

APPENDIX G:
Responses to Comments



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue, South
St. Petersburg, Florida 33701

June 18, 2010 F/SER46/R11:jk
225/389-0508

Ms. Joan Exnicios, Chief
Environmental Planning and Compliance Branch
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:


NOAA's National Marine Fisheries Service (NMFS) has reviewed the four public notices dated May 21, 2010, pertaining to the Louisiana Coastal Area – Ecosystem Restoration Projects. Those public notices are variously titled:

1. Amite River Diversion Canal Modification Project, Livingston and Ascension Parishes, Louisiana.
2. Small Diversion at Convent/Blind River, St. James Parish, Louisiana.
3. Medium Diversion at White Ditch, Plaquemines Parish, Louisiana.
4. Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock

NMFS is presently reviewing Supplemental Environmental Impact Statements for each of the above identified projects. While we have significant recommendations pertaining to needed revisions to those documents, we do not expect to object to authorization or implementation of any of the above identified projects. As such, NMFS has no comments to provide on the public notices for any of the projects identified above.

We appreciate the opportunity to review and comment on these projects.

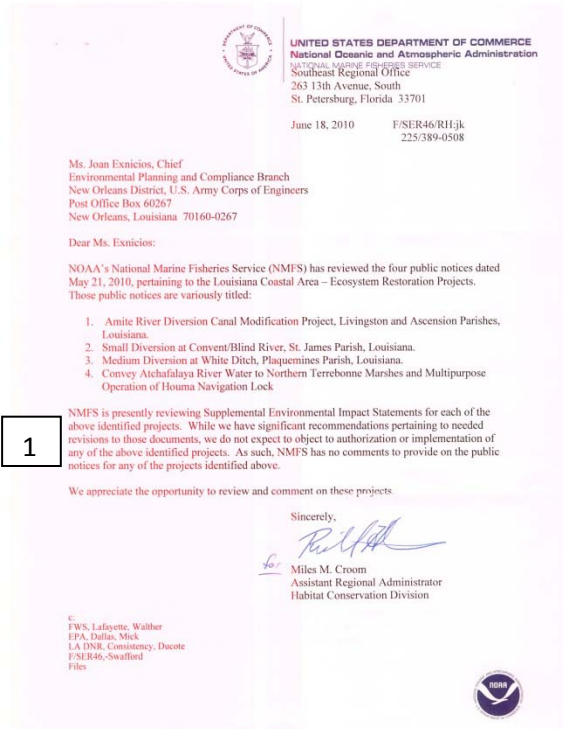
Sincerely,


for

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

C:
FWS, Lafayette, Walther
EPA, Dallas, Mick
LA DNR, Consistency, Ducote
F/SER46, Swafford
Files





1. Acknowledged.

United States Department of Agriculture



Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

(318) 473-7751
Fax: (318) 473-7628

June 21, 2010

Ms. Joan M. Exnicios
Chief, Environmental Planning and
Compliance Branch, Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

RE: Louisiana Coastal Area - Ecosystem Restoration Project Convey Atchafalaya River Water
to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock

Dear Ms. Exnicios:

Please reference your May 21, 2010, letter on the above subject and the accompanying Draft Environmental Impact Statement (DEIS), entitled Integrated Feasibility Study and Environmental Impact Statement for the Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock Lafourche, Terrebonne, St. Mary Parish, Louisiana. The Natural Resources Conservation Service (NRCS) has reviewed the information and offers the following comments as requested.

The DEIS is well-written and provides a comprehensive description of the proposed project, the affected environmental resources, the anticipated project impacts to those resources, and the alternatives considered. As you probably are aware, NRCS has been actively involved in restoration efforts within the project boundary for the past two decades including several CWPPRA projects and has provided assistance to the parishes and land owners in these areas through several other programs. NRCS continues to play an active role in the restoration of the Terrebonne Basin and agrees that the coastal wetlands in the project area will continue to deteriorate unless preventative measures are taken. Relative sea level rise has been particularly bad in the Terrebonne Basin through a series of natural and man-induced activities. The marshes of the Terrebonne Basin were formed primarily by previously abandoned lobes of the historic track of the Mississippi River. These marshes have since transitioned to largely organic remnants that are nearly isolated from any significant riverine input and, therefore, are severely deprived of seasonal inputs of riverine sediment and nutrients. In addition, channels dredged through natural ridges has increased drainage and tidal exchange and exposed the soil to elevated salinities and erosive forces. Over the past two decades, thousands of acres of vegetated marsh were converted to open water by subsidence and hurricanes and tropical storms. Those acres are unlikely to recover without comprehensive restoration efforts. This project was identified as a Near-term Critical Restoration Feature in the Louisiana Coastal Area (LCA) Ecosystem Restoration Study, and NRCS continues to support it.

As described in the provided information, the Corps of Engineers has selected Alternative 2, which involves construction of 56 structures and other water management features and the opportunistic operation of the Houma Navigation Lock complex, which is not yet constructed

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Ms. Joan Exnicios
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and is proposed for construction through another authority. NRCS has reviewed the structures and features proposed and is in agreement that these measures would provide benefits to the project area by either increasing freshwater flow to areas of need or preventing salinity intrusion into fresh and intermediate marshes as well as forested wetlands. The two main water diversion structures – CS1 at Bayou Butler and EC5 at Grand Bayou are two points of opportunity that NRCS has likewise recognized as sites for potential action to increase freshwater flows. Project features WD2 and WD3 are features to increase freshwater into targeted areas however both of these traverse somewhat sensitive areas. WD3 is through as mature cypress swamp and WD2 is in floating marsh. While NRCS supports these actions, we also caution that thorough review of these actions is necessary to ensure avoiding sustained negative impacts.

The project focuses heavily on the area of the HNC and where both riverine water is mainly diverted efficiently to the coastal bay system and saline waters may periodical push up into fresh areas. The channel also provides efficient tidal movement during hurricanes and tropical storms causing catastrophic damage to coastal features that otherwise are far removed from the gulf. NRCS agrees that actions to minimize the short-circuiting of river water to the coastal bays via the HNC is an important basin-wide strategy that should be a priority for restoration. The opportunistic utilization of such a structure would certainly optimize the benefits of Atchafalaya River water moving east via the GIWW to Central Terrebonne. The main concern is that the HNC locks are only in the planning stages and that benefits from this project are assuming the lock is in place. Nevertheless, NRCS agrees that the benefits from the opportunistic operation would in fact be substantial from both the more efficient use of nutrients and sediment from the river and the offset of salinity into the upper basin.

One area lacking in the project is the omission of any action to increase flows down Bayou Petite Caillou and Bayou Terrebonne. These are two major natural waterways are linked to the GIWW and flow deep into Central Terrebonne into some of the most isolated areas of critical need. NRCS has observed that there is potential to dredge these bayous and perhaps make modifications at constriction points (i.e. bridge modifications) to increase flow from the GIWW into these bayous.

To the East, NRCS is highly supportive of the measures to increase flows into Grand Bayou while recognizing the complexity of these actions. We have been involved with this project from the conception and will continue to support this action as needed. We also support restoring flow to the St. Louis Canal within this same subunit and have previously worked with landowners in this area to develop project plans.

NRCS through several decades of work in the Terrebonne Basin recognizes that Eastern Terrebonne Basin is one of the areas of most need in coastal Louisiana but perhaps the most complicated areas to work in because of isolation from the Mississippi and Atchafalaya Rivers, the limited land availability for development, the high density of use in inhabitable areas, and the potential conflicts of restoration actions on livelihoods. While everyone recognizes the importance of the actions put forth in this plan, we encourage working very closely with local stakeholders, including the parish and private property owners, to try to eliminate conflicts and complications to constructing these projects.

Ms. Joan Exnicios
Page 3
June 21, 2010

NRCS appreciates the opportunity to provide comments on the proposed action and DEIS and compliments the development team on a comprehensive and thorough effort. If you have any questions or need further information, please contact Ron Boustany (337) 291-3067.

Respectfully,



Kevin D. Norton
State Conservationist

cc: W. Britt Paul, ASTC/WR, SO, NRCS, Alexandria, LA
Randolph Joseph, AC, AO, NRCS, Lafayette, LA
Ron Boustany, NRS, NRCS, Lafayette, LA

United States Department of Agriculture



Natural Resources Conservation Service
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June 21, 2010

Ms. Joan M. Exnicios
Chief, Environmental Planning and
Compliance Branch, Department of the Army
New Orleans District, Corps of Engineers
P. O. Box 60267
New Orleans, Louisiana 70160-0267

RE: Louisiana Coastal Area - Ecosystem Restoration Project Convey Atchafalaya River Water
to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock

Dear Ms. Exnicios:

Please reference your May 21, 2010, letter on the above subject and the accompanying Draft
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affected environmental resources, the anticipated project impacts to those resources, and the
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restoration efforts within the project boundary for the past two decades including several
CWPPRA projects and has provided assistance to the parishes and land owners in these areas
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Terrebonne Basin and agrees that the coastal wetlands in the project area will continue to
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Ms. Joan Exnicios
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One area lacking in the project is the omission of any action to increase flows down Bayou Petite Caillou and Bayou Terrebonne. These are two major natural waterways are linked to the GIWW and flow deep into Central Terrebonne into some of the most isolated areas of critical need. NRCS has observed that there is potential to dredge these bayous and perhaps make modifications at constriction points (i.e. bridge modifications) to increase flow from the GIWW into these bayous.

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To the East, NRCS is highly supportive of the measures to increase flows into Grand Bayou while recognizing the complexity of these actions. We have been involved with this project from the conception and will continue to support this action as needed. We also support restoring flow to the St. Louis Canal within this same subunit and have previously worked with landowners in this area to develop project plans.

NRCS through several decades of work in the Terrebonne Basin recognizes that Eastern Terrebonne Basin is one of the areas of most need in coastal Louisiana but perhaps the most complicated areas to work in because of isolation from the Mississippi and Atchafalaya Rivers, the limited land availability for development, the high density of use in inhabitable areas, and the potential conflicts of restoration actions on livelihoods. While everyone recognizes the importance of the actions put forth in this plan, we encourage working very closely with local stakeholders, including the parish and private property owners, to try to eliminate conflicts and complications to constructing these projects.

5

6

2. Acknowledged. Slope stability and bankline stability analyses will be conducted on WD3 during pre-construction engineering and design. Hydraulic, slope stability, and bankline stability analyses will be conducted on WD2 during pre-construction engineering and design.
3. Acknowledged.
4. Acknowledged. Analysis conducted in conjunction with the CWPPRA TE-32a Lake Boudreaux Freshwater Introduction Project demonstrated that increasing flow by way of these bayous was not efficient or technically feasible. Therefore, these features were eliminated from consideration for the LCA-ARTM study.
5. Acknowledged.
6. Acknowledged.

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Page 3
June 21, 2010

7

NRCS appreciates the opportunity to provide comments on the proposed action and DEIS and compliments the development team on a comprehensive and thorough effort. If you have any questions or need further information, please contact Ron Boustany (337) 291-3067.

Respectfully,



Kevin D. Norton
State Conservationist

cc: W. Britt Paul, ASTC/WR, SO, NRCS, Alexandria, LA
Randolph Joseph, AC, AO, NRCS, Lafayette, LA
Ron Boustany, NRS, NRCS, Lafayette, LA

7. Acknowledged.



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1001 Indian School Road NW, Suite 348
Albuquerque, New Mexico 87104



ER 10/477
File 9043.1

June 29, 2010

Joan Exnicios
Chief, Environmental Planning & Compliance Branch
New Orleans District
U.S. Army Corps of Engineers
PO Box 60267
New Orleans, Louisiana 70160-0267

Subject: Draft Environmental Impact Statement (DEIS), for Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock, Integrated Feasibility Study, Louisiana Coastal Area (LCA) Implementation, Lafourche, Terrebonne, and St. Mary Parishes, Louisiana

Dear Ms. Exnicios:

The U.S. Department of the Interior has reviewed the subject document and provides the following comments in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.), the Fish and Wildlife Coordination Act (FWCA, 48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Endangered Species Act of 1973 (87 Stat. 884, as amended, 16 U.S.C. 1531 et seq.). The subject study report pertains to 2 of 6 critical near-term Louisiana Coastal Area (LCA) projects authorized under Title VII of the 2007 Water Resources Development Act. Accordingly, this report is designated as Volume III of VI.

General Comments

In several places, the DEIS indicates that the project would reverse wetland loss within the project area. Although this would indeed be a desirable outcome, project evaluations indicate that the project would reduce area wetland loss by only 10 percent. To avoid confusing or misleading the readers, statements regarding project effectiveness should be more carefully worded to consistently communicate that the project would reduce wetland loss rates.

Through the U.S. Fish and Wildlife Service's May 2010 Draft Fish and Wildlife Coordination Act Report, the FWS identified a number of project planning and evaluation shortcomings that occurred due to the very compressed project schedule. As a result of those shortcomings, the FWS recommended that further project evaluation work should be conducted to provide a more

accurate assessment of project effects. The DEIS should include Corps responses to those recommendations.

Specific Comments

Executive Summary, line 140 - The text states that Penchant Basin float marshes would “continue to deteriorate.” Because this statement suggests that those marshes have experienced recent deterioration, it conflicts with information presented on lines 2516, 2540, and Figure 2.3, which indicate that those float marshes have not experienced recent loss. This apparent conflict should be resolved.

Executive Summary, line 278 - More summary information should be presented on the nature of stages changes, including their location and duration.

Executive Summary, line 324 - The text incorrectly states that under the TSP, a “large” area of wetlands would be created and that the wetland degradation and loss trend would be reversed. Rather than use the subjective term “large” in regard to wetland creation, the actual acreage should be cited and the text should more clearly indicate whether or not that creation refers only to mechanical creation. As the report states elsewhere that the project would only reduce wetland loss rates, not reverse loss (i.e., result in wetland gain), this statement should be modified to be consistent with study text and findings.

Section 1.5.4.4., line 1940 - The Grand Bayou Project was deauthorized by the Coastal Wetland Restoration Planning, Protection and Restoration Task Force on January 2009. Hence, construction of this project is no longer planned.

Section 2.3.3., line 2625 – The text states that freshwater introduction would “help promote marsh building . . .” This suggests that the project would achieve deltaic land-building. However, the evaluation of planned freshwater introductions was determined to only reduce wetland loss and not to result in any deltaic land-building. The text should be revised to reflect this expected outcome.

Section 2.3.3., line 2680 – Grand Bayou Canal is identified as a major hydrologic alteration causing saltwater intrusion. This section should be amended to identify the Cutoff Canal, which was dredged through the Bayou Pointe au Chene ridge, as the most significant hydrologic alteration in this system and that saltwater intrusion impacts associated with the Cutoff Canal are conveyed northward via the Grand Bayou Canal.

Figures 3.3 through 3.9 - Given the map scale and size of markers, lines, and map text, it is impossible to tell where some project features are located. Revised maps, and/or close-up maps are needed to illustrate locations of project features.

Section 3.5.2. – The text describing the WVA methodology should note that fisheries access impacts (via WVA variable 6) normally associated with construction of canal plugs were not applied to the proposed HNC Lock operations, the Grand Pass plug, the Cutoff Canal plug, and the Robinson Canal plug.

Section 3.6.1., line 3725 – The text incorrectly states that measure CS1 consists of six 10' x 10' gated box culverts on Bayou Butler. According to information on specific project measures, that 6-culvert structure is the primary water control structure associated with the CWPPRA North Lake Boudreaux Basin Freshwater Introduction Project (TE-32a) and is listed as measure CC13.

Section 3.6.1., line 3750 – The text indicates that measure CL1 will keep the HNC Lock sector gates “closed more frequently.” This statement implies that there may be times when the lock would not be closed. However, hydrologic modeling and environmental benefits of measure CL1 were based on year-round Lock closure. If multipurpose lock operation would not result in year-round lock closure, then this DEIS does not accurately assess benefits and impacts of that measure. If there are other alternative lock operation scenarios, those scenarios should be described and benefits and impacts of each should be determined.

Section 3.9.3., line 4001 – The text suggests that “new marsh of better quality” would be created through freshwater reintroduction. This is incorrect as the freshwater introduction will reduce the loss of existing degraded marsh. Marsh creation measures may however result in the creation of high-quality marshes.

Section 4.2.7.1., line 4996 – Black-bellied whistling ducks have in recent years begun nesting in and around the study area fresh marsh and swamps.

Section 5.2.2.1., line 7200 – The text states that the majority of suspended sediment from the GIWW “would be transported out of the basin through Cutoff Canal.” Numerous observations of water turbidity in that area suggest that suspended sediments flocculate out in the Grand Bayou Canal or in the lake-like upper end of Grand Bayou. Generally, outgoing tides in the Cutoff Canal appear to contain little suspended sediment.

