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**Agency Coordination**

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Tribal Consultation

## Behrens, Elizabeth MVN

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**From:** Keeler, Barbara <Keeler.Barbara@epa.gov>  
**Sent:** Wednesday, December 16, 2015 2:18 PM  
**To:** Behrens, Elizabeth MVN  
**Cc:** Stiles, Sandra E MVN; Salaam, Tutashinda MVN; Hughes, Guy; Pate, Dusty  
**Subject:** [EXTERNAL] RE: Draft EA for Bayou aux Carpes 404(c) & Jean Lafitte Nat'l Park -- GNOHSDRRS Project

Libby:

Thanks for sending the Dec. 15, 2015, Corps response to the EPA comments dated Nov. 10, 2015, on the draft EA for Jean Lafitte National Historical Park and Preserve Mitigation Features, West Bank and Vicinity, Hurricane and Storm Damage and Risk Reduction Mitigation, Jefferson Parish, LA (PIER 37, TIER 1). We have reviewed the responses and have no further comments on this NEPA document. In addition, we have reviewed the general schedule for developing the long-term monitoring plan that you sent separately this morning. We may want to discuss those issues in more detail in January.

We stand ready to work with the Corps throughout the mitigation implementation phase and with the Project Development Team on finalizing the plans for augmentation and for developing the long-term monitoring plan, as required in the EPA Bayou aux Carpes CWA 404(c) modification for the post-Katrina flood risk reduction project construction.

Please give me a call if you have any questions.

Barbara Keeler  
EPA Region 6  
Marine, Coastal and Analysis Section  
1445 Ross Ave.  
Dallas, TX 75202-2733  
214-665-6698  
keeler.barbara@epa.gov

-----Original Message-----

**From:** Behrens, Elizabeth MVN [mailto:Elizabeth.H.Behrens@usace.army.mil]  
**Sent:** Tuesday, December 15, 2015 4:51 PM  
**To:** Keeler, Barbara  
**Cc:** Stiles, Sandra E MVN; Salaam, Tutashinda MVN; Hughes, Guy; Pate, Dusty  
**Subject:** RE: Draft EA for Bayou aux Carpes 404(c) & Jean Lafitte Nat'l Park -- GNOHSDRRS Project

Barbara,

Please see the attached response letter from CEMVN on you agencies comments on the PIER 37, TIER 1 EA. I hope our answers satisfy your concerns for now as we work together to complete selection of the augmentation features and development of the long term monitoring plan in the next joint EA with the NPS. Please call me if you have any questions. I'd appreciate your review and a response back as quickly as possible (an email would be great if it suffices for your approval of the mitigation plan). Our schedule has us signing the FONSI by this Friday, but we understand this is a short suspense that may not be possible on your end. We will delay signature of the FONSI until we receive your response. Thanks for your patience with us as we work to comply with the conditions of the 2009 Final Determination.

Libby

Elizabeth Behrens  
Biologist  
US Army Corps of Engineers  
CEMVN-PDN-CEP  
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New Orleans, LA 70160-0267  
504-862-2025

The supreme quality for leadership is unquestionably integrity. Without it no success is possible, no matter whether it is on a section gang, a football field, in an army, or in an office. Dwight D. Eisenhower

-----Original Message-----

From: Keeler, Barbara [mailto:Keeler.Barbara@epa.gov]

Sent: Tuesday, November 10, 2015 7:51 AM

To: Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil>; Dusty Pate <haigler\_pate@nps.gov>; Lance Hatten <Lance\_Hatten@nps.gov>; Horst Greczmiel <Horst\_Greczmiel@ceq.eop.gov>; Walther, David <david\_walther@fws.gov>; Angela Trahan <Angela\_Trahan@fws.gov>; Exnicios, Joan M MVN <Joan.M.Exnicios@usace.army.mil>; Goodman, Melanie L MVN <Melanie.L.Goodman@usace.army.mil>; Guy Hughes <guy\_hughes@nps.gov>; Rick Hartman <richard.hartman@noaa.gov>

Cc: Martinez, Maria <Martinez.Maria@epa.gov>; Gutierrez, Raul <Gutierrez.Raul@epa.gov>; Crawford, Dorothy <Crawford.Dorothy@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Goodin, John <Goodin.John@epa.gov>; Miller, Clay <Miller.Clay@epa.gov>; Jansky, Michael <Jansky.Michael@epa.gov>; McCormick, Karen <McCormick.Karen@epa.gov>; Kitto, Alison <Kitto.Alison@epa.gov>

Subject: [EXTERNAL] Draft EA for Bayou aux Carpes 404(c) & Jean Lafitte Nat'l Park -- GNOHSDRRS Project

Attached are the EPA comments on the draft EA for the joint U.S. Army Corps of Engineers and National Park Service draft EA for the Jean Lafitte National Historical Park and Preserve mitigation features for the post-Hurricane Katrina 100-year flood risk reduction upgrades. This includes mitigation for impacts to the Bayou aux Carpes CWA 404(c) area.

Please give me a call at the number below if you have any questions.

Barbara Keeler

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# **Modification to the 1985 Clean Water Act Section 404(c) Final Determination for Bayou aux Carpes**

## **I. Introduction**

Section 404(c) of the Clean Water Act (CWA), 33 U.S.C. §1344(c), authorizes the Environmental Protection Agency (EPA) to restrict or prohibit the use of a wetland area as a disposal site for dredged or fill material if the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. The regulations establishing procedures to be used by EPA in applying this provision are found at 40 CFR Part 231. In 1984 and 1985 these procedures were employed by EPA when the existing Bayou aux Carpes CWA Section 404(c) designation was made. Key milestones during that process included a hearing and opportunity for the public to provide written comments, a Recommended Determination proposed by EPA Region 6, and a Final Determination issued by EPA Headquarters and noticed in the Federal Register on November 15, 1985 (50 Fed. Reg. 47267).

EPA proceeded with a similar process for the review of the Army Corps of Engineers' request for a modification of the 404(c) designation for the Bayou aux Carpes area. On November 4, 2008, the New Orleans District of the Corps requested that EPA modify the Bayou aux Carpes CWA Section 404(c) designation to accommodate discharges to the Bayou aux Carpes wetlands associated with the proposed enhanced flood protection system in Jefferson Parish, Louisiana. The proposed discharge for construction of the flood wall would impact no more than 9.6 acres of wetlands within the Bayou aux Carpes area. A notice of Proposed Determination was published in the Federal Register on January 14, 2009, and a public hearing was held in New Orleans on February 11, 2009. Public comments were accepted through February 23, 2009. Based on the record developed during the public comment period, the Regional Administrator<sup>1</sup> makes a decision to either withdraw the Proposed Determination, or prepare a Recommended Determination in accordance with the regulations. On April 2, 2009, Acting EPA Regional Administrator (Region 6) Lawrence E. Starfield signed the Recommended Determination (RD) for modification of the Bayou aux Carpes 404(c) action. The RD and associated documents were transmitted to EPA's Office of Water (OW) for Final Determination action by the Assistant Administrator for Water (AAOW).<sup>2</sup> Upon receipt of the RD and the administrative record, the AAOW makes a Final Determination (FD) affirming, modifying or rescinding the recommendation.

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<sup>1</sup> Lawrence E. Starfield is the Deputy Regional Administrator for the U.S. Environmental Protection Agency, Region 6, in Dallas, Texas, and is currently acting as Regional Administrator.

<sup>2</sup> Signature authority on issuance of Section 404(c) Final Determinations has been delegated by the Administrator to the Assistant Administrator for Water.

## **II Background**

### ***A. Project History: Bayou aux Carpes CWA Section 404(c)***

#### ***1985 Bayou aux Carpes CWA Section 404(c) Determination***

On October 16, 1985, the EPA Assistant Administrator for External Affairs<sup>3</sup> issued a FD pursuant to Section 404(c) of the CWA restricting the discharge of dredged or fill material in the Bayou aux Carpes site, Jefferson Parish, Louisiana based on findings that the discharges of dredged or fill material into that site would have unacceptable adverse effects on shellfish beds, fishery areas (including spawning and breeding areas), wildlife, and recreational areas. EPA published the FD prohibiting, with three exceptions, future discharges of dredged or fill material to wetlands into the Bayou aux Carpes site at 50 Fed. Reg. 47267 (November 15, 1985). The first exception provided for discharges associated with the completion of the U.S. Army Corps of Engineers' (Corps) modified design for the Harvey Canal – Bayou Barataria Levee Project. The second exception provided for discharges associated with routine operation and maintenance of the Southern Natural Gas Pipeline. The third exception addressed discharges associated with EPA approved habitat enhancement activities. The CWA Section 404(c) action was based upon a thorough record of investigations, including field surveys, remote sensing, and other technical analyses conducted by three EPA facilities, the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the Louisiana State University (LSU) Center for Wetland Resources. These study reports and additional documentation supporting the designation may be found at:

[http://www.nolaenvironmental.gov/nola\\_public\\_data/projects/usace/levee/docs/original/BayouAuxCarpes404c1985RecDeterm.pdf](http://www.nolaenvironmental.gov/nola_public_data/projects/usace/levee/docs/original/BayouAuxCarpes404c1985RecDeterm.pdf).

#### ***1992 Modification to Bayou aux Carpes CWA Section 404(c) Action***

After completion of the FD, several requests for modifications were reviewed by EPA.<sup>4</sup> The one request that was granted was for an emergency exception to bury an existing pipeline deeper via horizontal drilling techniques as a response to unstable soil conditions and a leaking pipeline. Shell Pipe Line Corporation (Shell) petitioned EPA for reconsideration of exceptions identified in EPA's 1985 FD concerning the Bayou aux

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<sup>3</sup> In 1985 the signature authority for CWA Section 404(c) had been delegated to the Assistant Administrator for External Affairs. This responsibility has been subsequently delegated to the Assistant Administrator for Water.

<sup>4</sup> In 1988 the Corps requested an exception to allow construction of the West Bank Hurricane Protection Levee such that the toe of the V-shaped levee would extend into the 404(c) protected area. That request was based only on potential cost savings, did not fall within the bounds of the exceptions set out in the 404(c) Final Determination, and was therefore considered to be a restricted action. In response, the Corps modified the levee alignment and constructed the levee without discharges into the Bayou aux Carpes CWA Section 404(c) site.

Carpes site on December 18, 1991.<sup>5</sup> Shell requested a modification to the FD in order to (1) temporarily discharge dredged or fill material associated with performing emergency work to relocate an existing below ground pipeline located in the restricted Section 404(c) area; and (2) except from the Bayou aux Carpes Section 404(c) restriction future discharges associated with routine operation and maintenance of this pipeline. On February 28, 1992, Shell's request for modification was approved by the AAOW on the basis that relocating the pipeline to non-wetlands was infeasible from the perspectives of engineering alternatives and public safety, the work would have only minimal and temporary impacts on the wetlands, and the work was essentially the same as that envisioned under the second exception granted in the 1985 FD (57 Fed. Reg. 3757).

***Current Modification to Bayou aux Carpes  
CWA Section 404(c) Action Request***

As a result of the residential, commercial, and industrial damages caused by Hurricanes Katrina and Rita in 2005, Congress directed the Corps of Engineers (Corps) to enhance the existing Lake Pontchartrain and Vicinity Hurricane Protection project and the West Bank and Vicinity Hurricane Protection project to the 100-year level of protection, as determined by the Federal Emergency Management Agency. The overall Corps project to provide protection to southern Louisiana involves two large levee systems, the West Bank and Vicinity Hurricane Protection Project and the Lake Pontchartrain and Vicinity Hurricane Protection Project, and approximately 350 miles of earthen levees and floodwalls throughout five parishes in the New Orleans metropolitan area. One section of this much larger project is within the Bayou aux Carpes area. The Corps' proposal for providing increased hurricane and storm damage risk reduction for this area does not fall within one of the three exceptions provided for in the 1985 Section 404(c) Final Determination. Since the construction of the Corps' project would result in discharges of dredged or fill material within the Bayou aux Carpes site, a request for modification of EPA's FD was submitted for consideration and final decision.

On November 4, 2008, the New Orleans District of the Corps requested that EPA modify the Bayou aux Carpes CWA Section 404(c) designation to accommodate discharges to the Bayou aux Carpes wetlands associated with the proposed enhanced flood protection system in Jefferson Parish, Louisiana. Region 6 completed a RD on April, 2, 2009, and transmitted the RD and associated documents to EPA's OW for review and final decision pursuant to CWA Section 404(c).

***B. Project Description***

Prior to the November 2008 request for the Section 404(c) modification, the Corps' preferred alternative initially included a 3,000 foot long levee and then a 3,000 foot floodwall, bisecting the Bayou aux Carpes CWA Section 404(c) site. However, early in the planning process, EPA Region 6 notified the Corps that this alternative bisecting the site would present irreparable environmental impacts and would most likely result in the loss of over 600 acres of unique floatant marsh wetlands within the Bayou aux Carpes site.

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<sup>5</sup> Additional information supporting Shell's request for modification was received by EPA on January 17, 1992 and January 21, 1992.

EPA Region 6, in coordination with the National Park Service, suggested a conceptual alternative, which the Corps subsequently designed. This alternative is now the current proposed project alternative, also known as the West Closure Complex. The floodwall is located within the Bayou aux Carpes CWA Section 404(c) site on an area comprised of bottomland hardwood and cypress-tupelo habitat that has formed on top of the western bank of the Gulf Intracoastal Waterway (GIWW), established when the waterway was originally created. The bank is low and undulating and shows signs of downed and damaged trees as a result of recent hurricane winds. The Corps plans to construct an improved storm surge barrier system and tie into a new array of flood gates and pumping stations crossing the GIWW as part of the aforementioned 100 year flood protection plan. The significant structural element that will be within the Bayou aux Carpes site is a floodwall that would be constructed on the previously impacted GIWW spoil bank (Fig. 1).



**Figure 1. West Closure Complex features on the Bayou aux Carpes site and vicinity. Note 4,200 foot T-wall.**

Once the West Closure Complex alternative became the preferred design, EPA requested the Corps to consider any siting or design options that could reduce the environmental impacts further. Alternatives which would have built the floodwall within the same alignment but closer to the GIWW or completely within the water outside the boundary of the Bayou aux Carpes CWA Section 404(c) site were considered. A number of environmental organizations also focused on this issue. After considerable evaluation, the Corps found this was not a practicable alternative that would meet the project purpose based on a determination that this alternative design and siting posed significant

navigational safety issues and would not meet the cost, social, and engineering risk and reliability criteria. Furthermore, the US Coast Guard agrees with the Corps' assessment that constructing a floodwall in the waterway would increase hazards to navigation and the possibility of a major marine accident. In a letter to the EPA, dated February 23, 2009, the US Coast Guard stated that it objects to the construction of any segment of the floodwall in the GIWW channel based on these navigation hazard concerns. After careful review of the Corps' analysis on these alternative designs and siting, EPA accepted those conclusions.

The Corps has incorporated into the West Closure Complex alternative a number of innovative designs and construction techniques to reduce the wetland impacts. The structure proposed in the Bayou aux Carpes CWA Section 404(c) area would be constructed as a "T-wall" style floodwall in lieu of an earthen levee in order to minimize the footprint (Fig. 2.). A berm to protect the floodwall from barge collisions would be constructed on the water side and would incorporate a maintenance access road. This configuration would contain impacts within a maximum 100 foot width. The floodwall would be built from the water side to reduce construction impacts. Further, the Corps has located the gates and pumps that would span the GIWW as far north as practical to further reduce the length of the structure along the boundary of the Bayou aux Carpes CWA Section 404(c) site. These factors have resulted in a maximum corridor for the floodwall of 4,200 feet by 100 feet.

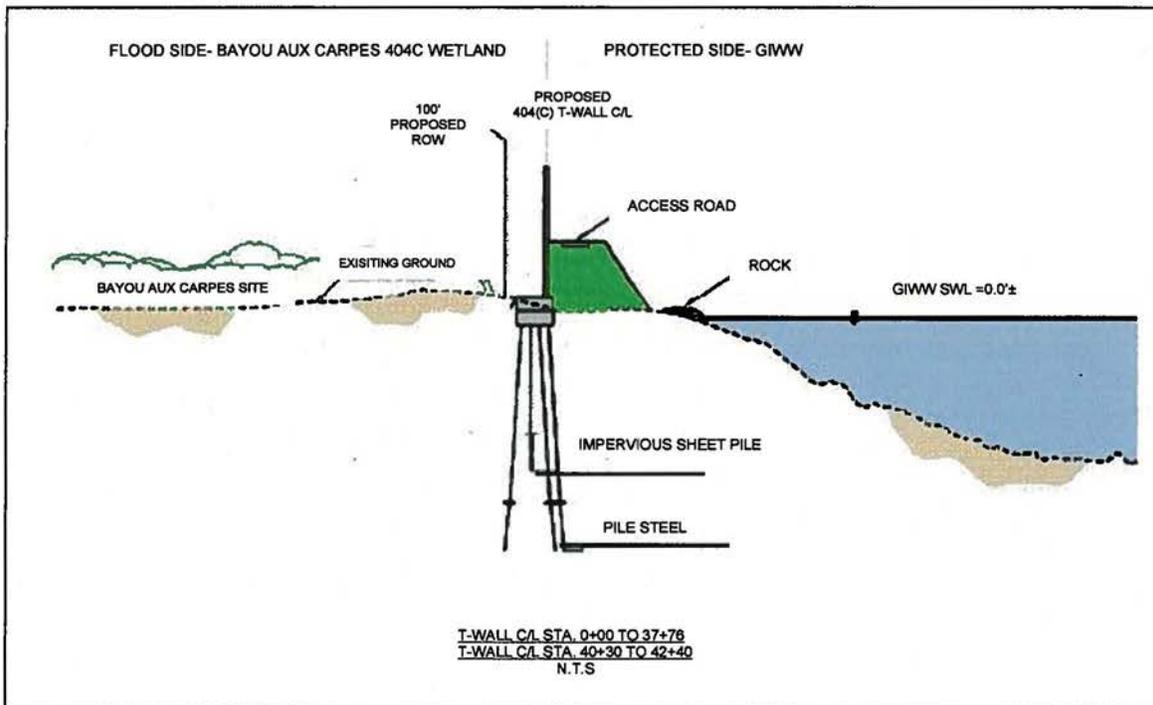


Figure 2. Cross-section of the proposed T-Wall design.

