimates and projections provided in the Denver Water IRP were evaluated independently and in considerable detail by the Corps team. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle Engineering 2003 and 2004). As a component of UPCO, an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities

Comment Information	Comment	Comments and Response
		in Grand and Summit Counties (UPCO PACSM Review Committee 1999). Colorado Water Law The Corps relies on administration and enforcement of the State water laws to ensure rights are protected, and the Corps defers to the State to resolve water rights issues. The Corps' analysis for the EIS is based on operational diversions under Denver Water's existing decrees. When evaluating a permit application, the Corps' regulations provide: "The dispute over property ownership would not be a factor in the Corps public interest decision" 33 CFR Part 320.4(g). Whether water rights or other property rights need to be obtained, utilized, expanded, or managed differently in order to fulfill the basic purpose of the Proposed Action does not preclude the Corps from permitting an otherwise practicable alternative (40 CFR Pt. 230.10). The Corps may issue a Section 404 Permit even if other Federal, State or local authorizations have not been obtained before the applicant has applied for a permit. Blue River Decree As part of Denver Water's obligation to reuse water under the Blue River decree, Denver Water currently uses its reusable supplies for exchanges, augmentation, contract deliveries, and its non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. ***Comment #1531-14*** *(ID 1401)**:*** *An alternative is practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Id. (citing 40 C.F.R. 8 230.10(a)(2)). Unlike NEPA, which is a procedural statute, the CWA has substantive requirements. "The CWA test is not ... whether features of a proposal would make a more*

Comment Information	Comment	Comments and Response
		desirable project. Rather, the Applicant and the [Corps] are obligated to determine the feasibility of the least environmentally damaging alternatives that serve the basic project purpose. If such an alternative exists ... then the CWA compels that the alternative be considered and selected unless proven impracticable." Id. at 1 188 (emphasis added). Like the Corps failure to comply with NEPA, the Corps' failure to comply with the CWA also stems in large part from an improperly narrow and unexamined statement of purpose and need. The basic project purpose should be generally defined as meeting Denver's water supply obligations, rather than narrowly defined as constructing a major enlargement of Gross Reservoir. Put simply, the Corps cannot prove that enlargement of Gross Reservoir is the LEDPA, and satisfy its obligations under the § 404 guidelines when it hasn't considered anything other than the enlargement of Gross Reservoir. In addition to the overly narrow, result-oriented statement of purpose and need, the DEIS fails to prove that the Project is the LEDPA because (a) an aggressive water conservation plan, which has already been adopted by Denver, should eliminate most of the alleged need for the Project, (b) executing the existing drought response plan will eliminate the alleged water supply shortfall in times of drought, (c) exercising Denver's rights under the Shoshone Agreement should satisfy most or all of the alleged water supply shortfall, and (d) an independent analysis of the Denver's supply and demand projections would show that there is no real or immediate need for additional water supplies given the 30,000 safety factor, the 5% arbitrary increase in the demand model, and flawed comparison of dry year supply to average year demand. Beyond the nonstructural alternatives to a major reservoir expansion and increased transbasin diversions, Denver has other means of generating additional firm yield, such as cooperative projects with neighboring municipalities, lawn irrigation return flows, water reuse, gravel pit storage and a number of other less damaging alternatives. While the identification and

Comment Information	Comment	Comments and Response
		evaluation of these alternatives are the responsibility of the Corps, the Reservoir Companies urge the Corps to rigorously evaluate the potential of the above alternatives, particularly potable and non-potable water reuse, which is technically and economically feasible and legally required, as explained above in the context of the Blue River Decree. As one example of many practicable alternatives to the Project that were not adequately considered in the DEIS, the Reservoir Companies anticipate that Denver can meet most, if not all, of its projected demand deficit, if any, with re-usable return flows. Based on historical reuse of Roberts Tunnel return flows from 2000 through 2004, Denver generated about 20,000 AF of unused return flows that could have been legally reused to extinction. (See Summary of Denver's Reports to USBR attached as Exhibit G). As Denver maximizes use of its Blue River water rights, the Reservoir Companies estimate that Denver will own on the order of 66,000 AF of reusable return flows. (See Id.). The DEIS even acknowledges that some of Denver's return flows remain available for other uses and that "the reusable return flows could be combined with other water sources to meet the entire needed 18,000 AF/yr of new firm yield." (DEIS at K-8). But the analysis of this potential source, and practicable alternative to the Project, inexplicably ends there. As part of the Denver's reuse obligation, it can and will reuse return flows from residential lawn irrigation. While Denver would need to construct infrastructure to capture, treat and pipe lawn irrigation return flows ("LIRFs") back into its system, LIRFs have the ability to provide up to 12,000 AF of firm annual yield. (Depo. Trans., W. Bates at 173-180; Trial Trans., Day 2 at p. 127). Yet, the 2002 IRP and DEIS assume only 500 AF of supply from LIRFS. Capturing LIRFs is apparently technically and economically feasible, and would add significant firm annual yield to Denver's system. Denver plans on capturing LIRFs as it has adjudicated that source in Water Court, and has spent roughly $2 Million Dollars quantifying the source. (Trial Trans., Day 2, p.

Comment Information	Comment	Comments and Response
		12-13). The DEIS assumption in this regard (500 AF for LIRFs) is yet another example of a gross underestimate of Denver's water supplies, that leads to an imaginary water supply shortfall. Potable and non-potable reuse (not merely reuse by exchange) of excess return flows, including LIRFs, is economically, technically, and legally feasible, as evidenced by Denver's construction of it water reuse facility and adjudication of LIRFs. More importantly, Denver is legally obligated under the Blue River Decree to reuse its return flows before it constructs projects that would divert additional Western Slope water. Given the technical and economic feasibility, coupled with the preexisting legal requirement of the Blue River Decree, the Corps has the obligation to rigorously evaluate the potential of water reuse to satisfy Denver's demands and provide supplemental information to the public in this regard. **Response #1531-14:** Please see the response to Comment ID 1387. The Corps did not identify an LEDPA in the DEIS. The Corps will make a determination of the LEDPA based on its review of the information and analysis contained in the FEIS, per the Corps' Section 404 regulations. Conservation and Drought Response Water conservation is part of the solution for water supply projects. The Purpose and Need for the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. This Purpose and Need statement addresses a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This system imbalance leads to vulnerability (or lack of system flexibility) to respond to water collection system outages and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and

Comment Information	Comment	Comments and Response
		Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Mandatory drought restrictions are designed for short-term reductions in water use and would not independently or reliably meet the required firm yield of 18,000 AF. Drought responses are primarily intended to respond to droughts of unknown duration and severity, unexpected emergencies and infrastructure failure. Unlike the Strategic Water Reserve, a supply side solution, drought response is a demand side device designed to quickly bring demand down in response to reduced supply. Drought response is temporary in nature and inherently uncertain, driven by immediate conditions. Modeling water supply and firm yield assumes a perfectly operating system over a long period of time. This is a widely accepted approach for evaluating a water utility's ability to meet needs under varying hydrologic conditions, while preserving management's prerogative to deploy drought response as circumstances require. Shoshone Call The Shoshone Agreement does not provide additional water to the Moffat Collection System since available storage capacity in Gross Reservoir would not be a limiting factor in dry years when the Shoshone Call reduction would be invoked and Denver Water retains enough water in Williams Fork Reservoir to exchange against out-of-priority diversions in the Moffat Collection System.

Comment Information	Comment	Comments and Response
		Demand Projection and Safety Factor The need for the 30,000 AF safety factor (i.e., Strategic Water Reserve) is described in Appendix A (Review of Denver Water's IRP and Supplemental Evaluation of Denver Water Demand Projections, pages 13-15). As stated, the safety factor is intended to protect against a host of uncertainties, including the constriction of existing supplies, a downward revision of the estimated safe annual yield from prolonged drought, challenges to historic operations of Denver Water's water rights, changes in administration of water rights resulting in adverse impacts to Denver Water's supplies, catastrophic loss of facilities, delays in the development of new supplies, or higher than anticipated demand forecasts. The 30,000 AF safety factor is reasonable to help account for these risks These risks are not accounted for in the firm yield modeling and calculations, nor are they considered in the water demand projections. The safety factor must be held apart from the derivation of the 18,000 AF shortfall to appropriately reflect the risks which occur outside the models, methods and procedures to calculate that need. Recent DRCOG projections (2007) show an average annual growth of 1.63% for the Denver area between 2000 and 2020. The 2008 State Demographer projections cited by the EPA result in average annual growth of 1.76% for the Denver PMSA between 2000 and 2020. Both the more recent DRCOG projections and the 2008 State Demographer projections are not inconsistent with the DRCOG projections originally used in Denver Water's model. Additional data was collected and analyzed for socioeconomics in FEIS Section 5.19. The socioeconomic analysis included an update of demand projections through reviewing the data used in Denver Water's current model and reviewing current population projection data from DRCOG, DOLA or other agencies, as available, to examine any differences in projected population numbers or rates between the

Comment Information	Comment	Comments and Response
		older data and the current data. There is reason and merit to the 5% upward adjustment to the demand model. This adjustment is based on the average annual model under-prediction between 1985 and 2000, as explained in the technical memoranda included in FEIS Appendix A. Harvey Economics reviewed Denver Water's model and found this adjustment to be reasonable. Reuse Alternatives that were formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated include some component of reuse. These alternatives were configured to meet a portion or all of the new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat WTP. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7. and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable supplies available to meet the entire firm yield

Comment Information	Comment	Comments and Response
		requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in Alternatives 8a and 10a was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. Approximately 7,600 AF/yr on average of unused reusable water would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. Alternatives 8a and 10a, which provide 5,000 AF/yr of the new firm yield requirement from reusable supplies were considered reasonable and achievable given the variability in timing and amount of unused reusable supplies available. As part of Denver Water's obligation to reuse water under the Blue River decree, Denver Water currently uses its reusable supplies for exchanges, augmentation, contract deliveries, and its non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. Lawn irrigation return flows (LIRFs) were considered when Denver Water calculated its total system supply (FEIS Table 1-1). Recently, in 2012, Denver Water completed the water court process for LIRF's and an additional 1,500 to 2,000 AF/yr of reusable water is now available at an average annual demand of 285,000 AF/yr. However, in order to maximize the yield of LIRF's and Agricultural Transfers some sort of reservoir is needed to capture these flows when they are available

Comment Information	Comment	Comments and Response
		for use when needed. This is why Denver Water is constructing 30,000 AF of additional gravel pit storage along the South Platte River. Furthermore, LIRF and Agricultural Transfers are typically located downstream of Denver Water's treatment plants and the ability to exchange these types of water is limited and pumping facilities and pipelines would need to be constructed. Denver Water included new water supply projects, cooperative agreements, reuse, and conservation savings when calculating its total water supply (FEIS Table 1-1). ***Comment #1531-19*** *(ID 1402)**:*** *The Corps is obligated to consider whether the Project is in the best interest of the nation, not just whether it is desirable for Denver. By finding, based on stale, unreliable and biased data and modeling, that the environmental impacts of the Project are generally insignificant, the Corps essentially ignores all impacts on the west slope as negligible. The Colorado River and its tributaries are the lifeblood of recreation and agriculture for the west slope. It has been diverted and pumped to the Front Range for decades, by dozens of transbasin projects. While the impact of each of the existing and foreseeable transbasin diversion projects may be compartmentalized, the Colorado River is subject to death by a thousand cuts. The Corps must reevaluate, based on the most current and best available data and information, whether the Colorado River and its tributaries are at a tipping point, at which even relatively minor impacts can lead to major adverse ecological and economic consequences.* **Response #1531-19:** As stated in 33 CFR Part 320, which are, in part, the Federal regulations governing the Corps' review of Section 404 of the Clean Water Act, the decision whether to issue a Section 404 Permit is based on an evaluation of the probable impacts of the proposed activity on the public interest. That decision reflects the

Comment Information	Comment	Comments and Response
		national concern for both protection and utilization of important resources. Factors relevant to the proposal that were considered in the public interest include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Regarding the data used in the model, please see the response to Comment ID 1385. For some resources, there is not a known scientific threshold or “tipping point” at which negative impacts occur nor is the Corps aware of specific models or techniques available to conduct “threshold” analyses. The magnitude of impact depends on the current state of that resource and factors that influence that resource. Tipping point issues were addressed for aquatic resources in FEIS Sections 3.11, 4.6.11, and 5.11. ***Comment #1531-21*** *(ID 1403)**:*** *There is no question that the Project would cause significant degradation to the Colorado River. Not only would the Project itself have adverse impacts on the aquatic ecosystem, it is only one of several transbasin diversion projects that combine to drastically reduce streamflow. The DEIS barely acknowledges, and quickly dismisses the Project's impacts on aquatic resources when it states, "overall, the cumulative effects of reasonably foreseeable projects and the Moffat Project on surface water is minor ..." (DEIS 5-39). Yet, the DEIS also states that in combination with the Windy Gap Firming Project ("WGFP") and Shoshone Call reduction, the average annual flows of the Colorado River will decrease by approximately 60,600 AF or 9%. (Id.). The DEIS also acknowledges adverse impacts on*

Comment Information	Comment	Comments and Response
		water quality, sediment transport and water temperature. (DEIS 5-40). Contrary to the conclusion of the DEIS, however, these are hardly "minor" impacts, particularly when viewed in light of the hundreds of thousands of AF already transported out of the basin and degradation of the ecosystem caused by pre-existing projects. Indeed, according to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and the Moffat Project are implemented. Moreover, the DEIS focused primarily on the average monthly streamflows to evaluate impacts to aquatic resources. Since the Project is designed to capture the highest flows in wet and average years, the Reservoir Companies suspect that it would have much more significant impacts on the peak flows than it has on the average flows. Major reductions of the already constrained peak flows are perhaps more important indicators of stream health than average flows. Similarly, the focus on average monthly streamflows may mask impacts to minimum stream flows, which, like peak flows, must be evaluated independently. Accordingly, in its supplemental analysis, the Reservoir Companies urge the Corps to take a hard look at the specific impacts of the Project on peak flows and minimum stream flows. **Response #1531-21:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. Our analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water related resources such as