Section 5.2.2.2.1., line 7214 – Spoil generated through enlargement or construction of conveyance channels should be used beneficially to the greatest extent possible. However, spoil banks are planned along the conveyance channel within the north Lake Boudreaux basin to preclude canal-induced saltwater intrusion into the degraded area swamps (according to the CWPPRA design for project TE-32a). Channel construction impact estimates included impacts associated with spoil placement adjacent to the channel. If all or a portion of the resulting spoil material would be used beneficially, then the estimated direct construction impacts would need to be revised.

Section 5.15.10.1.2.1., line 11184 – The text correctly states that the proposed Robinson Canal plug would block passage of commercial fishing vessels. However, all but the smallest such vessels are currently blocked by the fixed-span low-level Louisiana Highway 57 bridge over Robinson Canal. The proposed Robinson Canal plug would, however, eliminate tidal currents through Robinson Canal and the associated butterfly net shrimp fishery in that canal.

Section 8.1., line 12151 – The text mentions that there are 6 sluice gates in the t-wall section of the HNC lock complex and that those gates can be used for drainage and/or circulation when the sector gate is closed. As operation of those sluice gates may change the effects of the multi-purpose lock operations, the operation of those sluice gates with and without the multi-purpose lock operations should be described. Additionally, the size and invert of those sluice gates should also be described.

Section 8.3, line 12215 – The text indicates that implementation of Alternative 2 would reverse the “trend of degradation and deterioration to the area between Bayou Lafourche and the Atchafalaya River . . .” According to information presented previously, Alternative 2 would only slow the degradation trend, not reverse it.

Appendix A, Biological Assessment - The Gulf sturgeon is an anadromous fish that occurs in many coastal rivers and streams and estuarine waters from the Atchafalaya River to the Suwanee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, and rivers and lakes of the Lake Pontchartrain basin and adjacent estuarine areas. The proposed project does not occur within Gulf sturgeon critical habitat and that species has not been reported within the project area. Thus, the FWS’s Louisiana Field Office concurs with your determination that the proposed activity is not likely to adversely affect the Gulf sturgeon or its critical habitat.

The pallid sturgeon is a riverine fish that occurs in the Atchafalaya and Mississippi rivers. There is no designated critical habitat for the pallid sturgeon and that species has not been reported within the project area. Thus, the FWS’s Louisiana Field Office concurs with your determination that the proposed activity is not likely to adversely affect the pallid sturgeon or its critical habitat.

Federally listed as endangered, West Indian manatees (*Trichechus manatus*) occasionally enter Lakes Pontchartrain and Maurepas, including their associated coastal waters and streams, during the summer months. Manatees, within Louisiana, have also been reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes, they have also been occasionally observed elsewhere along the Louisiana coast. According to your BA, all contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. Temporary signs would be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area). In addition siltation barriers, if used, would be made of material in which manatees cannot become entangled and would be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions would be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels would operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, would be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary but careful observations would be resumed. Accordingly, the FWS’s Louisiana Field Office concurs with your determination that the proposed work is not likely to adversely affect the West Indian manatee.

No further endangered species consultation will be required for this project unless there are changes in the scope or location of the work, or construction has not been initiated within 1 year. If the work has not been initiated within 1 year, follow-up consultation should be accomplished with the FWS’s Louisiana Field Office prior to making expenditures for construction.

Appendix I, Management Plan, Section 4.2 – Management of the project to achieve the Objective 1 Desired Outcome “Maintain baseline (2007 or most current pre-construction) proportions of vegetation community types within project area” would seem to maintain the

current degraded and unsustainable conditions within the project area. Assuming the current habitat type distribution represents a low-diversity and non-sustainable condition, this Desired Outcome may indirectly conflict with the Objective 2 which is to achieve and maintain sustainable marsh hydrology and with Objective 5 which is to sustain productive fish and wildlife habitat. Furthermore, this proposed outcome appears to directly conflict with the project's restoration objectives (see Section 2.1.) "Reduce salinity levels in project area" and "Increase residence time of fresh water." Accordingly, this outcome should be deleted, or modified to read "Restore and maintain a gradient of habitat types within the project area."

Appendix I, Management Plan, Section 4.2. – Regarding Objective 4, the FWS recommends use of satellite signatures and corresponding project-area gauge data to identify flow pathways at different river discharges. This information would supplement the analysis associated with the proposed suspended sediment and nutrient sampling. We believe that the inclusion of this method will help identify areas not receiving freshwater inputs and the resulting information could guide outfall management decisions. Conductivity and pH should also be measured when sediment and nutrient samples are taken.

Appendix I, Management Plan, Section 4.2. – Regarding Objective 5, we recommend using historic and future Louisiana Department of Wildlife and Fisheries sampling data as a means to directly assess fisheries effects. Because the existing LDWF sampling is biased toward game species, a more robust monitoring program may be needed to also assess non-game species. This type monitoring would provide a direct performance measure that can be used to determine if this objective has been met.

We appreciate the opportunity to provide comments on the subject document. If your staff has additional questions regarding our comments, please contact the FWS's Lafayette Field Office, Ronald Paille at (337) 291-3117.

Sincerely,



Stephen R. Spencer
Regional Environmental Officer

cc: U.S. Environmental Protection Agency, Dallas, TX
Attn: Barbara Keeler
NOAA's National Marine Fisheries Service, Baton Rouge, LA
Attn: Mr. Richard Hartman
Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA
Attn: Mr. Kyle Balkum
Louisiana Department of Wildlife and Fisheries, Natural Heritage Program,
Baton Rouge, LA
Louisiana Office of Coastal Protection and Restoration, Baton Rouge, LA



United States Department of the Interior

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ER 10/477
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June 29, 2010

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U.S. Army Corps of Engineers
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- 2 Through the U.S. Fish and Wildlife Service's May 2010 Draft Fish and Wildlife Coordination Act Report, the FWS identified a number of project planning and evaluation shortcomings that occurred due to the very compressed project schedule. As a result of those shortcomings, the FWS recommended that further project evaluation work should be conducted to provide a more

1. Concur. The use of the term reverse was replaced with reduce the trend.
2. Concur. Responses to those recommendations have been added to Section 7.2.1 of the report.

accurate assessment of project effects. The DEIS should include Corps responses to those recommendations.

Specific Comments

- 3 Executive Summary, line 140 - The text states that Penchant Basin flotant marshes would "continue to deteriorate." Because this statement suggests that those marshes have experienced recent deterioration, it conflicts with information presented on lines 2516, 2540, and Figure 2.3, which indicate that those flotant marshes have not experienced recent loss. This apparent conflict should be resolved.
- 4 Executive Summary, line 278 - More summary information should be presented on the nature of stages changes, including their location and duration.
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- 8 Section 2.3.3., line 2680 - Grand Bayou Canal is identified as a major hydrologic alteration causing saltwater intrusion. This section should be amended to identify the Cutoff Canal, which was dredged through the Bayou Pointe au Chene ridge, as the most significant hydrologic alteration in this system and that saltwater intrusion impacts associated with the Cutoff Canal are conveyed northward via the Grand Bayou Canal.
- 9 Figures 3.3 through 3.9 - Given the map scale and size of markers, lines, and map text, it is impossible to tell where some project features are located. Revised maps, and/or close-up maps are needed to illustrate locations of project features.
- 10 Section 3.5.2. - The text describing the WVA methodology should note that fisheries access impacts (via WVA variable 6) normally associated with construction of canal plugs were not applied to the proposed HNC Lock operations, the Grand Pass plug, the Cutoff Canal plug, and the Robinson Canal plug.

- 3. Concur. Discussion of trends in Penchant Basin flotant marshes clarified throughout document.
- 4. Acknowledged. However this information is too detailed for Executive Summary. This information can be found in Chapter 5 and Appendix L.
- 5. Concur. Updated language in ES 9.
- 6. Concur. Updated language in Sec 15.4.4.
- 7. Concur. Updated language in Sec 2.3.3.
- 8. Concur. Updated language in Sec 2.3.3.
- 9. Concur. An additional figure showing the features in the north Lake Boudreaux area has been added after the alternatives figures.
- 10. Concur. Section 3.5.2 modified accordingly.

11	Section 3.6.1, line 3725 – The text incorrectly states that measure CS1 consists of six 10' x 10' gated box culverts on Bayou Butler. According to information on specific project measures, that 6-culvert structure is the primary water control structure associated with the CWPPRA North Lake Boudreaux Basin Freshwater Introduction Project (TE-32a) and is listed as measure CC13.
12	Section 3.6.1, line 3750 – The text indicates that measure CL1 will keep the HNC Lock sector gates “closed more frequently.” This statement implies that there may be times when the lock would not be closed. However, hydrologic modeling and environmental benefits of measure CL1 were based on year-round Lock closure. If multipurpose lock operation would not result in year-round lock closure, then this DEIS does not accurately assess benefits and impacts of that measure. If there are other alternative lock operation scenarios, those scenarios should be described and benefits and impacts of each should be determined.
13	Section 3.9.3, line 4001 – The text suggests that “new marsh of better quality” would be created through freshwater reintroduction. This is incorrect as the freshwater introduction will reduce the loss of existing degraded marsh. Marsh creation measures may however result in the creation of high-quality marshes.
14	Section 4.2.7.1, line 4996 – Black-bellied whistling ducks have in recent years begun nesting in and around the study area fresh marsh and swamps.
15	Section 5.2.2.1, line 7200 – The text states that the majority of suspended sediment from the GHWW “would be transported out of the basin through Cutoff Canal.” Numerous observations of water turbidity in that area suggest that suspended sediments flocculate out in the Grand Bayou Canal or in the lake-like upper end of Grand Bayou. Generally, outgoing tides in the Cutoff Canal appear to contain little suspended sediment.
16	Section 5.2.2.2.1, line 7214 – Spoil generated through enlargement or construction of conveyance channels should be used beneficially to the greatest extent possible. However, spoil banks are planned along the conveyance channel within the north Lake Boudreaux basin to preclude canal-induced saltwater intrusion into the degraded area swamps (according to the CWPPRA design for project TE-32a). Channel construction impact estimates included impacts associated with spoil placement adjacent to the channel. If all or a portion of the resulting spoil material would be used beneficially, then the estimated direct construction impacts would need to be revised.
17	Section 5.15.10.1.2.1, line 11184 – The text correctly states that the proposed Robinson Canal plug would block passage of commercial fishing vessels. However, all but the smallest such vessels are currently blocked by the fixed-span low-level Louisiana Highway 57 bridge over Robinson Canal. The proposed Robinson Canal plug would, however, eliminate tidal currents through Robinson Canal and the associated butterfly net shrimp fishery in that canal.
18	Section 8.1, line 12151 – The text mentions that there are 6 sluice gates in the t-wall section of the HNC lock complex and that those gates can be used for drainage and/or circulation when the sector gate is closed. As operation of those sluice gates may change the effects of the multi-purpose lock operations, the operation of those sluice gates with and without the multi-purpose lock operations should be described. Additionally, the size and invert of those sluice gates should also be described.

11. Non-Concur. There are two identical structures that pass under Highway 57. CC13 is as stated by the commenter and is located near Bayou Pelton. CS1 passes under Highway 57 on Bayou Butler.
12. Concur. Text modified accordingly.
13. Concur. Text modified accordingly.
14. Concur. Section 4.2.7.1 modified accordingly.
15. Concur. Text modified accordingly.
16. Acknowledged. Dredged material will be used beneficially to the maximum extent practicable. However, due to unknown material and site properties, acreages could not be determined. These will be determined in future during pre-construction engineering and design (PED). The results of further evaluations conducted during PED will be disclosed to the public.
17. Concur. Sections 5.15.10.1.2.1 and 5.15.10.1.2.2 modified accordingly. Parts of Section 5.15.10.1.2.1 subsequently moved to Section 5.15.6 (Navigation).
18. Concur. Text modified accordingly in sections 3.3.2, 3.10.4, and 8.1.

19 Section 8.3, line 12215 – The text indicates that implementation of Alternative 2 would reverse the “trend of degradation and deterioration to the area between Bayou Lafourche and the Atchafalaya River . . .” According to information presented previously, Alternative 2 would only slow the degradation trend, not reverse it.

Appendix A, Biological Assessment - The Gulf sturgeon is an anadromous fish that occurs in many coastal rivers and streams and estuarine waters from the Atchafalaya River to the Suwanee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, and rivers and lakes of the Lake Pontchartrain basin and adjacent estuarine areas. The proposed project does not occur within Gulf sturgeon critical habitat and that species has not been reported within the project area. Thus, the FWS’s Louisiana Field Office concurs with your determination that the proposed activity is not likely to adversely affect the Gulf sturgeon or its critical habitat.

The pallid sturgeon is a riverine fish that occurs in the Atchafalaya and Mississippi rivers. There is no designated critical habitat for the pallid sturgeon and that species has not been reported within the project area. Thus, the FWS’s Louisiana Field Office concurs with your determination that the proposed activity is not likely to adversely affect the pallid sturgeon or its critical habitat.

Federally listed as endangered, West Indian manatees (*Trichechus manatus*) occasionally enter Lakes Pontchartrain and Maurepas, including their associated coastal waters and streams, during the summer months. Manatees, within Louisiana, have also been reported in the Amite, Blind, Techefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes, they have also been occasionally observed elsewhere along the Louisiana coast. According to your BA, all contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. Temporary signs would be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area). In addition siltation barriers, if used, would be made of material in which manatees cannot become entangled and would be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions would be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels would operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, would be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area on its own accord, special operating conditions are no longer necessary but careful observations would be resumed. Accordingly, the FWS’s Louisiana Field Office concurs with your determination that the proposed work is not likely to adversely affect the West Indian manatee.

20 No further endangered species consultation will be required for this project unless there are changes in the scope or location of the work, or construction has not been initiated within 1 year. If the work has not been initiated within 1 year, follow-up consultation should be accomplished with the FWS’s Louisiana Field Office prior to making expenditures for construction.

21 Appendix I, Management Plan, Section 4.2 – Management of the project to achieve the Objective 1 Desired Outcome “Maintain baseline (2007 or most current pre-construction) proportions of vegetation community types within project area” would seem to maintain the

19. Concur. Updated language in Sec 8.3.

20. Acknowledged.

21. This concern is noted and the desired outcome has been deleted. Vegetation monitoring is still proposed to ground-truth the proposed Landsat imagery.

current degraded and unsustainable conditions within the project area. Assuming the current habitat type distribution represents a low-diversity and non-sustainable condition, this Desired Outcome may indirectly conflict with the Objective 2 which is to achieve and maintain sustainable marsh hydrology and with Objective 5 which is to sustain productive fish and wildlife habitat. Furthermore, this proposed outcome appears to directly conflict with the project's restoration objectives (see Section 2.1.) "Reduce salinity levels in project area" and "Increase residence time of fresh water." Accordingly, this outcome should be deleted, or modified to read "Restore and maintain a gradient of habitat types within the project area."

Appendix I, Management Plan, Section 4.2 – Regarding Objective 4, the FWS recommends use of satellite signatures and corresponding project-area gauge data to identify flow pathways at different river discharges. This information would supplement the analysis associated with the proposed suspended sediment and nutrient sampling. We believe that the inclusion of this method will help identify areas not receiving freshwater inputs and the resulting information could guide outfall management decisions. Conductivity and pH should also be measured when sediment and nutrient samples are taken.

22

Appendix I, Management Plan, Section 4.2 – Regarding Objective 5, we recommend using historic and future Louisiana Department of Wildlife and Fisheries sampling data as a means to directly assess fisheries effects. Because the existing LDWF sampling is biased toward game species, a more robust monitoring program may be needed to also assess non-game species. This type monitoring would provide a direct performance measure that can be used to determine if this objective has been met.

23

We appreciate the opportunity to provide comments on the subject document. If your staff has additional questions regarding our comments, please contact the FWS's Lafayette Field Office, Ronald Paille at (337) 291-3117.

Sincerely,



Stephen R. Spencer
Regional Environmental Officer

cc: U.S. Environmental Protection Agency, Dallas, TX
Attr: Barbara Keeler
NOAA's National Marine Fisheries Service, Baton Rouge, LA
Attr: Mr. Richard Hartman
Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA
Attr: Mr. Kyle Balkum
Louisiana Department of Wildlife and Fisheries, Natural Heritage Program,
Baton Rouge, LA
Louisiana Office of Coastal Protection and Restoration, Baton Rouge, LA

22. The LCA AM Framework team agrees that these types of analyses could be valuable. These analyses are complicated, but not impossible, for project areas obscured by vegetation structure. Because Landsat imagery is already proposed for utilization in the monitoring and adaptive management plan, this additional information can be easily evaluated relatively economically. If the PDT determines this information is necessary, then it can be added during plan modification during pre-construction engineering and design.

