UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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JUL 0 1 2010

Colonel Alvin B. Lee
New Orleans District
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Colonel Lee:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) Region 6 has reviewed the Corps of Engineers (Corps) May 2010, draft Supplemental Environmental Impact Statements (DSEISs) for the following four Louisiana Coastal Area (LCA) projects: Small Diversion at Convent/Blind River; Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock; Medium Diversion at White Ditch; and Amite River Diversion Canal Modification. With this letter and enclosed Detailed Comments, EPA offers integrated ratings, comments, and recommendations on these DSEISs.

EPA greatly appreciates the Corps' ongoing interagency collaboration on the LCA program. Such teamwork is essential for leveraging and maximizing the resources available to address the pressing coastal issues facing Louisiana. EPA fully recognizes that the Congressionally-mandated timelines for the subject LCA studies, combined with the many other priority projects the Corps is engaged in place pressure on personnel and resources available for data gathering and analysis. While these factors have affected the rigor of analysis for the LCA studies, such shortcomings are to some extent mitigated by the fact that the subject projects tier from planning and analysis in the LCA programmatic EIS (2004) and in related coastal restoration efforts such as the Coastal Wetlands Planning, Protection, and Restoration Act.

EPA's comments are intended to help address remaining information gaps while striking a balance with the need to move forward expeditiously with coastal restoration projects in Louisiana. EPA is cognizant that uncertainty with major variables (particularly future relative sea level rise) hampers the ability to accurately predict the impacts and effectiveness of these and other coastal restoration projects. Robust monitoring and adaptive management programs are, therefore, essential. EPA also notes that unlike a new cross-basin levee or other large-scale artificial manipulation of the coastal landscape, these restoration projects generally attempt to mimic natural processes. Thus, the potential environmental downsides of proceeding with coastal restoration projects based on imperfect knowledge are generally more acceptable than would be the case for projects that pose significant potential adverse environmental impacts.

EPA Region 6 rates the four DSEISs as follows:

- **Small Diversion at Convent/Blind River: "EC-2".** (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)

- **Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock: "EC-2".** (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)

- **Medium Diversion at White Ditch: "EC-2".** (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)

- **Amite River Diversion Canal Modification: "LO".** (EPA's review has no objections and has not identified any potential environmental impacts requiring substantive changes to the preferred alternative.)

EPA continues to support the LCA program as an important step toward greater efforts to restore some semblance of sustainability to parts of coastal Louisiana. To that end, it is important to reiterate that the LCA program in general and these projects in particular represent near-term measures, and should not be mistaken for the larger and more comprehensive effort needed to address coastal wetland loss in Louisiana on the scale and scope warranted. The ongoing oil spill in the Gulf of Mexico and its impacts on Louisiana's valuable coastal wetlands and aquatic resources only underscore this point. Nevertheless, these and other LCA projects can be viewed as stepping stones toward larger and more aggressive projects, and offer valuable learning and adaptive management opportunities that will help in that regard.

The proposed White Ditch project represents the largest and most ambitious use of seasonal, high-river "pulsing" as a technique to increase the environmental benefits of diversions, while reducing potential impacts to existing fisheries. Of the four LCA projects discussed herein, the White Ditch diversion offers the greatest promise for coastal restoration benefits and advancing larger-scale projects. EPA also notes that the Amite River diversion canal gapping project and the proposed Convent/Blind River diversion are not mutually exclusive and could work in concert with the proposed LCA Hope Canal diversion. Although the Blind River/Convent diversion is further along in the NEPA process than Hope Canal, the latter offers a superior opportunity to address ecosystem needs in the Maurepas Swamp. Again, while these projects are not mutually exclusive, EPA encourages expedited implementation of the Hope Canal diversion. Finally, given the relatively high cost to environmental benefit ratio, EPA would not place a high priority on implementation of the Atchafalaya River conveyance project over other LCA restoration projects, such as White Ditch.