Comment Information	Comment	Comments and Response
		water quality, aquatic biological resources, and stream morphology, are anticipated to be minor. A combination of daily and monthly hydrologic data was used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly and annual summaries of stream flows, diversions, reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with each Moffat Project alternative. Daily data were used in resource assessments where the magnitude or value of the resource is especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily data was utilized to evaluate effects on several resources, including surface water, aquatic resources, stream morphology, recreation, floodplains, riparian and wetlands areas, wildlife and special status species, and water quality (see the sub-section Use of Daily and Monthly PACSM Data for Resource Evaluations in DEIS Section 4.1). The time step used in Physical Habitat Simulation (PHABSIM) modeling was a daily time step for creating a daily time series for fish habitat. This information was used for impact evaluation in the DEIS and FEIS, and was not based on monthly flow data. ***Comment #1531-20*** *(ID 1404)**:*** *Demonstrating the Corps' failure to focus on the most significant environmental impacts - which will occur in the sending basin, not the receiving basin - Appendix M to the DEIS considers a 5,000 AF "Environmental Pool" for the benefit of streamflows on 17 miles of South Boulder Creek. There is no corollary for mitigation of impacts on the Colorado River and its tributaries. While the Reservoir Companies support the concept of mitigating impacts to South Boulder Creek, they are*

Comment Information	Comment	Comments and Response
		concerned with the absence of specific mitigation to improve the environmental conditions of a source area that is already massively depleted of native streamflow along approximately 57 miles of rivers and creeks. The "best interest of the nation" must include both sides of the Continental Divide. **Response #1531-20:** FEIS Appendix M contains a Conceptual Mitigation Plan proposed by Denver Water to mitigate Project-related impacts identified in the EIS. The Corps will determine if the proposed mitigation would offset identified impacts. The final mitigation measures will be specified by the Corps as Section 404 Permit conditions, if a permit is issued. Denver Water, in collaboration with the Municipal Subdistrict NCWCD, developed a voluntary Fish and Wildlife Enhancement Plan to improve the existing aquatic habitat in approximately 14 miles of the upper Colorado River from Windy Gap to the Kemp-Breeze State Wildlife Area. The Fish and Wildlife Enhancement Plan will be implemented through an IGA with CPW (see FEIS Section 4.3.1 and Appendix M). Denver Water also committed to a future stream restoration project in Grand County through the cooperative effort called Learning by Doing (LBD) as part of the Colorado River Cooperative Agreement (CRCA) (see FEIS Section 4.3.1 and Appendix M). Portions of these plans and agreements may be incorporated into Section 404 permitted requirements by the Corps, if a permit is issued. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in

Comment Information	Comment	Comments and Response
		its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #1531-11*** *(ID 1405)**:*** *The data relied upon in the DEIS are outdated, including the supply and demand projections from the 2002 IRP and the data set that informs all of the PACSM model runs. Further reducing the reliability of the DEIS, these data and models were supplied by the project proponent and were not given sufficient independent evaluation by the Corps. The Corps failure in this regard is obvious due to its failure to identify most of the glaring errors and omissions identified above. Contrary to a fundamental premise of the DEIS, Denver will not run out of water in 2016. No water supply shortfall would exist absent the faulty comparison of dry year yield to average, unrestricted demand, an arbitrary 5% increase in demand projections on top of a 30,000 AF safety factor, failure to acknowledge LIRFs, the Shoshone Agreement and Denver's accelerated conservation goals. These are the conditions under which the statement of purpose and need should be rewritten.* **Response #1531-11:** Please see the response to Comment IDs 1390, 1392, and 1407. In 2010, Denver Water updated their water demand projections based on the most recent population and demographic projections available from DRCOG, Colorado State Demographer's Office and other relevant sources of demographic data. The Corps has independently evaluated the updated projections and found them reasonable for use in the FEIS.

Comment Information	Comment	Comments and Response
		As shown in FEIS Table 1-1, Denver Water considers past and future conservation savings when estimating future demand. The demand forecasting model, the specifications of that model, and the independent variables which drove that model were independently examined and validated. An independent review of PACSM was conducted for the Moffat Project EIS, which concluded that PACSM is adequate for the modeling purposes of this EIS and can be relied on to provide hydrologic information (Boyle Engineering 2003 and 2004). As a component of UPCO, an additional independent review of PACSM was conducted. That review concluded that the model adequately simulates the hydrology, major water rights and the operations of major water storage and diversion projects within the Colorado River Basin for the purpose of that multi-agency study, which addresses long-range water supply planning for numerous West Slope entities in Grand and Summit Counties (UPCO PACSM Review Committee 1999). ***Comment #1531-26*** *(ID 1406)**:*** *The failure of the DEIS to accurately depict the status quo in the No Action Alternative also pervades every aspect of the DEIS, in that it forces environmental comparisons of alternatives to an erroneous baseline condition. Put simply, the LEDPA cannot be determined when the environmental impacts are not known. Likewise, the Corps cannot make a sound decision regarding the nation's best interest, when its entire analysis rests on stale, biased and unreliable data.* **Response #1531-26:** The Corps notes the comment. ***Comment #1531-5*** *(ID 1407)**:*** *Once the Corps has an objective understanding of Denver's real water demands and supplies, and*

Comment Information	Comment	Comments and Response
		documents them in a supplemental EIS, it can then meaningfully evaluate whether any unmet demands would remain. If any demands would remain unmet with no action, then the Corps should consider real "alternatives," rather than minor variations of the Project. In so doing, the Corps should rigorously consider cooperative arrangements, LIRFs, gravel pit storage and particularly, potable and non-potable water reuse of transbasin water, which is already a legal requirement under the Blue River Decree. **Response #1531-5:** As shown in Table 1-1, Denver Water has considered cooperative arrangements when calculating future supply. Other cooperative arrangements, such as WISE, have not been finalized so the effect of Denver Water's supply cannot be determined. However, WISE has been considered as a Reasonable Future Foreseeable Action and a description can be found in FEIS Section 4.5.3. Denver Water is currently in the process of obtaining a water right for LIRFs. The anticipated additional reusable water from LIRF's has been included in Denver Water's estimate of total reusable water. As described below, the additional use of reusable water was considered in several of the alternatives described in the FEIS. Per 40 CFR 1502.9(c)(1), since the Corps would not make substantial changes to the Proposed Action that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns and bearing on the Proposed Action or its impacts, a Supplemental Draft document would not be prepared for the Moffat Project. The alternative screening process (Alternatives Screening Report, Corps 2007) did consider the other water sources (agricultural water transfer, conjunctive use and municipal reuse) in combination with storage components other than Gross Reservoir. These various water sources and 29 storage components from the

Comment Information	Comment	Comments and Response
		"long list" passed the initial Screen 1A, as discussed in DEIS Section 2.1.2, Screen 1B. Two methods of acquiring agricultural water (ID 601) were reviewed: purchase or dry-year lease. It was assumed that the agricultural rights were available downstream of the Metro WWTP. Other locations, including the Arkansas River Basin, were considered in Screen 1A; however, they were eliminated by the criterion LG1, Must be within the State of Colorado and in the South Platte and mainstem Colorado river basins. The justification for this criterion, as stated in Table 2-1, is still valid: "Exploring options outside the South Platte and mainstem Colorado river basins would necessitate acquiring water rights from new filings, purchasing and transferring existing water rights, and developing extensive new infrastructure to import the water. Obtaining water from the Gunnison, Yampa, White, North Platte, Rio Grande, San Juan/Dolores, or Arkansas river basins would be extremely difficult, if not impossible, in a timeframe consistent with the Purpose and Need." This is also a reasonable criterion to use because it did not eliminate a significant number of the water source options being considered in the screening. Numerous alternatives were configured in Screen 1b that do not include expansion of Gross Reservoir. Leyden Gulch Reservoir, plus several other storage components such as Ralston Reservoir, Spring Creek Reservoir, and Box Elder shallow aquifer were used to configure Project alternatives. Refer to Alternatives 6a and 6b, 7a and 7b, 8b, 9a and 9b, 10b – 10e, 11a, 12a, and 13b in Table 2-4. Each of these alternatives was legitimately screened out in Screen 1c or Screen 2 for various reasons. The multi-step process of screening a variety of water sources other than Moffat Tunnel water and storage components other than enlarging Gross Reservoir is justified and well-documented. Denver Water's surplus reusable effluent and purchase of new agricultural supplies are evaluated in the DEIS

Comment Information	Comment	Comments and Response
		under Alternatives 8a and 13a, respectively. Alternative 14a, which is a combination of Alternative 8a and 13a, was considered during the screening process. Alternative 14a consisted of reusable return flows from the South Platte River being diverted to new gravel pit storage facilities along with the purchase and conversion of agricultural water rights to municipal/ industrial use. Alternative 14a was screened out in the Cost Screen due to a high relative cost index associated with gravel pit storage requirements and advanced treatment in a new WTP. Alternatives that were initially formulated that include reuse to varying degrees are Alternatives 6, 7, 8, 10, 11, and 14, therefore, almost 50% of the alternatives formulated include some component of reuse (see Moffat Project EIS, Denver Water, Alternatives Screening Report, August 2007). These alternatives were configured to meet a portion or the entire new firm yield requirement with reusable effluent. Alternatives 6a and 6b are specifically indirect potable reuse alternatives. Alternatives 7, 8, 10, 11, and 14 are variations of indirect potable reuse alternatives that involve treating reusable water, storing it, and delivering it back to the Moffat Collection System. The primary difference between these alternatives and 6a and 6b is that treated reusable water is not stored in Gross, Ralston, or Leyden Gulch reservoirs and blended with other supplies prior to treatment at the Moffat WTP. Storage for reusable supplies in Alternatives 7, 8, 10, and 11 is provided at new gravel pits or deep aquifer storage. Alternatives 6, 7, and 14 were screened in the Cost Screen (Screen 1C) because they had high relative cost indices primarily due to the high cost of advanced water treatment and residual disposal. Alternative 11 was also screened because it was determined after further evaluation that sufficient unused reusable effluent supplies were not available to meet the entire firm yield requirement of 18,000 AF/yr. Therefore, even if Alternatives 6, 7 and 14 were not screened out for cost, they would be screened out because there are not sufficient unused reusable

Comment Information	Comment	Comments and Response
		supplies available to meet the entire firm yield requirement of 18,000 AF/yr. Alternatives 8a and 10a, which include indirect potable reuse to meet 5,000 AF/yr of the firm yield requirement, were evaluated as EIS alternatives. The treatment costs were considerably lower for these alternatives because only a portion of the firm yield requirement would be met with indirect potable reuse, therefore, they passed the Cost Screen. The amount of indirect potable reuse included in Alternatives 8a and 10a was based on an evaluation of the amount of gravel pit storage potentially available and available unused reusable effluent. Approximately 7,600 AF/yr on average of unused reusable water would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. Alternatives 8a and 10a, which provide 5,000 AF/yr of the new firm yield requirement from reusable supplies were considered reasonable and achievable given the variability in timing and amount of unused reusable supplies available. Denver Water asserts that it has and would continue to fully comply with its obligation to and requirements of the Blue River Decrees. Denver Water currently uses their reusable supplies for exchanges, augmentation, contract deliveries, and their non-potable system to the extent they can in combination with gravel pit storage. Any remaining unused reusable effluent, which is primarily available in the winter months, was considered for inclusion in reuse alternatives. ***Comment #1531-2*** *(ID 1408)**:*** *The Reservoir Companies thank you for your consideration and response to the above comments, and urge you to take the steps that are necessary to ensure the Project is rigorously and objectively evaluated with the most current scientific data and under the most realistic operating scenarios.*

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
		Response #1531-2: Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1623 Royce Fenton, [redacted] and Glenn Adair, [redacted]	[redacted] RECEIVED FEB 2010 **LETTER OF SUPPORT** February 16, 2010 U.S. Army Corps of Engineers Attn: Mr. Scott Franklin 9307 S. Wadsworth Blvd. Littleton, CO 80128 Denver Water Board Attn: Mr. Brian Gogas 1600 W. 112th Avenue Mail Code 415 Denver, CO 80204 Federal Energy Regulatory Commission Attn: Sec. Kimberly Bose 888 First Street, NE Washington, DC 20426 RE: Expansion of Gross Reservoir Arvada, Colorado Dear Addresses: We are small general contractor located in Arvada, Colorado that will be immediately affected by the expansion of Gross Reservoir. In Short, we support the expansion of Gross Reservoir. Greater water capacity is essential to meet our collective current and future needs in Colorado. To be a driving force in attracting innovative "green" energy and other related industries to our state, we must start by providing an excellent standard of living for the workforce necessary to [redacted] Page 1 of 2	***Comment #1623-1*** *(ID 1609)**:*** *We are small general contractor located in Arvada, Colorado that will be immediately affected by the expansion of Gross Reservoir. In Short, we support the expansion of Gross Reservoir. Greater water capacity is essential to meet our collective current and future needs in Colorado. To be a driving force in attracting innovative "green" energy and other related industries to our state, we must start by providing an excellent standard of living for the workforce necessary to support these businesses. This means adequate water supply for families, businesses and recreation. The various Front Range and other communities in Colorado should work together now for our mutual future prosperity. Working together will translate into an immediate positive economic impact in the form of new jobs, which will "trickle down" to support ancillary support industries, not to mention our local, county and state-level tax bases. This is good for our Nation as we collectively seek to alleviate the ailing economy and unemployment rate. With careful planning we can do this in an environmentally sensitive way. The expansion will minimally impact the surrounding. Removed trees can be recycled, used for long-term construction projects or transformed into friendly biomass fuel. A water storage facility already exists on the property - it will merely be larger, and the long-term plan has accommodated this potential growth. Although submerging more land area, adverse effects will be offset by attracting more waterfowl, fish populations, human recreational opportunities, and could even complement our National security. Those who object will one day need the help of their neighboring communities. I hope they will factor such long-term considerations into their equation when deciding whether to ultimately support this endeavor. Thank you, and please contact us for any help you may need in supporting the expansion of Gross Reservoir.*