The T-wall would tie into the proposed flow control structure at the end of the Old Estelle Outfall Canal to the north and the closure and pump station complex that would cross the

GIWW to the south. The T-wall is designed to an elevation of +16.0 ft (NAVD 88 2004.65). A continuous steel sheet pile wall will be provided beneath the base slab for seepage cutoff purposes.

Construction of the proposed action would impact no more than 9.6 acres within the Bayou aux Carpes 404(c) boundary. The location of the wall away from the waterway's edge increases the safety of the wall against potential catastrophic vessel impacts by absorbing the energy of the impact in the embankment, thus stopping the vessel before it contacts the wall. Placement of the protected earthen berm outside the channel results in no constriction of the waterway as a storm water evacuation route. The placement of the wall within the 100 ft by 4,200 ft corridor on the previously impacted area of the Bayou aux Carpes 404(c) area, along with the commitment by the Corps to provide augmentation and mitigation measures to enhance the hydrology and habitat of the Bayou aux Carpes 404(c) area to offset any potential impacts due to construction, provides the most practical approach from an environmental perspective while ensuring the 100-yr level of risk reduction is achieved.

### ***C. EPA Headquarters Action***

The key elements of a Section 404(c) process have been followed as EPA considered this modification request. These include a hearing and opportunity for the public to provide written comments, preparation and submittal of a RD proposed by EPA Region 6 to EPA Headquarters, a FD (this document) issued by EPA Headquarters and subsequent notice in the Federal Register of the final decision.

On January 14, 2009, a notice for the proposed modification of the Bayou aux Carpes Section 404(c) was published in the Federal Register. A public hearing, which EPA OW representatives attended, was held in New Orleans on February 11, 2009. Public comments were accepted through February 23, 2009. On February 10, 2009, representatives from the EPA OW and EPA Region 6, accompanied by personnel from the National Park Service, US Geological Service, and the Fish and Wildlife Service, conducted a site visit of the Bayou aux Carpes area (Photos 1 and 2). On April 2, 2009, Acting Regional Administrator for Region 6, Lawrence E. Starfield, signed the RD for modification of the Bayou aux Carpes 404(c) action and the RD was transmitted to EPA's OW for FD action by the AAOW. Upon receipt of the RD and the administrative record, the AAOW makes a FD affirming, modifying or rescinding the recommendation. During this review period the OW provided an opportunity to the Corps to meet with EPA officials for further consultation.

### **III. Site Characterization**

The Bayou aux Carpes site (Fig. 3) lies in the upper Barataria basin within the Mississippi deltaic plain, an area experiencing some of the highest historic rates of coastal wetland loss in the country. Coastal wetland loss has been widespread in



**Photos 1 and 2. Bayou aux Carpes February 10, 2009 field visit EPA Office of Water, EPA Region 6, National Park Service, US Geological Service and US Fish and Wildlife Service.**

Louisiana over the past half century averaging approximately  $100 \text{ km}^2$  per year during the 1960's through the 1980's, but decreasing to approximately  $62 \text{ km}^2$  per year between 1990 and 2000. An additional loss of approximately  $1300 \text{ km}^2$  is anticipated by 2050.<sup>6</sup> Although this region experienced a spike in wetland loss and degradation as a result of hurricanes over the last few years, the Bayou aux Carpes site has weathered the storms and other natural and human-induced forces. Today the approximately 3,000 acres of unique and productive wetlands of the Bayou aux Carpes CWA Section 404(c) site are an important regional and national asset providing ecological, flood storage, and water quality benefits. The Bayou aux Carpes CWA Section 404(c) site is bounded on the north by the east-west Old Estelle Pumping Station Outfall Canal, on the east by Bayou Barataria (Gulf Intracoastal Waterway, or GIWW), on the south by Bayou Barataria and Bayou des Familles, and on the west by State Highway 3134 and the "V-Levee." Immediately across State Highway 3134 to the west of the site is the Barataria Preserve unit of Jean Lafitte National Historical Park and Preserve (Fig. 4).

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<sup>6</sup> Evers, D. Elaine, Erick M. Swenson, Lee Stanton, and Charles E. Sasser. *Distribution and Ecological Characteristics of the Marshes in the Eastern Mississippi River Delta Plain, Louisiana*. June 2007. Louisiana State University, Coastal Ecology Institute, Baton Rouge. Prepared for U.S. Environmental Protection Agency, Dallas, Texas.

## Bayou aux Carpes 404(c) Site



**Figure 3. Location of Bayou aux Carpes site (outlined in red) within the vicinity of the Greater New Orleans Metro area, Louisiana.**

Today, the habitat of Bayou aux Carpes looks much the same as it did at the time of the 1985 Section 404(c) action. The Bayou aux Carpes site is a diverse estuarine ecosystem consisting of a mosaic of habitats, including forested wetland, shrub wetland, cypress-tupelo swamp, marsh, and open water. From an ecological perspective, the Bayou aux Carpes CWA Section 404(c) site exhibits some particularly notable habitat features. Within the forested swamps, naturally regenerating cypress trees may be found, a situation all too uncommon along the Louisiana coast where natural and human-induced alterations have resulted in conditions limiting natural regeneration. In addition to the forested wetland systems, the site also contains flotant (or floating) marsh, an ecologically valuable and unique wetland type. This type of wetland has also become increasingly rare because of major losses in the floating marshes that historically covered extensive areas, particularly in the Mississippi River Deltaic Plain.

The Bayou aux Carpes CWA Section 404(c) site also incorporates valuable coastal resources and provides a wide array of benefits to the citizens of this area. For example, the Bayou aux Carpes CWA Section 404(c) wetlands provide floodwater storage and water quality benefits. During the 1984 -1985 studies, the relatively flat topography was found to enhance the capacity of the area to detain surface waters and slow the release of water downstream. Most of the site is now federally owned and the CWA Section 404(c) designation continues to apply to all wetlands within the site, regardless of ownership. The most recent federal action was finalized on March 30, 2009, as the President signed the Omnibus Public Land Management Act of 2009, which added the federally owned portion of the CWA Section 404(c) site to the Barataria Preserve Unit of Jean Lafitte National Historical Park and Preserve.

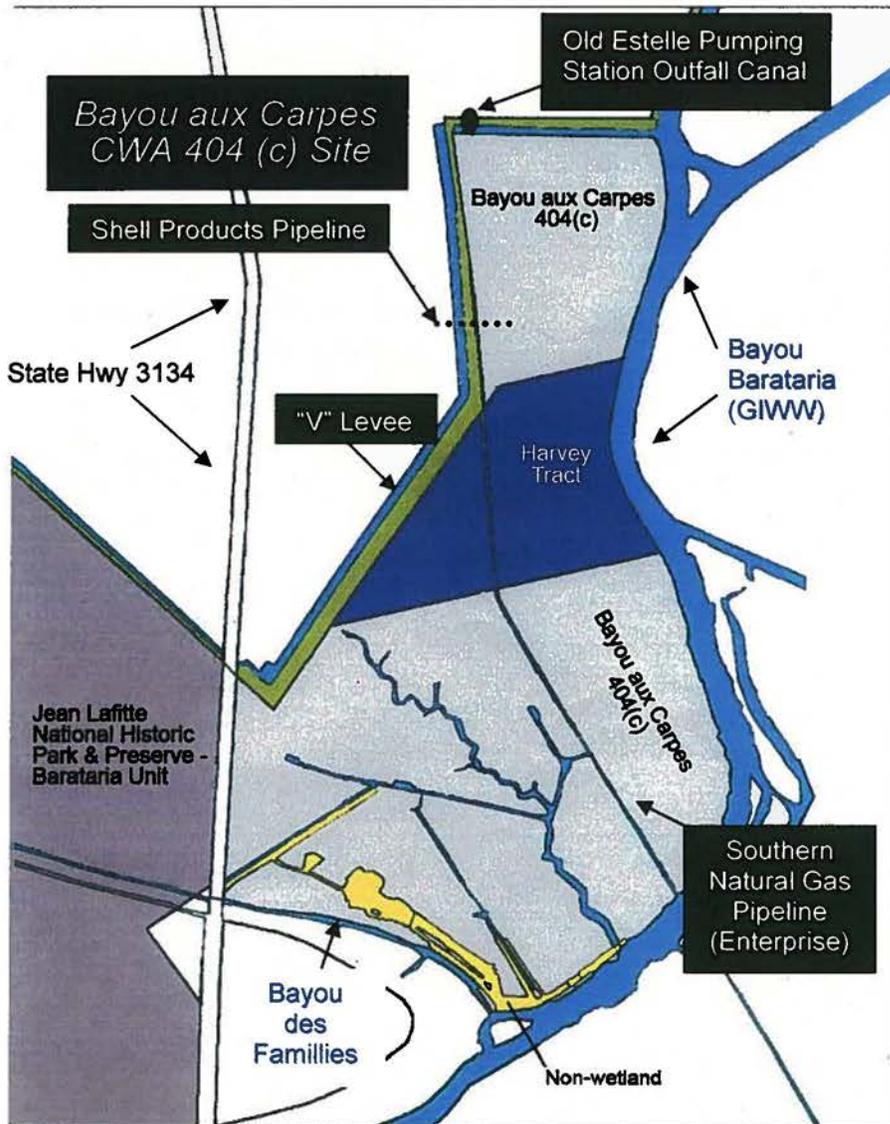


Figure 4. Bayou aux Carpes Clean Water Act Section 40(c) site.<sup>7</sup>

During the field studies in 1984 and 1985, at least 70 wildlife species, at least 23 species of freshwater fish, and 27 taxa of macroinvertebrates were observed.<sup>8</sup> The field data showed the area to be seasonally brackish, supporting species that can tolerate both fresh and brackish salinities. The Bayou aux Carpes drainage area and associated habitats provide valuable spawning, feeding, and nursery habitat for recreationally-important freshwater and estuarine fish. The USFWS 1985 habitat analysis determined that the bottomland hardwood and forested swamp habitat in this drainage area provided valuable

<sup>7</sup> On March 30, 2009, the federally owned portion of the CWA Section 404(c) site was added to the Barataria Preserve Unit of Jean Lafitte National Historical Park and Preserve.

<sup>8</sup> USFWS. Fish and Wildlife Resources of the Bayou aux Carpes Drainage Area, Jefferson Parish, Louisiana. June 1985. Lafayette, Louisiana.

habitat and the 2008 field studies revealed that the habitat continues to be significant for fish and wildlife.

#### **IV. Adverse Environmental Impacts**

##### ***A. Adverse Impacts to Wetlands***

The proposed floodwall would impact no more than 9.6 acres within a 100 foot width from the GIWW toward the interior of the Bayou aux Carpes CWA Section 404(c) site. A maximum of 7.2 acres of cypress-tupelo swamp and 2.4 acres of bottomland hardwood wetlands within the site would be directly and permanently impacted by mechanical clearing and grubbing prior to construction of the new floodwall. Hydrologic impacts to the CWA Section 404(c) site from the floodwall are expected to be minimal. No additional indirect effects are anticipated.

The planning, engineering, and interagency review process has resulted in the development of this storm damage risk reduction alternative, the West Closure Complex alternative, which has avoided and minimized impacts to the Bayou aux Carpes CWA Section 404(c) area to the maximum extent practicable. However, implementation of this alternative will still result in unavoidable impacts, or discharges, to wetlands in the restricted site. Loss of this habitat value is not expected to jeopardize the ecological integrity of Bayou aux Carpes wetland site and the loss of habitat will be fully compensated, as described below.

#### **V. Mitigation and Enhancement Features**

Early in the planning process, EPA advised the Corps that unavoidable wetland impacts to the Bayou aux Carpes CWA Section 404(c) site must be fully and appropriately mitigated and compensated for consistent with the regulations. EPA Region 6 staff has provided guidance to the Corps on avoiding and minimizing the impacts to the Bayou aux Carpes CWA Section 404(c) site from the West Closure Complex alternative. In addition, Region 6 is working with an interagency team, including the Corps, to evaluate an array of additional features that might provide environmentally beneficial hydrologic and wetland effects to this area. These enhancement features are being evaluated and considered in order to add an extra measure of environmental benefits in light of the unique status of the Bayou aux Carpes site.

Evaluation of these features continues and agreement has been reached with the Corps and the interagency review team regarding the minimum amount of mitigation required to offset the wetland impacts. The Corps has also agreed to fund and implement additional ecological enhancement features, if the results of ongoing investigations indicate that they will contribute environmental benefits. An adaptive management approach will be utilized to monitor changes over time, evaluate the observed results with respect to intended objectives, and apply any changes needed to achieve the desired outcome.

Mitigation procedures and requirements regarding impacts within the Bayou aux Carpes 404(c) area are being coordinated with the EPA, USFWS, USGS, NOAA Fisheries,

National Park Service, and other State representatives on the interagency team. Although a final mitigation plan has yet to be finalized, the District Commander for the New Orleans District in a letter to the Regional Administrator for EPA Region 6 dated November 4, 2008, (Appendix 1) committed to mitigate for all unavoidable adverse impacts to the Bayou aux Carpes CWA Section 404(c) area within the Bayou aux Carpes CWA Section 404(c) area and/or Jean Lafitte National Historical Park and Preserve, as per an agreement with EPA and the resource agencies. Furthermore, the Corps committed that mitigation projects will be designed and implemented concurrently with the design and construction of the project. The District Commander in that letter also stated that “full mitigation within this unique environment may require mitigation in addition to acres indicated by the Wetland Value Assessment.” Based on the minimum mitigation that the Corps has committed to and is required to perform pursuant to Section 2036 of the Water Resources Development Act of 2007,<sup>9</sup> as well as on the Corps’ commitment to provide additional mitigation and augmentation features EPA believes that any discharges of dredged or fill material associated with the Corps’ West Closure Complex alternative would not result in unacceptable adverse effects to the Bayou aux Carpes wetland resources. Additionally, EPA expects the final mitigation plan to be adequate to offset unavoidable impacts consistent with mitigation regulations (33 CFR 332) with the goal to ensure no net loss of either wetland acres or functions. EPA must agree with the proposed mitigation plan prior to the mitigation plan being finalized. In addition to mitigation, project augmentation measures will be considered by the interagency team to enhance the wetland functions and values of the site and provide added compensation for any unavoidable impacts.

## **VI. Final Determination**

### ***A. Findings and Conclusion***

EPA has carefully reviewed the proposal and the information submitted by EPA Region 6, the New Orleans District of the U.S. Army Corps of Engineers, comments received pursuant to the notice published in the Federal Register on January 14, 2009, and public hearing held in New Orleans on February 11, 2009, the alternative NEPA documents for the proposed project, and the existing Bayou aux Carpes administrative record. Based on EPA’s review of the Corps’ recommendations regarding the relative flood risk reduction benefits, social and economic costs, as well as the hydrologic, engineering, and navigation constraints, EPA concludes the West Closure Complex alternative has the potential to accomplish the Corps’ flood control, navigation, timing, and engineering objectives while avoiding and minimizing the impacts to the Bayou aux Carpes CWA Section 404(c) area to the maximum degree possible. In reaching a decision, EPA considered whether the discharges of dredged or fill material associated with the Corps’ West Closure Complex would result in unacceptable adverse effects on the shellfish beds, fishery areas (including spawning and breeding), wildlife, and recreational areas of the

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<sup>9</sup> Section 2036 “Mitigation for Fish and Wildlife and Wetlands Losses” of the Water Resources Development Act of 2007 requires the Corps to mitigate losses to flood damage reduction capabilities and fish and wildlife resulting from a water resources project, the Corps is required to ensure that the mitigation plan for each water resources project complies with the mitigation standards and policies established pursuant to the regulatory programs administered by the Corps.

Bayou aux Carpes Section 404(c) area. EPA concludes that the discharges of dredged or fill material associated with the West Closure Complex alternative would not result in unacceptable adverse effects to the Bayou aux Carpes Section 404(c) wetland resources.

The West Closure Complex project sited on the Bayou aux Carpes area is a part of a much larger project with the intent to reduce risks to the 286,000 people living on the west bank of the Mississippi River and to infrastructure supporting the greater New Orleans area by building a more resilient and reliable storm damage and risk reduction system, as directed by Congress. In an effort to reconcile the potentially conflicting goals of increased flood protection and ecological protection, the Corps and EPA worked closely together and with other federal partners, State and local agencies, and many stakeholders in an effort to understand fully the possibilities for accommodating these serious needs in an environmentally sensitive manner. EPA agrees with Corps' conclusion that there is no reasonable and less environmentally damaging practicable structural alternative for achieving the Congressional directive of levee enhancement than to locate a sector gate adjacent to the Bayou aux Carpes CWA Section 404(c) site.