23. Concur. Utilization of pre- and post-project fishery data from Louisiana Department of Wildlife and Fisheries is now included in the monitoring and adaptive management plan. Expansion of the current LDWF sampling regime is not proposed at this time. If it is determined, in coordination with LDWF and other resource agencies, that additional sampling is needed, it will be considered during pre-construction engineering and design.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
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DALLAS, TX 75202-2733

JUL 01 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.

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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.

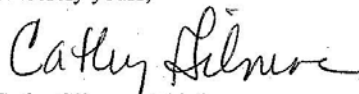
EPA appreciates that the Corps recognizes the need to monitor the extent to which the ongoing oil spill could affect study areas and aquatic resources covered by these four projects. It currently appears unlikely that the oil spill would directly affect the two proposed projects in the Maurepas Swamp, 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, 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 Maurepas. 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 Maurepas; 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 Maurepas. 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 Maurepas 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.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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JUL 01 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.

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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.

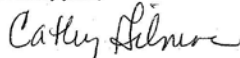
EPA appreciates that the Corps recognizes the need to monitor the extent to which the ongoing oil spill could affect study areas and aquatic resources covered by these four projects. It currently appears unlikely that the oil spill would directly affect the two proposed projects in the Maurepas Swamp, 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, 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 Maurepas. 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 Maurepas; 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 Maurepas. 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 Maurepas 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/MOHNH 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

1

1. Acknowledged.

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).

2 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.

3 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 lands by decreasing the rate of decline of wetland habitat in the coastal system" (Vol. I, page 4-61).

4 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.

5 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

2. Acknowledged.

3. Acknowledged.

4. Acknowledged. Additional projects may need to be considered in the future based on RSLR, ARTM project performance during monitoring, the updated State Master Plan, Medium and Long-term LCA proposals based on the data and methods being evaluated by the LCA Science Board and others. The ARTM project is a critical near-term project to address the immediate needs of the study area and its critical resources.

5. Concur. Text modified accordingly.

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

6

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.

7

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.

8

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.

9

10

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.

11

6. Non-concur. Alternatives were formulated to achieve the objectives set forth early in the planning process by the multi-agency project delivery team, but these objectives could not be fully attained through this study alone. Modifying objectives at this stage in the plan formulation process would potentially reduce USACE credibility in this scientific analysis.
7. Concur. However, due to schedule limitations, the hydraulic and habitat assessment analyses necessary for a complete sensitivity analysis related to Morganza to the Gulf completion schedules cannot be conducted. In lieu of this, a sensitivity analysis based on analysis of Alternative 7 results (the Alternative involving only the modified operation of the HNC lock complex) was added to Section 3.10.4 of the report.
8. Acknowledged. At this time the implications of this project on the HNC deepening and vice versa are anticipated to be negligible. The HNC deepening would not impact the modified operation since the operation plan is to have the floodgate closed year-round. Any impacts associated with the modified operation plan are already discussed in the report.
9. Concur. HNC lock assumptions clarified throughout document.

10. Concur. A description of how the sluice gates would be operated was added to subsections of section 3.3.2. The impacts of this operation were included in the benefits analysis, but were not specifically determined.
11. Concur. Discussion of trends in Penchant Basin floatant marshes clarified throughout document.

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 floatant 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 floatant marsh converted to thin-mat *Eleocharis* floatant 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.

12

12. Acknowledged.

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.

13

13. Acknowledged.

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.

14

14. Concur.

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.



BOBBY JINDAL
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY

JIMMY L. ANTHONY
ASSISTANT SECRETARY

July 1, 2010

Attn: Nathan Dayan
Planning, Programs, and Project Management Division
Environmental Planning and Compliance Branch
United States Army Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

RE: *Application Number: draft EIS LCA-Convey Atchafalaya Water to Northern Terrebonne Marshes*
Applicant: U.S. Army Corps of Engineers-New Orleans Division
Notice Date: May 21, 2010

Dear Mr. Serio:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced notice. Based upon this review, the following has been determined:

LDWF believes that operational flexibility should be incorporated into the operation plan and that the plan be modified as needed in response to monitoring and recommendations of regulatory and resource agencies.

All water control structures should be designed to allow for fish passage using the best available science.

Portions of the proposed activity may impact LDWF Wildlife Management Areas. No activities shall occur on any LDWF Wildlife Management Area or Refuge without obtaining a Special Use Permit from LDWF. Please contact Vaughn McDonald at (504) 284-5267 for more information.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact Habitat Section biologist Matthew Weigel at 225-763-3587 should you need further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyle F. Balkum", with a horizontal line extending to the right.

Kyle F. Balkum
Biologist Program Manager

Page 2

Application Number: draft EIS LCA-Convey Atchafalaya Water to Northern Terrebonne Marshes
July 1, 2010

mw/rb

c: Matthew Weigel, Biologist
Vaughn McDonald, Biologist
Rob Bourgeois, Fisheries Biologist
EPA Marine & Wetlands Section
USFWS Ecological Services



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GOVERNOR

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2

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3

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The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact Habitat Section biologist Matthew Weigel at 225-763-3587 should you need further assistance.

Sincerely,

Kyle F. Balkum
Biologist Program Manager

P.O. BOX 98000 • BATON ROUGE, LOUISIANA 70898-0000 • PHONE (225) 765-2800
AN EQUAL OPPORTUNITY EMPLOYER

1. Concur. A Monitoring and Adaptive Management Plan has been developed for the project and will facilitate operational flexibility of project features in coordination with regulatory and resource agencies.
2. Concur. All water control structures will be designed accordingly.
3. Concur. The appropriate Special Use Permits will be obtained from LDWF prior to construction of the project.

Page 2
Application Number: draft EIS LCA-Convey Atchafalaya Water to Northern Terrebonne Marshes
July 1, 2010

mw/rb

c: Matthew Weigel, Biologist
Vaughn McDonald, Biologist
Rob Bourgeois, Fisheries Biologist
EPA Marine & Wetlands Section
USFWS Ecological Services



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

July 1, 2010 F/SER46/RH:jk
225/389-0508

Ms. Joan M. Exnicios, Chief
Environmental Planning and Compliance Branch
Planning, Programs, and Management Division
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Pre-Decisional Draft Integrated Feasibility Study and Supplemental Environmental Impact Statement (SEIS) for the Louisiana Coastal Area (LCA) Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock, in Lafourche, Terrebonne, and St. Mary Parishes, Louisiana. This document was transmitted for NMFS' review by letter dated May 21, 2010, from the Army Corps of Engineers, New Orleans District (NOD). The NOD's letter indicated that submittal of the document to NMFS initiates essential fish habitat consultation as required by provisions of the Magnuson-Stevens Fishery Conservation and Management Act. It should be noted that NMFS has agreed to serve as a cooperating agency on this project under provisions of the National Environmental Policy Act.

The overall study area comprises approximately 1,100 square miles centered around the city of Houma in Terrebonne Parish. Habitat types within the project area include natural levees, lakes, freshwater swamps, and a variety of marsh types from fresh water to saline. The tentatively selected plan, listed as Alternative 2, consists of actions that would increase freshwater flows and associated sediments and nutrients into the project area to maintain and restore wetlands. Project design features include deepening and/or widening constrictions in the Gulf Intracoastal Waterway and Grand Bayou, placement of 56 water control and management structures, dredging of conveyance channels, gapping of spoil banks, and modification of the operation of the proposed Houma Navigation Canal and Lock complex. As assessed using Wetland Value Assessment methodology, the proposed action would prevent the loss of 9,655 acres of emergent wetlands over the 50-year period of analysis. According to the Wetland Value Assessment for the proposed action, the project would provide 3,220 Average Annual Habitat Units over the 50-year period of analysis when compared to the No Action Alternative.

The attached comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and 600.920 of the Magnuson-Stevens Fishery

1



Conservation and Management Act. Related correspondence should be directed to the attention of Mr. Richard Hartman at the NMFS Southeast Region, Habitat Conservation Division office at: c/o LSU, Baton Rouge, Louisiana 70803-7535. He may be contacted by telephone at (225) 389-0508, ext. 203 or by e-mail at richard.hartman@noaa.gov.

Sincerely,



Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

Enclosure

cc:
FWS, Lafayette, Walther
EPA, Dallas, Ettinger
LA DNR, Consistency, Ducote
F/SER46, Swafford
F/SER4, Dale
NOAA PPI, Reid
Files

ATTACHMENT
National Marine Fisheries Service Comments on the Pre-Decisional Draft
Integrated Feasibility Study and Supplemental Environmental Impact Statement
For the Louisiana Coastal Area (LCA) Convey Atchafalaya River Water to Northern
Terrebonne Marshes
and the Multipurpose Operation of the Houma Navigation Canal Lock projects
Authorized under the 2007 Water Resources Development Act

Essential Fish Habitat (EFH) Consultation

According to the NOD's May 21, 2010, transmittal letter, information in the Supplemental Environmental Impact Statement (SEIS) constitutes the EFH assessment. NMFS' response is submitted in accordance with section 600.920(i)(4) of the EFH rules and regulations.

Based on our review of the SEIS, NMFS has determined the document contains all required EFH assessment contents listed in section 600.920(e)(3) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (P.L. 104-297). Specific comments are provided where NMFS believes clarification or additional information is needed concerning EFH and other environmental factors. NMFS concurs with the determination that project-related benefits should more than offset short-term adverse impacts to EFH. However, to attain this, measures identified in the SEIS that are intended to avoid, minimize, and offset adverse effects must be implemented. These measures include, but are not limited to, use of best management practices during project construction and operation, and implementation of proposed monitoring and adaptive management actions as needed to measure project related impacts and provide a framework for decision-making and needed change.

The EFH assessment provides a rational basis and justification for implementing the Tentatively Selected Plan (TSP) when the benefits for that effort are compared to the consequences of the no action alternative. Based on this and fulfillment of the above-mentioned requirements of the EFH rules and regulations, NMFS has no EFH conservation recommendations to offer at this time. Provided that the project is completed as proposed, or modified to further avoid and minimize adverse impacts to EFH, no further consultation is required.

General comments

NMFS' review focuses on descriptions of the existing conditions and anticipated environmental consequences of Alternative 2, the TSP. In connection with this review, NMFS notes that information provided in the SEIS concerning the environmental consequences for other "action" alternatives (Alternatives 3-8) is extremely limited. As such, any decision to select a different action alternative in the future would likely create the need for another SEIS that more thoroughly evaluates the impacts of that alternative. In addition, given existing workloads, it should be understood that NMFS has concentrated this review on the Environmental Consequences of the No Action and TSP alternatives only.

Various sections of the document indicate that implementation of the TSP would prevent the loss of 9,655 acres of marsh and yield 3,220 Average Annual Habitat Units (AAHUs) over the No Action alternative. It should be noted that the project area would still undergo a significant amount of wetland loss with implementation of the TSP. Lacking frequent reminders of the likely continued degradation of wetlands with project implementation, others may believe there would be no need for further remedial actions in the area. All appropriate sections of the final SEIS should be revised to clearly quantify the acres by habitat type prior to project implementation and 50 years post construction. Those sections should also clearly state that wetland degradation would continue even with project implementation.

The NMFS response to the EFH assessment component of the SEIS is provided above. As noted above, NMFS' determination that EFH conservation recommendations are not warranted at this time is based on planned implementation of the TSP and associated components which include implementation of best management practices and a Monitoring and Adaptive Management Plan (MAMP). The following specific comments address sections in the SEIS where clarification or additional information is needed.

Specific comments

EXECUTIVE SUMMARY

Page ES-2, lines 111-113 This sentence lists five reasons for wetland deterioration in the project area. Relative sea level rise should be listed as one of those reasons.

SECTION 1.0 STUDY INFORMATION

1.5 Prior Reports and Existing Projects

1.5.4 Existing and Likely Future Water Projects

Page 20, lines 1840 through 1857 Based on NMFS' knowledge of the Atchafalaya Sediment Delivery project, it falls slightly outside of the boundaries of this LCA project area. As such, NMFS recommends it be deleted from mention in the SEIS.

Page 22, lines 1921-1936 The GIWW Bank Restoration in Critical Areas in Terrebonne project has largely been completed under the auspices of the Coastal Impact Assistance Program. This section of the document should be revised to incorporate that change in project status.

In addition, there is no mention in this section of the SEIS of the following projects funded under the auspices of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) that appear to be within the project area: TE-28 Brady Canal Hydrologic Restoration; TE-34 Penchant Basin Natural Resources Plan; TE-39 South Lake Decade Freshwater Introduction; TE-44 North Lake Mechant Landbridge Restoration; TE-46 West Lake Boudreaux Shoreline Protection and Marsh Restoration; TE-66 Central Terrebonne Freshwater Enhancement; and, TE-32a North Lake Boudreaux Freshwater Introduction and Hydrologic Management. Because several components of the latter project match components incorporated in the TSP for this

project, NMFS believes it is especially important to identify and discuss components of that project. If the North Lake Boudreaux project were constructed by the CWPPRA program, there would be no need to fund some components of this LCA project.

SECTION 2.0 NEED AND OBJECTIVES OF ACTION

2.3 Problems, needs, opportunities

2.3.1 General problem statement

Pages 4 through 5, lines 2399-2309 This section of the SEIS summarizes recent rates of sea level rise in the study area as drivers for project area alterations. However, no information is provided on medium and high projections of relative sea level rise as required by Corps of Engineers (COE) policy. This section should be revised to identify medium and high projections of relative sea level rise to be used to evaluate project performance later in the document.

Page 7, line 2397 Predicted sea level rise rates have increased over historic rates and, based on available information, may increase even more. Based on this and COE policy to evaluate all proposed actions using predicted sea level rise rates, sea level rise should be added to the list of activities contributing to the loss of project area wetlands.

2.3.3 Problems, Future Without Project Conditions, and Opportunities by Study Area Subunit

Page 18, lines 2718-2727 This section of the SEIS discusses opportunities that the Morganza to the Gulf levee project could provide in terms of environmental and flood control benefits. The authorized alignment also could impede the existing flow of fresh water and nutrients to portions of the Grand Bayou area. This potential negative impact of the Morganza project should be identified in this section of the document.

SECTION 3.0 ALTERNATIVES

3.5 Comparison of Alternative Plans

3.5.2 Wetland Value Assessment

Pages 32 through 35, lines 3445-3561 As described in the U.S. Fish and Wildlife Service's (FWS) Draft Coordination Act Report (DCAR), the Wetland Value Assessment (WVA) methodology was revised for the analysis of the TSP to obviate potential negative impacts to variable V6 that would result from the installation of a number of water control structures. Those structures could impede fishery migration pathways to nursery areas. Under the normal WVA methodology, such an impact would result in reductions of the V6 variable future-with project implementation. According to the DCAR, using the normal methodology would result in negative AAHUs for the TSP; therefore, that methodology was revised. NMFS recommends this revised methodology be identified and discussed in this section of the final SEIS.

3.6 NER Plan

3.6.1 Components of the NER Plan

Pages 42 through 43, lines 3720-3739 Information in this section briefly describes major components of Alternative 2. The WW2 component would have potential negative impacts on marine fishery migration to western portions of the project area, but is not identified or described. Information pertaining to the WW2 structure should be added to this section of the final SEIS.

3.6.3 Real Estate Requirements of the NER Plan

Page 45, line 3854 According to this section of the draft SEIS, 674.9 acres would be required for temporary work areas. Within appropriate sections of the final SEIS, the environmental consequences of using 674.9 acres for project related work should be described. The description should identify the existing land type (upland or wetland); existing value as habitat for fish and wildlife; duration of use as a work area; and planned restoration efforts. Where practicable, consideration should be given to converting work areas to wetlands or other desirable habitat for fish and wildlife once the site is no longer needed for construction purposes.

3.6.5 Monitoring and Adaptive Management Plan

Page 46, line 3865 The MAMP is needed to assess project related impacts and determine the need for operational change as needed to protect and restore EFH and other habitats and resources. By letter dated April 12, 2010, the FWS, in coordination with NMFS, provided detailed comments concerning needed changes in the project's MAMP. NMFS recommends the MAMP be modified in accordance with FWS and NMFS recommendations and incorporated into the final SEIS as a project component.

3.9 Plan Selection – Tentatively Selected Plan

3.9.3 Compensatory Mitigation Measures

Page 49, lines 3999-4004 While this section refers specifically to compensatory mitigation, NMFS believes other forms of mitigation such as impact avoidance and minimization should also be addressed. Although the WVA analysis indicates the project would result in net environmental benefits over the 50 year life, there are significant construction-related impacts to wetlands. All efforts to avoid and minimize those impacts should be evaluated during the preliminary engineering and design phase of project implementation. NMFS recommends this section of the final SEIS be revised to discuss future efforts to avoid and minimize direct construction-related impacts to wetlands in the project area.