EPA appreciates that the Corps recognizes the need to monitor the extent to which the ongoing oil spill could affect study areas and aquatic resources covered by these four projects. It currently appears unlikely that the oil spill would directly affect the two proposed projects in the Maurepas Swamp, but the study areas for the other two projects have already or could be impacted by the spill. Accordingly, the Corps needs to be prepared to modify and/or further expedite such projects as needed, and perform supplemental environmental analysis where warranted.

The schedule and resource constraints discussed earlier have also affected EPA's ability to fully engage in the interagency development and review of these four LCA projects. EPA greatly respects the views of our state and Federal partner agencies with responsibilities and expertise pertaining to fish and wildlife impacts. EPA will defer to some extent to the recommendations of the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Louisiana Department of Wildlife and Fisheries on any additional information and analysis needed for resources within their purview. EPA encourages the Corps to fully address any such needs identified by these agencies.

Moving forward, we would also point out the connection between the ongoing LCA effort to develop near-term restoration projects and the interagency effort to prioritize and expedite coastal restoration projects pursuant to the March 2010, Roadmap for Restoring Ecosystem Resiliency and Sustainability (Roadmap). The interagency process initiated by the Roadmap provides a valuable opportunity to identify the most promising LCA projects and focus limited resources to ensure that such projects are constructed in a timely fashion.

EPA appreciates the opportunity to review the DSEIS's. If you have any questions about the 309 Review Process, please contact Michael Jansky of my staff at (214) 665-7451 or by e-mail at jansky.michael@epa.gov. If you questions or wish to discuss the technical aspects of our comments, contact John Ettinger at (504) 862-1119. Please send our office two copies of the Final SEIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,

Cathy Gilmore

Cathy Gilmore, Chief
Office of Planning
and Coordination 6ENXP

Enclosure

DETAILED COMMENTS

ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENTS FOR THE SMALL DIVERSION AT CONVENT/BLIND RIVER; CONVEY ATCHAFALAYA RIVER WATER TO NORTHERN TERREBONNE MARSHES AND MULTIPURPOSE OPERATION OF HOUMA NAVIGATION LOCK; MEDIUM DIVERSION AT WHITE DITCH, AND AMITE RIVER DIVERSION CANAL MODIFICATIONS FOR THE LOUISIANA COASTAL AREA

COMMENTS

1. Small Diversion at Convent/Blind River DSEIS, May 2010

In general, additional freshwater and sediments to Maurepas Swamp provided by the proposed diversion is positive for the swamp. A potential downside to diverting existing surface waters and sediments is pollutants in the diverted water could impact the Blind River and Lake Maurepas. While such concerns are manageable, EPA would recommend additional information and analysis pertaining to water quality.

The 2001 Diversion into the Maurepas Swamps study by Lee Wilson & Associates, as well as Batelle's Assessments of Ecological Risks of Contaminants from a Proposed Reintroduction of Mississippi River Water into Maurepas Swamp (Phase I and II, 2005 and 2008, respectively), are cited as support that long term adverse impacts to water quality in the Maurepas Swamp, the Blind River, and Lake Maurepas are not anticipated. Unfortunately, the study area for these documents appears limited to the LCA Small Diversion at Hope Canal project area. While these assumptions may be applicable to a single 1500 cfs diversion, the application of these assumptions to a project diverting twice the amount of water (as in Small Diversion at Convent/Blind River) must account for the difference in scope. EPA notes, however, that if the diverted water flows through the swamp rather than directly to the Blind River and Lake Maurepas, and if the area of swamp is sufficient to reduce pollutants adequately, then this may not be a significant concern.