In conclusion, EPA believes that compelling circumstances justify a modification of the Bayou aux Carpes CWA Section 404(c) designation, that there are no less environmentally damaging practicable alternatives that would adequately address those circumstances, and that all feasible means of minimizing adverse wetland effects to the Bayou aux Carpes site will be implemented, and any discharges of dredged or fill material associated with the Corps' West Closure Complex would not result in unacceptable adverse effects to the Bayou aux Carpes section 404(c) wetland resources. Therefore, EPA is modifying the 1985 Bayou aux Carpes CWA Final Determination, with specific conditions on the modification to allow for discharges associated with construction of the West Closure Complex alternative not to exceed 9.6 acres of impact on the Bayou aux Carpes 404(c) site as described in the Corps of Engineers' November 4, 2008, request for Section 404(c) modification. EPA believes that this FD for modification achieves a balance between the national interest in reducing overwhelming flood risks to the people and critical infrastructure of southern Louisiana while avoiding and minimizing adverse effects to the ecologically significant Bayou aux Carpes CWA Section 404(c) site to the maximum extent practicable. EPA has a long record of protecting these wetlands, dating back to the early 1970's and does not believe that this modification, coupled with EPA approved mitigation and site augmentation features, will result in significant or unacceptable adverse effects to the Bayou aux Carpes CWA Section 404(c) wetland resources. The projected construction impacts will be limited in time and area, the unavoidable impacts will be appropriately mitigated, additional environmental augmentation features will be developed and implemented, and the site will be monitored and managed for any adverse changes for the life of the Corps project.

#### ***B. Modification and Conditions***

The October 16, 1985, Bayou aux Carpes Final Determination is hereby modified, subject to conditions specified below, by adding the following: The US Army Corps of Engineers may discharge dredged or fill material for the purpose of constructing the West Closure Complex alternative, as described by Colonel Alvin B. Lee, District Commander

for the New Orleans District, in the November 4, 2008, letter requesting modification of the 1985 Bayou aux Carpes 404(c) FD. In this letter (Appendix 1), Colonel Lee requested modification of the 404(c) designation of the site to allow for the construction of a 4,200 foot floodwall and earthen berm within a 100 ft by 4,200 ft corridor along the eastern boundary of the Bayou aux Carpes 404(c) site, Jefferson Parish, Louisiana.

As stated above, this modification is subject to the specific conditions that EPA found were necessary in order for the Agency to grant this modification. The conditions are consistent with EPA and Corps regulations for mitigation and must be implemented in order for any discharges of dredged or fill material to comply with the terms of the 1985 Bayou aux Carpes 404(c) Final Determination. Not-with-standing the fact that the conditions contained in the Final Determination are binding requirements on the Corps, in order to demonstrate the high level of inter-agency cooperation and commitment that compensatory mitigation projects will be provided and maintained, a letter agreeing to the conditions below must be provided by the Corps to EPA (e.g., a formal, documented commitment from a government agency or public authority) (33 CFR 332.3 (n)), as soon as possible and in any event prior to any construction activities authorized by this Final Determination modification. The District Commander for the New Orleans Corps District must provide in writing to EPA AAOW a commitment to plan, design, ensure full funding, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this modification was based to the satisfaction of EPA. EPA recognizes that full funding of the mitigation, augmentation and monitoring measures is subject to the availability of appropriated funds, however the District Commander for the New Orleans Corps District would agree to request through the Corps' budget process the funding that is necessary to fully implement and monitor the mitigation, augmentation and monitoring measures as detailed below.

As set forth in this modification, this action is reflective of a unique set of circumstances. The modification granted today does not have any bearing on any other CWA Section 404(c) designations or modification requests. Each CWA Section 404(c) designation represents a unique situation that responds to a specific set of parameters unlike any other.

#### ***i. Project Design and Construction***

1. During final project design, the New Orleans District of the Corps (Corps) shall utilize all feasible engineering and construction practices to reduce impacts to the Bayou aux Carpes CWA Section 404(c) wetlands.<sup>10</sup>

2. During project construction, the Corps shall comply with the conservation recommendations as specified in the "Fish and Wildlife Coordination

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<sup>10</sup> This commitment was stated in a November 4, 2008, request for Section 404(c) modification letter to Mr. Lawrence E. Starfield, Deputy Regional Administrator EPA Region 6 from Colonel Alvin B. Lee, District Commander for the New Orleans District for the US Army Corps of Engineers (Appendix 1). Note: enclosed documents referenced in this letter are not attached in Appendix 1, but can be found in EPA Region 6 Recommended Determination dated April 2, 2009.

Act Report, Individual Environmental Report (IER) 12, Harvey to Algiers” (February 18, 2009), or as they may be amended by the USFWS, Ecological Service, Lafayette.

***ii. Mitigation***

1. The New Orleans District of the Corps shall ensure full funding and implementation of mitigation measures to compensate for the unavoidable adverse impacts of the project. EPA will make the final determination as to whether compensation is adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (GNOHSDRRS) interagency review team, prior to implementing any mitigation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each mitigation feature by the National Park Service (Jean Lafitte National Historical Park and Preserve), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), US Geological Survey (USGS), Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The New Orleans District of the Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any mitigation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

***iii. Augmentation Features***

1. The New Orleans District of the Corps shall insure full funding and implementation of augmentation features to enhance the wetland functions and values of the site. EPA will make the determination as to whether augmentation features are adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing any augmentation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each augmentation feature by the NPS (Jean Lafitte National Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any augmentation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

***iv. Long-term Monitoring and Operation***

1. The New Orleans District of the Corps shall coordinate the development of a long-term site monitoring plan, to be approved in writing by EPA, after consulting with the GNOHSDRRS interagency review team. EPA will make the determination as to whether the monitoring plan is adequate and appropriate.

2. The New Orleans District of the Corps and EPA Region 6 shall develop and sign a Memorandum of Agreement with those willing and active State, federal, and local participants with natural resource management missions who have participated on the IER # 12 <sup>11</sup> interagency review team. The Memorandum of Agreement shall document the commitment to participate in the planning and analyses specified by the long-term monitoring plan.

3. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing the long-term monitoring plan. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on the long-term monitoring plan by the NPS (Jean Lafitte National Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

4. The New Orleans District of the Corps shall be responsible for ensuring implementation of a long-term site monitoring plan, to extend no less than the first 50 years of the Corps project life, unless otherwise addressed in a long-term agreement with another party approved by EPA. <sup>12</sup> The long-term monitoring plan for the Bayou aux Carpes Modification mitigation and augmentation features will focus on monitoring both the mitigation and augmentation features, as well as the impacts of the floodwall. The plan should provide for making adjustments if the mitigation or augmentation features prove not to perform as expected. Though it is not expected that the Corps would need to make future adjustments to the floodwall, the effects of the floodwall are to be monitored to determine unexpected impacts which may warrant other corrective actions.

5. The New Orleans District of the Corps shall provide EPA Region 6 with digital aerial photography of the site (season and flood stage to be determined jointly) prior to

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<sup>11</sup> The Corps has divided the study area for the GNOHSDRRS into 17 project component areas. Each of these component areas will report on plans for those areas in Individual Environmental Reports (IERs). The proposed plans for the Bayou aux Carpes CWA Section 404(c) area are reported in IER #12.

<sup>12</sup> The ultimate responsibility to plan, design, fully fund, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this determination was based are the responsibility of the U.S. Army Corps of Engineers. Although the Corps may enter into long term agreements with another party with respect to the work authorized by this modification, such agreements do not obviate the Corps' responsibility for meeting the conditions of this modification, and any concerns EPA may have will be raised with the Corps, not other involved parties.

constructing the floodwall along the perimeter of the site and annually for the first five years after its construction, and at other times as specified by EPA Region 6.

6. The New Orleans District of the Corps shall gather the monitoring data and report results to EPA Region 6 annually, on a schedule to be specified by EPA Region 6, each year for the first five years, and at other times as specified by EPA Region 6.

7. Throughout the life of the project, the New Orleans District of the Corps shall ensure that any necessary adaptive construction modifications, including removal or repair, of any mitigation or augmentation feature is instituted based on the recommendations of EPA.

8. In the event that EPA determines during the life of the project that operation, maintenance, or long-term management by the Corps of the flood protection/risk reduction features, mitigation features, or augmentation features is causing unanticipated and unacceptable wetland impacts, EPA may modify the terms of these conditions.



**Michael H. Shapiro**  
**Acting Assistant Administrator for Water**



**Date**

# **Appendix 1**

**Modification to the 1985 Clean Water Act Section 404(c)  
Final Determination for Bayou aux Carpes**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

NOV 04 2008

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

Mr. Lawrence E. Starfield  
Deputy Regional Administrator  
Environmental Protection Agency  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733

Dear Mr. Starfield:

The purpose of this letter is to request modification of the Environmental Protection Agency (EPA) Bayou aux Carpes 404 (c) Final Determination issued October 16, 1985. The US Army Corps of Engineers (Corps) requests that the EPA consider approving a modification that would allow the Corps to construct a segment of the West Bank and Vicinity Hurricane Protection Project / Hurricane and Storm Damage Risk Reduction System (HSDRRS) along the northeastern property boundary. The intent of the Corps proposed action is to reduce risk to the citizens of Greater New Orleans Metropolitan area by building a more resilient and reliable storm damage and risk reduction system. We can accomplish this by constructing an improved storm surge barrier system around the Bayou aux Carpes site, crossing the Gulf Intracoastal Waterway (GIWW) with a floodgate(s)/pumping station structure, and then tying into the existing Hero Canal Federal levee (GIWW West Closure Complex (GIWW WCC) alternative, see enclosed map and floodwall cross section).

The Corps has been working closely with EPA and other federal and state resource agency staff for several months to come up with the least environmentally damaging alternative that lowers the risk of storm surge damage to the greatest number of people in the area. It is our determination that the proposed action, GIWW WCC is the best alternative to provide the greatest level of risk reduction while minimizing environmental impacts. The Corps intends to make a final decision in the upcoming months concerning this project by circulating a draft of Individual Environmental Report (IER) # 12 and a Clean Water Act Section 404 (b) (1) public notice for a 30-day public comment period. Upon completion of the 30-day comment period, the Corps will review all comments received along with the data and analysis discussed in the IER in order to make a decision on the proposed action. The Corps will not make a decision on this portion of the proposed action until the EPA makes a determination on a modification to the Bayou aux Carpes 404 (c).

The proposed alternative would require the construction of a floodwall and earthen berm along the eastern boundary of the 404 (c) site. To construct this alternative the Corps would need to impact an area within the 404 (c) area no greater than 4,200 LF by 100 LF. This action would impact no greater than 9.6 acres along the west bank of the GIWW within the Bayou aux Carpes 404 (c) area. Please refer to the enclosed documentation that describes in detail the:

- a. Need to modify the original HSDRRS alignment;
- b. Need to modify the Bayou aux Carpes 404 (c) Final Determination;
- c. Measures taken to ensure the avoidance and/or minimization of all adverse impacts to the Bayou aux Carpes 404 (c) area;
- d. Planning and design considerations to avoid additional impacts from any reasonable foreseeable future flood protection measures (i.e., the Louisiana Coastal Protection and Restoration (LACPR) Study);
- e. Plans for adequate site specific mitigation for all unavoidable adverse impacts to the Bayou aux Carpes 404 (c) area;
- f. Review of projected wetland impacts as per Corps 404 (b)(1) guidelines and the EPA 404 (b)(1) and 404 (c) procedures found in 40 CFR Parts 230 & 231; and
- g. Draft Path Forward with GIWW WCC.

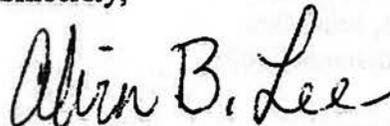
Summarizing the above attachments: The Corps has determined that the GIWW WCC alternative, which alters the current system alignment, is the government's proposed action for this segment of the HSDRRS because this alternative would provide the most reliable, time sensitive and cost effective solution with the least adverse environmental impacts. Though this alternative would impact the Bayou aux Carpes 404 (c) area, the Corps agrees that final design efforts would utilize all feasible engineering and construction practices to reduce impacts to these nationally significant wetlands. In order to minimize the footprint of the surge barrier component to no greater than 4,200 LF by 100 LF along the western side of the GIWW within the Bayou aux Carpes 404 (c) area, the Corps agrees to investigate and utilize innovative techniques to design and build a structure that incorporates a floodwall and earthen berm rather than an earthen levee. The Corps would also locate the GIWW floodgate(s) as close to the Harvey and Algiers Canals confluence as engineeringly feasible in order to minimize impacts to the 404 (c) area. To further ensure the minimization of adverse impacts within the 404 (c) area, construction of the floodwall and earthen berm / access road would occur from the GIWW side of the construction area. In addition, project feature augmentations, such as allowing Old Estelle effluent into the 404 (c) area by gapping the spoil bank and removing the shell plug at Bayou aux Carpes, are being studied and would be incorporated as project features if the results of the

environmental studies demonstrate that this proposed action would augment the Corps actions to minimize effects to the 404 (c) wetland habitat. Additional project feature augmentations, such as the gapping of other canal banks in the 404 (c) area are also being studied and would be incorporated into the project if it is found that the features further minimize impacts as a result of the Corps proposed action. The Corps agrees that mitigation for all unavoidable adverse impacts to the Bayou aux Carpes 404 (c) area would occur within the Bayou aux Carpes 404 (c) area and/or Jean Lafitte National and Historical Park. Mitigation projects would be designed and implemented concurrently with the design and construction of the floodwall and earthen berm / access road. Full mitigation within this unique environment may require mitigation in addition to acres indicated by the Wetland Value Assessment. The Corps further agrees to work in collaboration with the interagency team to monitor the area to ensure mitigation is successful in reaching its targeted goal and to utilize adaptive management efforts to ensure the project feature augmentations are assisting to minimize adverse impact within the 404 (c) area. The total funding required for the entire HSDRRS, \$16.8 billion, has been appropriated by Congress. This funding includes funds for the design and construction of all HSDRRS mitigation measures. The Corps would ensure that all impacts due to upgrading structures currently outlining the Bayou aux Carpes 404 (c) area would occur on the protected side and would not impact the 404 (c) area. Lastly, the GIWW WCC proposed action, would have the greatest adaptability to accommodate an enlargement associated with future system upgrades, i.e., LACPR.

We recognize the significance of this request and greatly appreciate the cooperation the EPA has shown in working with the Corps in our efforts to construct the most reliable hurricane risk reduction system possible.

If you have any questions or concerns please contact Mr. Gib Owen by E-mail: [gib.a.owen@usace.army.mil](mailto:gib.a.owen@usace.army.mil) or by phone at (504) 862-1337.

Sincerely,



Alvin B. Lee  
Colonel, US Army  
District Commander

Enclosure

See page 4 for list of copies furnished.

Mr. Garret Graves  
Chairman  
Coastal Protection and Restoration  
Authority of Louisiana  
1051 North 3rd Street  
Capitol Annex Building  
Baton Rouge, Louisiana 70802

Mr. James McMenis  
LA Office of Coastal Protection  
8900 Jimmy Wedell Road  
Baton Rouge, Louisiana 70807

Mr. David Bindewald  
President  
Southeast Louisiana Flood  
Protection Authority - West Bank  
7001 River Road  
Marrero, Louisiana 70072

Mr. Jerry Spohrer  
Executive Director  
West Jeff Levee District  
7001 River Road  
Marrero, Louisiana 70072

Honorable Billy Nungesser  
Plaquemines Parish President  
8056 Highway 23, Suite 200  
Belle Chasse, Louisiana 70037

Mr. David Luchsinger  
Park Superintendent  
Jean Laffite National Historic Park and Preserve  
419 Decatur Street  
New Orleans, Louisiana 70130-1035



DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF

JUL 27 2009

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

Mr. Michael Shapiro  
Acting Assistant Administrator for Water  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Mail Code: 4101M  
Washington, DC 20460

Dear Mr. Shapiro:

I am writing to you today to reaffirm the US Army Corps of Engineers (Corps) November 4, 2008, commitment to the US Environmental Protection Agency (EPA) that the Corps will plan, design, ensure full funding, implement and monitor all mitigation, augmentations and monitoring measures that are described in the May 28, 2009, Modification to the 1985 Clean Water Act Section 404 (c) Final Determination for Bayou aux Carpes, subject to the availability of appropriated funds.

Additional information on the Corps' approved project to reduce the risk of hurricane and storm damage to the people of the West Bank of New Orleans, Louisiana, and the Corps' plans to complete mitigation and augmentations for unavoidable impacts to the Bayou aux Carpes 404(c) area can be found in Final Individual Environmental Report 12 and Decision Record dated February 18, 2009. A copy of this report can be obtained by contacting Mr. Gib Owen or directly from the [nolaenvironmental.gov](http://nolaenvironmental.gov) web site.