3.10 Risk and Uncertainty

3.10.2 Relative Sea Level Rise

Pages 49 through 50, lines 4024-4050 The analysis of project performance in the event of intermediate and high rates of relative sea level rise contained in this section is extremely limited. NMFS recommends this section of the final SEIS quantify the net acres and net AAHUs for the TSP for critical years in the period of evaluation for each rate of relative sea level rise.

3.11 Implementation Requirements
3.11.4 Environmental Commitments

Pages 55 through 56, lines 4266-4294 NMFS views the MAMP as an essential component of the project. Monitoring environmental conditions and implementing needed operational adjustments are crucial to meeting project purposes and ensuring that adverse impacts to fish and wildlife are minimized. As such, a commitment to implement the MAMP should be included in the list of Environmental Commitments.

SECTION 5.0 ENVIRONMENTAL CONSEQUENCES

5.3 Water Quality and Salinity
5.3.4 and 5.3.5 Alternatives 4-5

Page 30, lines 7449-7462 According to Section 3.5.3, operation of the proposed pump station would adversely impact isohalines in the Barataria Basin and force salt water up into Bayou Lafourche. This should be identified as a direct impact of Alternatives 4 and 5.

5.6 Vegetation Resources
5.6.2 Alternative 2 (NER Plan and TSP)

Page 52, line 7772-7803 In addition to identification of total wetland impacts (by wetland type) as provided in the document, NMFS recommends the final SEIS include a table that identifies each work site, the type of structure or work (e.g., widening of conveyance channels, addition of plugs) at the site, the acreage of wetland to be impacted, the type of wetland to be impacted, and the duration of the impact (permanent or temporary). The recommended table would aid in impact disclosure, assist in identifying most damaging components for later efforts to minimize adverse impacts during the project engineering and design phase, and could be used in connection with monitoring and adaptive management.

In addition, this section of the document indicates that Alternative 2 would prevent the loss of 9,655 acres of marsh and yield 3,220 AAHUs over the No Action alternative. It should be recognized that the project area would still undergo a significant amount of wetland loss with implementation of the TSP. Lacking frequent reminders of the likely continued degradation of wetlands with project implementation, others may believe there would be no need for further remedial actions. This section of the final SEIS should be revised to clearly quantify the acres by habitat type prior to project implementation and 50 years post construction.

5.6.9 Invasive Species – Vegetation
5.6.9.2 Alternative 2 (NER Plan and TSP)

Pages 57 through 58, lines 7959-7974 It should be noted in this section of the final SEIS that widening and deepening conveyance channels could facilitate the movement of some invasive species to areas not readily accessible to them without project implementation.

5.9 Fisheries

5.9.2 Alternative 2 (NER Plan and TSP)

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Given the potential reduction of marine fishery access to some portions of the project area, NMFS believes that monitoring of project related effects may be warranted. The information in the table recommended in the previous paragraph for inclusion in the final SEIS would be useful in determining the actual degree of marine fishery movement restrictions that would be caused by implementation of the TSP. If migratory pathways are severely restricted by the installation of water control structures, the MAMP may need to be modified to include monitoring of fish movement as a potential evaluation feature. NMFS will coordinate further with the COE, FWS, and other agencies concerning the results of the fishery access assessment and the need to revise the MAMP to include monitoring of marine fishery production in portions of the project area.

5.10 Essential Fish Habitat (EFH)

Page 75, line 8613 and line 8637 NMFS is pleased to note inclusion of a separate section that identifies and addresses the mandatory requirements of the EFH assessment. While NMFS agrees that conclusions regarding the effects on EFH can be found within the analysis of direct, indirect, and cumulative impacts of each alternative, NMFS believes it is important to note that despite adverse impacts to EFH, the project is expected to result in a substantial net benefit to EFH when compared to the No Action Alternative.

Page 75, line 8640 This section should be modified to state that while compensatory mitigation is not warranted with regard to EFH, other measures in the form of impact avoidance and minimization are planned during the project engineering and development phase.

5.10.2 Alternative 2 (NER Plan and TSP)

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Page 76, line 8695 According to this section, the TSP would result in a “net gain of 9,655 acres of emergent marsh habitat over the 50-year period of analysis when compared to the No Action Alternative.” This is misleading as it implies that 9,655 acres of emergent wetlands would be generated or created. As assessed, the TSP would maintain existing wetlands that would otherwise be lost. Considering there is no expected gain in wetlands during the future-with project implementation, this section of the final SEIS should be revised to more accurately reflect that wetland loss will continue, but at a reduced rate.

- 5.15 Socioeconomics and Human Resources
- 5.15.10 Natural Resources
- 5.15.10.2 Oyster Leases
- 5.15.10.2.2 Alternative 2 (NER Plan and TSP)

Page 150, line 11349 Anticipated changes in salinity across the project area are presented in Figure 5-10, page 32 of the SEIS. The locations of existing oyster harvest (lease) and seed production areas are also provided (Figure 4-7, page 42) in the document. This information should be combined to develop a map of anticipated change in oyster harvest and seed production locations with the TSP.

Appendix I: Monitoring and Adaptive Management Plan As noted in previous comments pertaining to section 3.6.5 of the SEIS, the MAMP should be modified in accordance with recommendations contained in the April 12, 2010, letter from the FWS which was prepared in coordination with NMFS. Additionally, as noted above, the MAMP may need to be modified to include monitoring of impacts to marine fishery productivity caused by the installation of a number of water control structures.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

July 1, 2010 F/SER46/RH:jk
225/389-0508

Ms. Joan M. Exnicios, Chief
Environmental Planning and Compliance Branch
Planning, Programs, and Management Division
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Pre-Decisional Draft Integrated Feasibility Study and Supplemental Environmental Impact Statement (SEIS) for the Louisiana Coastal Area (LCA) Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock, in Lafourche, Terrebonne, and St. Mary Parishes, Louisiana. This document was transmitted for NMFS' review by letter dated May 21, 2010, from the Army Corps of Engineers, New Orleans District (NOD). The NOD's letter indicated that submittal of the document to NMFS initiates essential fish habitat consultation as required by provisions of the Magnuson-Stevens Fishery Conservation and Management Act. It should be noted that NMFS has agreed to serve as a cooperating agency on this project under provisions of the National Environmental Policy Act.

The overall study area comprises approximately 1,100 square miles centered around the city of Houma in Terrebonne Parish. Habitat types include within the project area include natural levees, lakes, freshwater swamps, and a variety of marsh types from fresh water to saline. The tentatively selected plan, listed as Alternative 2, consists of actions that would increase freshwater flows and associated sediments and nutrients into the project area to maintain and restore wetlands. Project design features include deepening and/or widening constrictions in the Gulf Intracoastal Waterway and Grand Bayou, placement of 56 water control and management structures, dredging of conveyance channels, gapping of spoil banks, and modification of the operation of the proposed Houma Navigation Canal and Lock complex. As assessed using Wetland Value Assessment methodology, the proposed action would prevent the loss of 9,655 acres of emergent wetlands over the 50-year period of analysis. According to the Wetland Value Assessment for the proposed action, the project would provide 3,220 Average Annual Habitat Units over the 50-year period of analysis when compared to the No Action Alternative.

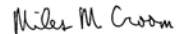
The attached comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and 600.920 of the Magnuson-Stevens Fishery

1



Conservation and Management Act. Related correspondence should be directed to the attention of Mr. Richard Hartman at the NMFS Southeast Region, Habitat Conservation Division office at: c/o LSU, Baton Rouge, Louisiana 70803-7535. He may be contacted by telephone at (225) 389-0508, ext. 203 or by e-mail at richard.hartman@noaa.gov.

Sincerely,



Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

Enclosure

cc:
FWS, Lafayette, Walther
EPA, Dallas, Ettinger
LA DNR, Consistency, Ducote
F/SER46, Swafford
F/SER4, Dale
NOAA PPI, Reid
Files

ATTACHMENT
National Marine Fisheries Service Comments on the Pre-Decisional Draft
Integrated Feasibility Study and Supplemental Environmental Impact Statement
For the Louisiana Coastal Area (LCA) Convey Atchafalaya River Water to Northern
Terrebonne Marshes
and the Multipurpose Operation of the Houma Navigation Canal Lock projects
Authorized under the 2007 Water Resources Development Act

Essential Fish Habitat (EFH) Consultation

According to the NOD's May 21, 2010, transmittal letter, information in the Supplemental Environmental Impact Statement (SEIS) constitutes the EFH assessment. NMFS' response is submitted in accordance with section 600.920(i)(4) of the EFH rules and regulations.

Based on our review of the SEIS, NMFS has determined the document contains all required EFH assessment contents listed in section 600.920(e)(3) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (P.L. 104-297). Specific comments are provided where NMFS believes clarification or additional information is needed concerning EFH and other environmental factors. NMFS concurs with the determination that project-related benefits should more than offset short-term adverse impacts to EFH. However, to attain this, measures identified in the SEIS that are intended to avoid, minimize, and offset adverse effects must be implemented. These measures include, but are not limited to, use of best management practices during project construction and operation, and implementation of proposed monitoring and adaptive management actions as needed to measure project related impacts and provide a framework for decision-making and needed change.

The EFH assessment provides a rational basis and justification for implementing the Tentatively Selected Plan (TSP) when the benefits for that effort are compared to the consequences of the no action alternative. Based on this and fulfillment of the above-mentioned requirements of the EFH rules and regulations, NMFS has no EFH conservation recommendations to offer at this time. Provided that the project is completed as proposed, or modified to further avoid and minimize adverse impacts to EFH, no further consultation is required.

General comments

NMFS' review focuses on descriptions of the existing conditions and anticipated environmental consequences of Alternative 2, the TSP. In connection with this review, NMFS notes that information provided in the SEIS concerning the environmental consequences for other "action" alternatives (Alternatives 3-8) is extremely limited. As such, any decision to select a different action alternative in the future would likely create the need for another SEIS that more thoroughly evaluates the impacts of that alternative. In addition, given existing workloads, it should be understood that NMFS has concentrated this review on the Environmental Consequences of the No Action and TSP alternatives only.

1

2

3

1. Acknowledged.

2. Acknowledged.

3. Non-Concur. Due to the similarity of features and environmental consequences among many of the Alternatives, the descriptions of consequences on a given resource for Alternatives 3 through 8 frequently refer back to the descriptions of consequences for Alternative 2. As necessary, the descriptions of consequences for Alternatives 3 through 8 are expanded beyond those for Alternative 2.

4

Various sections of the document indicate that implementation of the TSP would prevent the loss of 9,655 acres of marsh and yield 3,220 Average Annual Habitat Units (AAHUs) over the No Action alternative. It should be noted that the project area would still undergo a significant amount of wetland loss with implementation of the TSP. Lacking frequent reminders of the likely continued degradation of wetlands with project implementation, others may believe there would be no need for further remedial actions in the area. All appropriate sections of the final SEIS should be revised to clearly quantify the acres by habitat type prior to project implementation and 50 years post construction. Those sections should also clearly state that wetland degradation would continue even with project implementation.

The NMFS response to the EFH assessment component of the SEIS is provided above. As noted above, NMFS' determination that EFH conservation recommendations are not warranted at this time is based on planned implementation of the TSP and associated components which include implementation of best management practices and a Monitoring and Adaptive Management Plan (MAMP). The following specific comments address sections in the SEIS where clarification or additional information is needed.

Specific comments

EXECUTIVE SUMMARY

5

Page ES-2, lines 111-113 This sentence lists five reasons for wetland deterioration in the project area. Relative sea level rise should be listed as one of those reasons.

SECTION 1.0 STUDY INFORMATION

1.5 Prior Reports and Existing Projects

1.5.4 Existing and Likely Future Water Projects

6

Page 20, lines 1840 through 1857 Based on NMFS' knowledge of the Atchafalaya Sediment Delivery project, it falls slightly outside of the boundaries of this LCA project area. As such, NMFS recommends it be deleted from mention in the SEIS.

7

Page 22, lines 1921-1936 The GIWW Bank Restoration in Critical Areas in Terrebonne project has largely been completed under the auspices of the Coastal Impact Assistance Program. This section of the document should be revised to incorporate that change in project status.

8

In addition, there is no mention in this section of the SEIS of the following projects funded under the auspices of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) that appear to be within the project area: TE-28 Brady Canal Hydrologic Restoration; TE-34 Penchant Basin Natural Resources Plan; TE-39 South Lake Decade Freshwater Introduction; TE-44 North Lake Mechant Landbridge Restoration; TE-46 West Lake Boudreaux Shoreline Protection and Marsh Restoration; TE-66 Central Terrebonne Freshwater Enhancement; and, TE-32a North Lake Boudreaux Freshwater Introduction and Hydrologic Management. Because several components of the latter project match components incorporated in the TSP for this

4. Concur. Text modified accordingly throughout document.

5. Concur. Text modified accordingly.

6. Acknowledged. Due to close proximity to the study area this will remain in report.

7. Concur. Text modified accordingly.

8. Concur. Descriptions of omitted CWPPRA projects added to Section 1.5.4.4 accordingly.

project, NMFS believes it is especially important to identify and discuss components of that project. If the North Lake Boudreaux project were constructed by the CWPPRA program, there would be no need to fund some components of this LCA project.

SECTION 2.0 NEED AND OBJECTIVES OF ACTION

2.3 Problems, needs, opportunities

2.3.1 General problem statement

9

Pages 4 through 5, lines 2399-2309 This section of the SEIS summarizes recent rates of sea level rise in the study area as drivers for project area alterations. However, no information is provided on medium and high projections of relative sea level rise as required by Corps of Engineers (COE) policy. This section should be revised to identify medium and high projections of relative sea level rise to be used to evaluate project performance later in the document.

10

Page 7, line 2397 Predicted sea level rise rates have increased over historic rates and, based on available information, may increase even more. Based on this and COE policy to evaluate all proposed actions using predicted sea level rise rates, sea level rise should be added to the list of activities contributing to the loss of project area wetlands.

2.3.3 Problems, Future Without Project Conditions, and Opportunities by Study Area Subunit

11

Page 18, lines 2718-2727 This section of the SEIS discusses opportunities that the Morganza to the Gulf levee project could provide in terms of environmental and flood control benefits. The authorized alignment also could impede the existing flow of fresh water and nutrients to portions of the Grand Bayou area. This potential negative impact of the Morganza project should be identified in this section of the document.

SECTION 3.0 ALTERNATIVES

3.5 Comparison of Alternative Plans

3.5.2 Wetland Value Assessment

12

Pages 32 through 35, lines 3445-3561 As described in the U.S. Fish and Wildlife Service's (FWS) Draft Coordination Act Report (DCAR), the Wetland Value Assessment (WVA) methodology was revised for the analysis of the TSP to obviate potential negative impacts to variable V6 that would result from the installation of a number of water control structures. Those structures could impede fishery migration pathways to nursery areas. Under the normal WVA methodology, such an impact would result in reductions of the V6 variable future-with project implementation. According to the DCAR, using the normal methodology would result in negative AAHUs for the TSP; therefore, that methodology was revised. NMFS recommends this revised methodology be identified and discussed in this section of the final SEIS.

3.6 NER Plan

3.6.1 Components of the NER Plan

9. Non-Concur. Section 2.3.1 of the report provides a general discussion of the problems within the project area. A discussion of the details of alternatives analysis and related uncertainty does not belong in this section. A note was added to Section 2.3.1 to point the reader to the appropriate section in the report for a discussion of the uncertainty in relative sea level rise.

10. Concur. Text modified in Section 2.3.1 accordingly.

11. Acknowledged. Flow impacts to the Grand Bayou area are not identified in the Morganza to the Gulf EIS. LCA-ARTM operated under the assumption that the final design of all water control structures associated with Morganza to the Gulf would minimize impacts by mimicking existing flow patterns. Therefore no negative impacts to the Grand Bayou area from implementation of Morganza to the Gulf were anticipated.

12. Concur. Section 3.5.2 modified accordingly.

13

Pages 42 through 43, lines 3720-3739 Information in this section briefly describes major components of Alternative 2. The WW2 component would have potential negative impacts on marine fishery migration to western portions of the project area, but is not identified or described. Information pertaining to the WW2 structure should be added to this section of the final SEIS.

3.6.3 Real Estate Requirements of the NER Plan

14

Page 45, line 3854 According to this section of the draft SEIS, 674.9 acres would be required for temporary work areas. Within appropriate sections of the final SEIS, the environmental consequences of using 674.9 acres for project related work should be described. The description should identify the existing land type (upland or wetland); existing value as habitat for fish and wildlife; duration of use as a work area; and planned restoration efforts. Where practicable, consideration should be given to converting work areas to wetlands or other desirable habitat for fish and wildlife once the site is no longer needed for construction purposes.