The LCA Ecosystem Restoration Study Programmatic EIS (2004) recognizes these concerns and suggests that the LCA Plan needs to consider other activities, initiate an aggressive coordination plan with the stakeholders involved, and ensure that all activities including the LCA Plan complement each other. EPA recommends that use of studies for support of these projects acknowledge the limitations and applicability. Additionally, it is suggested that cumulative effects determinations clarify if the assumptions stated are applicable to an existing baseline with no Maurepas Swamp projects other than the single proposed project, or that the cumulative effect includes the additive effects of all related Maurepas Swamp projects.

There is likely continued interest on the part of some landowners to log cypress in the Maurepas Swamp. Given the degraded state of the swamp throughout much of this area, there is a high risk that any such logging would be unsustainable. Such logging could conflict with or undermine this and other proposed restoration efforts for the Maurepas Swamp. Accordingly, this project should include as a non-structural measure a commitment to full and effective enforcement of Clean Water Act Section 404 and/or Section 10 of the Rivers and Harbors Act as such laws pertain to logging, particularly where unsustainable.

The ongoing Corps of Engineers West Shore Lake Pontchartrain Hurricane Protection Study is reviewing different levee alignments in the vicinity of this proposed project. At least one of these levee alignments ("Alignment D") would further enclose the cypress swamp that would be benefited by this proposed diversion. There is no discussion of how these two projects would or would not work in concert to achieve the desired ecosystem restoration goals. EPA is concerned that levee alignments which enclose wetlands can result in significant direct, indirect, and cumulative adverse ecological impacts that would be contrary to the LCA Plan in general and this project in particular. The supplemental EIS should explain how any such levee work would be coordinated with the proposed for Convent/Blind River diversion, such that the former does not conflict with or undermine the latter.

Specific comments:

a. It is understood that the Romeville diversion (Alt 2) is the preferred alternative and if implemented will use existing St. James Parish drainage canals. Insufficient data is available to determine if this design addresses the concerns raised in the 2001 Lee Wilson report on Diversions into the Maurepas Swamps regarding diverted Mississippi River water reaching the Blind River directly with most diverted water directly delivered to Lake Maurepas as result. EPA recommends hydrologic modeling efforts to better identify/quantify how water (sediment and nutrients) moves through the system and within each hydrologic unit under the proposed operation plan along with determination of water levels and swamp flood elevations on a refined scale to be incorporated into the hydrologic modeling. Similar comments have been made by the United States Fish and Wildlife Service (USFWS) in its draft Fish and Wildlife Coordination Act report.

b. Page 4-32 through 4-27: Water Quality Concerns – Tables of water quality information do not provide adequate information to support decisions of environmental consequences i.e., data over ten years old suggests that Blind River has levels of copper where mean value is both acutely and chronically toxic to aquatic life. However, no 303(d) listing noted currently. EPA recommends that analytical data be appropriately annotated as to location of monitoring point, hardness of water at that monitoring point and applicable hardness dependent criteria at that point. Also note if analysis yielded total or dissolved pollutant.

c. Pages 4-32: Water Quality Concerns - Descriptions of conditions for Lower Mississippi River found on Page 4-32 suggest that volatile organic carbon (VOC) analysis was performed. Data is not presented nor is an explanation of results provided.

d. Page 4-32 : Water Quality Concerns - According to the DSEIS, the LDEQ 2006 Integrated Report both the Primary Contact Recreation (PCR) and Secondary Contact Recreation (SCR) designated uses were fully supported, while Fish and Wildlife Propagation (FWP) and Outstanding Natural Resource (ONR) uses are not supported. The suspected causes of impairment for the FWP designated use were mercury, nitrate/nitrite, non-native aquatic plants, total phosphorus (TP), and turbidity. The suspected sources for mercury were listed as atmospheric deposition and unknown sources. Site clearance (land development or redevelopment) and flow alterations from water diversions were listed as the suspected sources for nitrate/nitrite, dissolved oxygen (DO), and TP. The suspected causes of impairment for the ONR designated use were sedimentation/siltation and turbidity, which are believed to be caused by site clearance.

