



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

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JUL 15 2011

Ref: 8EPR-N

Dan Wenk, Superintendent  
Yellowstone National Park  
c/o Winter Use DEIS  
P.O. Box 168, Yellowstone National Park  
Wyoming 82190

Re: May 2011 Winter Use Plan DEIS  
NEPA Comments

Dear Superintendent Wenk:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the May 2011 Winter Use Plan (Plan) Draft Environmental Impact Statement (EIS) for Yellowstone National Park (Park). Our review was conducted in accordance with EPA's responsibilities under section 102 of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332(2)(c), and Section 309 of the Clean Air Act, 42 U.S.C. § 7609, and is consistent with the Memorandum of Understanding between the National Park Service (NPS) and EPA that guides our participation as a Cooperating Agency. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. EPA's comments include a rating of the environmental impact of the proposed action and the adequacy of the NEPA document.

EPA commends the NPS for its efforts to effect significant improvements in the Park's winter environment through management of winter use and access in the interior of Yellowstone National Park. The Park has lessened both environmental and health risks through setting limits on motorized use, implementing best available technology (BAT) to reduce air emission pollutants and noise impacts, and requiring full commercial guiding requirements for oversnow vehicles (OSVs). In the 2011 Draft EIS, the Park is proposing additional requirements in its Preferred Alternative to further minimize resource impacts.

In general, the Draft EIS is well organized, with a clearly presented comparative analysis of the proposed action and alternatives. The NPS explored and evaluated seven alternatives, including the no-action alternative. The six action alternatives include variations of snowmobile/snowcoach/wheeled vehicle use limits, as well as BAT and full commercial guiding requirements that have proven critical to producing and sustaining resource protections. Alternative 7, identified as the Preferred Alternative, proposes fluctuating use levels for OSVs while establishing maximum limits for specific days varying throughout the winter season. Snowmobile use would range from 110 to 330 per day, and snowcoach use would range from 30 to 80 per day, with a potential to increase daily limits if newer, cleaner technologies are introduced into operators' fleets. The current use levels are a maximum of 318 snowmobiles and 78 snowcoaches per day. All current hours of operation restrictions and existing BAT requirements for snowmobiles would still be in effect. In addition, noise BAT requirements would be

developed and implemented by the 2014/2015 winter season for snowcoaches so that they would not exceed 73 dBA when operating at or near full speed, as well as air emissions BAT requirements involving EPA's Tier 2 requirements. The NPS would also establish BAT to address NO<sub>x</sub> emission limits for snowmobiles by the 2014/2015 winter season. Finally, all OSV traffic would be required to enter the park by 10:30 a.m.

Through each analysis of winter use plans, EPA has supported the public's ability to access Park resources using OSVs while also encouraging sustainable and strong protection of the Park's unique environment and resources. In reviewing the 2011 Draft EIS, EPA notes that the level of air emissions, noise emissions and wildlife impacts correlate strongly with the number of over-snow vehicles (OSVs) allowed daily. For example, the Draft EIS analysis of the no-action alternative that does not allow public OSV access to the park interior was selected by NPS as the "Environmentally Preferred Alternative" because it would have the least adverse impacts on the biological and physical environment, including air quality, soundscapes, wildlife and wilderness. (See page 73.) The Draft EIS also documents that Alternative 3 has both the highest projected adverse impact to these resources along with the highest number of OSVs among the alternatives analyzed. Action Alternative 5 in the Draft EIS provides the best protection of air resources, soundscapes and wildlife, while also allowing public OSV access. This action alternative allows for the lowest number of OSVs. While EPA has taken no position on which modes of transportation should be offered in Yellowstone, EPA encourages NPS to sustain the strongest available resource protections while still meeting the NPS's purpose and need for action and providing an exceptional park experience.