3.6.5 Monitoring and Adaptive Management Plan

15

Page 46, line 3865 The MAMP is needed to assess project related impacts and determine the need for operational change as needed to protect and restore EFH and other habitats and resources. By letter dated April 12, 2010, the FWS, in coordination with NMFS, provided detailed comments concerning needed changes in the project's MAMP. NMFS recommends the MAMP be modified in accordance with FWS and NMFS recommendations and incorporated into the final SEIS as a project component.

3.9 Plan Selection – Tentatively Selected Plan

3.9.3 Compensatory Mitigation Measures

16

Page 49, lines 3999-4004 While this section refers specifically to compensatory mitigation, NMFS believes other forms of mitigation such as impact avoidance and minimization should also be addressed. Although the WVA analysis indicates the project would result in net environmental benefits over the 50 year life, there are significant construction-related impacts to wetlands. All efforts to avoid and minimize those impacts should be evaluated during the preliminary engineering and design phase of project implementation. NMFS recommends this section of the final SEIS be revised to discuss future efforts to avoid and minimize direct construction-related impacts to wetlands in the project area.

3.10 Risk and Uncertainty

3.10.2 Relative Sea Level Rise

17

Pages 49 through 50, lines 4024-4050 The analysis of project performance in the event of intermediate and high rates of relative sea level rise contained in this section is extremely limited. NMFS recommends this section of the final SEIS quantify the net acres and net AAHU for the TSP for critical years in the period of evaluation for each rate of relative sea level rise.

13. Concur. Text modified in Section 3.6.1 accordingly.

14. Concur. Information on temporary work areas added to various sections of Chapter 5, Environmental Consequences, accordingly.

15. Acknowledged. Comments from the April 12, 2010 letter have been addressed and the Monitoring and Adaptive Management Plan has been modified accordingly and is included as Appendix I.

16. Concur. Text modified accordingly.

17. Concur. Due to time constraints, analysis of the RP cannot be completed. Table 3.10 was replaced with a summary table showing RSLR, Net AAHU and net acreage values for Alternative 3.

3.11 Implementation Requirements
3.11.4 Environmental Commitments

18

Pages 55 through 56, lines 4266-4294 NMFS views the MAMP as an essential component of the project. Monitoring environmental conditions and implementing needed operational adjustments are crucial to meeting project purposes and ensuring that adverse impacts to fish and wildlife are minimized. As such, a commitment to implement the MAMP should be included in the list of Environmental Commitments.

18. Concur. Text changed accordingly.

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5.3 Water Quality and Salinity
5.3.4 and 5.3.5 Alternatives 4-5

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Page 30, lines 7449-7462 According to Section 3.5.3, operation of the proposed pump station would adversely impact isohalines in the Barataria Basin and force salt water up into Bayou Lafourche. This should be identified as a direct impact of Alternatives 4 and 5.

19. Concur. Text added to Sections 5.3.4 and 5.3.5 accordingly.

5.6 Vegetation Resources
5.6.2 Alternative 2 (NER Plan and TSP)

20

Page 52, line 7772-7803 In addition to identification of total wetland impacts (by wetland type) as provided in the document, NMFS recommends the final SEIS include a table that identifies each work site, the type of structure or work (e.g., widening of conveyance channels, addition of plugs) at the site, the acreage of wetland to be impacted, the type of wetland to be impacted, and the duration of the impact (permanent or temporary). The recommended table would aid in impact disclosure, assist in identifying most damaging components for later efforts to minimize adverse impacts during the project engineering and design phase, and could be used in connection with monitoring and adaptive management.

20. Concur. Table 5.2 added to beginning of Chapter 5 accordingly.

In addition, this section of the document indicates that Alternative 2 would prevent the loss of 9,655 acres of marsh and yield 3,220 AAHUs over the No Action alternative. It should be recognized that the project area would still undergo a significant amount of wetland loss with implementation of the TSP. Lacking frequent reminders of the likely continued degradation of wetlands with project implementation, others may believe there would be no need for further remedial actions. This section of the final SEIS should be revised to clearly quantify the acres by habitat type prior to project implementation and 50 years post construction.

21

21. Concur. Information on land loss acreages with and without project implementation added to various sections of Chapter 5.

5.6.9 Invasive Species – Vegetation
5.6.9.2 Alternative 2 (NER Plan and TSP)

22

Pages 57 through 58, lines 7959-7974 It should be noted in this section of the final SEIS that widening and deepening conveyance channels could facilitate the movement of some invasive species to areas not readily accessible to them without project implementation.

22. Concur. Text modified accordingly.

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5.9.2 Alternative 2 (NER Plan and TSP)

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Given the potential reduction of marine fishery access to some portions of the project area, NMFS believes that monitoring of project related effects may be warranted. The information in the table recommended in the previous paragraph for inclusion in the final SEIS would be useful in determining the actual degree of marine fishery movement restrictions that would be caused by implementation of the TSP. If migratory pathways are severely restricted by the installation of water control structures, the MAMP may need to be modified to include monitoring of fish movement as a potential evaluation feature. NMFS will coordinate further with the COE, FWS, and other agencies concerning the results of the fishery access assessment and the need to revise the MAMP to include monitoring of marine fishery production in portions of the project area.

24

5.10 Essential Fish Habitat (EFH)

Page 75, line 8613 and line 8637 NMFS is pleased to note inclusion of a separate section that identifies and addresses the mandatory requirements of the EFH assessment. While NMFS agrees that conclusions regarding the effects on EFH can be found within the analysis of direct, indirect, and cumulative impacts of each alternative, NMFS believes it is important to note that despite adverse impacts to EFH, the project is expected to result in a substantial net benefit to EFH when compared to the No Action Alternative.

25

Page 75, line 8640 This section should be modified to state that while compensatory mitigation is not warranted with regard to EFH, other measures in the form of impact avoidance and minimization are planned during the project engineering and development phase.

26

5.10.2 Alternative 2 (NER Plan and TSP)

23. Concur. Table summarizing impacts of each measure on fishery access added to Section 5.9. Further analysis of total cross-sectional area of pathways available for migration and development of maps indicating areas affected by restricted movement cannot be completed at this time due to lack of available data and time constraints. USACE will continue to work closely with NMFS, FWS, and other agencies to ensure that monitoring and adaptive management are effectively utilized to address fishery movement issues.

24. Acknowledged.

25. Concur. Statement added accordingly.

26. Concur. Statement added accordingly.

27

Page 76, line 8683 No information is provided in this section of the draft SEIS that quantifies the acreage of EFH impacted by each component of the TSP. The final SEIS should include a table that identifies each work site; the type structure or work (e.g., widening of conveyance channels; addition of plugs); the acreage of EFH to be impacted or benefited; the general category of EFH (e.g., mud bottoms; intermediate, brackish or saline marsh) to be impacted or benefited; and the duration of impact (permanent or temporary).

28

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5.15.10 Natural Resources
5.15.10.2 Oyster Leases
5.15.10.2.2 Alternative 2 (NER Plan and TSP)

29

Page 150, line 11349 Anticipated changes in salinity across the project area are presented in Figure 5-10, page 32 of the SEIS. The locations of existing oyster harvest (lease) and seed production areas are also provided (Figure 4-7, page 42) in the document. This information should be combined to develop a map of anticipated change in oyster harvest and seed production locations with the TSP.

30

Appendix I: Monitoring and Adaptive Management Plan As noted in previous comments pertaining to section 3.6.5 of the SEIS, the MAMP should be modified in accordance with recommendations contained in the April 12, 2010, letter from the FWS which was prepared in coordination with NMFS. Additionally, as noted above, the MAMP may need to be modified to include monitoring of impacts to marine fishery productivity caused by the installation of a number of water control structures.

27. Concur. Table summarizing impacts associated with each feature added to beginning of Section 5.0 Environmental Consequences and referenced in Section 5.10 EFH.
28. Concur. Text changed accordingly.
29. Concur. Discussion of anticipated changes in oyster production has been expanded in Section 5.15.10.2 of the report. Maps of anticipated oyster lease and seed production locations could not be generated at this time due to time constraints.
30. Concur. The MAMP has been modified in accordance with recommendations contained in the April 12, 2010 letter as appropriate. The MAMP has been modified to include utilization of LDWF fishery monitoring data.



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TERREBONNE PARISH
CONSOLIDATED GOVERNMENT

*Office of Coastal Restoration
and Preservation*

July 2, 2010

Mr. Nathan Dayan, Environmental Section
US Army Corps of Engineers, MVN NOD
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Subject: Louisiana Coastal Area (LCA) Feasibility Study and Draft
Environmental Impact Statement
Convey Atchafalaya River Water to Terrebonne Marshes/ Multi-purpose
Operation of the Houma Navigation Canal Lock Complex

Dear Mr. Dayan:

Thank you for the opportunity to provide comments on the LCA Feasibility Study to Convey Atchafalaya River Water to the Terrebonne Marshes/Multi-purpose Operation of the Houma Navigation Canal Lock Complex (HNC LOCK).

The project area of the combined study authorizations encompass a large portion of the Environmental Management Units (EMU) identified within the Terrebonne Parish Coastal Zone Management (CZM) Program Document, adopted by ordinance in the year 2000. I offer these comments as Chairman of the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee, with the discussion and concurrence of our Projects Sub-committee members.

The Terrebonne Parish CZM document identifies the following programmatic goals and objectives for the Terrebonne Parish Coastal Zone, and any projects developed as part of this ongoing study authorization should be consistent with the following:

- 1) Protection of Historic Ridge Functions
- 2) Maximize Bank Stabilization in order to Protect Existing Shorelines and Banks from Erosion;
- 3) Restore Deteriorated Marshes;

- 4) Decrease Energy of Tidal Influx; and
- 5) Maximize the Beneficial Use of Dredged Material.

As presented, the Tentatively Selected Project Alternative (TSP) proposes the dredging of a new channel (an extension of Bayou Carencro) within the center of the Penchant Basin EMU, without the benefit of bankline stabilization and without the benefit of any structure designed to prevent the intrusion of saltwater from the south up into the fresher marshes of the north. This is contrary to the stated goals and objectives of Terrebonne Parish CZM document. Such a channel, without appropriate bankline stabilization and saltwater control structures would likely cause increased deterioration of the existing “floating marshes” located in this area, and cause irreparable harm to one of the more diverse ecosystems remaining in the Terrebonne Basin.

Tremendous concern has also been expressed with regard to the activities in the eastern portion of the project area, namely, the Grand Bayou area. While it is agreed that the stated goals of this project feature are fundamental to the long-term sustainability of that area, these goals will fall far short of expectations without the protection of existing shorelines and an aggressive effort to maximize bank stabilization. In addition, structures in this portion of the project area should include saltwater control structures that are more substantial than the culverts proposed in the TSP. Non-rock alternatives should be considered for bankline stabilization in order to curb costs and address issues of soil quality in the project area.

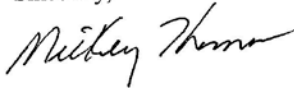
It is the expressed preference of the members of the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee that project implementation should focus on the dredging and bankline stabilization of natural bayous and existing channels rather than the creation of new channels. For example, the dredging of Bayou Carencro and Bayou Grand Caillou in the western basin, Bayou Terrebonne and Upper Bayou Petit Caillou in the eastern portion of the basin would facilitate the movement of fresh water to the southern marshes. This would accomplish the stated goals of this LCA project as well as provide synergistic benefits to other ongoing restoration projects in the area, including LCA project activities. Additionally, this may provide opportunities for the beneficial use of dredged materials, another stated goal of the LCA program. Such materials would be useful for restoration projects, and may provide suitable material for ongoing hurricane risk reduction efforts associated with the Morganza to the Gulf Project.

In addition, it also requested that non-rock alternatives be considered for bankline stabilization during the engineering and design phases of each project feature. Three product alternatives are currently being tested under the CWPPRA Program project TE – Terrebonne Bay Shoreline Protection Demonstration project. In addition to the three products currently under evaluation, additional products are now available that provide the stabilization and protection needed at a lighter weight than traditional rock structures. Such products may reduce costs and address the ongoing soil quality issues in the project area.

With regard to those project features identified for the Lake Boudreaux Unit, it remains unclear at this time whether or not these proposed features will be redundant features of the CWPPPRA Project TE-32, the North Lake Boudreaux Freshwater Introduction Project. Decisions for that project will likely be made by the CWPPPRA Task Force in September or October of 2010. Proposed project features for this LCA authorization should be developed in a manner that will allow for flexibility in selection and implementation, should the CWPPPRA move forward as anticipated.

Thank you again for the opportunity to comment on this feasibility study. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,



Mickey Thomas, Chairman

Cc: Michel Claudet, Parish President
Council Members
CZM & RAC Members
Project File
Council Reading File



P.O. BOX 6097
HOUMA, LOUISIANA 70361
(985) 868-5050



P.O. BOX 2768
HOUMA, LOUISIANA 70361
(985) 868-3000

TERREBONNE PARISH
CONSOLIDATED GOVERNMENT

*Office of Coastal Restoration
and Preservation*

July 2, 2010

Mr. Nathan Dayan, Environmental Section
US Army Corps of Engineers, MVN NOD
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Subject: Louisiana Coastal Area (LCA) Feasibility Study and Draft
Environmental Impact Statement
Convey Atchafalaya River Water to Terrebonne Marshes/ Multi-purpose
Operation of the Houma Navigation Canal Lock Complex

Dear Mr. Dayan:

Thank you for the opportunity to provide comments on the LCA Feasibility Study to Convey Atchafalaya River Water to the Terrebonne Marshes/Multi-purpose Operation of the Houma Navigation Canal Lock Complex (HNC LOCK).

The project area of the combined study authorizations encompass a large portion of the Environmental Management Units (EMU) identified within the Terrebonne Parish Coastal Zone Management (CZM) Program Document, adopted by ordinance in the year 2000. I offer these comments as Chairman of the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee, with the discussion and concurrence of our Projects Sub-committee members.

1

The Terrebonne Parish CZM document identifies the following programmatic goals and objectives for the Terrebonne Parish Coastal Zone, and any projects developed as part of this ongoing study authorization should be consistent with the following:

- 1) Protection of Historic Ridge Functions
- 2) Maximize Bank Stabilization in order to Protect Existing Shorelines and Banks from Erosion;
- 3) Restore Deteriorated Marshes;

1

1. Acknowledged.

- 4) Decrease Energy of Tidal Influx; and
- 5) Maximize the Beneficial Use of Dredged Material.

2 As presented, the Tentatively Selected Project Alternative (TSP) proposes the dredging of a new channel (an extension of Bayou Carencro) within the center of the Penchant Basin EMU, without the benefit of bankline stabilization and without the benefit of any structure designed to prevent the intrusion of saltwater from the south up into the fresher marshes of the north. This is contrary to the stated goals and objectives of Terrebonne Parish CZM document. Such a channel, without appropriate bankline stabilization and saltwater control structures would likely cause increased deterioration of the existing “floating marshes” located in this area, and cause irreparable harm to one of the more diverse ecosystems remaining in the Terrebonne Basin.

3 Tremendous concern has also been expressed with regard to the activities in the eastern portion of the project area, namely, the Grand Bayou area. While it is agreed that the stated goals of this project feature are fundamental to the long-term sustainability of that area, these goals will fall far short of expectations without the protection of existing shorelines and an aggressive effort to maximize bank stabilization. In addition, structures in this portion of the project area should include saltwater control structures that are more substantial than the culverts proposed in the TSP. Non-rock alternatives should be considered for bankline stabilization in order to curb costs and address issues of soil quality in the project area.

4 It is the expressed preference of the members of the Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee that project implementation should focus on the dredging and bankline stabilization of natural bayous and existing channels rather than the creation of new channels. For example, the dredging of Bayou Carencro and Bayou Grand Caillou in the western basin, Bayou Terrebonne and Upper Bayou Petit Caillou in the eastern portion of the basin would facilitate the movement of fresh water to the southern marshes. This would accomplish the stated goals of this LCA project as well as provide synergistic benefits to other ongoing restoration projects in the area, including LCA project activities. Additionally, this may provide opportunities for the beneficial use of dredged materials, another stated goal of the LCA program. Such materials would be useful for restoration projects, and may provide suitable material for ongoing hurricane risk reduction efforts associated with the Morganza to the Gulf Project.

5 In addition, it also requested that non-rock alternatives be considered for bankline stabilization during the engineering and design phases of each project feature. Three product alternatives are currently being tested under the CWPPRA Program project TE – Terrebonne Bay Shoreline Protection Demonstration project. In addition to the three products currently under evaluation, additional products are now available that provide the stabilization and protection needed at a lighter weight than traditional rock structures. Such products may reduce costs and address the ongoing soil quality issues in the project area.