(1) In light of these impairments, the SEIS should more clearly describe the impacts on the Blind River from diverted Mississippi River water through the swamp and thus to the River. In light of an annual estimate of sediment load to Blind River and Maurepas Swamp of approximately 505,000,000 kg/yr (Page 5-51, Line 2) discuss how sediment loading in return flows (throughput from swamp to River) could affect water quality in the study area. Here again, hydrology is key with respect to such issues. Work on the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Maurepas Diversion project suggests that if the diversion is routed through a swamp receiving area of sufficient size virtually all sediment will be deposited in the swamp.

(2) Page 3-104, Line 28 and Appendix I: In light of current mercury impairments in the Blind River and mercury levels in diverted Mississippi River water, the SEIS should more clearly describe additional mercury loading and methylation risks to the swamp as well as to the Blind River and Lake Maurepaus. Appendix I (Adaptive Management and Monitoring Plan)(Page 10) and DSEIS suggest nutrients are a risk (Page 3-104, Line 28); however, mercury is not mentioned as a risk. EPA recommends periodic monitoring for mercury increases in swamp (sediments, fish tissue) or receiving waters (Blind River/Lake Maurepaus; sediments, fish tissue), along with consideration of what/if any impacts to aquatic life, migratory birds and listed species might be associated with such water quality issues. (Battelle. 2007. Limited Phase II Assessment of Ecological Risks of Contaminants from a Proposed Reintroduction of Mississippi River Water into Maurepas Swamp. Report from EPA Region 6. EPA Contract No. 68-C-03-041, Work Assignment No 4-40.)

(3) Page 3-104, Line 28 and Appendix I: In light of current metals water column levels in the Blind River and metals levels in diverted Mississippi River water, the SEIS should more clearly describe additional metals loading risks to the swamp as well as to the Blind River and Lake Maurepaus. Appendix I (Adaptive Management and Monitoring Plan)(Page 10) and draft SEIS suggest nutrients are a risk (Page 3-104, Line 28); however, metals not mentioned as a risk . EPA recommends monitoring for metals increases in swamp (sediments, fish tissue).

e. Page 3-102, Line 3-102 and Appendix I: Objectives stated in DEIS on Page 3-102 (beginning at Line 34) and Appendix I (page 10) are not in sync. Ensure that monitoring design supports objective. For example, Objective 1 (EIS) suggests decreases in nitrogen and phosphorus and DO increases but has no monitoring design associated. Objective 1 (Appendix I) does not include water quality at all. Recommend a separate objective for water quality or include as a risk with monitoring design.

f. Page 4-36, Line 10: States **4.2.3.2 Blind River and Maurepaus Swamp.** See no information on the swamp.

g. Page 3 – 37, Line 17: blind river should be revised to Blind River.

h. Page 3-16, Table 3-1: Comments for TS-3 to TS-6 are wrong. Comments column narrative needs to shift down.

i. Beginning at Page 5-1, **5 Environmental Consequences**: Ensure continuity throughout this section regarding the complimentary projects of Hope Canal and Amite River Canal Diversions. The Hope Canal project is typically discussed in the "no action" alternative. Studies have been performed on the concept of a 1500 cubic feet per second (cfs) diversion impacts to the swamp (as part of the Maurepas Diversion project under the CWPPRA program), the Blind River and Lake Maurepas. Ensure that implications of these studies are applicable to the Convent/Blind Diversion, since this preferred alternative is for a proposed diversion of 3000 cfs.

j. Readability would be enhanced if the document would spell out the meaning of acronyms upon first usage, i.e., ADCIRC, PCR, SCR, and ONR.

2. Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock DSEIS, May 2010

WRDA 2007 included authorization for feasibility-level reports of six of the ten near-term elements in the 2004 LCA Report. Two of those six elements were determined to be hydrologically intertwined and the planning efforts were subsequently combined. Consequently, the projects known as Convey Atchafalaya to Northern Terrebonne Marsh and Multipurpose

Operation of the Houma Navigation Lock were integrated into the Pre-Decisional Draft Integrated Feasibility Study and EIS for the Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock (LCA ARTM/MOHNL Project) and it is the later document, published in May 2010, to which these comments apply.