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
	support these businesses. This means adequate water supply for families, businesses and recreation. The various Front Range and other communities in Colorado should work together now for our mutual future prosperity. Working together will translate into an immediate positive economic impact in the form of new jobs, which will "trickle down" to support ancillary support industries, not to mention our local, county and state-level tax bases. This is good for our Nation as we collectively seek to alleviate the ailing economy and unemployment rate. With careful planning we can do this in an environmentally sensitive way. The expansion will minimally impact the surrounding. Removed trees can be recycled, used for long-term construction projects or transformed into friendly biomass fuel. A water storage facility already exists on the properly - il will merely be larger, and the long-term plan has accommodated this potential growth. Although submerging more land area, adverse effects will be offset by attracting more waterfowl, fish populations, human recreational opportunities, and could even complement our National security. Those who object will one day need the help of their neighboring communities. I hope they will factor such long-term considerations into their equation when deciding whether to ultimately support this endeavor. Thank you, and please contact us for any help you may need in supporting the expansion of Gross Reservoir. Sincerely, *s/s Royce Fenton, Glenn Adair* Royce Fenton, [redacted] Glenn Adair, [redacted] [redacted] Page 2 of 2	**Response #1623-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Response
Comment #1637 Kim A. Klancke, MD, FACC [redacted]	[redacted] Kim A. Klancke, MD, FACC Vance E. Wilson, MD, FACC Glenn H. Rayos, MD, FACC Oscar D. Wesl, MD, FACC Chad L. Broome-Webster, MD, FACC Hanscy Soide, MD, FACC Francis A. Reed, Jr, MD, CBNC Alan S. Goldsmith, MD, FACC Beth A. Bartholomew, MD, FACC Marielle B. Lazard, MD, MPH Rodolfo E. Aldir, MD, FACC, FCCP Joshua A. Horenstein, MD Cindy Davenport, PA-C Marcia Bayer, MSN, ARNP Terry Purcell, MSN, ARNP-C Nancy Mather, MSN, ARNP-C RECEIVED JAN 2010 December 28, 2009 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Re: Moffat Firming Project Dear Mr. Franklin: I am writing with an outsider's perspective. For many years, I have, as have many of my friends, maintained a second home on the Colorado's western slope. This is the Colorado of lakes and rivers. This is a spiritual place. Colorado is degrading its spiritual lands and driving second home owners to Montana and Idaho. I've watched the Fraser River go from a vibrant river to one impaired by sediment, algae growth and increasing temperatures. Do not compound this problem by further reducing flow via the Moffat Firming Project. Take the money intended for the Moffat Firming Project and put it into a water reclamation system for use on lawns and golf courses. Even in Ormond Beach, Florida where one hits water everywhere one digs a few feet, water is reclaimed. We use it to water our grass. We do not suck the St. John's River, a historic waterway, dry. The logical place to start with water management is via a maximum conservation effort. If conservation proves inadequate, you can always destroy your lakes and rivers but you lose the heart of your state. Sincerely, Kim A. Klancke, MD, FACC KAK: bdt	***Comment #1637-1*** *(ID 1662)**:*** *I am writing with an outsider's perspective. For many years, I have, as have many of my friends, maintained a second home on the Colorado's western slope. This is the Colorado of lakes and rivers. This is a spiritual place. Colorado is degrading its spiritual lands and driving second home owners to Montana and Idaho. I've watched the Fraser River go from a vibrant river to one impaired by sediment, algae growth and increasing temperatures. Do not compound this problem by further reducing flow via the Moffat Firming Project.* **Response #1637-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1637-2*** *(ID 1661)**:*** *Take the money intended for the Moffat Firming Project and put it into a water reclamation system for use on lawns and golf courses. Even in Ormond Beach, Florida where one hits water everywhere one digs a few feet, water is reclaimed. We use it to water our grass. We do not suck the St. John's River, a historic waterway, dry. The logical place to start with water management is via a maximum conservation effort. If conservation proves inadequate, you can always destroy your lakes and rivers but you lose the heart of your state.* **Response #1637-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water

Comment Information	Comment	Comments and Response
		collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. All water delivered by Denver Water to its customers is classified as reusable or non-reusable. Reusable water can be used and reused to extinction. Use of reusable water increases Denver Water's system supply and reduces the amount of water diverted from other components of the system. The main sources of reusable water in Denver Water's Collection System are the Blue River water delivered through the Roberts Tunnel, Fraser River water diverted by the Meadow Creek system (the only reusable water associated with the Moffat Collection System), and transferred agricultural water rights on the East Slope. The Metro WWTP and the Bi-City Wastewater Plant are the primary return points of Denver Water's reusable water. Denver Water keeps track of reusable return flows and currently uses, or is planning to use, most of its reusable supplies through river exchanges, transfers to gravel pits, and to supply water for the non-potable recycling project. As shown in Table 2-9, approximately 7,600 AF/yr on average of unused return flows would be available primarily in the winter months, when Denver Water's customer demands, non-potable demands, and exchange potential are relatively low. The amount of unused reusable supplies available varies considerably from year to year, ranging from 0 AF to as much as 37,500 AF/yr. Refer to FEIS Section 1.3.1 (Subheading Non-Potable Recycling Facility).

Comment Information	Comment	Comments and Response
		Denver Water is in the process of completing a Recycling Project that will use reusable supplies to meet an annual demand of 17,500 AF. Denver Water is also in the process of constructing 30,000 AF of gravel pit reservoir storage downstream of Denver. The storage facilities would be used to manage reusable supplies by storing excess reusable supplies in time of surplus, and releasing the stored reusable supplies at times of shortage. The gravel pits would be used for the following purposes: 1. Perform exchanges to upstream facilities. In an exchange, reusable water is added to a stream at a downstream location to enable diversion of a like amount of water at an upstream location. 2. Deliver the reusable water to the Recycling Plant, treat the water, and distribute it for non-potable uses. The recycling plant requires gravel pit storage to supply reusable water to the Recycle Plant, via exchange, when reusable water is not available at Metro WWTP or Bi-City Wastewater Plant. 3. Deliver an annual supply of 5,000 AF of reusable water to South Adams County Water and Sanitation District (per agreements). 4. Use reusable water to augment raw water systems in the Denver Metropolitan area (e.g., augment the wells used to supply water to Denver parks). The reusable water needed to support these projects was included in the PACSM simulations and therefore less reusable water is available for a new project. These projects were not on-line in from 1998 to 2008 as noted in the comment, but once these projects are completed, the average annual available unused reusable effluent is estimated to be approximately 7,600 AF. This is an example of why it is inappropriate to simply rely on historical values to draw conclusions.

Comment Information	Comment	Comments and Response
		As shown in the DEIS Table 2-9, the estimated 7,600 AF of average annual unused reusable water ranges from to zero AF some years, to as high as approximately 37,500 AF in one year. The highest year of unused return flows does occur in a dry year, but many other dry years and periods have less than the 6,700 AF average. Project alternatives that included 5,000 AF of yield using the reusable return flows were analyzed. Alternative that included more than 5,000 AF would have been even more expensive on a cost per AF basis. Also note that with PACSM, Denver Water's unused reusable return flows are used and reused to extinction.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1647 Richard E. Newton, Attorney at Law [redacted]	[redacted] RONALD S. STURN RICHARD E. NEWTON November 24, 2009 [redacted] RECEIVED NOV 2009 Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S Wadsworth Boulevard Littleton CO 80128 Moffat.eis@usace.army.mil Dear Mr. Franklin: I have lived in Grand County since 1976. During that period of time I have noted the dramatic effects of increased diversions from the Fraser and Colorado Rivers. The Rivers continue to suffer as a result of diversions of what would be high water spring runoff. Moss and algae growth, sedimentation, riparian vegetation and other factors have contributed to high water temperatures, algae blooms, insufficient water for irrigation for local farmers and ranchers and the like. I am very concerned that the Moffat Firming Draft EIS does not adequately address a number of issues. My comments are as follows: I feel very strongly that Denver has not made sufficient efforts at conservation and that significant conservation should be required prior to permitting any further diversions from the western slope. Landscaping is, in my mind, a huge and unnecessary demand on water supplies. The water under consideration from the Fraser River will pass into Windy Gap Reservoir and be pumped by the Colorado Big Thompson Project into Lake Granby thence to Shadow Mountain Reservoir and Grand Lake. This constitutes, I believe, a serious discharge of actual and potential pollutants into the Three Lakes region. The area is already experiencing high algae contents and diminishing water clarity. The nutrient load which will be carried by the Fraser River water pumped through the system will exacerbate these problems. The mitigation measures set forth by Denver Water are minimal at best. The draft EIS refers to "additional environmental enhancement opportunities" but does not specify what those opportunities are. Denver should be required to set forth those opportunities specifically and they should be made a requirement of the EIS. Finally and most importantly, the draft EIS is presented as a standalone document. This is erroneous. The Colorado Big Thompson Project is currently in the process of "firming" an additional 30,000 acre feet from the Colorado River. The EIS for both these projects should be integrated to discuss the combined effects of the removal of this significant amount of water from the river systems. At this point in time the draft EIS is incomplete. It is vital that the issues which I have raised be addressed and mitigated. Thank you for your consideration. Sincerely, Richard E. Newton Attorney at Law /cc	***Comment #1647-1*** *(ID 1705)**:*** *I have lived in Grand County since 1976. During that period of time I have noted the dramatic effects of increased diversions from the Fraser and Colorado Rivers. The Rivers continue to suffer as a result of diversions of what would be high water spring runoff. Moss and algae growth, sedimentation, riparian vegetation and other factors have contributed to high water temperatures, algae blooms, insufficient water for irrigation for local farmers and ranchers and the like. I am very concerned that the Moffat Firming Draft EIS does not adequately address a number of issues.* **Response #1647-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1647-2*** *(ID 1704)**:*** *My comments are as follows: I feel very strongly that Denver has not made sufficient efforts at conservation and that significant conservation should be required prior to permitting any further diversions from the western slope. Landscaping is, in my mind, a huge and unnecessary demand on water supplies. .* **Response #1647-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not

Comment Information	Comment	Comments and Response
		meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #1647-3*** *(ID 1703)**:*** *The water under consideration from the Fraser River will pass into Windy Gap Reservoir and be pumped by the Colorado Big Thompson Project into Lake Granby thence to Shadow Mountain Reservoir and Grand Lake. This constitutes, I believe, a serious discharge of actual and potential pollutants into the Three Lakes region.*

Comment Information	Comment	Comments and Response
		The area is already experiencing high algae contents and diminishing water clarity. The nutrient load which will be carried by the Fraser River water pumped through the system will exacerbate these problems. **Response #1647-3:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1647-4*** *(ID 1702)**:*** *The mitigation measures set forth by Denver Water are minimal at best. The draft EIS refers to "additional environmental enhancement opportunities" but does not specify what these opportunities are. Denver should be required to set forth those opportunities specifically and they should be made a requirement of the EIS.* **Response #1647-4:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a Biological Opinion. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are provided in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all “reasonably foreseeable future actions” in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be

Comment Information	Comment	Comments and Response
		enlarged. ***Comment #1647-5*** *(ID 1701)**:*** *Finally and most importantly, the draft EIS is presented as a standalone document. This is erroneous. The Colorado Big Thompson Project is currently in the process of "firming" an additional 30,000 acre feet from the Colorado River. The EIS for both these projects should be integrated to discuss the combined effects of the removal of this significant amount of water from the river systems.* **Response #1647-5:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT System. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
		Comment #1647-6 *(ID 1700)**:*** *At this point in time the draft EIS is incomplete. It is vital that the issues which I have raised be addressed and mitigated. Thank you for your consideration* **Response #1647-6:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Response
Comment #1648 Richard E. Newton, [redacted]	[redacted] RONALD S. STERN RICHARD E. NEWTON [redacted] February 3, 2010 Army Corp of Engineers Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S Wadsworth Boulevard Littleton CO 80128 moffat.eis@usace.army.mil Colorado Division of Wildlife Attention: Wildlife Commission 6060 Broadway Denver CO 80216 wildlife.comm@state.co.us Environmental Protection Agency Attention: Larry Svoboda, Director NEPA Compliance and Review Program U.S. EPA, Region VIII 1595 Wynkoop Street Denver CO 80134 svoboda.larry@epa.gov U.S. Senator Mark Udall Hart Office Building Suite SH-317 Washington DC 20510 www.markudall.senate.gov/contact Secretary Ken Salazar Department of the Interior 1849 C Street, N.W. Washington DC 20240 U.S. Representative Jared Polis 501 Cannon HOB Washington DC 20515 www.polis.house.gov/contact U.S. Senator Michael Bennet 702 Hart Senate Office Building Washington DC 20510 www.bennet.senate.gov/contact Governor Bill Ritter 136 State Capital Denver CO 80203-1792 Fax: (303) 866-2003 Mayor John Hickenlooper 1437 Bannock St., Suite 350 Denver, CO, 80202 milehighmayor@denvergov.org Re: Moffat Expansion Project Dear Sir/or Madam: I have lived in Grand County, Colorado since 1976. I am an avid outdoors man and extremely concerned by the effect which the Moffat Expansion Project (as well as the expansion of the Windy Gap Project) will have on the ecology of Grand County. Between these two systems, nearly 48,000 acre feet per year will be taken out of the Fraser and Colorado Rivers. Seventy-six percent of the water which falls in Grand County will be subject to diversion. This is a huge concern. It is particularly troubling in light of the fact that in 2002, when drought conditions were severe and temperatures in the River reached levels fatal the aquatic life, the Denver Water Board continued to sell taps at an alarming rate of many thousands per month. This is simply	***Comment #1648-1*** *(ID 1714)**:*** *I have lived in Grand County, Colorado since 1976. 1 am an avid outdoors man and extremely concerned by the effect which the Moffat Expansion Project (as well as the expansion of the Windy Gap Project) will have on the ecology of Grand County. Between these two systems, nearly 48,000 acre feet per year will be taken out of the Fraser and Colorado Rivers. Seventy-six percent of the water which falls in Grand County will be subject to diversion. This is a huge concern. It is particularly troubling in light of the fact that in 2002, when drought conditions were severe and temperatures in the River reached levels fatal the aquatic life, the Denver Water Board continued to sell taps at an alarming rate of many thousands per month. This is simply unconscionable and cannot be tolerated. The solution of the Denver Water Board (and the Northern Colorado Water Conservancy District) basically ignores the concept of conservation.* **Response #1648-1:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the