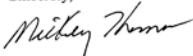
2. Acknowledged. During pre-construction engineering and design the team will sample the area to determine the alignment of the historic Bayou Carencro Channel. The WD2 channel will follow this alignment and the mineral soils found in the ridge will be used beneficially to create stable banklines. This channel will re-establish the natural hydrology and geomorphology of Bayou Carencro which includes occasional storm and drought events that may occur as part of the natural process. In addition, any negative impacts can be addressed through monitoring and adaptive management.
3. Acknowledged. This comment is not specific enough to project features including culverts and specific banklines in the study area to be properly addressed.
4. Acknowledged. Dredging of Carencro Bayou is included in the Recommended Plan (feature WD2). Due to the magnitude of development along the length of Bayou Grand Caillou and the lack of connection to the GIWW, dredging this waterway was not considered a reasonable alternative. Analysis conducted in conjunction with the CWPPRA TE-32a Lake Boudreaux Freshwater Introduction Project demonstrated that increasing flow by way of Bayou Petit Caillou and Bayou Terrebonne was not efficient or technically feasible. Therefore, these features were eliminated from consideration for the LCA-ARTM study.
5. Acknowledged.

6

With regard to those project features identified for the Lake Boudreaux Unit, it remains unclear at this time whether or not these proposed features will be redundant features of the CWPPRA Project TE-32, the North Lake Boudreaux Freshwater Introduction Project. Decisions for that project will likely be made by the CWPPRA Task Force in September or October of 2010. Proposed project features for this LCA authorization should be developed in a manner that will allow for flexibility in selection and implementation, should the CWPPRA move forward as anticipated.

Thank you again for the opportunity to comment on this feasibility study. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,



Mickey Thomas, Chairman

Cc: Michel Claudet, Parish President
Council Members
CZM & RAC Members
Project File
Council Reading File

6. Many of the LCA-ARTM features identified in the Lake Boudreaux area are, indeed, features pulled directly from the CWPPRA TE-32a Project. Since the TE-32a Project was not approved for construction funding at the time of LCA-ARTM plan formulation, it was not considered to be part of the Future Without Project condition. Implementation of the TE-32a project features by CWPPRA would not negatively impact the LCA-ARTM Project.

**LDEQ Comments regarding US ACOE Proposal to Convey Atchafalaya River Water to the Northern
Terrebonne Marshes
07/05/2010**

**LDEQ Comments Concerning US Army Corps of Engineers’ Convey
Atchafalaya River Water to Northern Terrebonne Marshes Study, LA, May
2010**

General Comments:

1. LDEQ supports the Corps’ efforts to restore the wetland habitat of the Northern Terrebonne Marshes. Overall, the project will be beneficial to the area.
2. The Lake Boudreaux and Grand Bayou Terrebonne marshes are disappearing. The City of Houma pumps storm water to Lake Boudreaux via Bayou Chauvin. This nutrient and sediment loading adversely impacts the water quality for Bayou Chauvin and Lake Boudreaux. However, pumping this storm water to the Northern Terrebonne Marshes instead of Bayou Chauvin and Lake Boudreaux could have a mutually beneficial impact. The sediment and nutrient would be placed into the marsh, where it can be assimilated and help rebuild the marshes. At the same time, the sediment and nutrients would not be placed in Bayou Chauvin and Lake Boudreaux, where these parameters can cause impairments to the water quality. Additionally, other pumping stations located within this project area should also be considered for re-routing to the marshes. The LDEQ has water quality standards for nutrient assimilation in wetlands and can assist in the effective planning for management of out-of-channel storm water flows.

LDEQ Comments regarding US ACOE Proposal to Convey Atchafalaya River Water to the Northern Terrebonne Marshes
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General Comments:

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2. The Lake Boudreaux and Grand Bayou Terrebonne marshes are disappearing. The City of Houma pumps storm water to Lake Boudreaux via Bayou Chauvin. This nutrient and sediment loading adversely impacts the water quality for Bayou Chauvin and Lake Boudreaux. However, pumping this storm water to the Northern Terrebonne Marshes instead of Bayou Chauvin and Lake Boudreaux could have a mutually beneficial impact. The sediment and nutrient would be placed into the marsh, where it can be assimilated and help rebuild the marshes. At the same time, the sediment and nutrients would not be placed in Bayou Chauvin and Lake Boudreaux, where these parameters can cause impairments to the water quality. Additionally, other pumping stations located within this project area should also be considered for re-routing to the marshes. The LDEQ has water quality standards for nutrient assimilation in wetlands and can assist in the effective planning for management of out-of-channel storm water flows.

1. Acknowledged. Comment of support noted.

2. Acknowledged. That type of project feature would be outside the authorized scope of conveying Atchafalaya River water for this study.



MICHEL H. GLAUDET
PARISH PRESIDENT

OFFICE OF THE PARISH PRESIDENT
TERREBONNE PARISH CONSOLIDATED GOVERNMENT
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HOUMA, LOUISIANA 70361-6097



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E-MAIL: mhclaudet@pcg.org

July 6, 2010

Mr. Nathan Dayan, Environmental Section
US Army Corps of Engineers, MVN NOD
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Subject: Louisiana Coastal Area (LCA) Feasibility Study and Draft
Environmental Impact Statement
Convey Atchafalaya River Water to Terrebonne Marshes/ Multi-purpose
Operation of the Houma Navigation Canal Lock Complex

Dear Mr. Dayan:

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The project area of the combined study authorizations encompass a large portion of the Environmental Management Units (EMU) identified within the Terrebonne Parish Coastal Zone Management (CZM) Program Document, adopted by ordinance in the year 2000. This document identifies the following programmatic goals and objectives for the Terrebonne Parish Coastal Zone, and any projects developed as part of this ongoing study authorization should be consistent with the following:

- 1) Protection of Historic Ridge Functions
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- 4) Decrease Energy of Tidal Influx; and
- 5) Maximize the Beneficial Use of Dredged Material.

As presented, the Tentatively Selected Project Alternative (TSP) proposes the dredging of a new channel (an extension of Bayou Carencro) within the center of the Penchant Basin EMU, without the benefit of bankline stabilization and without the benefit of any structure designed to prevent the intrusion of saltwater from the south up into the fresher

marshes of the north. Such a channel, without appropriate bankline stabilization and saltwater control structures would likely cause increased deterioration of the remaining “floating marshes” located in this area, and cause irreparable harm to one of the more diverse ecosystems remaining in the Terrebonne Basin. Furthermore, the introduction of additional freshwater into the Upper Penchant Basin will likely cause an increase in backwater flooding the area, again resulting in continued degradation of these important habitats.

The Terrebonne Parish Coastal Zone Management and Restoration Advisory Committee (CZM&RAC) has expressed tremendous concern has also been expressed with regard to the following project features in the Grand Bayou area. While it is agreed that the stated goals of this project feature are fundamental to the long-term sustainability of that area, these goals will fall far short of expectations without the protection and stabilization of existing shorelines and banklines. In addition, structures in this portion of the project area should include saltwater control structures that are more substantial than the culverts proposed in the TSP. Non-rock alternatives should be considered for bankline stabilization in order to curb costs and address issues of soil quality in the project area.

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Thank you again for the opportunity to comment on this feasibility study. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,



Michel Claudet

Cc: CZM & RAC Members
Project File
Council Reading File



MICHEL H. GLAUDET
PARISH PRESIDENT

OFFICE OF THE PARISH PRESIDENT
TERREBONNE PARISH CONSOLIDATED GOVERNMENT
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July 6, 2010

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5. Acknowledged.
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Thank you again for the opportunity to comment on this feasibility study. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,



Michel Claudet

Cc: CZM & RAC Members
Project File
Council Reading File

From: Dayan, Nathan S MVN
Sent: Friday, July 09, 2010 6:58 AM
To: Runyon, Kip R MVS; Peukert, John MVS; Mickal, Sean P MVN
Subject: FW: DEQ SOV: 100603/1020 USACE DRAFT EIS - LCA- Vol. III

From: Diane Hewitt [mailto:Diane.Hewitt@LA.GOV]
Sent: Thu 7/8/2010 2:29 PM
To: Dayan, Nathan S MVN
Subject: DEQ SOV: 100603/1020 USACE DRAFT EIS - LCA- Vol. III

July 8, 2010

Joan M. Exnicios, Chief
USACE Environ. Planning Branch
P.O. Box 60267
New Orleans, LA 70160-0267
nathan.s.dayan@usace.army.mil

RE:
100603/1020 USACE DRAFT EIS - LCA- Vol. III
(on disk) Convey Atchafalaya River
Lafourche, Terrebonne, St. Mary Parishes

Dear Ms. Exnicios:

The Department of Environmental Quality (LDEQ), Offices of Environmental Services and Environmental Compliance have received your request for comments on the above referenced project. Please take any necessary steps to obtain and/or update all necessary approvals and environmental permits regarding this proposed project.

There were no objections based on the information in the document submitted to us. However, the following comments have been included below. Should you encounter a problem during the implementation of this project, please notify LDEQ's Single-Point-of-contact (SPOC) at (225) 219-3640.

The Office of Environmental Services/Permits Division recommends that you investigate the following requirements that may influence your proposed project:

- If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permit Division at (225) 219-3181 to determine if your proposed improvements require one of these permits.
- All precautions should be observed to control nonpoint source pollution from construction activities.

- If any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps directly to inquire about the possible necessity for permits. If a Corps permit is required, part of the application process may involve a water quality certification from LDEQ.
- All precautions should be observed to protect the groundwater of the region.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28. Lead-Based Paint Activities, LAC 33:III.Chapter 27. Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation), and LAC 33:III.5151. Emission Standard for Asbestos for any renovations or demolitions.
- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.

Currently, Lafourche, Terrebonne, and St. Mary Parish is classified as attainment parishes with the National Ambient Air Quality Standards.

Please forward all future requests to Ms. Diane Hewitt, LDEQ/Performance Management/ P.O. Box 4301, Baton Rouge, LA 70821-4301, and your request will be processed as quickly as possible.

If you have any questions, please feel free to contact me at (225) 219-4079 or by email at diane.hewitt@la.gov. Permitting questions should be directed to the Office of Environmental Services at (225) 219-3181.

Sincerely,

Diane Hewitt
Performance Management
LDEQ/Community and Industry Relations
Business and Community Outreach Division
Office of the Secretary
P.O. Box 4301 (602 N. 5th Street)
Baton Rouge, LA 70821-4301
Phone: 225-219-4079
Fx: 225-325-8208
E-mail: diane.hewitt@la.gov

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July 8, 2010

Joan M. Exnicios, Chief
USACE Environ. Planning Branch
P.O. Box 60267
New Orleans, LA 70160-0267
nathan.s.dayan@usace.army.mil

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- LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permit Division at (225) 219-3181 to determine if your proposed improvements require one of these permits.
- All precautions should be observed to control nonpoint source pollution from construction activities.

1. Concur. During pre-construction engineering and design, impacts and/or construction methods resulting in a discharge will be identified and submitted to LDEQ as part of a LPDES permit application. Discharge will be managed in a manner that will either eliminate or reduce non-point discharge in accordance with LPDES permit guidelines. All other applicable permits will be sought and all applicable regulations will be followed.

- If any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps directly to inquire about the possible necessity for permits. If a Corps permit is required, part of the application process may involve a water quality certification from LDEQ.
- All precautions should be observed to protect the groundwater of the region.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- Any renovation or remodeling must comply with LAC 33:III Chapter 28 Lead-Based Paint Activities, LAC 33:III Chapter 27 Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation), and LAC 33:III.5151 Emission Standard for Asbestos for any renovations or demolitions.
- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.

Currently, Lafourche, Terrebonne, and St. Mary Parish is classified as attainment parishes with the National Ambient Air Quality Standards.

Please forward all future requests to Ms. Diane Hewitt, LDEQ/Performance Management/ P.O. Box 4301, Baton Rouge, LA 70821-4301, and your request will be processed as quickly as possible.

If you have any questions, please feel free to contact me at (225) 219-4079 or by email at diane.hewitt@la.gov. Permitting questions should be directed to the Office of Environmental Services at (225) 219-3181.

Sincerely,

Diane Hewitt
Performance Management
LDEQ/Community and Industry Relations
Business and Community Outreach Division
Office of the Secretary
P.O. Box 4301 (602 N. 5th Street)
Baton Rouge, LA 70821-4301
Phone: 225-219-4079
Fx: 225-325-8208
E-mail: diane.hewitt@la.gov

CONTINENTAL LAND & FUR CO., INC.

39730 LES ROIS ROAD

GUEYDAN, LOUISIANA 70542-5246

TELEPHONE (337) 774-0098 CELL (337) 519-8006 FAX (337) 774-0823

July 3, 2010

VIA REGULAR MAIL & EMAIL

U.S. Army Corps of Engineers
Planning, Programs and Project Management Division
Environmental Planning and Compliance Branch
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Attn: Nathan Dayan

Re: Integrated Feasibility Study and
Environmental Impact Statement for the
Convey Atchafalaya River Water to Northern
Terrebonne Marshes (ARTM) and
Multipurpose Operations of the Houma
Navigational Lock Lafourche, Terrebonne,
St. Mary Parish, Louisiana

Gentlemen:

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CL&F has met, along with other land company representatives, with the engineers, biologists, and other U.S. Army Corps of Engineers ("USACE") representatives on three occasions to discuss this project, ask questions and request additional information. CL&F also attended two public meetings and sent information and questions to the U.S. Fish and Wildlife Service ("USFWS") and questions to the USACE.

CL&F understands the problems and need for freshwater in southern Terrebonne Parish. However, the basic concept of introducing more water into the Penchant Basin was flawed from the beginning. In previous plans and at numerous meetings dating back perhaps 15 years, the problem of excessive flooding in the upper Penchant Basin has been discussed. These discussions resulted in written comments from landowners and acknowledgement by state and federal agencies that no more water should be introduced into the Penchant Basin until the problem of excessive flooding has been addressed. It appears that the authors of this project failed to consider the EIS from CWPPRA project, TE-34, the Penchant Basin. The TE-34 EIS describes

U.S. Army Corps of Engineers
Planning, Programs and Project Management Division
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July 3, 2010

deterioration of floating marshes, subsidence, and excessive water levels associated with the Atchafalaya River. This was also pointed out by CL&F at some of the first land company meetings with the USACE. The excessive flooding of the freshwater marshes in the West-Bayou Penchant Area was barely mentioned in the captioned document. In the Executive Summary of the captioned document (ES-2) it is mentioned that without action, the floatant marshes within the Penchant Basin would continue to deteriorate due to excessive backwater flooding events from the Atchafalaya River. However, in the Land Loss section of the captioned document it appears that these marshes show a positive growth rate. Under the discussion of Ecological Stressors on page 5 of the captioned document there is no reference to excessive flooding in the northwestern Terrebonne Parish freshwater marshes, only reference to decreased freshwater in the study area. In this discussion, it appears that the study area has been reduced to only marshes of southern Terrebonne Parish.

During the early stages of the project Feasibility Study and EIS, the USACE's preferred Alternative involved a structure to introduce more water into the Penchant Basin. The structure under consideration was to be located on the Avoca Island Levee. Fortunately, after additional study and a cost benefit analysis, this Alternative was dropped. However, the new selected Alternative 2 does nothing to address the flooding problems of the upper portion of the Penchant Basin and CL&F has concerns that it may create additional problems for this area as stated below.

The three main features of Alternative 2 in the West-Bayou Penchant Area are: (1) widening a narrow portion of the GIWW, (2) opening up Carencro Bayou and (3) installing a plug and weir. CL&F has expressed concern about the opening (dredging) of Carencro Bayou since it was first considered. The lack of any type of structure on the lower end of this new channel to stop saltwater from moving north is totally unacceptable to CL&F. The USACE heard the same concern expressed by a member of the Terrebonne Parish Coastal Advisory Committee at the June 2, 2010 public meeting in Houma. CL&F also believes other land companies in the area share our concern. CL&F understands the concept of moving freshwater south from Bayou Penchant into brackish marshes experiencing saltwater intrusion, but a structure to prevent saltwater from moving north in this channel during low river flow and/or drought events is essential. A second concern of saltwater intrusion would obviously be a storm event. CL&F was told that the USFWS helped with the analysis of salinity. CL&F provided an email to the USFWS with salinity data that demonstrate the reason for our concern about salinity. This email, dated March 8, 2010, with all attachments, will be included with this letter. As shown in the attachments, data collected at a station directly connected to the lower end of Carencro Bayou indicated much higher salinities than a site on the north end of the bayou during Hurricanes Rita and Ike. With an open channel 200 feet wide and 7 feet deep, it would seem that during low flows, drought or storm events, salinities on the north end of this channel would be much higher than they would be without the channel. At several meetings CL&F asked USACE officials questions about modeling salinities that might be expected during such events. The USACE responded in an email dated June 21, 2010, that they did not expect to be able to acquire the data needed to run the model to simulate the 1999-

U.S. Army Corps of Engineers
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July 3, 2010

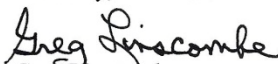
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CL&F, other land companies and members of the public learned at the June 2, 2010 public meeting that the proposed dredging of Carencro Bayou does not include any banks along this channel. The marshes adjacent to this proposed channel are highly organic and fragile, as can be documented by Dr. Charles Sasser, LSU. It was explained at this public meeting that the dredge material will be used beneficially instead of to build strong stabilized bank lines. If banks are not built adequately and maintained, the adjacent marshes will erode and convert to open water resulting in irreparable damage to CL&F property. This one factor, loss of adjacent marshes along this channel, could completely change the AAHUs and decrease the acreages projected to be saved as a result of the project.