The objective of the project is to provide additional freshwater, nutrients, and sediments to the wetland communities of northwestern Terrebonne Basin, both north and south of the Gulf Intracoastal Waterway, which have exhibited accelerated wetland loss and ecosystem deterioration due to altered hydrology, reduced sediment and nutrient deposition, saltwater intrusion, tidally forced erosion, and subsidence. Currently, net primary productivity is declining and land loss is increasing, with existing fragmented emergent wetlands converting to shallow open water. According to United States Geological Survey (USGS) analyses, the overall rate of land loss in this area is 2,597 acres/year, or approximately 0.3 percent per year. If current conditions persist, it is predicted that 102,000 acres (18%) of remaining wetlands would decline over the next 50 years. Even more dramatic losses would be expected within several of the study subunits, with the loss of all emergent wetlands within the next 50 years.

As part of the feasibility study, multiple alternatives were developed incorporating a large array of treatment measures to be applied over the 1,100 square mile study area. The resulting Tentatively Selected Plan (TSP) is predicted to reduce the loss of 9,655 acres of marsh habitat (3,220 average annual habitat units (AAHUs)) at a cost of $311,030,000, including monitoring and adaptive management costs.

Of the alternatives studied, Alternative 2 is identified by the Corps and the interagency team as the TSP and it is also identified as the National Ecosystem Restoration Plan (NER). TSP fits the cost limitations of WRDA 2007 and is the most efficient plan from an incremental cost per average annualized habitat unit (AAHU) perspective. The TSP/NER plan involves construction of 56 structures and other water management features, as well as the opportunistic operation of the Houma Navigation Canal (HNC) Lock Complex, in an effort to address holistically the declining health of the Terrebonne marsh ecosystem, while meeting the planning objectives.

EPA supports the rationale provided for defining the NER plan and EPA further support the selection of Alternative 2 as the TSP. EPA does so in light of the urgency of addressing dramatic wetland habitat loss and degradation in the study area, while recognizing that there are a number of technical and design uncertainties yet to be worked through. The tight schedule under which this DSEIS was prepared resulted in publication of the document before all planning evaluations have been completed. While EPA believes this work should be completed prior to final plan approval, EPA does not believe that these analyses will alter the alternatives ranking. Therefore, EPA recommends that final approval of the TSP/NER plan be conditioned upon

completion of additional modeling and hydrology work needed prior to final project design and implementation of the plan. See the USFWS's May 2010 Draft Fish and Wildlife Coordination Act Report for details (Vol. III, Appendix B, pages 47-49).

EPA's support for the TSP is also predicated on the potential for adaptively responding to continually refined data, according to the management and monitoring plan (Vol. III, Appendix I). The incorporation of a monitoring plan and the commitment to adaptive management is a vital component for dealing with the uncertainties associated with the ecosystem modeling and for coordinating this project with other planned and future restoration and storm damage risk reduction projects in the area.

While this plan represents a valuable contribution to reducing the ecosystem degradation in the study area, a sustainable and resilient coastal ecosystem will quite likely require additional hydrologic manipulations. It is unlikely that this project alone will result in a sustainable ecosystem. The project features will not actively introduce additional sediment, nutrients, and freshwater from other sources. It will instead redistribute and more efficiently utilize existing freshwater within the system.

With that frame of reference, the project cost of $311,030,000 deserves careful consideration. Although the benefit area of the project is large and the ecosystem values to the nation are great, the cost is high and the benefits are incremental. These first cost benefits to the nation will only be realized if a future commitment is made to augment this project with additional hydrologic manipulations at a landscape scale.