Comment Information	Comment	Comments and Response
	Army Corp of Engineers/Scott Franklin, Moffat EIS Project Manager; Colorado Division of Wildlife/Attention: Wildlife Commission; Environmental Protection Agency/Attention: Larry Svoboda, Director; U.S. Senator Mark Udall; Secretary Ken Salazar; U.S. Representative Jared Polis; U.S. Senator Michael Bennet; Governor Bill Ritter; Mayor John Hickenlooper February 3, 2010 Page 2 unconscionable and cannot be tolerated. The solution of the Denver Water Board (and the Northern Colorado Water Conservancy District) basically ignores the concept of conservation. Conservation is an absolute necessity. Because of problems and defects in the infrastructure, huge amounts of water are lost through leaking mains, valves, service lines and the like. This defective equipment must be repaired. Also, it is my understanding that more than half of the water which is consumed domestically in single-family homes in Denver is for outside irrigation. As the saying goes "Kentucky blue grass is not green". This type of consumptive use must be discouraged. The Clean Water Act requires that the Army Corp of Engineers approve only the least environmentally damaging alternative available. At a minimum, specific goals for conservation must be imposed upon the Denver Water Board before any additional diversions are allowed. The Moffat Expansion Project is certainly not the least environmentally damaging alternative. In fact, it will be tremendously damaging. As a fly fisherman who regularly takes water temperature on the Fraser and Colorado Rivers, I can tell you that the temperatures which have been reached in the last 10 years far exceed previous years. Not only that, the Moffat Project and the Windy Gap Project will result in a total lack of flushing flows in both the Fraser and Colorado Rivers. These flushing flows are absolutely necessary for the health of the River. The Fraser and Colorado Rivers present a huge economic and recreational asset to Grand County. The public access areas at Paul Gilbert, Kemp and Breeze and Sunset Properties on the Colorado see an incredible number of fishermen per year. In areas where the River is open in the wintertime one can constantly see fishermen plying the waters. Over the years I have been witness to an increase in sedimentation, algae growth and lack of spawning in the River as a result of low flows. Grand County has enacted a stream flow management plan which must be incorporated into any permit which is issued to the Denver Water Board. This plan requires, in any permit issued should also require that there are adequate year-round baseline stream flows in the Fraser, the Colorado and the Williams Fork Rivers necessary to maintain those ecosystems. This would include a restriction which would prohibit diversions when stream temperatures reach or exceed State standards for the protection of aquatic life. The gauging station monitoring bypass flows are strategically placed at the present time. They permit the measuring of bypass flows downstream from the Water Board's diversion points. The permit should require that all bypass gauging devices be placed immediately below the diversion point. Of additional consideration is the negative effect which the diversion of these waters will have on water quality in the three lakes of Granby Reservoir, Shadow Mountain Reservoir and Grand Lake. Water quality in those lakes has greatly diminished over the years. Water clarity in Grand Lake has been dramatically reduced as a result of water diversion. If the Denver Water Board is permitted to further de-water the Fraser River, the River will become little more than a storm sewer carrying lowland rain runoff, agricultural return flows and municipal return flows. This will result in a higher concentration of nutrients in the River which, when diverted by the Windy Gap	Colorado-Big Thompson Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT System. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. The Corps agrees that water conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 AF/yr of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in Denver Water's supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation and water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in DEIS and FEIS Table 1-2. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water has been encouraging their customers to use 22% less water than they were consuming before the 2002 drought, by 2016. To date, Denver Water customers are using 18% less water than they were before the 2002 drought. In 2002 Denver Water sold 9,790 taps. Most of these taps (6,820) were a result of Willows Water District, which is within Denver Water's CSA, converting to a

Comment Information	Comment	Comments and Response
	Army Corp of Engineers/Scott Franklin, Moffat EIS Project Manager; Colorado Division of Wildlife/Attention: Wildlife Commission; Environmental Protection Agency/Attention: Larry Svoboda, Director; U.S. Senator Mark Udall; Secretary Ken Salazar; U.S. Representative Jared Polis; U.S. Senator Michael Bennet; Governor Bill Ritter; Mayor John Hickenlooper February 3, 2010 Page 3 Project, will foster increased algae growth and diminished water quality. Grand Lake is a recreation based economy which will greatly suffer. I cannot tell you how dismayed I am over the proposal to remove these vast amounts of water from the Rivers of Grand County. Any permit must contain provisions for the monitoring of temperatures and stream flows and for the cessation of diversions in the event that critical low flows and/or temperatures are reached. Sincerely, BY: Richard E. Newton /cc	Master Meter Account. Prior to 2002, Willows Water District was a separate entity from Denver Water and had its own water supply and delivery system. When the 6,820 taps for Willows Water District are removed from the total tap sales in 2002, the remaining sales (2,970) are comparable to total tap sales in other years. ***Comment #1648-2*** *(ID 1713)**:*** *Conservation is an absolute necessity. Because of problems and defects in the infrastructure, huge amounts of water are lost through leaking mains, valves, service lines and the like. This defective equipment must be repaired. Also, it is my understanding that more than half of the water which is consumed domestically in single-family homes in Denver is for outside irrigation. As the saying goes "Kentucky blue grass is not green". This type of consumptive use must be discouraged. The Clean Water Act requires that the Army Corp of Engineers approve only the least environmentally damaging alternative available. At a minimum, specific goals for conservation must be imposed upon the Denver Water Board before any additional diversions are allowed.* **Response #1648-2:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of

Comment Information	Comment	Comments and Response
		xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. On average, Denver Water spends $15 million per year on existing system maintenance and improvements. In addition, Denver Water's Ten-Year Capital Plan projects expenditures for additions, improvements, and replacements to water system facilities. Denver Water also has a leak detection program that identifies small leaks and develops a list for repairs. This, accompanied with Denver Water's main replacement program, has resulted in a treated water loss rate of less than 5% for Denver Water, which is among the lowest loss rates in the nation. ***Comment #1648-3*** *(ID 1712)**:*** *The Moffat Expansion Project is certainly not the least environmentally damaging alternative. In fact, it will be tremendously damaging. As a fly fisherman who regularly takes water temperature on the Fraser and Colorado Rivers, I can tell you that the temperatures which have been reached in the last 10 years far exceed previous years.* **Response #1648-3:** Additional water quality analysis, including temperature, was performed for the Fraser River and Colorado River. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1648-4*** *(ID 1711)**:*** *Not only that, the Moffat Project and the Windy Gap Project will result in a total lack of flushing flows in both the Fraser and Colorado Rivers. These flushing flows are absolutely necessary for the health of the River.*

Comment Information	Comment	Comments and Response
		Response #1648-4: High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak

Comment Information	Comment	Comments and Response
		flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, Indicators of Hydrologic Alteration (IHA) was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the right-of-way (ROW) agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11.

Comment Information	Comment	Comments and Response
		An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #1648-5*** *(ID 1710)**:*** *The Fraser and Colorado Rivers present a huge economic and recreational asset to Grand County. The public access areas at Paul Gilbert, Kemp and Breeze and Sunset Properties on the Colorado see an incredible number of fishermen per year. In areas where the River is open in the wintertime one can constantly see fishermen plying the waters. Over the years I have been witness to an increase in sedimentation, algae growth and lack of spawning in the River as a result of low flows.* **Response #1648-5:** The Corps has reviewed the recreation analysis and has provided additional information and revisions for clarity in FEIS Section 5.15. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1648-6*** *(ID 1709)**:*** *Grand County has enacted a stream flow management plan which must be incorporated into any permit which is issued to the Denver Water Board. This plan requires, in any permit issued should also require that there are adequate year-round baseline stream flows in the Fraser, the Colorado and the Williams Fork Rivers necessary to maintain those ecosystems. This would include a restriction which would prohibit diversions when stream temperatures reach or exceed State*

Comment Information	Comment	Comments and Response
		standards for the protection of aquatic life. **Response #1648-6:** The Grand County Stream Management Plan has been reviewed and appropriate data contained therein has been incorporated into the FEIS for the following resources: water quality (Sections 3.2 and 4.6.2), geomorphology (Section 4.6.3), wetlands and riparian areas (Section 3.8), PHABSIM data for analysis of aquatic biological resources (Sections 3.11, 4.6.11 and 5.11), and recreational flows analysis (Sections 4.6.15 and 5.15). Appropriate conceptual mitigation components were incorporated into the FEIS (see Appendix M) and, if a Section 404 Permit is issued for the Moffat Project, detailed mitigation will be evaluated and required, including Adaptive Management for mitigation. ***Comment #1648-7*** *(ID 1708)**:*** *The gauging station monitoring bypass flows are strategically placed at the present time. They permit the measuring of bypass flows downstream from the Water Board's diversion points. The permit should require that all bypass gauging devices be placed immediately below the diversion point.* **Response #1648-7:** With the exception of Denver Water's Fraser River mainstem diversion, flow measurement structures are located directly below Denver Water's Diversion points to verify minimum bypasses. Bypass flows for Denver Water's Fraser River mainstem diversion are measured approximately four miles downstream at the Fraser River near Winter Park gage. This is a condition included in Paragraph 3a of the Stipulations to the 1970 Amendatory Decision. Denver Water's current operations, which include measurement of the bypass flow requirement at that gage, are consistent with the Amendatory Decision. While this may result in less flow

Comment Information	Comment	Comments and Response
		bypassed at the diversion structure than measured at the gage, this is an existing operation and not an impact of the proposed Moffat Project. ***Comment #1648-8*** *(ID 1707)**:*** *Of additional consideration is the negative effect which the diversion of these waters will have on water quality in the three lakes of Granby Reservoir, Shadow Mountain Reservoir and Grand Lake. Water quality in those lakes has greatly diminished over the years. Water clarity in Grand Lake has been dramatically reduced as a result of water diversion. If the Denver Water Board is permitted to further de-water the Fraser River, the River will become little more than a storm sewer carrying lowland rain runoff, agricultural return flows and municipal return flows. This will result in a higher concentration of nutrients in the River which, when diverted by the Windy Gap Project, will foster increased algae growth and diminished water quality. Grand Lake is a recreation based economy which will greatly suffer.* **Response #1648-8:** Please see the response to Comment ID 1712. ***Comment #1648-9*** *(ID 1706)**:*** *I cannot tell you how dismayed I am over the proposal to remove these vast amounts of water from the Rivers of Grand County. Any permit must contain provisions for the monitoring of temperatures and stream flows and for the cessation of diversions in the event that critical low flows and/or temperatures are reached.* **Response #1648-9:** A more detailed evaluation of temperature analysis on the Fraser River and the Colorado River (between the Fraser River and the Blue River) was performed for the FEIS (see Sections 4.6.2 and 5.2). In addition to monitoring stream temperatures, Denver Water has proposed to bypass additional water when stream

Comment Information	Comment	Comments and Response
		temperatures reach a certain level. Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1649 Stevan L. O'Brian, [redacted]	[redacted] LARRY E. O'BRIAN [redacted] [redacted] February 19, 2010 U.S. Army Corps of Engineers Attn: Scott Franklin 9307 S. Wadsworth Blvd. Littleton, CO 80128 Denver Water Board Brian Gogas Mail Code 415, 1600 W. 12th Ave. Denver, CO 80204 FERC Attn: Sec. Kimberly Bose 888 First St, NE Washington, DC 20426 Re: Gross Reservoir Expansion in Arvada, Colorado Dear Mr. Franklin, Mr. Gogas & Ms. Bose, I am writing this letter to show my support for the Gross Reservoir expansion. Expanding this reservoir will increase the water storage for the area and will have the least amount of impact to the environment. When the Two Forks dam was denied it left the Denver Metro area with a large need for water storage, some of the much needed storage has been supplied by lining old gravel mine along the South Platte River. We have now reached a point where all the suitable vessels have been converted from gravel pit lakes to water storage reservoirs and the current area being mined will not be available till many years in the future. During this time we continue to allow water that could be used by Colorado to flow to downstream states and will be lost forever. This expansion should be a top priority for Denver Water to help Colorado keep it allotted share of water. Thank you, Stevan L. O'Brian [redacted] RECEIVED 2010	***Comment #1649-1*** *(ID 1715)**:*** *I am writing this letter to show my support for the Gross Reservoir expansion. Expanding this reservoir will increase the water storage for the area and will have the least amount of impact to the environment. When the Two Forks dam was denied it left the Denver Metro area with a large need for water storage, some of the much needed storage has been supplied by lining old gravel mine along the South Platte River. We have now reached a point where all the suitable vessels have been converted from gravel pit lakes to water storage reservoirs and the current area being mined will not be available till many years in the future. During this time we continue to allow water that could be used by Colorado to flow to downstream states and will be lost forever. This expansion should be a top priority for Denver Water to help Colorado keep it allotted share of water.* **Response #1649-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment Information	Comment	Comments and Response
Comment #1659 Dennis R. Saffell, [redacted]	[redacted] RECEIVED DEC 2009 DENNIS R. SAFFELL [redacted] Mr. Scott Franklin Moffat EIS Project Manager Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Dear Mr. Franklin, I testified at the public hearing conducted in Granby, Colorado on December 2, 2009 regarding the Moffat Firming Project. Please record the following facts regarding Denver Water. 1. **Denver Water is a terrible community member**. They purchased 1000's of agricultural acres in Grand County to skim off the water rights. Thousands of acres have been dried up so that residents in Denver can water their Kentucky Blue Grass. Denver Water contributes nothing to our community, they only take. They do not support our charities, they do not contribute to the welfare of our citizens in any way, and they don't even contribute their land to public use. 2. **Denver water is a terrible steward of the land.** Denver water does not manage their land. A. Denver Water has 1000's of acres of beetle killed dead standing trees. Private land owners have spent millions of dollars removing the dead trees to prevent fire. Denver Water has done very little to mitigate the risk. They don't care if our valley burns. If their massive amount of land holdings burns, the erosion from their burnt land will flow into the Fraser River and its tributaries causing generational damage. B. Denver Water has built 100's of miles of roads throughout bordering Arapahoe National Forest. These roads are not built to the very basic Grand County Codes. They built the roads without proper erosion control, without proper drainage detention areas, and without proper ditch and culvert systems. These rouge roads are eroding tons of sediment into the Fraser River and its tributaries every year. Instead of fixing the problem, Denver Water just dumps more Class C road material into the erosion areas without regard for the impact of their actions. C. Denver Water has no programs in place to mitigate their daily damage to tributaries like Ranch Creek. Road Building by Denver Water has altered the course of the creek, blocked access to natural spawning areas by endangered species (like Green Back Cutthroat Trout), and caused massive erosion. Each Office is Independently Owned And Operated.	***Comment #1659-4*** *(ID 1773)**:*** *I testified at the public hearing conducted in Granby, Colorado on December 2, 2009 regarding the Moffat Firming Project. Please record the following facts regarding Denver Water. 1. Denver Water is a terrible community member. They purchased 1000's of agricultural acres in Grand County to skim off the water rights. Thousands of acres have been dried up so that residents in Denver can water their Kentucky Blue Grass. Denver Water contributes nothing to our community, they only take. They do not support our charities, they do not contribute to the welfare of our citizens in any way, and they don't even contribute their land to public use.* **Response #1659-4:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1659-2*** *(ID 1772)**:*** *Denver water is a terrible steward of the land. Denver water does not manage their land. A. Denver Water has 1000's of acres of beetle killed dead standing trees. Private land owners have spent millions of dollars removing the dead trees to prevent fire. Denver Water has done very little to mitigate the risk. They don't care if our valley burns. If their massive amount of land holdings burns, the erosion from their burnt land will flow into the Fraser River and its tributaries causing generational damage.* **Response #1659-2:** The Moffat Project does not influence or impact the pine beetle epidemic. Impacts from the pine beetle on sediment supply are relatively unknown. The effects as a result of pine beetle infestation alone would not impact channel morphology, however forest lost and vegetation community changes from the beetle could potentially have several successive impacts: Decreased