In general, EPA supports the Park in its proposals to develop and implement new BAT requirements to further protect Park resources, particularly with the proposed improvements to snowcoaches that may significantly improve air quality and soundscape impacts. We have, however, included some questions and concerns regarding these BAT requirements in the Detailed Comments section of this letter, as well as comments on the BAT emission factors used for modeling.

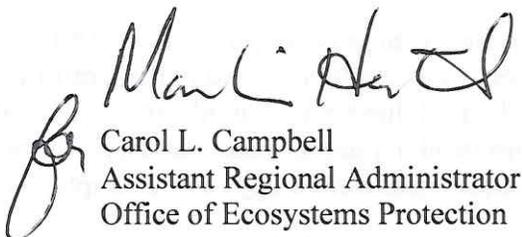
Additionally, EPA has historically been a strong supporter of incorporating adaptive management practices into winter use management. Having an adaptive management plan in place has been a cornerstone of the management process to ensure long term protection of resources. As outlined in Table 12 Impact Summary beginning on page 87 of the Draft EIS, under the Preferred Alternative there may be short- and long-term minor to moderate adverse impacts on bison and elk, long-term moderate adverse impacts to soundscapes and health and safety, and minor long-term adverse impacts on wolves, wolverines, lynx, trumpeter swans, eagles, and air quality. Adaptive management would allow the NPS to alter management actions to address unforeseen adverse impacts as new information is collected through monitoring and research and new technology is developed. EPA is pleased that the Park has committed to establishing an adaptive management framework as described in the Draft EIS, and encourages NPS to further define the adaptive management framework to include the elements and specificity included in previous winter use analyses. EPA suggests and is available to discuss clarification regarding the details of the adaptive management plan, in particular those details concerning threshold triggers, as further discussed in the Detailed Comments section.

EPA recognizes the amount of effort that the NPS has invested in preparing the Draft EIS, and appreciates NPS's spirit of cooperation in discussing EPA concerns. EPA's role is to evaluate the potential effects of proposed actions and the adequacy of the information in the Draft EIS. We rate this DEIS as "LO" (Lack of Objections). The LO rating indicates that the EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. Our rating is based on NPS' commitment to impose BAT to reduce air emission pollutants and noise impacts, use of full

commercial guiding for OSVs, and setting specific limits on the number of OSVs in the Preferred Alternative. These requirements will better protect against environmental and health risks. A complete description of EPA's EIS rating system is enclosed, as well as the detailed comments used to determine the project's rating.

We appreciate the opportunity to participate in the review of this project. If we may provide further explanation of our comments during this stage of your planning process, please contact Suzanne Bohan, Deputy Director of the Region 8 NEPA Program at 303-312-6925 or Melanie Wasco, Lead NEPA Reviewer, at 303-312-6540.

Sincerely,



Carol L. Campbell  
Assistant Regional Administrator  
Office of Ecosystems Protection  
and Remediation

Enclosure:

Ratings Criteria

Detailed Comments  
2011 Winter Use Plan Draft EIS  
National Park Service

**AIR QUALITY TECHNICAL COMMENTS**

EPA is providing comments in two main areas: the proposed best available technology (BAT) controls for snowcoach emissions, and the draft air quality modeling report on snowmobile and snowcoach emissions. Additionally, we've further clarified some minor points within the air quality sections.

**Best Available Technology for Snowcoaches**

EPA recommends NPS provide a clearer description of the BAT requirement for snowcoaches in the Final EIS. As the information is currently presented in the Draft EIS (see page 64) and the February 17, 2011 Draft Air Quality Modeling Report Snowmobile and Snowcoach Emissions (see Appendix B, page 12), it is unclear if the requirement applies to measured Tier 2 tailpipe emissions standards or to engine/emission's systems equipment technology. For example, on page 64 in Chapter 2: Alternatives, the Draft EIS states:

“BAT would be implemented for the 2014/15 winter season, similar to other action alternatives. Snowcoach BAT requirements would include snowcoaches meeting Model Year 2010 gasoline or diesel EPA emission standards ...”