If you have any questions or concerns, please contact Mr. Gib Owen at: US Army Corps of Engineers, CEMVN PM-R, Attn: Mr. Gib Owen, P.O. Box 60267, New Orleans, Louisiana, 70160-0267. Mr. Owen can be contacted by E-mail: [gib.a.owen@usace.army.mil](mailto:gib.a.owen@usace.army.mil) or by phone at (504) 862-1337.

Sincerely,

A handwritten signature in cursive script that reads "Alvin B. Lee".

Alvin B. Lee  
Colonel, US Army  
District Commander



REPLY TO  
ATTENTION OF:

Planning, Programs and  
Project Management Division  
Environmental Planning and  
Compliance Branch

**DEPARTMENT OF THE ARMY**

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

Mr. David Luchsinger  
Park Superintendent  
Jean Lafitte National Historical Park and Preserve  
419 Decatur Street  
New Orleans, LA 70130-1035

Dear Superintendent Luchsinger:

I am writing to you today regarding the inadvertent encroachment by US Army Corps of Engineers (USACE) staff and one of our contractors onto Jean Laffite National Historical Park and Preserve property in the area just west of the Highway 45 entrance into the park in Jefferson Parish, Louisiana. It appears that encroachments have occurred on two separate occasions in recent months. The enclosed map shows the areas that were impacted by this work.

On the first occasion, in August 2007, during the taking of soil borings for the nearby USACE borrow property it appears that my staff inadvertently sited a boring site on park property. This action resulted in a soil boring being taken on park property and the destruction of approximately one-third of an acre of bottomland hardwood habitat. On the second occasion, in October 2007, it appears that one of our contractor's employees cleared an area of park property approximately one acre in size comprised of bottomland hardwoods. Site is along the southern boundary of the Highway 45 borrow pit, approximately 2,000 feet from Highway 45. This work was done without our authorization and was stopped when discovered by the onsite Quality Assurance Representative. We have based our estimates of the size of the encroachments on discussions with park staff and field visits and not formal surveys.

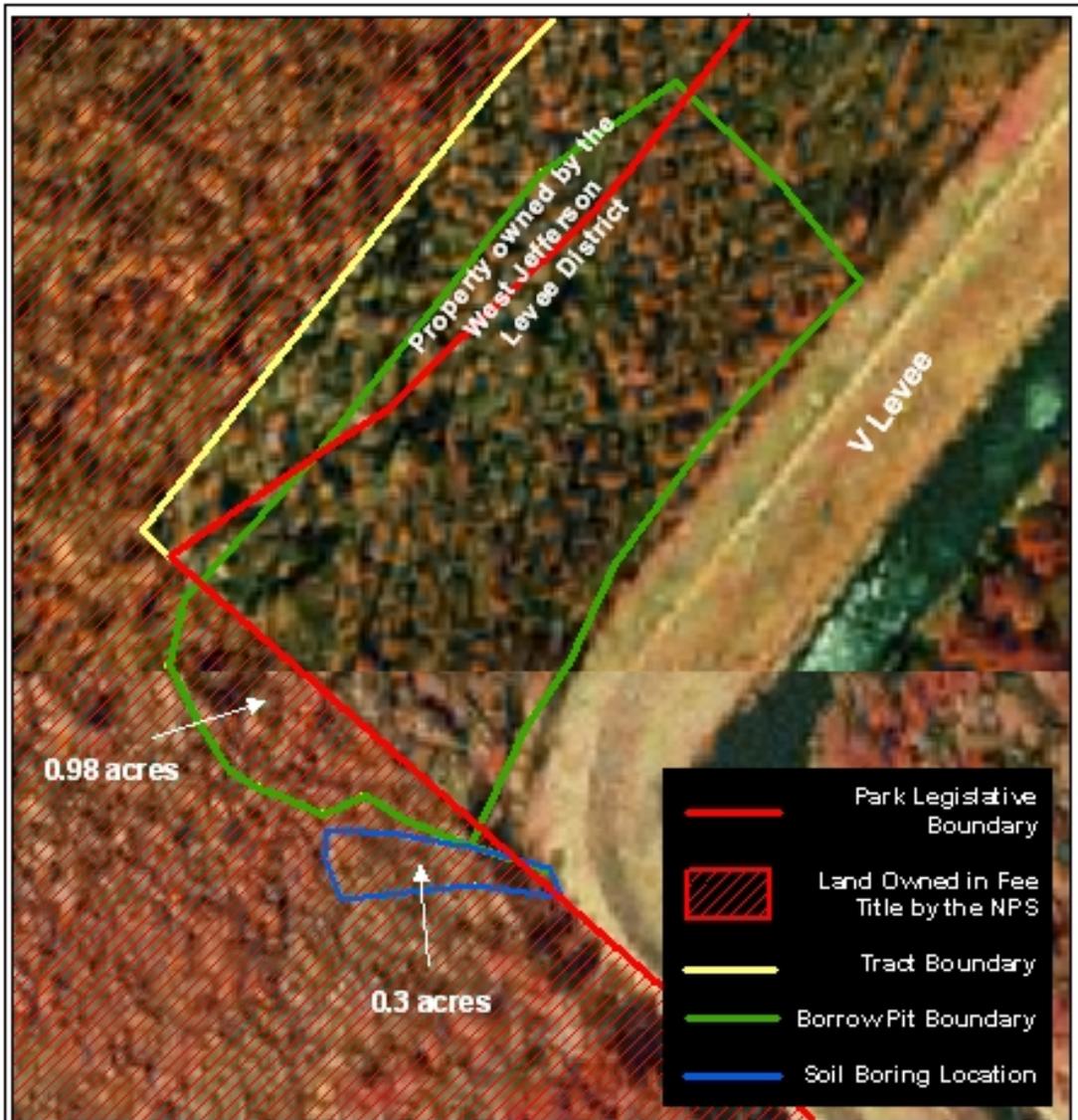
This issue was brought to our attention by your resource staff several months ago and we have been coordinating with them to determine the exact impacts to park property. We would like to meet with you and your staff to reach an agreement on exactly what areas have been impacted and to determine a tentative plan to restore the area. We appreciate your staff's professionalism and cooperation in partnering with us to resolve these issues. We regret that these incidents have occurred and are prepared to complete the steps necessary to restore these areas.

If you have any questions or would like to discuss this matter, please contact Mr. Gib Owen in our Environmental Planning and Compliance Branch. Mr. Owen can be reached at (504) 862-1337 or by e-mail at [Gib.A.Owen@usace.army.mil](mailto:Gib.A.Owen@usace.army.mil).

Sincerely,

Alvin Lee  
Colonel, US Army  
District Commander

Enclosure



**Location of V Levee Borrow Pit within the Barataria Preserve of Jean Lafitte National Historical Park and Preserve**



|                                                                                                        |                                                                                                                             |                                                      |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Jean Lafitte National Historical Park & Preserve<br>U.S. Dept of the Interior<br>National Park Service | Acreage figures are estimated based on GPS data collected on 10/23/07<br>Base map: 2005 DOQQ<br>Projected in NAD83, Zone 15 | Page 1 of 1                                          |
|                                                                                                        |                                                                                                                             | Drawn By: Nancy P. Walters<br>Date: November 6, 2007 |

Mr. Garret Graves  
Chairman  
Coastal Protection and Restoration  
Authority of Louisiana  
1051 North 3rd Street  
Capitol Annex Building  
Baton Rouge, Louisiana 70802

Mr. James McMenis  
LA Office of Coastal Protection  
8900 Jimmy Wedell Road  
Baton Rouge, Louisiana 70807

Mr. David Bindewald  
President  
Southeast Louisiana Flood  
Protection Authority - West Bank  
7001 River Road  
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Executive Director  
West Jeff Levee District  
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8056 Highway 23, Suite 200  
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Mr. David Luchsinger  
Park Superintendent  
Jean Laffite National Historic Park and Preserve  
419 Decatur Street  
New Orleans, Louisiana 70130-1035

**ESA MEMO**

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,  
( ) Will have no effect on those resources  
(X) is not likely to adversely affect those resources.  
This finding fulfills the requirements under Section 7(e)(2) of the Act.

*David L. Wetts*  
Acting Supervisor  
Louisiana Field Office  
U.S. Fish and Wildlife Service

*7 Jul 2015*  
Date

To: Jeff Weller, USFWS  
646 Cajundome Blvd., Suite 400  
Lafayette, LA 70506  
Fax: (337) 291-3139

From: Elizabeth Behrens  
FAX: (504) 862-2088  
Date: June 22, 2015

Subject: ESA coordination for PIER 37, Tier 1 Jean Lafitte National Historical Park and Preserve Mitigation Features, West Bank and Vicinity (WBV), Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation, Jefferson Parish, Louisiana

Dear Mr. Weller:

Attention: David Walther

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), is preparing to perform the work described in Supplemental Programmatic Individual Environmental Report (SPIER) #37, "West Bank and Vicinity (WBV), Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation Project Jefferson, St. Charles, Lafourche, and Plaquemines Parishes, Louisiana." We are requesting concurrence with our threatened and endangered species determination of "Not likely to Affect".

**Project Description**

The approved WBV HSDRRS mitigation plan set forth in PIER 37 was comprised of both constructible and programmatic features. The programmatic features in the plan required further analysis and agency coordination before National Environmental Policy Act (NEPA) compliance was considered complete and the projects therefore constructible. Such analysis and coordination is now occurring during completion of PIER 37, Tier1 for all the once programmatic features located on Jean Lafitte National Historic Park and Preserve (JLNHPP). The following are the projects addressed in PIER 37, Tier 1.

**General Fresh Marsh Projects**

This mitigation project would involve the restoration of fresh marsh habitats at two locations (figures 1 and 2). Feature JL1B5 would be built in an open water portion of Yankee pond, would occupy approximately 91.2 acres, and would be located within the Park on federal land. Feature JL15 would be situated in an area along the shoreline of Lake Salvador where prior work has already largely established a marsh platform that was previously an open water portion of the lake. Feature JL15 would encompass a total of approximately 55.5 acres. Portions of this feature would overlap federal property within the park, while the remaining portions would overlap lands not currently owned by the federal government. Both of the marsh restoration features are located in Jefferson Parish.

As part of the proposed JL15 project, existing low quality BLH species (black willow) within the project area would be eradicated, existing rock armament of the lakeside dike would be augmented, and several fish dips would be constructed in the dike. Low quality BLH species on the dike itself would not be removed. The new fish dips would be designed to prevent interior erosion from lake wave action and would provide water exchange and aquatic organism access to the marsh feature. During refurbishment of the rock dike, the two existing fish dips would be improved so as to prevent further interior erosion due to lake wave action. It is anticipated that the JL15 construction activities (herbicide application, refurbishment of rock dike, constructing fish dips) would require approximately 4 to 5 months.

Approximately 8,400 linear feet of retention dike would be required for JL1B5. Of the total 8,400 linear feet of dikes, approximately 3,100 linear feet would be armored/capped with stone (well graded riprap with a proposed top size stone of 650 pounds) during the second project construction phase. This armored dike segment would be located along the eastern boundary of feature of JL1B5 adjacent to Bayou Segnette (figure 1).

Retention dikes would be constructed to maintain a minimum of one foot of freeboard during dredging operations. The retention dikes would be constructed to elevation +5.0 feet, with a 5-foot crown to assure dike integrity. Borrow for these retention dikes would be excavated with a marsh buggy from within the marsh creation footprint. The borrow ditch would be offset a minimum of 40 feet from the dike to assure dike stability. For initial quantity estimates, the dikes were assumed to have 1V:4H side slopes. A low level weir or spill boxes would be constructed in the western retention dike where it borders existing marsh habitats to allow for effluent water release from within the marsh restoration area and potentially nourish the adjacent existing marsh. If deemed necessary by the construction contractor, a low level interior weir could be constructed to assist in vertical stacking of dredged material.

Marsh restoration at JL1B5 would require approximately 600,000 cubic yards of material hydraulically dredged from Lake Cataouatche. It is anticipated that the proposed borrow source would contain approximately 10 percent sand. The borrow site would be situated a minimum 2,000 feet from the lake shoreline and borrow would be removed by a hydraulic cutter-head dredge. The borrow site would be approximately 1,200 ft X 1,500 ft (roughly 42.0 acres) with a maximum cut of 10 feet. The material would be hydraulically pumped from the borrow site to feature JL1B5 via 18,000 linear feet of pipeline routed through Lake Cataouatche to the western bank of Bayou Segnette Waterway (BSSW). Floating pipeline (discharge pipe on pontoons) would be used in the BSSW. The main navigation channel in the BSSW ranges from 300 to 450 feet wide. The portion of the slurry pipeline routed adjacent to the west bank of the BSSW would have a pipeline corridor width of 100 feet. The eastern boundary of this corridor would not extend into the limits of or cross the main BSSW navigation channel. This corridor would be marked on 150 foot centers to prevent boat hazards in the lake and along the bayou. Markers would include lighted and reflective buoys. As the pipeline would need to cross a portion of Lake Cataouatche from the borrow site to the BSSW, a small segment of submerged pipeline would be utilized with appropriate signage to ensure safe passage of vessels over the line. Throughout the initial construction phase, project construction would be coordinated with the US Coast Guard.

The initial target marsh elevation (elevation of slurry fill) in JL1B5 would be +3.5 feet. It is

estimated that the initial project construction activities discussed above would require approximately 5 to 6 months. Once these activities are completed there would be an idle period of approximately 1 year to allow the marsh feature to settle to the desired final target elevation of approximately +1.0 to +1.5 feet. The final construction phase would begin following settlement and dewatering of the created marsh platform.

In the final construction phase, all perimeter dikes except for the one bordering Bayou Segnette (e.g. east dike) would be degraded with a marsh buggy such that the crest of the dikes would be the same as the final target elevation of the marsh platform. Approximately 2-feet of dike degrading is anticipated after the initial year of settlement to revert the dike footprint to desired marsh elevation. The dike segment along the eastern edge of feature JL1B5 would first be degraded to elevation +3.0 feet. Armoring would then be placed along the eastern face of this dike, constructed with a 2-foot stone cap to elevation +3.0 feet. During this process, fish dips” (essentially armored gaps) would be constructed in the armored dike segment. The fish dips would allow water exchange and provide aquatic organism access to the marsh feature. Each fish dip would have a bottom width of approximately 100 feet, a bottom elevation no greater than 0 feet, and 1V:3H side slopes. At this phase of design, it was assumed that there would be one fish dip established for every 500 feet of armored dike (i.e. 500-foot spacing). Sediment generated during the dike degrading process would be placed back into the depression that may result from incomplete filling of the interior borrow ditch within the restoration feature.

In conjunction with the dike degrading efforts, trenasses would be constructed as necessary to serve as tidal creeks to facilitate water exchange and create shallow water interspersed features within JL1B5. The trenasses would be rutted to a lower than marsh elevation by performing two passes of a marsh buggy along the desired alignment. The acceptable trenasse width, if constructed in this fashion, would be the width of marsh buggy. If the resulting depression is not adequate for minimal water flow, the marsh equipment may excavate material along the proposed alignment, not to exceed a 5-foot bottom width by 1-foot deep channel. It is anticipated that the final phase of construction activities (degrading dikes, constructing trenasses and fish dips, installation of dike armoring) would take approximately 3 to 4 months.

Additional activities that would occur during the project construction phase would include periodic eradication of invasive/nuisance plant species within the mitigation feature as well as mitigation monitoring and (i.e. monitoring and reporting necessary prior to transfer of monitoring responsibilities to the non-Federal sponsor). It is assumed that appropriate fresh marsh plant species would naturally colonize the marsh restoration feature; hence, no planting of the feature is proposed. However, if the site does not vegetate within 3 years, planting with native fresh/intermediate species would be initiated.

### **JL1B4 NPS Fresh Marsh Project**

The JL1B4 project would involve restoring 20.4 acres of fresh marsh habitat from open water in the southwest corner of Yankee Pond (figure 3). This project would merge with the JL1B5 feature to create one overall marsh restoration project occupying approximately 108 acres. Under this scenario, the armored dike constructed along the eastern edge of JL1B5 would protect both JL1B5 and JL1B4 since the JL1B4 project would become part of the overall marsh platform. The earthen perimeter retention dike along the southern boundary of JL1B5 would be moved to the

southern boundary of JL1B4 and the western boundary of JL1B5 extended to encompass both JL1B4 and JL1B5.

Approximately 2,000 linear feet of retention dike would be required for JL1B4. Retention dikes would be constructed in the same manner as those for the JL1B5 feature. A low level weir would be constructed in the southwest corner of the restoration project to allow for effluent water release from within the marsh restoration area and potentially nourish the existing marsh adjacent to the west side of JL1B4.

Marsh restoration would require approximately 150,000 cubic yards of material hydraulically dredged from Lake Cataouatche. The borrow site would be approximately 1,500 ft X 300ft (roughly 10.3 acres) with a maximum cut of 10 feet. All other construction details would be the same as those specified for the JL1B5 feature.

### **JL7 Park/404c Swamp Project**

The JL7 project would involve restoring hydrologic connection and natural sheet flow across existing impounded swamp habitat as mitigation for Park/404c swamp impacts (figure 4).