Comment Information	Comment	Comments and Response
	3. **Denver Water is a terrible steward of the Water** Denver Water does not manage usage of the Water. Denver Water will just keep using as much water as they can take without regard for the consequences of their action A. Denver Water is extremely wasteful with water in Denver, Colorado. A drive around Denver on any July day will provide all the evidence needed: they water concrete, they water creeks, and they water streets. New Denver hotels have been built without respect for water, with mega flowing showers, fountains, and five gallon toilets in every room. B. **Denver Water cover-up** I co-developed the Lakota Subdivision in Winter Park, Colorado. During the development process we learned that Denver Water's water collection and transmission canals located above and to the east of Lakota are leaking excessively, and then surfacing in the form of springs which then evaporate before reaching the Fraser River. Hundreds of unnatural springs now exist because millions of gallons are leaking and evaporating from the unlined and uncapped canals. Denver water has actually preformed the calculations of how many millions of gallons they are losing. They know that it costs about $300.00 per linear foot to line and cap the ditches and have deemed the loss of water "acceptable". If Denver Water lined and capped its canals it would not need any more water from the Fraser River. This is a crime and a cover-up of important facts regarding the Moffat Firming Project. I respectfully request that you open a full investigation into the wasteful and illegal water management practices of Denver Water and that no action be taken to grant the further depletion of the Fraser River. Sincerely, Dennis R. Saffell [redacted]	sediment supply as dying forests decrease overhead shading resulting in increased groundcover and mid-story vegetation, therefore decreasing erosion potential. Pine beetle could also result in increased sediment supply if a large fire were to occur, fueled by the killed timber increasing erosion potential. In the event of a large scale fire, sediment supply would likely significantly increase for a finite amount of time. Sediment deposition from increased erosion would be expected to occur in streams during this time. As groundcover and the forest regenerates, sediment supply would be reduced and likely return to levels near Current Conditions. As revegetation occurs, sediment supply would decrease and at some point during the revegetation process sediment supply would once again drop below sediment transport capacity. Over time, sediment supply would again be orders of magnitude less than sediment transport capacity. When sediment transport capacity once again exceeds sediment supply, sediment that had been deposited as a result of the fire would begin to erode and transport downstream. The system would continue along this erosional process until it returned to its equilibrium. Results of the channel morphology analysis show that with or without the proposed Project sediment transport capacity greatly exceeds supply in all locations evaluated. However, the proposed Project would result in decreased sediment transport capacity. Following a major fire it can therefore be predicted that either with or without the Project, the river system would eventually return to the same dynamic state. The analysis that was completed for sediment transport indicated that the sediment transport capacity greatly exceeds sediment supply for all modeled locations and impacts are not expected as a result of the proposed Project. DEIS Section 4.1 (FEIS Section 5.1) under the subheading Sediment Supply explains how pine beetle

Comment Information	Comment	Comments and Response
		could impact the river systems. Additional water quality analysis was also performed on the Fraser River and Three Lakes related to nutrients (FEIS Sections 4.6.2 and 5.2). Information about the relationship of the Project and mountain pine beetle has been added to the vegetation analysis in the FEIS (Sections 4.6.7.1 and 5.7.1.1). In 2010, Denver Water and the USFS announced a plan to equally share an investment of $33 million, over a five year period, for restoration projects on more than 38,000 acres of National Forest lands. Recent wildfires and the State's 3 million acres of pine beetle-infested forests have emphasized the need to protect forest health. This partnership will accelerate and expand the USFS ability to restore forest health in watersheds critical for Denver Water's water supplies and infrastructure. Forest thinning and other wildfire fuels reduction projects will take place around and upstream of Denver Water reservoirs. Restoration also will help the forests become more resistant to future insect and disease, reduce wildlife risks and maintain habitat for fish and wildlife. ***Comment #1659-3*** *(ID 1771)**:*** *Denver Water has built 100's of miles of roads throughout bordering Arapahoe National Forest. These roads are not built to the very basic Grand County Codes. They built the roads without proper erosion control, without proper drainage detention areas, and without proper ditch and culvert systems. These rouge roads are eroding tons of sediment into the Fraser River and its tributaries every year. Instead of fixing the problem, Denver Water just dumps more Class C road material into the erosion areas without regard for the impact of their actions. C. Denver Water has no programs in place to mitigate their daily damage to tributaries like Ranch Creek. Road Building by Denver Water has altered the course of the creek, blocked access to natural spawning areas by endangered*

Comment Information	Comment	Comments and Response
		species (like Green Back Cutthroat Trout), and caused massive erosion. **Response #1659-3:** Denver Water is committed to responsibly managing its roads in Grand County and minimizing erosion and sedimentation in the adjacent waterways. In fact, Denver Water just completed a Project in collaboration with CDOT, Grand County, USFS, CPW and the Town of Winter Park to improve the Fraser River water quality and ecosystem by constructing a sediment detention basin at Denver Water's Fraser River Diversion structure to remove traction sand and sediment that runoff into the river. ***Comment #1659-1*** *(ID 1770)**:*** *Denver Water is a terrible steward of the Water Denver Water does not manage usage of the Water. Denver Water will just keep using as much water as they can take without regard for the consequences of their action A. Denver Water is extremely wasteful with water in Denver, Colorado. A drive around Denver on any July day will provide all the evidence needed: they water concrete, they water creeks, and they water streets. New Denver hotels have been built without respect for water, with mega flowing showers, fountains, and five gallon toilets in every room.* **Response #1659-1:** Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 am – 6:00 pm) outside watering cannot occur, prohibit watering the street, watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted).

Comment Information	Comment	Comments and Response
		Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water implements an aggressive rebate program and rewards customers for installing low-flow fixtures and rain gages. In the last three years 38,627 residential rebates have been processed by Denver Water, which amounts to 15% of Denver Water's residential customers participating in rebate programs since 2007. Through these rebates, the new high-efficiency products help save about 960 AF of water, roughly the amount used by 2,400 homes in a year. Additionally, Denver Water has launched a pilot program with Habitat for Humanity by buying inefficient toilets (more than 1.6 gallons per flush) from their Home Improvement Outlet stores as an attempt to save over 40 AF/yr. Denver Water also offers free water-use audits and incentive contracts to commercial, industrial, and institutional customers. ***Comment #1659-5*** *(ID 1769)**:*** *Denver Water cover-up I co-developed the Lakota Subdivision in Winter Park, Colorado. During the development process we learned that Denver Water's water collection and transmission canals located above and to the east of Lakota are leaking excessively, and then surfacing in the form of springs which then evaporate before reaching the Fraser River. Hundreds of unnatural springs now exist because millions of gallons are leaking and evaporating from the unlined and uncapped canals. Denver water has actually preformed the calculations of how many millions of gallons they are losing. They know that it costs about $300.00 per linear foot to line and cap the ditches and have deemed the loss of water "acceptable". If Denver Water lined and capped its canals it would not need any*

Comment Information	Comment	Comments and Response
		more water from the Fraser River. This is a crime and a cover-up of important facts regarding the Moffat Firming Project. I respectfully request that you open a full investigation into the wasteful and illegal water management practices of Denver Water and that no action be taken to grant the further depletion of the Fraser River. **Response #1659-5:** A majority of the Moffat Collection System (i.e., Fraser and Williams Fork rivers collection system), Gumlick, Vasquez, and Moffat tunnels, and South Boulder Canal are lined. Some of Denver Water's system is unlined and seepage does occur. Denver Water makes replacement water releases for evaporative losses and losses that occur during transport of water between facilities using natural waterways. Additionally, Denver Water is currently replacing sections of the Moffat Collection System with new concrete pipe that will be buried as part of its on-going maintenance plan. The timeframe for replacement depends on a variety of factors, including outages of other facilities, water supply, and availability of construction crews.

Comment Information	Comment	Comments and Response
Comment #1678 Virginia L. Winter [redacted]	[redacted] VIRGINIA L. WINTER Scott Franklin, Moffat EIS Project Manager Corps Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton CO 80218 Moffat.eis@usace.army.mil RECEIVED SEP 2009 Dear Mr. Franklin: I am a concerned citizen and taxpayer here in the State of Colorado and a property owner and resident both in Grand County (Fraser, CO) and in Boulder, CO. Twenty two of my thirty two years in this State were spent living and working Granby, Hot Sulphur Springs, Grand Lake and Fraser and included a time working for the U.S. Forest Service in timber management and fire protection. I write to you in support of the Trout Unlimited stance regarding the Moffat Firming Project - and add my plea to others that it can be conducted in a manner that respects the needs of the Fraser and Upper Colorado Rivers; which the current proposal has not yet achieved. To achieve that goal it MUST to be improved in several key ways. I urge the Army Corps of Engineers to require - and the Denver Water Board to support - improvements to the proposal that will ensure a balanced approach addressing Front Range water needs while maintaining the water quality, fisheries, and overall river ecosystems that contribute so much to Colorado's economy and quality of life. Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: • **Conservation First/Diversion Second:** The Moffat Firming draft EIS proposes to meet Denver's projected 2030 water shortfall by diverting 18,000 acre-feet from the West Slope and developing another 16,000 acre-feet through conservation (an acre-foot is enough water to cover one acre to a depth of one foot - enough for at least two families of four for a year). I firmly believe that developing water through conservation first before diverting additional water from the West Slope will preserve the West Slope environment longer and give Denver an opportunity to discover how much water can be developed through conservation. While Denver is a clear leader among Colorado municipalities in indoor water conservation measures, they have done far less to address the largest use of water in Colorado's arid environment: outdoor lawn watering. With over half of residential water use going to keep Kentucky blue grass thriving in a high plains desert, Denver has an opportunity to save large amounts of water before building any new and costly infrastructure. Much can be learned from the Southern Nevada Water Authority, which pays customers to remove blue grass and has dropped their water usage by 30%. A similar reduction in Denver's water use would develop far more than the 34,000 acre feet. that Denver is hoping to secure by 2030. • **Periodic high flows:** The draft EIS does not recognize the importance that the spring high flows mean to the river. A Fraser river without high flows in the spring can not flush the 9,000 tons of traction sand that the Colorado Department of Transportation dumps on the west side of Berthoud Pass every winter. High flows are also critical to the configuration of the stream bed which is a vital component to a healthy river. A "flat-line" river – like what the Fraser is becoming based on past and proposed diversions – will not be able to maintain its health over time. The draft EIS must acknowledge the importance of these high flows and require periodic high flows as part of the mitigation package. [redacted]	***Comment #1678-1*** *(ID 1861)**:*** *I am a concerned citizen and taxpayer here in the State of Colorado and a property owner and resident both in Grand County (Fraser, CO) and in Boulder, CO. Twenty two of my thirty two years in this State were spent living and working Granby, Hot Sulphur Springs, Grand Lake and Fraser and included a time working for the U.S. Forest Service in timber management and fire protection. I write to you in support of the Trout Unlimited stance regarding the Moffat Firming Project - and add my plea to others that it can be conducted in a manner that respects the needs of the Fraser and Upper Colorado Rivers; which the current proposal has not yet achieved. To achieve that goal it MUST to be improved in several key ways. I urge the Army Corps of Engineers to require - and the Denver Water Board to support - improvements to the proposal that will ensure a balanced approach addressing Front Range water needs while maintaining the water quality, fisheries, and overall river ecosystems that contribute so much to Colorado's economy and quality of life.* **Response #1678-1:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. ***Comment #1678-2*** *(ID 1860)**:*** *Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: Conservation First/Diversion Second: The Moffat Firming draft EIS proposes to meet Denver's projected 2030 water shortfall by diverting 18,000 acre-feet from the West Slope and developing another 16,000 acre-feet through conservation (an acre-foot is enough water to cover one acre to a depth of one foot - enough for at least two families of four for a year). I firmly believe that developing water through conservation first before diverting additional water from the West Slope will preserve the West Slope*