This point cannot be overemphasized. As noted in the report, "[t]he project area is declining and imperiled. While the project cannot stop the natural processes of sea level rise, subsidence, and storm-caused erosion, the project can greatly slow down the disappearance of these landforms by decreasing the rate of decline of wetland habitat in the coastal system" (Vol. I, page 4-61).

Relative sea level rise (RSLR) evaluation curves were developed for three different sea level rise scenarios. The TSP/NER plan would provide benefits under the low and the intermediate RSLR scenarios. However, at the high RSLR rate, "marsh collapse is predicted to begin in 2017, when RSLR rate reaches 10 mm/yr. This rate represents a threshold believed to initiate rapid marsh collapse." None of the alternatives would prevent marsh collapse at the high RSLR rate. Once again, this is a large investment for benefits which will require additional treatment efforts to insure sustainability beyond the next seven years. This is too large an investment not to be part of a comprehensive plan of attack.

This project holds the promise of reducing additional wetland losses by some 9,655 acres. That is a far different scenario than "resulting in a net gain of 9,655 acres," as cited in various

sections throughout the reports, in both Volumes I and III. This is a significant correction which should be made in the Final EIS.

The correction should start at the top, with Objective 1: "Prevent, reduce, and/or reverse future wetland loss" and Objective 2: "Achieve and maintain characteristics of sustainable marsh hydrology." These goals are worthy of a more comprehensive approach with a larger scope than this near term project affords. As stated in the reports, the desired outcome seems to stop short of the objectives by establishing a measure of "reducing the rate of land loss compared to the pre-project condition." These outcomes appear to be achievable but they do not line up well with the more aggressive objectives. This is also a significant correction which should be made in the Final EIS.

Perhaps another project objective should be to optimize delta building, or at least to avoid negatively impacting ongoing Atchafalaya Delta building processes. The Atchafalaya River is building the only two actively growing deltas on the Louisiana coast. Although these active deltas are growing, they have not offset the land loss in this basin. However, they represent part of the ecosystem that is functioning in a positive trend and that should be valued and protected.

One of the more notable project uncertainties involves the construction and operation of the HNC lock complex for environmental purposes after the year 2025. The HNC lock complex is a feature of the Morganza to the Gulf project. If the lock complex is not constructed or if it is not operated as envisioned by this project, all benefits attributed to that feature will be unrealized. Accordingly, the Final EIS should provide an analysis of benefits (including the calculation of a benefit/cost ratio) both with and without the implementation of this feature.

The Final SEIS should clarify the implications for this project of the Corps' ongoing study to deepen the HNC channel. Also, the Final should clarify the lock closure conditions which were analyzed. In various sections of Volume III, those conditions are reported to include periods when the sector gates would not be closed, while other references infer that the modeling assumed constant closure. Finally, the Final SEIS should provide a plan for operating the sluice gates and it should explain how that operation would be anticipated to impact basin hydrology and consequent ecosystem health and sustainability.

Another area for further consideration involves statements in both Volumes I and III that the floating marshes in the upper Penchant Basin are currently stable and experiencing conditions where sufficient freshwater, nutrient, and sediment loads are being provided. Without further documentation, this conclusion would seem to overstate the current condition of these marshes. At a minimum, the vulnerability of these fragile marshes should be taken into account in the project planning. Based on a study conducted for EPA (Floating Marshes in the Barataria and Terrebonne Basins, Louisiana, Sept. 1994, Charles E. Sasser et al. (LSU-CEI-94-02)), notable changes to these marshes have occurred over the last several decades.

Six of the study sites in the Louisiana State University (LSU) project lie within the LCA ARTM/MOHNL Project study area. Based on habitat mapping and the results of other work by the same researchers, some floating marsh habitats have changed over the last several decades from one type of flotant to another type, or to open water. In the northern Terrebonne basin and upper Bayou Penchant basin, large areas of formerly *Panicum hemitomon* thick-mat flotant marsh converted to thin-mat *Eleocharis* flotant marshes or to open water. While much remains unknown as to what processes have operated on these areas to produce such dramatically different results, possible contributors include: altered hydrology due to canal construction and dredging; flux of organic material from the marsh due to hydrologic changes; nutria herbivory; nutrient dynamics due to altered hydrology; burning; and floods/storms.