Existing spoil berms along the north side of the Millaudon and Horseshoe Canals will be gapped to improve exchange of surface water between swamp habitats in the area. Spoil berm gaps would be excavated at 3 locations along Millaudon Canal and 3 locations along Horseshoe Canal. The spoil berm would be degraded approximately 4.5 ft, to elevation -1.5 NAVD88 which is below the typical elevations found in existing swamp habitats near this project. This bottom elevation would allow water movement in the adjacent swamp to mimic the tidal range experienced in the adjacent canals and would discourage re-growth of woody plant species in the gaps. Gaps constructed on Millaudon Canal would be excavated to a bottom width of 25 feet, approximately 60 feet long with 1:3 side slopes. Gaps constructed on Horseshoe Canal would be excavated to a bottom width of 100 feet, approximately 60 feet long with 1:3 side slopes. The proposed project would require excavation of approximately 470 cubic yards/cut for each cut along Horseshoe Canal and 140 cubic yards/cut for each cut along the Millaudon Canal.

Materials and vegetative debris excavated by gapping canal spoil berms shall be placed immediately south of the gaps in the adjacent canals using marsh tracked excavators or excavators on small modular barges to stay within the canal and avoid additional impacts to spoil bank habitat.

Construction equipment would access the project site via an access roadway along an existing levee from Tusa Drive off of Barataria Blvd. After reaching the levee, construction equipment would follow the West Bank Hurricane Protection Levee west to Horseshoe Canal or north to Millaudon Canal. The proposed construction access route would require building temporary earthen access ramps on either side of the levees within the existing levee ROW for equipment movement over the existing levee. Construction equipment, consisting of long reach marsh buggies, would then access the gap locations by traveling adjacent to the spoil berm, within the banks of the canal, on the north side of the canals. If instead of tracking in the canal, modular barges are used they would be brought in by trailer from Barataria Blvd. and connected onto a work platform in the canal. Equipment would then construct the gaps from the barges.

### **JL14A Park/404c BLH-Wet Project**

The JL14A project would involve restoring BLH-Wet habitat from open water areas (figure 4).

This project would require filling 8.1 acres of an existing borrow pit to elevations conducive to BLH establishment. The existing bottom elevation of the borrow pit is likely around -20.0 ft. The pit would first be filled with 19.5 feet of sand to elevation -0.5 ft. A clay cap would then be placed on top of the sand fill to the initial target elevation of 3.5 ft. It is anticipated that it would take approximately one year for the fill materials to settle to the desired final target grade of elevation 2.0 feet. Clearing of vegetation and debris from within the pits, and trimming of overhanging trees along the edge of the mitigation project may be required prior to placement of fill.

The proposed project would require approximately 255,000 cubic yards of sand and 53,000 cubic yards of clay hauled from off-site commercial, contractor furnished, and/or government furnished borrow pits.

Construction equipment, including dump trucks, would access the project site via an existing levee access roadway situated about 0.3 miles south of Tusa Drive off Barataria Blvd. After reaching the levee, construction equipment would follow the West Bank Hurricane Protection Levee west to JL14. A temporary road will be required along the floodside berm of the levee. Approximately 100 – 20 cy dump trucks would be accessing the site per day during the estimated 210 day construction duration for this project.

The initial construction phase is an estimated 3 years, with an estimated 9 months to a year to settle to the final target elevation of +2.0. Once the mitigation project has settled to the desired target grade, the project would be planted with native canopy and midstory BLH species.

### **Occurrence of Protected, Threatened and Endangered Species**

Only one of the listed species under the jurisdiction of USFWS for Jefferson parish, the West Indian Manatee, has the potential to be found in the project areas. Although this species has never been reported on the park, the project will employ the use of the following standard protection to avoid any potential there exists for this species to show up in the project areas and be impacted.

**Manatees:** All contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel would be responsible for observing water-related activities for the presence of 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., the work area), and at least one sign would be placed where it is visible to the vessel operator. Siltation barriers, if used, would be made of material in which manatees could not 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: moving equipment would not operate within 50 ft 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 of its own accord, special operating conditions would no longer be necessary, but careful observations would be resumed. Any manatee sighting would be immediately reported to the U.S. Fish and Wildlife Service (337/291-3100) and the Louisiana Department of Wildlife and Fisheries (LDWF), Natural Heritage Program (225/765-2821).

Bald eagles and migratory birds may be present within the project areas; however, no known nests or rookeries exist at this time. Surveys will be conducted prior to construction to determine if any nests become active within the project area. If nests are found, no work would take place within 660 feet for bald eagles and 1,000 feet for colonial nesting birds.

### **Conclusion and Determination**

We believe that the project, as planned, would not likely affect any federally-listed threatened or endangered species or their critical habitat with the use of the proposed standard protection measures. Please review this plan and inform us whether or not you agree with our determination. If you have any questions about the project or need additional information please telephone me at (504) 862-2025.

### **Literature Cited**

U.S. Fish & Wildlife Service (USFWS). Endangered Species Program. 2015.  
[http://www.fws.gov/lafayette/pdf/LA\\_T&E\\_Species\\_List.pdf](http://www.fws.gov/lafayette/pdf/LA_T&E_Species_List.pdf)

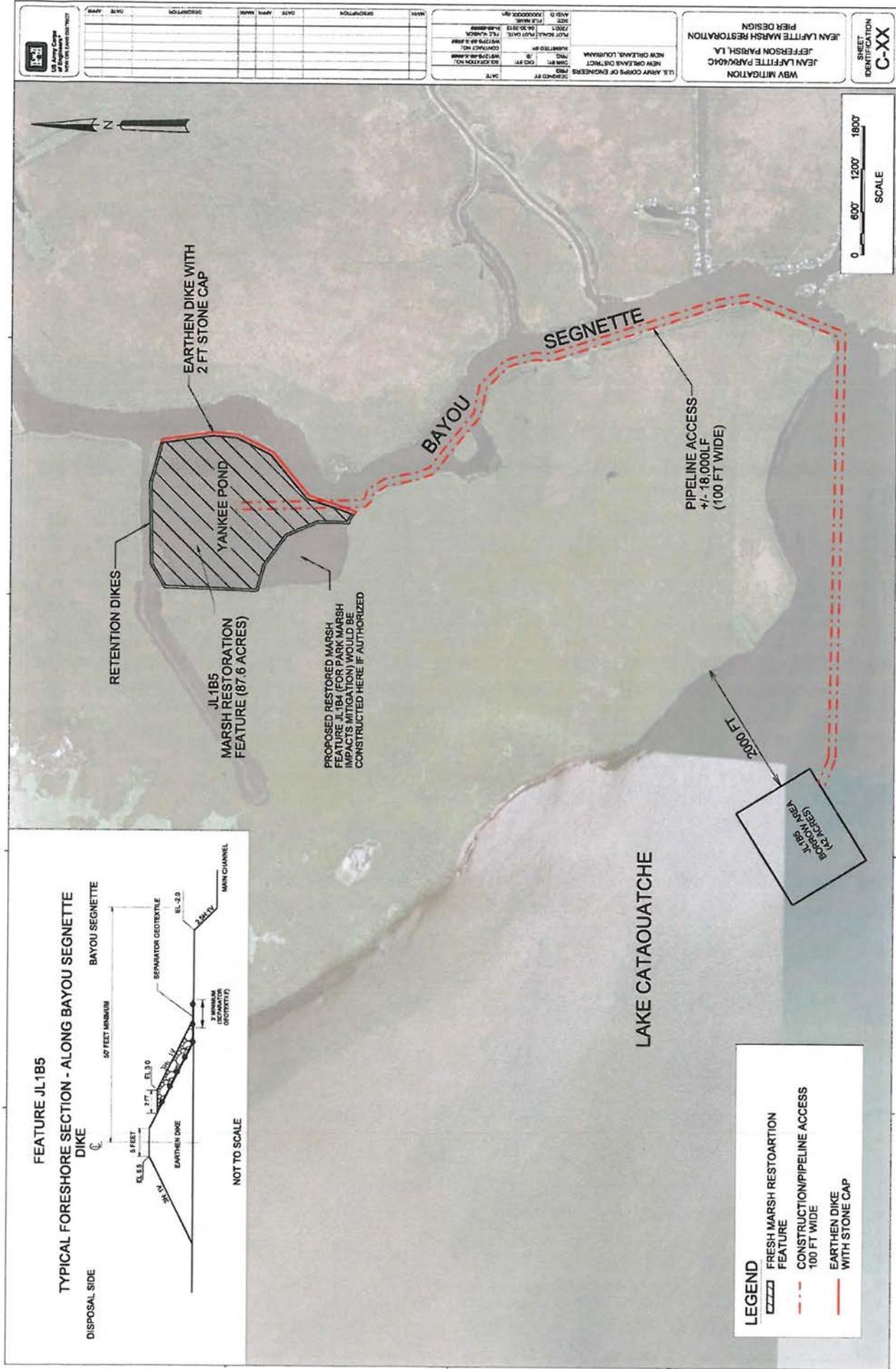


Figure 1: Jean Lafitte Fresh Marsh Project for General Impacts





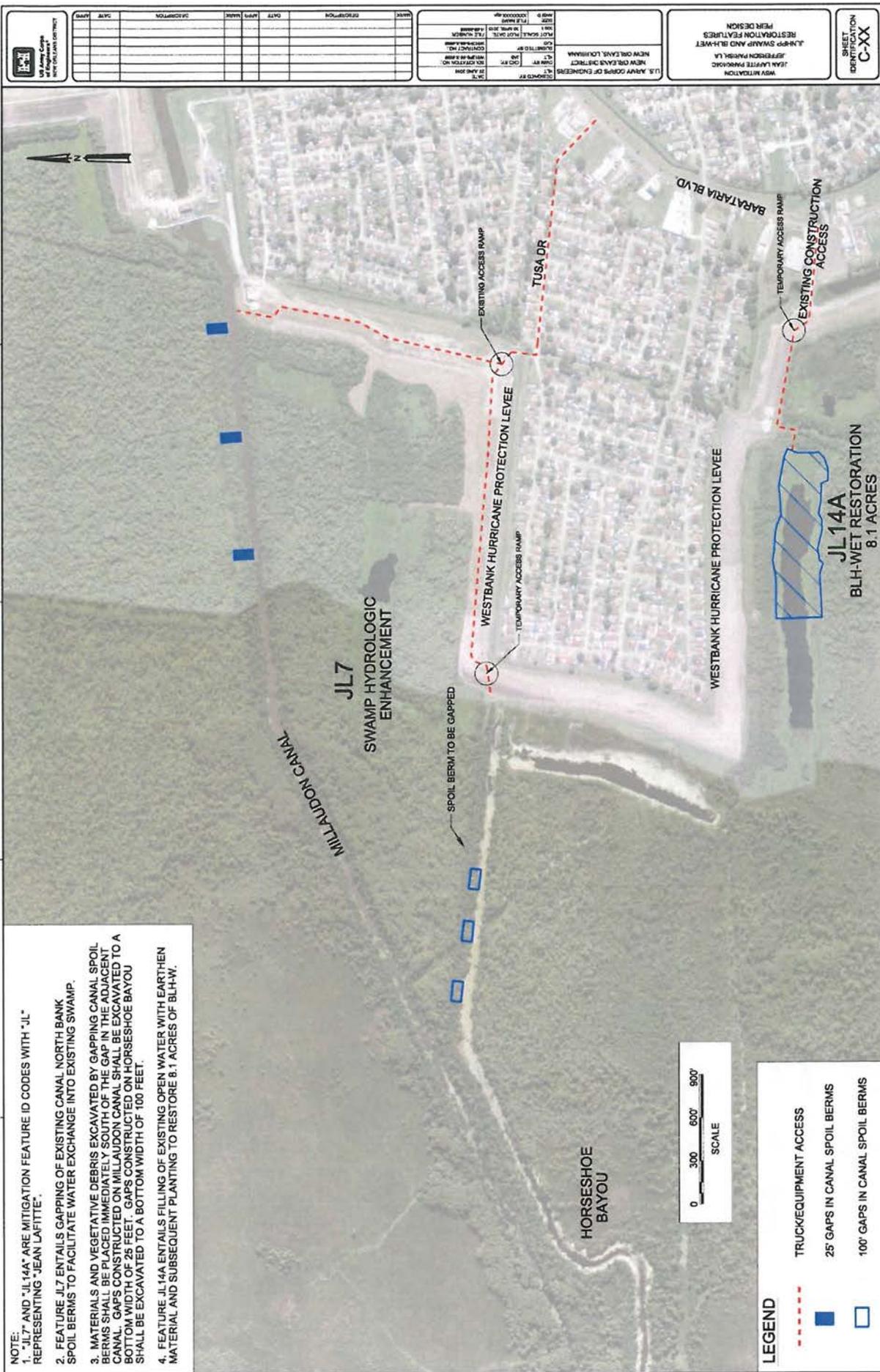


Figure 4: Jean Lafitte BLH-Wet and Swamp Restoration Projects for Park/404(c) impacts

**BOBBY JINDAL**  
GOVERNOR



**STEPHEN CHUSTZ**  
SECRETARY

**State of Louisiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF COASTAL MANAGEMENT**

August 21, 2015

Elizabeth Behrens  
Corps of Engineers- New Orleans District  
P.O. Box 60267  
New Orleans, LA 70160-0267

RE: **C20140014 mod 01**, Coastal Zone Consistency  
**New Orleans District, Corps of Engineers**  
Direct Federal Action  
PIER #37, TIER 1: Wetland Restoration at Five Sites in Jean Lafitte National Historical  
Park and Preserve  
**Jefferson Parish, Louisiana**

Dear Ms. Behrens:

The above referenced modification has been reviewed for consistency with the Louisiana Coastal Resources Program in accordance with Section 307 (c) of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in this application, is consistent with the LCRP.

If you have any questions concerning this determination please contact Carol Crapanzano of the Consistency Section at (225) 342-9425 or 1-800-267-4019.

Sincerely yours,

**/S/ Don Haydel**

Acting Administrator  
Interagency Affairs/Field Services Division

DH/SK

cc: Barbara Keeler, EPA  
Dusty Pate, NPS  
David Walther, USFWS  
Dave Butler, LDWF  
Frank Cole, OCM  
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## United States Department of the Interior



FISH AND WILDLIFE SERVICE

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Lafayette, Louisiana 70506

December 14, 2015

Colonel Richard L. Hansen  
District Commander  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Hansen:

Please reference your office's first tier to the Programmatic Individual Environmental Report (PIER #37, TIER 1) that is being prepared under the approval of the Council on Environmental Quality (CEQ) and that will partially fulfill the U.S. Army Corps of Engineers' (Corps) compliance with the National Environmental Policy Act of 1969 (NEPA) (83 Stat. 852, as amended; 42 U.S.C. 4321- 4347). Individual Environmental Reports are CEQ-approved alternative arrangements for compliance with NEPA that would allow expedited implementation of improved hurricane protection measures in Louisiana. Work proposed under this PIER would mitigate impacts resulting from the improved hurricane protection measures and would be conducted under the authority of Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4). That law authorized the Corps to upgrade two existing hurricane protection projects (i.e., the Westbank and Vicinity of New Orleans [WBV] and the Lake Pontchartrain and Vicinity [LPV]) in the Greater New Orleans area in southeast Louisiana.

The Fish and Wildlife Service provides the enclosed report to assist your staff in fulfilling mitigation needs associated with those efforts in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This final report constitutes the report of the Secretary of the Interior as required by Section 2(b) of that Act. Furthermore, additional comments are provided in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d), and the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). Copies of this draft report were provided to the National Marine Fisheries Service (NMFS), the Louisiana Department of Wildlife and Fisheries, and the Jean Lafitte National and Historical Park and Preserve; any comments from those agencies were incorporated into this final report.

We will continue to work closely with your staff to ensure that fish and wildlife resources are conserved. Toward that end, please have your staff advise Mr. David Walther (337/291-3122) if you or your staff has any questions regarding this matter.

Sincerely,

A handwritten signature in blue ink that reads "Brigette D. Firmin". The signature is written in a cursive style with a clear, legible font.

Brigette D. Firmin  
Acting Deputy Field Supervisor  
Louisiana Ecological Services Office

cc: Jean Lafitte National Historical Park and Preserve, New Orleans, LA  
National Marine Fisheries Service, Baton Rouge, LA  
Environmental Protection Agency, Dallas, TX  
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA  
LA Dept. of Natural Resources (CMD), Baton Rouge, LA  
LA CPRA, Baton Rouge, LA

**Fish and Wildlife Coordination Act Report  
for the  
Hurricane and Storm Damage Risk Reduction System (HSDRRS),  
Tier 1 Individual Environmental Report (IER) 37  
West Bank and Vicinity (WBV)  
Mitigation Plans**



PROVIDED TO  
NEW ORLEANS DISTRICT  
U.S. ARMY CORPS OF ENGINEERS  
NEW ORLEANS, LOUISIANA

PREPARED BY  
DAVID WALTHER

FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
LAFAYETTE, LOUISIANA  
DECEMBER 2015

U.S. FISH AND WILDLIFE SERVICE – SOUTHEAST REGION

CORPS OF ENGINEERS  
HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM  
TIER 1 INDIVIDUAL ENVIRONMENTAL REPORT 37  
WEST BANK AND VICINITY  
MITIGATION PLANS

FISH AND WILDLIFE COORDINATION ACT REPORT

Prepared by  
David Walther  
U.S. Fish and Wildlife Service  
Lafayette, Louisiana

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## EXECUTIVE SUMMARY

This Fish and Wildlife Coordination Act (FWCA) Report of the Fish and Wildlife Service (Service) documents proposed mitigation measures for impacts to forested areas and fresh marsh resulting from the Corps of Engineers' (Corps) activities associated with implementation of the Hurricane and Storm Damage Risk Reduction System (HSDRRS), West Bank and Vicinity (WBV) Project. Our findings and recommendations are presented in accordance with the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and have been developed on the basis of surveys and analyses of project impacts and potential improvement of mitigation areas for fish and wildlife resources. This report constitutes the final report of the Secretary of the Interior as required by Section 2(b) of that Act. The Service has provided copies of our draft report to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF) for comment. Because the mitigation addressed in this report is primarily for impacts to the Jean Lafitte National and Historical Park and Preserve (JLNHPP) the Service also provided a copy of our draft report to the National Park Service (NPS) for comment.