EPA cautions NPS that an original-equipment-manufactured (OEM) on-road-use 2010 vehicle would likely not be able to achieve the same level of required certified emissions after modification to run with tracks, instead of wheels, in an oversnow operations configuration. There is the potential for improvement in emissions from snowcoaches with Tier 2 equipped engines and emissions technology, but it is unlikely these BAT snowcoaches will be able to meet the Tier 2 40 C.F.R. 86 Subpart S on-road vehicle emissions standards. These requirements can be found at the following EPA Office of Transportation and Air Quality (OTAQ) webpage: <http://www.epa.gov/otaq/standards/light-duty/tier2stds.htm>.

EPA recommends NPS specify if the intent for snowcoach BAT is to require these OSVs to be based on a chassis that employs 2010 or newer Tier 2 engine and emissions equipment technology, but not be required to meet actual EPA Tier 2 emission standards.

**Best Available Technology for Snowmobiles**

Regarding the BAT requirements for snowmobiles, page 63 of the Draft EIS indicates that:

“Under Alternative 7, snowmobiles entering the park would follow current BAT requirements. Additional BAT standards for NO<sub>x</sub> would be implemented for the 2014/2015 winter season. The NO<sub>x</sub> BAT requirement would be that the sum of HC and NO<sub>x</sub> would not exceed 15 grams per kilowatt-hour.”

Currently, NPS BAT snowmobile emissions information for carbon monoxide (CO) and hydrocarbon (HC) are reported to EPA as required in 40 C.F.R. parts 1051 and 1065 and are available to NPS. EPA does not have an oxides of nitrogen (NO<sub>x</sub>) or NO<sub>x</sub>+ HC emission standard for snowmobiles (see 73 Fed.

Reg. 35946, June 25, 2008). NPS is advised that since EPA does not have a NO<sub>x</sub> standard for snowmobiles, OEMs are not required to report emissions data as per 40 C.F.R. parts 1051 and 1065 to us for that particular pollutant even if they collect it during testing.

### **Draft Air Quality Modeling Report**

We note that the BAT snowcoach emission factors in Table 4-3 on page 13 of the Draft Air Quality Modeling Report do not reflect EPA's Tier 2 emission standards, but instead were emission factors prepared for the air quality modeling and are from data from emission factors from port-injected gas snowcoaches of the current fleet, tested by the University of Denver. These BAT snowcoach emission factors in the DEIS were derived by averaging the emissions from eight port-injected gasoline snowcoaches that are now 10 to 17 years old (manufactured and converted for OSV operations between 1994 and 2004), and represent in-field emissions measurements that were made in the winter of 2005-2006. Therefore, we cannot speculate that these emission factors in Table 4-3 represent those that may be achieved with Tier 2 technologies and associated emission control equipment on a NPS BAT snowcoach. However, these in-use data derived estimated snowcoach BAT emission factors are considered a reasonable approach for purposes of the air quality modeling component of the Draft EIS.

We anticipate that a NPS BAT snowcoach equipped with Tier 2 technologies and associated emission control equipment should likely show a significant improvement in emissions reductions. We therefore suggest that a qualifier statement be added reflecting that actual emissions from 2014-2015 NPS BAT equipped snowcoaches are: (1) expected to be less than what was modeled as a BAT snowcoach in the Draft EIS; and (2) that modeled air quality pollutant predicted concentrations may be less than the results provided in the Draft EIS.

### **Miscellaneous**

Please note that the entire counties surrounding the Park listed in the first full paragraph on page 120 of the Draft EIS are not designated as nonattainment by EPA; instead, portions of these counties within specific nonattainment area boundaries are designated as nonattainment. For these specific nonattainment areas, please see 40 C.F.R. § 81.313 for Idaho, 40 C.F.R. § 81.327 for Montana, and 40 C.F.R. § 81.351 for Wyoming.