With regard to compensatory mitigation, the report states that "[t]emporary negative impacts to the marsh associated with excavation of canals and management structures will be compensated for by creation of new marsh of better quality as a result of the reintroduction of freshwater, nutrients, and sediments into the Study Area" (Vol. I, page 4-68 and Vol. III, Section 3, page 49). The more likely case is that marsh degradation will be slowed by these measures. Additional marsh creation should be considered, however, if excess dredged material is available beyond that which is required for canal bank construction. In addition, all actions identified in the Clean Water Act Section 404(b) evaluation to minimize impact should be incorporated into the final plan.

Finally, EPA suggests that, to the degree possible, the Final EIS include an updated assessment of the Deepwater Horizon oil spill impacts to the Terrebonne basin ecological resources subject to this project proposal. The baseline conditions should be modified as necessary and a projection of the potential for the TSP/NER plan, or any individual features of other alternatives, for remediating those impacts should be considered. The TSP/NEP plan should be modified if the incorporation of other features could reasonably be expected to provide incremental benefits to protect the marshes from further oil spill damage under non-storm and/or storm conditions.

As a partner with the Corps of Engineers and others in the restoration of coastal Louisiana, EPA offers these comments in an effort to promote the most effective long-term wetlands protection and restoration strategy for the study area. This near term project could provide a platform for a sustainable coastal ecosystem, when viewed in tandem with measures to provide additional inputs of sediments and flows.

3. Medium Diversion at White Ditch DSEIS, May 2010

As noted in our cover letter, EPA supports the proposed White Ditch diversion. It is consistent with our long-standing priority of re-establishing Mississippi River inputs to help undo to some extent the major disruption of deltaic processes that underlies the ongoing loss of

coastal wetlands in Louisiana. EPA recognizes such river diversions have the potential to alter existing fisheries in the receiving areas due to changes in salinities, nutrients, sedimentation, and other factors. However, without efforts to restore deltaic processes by reintroducing riverine inputs, the productivity of such fisheries and coastal wetlands remains gravely threatened. The cost of inaction is continued rapid decline of wetlands and the related aquatic resources in deltaic Louisiana.

Nevertheless, EPA is sensitive to the potential effects of diversions on fisheries and the livelihoods built upon them. EPA recognizes the value of minimizing impacts where practicable and consistent with the pressing and long-term need to restore some semblance of sustainability to coastal Louisiana. There appear to be restoration approaches which could mimic natural deltaic processes and possibly minimize such impacts to existing fisheries. Specifically, EPA is referring to the concept of diversion "pulsing" which is intended to mimic seasonal riverine inputs historically associated high water events on the Mississippi. Such a "pulsing" operation is proposed for the White Ditch diversion, and entails high volumes of riverine input for months when stages and sediment concentrations are relatively high, followed by relatively limited "maintenance" inputs during the remaining months. This operation scheme has the promise of increasing sediment inputs, while reducing potential disruption of fisheries.

As noted in the cover letter, the capacity to precisely predict the effects of this and other coastal restoration projects is limited by uncertainty over major variables, particularly the future rate of relative sea level rise. This puts a premium on monitoring and adaptive management. At the programmatic level, the information gained through implementation of the White Ditch diversion would help test the diversion "pulsing" concept, thereby potentially assisting the larger-scale planning necessary to address coastal land loss in Louisiana. Thus, we believe the White Ditch project has the potential to both help restore coastal wetlands in the relative near term and support comprehensive coastal restoration in the future.