The Corps has prepared this first tier (Tier 1) for the Programmatic Individual Environmental Report (PIER) 37 to address changes and the addition of planning details to the previous mitigation plan for WBV project impacts on the JLNHPP. Habitats needing to be mitigated on the JLNHPP include flood-side wet bottomland hardwoods, swamp, and fresh marsh. In addition, impacts to fresh marsh that were not located on JLNHPP will be mitigated within the same mitigation site as the impacts to JLNHPP fresh marsh impacts. Therefore, non-park fresh marsh impacts will also be addressed in this report. To mitigate these losses on the JLNHPP approximately 8.1 acres of open water would be converted to wet bottomland hardwood (BLH), approximately 0.4 acres of forested spoil bank would be converted to openwater and/or marsh to restore hydrology in adjacent swamps, and approximately 108 acres of open water would be converted to fresh marsh. Approximately 52.5 acres of lake bottom would be deepened by approximately 10 feet to provide borrow material.

This report addresses the mitigation plan for the WBV hurricane protection project and it also supplements our November 26, 2007, Draft FWCA Report that provided twenty-six programmatic recommendations for the HSDRRS authorized work to help avoid and minimize impacts to fisheries, wetlands, forested habitats, migratory birds, and public lands, and incorporates and supplements the numerous FWCA Reports provided for the work authorized under 4<sup>th</sup> and 5<sup>th</sup> Supplemental Appropriations Acts. This report also supplements our May 27, 2014, report that addressed proposed mitigation features in the Corps' Programmatic Individual Environmental Report (PIER) 37 for WBV impacts. Impacts and mitigation needs resulting from government- (IER 18) and contractor-provided borrow areas have been addressed in an October 25, 2007, and a November 1, 2007, FWCA reports, respectively, therefore this report will not address those project features.

Implementation of the proposed mitigation plans is predicted to improve and maintain the habitat value of the BLH, swamp and marsh habitat for fish and wildlife to fully ensure adverse impacts are fully offset. Mitigation-area habitat values would increase due to the increased quantity and quality of mast-producing trees, moderate increases in shrub and herbaceous cover after planting of forested areas, and restoration of high quality estuarine marsh.

For work authorized within the Bayou aux Carpes 404(c) area, the Environmental Protection Agency (EPA) outlined terms and conditions in a 2009 Modification of the Bayou aux Carpes Clean Water Act (CWA) Section 404(c) Final Determination. Alterations to the Bayou aux Carpes 404(c) area would be ameliorated through the construction of mitigation and augmentation features. Selection and implementation of the final augmentation features and development of a long-term monitoring plan remain to be accomplished.

The Service supports the Corps' current constructible features and recognizes that additional Tiered IERs may be needed to further address individual mitigation features that are still in early design phases. We support the Corps' plan to mitigate impacts to fish and wildlife resources associated with WBV HSDRRS provided that the following fish and wildlife conservation recommendations are incorporated into future project planning and implementation and outstanding issues are adequately resolved via ongoing planning efforts:

1. Impacts to Essential Fish Habitat (EFH) should be avoided and minimized to the greatest extent possible. Because impacts to designated EFH habitat may need to be mitigated the Corps should coordinate with the NMFS regarding this need and maintain an account of all EFH habitats (e.g., openwater, marsh) impacted and mitigated.
2. Impacts to wetland habitat (including SAV habitat) and non-wet BLH associated with the construction of the mitigation features should be avoided and minimized to the greatest extent possible. The Corps shall fully compensate for any unavoidable losses of wetland habitat or non-wet BLH caused by mitigation features through sizing (i.e., boundary adjustments) of the mitigation features in close coordination with the natural resource agencies.
3. Sediment borrow sites for the marsh creation areas should be designed to avoid and minimize impacts to water quality. The general guidelines for borrow design found in Appendix A should be incorporated into project design, and close coordination with the natural resource agencies should continue since borrow design can be case specific and influenced by a number of factors.
4. The Corps should coordinate with the natural resource agencies to ensure that necessary information to conduct detailed project planning/design and finalize the WVA analysis is developed and available. Final sizing of mitigation must be based on revised WVAs conducted on advanced project designs.
5. Further detailed planning of project features (e.g., Design Documentation Report, Engineering Documentation Report, Plans and Specifications, Water Control Plans, or other similar documents) should be coordinated with the Service, NMFS, LDWF, EPA and Louisiana Department of Natural Resources (LDNR). The Service shall be provided an opportunity to review and submit recommendations on all work addressed in those reports.

6. A fully defined mitigation plan should be included in the authorizing report and Decision Record. The mitigation plan should be developed including locations and AAHUs vetted through the natural resource agencies. Only existing mitigation banks and existing credits released by the Corps' Regulatory Branch may be considered.
7. The Corps should continue to coordinate with land managing agencies during planning of mitigation features that may be built on their lands or lands to be turned over to them for management. Coordination should continue until construction of the projects are complete and prior to any subsequent maintenance. For National Park Service (NPS) lands within the area please contact Superintendent Lance Hatten, (504) 589-3882 extension 108, (lance\_hatten@nps.gov), or Chief of Resource Management Guy Hughes (504) 589-3882 extension 128, (guy\_hughes@nps.gov).
8. If the local project-sponsor is unable to fulfill the financial mitigation requirements for operation and/or maintenance of mitigation lands, then the Corps should provide the necessary funding to ensure mitigation obligations are met on behalf of the public interest.
9. Any proposed change in mitigation features or plans should be coordinated in advance with the Service, NPS, NMFS, LDWF, EPA and LDNR.
10. The Service encourages the Corps to finalize mitigation plans and proceed to mitigation construction so that it will be concurrent with project construction. If construction is not concurrent with mitigation implementation then revising the impact and mitigation period-of-analysis to reflect additional temporal losses will be required.
11. The Service recommends that the Corps immediately finalize selection and approval of mitigation and augmentation features in coordination with federal and state natural resource agencies and with required approval from EPA. All necessary studies for the mitigation and augmentation features have been completed and agencies have reached agreement on those features. Further, the Service recommends that all such mitigation and augmentation features be implemented as soon as possible. All terms and conditions specified in the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination should be followed with regard to mitigation and augmentation requirements.
12. The Corps should immediately develop a long-term monitoring plan for the Bayou aux Carpes 404(c) area, as required under the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination. The plan should be coordinated with the natural resources agencies and approved by EPA. All terms and conditions specified in the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination with regard to the long-

term monitoring and operation plan should be followed. Once approved, that plan should be implemented as soon as possible.

13. The Service recommends that all of the terms and conditions outlined in the EPA Bayou aux Carpes 404(c) 2009 modification be implemented without delay. The Corps is responsible for funding all mitigation and augmentation features in this agreement. A link to the 2009 final modified determination may be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov) under the EPA heading for IER 12.
14. The Service recommends that the Corps work with the natural resource agencies to incorporate previously proposed modifications and finalize the “GUIDELINES – WET BLH HABITAT ENHANCEMENT, SWAMP HABITAT RESTORATION, AND SWAMP HABITAT ENHANCEMENT” and incorporate all changes in the Mitigation Success Criteria and Mitigation Monitoring: Marsh Mitigation Features from the LPV PIER 36 and the Bayou Sauvage Task Force Guardian BLH mitigation monitoring plan.
15. The Service recommends that the Corps maintain full responsibility for any BLH mitigation project for a minimum of 4-years post planting. The Corps should maintain full responsibility for all marsh mitigation projects until monitoring guidelines to be developed are completed and should demonstrate the projects are fully compliant with success and performance requirements. Documentation should be provided and referenced to demonstrate funding obligation for the Corps to fulfill initial success criteria at a minimum.
16. The Service recommends that all mitigation planning documents should describe in detail actions needed by the Corps and/or the local sponsor if mitigation is not succeeding as planned.
17. The Corps should avoid adverse impacts to bald eagle and osprey nesting locations and wading bird colonies through careful design of project features and timing of construction. Forest clearing associated with project features should be conducted during the fall or winter to minimize impacts to nesting migratory birds, when practicable.
18. We recommend that the Corps re-initiate ESA consultation with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat. Subsequently, ESA consultation should be reinitiated should the proposed project features change significantly or are not implemented within one year of the last ESA consultation with this office to ensure that the proposed project does not adversely affect any federally listed threatened or endangered species or their habitat.

## INTRODUCTION

This Fish and Wildlife Coordination Act (FWCA) Report of the Fish and Wildlife Service (Service) addresses the mitigation plan for project-associated impacts to forested wetlands and estuarine marsh by the Corps of Engineers (Corps) for activities associated with implementation of the Hurricane and Storm Damage Risk Reduction System (HSDRRS), West Bank and Vicinity (WBV) Project. Our findings and recommendations are presented in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and have been developed on the basis of surveys and analyses of project impacts and potential improvement of mitigation areas for fish and wildlife resources. This report constitutes the final report of the Secretary of the Interior as required by Section 2(b) of that Act. Furthermore, additional comments are provided in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d), and the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). The Service provided draft copies of this report to the National Marine Fisheries Service (NMFS) and the Louisiana Department of Wildlife and Fisheries (LDWF) for comment. Because the mitigation addressed in this report is primarily for impacts to the Jean Lafitte National and Historical Park and Preserve (JLNHPP) the Service has also provided a draft copy of this report to the National Park Service (NPS) for comment.

Hurricane Katrina, a Category 3 storm, made landfall on the west bank of the Mississippi River and continued northeastward with the eye crossing Plaquemines, St. Bernard, Orleans and St. Tammany parishes in Louisiana. Hurricane surge inundated lower elevation areas in southeast Louisiana, and overtopped hurricane and flood control levees. As a result and under the authority of Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (4<sup>th</sup> Supplemental) and Public Law 110-28, U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act, 2007 (5<sup>th</sup> Supplemental), the Corps improved two existing hurricane protection projects [i.e., Westbank and Vicinity of New Orleans (WBV) and Lake Pontchartrain and Vicinity (LPV)] in the Greater New Orleans area. The Corps is preparing Individual Environmental Reports (IER) under the approval of the Council on Environmental Quality (CEQ). Those IERs will partially fulfill the Corps compliance with the National Environmental Policy Act of 1969 ([NEPA]83 Stat. 852, as amended; 42 U.S.C. 4321- 4347). IERs are a CEQ-approved alternative arrangement for compliance with NEPA that has allowed expedited implementation of improved hurricane protection measures.

The Corps is preparing this first tier IER (TIER 1) from the Programmatic IER (PIER) 37 that addressed the mitigation plan for WBV project-associated impacts. Because TIER 1 is for impacts to the JLNHPP, and the NPS needed to also prepare a NEPA document for the proposed activities on JLNHPP, the Corps and NPS prepared a joint NEPA document.

This report addresses the mitigation plan for the WBV hurricane protection project and it also supplements our November 26, 2007, Draft FWCA Report that provided twenty-six programmatic recommendations for the HSDRRS authorized work to help avoid and minimize

impacts to fisheries, wetlands, forested habitats, migratory birds, and public lands, and incorporates and supplements the numerous FWCA Reports provided for the work authorized under 4<sup>th</sup> and 5<sup>th</sup> Supplemental Appropriations Acts. This report also supplements our May 27, 2014, report that addressed proposed mitigation features in the Corps' Programmatic Individual Environmental Report (PIER) 37 for WBV impacts. Impacts and mitigation needs resulting from government- (IER 18) and contractor-provided borrow areas have been addressed in an October 25, 2007, and a November 1, 2007, FWCA reports, respectively, therefore this report will not address those project features.

## **DESCRIPTIONS OF THE AREA'S FISH AND WILDLIFE RESOURCES**

As previously mentioned, the Service has provided several FWCA Reports for the entire HSDRRS project. Those reports contain a thorough discussion of the significant fish and wildlife resources (including those habitats) that occur within the study area. For brevity, that discussion is incorporated by reference herein but the following brief descriptions are provided to update the previously mentioned information.

The study area is located within the Mississippi River Deltaic Plain of the Lower Mississippi River Ecosystem. Portions of Jefferson, Orleans, St. Charles and Plaquemines Parishes are included in the study area. Higher elevations occur on the natural levees of the Mississippi River and its distributaries. Developed lands are primarily associated with natural levees, but extensive wetlands have been leveed and drained to accommodate residential, commercial, and agricultural development. Federal, State, and local levees have been installed for flood protection purposes, often with negative effects on adjacent wetlands. Navigation channels such as the Gulf Intracoastal Waterway (GIWW), including the Harvey Canal portion, the Bayou Segnette Waterway and the Barataria Bay Waterway are also prominent landscape features, as are extensive oil and gas industry access channels and pipeline canals, all of which have altered the landscape's hydrology. Extensive wetlands and associated shallow open waters dominate the landscape outside the flood control levees. Major water bodies include Lakes Cataouatche and Salvador located south of the project area and the Mississippi River which bisects the project area.

Habitat types in the project area include forested wetlands [i.e., bottomland hardwoods (BLH) and/or swamps], non-wet BLH, marsh, open water, and developed areas. Due to urban development and a forced-drainage system, the hydrology of most of the forested habitat within the levee system has been altered. The forced-drainage system has been in operation for many years, and subsidence is evident throughout the areas enclosed by levees.

Wetlands (forested, marsh, and scrub-shrub) within the study area provide plant detritus to adjacent coastal waters and thereby contribute to the production of commercially and recreationally important fishes and shellfishes. Wetlands in the project area also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment. In addition, coastal wetlands buffer storm surges reducing their damaging effect to man-made infrastructure within the coastal area.

Factors that will strongly influence future fish and wildlife resource conditions outside of the protection levees include freshwater input and loss of coastal wetlands. Depending upon the deterioration rate of marshes, the frequency of occasional short-term saltwater events may increase. Under that scenario, tidal action in the project area may increase gradually as the buffering effect of marshes is lost, and use of that area by estuarine-dependent fishes and shellfish tolerant of saltwater conditions would likely increase. Regardless of which of the above factors ultimately has the greatest influence, freshwater wetlands and forested areas within and adjacent to the project area will probably experience losses due to development, subsidence, and erosion.

The ongoing loss of coastal Louisiana wetlands (approximately 1,149 square miles between 1956 and 2004; average loss rate of 24 square miles per year) was exacerbated by Hurricanes Katrina and Rita in 2005. Those hurricanes caused an initial loss of wetlands equivalent to 9 years (approximately 217 square miles) of mean annual losses (Barras 2007). Louisiana wetlands provide 26 percent of the seafood landed in the conterminous United States and over 5 million migratory waterfowl utilize those wetlands every year. In addition, those wetlands provide protection to coastal towns, cities and their infrastructure, as well as important infrastructure for the nation's oil and gas industry.

Non-wet BLH within the project area also provide habitat for wildlife resources. Between 1932 and 1984, the acreage of BLH in Louisiana declined by 45 percent (Rudis and Birdsey 1986). By 1970, Jefferson Parish was classified as entirely urban or non-forested in the U.S. Forest Service's forest inventory with most of this loss resulting from development within drained, potentially non-wet areas inside the hurricane protection levees. A large percentage of the original BLH within the Mississippi River floodplain in the Deltaic Plain are located within levees. However, losses of that habitat type are not regulated or mitigated with the exception of impacts resulting from Corps projects as required by Section 906(b) of the Water Resources Development Act of 1986 and Section 2036 (a) of the Water Resource Development Act of 2007.

Mammals known to occur in the project-area BLH and marsh habitats include mink, raccoon, swamp rabbit, nutria, river otter, and muskrat. Those habitats also support a variety of birds including herons, egrets, ibises, least bittern, rails, gallinules, neotropic cormorant, white pelican, pied-billed grebe, black-necked stilt, sandpipers, gulls, and terns. Forested and scrub-shrub habitats within the study area also provide habitat for many resident passerine birds and essential resting areas for many migratory songbirds including warblers, orioles, thrushes, vireos, tanagers, grosbeaks, buntings, flycatchers, and cuckoos (Lowery 1974). Many of these and other passerine birds have undergone a decline in population primarily due to habitat loss.

Given the extent of development and drainage, waterfowl use within the hurricane protection system is likely minimal, except in the adjacent wetlands outside the levees. Swamps, and fresh and intermediate marshes usually receive greater waterfowl utilization than brackish and saline marshes because they generally provide more waterfowl food.

The MBTA and the BGEPA offer protection to many bird species within the project area including colonial nesting birds, osprey, and the bald eagle (*Haliaeetus leucocephalus*). We continue to recommend that a qualified biologist inspect proposed work sites for the presence of undocumented nesting colonies during the nesting season (e.g. February through September depending on the species). If colonies exist work should not be conducted within 1,000 feet of the colony during the nesting season.