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As always, we are available to discuss our position on the project.

Sincerely,


Greg Linscombe
Fee Land Manager

Enclosures

cc: Wes LeBlanc, OCPR
Jerome Zeringue, OCPR
Steve Mathies, OCPR
George Strain, CL&F

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July 3, 2010

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U.S. Army Corps of Engineers
Planning, Programs and Project Management Division
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Post Office Box 60267
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Attn: Nathan Dayan

Re: Integrated Feasibility Study and
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Multipurpose Operations of the Houma
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1

1. Acknowledged. While not expressly stated in the document, the study team was fully aware of the need to avoid stage increases in the upper Penchant Basin and was aware of the Environmental Assessment for TE-34. The RP does not increase stages in the upper Penchant Basin as detailed in Engineering Appendix L, Annex 2, Detailed Hydraulic Modeling Studies. Potential errors in land loss analysis in the upper Penchant Basin due to the presence of floating vegetation are now acknowledged in the report.

U.S. Army Corps of Engineers
Planning, Programs and Project Management Division
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July 3, 2010

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2. Acknowledged. During pre-construction engineering and design the team will sample the area to determine the alignment of the historic Bayou Carencro Channel. The WD2 channel will follow this alignment and the mineral soils found in the ridge will be used beneficially to create stable banklines. This channel will reestablish the natural hydrology and geomorphology of Bayou Carencro which includes occasional storm and drought events that may occur as part of the natural process. Hydraulic analysis will be conducted to determine saltwater intrusion impacts, and the design will minimize these impacts. In addition, any negative impacts can be addressed through monitoring and adaptive management.

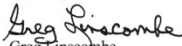
U.S. Army Corps of Engineers
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As always, we are available to discuss our position on the project.

Sincerely,

Greg Linscombe
Fee Land Manager

Enclosures
cc: Wes LeBlanc, OCP
Jerome Zeringue, OCP
Steve Mathies, OCP
George Strain, CL&F

3. See response to Comment #2 above.



July 6, 2010

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

Re: LCA Draft Feasibility Reports and Draft Environmental Impact Statements

Dear Colonel Lee:

Thank you for the opportunity to review and comment on the LCA Draft Feasibility Reports and Draft Environmental Impact Statements. Section 7006(e)(3) of the 2007 WRDA identifies six near-term restoration projects that Congress has authorized for construction subject to, among other things, completion of feasibility studies and a Chief's Report before December 31, 2010. The draft Feasibility Report covers five of those six projects:

- Medium Diversion at White Ditch
- Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock (two projects merged)
- Small Diversion at Convent/Blind River
- Amite River Diversion Canal (ARDC) Modification

Although we were disappointed that the initial deadline of December 31, 2008 was missed, we commend the U.S. Army Corps of Engineers and the State of Louisiana in working diligently to meet the December 31, 2010 as directed by WRDA. It is imperative that these projects are constructed as quickly as possible and our organizations are available to assist to ensure the urgency of these projects is understood in Washington, D.C. and in the State.

We understand the need for additional analysis and the increasing uncertainty of the Terrebonne Basin Barrier Shoreline Project considering the Deepwater Horizon oil spill. However, the Deepwater Horizon oil spill has also shown the urgent need to restore and maintain our barrier island chains to protect the interior marshes from multiple threats, including massive oil spills and hurricanes. We request the USACE to distribute an updated timeline for completion to the public and that timeline ensures that this feasibility report is completed at the earliest possible time with the understanding that some details may have to be modified during the engineering, design and construction phase. We request that the Chief's Report also address an extended deadline for the

Terrebonne Basin Barrier Shoreline project that will not be meeting the required WRDA deadline due to these extraordinary circumstances.

We also applaud the USACE and the State of Louisiana for incorporating Monitoring and Adaptive Management Plans at the feasibility stage of project planning. We support the use of project funding to conduct monitoring and expand research and development on these restoration projects to provide lessons learned and flexibility in operations and management. We offer our assistance as the Monitoring and Adaptive Management Plans continue to develop.

Two of the four projects (ARDC Modifications and Atchafalaya to Terrebonne/HNC Lock) were restricted from providing large scale benefits due to the cost constraints authorized in WRDA 2007. The USACE and State of Louisiana boldly expanded the Medium Diversion at White Ditch beyond its cost authorization to adequately address the sustainability of the study area. We commend the USACE and State for this action. We would have liked to see the same initiative to address the concerns of the Maurepas and Terrebonne Basins. Many large-scale restoration measures were considered in these studies, but dismissed due to costs. The ARDC Modification Project only addressed one of the four identified degraded hydrologic units and the Atchafalaya to Terrebonne/HNC Lock Project only reduces the land loss rate by 10 percent over the 50 year period. Much larger scale restoration in these basins is needed. In these instances, the project did not truly meet the objectives of the project in the entire study area. A phased approach to project implementation should be provided that evaluates all needed restoration measures to meet the full objectives of the study without any cost constraints, identifies the critical first steps, and identifies phased project implementation based on available funding.

It is imperative that the USACE complete the Feasibility Reports and the Chief's Report for these LCA projects before the end of the year. Specific comments on each project are enclosed. We believe these comments could be addressed during the engineering, design, construction or adaptive management phases of the projects and will not delay the process.

The undersigned groups welcome the opportunity to discuss our recommendations at any time.

Sincerely,

Coalition to Restore Coastal Louisiana

Steven Peyronnin
Executive Director

Natalie Snider
Science Director

Lake Pontchartrain Basin Foundation

John Lopez, Ph.D.
Director of Coastal Sustainability

Environmental Defense

Jim Tripp
General Counsel

Angelina Freeman, Ph.D.
Coastal Scientist

National Audubon Society

G. Paul Kemp, Ph.D.
Vice President, Gulf Coast Initiative

National Wildlife Federation

Karla Raettig
National Campaign Director

cc: Garret Graves, Coastal Protection and Restoration Authority
Steve Mathies, Louisiana Office of Coastal Protection and Restoration
Timothy Axtman, U.S. Army Corps of Engineers



Medium Diversion at White Ditch LCA Draft Feasibility Report

A key component to restoration of Louisiana’s coastal landscape is to reconnect the Mississippi River to the wetlands by mimicking natural processes that use the power of the Mississippi River to build land and maintain ecological integrity including habitats, communities, and storm buffering capacity. We strongly support the Medium Diversion at White Ditch and its objectives to provide freshwater, nutrients and sediments designed to restore degraded habitat and sustain a larger coastal ecosystem to support and protect the environment, economy, and culture of southern Louisiana.

Much has been learned recently about the design and operation of diversions in the Lower Mississippi River for coastal restoration, including the advantages of using pulsing as an operational strategy to maximize sediment capture (Allison and Meselhe, 2010). With rising sea levels and predictions for increased storm frequency/intensity, it is imperative that restoration projects are designed to maximize potential for offsetting projected land loss. Therefore, we commend and support the Tentatively Selected Plan (TSP) incorporating pulsing at 35,000 cfs (cubic feet per second) at high river flows to maximize sediment capture in the planning and operation of the diversion. The minimal amount of shoaling in the river expected from operation of the diversion in a pulsed fashion (1,000 cfs diversion that is pulsed at 35,000 cfs at the beginning of spring flood when suspended sediment concentrations are significantly elevated) is an additional advantage to this operational regime. Designing flexibility into this diversion project by providing pulsing capacity allows adaptation to unforeseen circumstances, as demonstrated by the Deepwater Horizon oil spill where river diversions were used to keep oil at bay. We applaud the Corps for evaluating a pulsed diversion in the analysis, and agree that the pulsed operation of the TSP maintains the medium diversion category authorization.

The sediment concentrations in the Mississippi River can vary significantly according to location, and a thorough analysis of site specific data and modeling would improve prediction of sediment efficiency and land building potential relative to diversion locations. Extensive sediment data collection and modeling is being undertaken in the White Ditch reach of the river in support of the Myrtle Grove Land Building Diversion. Using this type of data and modeling results in the benefits and drawbacks of location selection would provide a more robust analysis. We suggest incorporation of this additional data in Planning, Engineering, and Design.

The conveyance channel for the TSP accounts for almost half the total cost for the project. We agree that amending language from House/Senate subcommittees that

adjusts the project as authorized in WRDA 2007 for the increase in construction cost is warranted. However, we recommend reevaluating the conveyance channel and whether natural channel formation can be effectively utilized allowing the engineering to be scaled back (thereby reducing cost) to be investigated in Planning, Engineering, and Design. Natural channel formation could be incorporated into the Monitoring and Adaptive Management Plan and funding for channel modifications could be acquired on an as needed basis as a part of Operations and Maintenance.

References

Allison, M.A. and Meselhe, E.A., 2010. The use of large water and sediment diversions in the lower Mississippi River (Louisiana) for coastal restoration. *Journal of Hydrology* 387, 346-360.



**Convey Atchafalaya to Northern Terrebonne Marsh/
Multipurpose Operation of the Houma Navigation Canal (HNC) Lock
LCA Draft Feasibility Report**

In contrast to the robustness of the Medium Diversion at White Ditch project, the narrowing of ambition in the design of the Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock is striking. As stated in the Draft Feasibility Report:

The purpose of the project is to reverse the current trend of marsh degradation in the project area resulting from subsidence, erosion, saltwater intrusion, and lack of sediment and nutrient deposition. The project proposes to accomplish this by utilizing fresh water, sediments, and nutrients from the Atchafalaya River and the Gulf Intracoastal Waterway (GIWW).

The report goes further to define the objectives of the project to include:

- Prevent, reduce, and/or reverse future wetland loss
- Achieve and maintain characteristics of sustainable marsh hydrology
- Reduce salinity levels in project area
- Increase sediment and nutrient load to surrounding wetlands
- Increase residence time of fresh water
- Sustain productive fish and wildlife habitat

We do not feel that the alternatives developed for this project meet the objectives of the project. Alternative 2 was selected as the Tentatively Selected Plan. However, the TSP will reduce land loss rates by a mere 10 percent over the 50-year project period and this benefit will be lost with intermediate or high relative sea level rise. The Draft Feasibility Report states that modeling of Alternative 3 under intermediate RSLR would reduce the effectiveness of the project by 87 percent and effectiveness of the other alternatives, including the TSP, would be similar. None of the alternatives would prevent marsh collapse at the high RSLR rate.

Although none of the alternatives meet the full objectives of the project, there are benefits to be realized from the project. Based on the description of the eight alternatives available, we feel that Alternative 3 has additional benefits over Alternative 2 and should be selected as the Tentatively Selected Plan (TSP). Alternative 3 includes all the measures in Alternative 2 plus two additional measures in the West – Bayou Penchant Area. To increase flows from the Atchafalaya River, water will be moved from Bayou Shaffer to the Avoca Island Cutoff/Bayou Chene. This will be accomplished by creating an opening through the Avoca Island levee and installing a large gated diversion structure

(WS4) in the opening. The remaining measure (WO2) would place stone along the shore of Bayou Chene and Avoca Island Cutoff to protect from increased flows. Alternative 3 would prevent 10,308 acres of emergent marsh soils from being converted to open water over the 50-year period of analysis and would generate 3,325 AAHUs.

Alternative 2, the TSP, does not make any change to the Avoca Island Levee, one of the root causes for problems in this area that this project is designed to address. The northern and central Terrebonne Basin is in dire need to additional freshwater and sediment inputs. While even Alternatives 3 would provide only modest amounts of water and sediment into this deteriorating basin, they would represent a net addition of water and sediment above current levels. We would therefore urge further consideration of a gate diversion structure in a new Avoca Island levee opening, a structure that would return the hydrology of this part of the coast more to the distribution of flows that existing prior to construction of the levee.



Small Diversion at Convent/Blind River LCA Draft Feasibility Report

A key component to restoration of Louisiana’s coastal landscape is to reconnect the Mississippi River to the wetlands by mimicking natural processing that use the power of the Mississippi River to build land and maintain ecological integrity including habitats, communities, and storm buffering capacity. We strongly support the Small Diversion at Convent/Blind River and its objectives to provide freshwater, nutrients and sediments designed to restore and sustain degraded forest ecosystem to support and protect the environment, economy, and culture of southern Louisiana.

We support the selection of Alternative 2, a 3,000-cfs gated culvert diversion structure at Romeville, Louisiana, as the TSP for the Small Diversion at Convent/Blind River. Alternative 2 is also the NER Plan. Although we typically support larger flow rates, we understand the constraints of the receiving area and the need to provide both wet and dry periods for natural regeneration of the forest. We also support the robust monitoring plan to be utilized to adaptively manage the structure operations including optimal pulsing periods and various flow rate impacts.

We are concerned about the requirements for Operations, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R). The Feasibility Report estimates that the total annual cost will be \$2,754,000. Over the 50 year lifetime of the project, that equates to \$137,700,000 in OMRR&R. Most of this cost is associated with dredging in the Transmission Canal (\$2,200,000 per year). There was no discussion of alternatives to dredging, such as modification to the canal to limit sedimentation. Although the material will be used beneficially and “discharged into the swamp in a controlled manner to supplement land-building”, there is no detailed discussion on how this will be accomplished.

In addition, the deposition of 150,000 cubic yards of material annually appears to be an estimate based on multiple assumptions. With the uncertainty involved, the Monitoring and Adaptive Management Plan should monitor impacts to the Transmission Canal and recommend dredging on an as needed basis. The adaptive management plan should also evaluate structure operation and pulsing that maximizes impacts and minimizes dredging requirements.

Lastly, Appendix L: Engineering Appendix states that material dredged during the construction of the Transmission Canal can be sold as excess spoil by the contractor or used to widen/raise the adjacent berm. There appears to be no discussion of alternatives to use the material beneficially.



Amite River Diversion Canal Modifications LCA Draft Feasibility Report

The study area for the Amite River Diversion Canal Modifications Project is within one of the largest remaining tracts of coastal freshwater swamps in Louisiana. Some of the study area is degrading to marsh or open water. The continued degradation of these areas will lead to loss of ecological function, storm surge protection values, and a unique habitat. We strongly support the Amite River Diversion Canal Modifications and its objectives to provide freshwater, nutrients and sediments into these degraded forest ecosystems to support and protect the environment, economy, and culture of southern Louisiana.

Alternatives

The Amite River Diversion Canal Modification is the only project included in the Draft Feasibility Reports where the National Ecosystem Restoration (NER) Plan, Alternative 39, was not selected as the Tentatively Selected Plan (TSP). Alternative 33 was ranked as the 4th best performing plan but was selected as the TSP due to cost constraints under the current WRDA 2007 authorization. However, the acreage of benefits for Alternative 39 provides double the benefits of the TSP over the 50 year study period and impacts all of the critical, degrading hydrologic units identified within the study.

Although the TSP, Alternative 33, meets the objectives of the study, it only meets those objectives in the most critical hydrologic unit, NE-2. The other three degraded hydrologic units (NE-1, SE-1 and SE-2) are also in critical need for hydrologic restoration and the TSP does not meet the project objectives in these units of the study area. We must keep in mind that these areas will continue to degrade, increasing the difficulty and cost of restoring these areas in the future. The maximum cost allowance in WRDA 2007 is \$10,760,000 and the NER Plan total cost is estimated at \$13,600,000. The difference of \$2,840,000 is a small cost difference in order to double the acres benefited from this project and restore hydrologic function to all four critical hydrologic units.

The Chiefs Report should acknowledge that the environmentally-preferred and cost-effective alternative was not selected due to authorization constraints. Additional authorization should be sought to authorize the NER Plan for completion under the same Feasibility Study and Environmental Impact Statement.

We fully support the State of Louisiana's position on this project:

CPRA supports the NER plan (Alternative 39) since this plan includes all of the most critical areas within the Maurepas Swamp basin, establishes the greatest amount of hydrologic connectivity of all of the alternatives, is cost-effective while providing the most benefits, and is a best-buy plan. However, due to authorized cost limitations in WRDA 2007, CPRA supports Alternative 33 as the TSP. CPRA believes the project warrants additional Congressional authorization to increase funding and allow the implementation of the NER plan (Alternative 39) to fully address the Maurepas Swamp's ecosystem needs identified in this report.