Comment Information	Comment	Comments and Response
	• **Combined effects of past and proposed projects:** While Denver Water is proposing to deplete flows in the Fraser River, the Northern Water Conservancy District has plans to draw more water from the Upper Colorado River at Windy Gap. Denver Water's draft EIS fails to acknowledge the impacts that these two projects, which are running simultaneously, will have on the Upper Colorado River. The EIS also fails to recognize the risks this project poses to the Fraser and Colorado Rivers in light of the extensive diversions that already exist. A diversion of 18,000 acre-feet of water from the native flows of the Fraser River might pose little risk – but coming after decades of development that are already diverting more than half of the Fraser's flows, there is far more risk that the accumulated impacts will overwhelm the fishery and overall river health. The Colorado faces a similar problem from the combination of Denver and the Northern District's past and proposed projects: if both Moffat and Windy Gap Firming move forward, only 26% of the native flows will remain in the Upper Colorado River! The draft EIS must include the impacts and mitigation to address the effects of reducing what was once called the "Mighty Upper" to a trickle of its former self. • **Mitigation requirements:** In the draft EIS under mitigation, Denver Water refers to additional environmental enhancement opportunities separate from but parallel to the EIS. Since the mitigation measures mentioned in the EIS are minimal, it appears that these enhancement measures are the only meaningful mitigation being proposed. Unless these enhancement measures are tied into the EIS – and required under any permits that are issued for the project – there will be no meaningful mitigation. The Draft EIS admits to some impacts to the Fraser River and must include adequate mitigation, including incorporating the enhancement points that Denver Water is offering as mitigation requirements in the EIS. • **Impacts to Grand Lake:** The draft EIS fails to mention that the dewatered Fraser River will be pumped by the Northern Water Conservancy District through the Colorado Big Thompson Project and through Grand Lake. The additional depletions from the Fraser River will come in May, June and July. These are the same months that the Windy Gap Reservoir is pumping into the CBT project. These are also the months when the six wastewater treatment plants on the Fraser River are experiencing high discharge due to infiltration, when agricultural lands are flushing a years worth of nutrients from cattle into the river, and when the highest influx of phosphorus carrying sediment is hitting the river. By depleting the flows in the Fraser River the concentration of these nutrients will increase and be pumped directly into the Three Lakes Region. Grand Lake is already experiencing high algae counts and diminishing water clarity. The draft EIS must acknowledge the impact that increasing the nutrient concentrations will have on the State's largest natural lake and Grand County's crown jewel. Please consider the content of my concerns and include my name and e-address to your list of citizens interested in following developments in regard to the "Moffat Firming Project" and the Army Corps or Engineers permitting decision. Thank you for your time and consideration of my concerns. Sincerely yours, Virginia L. Winter Virginia L. Winter [redacted] [redacted]	*environment longer and give Denver an opportunity to discover how much water can be developed through conservation. While Denver is a clear leader among Colorado municipalities in indoor water conservation measures, they have done far less to address the largest use of water in Colorado's arid environment: outdoor lawn watering. With over half of residential water use going to keep Kentucky blue grass thriving in a high plains desert, Denver has an opportunity to save large amounts of water before building any new and costly infrastructure. Much can be learned from the Southern Nevada Water Authority, which pays customers to remove blue grass and has dropped their water usage by 30%. A similar reduction in Denver's water use would develop far more than the 34,000 acre feet that Denver is hoping to secure by 2030.* **Response #1678-2:** Denver Water explored a "Cash for Grass" program. In 2008, Denver Water held several focus groups and found that there was little interest in participating in this type of program. Therefore, Denver Water pursued other conservation measures that were more cost effective and that would have higher customer participation. Part of the issue with offering a program of this type to single family residential customers is that the majority of those customers already irrigate at a level that is below the efficiency level for turf. Replacing this turf with water efficient landscaping (that still requires irrigation) nets the utility very little water savings. This is compounded by the cost of this landscaping compared to the cost of water. The net result to the customer is that it is a costly endeavor, that even when offset by a utility rebate would take years to pay back the investment. Denver Water has concentrated its outdoor water conservation program as follows: "Use Only What You Need" – a nationally recognized conservation marketing campaign, and xeriscape – a term developed by Denver Water to describe landscaping that has little to no watering needs.

Comment Information	Comment	Comments and Response
		Denver Water does have a program in place which provides incentives to remove bluegrass from large landscapes including park systems and those owned by business parks and homeowners associations. Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22% by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Comment #1678-3*** *(ID 1859)**:*** *Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: Periodic high flows: The draft EIS does not recognize the importance that the spring high flows mean to the river. A Fraser river without high flows*

Comment Information	Comment	Comments and Response
		in the spring can not flush the 9,000 tons of traction sand that the Colorado Department of Transportation dumps on the west side of Berthoud Pass every winter. High flows are also critical to the configuration of the stream bed which is a vital component to a healthy river. A "flat-line" river - like what the Fraser is becoming based on past and proposed diversions - will not be able to maintain its health over time. The draft EIS must acknowledge the importance of these high flows and require periodic high flows as part of the mitigation package. **Response #1678-3:** High spring flows would still occur with the Moffat Project on-line. Appendix H-4 includes average daily hydrographs for average and wet conditions at key locations throughout the study area. While streamflows would be reduced in average and wet years with a Moffat Project alternative on-line, high flows would still occur during runoff. For example, at the Fraser River near Winter Park gage, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 190 cfs versus 177 cfs under the Proposed Action, which is a reduction of 13 cfs or 7%. At the Fraser River below the confluence with Crooked Creek, which is downstream of all Denver Water's diversions in the Fraser River Basin, the average daily peak flow in a wet year under Full Use of the Existing System would be approximately 1,243 cfs versus 1,152 cfs under the Proposed Action. The daily peak flow in an average wet year would be reduced by 91 cfs or 7% at that location. There would be little change in the timing of the peak flow in an average wet year at those locations. At the Winter Park gage, the peak flow in an average wet year under Full Use of the Existing System and the Proposed Action would occur at the same time in late June. Below the confluence with Crooked Creek, the peak flow in an average wet year would be delayed about one week from June 13 to June 21 under the Proposed Action compared to Full Use of the Existing

Comment Information	Comment	Comments and Response
		System. The reduction in the peak flow in an average wet year would generally be greatest in the Fraser and Williams Fork river basins due to Denver Water's additional diversions in average and wet years, however, the figures in Appendix H-4 and the additional analyses described below demonstrate that high flows would still occur during runoff with the Moffat Project on-line. Additional information on high flows was added to Section 4.1 and 5.1 in the FEIS. Information was included on the change in timing and magnitude of peak flows for an average year and wet year for several locations throughout the Fraser and Williams Fork river basins. The locations selected include tributaries with and without bypass requirements. In addition, The Nature Conservancy's software, IHA was used to evaluate the change in frequency, duration, magnitude, and timing of high flow pulses, small floods (2-year flood) and large floods (10-year flood) at the same locations. IHA is a tool for calculating the characteristics of altered hydrologic regimes. Denver Water's diversions from the Fraser River would continue to be subject to bypass requirements pursuant to the ROW agreements with the USFS. FEIS Section 5.11 evaluated the impacts of changes to sediment transport, minimum flows, and flushing flows on aquatic resources in the Project area. Appropriate mitigation for any predicted impacts that could occur in the streams is included in FEIS Section 5.11.7 and Appendix M. The analyses of stream morphology, specifically the anticipated response of the streams to projected flows changes as the result of additional water diversions during high spring flow conditions were supplemented in the FEIS. Additional assessments included added sampling sites, review of historic photos, sensitivity

Comment Information	Comment	Comments and Response
		analysis of sediment supply and sediment transport equations and an assessment of Phase 2 sediment transport. Analyses of the existing systems are provided in FEIS Section 3.3. Assessments of the streams' predicted response to proposed flow changes are provided in FEIS Sections 4.6.3 and 5.3. The effect of peak flow reductions on trout was evaluated in the DEIS and is discussed in more detail in FEIS Sections 3.11, 4.6.11, and 5.11. An analysis was completed to quantify changes to the magnitude and frequency of larger flood events. The duration between flooding events was computed to identify changes anticipated as a result of the Proposed Action. This information supplements sediment transport and effective discharge analysis that were performed to quantify the ability of the streams to transport their sediment load. This information in included in FEIS Sections 4.6.3 and 5.3. ***Comment #1678-4*** *(ID 1858)**:*** *Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: Combined effects of past and proposed projects: While Denver Water is proposing to deplete flows in the Fraser River, the Northern Water Conservancy District has plans to draw more water from the Upper Colorado River at Windy Gap. Denver Water's draft EIS fails to acknowledge the impacts that these two projects, which are running simultaneously, will have on the Upper Colorado River. The EIS also fails to recognize the risks this project poses to the Fraser and Colorado Rivers in light of the extensive diversions that already exist. A diversion of 18,000 acre-feet of water from the native flows of the Fraser River might pose little risk - but coming after decades of development that are already diverting more than half of the Fraser's flows, there is far more risk that the accumulated impacts will overwhelm the fishery and*

Comment Information	Comment	Comments and Response
		overall river health. The Colorado faces a similar problem from the combination of Denver and the Northern District's past and proposed projects: if both Moffat and Windy Gap Firming move forward, only 26% of the native flows will remain in the Upper Colorado River! The draft EIS must include the impacts and mitigation to address the effects of reducing what was once called the "Mighty Upper" to a trickle of its former self. **Response #1678-4:** The DEIS includes the WGFP as part of the analysis because the WGFP is assumed to be on-line in the Full Use of the Existing System scenario. The Corps' analysis evaluates what time of year reductions occur, what type of reductions take place, and the magnitude of reductions; that is, reductions occur only in wet years when the system can absorb the flow changes. Additionally, the Moffat Project and WGFP would not divert West Slope water in dry years. The timing and magnitude of impacts associated with Moffat Project diversions on surface water-related resources such as water quality, aquatic biological resources, and stream morphology, are anticipated to be negligible to minor. DEIS Section 4.1.1.2 under the sub-heading Colorado River Water Quality acknowledges: "The Colorado River from the Fraser River to the Blue River is influenced by a number of East Slope entities, most notably withdrawals from the Fraser River watershed, the C-BT Project, and the Windy Gap Project." Additional water quality analysis has been performed on the Fraser River and the Three Lakes area, including potential effects from the C-BT System. Please refer to FEIS Sections 4.6.2 and 5.2 for a discussion of this analysis. Please refer to the reorganized format of the FEIS, which provides a revised baseline for more detailed discussion of Project related effects. FEIS Chapter 4 now describes the total environmental effects (the

Comment Information	Comment	Comments and Response
		Project in combination with other reasonably foreseeable projects) that are anticipated to occur between Current Conditions (2006) and Full Use with a Project Alternative (2032). FEIS Chapter 5 describes Project-related effects between Full Use of the Existing System and Full Use with a Project Alternative (2032). Appropriate conceptual mitigation is discussed in FEIS Appendix M and, if a Section 404 Permit is issued, mitigation will be included as a condition of the Section 404 Permit. ***Comment #1678-5*** *(ID 1857)**:*** *Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: Mitigation requirements: In the draft EIS under mitigation, Denver Water refers to additional environmental enhancement opportunities separate from but parallel to the EIS. Since the mitigation measures mentioned in the EIS are minimal, it appears that these enhancement measures are the only meaningful mitigation being proposed. Unless these enhancement measures are tied into the EIS - and required under any permits that are issued for the project - there will be no meaningful mitigation. The Draft EIS admits to some impacts to the Fraser River and must include adequate mitigation, including incorporating the enhancement points that Denver Water is offering as mitigation requirements in the EIS.* **Response #1678-5:** The Corps will include specific mitigation measures that are enforceable through a Section 404 Permit, if issued. CDPHE will also include specific water quality mitigation measures that are enforceable through a Section 401 Certification. USFWS will include specific requirements to protect threatened and endangered species that are enforceable through a Biological Opinion. In addition, Denver Water has entered into three agreements that would enhance the existing environment and provide

Comment Information	Comment	Comments and Response
		additional protections: CRCA, LBD Cooperative Effort, and Fish and Wildlife Enhancement Plan, copies of which are located in FEIS Appendix M. Each of these plans will be implemented through permanent agreements between the parties. The Corps will consider these agreements, along with all "reasonably foreseeable future actions" in its decision process regarding the proposed Moffat Project. These agreements are not intended to mitigate the impacts of the proposed Project; instead, the purpose is to improve existing conditions of aquatic environments in the Colorado River Basin should Gross Reservoir be enlarged. ***Comment #1678-6*** *(ID 1856)**:*** *Major themes that I want to be more adequately addressed through the Environmental Impact Statement (EIS) process include: Impacts to Grand Lake: The draft EIS fails to mention that the dewatered Fraser River will be pumped by the Northern Water Conservancy District through the Colorado Big Thompson Project and through Grand Lake. The additional depletions from the Fraser River will come in May, June and July. These are the same months that the Windy Gap Reservoir is pumping into the CBT project. These are also the months when the six wastewater treatment plants on the Fraser River are experiencing high discharge due to infiltration, when agricultural lands are flushing a years worth of nutrients from cattle into the river, and when the highest influx of phosphorus carrying sediment is hitting the river. By depleting the flows in the Fraser River the concentration of these nutrients will increase and be pumped directly into the Three Lakes Region. Grand Lake is already experiencing high algae counts and diminishing water clarity. The draft EIS must acknowledge the impact that increasing the nutrient concentrations will have on the State's largest natural lake and Grand County's crown jewel.*

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
		Response #1678-6: Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2. ***Comment #1678-7*** *(ID 1855)**:*** *Please consider the content of my concerns and include my name and e-address to your list of citizens interested in following developments in regard to the "Moffat Firming Project" and the Army Corps or Engineers permitting decision.* **Response #1678-7:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA. The Corps does not maintain an email database; rather, Project updates are posted periodically to the Corps website at: http://www.nwo.usace.army.mil/html/od-tl/eis/moffat-eis.html.