On-site personnel should also be informed of the possible presence of nesting bald eagles and ospreys within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest is located within 660 feet of the proposed activities, the Corps should complete an on-line evaluation (<http://www.fws.gov/southeast/es/baldeagle>) to determine potential disturbance to nesting bald eagles and the need to implement any protective measures necessary. A copy of that evaluation should be provided to this office. If assistance is needed in completing the evaluation please contact this office.

Open water habitat in the study area consists of drainage canals; major waterways including the GIWW, Barataria Waterway, and Mississippi River; and Lakes Cataouatche and Salvador. Drainage canals do not support significant fishery resources because of dense vegetation, poor water quality, and inadequate depth. Freshwater sport fishes present in the project area, but outside of the levees, include largemouth bass, crappie, bluegill, redear sunfish, warmouth, channel catfish, and blue catfish. Other fishes likely to be present include yellow bullhead, freshwater drum, bowfin, carp, buffalo, and gar. Estuarine-dependent fishes and shellfishes such as Atlantic croaker, red drum, spot, sand seatrout, spotted seatrout, southern flounder, Gulf menhaden, striped mullet, brown shrimp, white shrimp, and blue crab are found in the intermediate to saline marshes of Lakes Cataouatche and Salvador and adjacent waterbodies.

Some of the waterbodies in the project area meet criteria for primary and secondary contact recreation and partially meets criteria for fish and wildlife propagation, while others do not meet the criteria for fish and wildlife propagation (Louisiana Department of Environmental Quality [LDEQ] 2012). Causes determined by the LDEQ for not fully meeting fish and wildlife propagation criteria include excessive nutrients, organic enrichment, low dissolved oxygen levels, flow and habitat alteration, pathogens and noxious aquatic plants. Indicated sources of those problems include hydromodification, habitat modification, recreational activities, and unspecified upstream sources. Municipal point sources, urban runoff, storm sewers, and onsite wastewater treatment systems are also known contributors to poor water quality in the area.

### **Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; P.L. 104-297) set forth a new mandate for the National Oceanic Atmospheric Administration's National Marine Fisheries Service (NMFS), regional fishery management councils (FMC), and other federal agencies to identify and protect important marine and anadromous fish habitat. The Essential Fish Habitats (EFH) provisions of the Magnuson-Stevens Act support one of the nation's overall marine resource management goals of maintaining sustainable fisheries. Essential to achieving this goal is the maintenance of suitable marine fishery habitat quality and quantity. Detailed information on Federally-managed fisheries

and their EFH is provided in the 1999 generic amendment of the Fishery Management Plans (FMP) for the Gulf of Mexico prepared by the Gulf of Mexico FMC (GMFMC). The generic FMP subsequently was updated and revised in 2005 and became effective in January 2006 (70 Federal Register [FR] 76216). NMFS administers EFH regulations. Categories of EFH in the project area include the estuarine waters, estuarine emergent wetlands and mud, sand, and shell water bottoms, and rock substrates.

Coastal wetlands also provide nursery and foraging habitat that supports economically important marine fishery species such as spotted seatrout, sand seatrout, southern flounder, Atlantic croaker, spot, gulf menhaden, striped mullet, white mullet, killifish, anchovies, and blue crab. Some of these species serve as prey for other fish species managed under the Magnuson-Stevens Act by the GMFMC (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). Portions of the WBV study area have been designated as EFH for post-larval, juvenile, and sub-adult life stages of brown shrimp, white shrimp, and red drum. Under future-without-project conditions there would be no significant change to EFH.

Where tidally-influenced waters designated as EFH are converted to a non-tidal elevation, loss of EFH would result. Should EFH be impacted, those losses should be quantified and presented in the Corps' report. Close coordination with the NMFS is recommended because mitigation for those impacts is necessary. Tracking of all designated EFH marsh and tidal water impacts to help NMFS assess impacts to that resource is recommended.

### **Endangered and Threatened Species**

To aid the Corps in complying with their proactive consultation responsibilities under the ESA, the Service provided a list of threatened and endangered species and their critical habitats within the coastal parishes of the New Orleans District. In a July 7, 2015, electronic mail transmittal from the Corps, the Corps made a "not likely to adversely affect" determination. The Service has concurred with that determination. The Corps' determination addressed potential impacts to the West Indian manatee in which they stated that best management practices (BMPs) would be employed in habitats that may be utilized by that species. If there are any changes to the proposed project, consultation will need to be re-initiated. Should a proposed action directly or indirectly affect the West Indian manatee, further consultation with this office will also be necessary.

### **Public/Protected Lands**

Lands within public ownership/oversight impacted by the WBV project include the Barataria Preserve unit of the JLNHPP managed by the NPS, some lands within the Bayou aux Carpes 404(c) area which also has Environmental Protection Agency (EPA) oversight, and the Bayou Segnette State Park which is managed by the Louisiana Office of State Parks.

Expansion of the existing federal levee impacted land previously owned by the Commercial Investment Trust. The so called CIT Tract consists of swamp owned by the Corps as the result of a 1994 lawsuit. The passage of the Omnibus Public Lands Management Act in April 2009

(Omnibus Act) transferred management jurisdiction of these lands from the Corps to the JLNHPP, incorporating them into the park.

The approximately 23,000-acre Baratavia Preserve unit of the JLNHPP is managed by the NPS and IERs 12, 14 and 15 were constructed adjacent to that unit. For additional information concerning NPS lands to be impacted by proposed mitigation please contact Superintendent Lance Hatten, (504) 589-3882 extension 108, or Chief of Resource Management Guy Hughes (504) 589-3882 extension 128, ([guy\\_hughes@nps.gov](mailto:guy_hughes@nps.gov))

An area adjacent to IER 12 and forming the eastern boundary of the JLNHPP was subject to an EPA Final Determination under the Clean Water Act (CWA) Section 404(c) in 1985. According to the EPA Final Determination, the discharge of any dredged or fill material within the approximately 3,200-acre site, referred to as the Bayou aux Carpes 404(c) area, is restricted. EPA's determination of the 404(c) area serves as an advance planning notification to the public and agencies that may propose work in this area. The Bayou aux Carpes 404(c) area is one of only 13 such actions ever completed by EPA. Approximately 2,800 acres within the site are in Federal ownership and Congress in the Omnibus Act also authorized the adjustment of the boundary of the JLNHPP Baratavia Preserve to include this area within the Park. Therefore, the Corps should contact both the NPS (see contacts above) and EPA (Ms. Barbara Keeler, 214/665-6698) regarding any proposed mitigation/augmentation project feature that may be implemented in that area. Because these 404(c) lands were placed into the JLNHPP, impact and mitigation acreage and AAHUs are often, but not always combined in tables within this report.

The Service continues to recommend and support the mitigation of public lands impacts to be done on public lands within the managing agencies' jurisdiction. If mitigation lands are purchased for inclusion within a managed area, those lands may have to meet certain requirements; individual agencies may have different requirements, therefore each agency should be contacted. If an agency is proposed as a manager of a mitigation site, they should also be contacted early in the planning phase regarding such requirements and costs.

## **PROJECT IMPACTS AND MITIGATION**

Project impacts resulted primarily from the expansion of levee right-of-way (ROW) and construction of levees, borrow pits, floodwalls, navigable floodgates, and associated features. Because development is ongoing within the hurricane protection levees and Task Force Guardian restored hurricane protection to pre-Hurricane Katrina levels, the Service has assumed that project-induced development is insignificant and that implementation of the HSDRRS project would not further induce development to areas not already developed or planned for development. Construction and implementation of the WBV hurricane protection project improvements resulted in impacts to the JLNHPP and Bayou aux Carpes 404(c) area (Table 1).

Table 1. WBV Impacts and Mitigation Requirement for JLNHPP/404(c) area

| Habitat Type                        | AAHUs Impacted <sup>3</sup> |
|-------------------------------------|-----------------------------|
| Park/404(c) FS BLH-Wet <sup>1</sup> | 3.08                        |
| Park/404(c) FS Swamp <sup>1</sup>   | 7.19                        |
| Park/404(c) FS Fresh Marsh          | 3.20                        |
| General FS Fresh Marsh <sup>2</sup> | 65.92                       |

<sup>1</sup>FS signifies the flood side of the levee.

<sup>2</sup> Impact occurred off JLNHPP/404(c) area but will be mitigated on NPS lands.

<sup>3</sup>AAHUS = Average Annual Habitat Units

In addition to impacts related to the construction of the HSDRRS project, impacts to fish and wildlife habitats during the construction of mitigation projects may occur. Impacts that would occur within the footprint of the mitigation feature have been evaluated in the Wetland Value Assessment (WVA) and the mitigation area has been reconfigured to offset those impacts. However, the location of ROWs for access, staging areas, and borrow areas have neither been finalized nor assessed by the resource agencies at this time. Coordination with the natural resource agencies during advanced design (i.e., post-95% design) is recommended in order to ensure that the agencies are granted adequate time to provide input into the design. This will ensure that unnecessary impacts are avoided and mitigation projects are designed to effectively offset impacts. Appendix A provides general marsh creation guidelines to aid in the development of plans and specifications.

FWCA reports and supplemental reports were provided as project designs changed or post-construction impacts were calculated. This report derives lost AAHUs from the latest impact acreage calculations utilizing Geographic Information System ROW data provided by the Corps and recent aerial photography. This report supplements all previously provided acreage and AAHU losses denoted in our previous reports.

The Service's Mitigation Policy (46 FR 7656) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values impacted. For impacts that occurred entirely within the existing ROW (i.e., maintained, non-wet grassland) and/or impacted low quality non-wet or prevalent habitats (e.g., open water without aquatic vegetation, dry fields, etc.) the Service did not recommend mitigation as they are Category 4 Resources. Considering the high value of forested wetlands and marsh for fish and wildlife and the relative scarcity of those habitat types, those wetlands were designated as Resource Category 2, the mitigation goal for which is no net loss of in-kind habitat value. Degraded (i.e., non-wet) BLH forests and any wet pastures that were impacted were placed in Resource Category 3 due to their reduced value to wildlife, fisheries, and lost/degraded fish and wildlife functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value. To ensure no net loss of in-kind habitat value mitigation includes the restoration and enhancement of BLH habitat and the restoration of marsh and swamp habitat.

Impacts to open water bottoms are anticipated as a result of borrow activities. Regardless of depth, open water bottoms with no submerged aquatic vegetation (SAVs) will remain a Category

4 Resource; impacts to those areas are discouraged, if feasible, and measures to minimize impacts to water quality from borrow sites should be incorporated. Appendix A provides general guidelines for borrow design; however, close coordination with the resource agencies should continue during the design of borrow sites. SAV beds are currently considered a Category 2, and lost functions and values should be replaced. However, because of the relatively low success rate of SAV replanting, mitigating in-kind may not be practicable. Potential impacts to any SAVs should first go through the mitigation sequencing of avoidance, minimization, and rectification, prior to compensation of impacts.

Because open water bottoms without SAVs are considered a Category 4 Resource for our trust resources the Service does not recommend mitigation. However, some tidally-influenced unvegetated water bottoms are designated as EFH, and the conversion of that habitat to a non-tidal elevation would result in a loss of EFH. Should EFH be impacted, coordination with the NMFS is recommended as mitigation for impacts to these areas is necessary.

### **Public/Protected Lands**

For work authorized by IER 12 and within the Bayou aux Carpes 404(c) area, EPA outlined terms and conditions in a 2009 Modification of the Bayou aux Carpes CWA Section 404(c) Final Determination. The Corps is responsible for funding and implementing all mitigation and augmentation features approved in accordance with the stipulations of this agreement. The Corps must also seek final approval from EPA for any mitigation feature offsetting impacts to the 404(c) area as stipulated in that determination. A link to the 2009 final modified determination may be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov) under the EPA heading for IER 12 and an excerpt of the determination is attached in Appendix B.

Mitigation procedures and requirements regarding impacts within the Bayou aux Carpes 404(c) area are being coordinated with the EPA, Service, US Geological Survey, NMFS, NPS, and other state representatives on the interagency review team. The District Commander for the Corps, in a letter to the Regional Administrator for EPA Region 6 dated November 4, 2008, committed to mitigate for all unavoidable adverse impacts to the Bayou aux Carpes CWA Section 404(c) area within the Bayou aux Carpes CWA Section 404(c) area and/or the JLNHPP, as determined by EPA and the resource agencies. Furthermore, the Corps committed that mitigation projects will be designed and implemented concurrently with the design and construction of the project. The District Commander in that letter also stated that “full mitigation within this unique environment may require mitigation in addition to acres indicated by the Wetland Value Assessment.”

Based on the minimum mitigation that the Corps has committed to and is required to perform pursuant to Section 2036 of the Water Resources Development Act of 2007, as well as the Corps’ commitment to provide additional mitigation and augmentation features, EPA believes that the discharges of dredged or fill material associated with the Corps’ West Closure Complex (a HSDRRS project feature) did not result in unacceptable adverse effects to the Bayou aux Carpes wetland resources. Additionally, EPA expects the final mitigation plan to be adequate to offset unavoidable impacts consistent with mitigation regulations (33 Code of Federal Regulations 332) with the goal to ensure no net loss of either wetland acres or

functions. EPA must agree with the proposed mitigation plan prior to the plan being finalized. In addition to mitigation, project augmentation measures will be considered by the interagency team to enhance the wetland functions and values of the site and provide added compensation for any unavoidable impacts.

The Corps is required to develop a long-term site monitoring plan, to be approved in writing by EPA, after consulting with the federal and state natural resource agencies on the interagency review team. EPA will make the determination as to whether the monitoring plan is adequate and appropriate, and that plan will be documented in a Memorandum of Agreement signed by the interagency review team. The Corps is responsible for ensuring implementation of the plan for the first 50 years of the project life. The long-term monitoring plan will focus on both the mitigation and augmentation features, as well as the impacts of the floodwall. The plan should provide for making adjustments if the mitigation or augmentation features prove not to perform as expected. Though it is not expected that the Corps' would need to make future adjustments to the floodwall, the effects of the floodwall are to be monitored to determine unexpected impacts which may warrant other corrective actions.

After the Corps selected the initial mitigation Tentatively Selected Plan they came to the interpretation that the Omnibus Act considered lands in the Commercial Investment Trust (CIT) Tract needed for the hurricane protection project would be subject to levee easements; the legislative history of that act repeatedly evidences similar intent.

Because IERS 14.a, which addressed impacts to the CIT Tract, was approved after ownership of the CIT Tract had been transferred to NPS, impacts to swamp habitats in the CIT Tract were considered to be impacts to habitats in the JLNHPP. Therefore, mitigation alternatives on NPS lands were sized to included impacts from the CIT Tract based on the premise that the mitigation would have to be provided in the JLNHPP.

Since the Corps discovered that the Omnibus Act had considered that lands needed for the hurricane protection project would be subject to levee easements they have determined that those lands on the CIT Tract should not have been assessed as impacts to the JLNHPP and the mitigation requirement for both Park/404(c) and Non- Park/404(c) BLH and swamp were adjusted accordingly; this revision became the new TSP but for clarification is referred to as the TSP alternative (TSPA).

### **Habitat Assessments**

To quantify project impacts to fish and wildlife resources and anticipated benefits resulting from the proposed mitigation, the WVA methodology was utilized. Habitat units fluctuate in response to changes in habitat quality, represented by the Habitat Suitability Index (HSI), and/or quantity (acres); those changes are predicted for various target years over the project life (i.e., 50 years), for future without-project and future with-project scenarios. Target years (TY) were selected for this analysis to capture the effects of important biological events. Values for model variables were obtained from site visits to the area, previous wetland assessments in similar habitats, communication with personnel knowledgeable about the study area and similar habitats, and review of aerial photographs and reports documenting fish and wildlife habitat conditions in the

study area and similar habitats. For all the habitat assessments, the products of the resulting HSI values and acreage estimates were then summed and annualized for each habitat type to determine the AAHUs available. The net change (increase or decrease) in AAHUs under future with-project conditions, compared to future without-project conditions, provides a quantitative comparison of anticipated project impact/benefits in AAHUs. By dividing the AAHU by the proposed mitigation project acreage a management or mitigation potential per acre is determined which can then be used to resize the project once mitigation needs are refined. Refinement is limited by the level of design, with each increasing detailed design level resulting in a more detailed WVA analysis. The final refinement should result in an equal replacement of impacted AAHUs with mitigated AAHUs (i.e., one to one ratio). Contractors for the Corps or the Service conducted the WVA analysis for all mitigation sites with review by state and federal natural resource agencies. Further explanation of how impacts/benefits are assessed with the WVA and an explanation of the assumptions affecting HSI values are available from the Corps' New Orleans District. Impact assessments and mitigation benefit assessments considered sea-level rise, subsidence, accretion, and historic marsh loss trends and were coordinated with other state and federal agencies.

The Service encourages the Corps to finalize mitigation plans and proceed to mitigation construction so that it will be concurrent with construction of remaining storm damage reduction project features and revising the impact and mitigation period-of-analysis to reflect additional temporal losses will not be required.

### **TENTATIVELY SELECTED PLANS**

Wetland value assessments were conducted to determine each project's mitigation potential. As the project is refined the mitigation potential may be adjusted. Should further development of feature designs result in a lower mitigation potential, a supplemental FWCA report may be necessary.