We also note several minor errors in Table 17 on page 126 of the Draft EIS entitled "Results of PM<sub>2.5</sub> and PM<sub>10</sub> Monitoring at Yellowstone National Park." For Site ID 300310013 (west entrance) the annual mean PM<sub>2.5</sub> values are in reverse order (i.e., 2003 should be 2.47, 2004 should be 4.68, 2005 should be 3.67, 2006 should be 4.26, 2007 should be 5.00 and 2008 should be 3.80). Footnote 2 is incorrect for the annual values. The Old Faithful Site ID should be 560391012.

## **ADAPTIVE MANAGEMENT**

Adaptive management has played a significant role creating sustainable resource protection for the long-term management of winter use at the Park. In particular, the air quality and soundscape thresholds and ongoing monitoring in key areas have informed the Park's decisions on creating BAT requirements and OSV limits to manage pollutant concentrations. EPA appreciates that so much consideration has historically gone into the adaptive management process, recognizing that a certain level of uncertainty exists when predicting the outcomes from proposed management actions and that management techniques sometimes need to be adjusted as new information is available.

As part of the adaptive management process, metrics are established to create impact intensity definitions for each affected resource, and those metrics and plan objectives are intended to assist in evaluating the results of a monitoring program. It would be useful if the adaptive management plan included more concrete threshold triggers indicating a change in action is needed based on the results from resource monitoring, particularly when results are vastly different or in a negative trend from what was predicted.

Although Appendix A outlines the Adaptive Management Framework and also identifies potential future studies that are subject to available funding, details regarding specific threshold values that would trigger a management response action are absent. Thresholds are discussed in general terms (negligible, minor, moderate, and major) within the document, and fleshed out in the form of intensity definitions for each resource evaluated, however specific triggers that would adjust management actions to better meet objectives of the proposed plan (or reconsider objectives) do not appear to be identified.

According to the Preferred Alternative, there will be several changes to the requirements currently in place under the 2009 interim rule that may result in unforeseen impacts, such as variable use levels and the establishment of a 10:30 a.m. OSV entry cut-off time. For example, it is uncertain what the establishment of a 10:30 a.m. entry time in combination with high use days will have on wildlife. The Draft EIS states “Under alternative 7, the provision that all OSV traffic must enter the park by 10:30 a.m. would further concentrate this pulse of OSV use in the park, specifically along high use corridors such as the Madison to Old Faithful road segment, where bison and elk are frequently encountered (McClure et al. 2009).” (See page 210.) The Draft EIS continues on page 211 by stating:

“A predictable daily pattern of OSV use would be more likely to decrease overall behavioral responses by bison and elk throughout the winter. This is because animals are more likely to become habituated to a disturbance if it is predictable in time and space, not directly harmful, and limited in duration (Thompson and Henderson 1998; White et al. 2008).”

With flexible daily use limits, there will be blocks of high use that will be combined with the 10:30 a.m. entrance cut-off time, which could cause OSV use to be compacted into a short time period along certain routes where OSV encounters with bison or elk are common. The Draft EIS concludes: “Even with group size limits, frequent encounters with OSVs may increase the likelihood of a heightened behavioral response, because closely spaced OSV groups may have similar effects to those of larger OSV group size and longer interaction time between OSVs and wildlife.” (See page 211.) This is an example of where a minimum desired condition identified in the form of a threshold trigger could be useful when paired with a firm commitment to monitor those specific impacts for a fixed period of time.

The Preferred Alternative does allow for the development and implementation of an adaptive management program to meet the winter use plan objectives that include monitoring the condition of resources. “All action alternatives incorporate adaptive management initiatives that are designed to assist the park in meeting the objectives of this draft plan/EIS.” (Draft EIS at ix.) The Draft EIS continues by stating that, “[a]daptive management planning would be standard procedure, but elements and emphases of its use could differ from one alternative to another.” (Draft EIS at xviii.) The Draft EIS indicates that development of an adaptive management program may currently be underway depending on the action alternative ultimately selected. Because adaptive management is key to assuring that resource impacts will not exceed those predicted in the EIS, EPA strongly recommends the NPS include as many details as possible in the Final EIS on how the Park will determine the effectiveness of the selected action in meeting the objectives of the proposed plan.