Monitoring and Adaptive Management Plan

We certainly understand the need to incorporate adaptive management into the LCA projects. However, the Feasibility Report states that there are minimal active adaptive management opportunities for the Amite River Diversion Canal project and that the lessons learned would not likely apply to other coastal Louisiana restoration projects. The Monitoring and Adaptive Management Plan states that the Amite River Diversion Canal project will not be adaptively managed.

The Feasibility Study analyzed the need for restoration throughout the study area and identified four hydrologic units in a degraded state. Hydrologic restoration will only occur in the NE-2, however it is still imperative to understand the impacts of this decision on the other degrading hydrologic units. Although the Monitoring and Adaptive Management Plan, includes the monitoring objectives for the entire study area, which includes the four most critical hydrologic units, the monitoring procedures are described for within the project area, which only includes one of the critical units, NE-2. Thus, it is unclear if the Monitoring and Adaptive Management Plan intends to monitor ecological variables in the entire study area or just the project area.

It is our recommendation that the Monitoring and Adaptive Management Plan collect monitoring data on the entire study area, or at least the four degraded hydrologic units, to not only understand the outcomes of the project construction but to also understand the outcomes of project decision-making.

We are also concerned with the cost estimates associated with Alternative 33, specifically the costs to monitor the project outcomes (\$2,971,200). This cost is nearly 40 percent of the total project cost and we assume will only cover monitoring within the project construction area. For the NER Plan, Alternative 39, monitoring is only 26.9 percent of the total project cost.

Although monitoring and research is one of the most important aspects of project performance and future planning, and those costs should be incorporated into the total project costs, we should be very aware of the need to balance monitoring and the overall project costs. In addition, these monitoring costs would be more reasonable if monitoring was being conducted on the entire study area instead of just one of the hydrologic units.



July 6, 2010

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

Re: LCA Draft Feasibility Reports and Draft Environmental Impact Statements

Dear Colonel Lee:

Thank you for the opportunity to review and comment on the LCA Draft Feasibility Reports and Draft Environmental Impact Statements. Section 7006(e)(3) of the 2007 WRDA identifies six near-term restoration projects that Congress has authorized for construction subject to, among other things, completion of feasibility studies and a Chief's Report before December 31, 2010. The draft Feasibility Report covers five of those six projects:

- Medium Diversion at White Ditch
- Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock (two projects merged)
- Small Diversion at Convent/Blind River
- Amite River Diversion Canal (ARDC) Modification

Although we were disappointed that the initial deadline of December 31, 2008 was missed, we commend the U.S. Army Corps of Engineers and the State of Louisiana in working diligently to meet the December 31, 2010 as directed by WRDA. It is imperative that these projects are constructed as quickly as possible and our organizations are available to assist to ensure the urgency of these projects is understood in Washington, D.C. and in the State.

We understand the need for additional analysis and the increasing uncertainty of the Terrebonne Basin Barrier Shoreline Project considering the Deepwater Horizon oil spill. However, the Deepwater Horizon oil spill has also shown the urgent need to restore and maintain our barrier island chains to protect the interior marshes from multiple threats, including massive oil spills and hurricanes. We request the USACE to distribute an updated timeline for completion to the public and that timeline ensures that this feasibility report is completed at the earliest possible time with the understanding that some details may have to be modified during the engineering, design and construction phase. We request that the Chief's Report also address an extended deadline for the

Terrebonne Basin Barrier Shoreline project that will not be meeting the required WRDA deadline due to these extraordinary circumstances.

We also applaud the USACE and the State of Louisiana for incorporating Monitoring and Adaptive Management Plans at the feasibility stage of project planning. We support the use of project funding to conduct monitoring and expand research and development on these restoration projects to provide lessons learned and flexibility in operations and management. We offer our assistance as the Monitoring and Adaptive Management Plans continue to develop.

Two of the four projects (ARDC Modifications and Atchafalaya to Terrebonne/HNC Lock) were restricted from providing large scale benefits due to the cost constraints authorized in WRDA 2007. The USACE and State of Louisiana boldly expanded the Medium Diversion at White Ditch beyond its cost authorization to adequately address the sustainability of the study area. We commend the USACE and State for this action. We would have liked to see the same initiative to address the concerns of the Maurepas and Terrebonne Basins. Many large-scale restoration measures were considered in these studies, but dismissed due to costs. The ARDC Modification Project only addressed one of the four identified degraded hydrologic units and the Atchafalaya to Terrebonne/HNC Lock Project only reduces the land loss rate by 10 percent over the 50 year period. Much larger scale restoration in these basins is needed. In these instances, the project did not truly meet the objectives of the project in the entire study area. A phased approach to project implementation should be provided that evaluates all needed restoration measures to meet the full objectives of the study without any cost constraints, identifies the critical first steps, and identifies phased project implementation based on available funding.

It is imperative that the USACE complete the Feasibility Reports and the Chief's Report for these LCA projects before the end of the year. Specific comments on each project are enclosed. We believe these comments could be addressed during the engineering, design, construction or adaptive management phases of the projects and will not delay the process.

The undersigned groups welcome the opportunity to discuss our recommendations at any time.

Sincerely,

Coalition to Restore Coastal Louisiana

Steven Peyronnin
Executive Director

Natalie Snider
Science Director

Lake Pontchartrain Basin Foundation

John Lopez, Ph.D.
Director of Coastal Sustainability

Environmental Defense

Jim Tripp
General Counsel

Angelina Freeman, Ph.D.
Coastal Scientist

National Audubon Society

G. Paul Kemp, Ph.D.
Vice President, Gulf Coast Initiative

National Wildlife Federation

Karla Raettig
National Campaign Director

cc: Garret Graves, Coastal Protection and Restoration Authority
Steve Mathies, Louisiana Office of Coastal Protection and Restoration
Timothy Axtman, U.S. Army Corps of Engineers



**Medium Diversion at White Ditch
LCA Draft Feasibility Report**

A key component to restoration of Louisiana's coastal landscape is to reconnect the Mississippi River to the wetlands by mimicking natural processes that use the power of the Mississippi River to build land and maintain ecological integrity including habitats, communities, and storm buffering capacity. We strongly support the Medium Diversion at White Ditch and its objectives to provide freshwater, nutrients and sediments designed to restore degraded habitat and sustain a larger coastal ecosystem to support and protect the environment, economy, and culture of southern Louisiana.

Much has been learned recently about the design and operation of diversions in the Lower Mississippi River for coastal restoration, including the advantages of using pulsing as an operational strategy to maximize sediment capture (Allison and Meselhe, 2010). With rising sea levels and predictions for increased storm frequency/intensity, it is imperative that restoration projects are designed to maximize potential for offsetting projected land loss. Therefore, we commend and support the Tentatively Selected Plan (TSP) incorporating pulsing at 35,000 cfs (cubic feet per second) at high river flows to maximize sediment capture in the planning and operation of the diversion. The minimal amount of shoaling in the river expected from operation of the diversion in a pulsed fashion (1,000 cfs diversion that is pulsed at 35,000 cfs at the beginning of spring flood when suspended sediment concentrations are significantly elevated) is an additional advantage to this operational regime. Designing flexibility into this diversion project by providing pulsing capacity allows adaptation to unforeseen circumstances, as demonstrated by the Deepwater Horizon oil spill where river diversions were used to keep oil at bay. We applaud the Corps for evaluating a pulsed diversion in the analysis, and agree that the pulsed operation of the TSP maintains the medium diversion category authorization.

The sediment concentrations in the Mississippi River can vary significantly according to location, and a thorough analysis of site specific data and modeling would improve prediction of sediment efficiency and land building potential relative to diversion locations. Extensive sediment data collection and modeling is being undertaken in the White Ditch reach of the river in support of the Myrtle Grove Land Building Diversion. Using this type of data and modeling results in the benefits and drawbacks of location selection would provide a more robust analysis. We suggest incorporation of this additional data in Planning, Engineering, and Design.

The conveyance channel for the TSP accounts for almost half the total cost for the project. We agree that amending language from House/Senate subcommittees that

adjusts the project as authorized in WRDA 2007 for the increase in construction cost is warranted. However, we recommend reevaluating the conveyance channel and whether natural channel formation can be effectively utilized allowing the engineering to be scaled back (thereby reducing cost) to be investigated in Planning, Engineering, and Design. Natural channel formation could be incorporated into the Monitoring and Adaptive Management Plan and funding for channel modifications could be acquired on an as needed basis as a part of Operations and Maintenance.

References

Allison, M.A. and Meselhe, E.A., 2010. The use of large water and sediment diversions in the lower Mississippi River (Louisiana) for coastal restoration. *Journal of Hydrology* 387, 346-360.



**Convey Atchafalaya to Northern Terrebonne Marsh/
Multipurpose Operation of the Houma Navigation Canal (HNC) Lock
LCA Draft Feasibility Report**

In contrast to the robustness of the Medium Diversion at White Ditch project, the narrowing of ambition in the design of the Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock is striking. As stated in the Draft Feasibility Report:

The purpose of the project is to reverse the current trend of marsh degradation in the project area resulting from subsidence, erosion, saltwater intrusion, and lack of sediment and nutrient deposition. The project proposes to accomplish this by utilizing fresh water, sediments, and nutrients from the Atchafalaya River and the Gulf Intracoastal Waterway (GIWW).

The report goes further to define the objectives of the project to include:

- Prevent, reduce, and/or reverse future wetland loss
- Achieve and maintain characteristics of sustainable marsh hydrology
- Reduce salinity levels in project area
- Increase sediment and nutrient load to surrounding wetlands
- Increase residence time of fresh water
- Sustain productive fish and wildlife habitat

1 We do not feel that the alternatives developed for this project meet the objectives of the project. Alternative 2 was selected as the Tentatively Selected Plan. However, the TSP will reduce land loss rates by a mere 10 percent over the 50-year project period and this benefit will be lost with intermediate or high relative sea level rise. The Draft Feasibility Report states that modeling of Alternative 3 under intermediate RSLR would reduce the effectiveness of the project by 87 percent and effectiveness of the other alternatives, including the TSP, would be similar. None of the alternatives would prevent marsh collapse at the high RSLR rate.

2 Although none of the alternatives meet the full objectives of the project, there are benefits to be realized from the project. Based on the description of the eight alternatives available, we feel that Alternative 3 has additional benefits over Alternative 2 and should be selected as the Tentatively Selected Plan (TSP). Alternative 3 includes all the measures in Alternative 2 plus two additional measures in the West – Bayou Penchant Area. To increase flows from the Atchafalaya River, water will be moved from Bayou Shaffer to the Avoca Island Cutoff/Bayou Chene. This will be accomplished by creating an opening through the Avoca Island levee and installing a large gated diversion structure

1. Acknowledged
2. Acknowledged. According to ER 1105-2-100, Alternative 2 was identified as the National Ecosystem Restoration Plan. The NER Plan is recommended by USACE and the non-federal sponsor as representing the best value for ecosystem restoration to the Nation. The significant added cost of Alternative 3 is not justified by the small increase in benefits.

(WS4) in the opening. The remaining measure (WO2) would place stone along the shore of Bayou Chene and Avoca Island Cutoff to protect from increased flows. Alternative 3 would prevent 10,308 acres of emergent marsh soils from being converted to open water over the 50-year period of analysis and would generate 3,325 AAHUs.

Alternative 2, the TSP, does not make any change to the Avoca Island Levee, one of the root causes for problems in this area that this project is designed to address. The northern and central Terrebonne Basin is in dire need to additional freshwater and sediment inputs. While even Alternatives 3 would provide only modest amounts of water and sediment into this deteriorating basin, they would represent a net addition of water and sediment above current levels. We would therefore urge further consideration of a gate diversion structure in a new Avoca Island levee opening, a structure that would return the hydrology of this part of the coast more to the distribution of flows that existing prior to construction of the levee.



July 6, 2010

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U.S. Army Corps of Engineers, MVN NOD
P.O. Box 60267
New Orleans, LA 70160-0267

Attention: Mr. Nathan Dayan

Re: Louisiana Coastal Area (LCA)
Convey Atchafalaya River water to
Terrebonne Marshes and Operation
Of the Houma Navigation Canal
Lock Complex

Dear Mr. Dayan,

Please accept this letter as comments to the above referenced LCA Feasibility Study. The Louisiana Land & Exploration Company (LL&E) is one of the major land companies that this project will affect greatly. LL&E does understand and agrees that we need to get more fresh water to the southern marshes of Terrebonne and Lafourche Parishes. LL&E strongly objects to the West Dredge Channel #2, (WD2) which is proposed as a 200 foot wide, 7 foot deep channel constructed with no continuous spoil banks and no water control structure. This feature is totally unacceptable. This area is made up of floating marsh which is highly organic and fragile. This proposed channel would completely destroy this pristine marsh area.

We have reviewed this area and propose using the existing canal system and nature waterways instead of digging an entire new channel. Please see the attached map showing some possible alternatives. We would like to do work with your engineers to come up with an acceptable way to get freshwater to the south without destroying additional marsh areas.

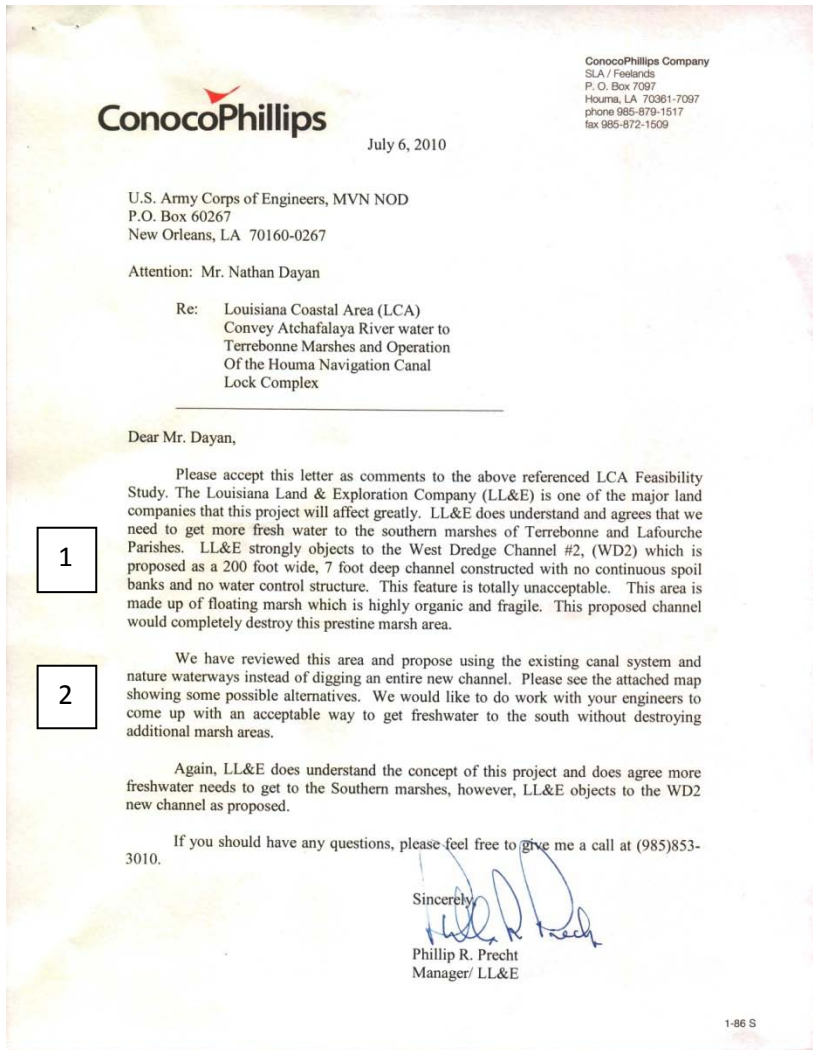
Again, LL&E does understand the concept of this project and does agree more freshwater needs to get to the Southern marshes, however, LL&E objects to the WD2 new channel as proposed.

If you should have any questions, please feel free to give me a call at (985)853-3010.

Sincerely,

Phillip R. Precht
Manager/ LL&E

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1. Acknowledged. During pre-construction engineering and design the team will sample the area to determine the alignment of the historic Bayou Carencro Channel. The WD2 channel will follow this alignment and the mineral soils found in the ridge will be used beneficially to create stable banklines. This channel will reestablish the natural hydrology and geomorphology of Bayou Carencro which includes occasional storm and drought events that may occur as part of the natural process. In addition, any negative impacts can be addressed through monitoring and adaptive management.
2. Acknowledged. The study team chose the planned alignment because with the current data at hand the proposed channel follows natural waterways. If in fact it is found that this is not the case or if there is an obvious cost and benefit effective alignment alternative, this issue may be reconsidered in Preconstruction Engineering and Design (PED).