EPA appreciated the Corps' efforts to consider how different relative sea level rise (RSLR) scenarios could affect projected project benefits. Certainly, the central focus of this project (increasing sediment input into coastal marsh) is of primary importance for offsetting or slowing wetland loss due to RSLR. EPA agrees that diversion alternatives that provide greater sediment inputs could provide greater wetland benefits in that regard. However, the DSEIS might overstate the ability of the tentatively selected plan to counter more extreme rates of RSLR. Specifically, the DSEIS states that the tentatively selected plan could be used to "overcome high sea level rise". Such a statement should be tempered by the recognition that such high-end RSLR estimates would represent unprecedented environmental conditions and, therefore, our ability to accurately predict marsh response to such is limited. We would also note that the aforementioned quote appears inconsistent with the statement made on page ES-11: "...no evaluated alternative is able to offset the high rate of sea-level rise."

More information and analysis should be provided on potential inputs of nutrients and agrochemicals as a result of the proposed diversion. For example, data is available on the fluctuating levels of atrazine concentrations in the Mississippi River. This information could be combined with the proposed diversion operational scheme and alternatives to estimate potential atrazine inputs into the estuary. Similar analysis should be done for nutrient loading. EPA suggests the Final SEIS include a graph showing atrazine concentrations in the Mississippi River over the period of a year. Such a graph should also include a line showing proposed diversion discharge rates over the same period of time. This would highlight the relationship between diversion discharge rates and atrazine concentrations in the river. On the subject of atrazine, EPA asks the Corps to correct the apparent wording error on page 5-24: "The long-term effects of prolonged, low-level, exposure to atrazine on both plants and animals, especially amphibians, *would be currently being* investigated." (Emphasis added.) If such long-term effects are indeed currently being studied, EPA asks whether the Corps plans to review the findings of such investigation and if necessary incorporate that information into the operational scheme for this proposed diversion.

With respect to nutrients, dissolved oxygen, and other water quality issues, EPA recommends the Corps consider adding water quality parameters to the monitoring plan and adaptive management scheme. The goal would be to have the ability to detect and respond to any unforeseen adverse water quality impacts that could result from operation of the proposed diversion. This would include measurements of dissolved oxygen levels in open water areas, as well as monitoring for atrazine, metals, and any other pollutants of concern.

The DSEIS should provide additional information on potential salinity and associated habitat changes expected to occur due to the proposed diversion and alternatives. The final SEIS should include maps showing existing marsh types and anticipated changes in marsh types associated with the proposed project and alternatives. It would also be informative to include maps showing existing base-case isohaline lines and the anticipated changes in such over time (i.e., during the high-flow period, the middle of any "rebound" period, and low flow months.

Finally, as noted in our cover letter, EPA supports recommendations made by the National Marine Fisheries Service with respect to any additional analysis (including modeling) needed to adequately assess and disclose potential effects on fisheries.

4. Amite River Diversion Canal Modification DSEIS, May 2010

Both the TSP and the NER plan appear to be good projects from a cost-benefit perspective. EPA supports either alternative TSP or NER plan.

There is likely continued interest on the part of some landowners to log cypress in the Maurepas Swamp. Given the degraded state of the swamp throughout much of this area, there is

a high risk that any such logging would be unsustainable. Such logging could conflict with or undermine this and other proposed restoration efforts for the Maurepas Swamp. Accordingly, this project should include as a non-structural measure a commitment to full and effective enforcement of Clean Water Act Section 404 and/or Section 10 of the Rivers and Harbors Act as such laws pertain to logging.

The Fish and Wildlife Coordination Act report dated April 2010 and attached at Appendix B is not discussed in the DEIS. Additionally, pages appear to be missing from the report at Attachment B, namely, the USFWS recommendations.

Finally, the cumulative impacts do not include the additive impacts that would be expected from construction of this project in conjunction with the other two Maurepas Swamp diversion projects – Hope Canal and Convent/Blind River.