In instances where the responsible agency can lay out threshold triggers and decision trees to guide future decisions, EPA supports the use of adaptive management. Without such threshold triggers and management options, adaptive management is not substantially different from traditional management. True adaptive management can reduce the need for future NEPA actions, or at least reduce the scope of future NEPA decisions. We offer several specific suggestions with respect to adaptive management that should be considered in the Final EIS.

### **Recommendations:**

1) The Final EIS should include threshold triggers that would be protective not only of air quality, but also the other resources examined, including but not limited to wildlife and wildlife habitat, soundscapes, and health and safety. As outlined in Table 12 Impact Summary beginning on page 87 of the Draft EIS, under Alternative 7 there may be short- and long-term minor to moderate adverse impacts on bison and elk, long-term moderate adverse impacts to soundscapes and health and safety, and minor long-term adverse impacts on wolves, wolverines, lynx, trumpeter swans, eagles, and air quality. Established thresholds would represent the minimum desired conditions in the analysis area, and would be the trigger points that would determine when additional management decisions (potentially including NEPA review) are necessary. We believe that these threshold triggers can be established in this EIS based on existing information and the expertise of NPS science and management staff, rather than deferring the disclosure of threshold triggers to some later date.

2) Ideally, this management plan would not only include a defined monitoring plan and identify the threshold triggers, but would also discuss and identify management alternatives and mitigation that would be implemented should a threshold be exceeded. Inclusion of threshold triggers and management alternatives in this EIS could reduce or eliminate the need for additional NEPA involvement regarding this issue in the near future.

3) The Final EIS should provide assurance that funding has been secured for the adaptive process, including for additional NEPA analysis if needed. If this funding is lost, or the required monitoring does not happen for any reason, the Final EIS and Record of Decision (ROD) should include a specific, environmentally conservative course of action that will ensure full protection of Park resources.

4) The Final EIS should include more detail on the proposed adaptive management process including the mechanisms for public disclosure of the analysis and the decisions. The roles of the NPS, other agencies, independent science, and the public should be clearly stated. The Final EIS should discuss any future decision points if known in this adaptive process that would require NEPA analysis.

### **OTHER CONSIDERATIONS**

NPS' evaluation criteria for assessing impacts on visitor accessibility for the very young, the elderly, and individuals with disabilities are provided on pages 289-290 of the Draft EIS. The evaluation criteria listed do not include transportation mode preferences. Although page 289 of the Draft EIS indicates that "snowmobile use would be possible for some portion of those visitors with disabilities," this appears to be a visitor preference rather than an accessibility impact. Please consider whether individuals seeking snowmobile experiences would be more appropriately evaluated under impacts for visitor use and experience rather than visitor accessibility.

For example, the Draft EIS explains that “Alternative 5 offers the greatest potential for the very young, the elderly, and the mobility impaired to experience an informative “over the snow” adventure in the winter landscape of the park via snowcoach” which would “...result in parkwide, long-term beneficial impacts to accessibility...” (See page 294.) However, the Draft EIS also points to the minor to moderate adverse effects to accessibility for those seeking snowmobile experiences in the park under Alternative 5 based on the elimination of snowmobiles and the potential increased cost of snowcoach touring. These elements do not seem to fit into the primary concerns outlined for visitor accessibility, which include mobility issues, exposure to and protection from winter weather, and opportunities to view wildlife and scenery in a safe environment. Please consider whether or not the evaluation criterion are consistent with the alternative impact ratings in this section, or if perhaps certain impacts are better evaluated under a different resource topic.