Comment Information	Comment	Comments and Response
Comment #1682 Frank Barone, President Arvada Economic Development Association 8101 Ralston Road Arvada, CO 80002	ARVADA ECONOMIC DEVELOPMENT ASSOCIATION RECEIVED MAR 2010 March 9, 2010 Mr. Scott Franklin, Moffat EIS Project Manager Corp Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Subject: Moffat Collection System Project Dear Mr. Franklin: I am writing on behalf of the Arvada Economic Development Association (AEDA) Board of Directors to express our strong support for the expansion of Gross Reservoir which will provide a reliable and adequate water supply for existing and future residents. Obviously, a reliable water supply is an essential ingredient to our quality of life, without which population growth will be limited, businesses will close and economic opportunity will be stifled. AEDA is the community's business-to-government liaison for the City of Arvada serving all businesses from home-based to our largest employer. AEDA's Board of Directors consists of seventeen business and community leaders who donate their time and resources to provide innovative solutions for business, attract targeted industries, grow our job base, increase the revenue for the City, and help existing businesses thrive. We recognized that Denver Water's collection system is comprised of the Moffat Collection System (MCS) or North System, and the South system. The MCS, which includes Gross Reservoir, has existing water demands that can exceed available supplies during a drought. We understand that during a severe drought, such as occurred in 2002, the Moffat Water Treatment Plant has a significant level of risk of running out of water. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre-feet by 2030. The provision of water resources is an infrastructure need that must be well managed. While Denver water has enacted effective and far reaching conservation measures, conservation alone is not enough to solve our water supply demands. Gross Reservoir must be expanded. Thank you for the opportunity to comment on this critical project. Sincerely, Frank Barone, President Arvada Economic Development Association 8101 Ralston Road • Arvada, Colorado 80002 • 720.898.7810	***Comment #1682-1*** *(ID 2268)**:*** *I am writing on behalf of the Arvada Economic Development Association (AEDA) Board of Directors to express our strong support for the expansion of Gross Reservoir which will provide a reliable and adequate water supply for existing and future residents. Obviously, a reliable water supply is an essential ingredient to our quality of life, without which population growth will be limited, businesses will close and economic opportunity will be stifled. AEDA is the community's business-to-government liaison for the City of Arvada serving all businesses from home-based to our largest employer. AEDA's Board of Directors consists of seventeen business and community leaders who donate their time and resources to provide innovative solutions for business, attract targeted industries, grow our job base, increase the revenue for the City, and help existing businesses thrive. We recognized that Denver Water's collection system is comprised of the Moffat Collection System (MCS) or North System, and the South system. The MCS, which includes Gross Reservoir, has existing water demands that can exceed available supplies during a drought. We understand that during a severe drought, such as occurred in 2002, the Moffat Water Treatment Plant has a significant level of risk of running out of water. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre-feet by 2030. The provision of water resources is an infrastructure need that must be well managed. While Denver water has enacted effective and far reaching*

Comment Information	Comment	Comments and Response
		conservation measures, conservation alone is not enough to solve our water supply demands. Gross Reservoir must be expanded. Thank you for the opportunity to comment on this critical project. **Response #1682-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1725 -- --	APR-30-2008 06:57P FROM: TO:1[redacted] P.2/2 February 27, 2010 Dear Mr. Franklin: The Moffat Firming Project will effect the quality as well as the quantity of water in the Fraser River and down stream from it. Another area of degradation that hasn't been addressed, to my knowledge, in Denver's firming project, is that Fraser River water is also pumped up to Granby Reservoir and additionally pumped up to Shadow Mountain Reservoir and Grand Lake. I have been a careful observer of Grand Lake water since the 1930's, and I can attest to the greatly reduced clarity and quality of the water in Grand Lake. When it, a natural, glacier-created lake was the only lake of the three bodies of water and its "outlet" was the beginning of the Colorado River (along with the "North Fork" that flowed from up the Kawuneeche Valley) , the Grand Lake water was so clear we could see very deep. Now the turbidity and quality have become very poor and get poorer every year. Before the flow of water was reversed in Grand Lake, we saw only the rocks on the lake bottom. Now aquatic plants are thriving. The Bureau of Reclamation made two promises to the Grand Lake residents before the Colorado Big Thompson Project was begun: the water level would only fluctuate 1-3 inches and the quality of the water would not be changed. The water level promise has been kept; the quality promise has slipped from the memory of the Army Corp of Engineers now charged with enforcement. The Northern Colorado Water Conservancy District is taking more water through the Adams Tunnel at the same time that the reduced flow and more polluted Fraser River MAR-01-2010 00:33AM From: ID:TRI LAKES Page:002 R=100%	***Comment #1725-0*** *(ID 2328)**:*** *The Moffat Firming Project will effect the quality as well as the quantity of water in the Fraser River and down stream from it. Another area of degradation that hasn't been addressed, to my knowledge, in Denver's firming project, is that Fraser River water is also pumped up to Granby Reservoir and additionally pumped up to Shadow Mountain Reservoir and Grand Lake. I have been a careful observer of Grand Lake water since the 1930's and I can attest to the greatly reduced clarity and quality of the water in Grand Lake. When it, a natural, glacier-created lake was the only lake of the three bodies of water and its "outlet" was the beginning of the Colorado River (along with the "North Fork" that flowed from up the Kawuneeche Valley) , the Grand Lake water was so clear we could see very deep. Now the turbidity and quality have become very poor and get poorer every year. Before the flow of water was reversed in Grand Lake, we saw only the rocks on the lake bottom. Now aquatic plants are thriving. The Bureau of Reclamation made two promises to the Grand Lake residents before the Colorado Big Thompson Project was begun: the water level would only fluctuate 1-3 inches and the quality of the water would not be changed. The water level promise has been kept; the quality promise has slipped from the memory of the Army Corp of Engineers now charged with enforcement. The Northern Colorado Water Conservancy District is taking more water through the Adams Tunnel at the same time that the reduced flow and more polluted Fraser River* **Response #1725-0:** Additional water quality analysis was performed for the Fraser River and the Three Lakes area. Please refer to FEIS Sections 4.6.2 and 5.2.

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
Comment #1763 Kathie Barstnar, Executive Director NAIOP, Commercial Real Estate Development Association, Colorado Chapter 1720 South Bellaire Street, Suite 110 Denver, CO 80222	www.naiop-colorado.org NAIOP COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION COLORADO CHAPTER RECEIVED MAR 2010 March 29, 2010 Mr. Scott Franklin, Moffat EIS Project Manager Corp Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 Subject: Comments on the Moffat Collection System Project Dear Mr. Franklin, I am writing to express our strong support for the expansion of Gross Reservoir which will provide a reliable and adequate water supply for existing and future residents. A reliable water supply is an essential ingredient to our quality of life, without which population growth will be limited, businesses will close and economic opportunity will be stifled. Denver Water's collection system is comprised of the Moffat Collection System (MCS) or North System, and the South system. The MCS, which includes Gross Reservoir, has existing water demands that can exceed available supplies during a drought. We understand that during a severe drought, such as occurred in 2002, the Moffat Water Treatment Plant has a significant level of risk of running out of water. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre-feet by 2030. The provision of water resources is an infrastructure need that must be well managed. While Denver water has enacted effective and far reaching conservation measures, conservation alone is not enough to solve our water supply demands. Gross Reservoir must be expanded. Thank you for the opportunity to comment on this critical project. Sincerely, Kathie Barstnar Executive Director 2010 Officers: President Stephanie T. Lawrence Granite Properties President Elect/Finance Chair Marshall M. Bintliff McWhinney Community Relations Chair Jason Newcomer DCS Inc. Legislative Affairs Chair John A. Logan Left Campbell Tucker & Gordon, LLP Membership Chair John F. Ellis Security Title Guaranty Company Programs Chair James F. Creighton REvest Inc. At-Large Officer Douglas L. Jones The Jones Realty Group, Inc. Immediate Past President Craig A. Poulter The PrivateBank Board of Directors: Guy M. Arnold Dividend Capital Total Realty Trust Wayne E. Barrett ProLogis Michelle Brokaw Fleisher Smyth Brokaw, LLC Christopher P. Ernst Aardex, LLC John Felley Westcore Properties, LLC Lee Ann T. Fowler Brownstein Hyatt Farber Schreck Mark Lucas Jones Lang LaSalle William B. Lucas Brookfield Properties John V. Miller First American Title Insurance Company Gregory W. Morris Fuller Real Estate Randy G. Nichols The Nichols Partnership, Inc. Steve Ormiston Shea Properties William Tresham Callahan Capital Partners Richard L. Woodruff The WW Reynolds Companies Director/Developing Leader Representative Sara Croot BBVA Compass Directors/Corporate Board Members Larry A. Lance Alliance Commercial Partners, LLC Tracy Wilkes Castle Keep Developments Honorary Lifetime Director John F. O'Meara,Retired NAIOP Staff Kathie Barstnar, Executive Director Robert F. Moody, Vice President for Government Affairs 1720 South Bellaire Street, Suite 110, Denver, CO 80222 Tel: (303) 782-0155 Fax: (303) 820-3844 CommonCostsFund	***Comment #1763-1*** *(ID 4435)**:*** *I am writing to express our strong support for the expansion of Gross Reservoir which will provide a reliable and adequate water supply for existing and future residents. A reliable water supply is an essential ingredient to our quality of life, without which population growth will be limited, businesses will close and economic opportunity will be stifled. Denver Water's collection system is comprised of the Moffat Collection System (MCS) or North System, and the South system. The MCS, which includes Gross Reservoir, has existing water demands that can exceed available supplies during a drought. We understand that during a severe drought, such as occurred in 2002, the Moffat Water Treatment Plant has a significant level of risk of running out of water. The proposed Gross Reservoir expansion was chosen from an analysis of more than 300 potential water supply sources and infrastructure components that were screened during the initial phase of the Environmental Impact Statement process. This is the preferred water supply solution for our region. Without expanding the reservoir, Denver Water in drought years could be unable to meet its contractual commitments to customers served by the North System. Furthermore, Denver Water will begin experiencing a shortfall in supply beginning in 2016 and growing by 34,000 acre-feet by 2030. The provision of water resources is an infrastructure need that must be well managed. While Denver water has enacted effective and far reaching conservation measures, conservation alone is not enough to solve our water supply demands. Gross Reservoir must be expanded. Thank you for the opportunity to comment on this critical project.* **Response #1763-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Organizations/Stakeholders Part B)

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Comment #1771 Perry Pearce, Investor Committee Chairman Colorado Competitive Council 1445 Market Street Denver, CO 80202	COLORADO Competitive COUNCIL RECEIVED MAR 2010 March 23, 2010 Scott Franklin Moffat EIS Project Manager Army Corps of Engineers Denver Regulatory Office 9307 South Wadsworth Blvd. Littleton, Colorado 80128 Subject: Comments on the Moffat Collection System Project Dear Mr. Franklin: The Colorado Competitive Council is writing to inform you of its support of the proposal by Denver Water to expand its Moffat Collection System. Our organization believes this project is essential to the secure the water future of our region. With the Denver area expected to see an additional 215,000 people and 230,000 jobs by 2030, Denver Water is facing a predicted water supply shortfall of 34,000 feet. This shortfall will occur even after taking into account smarter growth and higher densities. Our current system is imbalanced, which poses significant risk for water users should a drought or natural disaster occur. Currently, 80 percent of Denver's water comes from its southern collection system; 20 percent comes from the northern collection system, known as Moffat. This poses a significant risk in two ways. First, should we experience a drought, there may not be enough water in the northern system, thereby putting at risk those who live in the part of the metro area who rely on this water supply source. This nearly happened during the drought of 2002. Second, as we saw with the Hayman and Buffalo Creek fires, natural disasters can impair the system. As currently crafted, the northern system is not large enough or sufficiently robust to be able to serve as a suitable backup should a similar situation occur. Conservation has proved a helpful answer to these challenges, and Denver water users have an impressive and successful track record. Additionally, Denver Water continues to innovate and put into place programs that help reduce overall demand. But conservation alone will not solve future challenges and needs. Denver Water has not built a major new water supply project since Dillon Reservoir in the 1960s. However, since the 1980s, the population of the Denver metro area has grown by 40 percent. We must plan for our future, and that includes efforts such as the Moffat Collection Expansion. Denver Water has determined that expanding Moffat is the best solution from the perspective of both cost and environmental impact, and we agree. 1445 Market Street, Denver, CO 80202 Phone 303.620.8071 Fax 303.534.3200 www.coloradocompetes.org *An Affiliate of the Denver Metro Chamber of Commerce*	***Comment #1771-1*** *(ID 4464)**:*** *The Colorado Competitive Council is writing to inform you of its support of the proposal by Denver Water to expand its Moffat Collection System. Our organization believes this project is essential to the secure the water future of our region. With the Denver area expected to see an additional 215,000 people and 230,000 jobs by 2030, Denver Water is facing a predicted water supply shortfall of 34,000 feet. This shortfall will occur even after taking into account smarter growth and higher densities. Our current system is imbalanced, which poses significant risk for water users should a drought or natural disaster occur. Currently, 80 percent of Denver's water comes from its southern collection system; 20 percent comes from the northern collection system, known as Moffat. This poses a significant risk in two ways. First, should we experience a drought, there may not be enough water in the northern system, thereby putting at risk those who live in the part of the metro area who rely on this water supply source. This nearly happened during the drought of 2002. Second, as we saw with the Hayman and Buffalo Creek fires, natural disasters can impair the system. As currently crafted, the northern system is not large enough or sufficiently robust to be able to serve as a suitable backup should a similar situation occur. Conservation has proved a helpful answer to these challenges, and Denver water users have an impressive and successful track record. Additionally, Denver Water continues to innovate and put into place programs that help reduce overall demand. But conservation alone will not solve future challenges and needs. Denver Water has not built a major new water supply project since Dillon Reservoir in the 1960s. However, since the 1980s, the population of the Denver metro area has grown by 40 percent. We must plan for our future, and that includes efforts such as the Moffat Collection Expansion. Denver Water has determined that expanding Moffat is the best solution from the perspective of both cost and environmental impact, and we agree. The Colorado*

Comment-Response Report (Organizations/Stakeholders Part B)

Comment Information	Comment	Comments and Response
	The Colorado Competitive Council is composed of corporations, trade organizations and chambers of commerce that work together to affect positive change at the state legislative level and to keep our state competitive in the national marketplace. A secure water future is vital to the vitality and success of our state's businesses and their employees' quality of life. We strongly urge the Army Corps of Engineers to issue a favorable Record of Decision on this important project. Thank you for your consideration. Best regards, Perry Pearce Investor Committee Chairman Colorado Competitive Council 1445 Market Street, Denver, CO 80202 Phone 303.620.8071 Fax 303.534.3200 www.coloradocompetes.org *An Affiliate of the Denver Metro Chamber of Commerce*	*Competitive Council is composed of corporations, trade organizations and chambers of commerce that work together to affect positive change at the state legislative level and to keep our state competitive in the national marketplace. A secure water future is vital to the vitality and success of our state's businesses and their employees' quality of life. We strongly urge the Army Corps of Engineers to issue a favorable Record of Decision on this important project.* **Response #1771-1:** The Corps notes the support of the Moffat Project. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

REFERENCES

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Protest Family Form Letters

Comment-Response Report (Protest Family Form Letters)

Comment Information	Comment	Comments and Responses
PROTEST FAMILY FORM LETTER — STANDARD		
[The Protest Family Standard Form Letter shown here on page 1 was submitted by all the commenters listed below.] Comment #1705 John E. Giffin Comment #1727 Stephanie Rosario Comment #1728 Paul Rosario Comment #1731 Keith Thurman Comment #1732 Ayla Thurman Comment #1733 Jewel Thurman Comment #1734 Kira Thurman	To: Denver Water Attn: Brian Gogas Mail Code 415 1600 West 12th Avenue Denver, CO 80204 To: Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 From: Re: Project #2035 **Respectfully, this letter is to protest the proposed expansion of the Gross Reservoir and Dam. Here are a few of the many reasons this project and the associated FERC Hydropower License should be denied:** •The need for additional water supply is not adequately addressed in the Draft Environmental Impact Statement (DEIS). Possible urban sprawl, as a justification for projected water shortages, is not conclusive. Economic and regulatory based water conservation plans for Denver and its surrounding communities are *not* aggressive enough. One only needs to drive through any Denver metro residential community or business park to observe massive water waste, an estimated 25% of Denver Water's demand, used for outdoor landscaping that is not necessary or practical and, in fact, is *illegal* in mountain communities such as Coal Creek Canyon. The Gross expansion proposal will exacerbate existing irresponsible water usage and perpetuate an economic paradox that acts as a disincentive for Denver Water to decrease its demand. •The DEIS does not adequately justify the depletion of the western slope rivers. Water rights that had been granted decades ago may currently have legal legitimacy but lack in consideration of environmental responsibility and common welfare of the wildlife and people who will suffer from the lack of these natural resources. We must stop this "water grab" mentality and, instead, promote innovation and conservation to live and grow in a responsible way. If we don't break the "build a bigger dam" mentality now, the next generation will face the same issues. By then we will have selfishly ruined the remaining natural beauty and habitat that exists today. •The DEIS does not adequately assess the negative impact this project will have on the local human population. Thousands of people will be negatively impacted during this proposed Dam expansion project. Residents in communities ranging from Boulder Canyon to Nederland to Coal Creek Canyon will have their personal safety compromised and personal property jeopardized with no compensation from Denver Water or its customers. The list of negative impacts includes, but is not limited to, four or more years of: ▪ dangerous construction traffic ▪ public road damage ▪ delays in daily commute ▪ delays in emergency medical care ▪ delays in fire response ▪ poor air quality ▪ noise pollution ▪ destruction of wildlife habitat ▪ loss of recreational areas ▪ diminished property values I request that the Draft EIS Section 404 and associated FERC Hydropower License permits be denied for this project. Sincerely,	***Form Letter Comment #1742-1*** *(ID 2457)**:*** *Respectfully, this letter is to protest the proposed expansion of the Gross Reservoir and Dam.* **Response #1742-1:** Prior to making decisions on the proposed Moffat Collection System Project (Moffat Project or Project), the U.S. Army Corps of Engineers (Corps) will evaluate and consider the Project's environmental effects according to the National Environmental Policy Act of 1969, as amended (NEPA). ***Form Letter Comment #1742-2*** *(ID 2456)**:*** *Here are a few of the many reasons this project and the associated FERC Hydropower License should be denied: The need for additional water supply is not adequately addressed in the Draft Environmental Impact Statement (DEIS). Possible urban sprawl, as a justification for projected water shortages, is not conclusive. Economic and regulatory based water conservation plans for Denver and its surrounding communities are not aggressive enough. One only needs to drive through any Denver metro residential community or business park to observe massive water waste, an estimated 25% of Denver Water's demand, used for outdoor landscaping that is not necessary or practical and, in fact, is illegal in mountain communities such as Coal Creek Canyon. The Gross expansion proposal will exacerbate existing irresponsible water usage and perpetuate an economic paradox that acts as a disincentive for Denver Water to decrease its demand. The DEIS does not adequately justify the depletion of the western slope rivers. Water rights that had been granted decades ago may currently have legal legitimacy but lack in consideration of environmental responsibility and common welfare of the wildlife and people who will suffer from the lack of these natural resources. We must stop this "water grab" mentality and, instead, promote innovation and*

Comment Information	Comment	Comments and Responses
		conservation to live and grow in a responsible way. If we don't break the "build a bigger dam" mentality now, the next generation will face the same issues. By then we will have selfishly ruined the remaining natural beauty and habitat that exists today. **Response #1742-2:** Conservation is part of the solution for water supply projects. The Purpose and Need of the Moffat Project is to develop 18,000 acre-feet per year (AF/yr) of new, annual firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant. The proposed additional supply and reservoir storage address a projected shortfall in the Board of Water Commissioner's (Denver Water's) supply and an imbalance in Denver Water's Water Collection System. This imbalance has resulted in system-wide vulnerability issues, limited operational flexibility to respond to water collection system outages, and can seriously jeopardize Denver Water's ability to meet its present-day water needs. Therefore, an all-conservation option would not meet the Purpose and Need for the Project. It should be noted that almost half (i.e., 16,000 AF/yr) of the water supply shortfall identified by Denver Water would be met through conservation so water conservation is a part of all alternatives. Denver Water has implemented an aggressive conservation plan to achieve sustainable long-term reductions in demand. A summary of conservation measures implemented by Denver Water is provided in the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS) Table 1-2 of the DEIS. Denver Water has an aggressive 10-year conservation goal. Starting in 2007, Denver Water accelerated its future conservation and natural replacement goals and developed a conservation program to reduce customers' water use by 22 percent (%) by 2016. To date, Denver Water customers are using 20% less water than they were prior to the 2002 drought.

Comment-Response Report (Protest Family Form Letters)

Comment Information	Comment	Comments and Responses
		Denver Water does not have the legal authority to direct land-use decisions, including landscaping. But, it does have the power to enact water rules. Denver Water enforces water waste rules per its Operating Rules including mandatory restrictions on the number and times of day (10:00 a.m. – 6:00 p.m.) outside watering cannot occur, prohibiting watering the street and watering in rain or strong wind and other unfavorable conditions. Denver Water employs water-use enforcement officers to make sure customers understand the rules (may lead to fines and water service being interrupted). Additionally, Denver Water requires soil amendments to be incorporated into landscaping before new taps can be placed. Denver Water also educates its customers on the benefits of xeriscaping by hosting workshops and operating xeriscape demonstration gardens in the Denver Metropolitan area. The Corps considers all appropriate and legal measures to mitigate for effects caused by any authorized project according to NEPA and Section 404 regulations. ***Form Letter Comment #1742-3*** *(ID 2455)**:*** *The DEIS does not adequately assess the negative impact this project will have on the local human population. Thousands of people will be negatively impacted during this proposed Dam expansion project. Residents in communities ranging from Boulder Canyon to Nederland to Coal Creek Canyon will have their personal safety compromised and personal property jeopardized with no compensation from Denver Water or its customers. The list of negative impacts includes, but is not limited to, four or more years of: dangerous construction traffic, poor air quality, public road damage, noise pollution, delays in daily commute, destruction of wildlife habitat, delays in emergency medical care, loss of recreational areas, delays in fire response, and diminished property values.*

Comment-Response Report (Protest Family Form Letters)

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		Response #1742-3: Traffic The Corps acknowledges that there would be delays caused by slow-moving construction vehicles on County Road (CR) 77S, State Highways (SHs) 72, 93, 128, U.S. Highway (US) 287, Arapahoe Road (US 287 bypass to County Line Road), County Line Road and CR 2050. During construction, the volume of construction traffic could vary day-to-day and month-to-month, depending on the type and number of construction activities taking place. Based on preliminary construction plans, about 22 haul and supply trucks could travel to Gross Dam each day on average. During the peak construction period, about 35 trucks could deliver material daily. Additional trucks could be used to remove trees and debris from the reservoir site at the appropriate time. The number of commuting workers could vary considerably. An average of 60 commuter vehicles could make daily trips to Gross Reservoir, with about 100 expected on the busiest construction days. Denver Water would require contractors to encourage carpooling to the work site. Denver Water met with the Colorado Department of Transportation (CDOT) to discuss the best way to use SH 72 during construction. Denver Water is also evaluating alternatives for reducing construction traffic delays, including constructing and/or improving turnouts on SH 72 for slow-moving traffic. Refer to Denver Water's Conceptual Mitigation Plan in FEIS Appendix M. Road Maintenance CDOT is responsible for maintenance of State highways such as SH 72. Boulder County is responsible for maintenance of county roads such as CR 77S, CR 132, etc. Boulder County maintains Gross Dam Road (CR 77S) from SH 72 to the railroad tracks. Denver Water currently maintains Gross Dam Road from the railroad track crossing to Flagstaff Road. During construction, Denver Water or its contractor would be

Comment-Response Report (Protest Family Form Letters)

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		responsible for maintaining all of Gross Dam Road. Emergency Vehicles Emergency vehicles would have access to the same response routes during construction that currently exist. Additionally, construction contractors would pull over to allow emergency response vehicles to pass as needed. If an emergency vehicle needed access to a closed road, access would be granted. Air and Noise The Project would comply with all applicable State and Federal air quality rules, and would cooperate with the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) in ensuring compliance. CDPHE is the State agency responsible for ensuring that Colorado attains, maintains, and enforces the National Ambient Air Quality Standards. Through the APCD construction permit process and the conformity determination process, the State regulates pollutant emissions that have the potential to endanger public health and welfare. For purposes of the Environmental Impact Statement analysis, the Corps assumes construction equipment used by the contractors would function as designed and conform to applicable noise emission standards. The Corps may include a permit condition for noise abatement as part of the Public Interest Review for a Section 404 Permit. Denver Water would comply with all applicable noise ordinances and work with Boulder County to identify reasonable and feasible noise abatement measures for the Project construction period. Wildlife Habitat Project impacts to wildlife at Gross Reservoir are characterized as minor to moderate for the various species and groups. The analysis of wildlife habitats

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		and wildlife species and groups along the river segments was expanded in FEIS Section 5.9. The Corps conducted an analysis in the fall of 2010 to further evaluate the interactions of stream flow and groundwater on riparian and wetland areas in the Fraser Valley. The results of this analysis are included in FEIS Section 5.8. Recreation Recreational facilities at Gross Reservoir would be replaced in-kind above the high water line. The daily and seasonal operations of Gross Reservoir should not change during construction, as the reservoir would fluctuate based on water demand, not construction activities. Denver Water is preparing a recreation plan to keep recreational facilities open as much as possible without compromising public safety or construction progress. Certain areas would be restricted or temporarily closed during construction. Property Values An expanded analysis of impacts to communities surrounding Gross Reservoir is included in FEIS Section 5.19, including an evaluation of impacts to property values. ***Form Letter Comment #1742-4*** *(ID 2454)**:*** *I request that the Draft EIS Section 404 and associated FERC Hydropower License permits be denied for this project.* **Response #1742-4:** Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects according to NEPA.

Comment-Response Report (Protest Family Form Letters)

Comment Information	Comment	Comments and Responses
PROTEST FAMILY FORM LETTER — UNIQUE		
Comment #1730 David L. and Susan J. Schemel	March 10, 2010 To: Denver Water Attn: Brian Gogas Mail Code 415 1600 West 12th Avenue Denver, CO 80204 To: Scott Franklin, Moffat EIS Project Mgr. Corps Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128 To: Sec. Kimberly Bose FERC 888 First Street NE Washington, DC 20426 From: David L Schemel and Susan J Schemel [redacted] **Re: Project #2035** **Respectfully, this letter is to PROTEST the proposed expansion of the Gross Reservoir and Dam.** We built our home here in Coal Creek Canyon in 1976. We live in the natural beauty and serenity of Crescent Park at 8,200 feet of elevation and have a view of Gross Dam from our property. I am a professional landscape and wildlife photographer and this proposed project would have a **significant adverse impact** on my work here. The life style that we have worked hard for and enjoy here would be **shattered for 4 years or more** during the construction of the proposed expansion of Gross Dam. **Here are a few of the many reasons this project and the associated FERC Hydropower License should be denied:** The need for additional water supply is not adequately addressed in the Draft Environmental Impact Statement (DEIS). Possible urban sprawl, as a justification for projected water shortages, is not conclusive. Economic and regulatory based water conservation plans for Denver and its surrounding communities are *not* aggressive enough. One only needs to drive through any Denver metro residential community or business park to observe massive water waste, an estimated 25% of Denver Water's demand, used for outdoor landscaping that is not necessary or practical and, in fact, is *illegal* in mountain communities such as Coal Creek Canyon. The Gross expansion proposal will exacerbate existing irresponsible water usage and perpetuate an economic paradox that acts as a disincentive for Denver Water to decrease its demand. ▪ The DEIS does not adequately justify the depletion of the western slope rivers. Water rights that had been granted decades ago may currently have legal legitimacy but lack in consideration of environmental responsibility and common welfare of the wildlife and people who will suffer from the lack of these natural resources. We must stop this "water grab" mentality and, instead, promote innovation and conservation to live and grow in a responsible way. If we don't break the "build a bigger dam" mentality now, the next generation will face the same issues. By then we will have selfishly ruined the remaining natural beauty and habitat that exists today. ▪ The DEIS does not adequately assess the negative impact this project will have on the local human population. Thousands of people will be negatively impacted during this proposed Dam expansion project. Residents in communities ranging from Boulder Canyon to Nederland to Coal Creek Canyon will have their personal safety compromised and personal property jeopardized with no compensation	***Unique Comment #1730-5*** *(ID 2527)**:*** *We built our home here in Coal Creek Canyon in 1976. We live in the natural beauty and serenity of Crescent Park at 8,200 feet of elevation and have a view of Gross Dam from our property. I am a professional landscape and wildlife photographer and this proposed project would have a significant adverse impact on my work here. The life style that we have worked hard for and enjoy here would be shattered for 4 years or more during the construction of the proposed expansion of Gross Dam.* **Response #1730-5:** The Corps notes the comment. Prior to making decisions on the proposed Project, the Corps will evaluate and consider the Project's environmental effects, including potential impacts related to the expansion of Gross Reservoir on surrounding communities, according to NEPA.

Comment-Response Report (Protest Family Form Letters)

Comment Information	Comment	Comments and Responses
	from Denver Water or its customers. The list of negative impacts includes, but is not limited to, four or more years of: ▪ **dangerous construction traffic** ▪ **public road damage** ▪ **delays in daily commute** ▪ **delays in emergency medical care** ▪ **delays in fire response** ▪ **poor air quality** ▪ **noise pollution** ▪ **destruction of wildlife habitat** ▪ **loss of recreational areas** ▪ **diminished property values** I request that the Draft EIS Section 404 and associated FERC Hydropower License permits be denied for this project. Sincerely, David L Schemel and Susan J Schemel David L Schemel Susan J. Schemel	