For all BLH and swamp, plantings should be done in accordance with the "GUIDELINES – WET BLH HABITAT ENHANCEMENT, SWAMP HABITAT RESTORATION, AND SWAMP HABITAT ENHANCEMENT;" however those guidelines are still in draft form and need to be finalized. The Service recommends that the Corps work with the natural resource agencies to refine that document and incorporate all changes in the Mitigation Success Criteria and Mitigation Monitoring: Marsh Mitigation Features from the LPV PIER 36 and the Bayou Sauvage Task Force Guardian BLH mitigation monitoring plan.

#### Feature Descriptions

##### JL1B5 and JL15 General Fresh Marsh Projects

These mitigation projects, JL1B5 (Figure 1) and JL15 (Figure2), would involve the restoration of fresh marsh habitats at two locations; Yankee Pond and the Geocrib, respectively. Feature JL1B5 would be built in approximately 91.2 acres (87.6 acres of marsh restoration and 3.6 acres of dikes) of open water in Yankee Pond and would be located within the JLNHPP. Feature JL15 is situated in an area along the shoreline of Lake Salvador where prior work has already





largely established a marsh that was previously an open water portion of the lake. Feature JL15 would encompass a total of approximately 55.5 acres (50.4 acres of marsh and 5.1 acres of dikes). Portions of this feature would be within the park, while the remaining portions would be on lands not currently owned by the federal government. Both of the marsh restoration features are located in Jefferson Parish. As part of the proposed JL15 project, existing low quality BLH species (black willow) within the project area would be eradicated, existing rock armament of the lakeside dike would be augmented, and several fish dips would be constructed in the dike. Low quality BLH species on the dike itself would not be removed. The new fish dips would be designed to prevent interior erosion from lake wave action and would provide water exchange and aquatic organism access to the marsh feature. During refurbishment of the rock dike, the two existing fish dips would be improved to prevent further interior erosion due to lake wave action. It is anticipated that the JL15 construction activities (herbicide application, refurbishment of rock dike, constructing fish dips) would require approximately 4 to 5 months.

Approximately 8,400 linear feet of retention dike would be required for JL1B5. Of the total 8,400 linear feet of dikes, approximately 3,100 linear feet would be armored/capped with stone (well graded riprap with a proposed top size stone of 650 pounds) during the second project construction phase. This armored dike segment would be located along the eastern boundary of feature of JL1B5 adjacent to Bayou Segnette to protect against boat wakes and wave wash.

Retention dikes would be constructed to maintain a minimum of one foot of freeboard during dredging operations. The retention dikes would be constructed to an elevation +5.0 feet, with a 5-foot crown to assure dike integrity. Borrow for these retention dikes would be excavated with a marsh buggy from within the marsh creation footprint. The borrow ditch would be offset a minimum of 40 feet from the dike to assure dike stability. For initial quantity estimates, the dikes were assumed to have 1-foot vertical (V):4-foot horizontal (H) side slopes. A low level weir or spill boxes would be constructed in the western retention dike where it borders existing marsh habitats to allow for effluent water release from within the marsh restoration area and potentially nourish the adjacent existing marsh. If deemed necessary by the construction contractor, a low level interior weir could be constructed to assist in vertical stacking of dredged material.

Marsh restoration at JL1B5 would require approximately 600,000 cubic yards of material hydraulically dredged from Lake Cataouatche by a hydraulic cutter-head dredge to fill the 87.6 acre site. It is anticipated that the proposed borrow source would contain approximately 10 percent sand. The borrow site would be located a minimum of 2,000 feet from the lake shoreline and would be approximately 1,200 feet by 1,500 feet (approximately 42.0 acres) with a maximum depth of 10 feet below the lake bottom. Dredged material would be pumped from the borrow site to JL1B5 via 18,000 linear feet of pipeline routed through Lake Cataouatche to the western bank of Bayou Segnette Waterway (BSSW). Floating pipeline (discharge pipe on pontoons) would be used in the BSSW. The BSSW navigation channel ranges from 300 to 450 feet wide; however, the eastern boundary of the 100-foot wide pipeline corridor would not extend into the limits of or cross the BSSW navigation channel. The entire pipeline corridor would be marked to prevent boat hazards in the lake and along the bayou. As the pipeline would need to cross a portion of Lake Cataouatche from the borrow site to the BSSW, a small segment of submerged pipeline would be utilized with appropriate signage to ensure safe

passage of vessels over the line.

The initial target marsh elevation (elevation of slurry fill) in JL1B5 would be +3.5 feet. It is estimated that the initial project construction activities discussed above would require approximately 5 to 6 months. Once these activities are completed there would be an idle period of approximately 1 year to allow the marsh feature to settle to the desired final target elevation of approximately +1.0 to +1.5 feet. The final construction phase would begin following settlement and dewatering of the created marsh platform.

In the final construction phase, all perimeter dikes except for the one bordering Bayou Segnette (e.g. east dike) would be degraded with a marsh buggy to be the same elevation as the final target elevation of the marsh platform. Approximately 2-feet of dike degrading is anticipated after the initial year of settlement to revert the dike footprint to the desired marsh elevation. The dike segment along the eastern edge of feature JL1B5 would first be degraded to elevation +3.0 feet. Armoring would then be placed along the eastern face of this dike, constructed with a 2-foot stone cap to elevation +3.0 feet. During this process, “fish dips” (essentially armored gaps) would be constructed in the armored dike segment. The fish dips would allow water exchange and provide aquatic organism access to the marsh feature. Each fish dip would have a bottom width of approximately 100 feet, a bottom elevation no greater than 0 feet, and 1-foot V:3-foot H side slopes. At this phase of design, it was assumed that there would be one fish dip established for every 500 feet of armored dike (i.e., 500-foot spacing). Sediment generated during the dike degrading process would be placed back into the depression that may result from incomplete filling of the interior borrow ditch within the restoration feature.

In conjunction with the dike degrading efforts, trenasses would be constructed as necessary to serve as tidal creeks to facilitate water exchange and create shallow water interspersion features within JL1B5. The trenasses would be rutted to a lower than marsh elevation by performing two passes of a marsh buggy along the desired alignment. The acceptable trenasse width, if constructed in this fashion, would be the width of marsh buggy. If the resulting depression is not adequate for minimal water flow, the marsh equipment may excavate material along the proposed alignment, not to exceed a 5-foot bottom width by 1-foot deep channel. It is anticipated that the final phase of construction activities (degrading dikes, constructing trenasses and fish dips, installation of dike armoring) would take approximately 3 to 4 months.

Additional activities that would occur during the project construction phase would include periodic eradication of invasive/nuisance plant species within the mitigation feature as well as mitigation monitoring and reporting conducted in accordance with the applicable guidelines. It is assumed that appropriate fresh marsh plant species would naturally colonize the marsh restoration feature; hence, no planting of the feature is proposed. However, if the site does not vegetate within 3 years, planting would be initiated.

Various activities would be necessary during the Operations, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) phase of the project. At a minimum, these would include periodic eradication of invasive/nuisance plants in the mitigation feature and mitigation monitoring and reporting. Additional activities may need to be performed to ensure compliance with applicable mitigation success criteria. The armored perimeter dike may need to be

maintained once every 15 years through the addition of approximately 2,000 tons of stone.

#### JL1B4 NPS Fresh Marsh Project

The JL1B4 project would involve restoring 20.4 acres of fresh marsh habitat from open water in the southwest corner of Yankee Pond. This acreage would meet NPS mitigation policy. This project would merge with the JL1B5 feature to create one overall marsh restoration project occupying approximately 108 acres. Under this scenario, the armored dike constructed along the eastern edge of JL1B5 would protect both JL1B5 and JL1B4 since the JL1B4 project would become part of the overall marsh platform. The earthen perimeter retention dike along the southern boundary of JL1B5 would be moved to the southern boundary of JL1B4 and the western boundary of JL1B5 extended to encompass both JL1B4 and JL1B5.

Approximately 2,000 linear feet of retention dike would be required for JL1B4. Retention dikes would be constructed in the same manner as those for the JL1B5 feature. A low level weir would be constructed in the southwest corner of the restoration project to allow for effluent water release from within the marsh restoration area and potentially nourish the existing marsh adjacent to the west side of JL1B4.

Marsh restoration would require approximately 150,000 cubic yards of material hydraulically dredged from Lake Cataouatche. The borrow site would be approximately 1,500 feet by 300 feet, about 10.3 acres, with a maximum depth of 10 feet below the lake bottom. All other construction details would be the same as those specified for the JL1B5 feature.

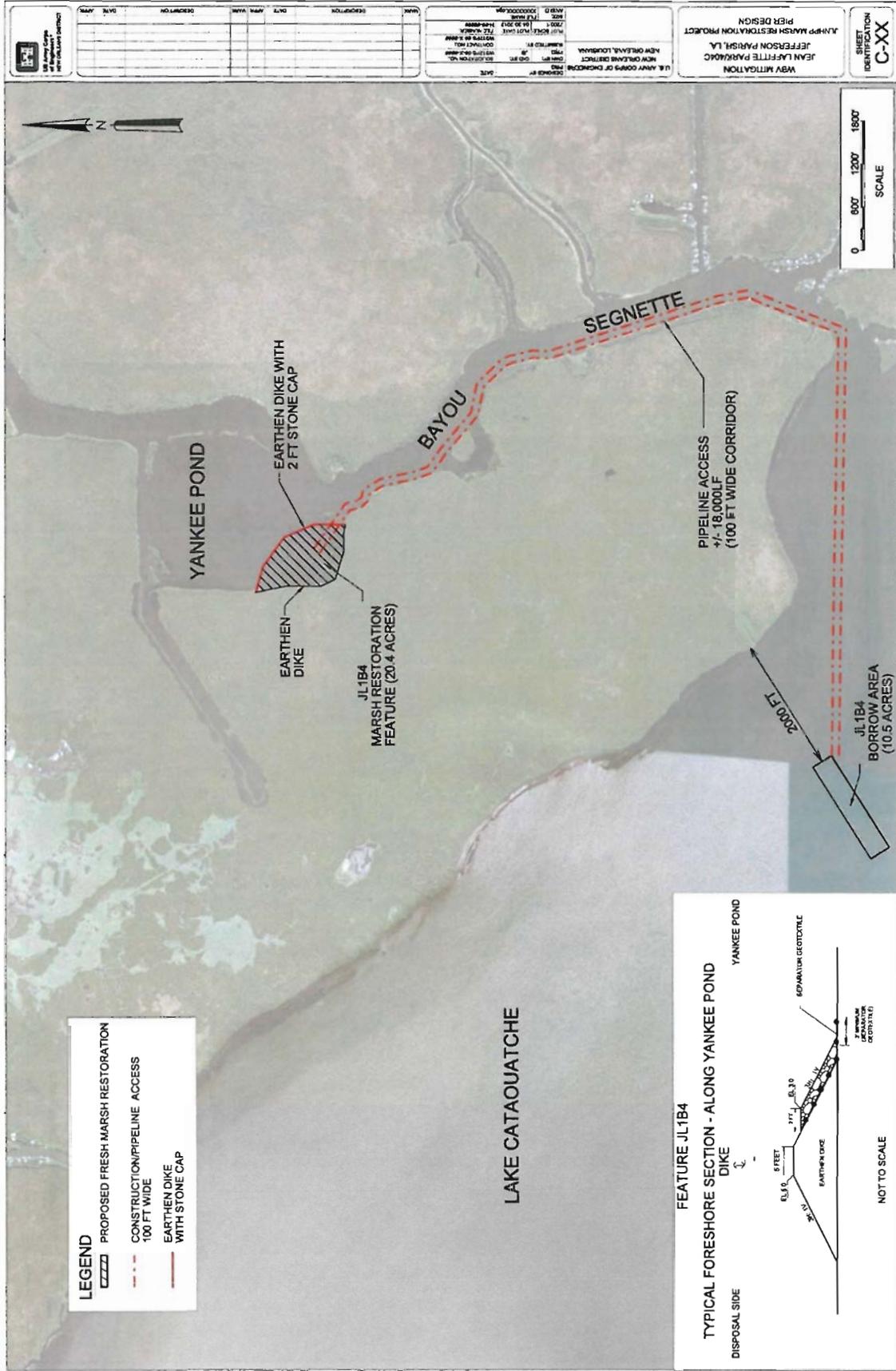
#### JL7 Park/404c Swamp Project

The JL7 project (Figure 4) would involve restoring hydrologic connection and natural sheet flow across existing impounded swamp habitat as mitigation for Park/404c swamp impacts.

Approximately 0.5 acre of existing spoil berms along the north side of the Millaudon and Horseshoe Canals will be gapped to improve exchange of surface water between swamp habitats in the area. Spoil berm gaps would be excavated at 3 locations along Millaudon Canal and 3 locations along Horseshoe Canal. The spoil berm would be degraded approximately 4.5 feet, to an elevation of -1.5 North American Vertical Datum 1988 which is below the typical swamp floor elevations found near this project. This bottom elevation would allow water movement in the adjacent swamp to mimic the tidal range experienced in the adjacent canals and would discourage re-growth of woody plant species in the gaps. Gaps constructed on Millaudon Canal would be excavated to a bottom width of 25 feet, approximately 60 feet long with 1-foot V:3-foot H side slopes. Gaps constructed on Horseshoe Canal would be excavated to a bottom width of 100 feet, approximately 60 feet long with 1-foot V:3-foot H side slopes. The proposed project would require excavation of approximately 470 cubic yards per gap along Horseshoe Canal and 140 cubic yards per gap along the Millaudon Canal.

Materials and vegetative debris excavated by gapping canal spoil berms shall be placed in the adjacent canals. Construction equipment is believed to consist of marsh tracked excavators or

Figure 3. J11B4





excavators on small modular barges to stay within the canal and avoid additional impacts to spoil bank habitat. Construction equipment would access the project site via an access roadway off of Barataria Boulevard. The proposed construction access route would require building temporary earthen access ramps on either side of the levees within the existing levee right-of-way for equipment movement over the levee. Construction equipment, most likely consisting of long reach marsh buggies, could then access the gap locations by traveling adjacent to the spoil berm, within the banks of the canal, or modular barges could be brought in and used as a work platform in the canal.

#### JL14A Park/404c BLH-Wet Project

The JL14A project (Figure 4) would meet NPS mitigation policy to mitigate WBV HSDRRS impacts, impacts from construction of JL7, and the impacts from the 2007 encroachments.

This mitigation feature would involve restoring BLH-Wet habitat from open water areas. This project would require filling 8.1 acres of an existing borrow pit to elevations conducive to BLH establishment. The existing bottom elevation of the borrow pit is estimated to be approximately -20.0 ft. The pit would first be filled with 15 feet of sand to elevation -0.5 ft. A 5 to 6 foot clay cap would then be placed on top of the sand fill, followed by 1.5 to 2 feet of topsoil to reach the initial target elevation of 2.5 to 3 feet. It is anticipated that it would take approximately one year for the fill materials to settle to the desired final target elevation. Clearing of vegetation and debris from within the pits, and trimming of overhanging trees along the edge of the mitigation project may be required prior to placement of fill.

The proposed project would require approximately 255,000 cubic yards of sand and 53,000 cubic yards of clay hauled from off-site commercial, contractor furnished, and/or government furnished borrow pits. Construction equipment, including dump trucks, would access the project site via an existing levee access roadway off Barataria Boulevard. A temporary road will be required along the floodside berm of the levee. The estimated construction duration for this portion of the project is 210 days. The overall construction phase is an estimated 3 years, with an estimated 9 months to a year to settle to the final target elevation of +2.0 feet. Once the mitigation project has settled to the desired target grade, the project would be planted with native canopy and midstory BLH species.

### **FISH AND WILDLIFE CONSERVATION MEASURES**

The goal of the mitigation plan is to provide for equal replacement of the habitat units lost due to improvements to the hurricane protection project. The equal replacement compensation goal specifies that the gain of one habitat unit can be used to offset the loss of one habitat unit. Achieving this goal would re-establish and maintain BLH and bald cypress forested habitats and fresh marshes. The objectives of the mitigation measures for the forested areas would be to establish and maintain a high diversity of native mast- and fruit-producing trees and shrubs, and maximize herbaceous and shrub-layer canopy cover while maintaining a semi-mature to mature age structure. The objective of the marsh mitigation measures should include a design goal to

develop intertidal marsh as early as possible and for it to remain above water for as long as possible.

Current benefits projected for the TSPA are based on general assumptions of the project area and design. As the Corps further refines proposed mitigation features, detailed designs should be provided to the natural resource agencies so that recommendations can be provided in an appropriate timeframe and more accurate habitat assessments can be completed. Further, as mitigation plans are refined, the Corps, Service, EPA, LDWF, and NMFS would need to evaluate the plans against the accrued and anticipated benefits and the effect of implementing the proposal on achievement of the mitigation plan goal. Any changes that would prevent the mitigation goal from being achieved would not be recommended for implementation. Furthermore, the following activities are not permitted within a mitigation area for the life of the project:

1. Placing, filling, storing, or dumping of refuse, trash, vehicle bodies or parts, rubbish, debris, junk, waste, or other such items on the property.
2. Mechanized land clearing or deposition of soil, shell, rock or other fill on the property without prior request for approval, excluding the existing ROWs.
3. Cutting, removal or destruction of vegetation on the property except in accordance with the restoration plan.
4. Grazing of cattle or other livestock on the property that has been restored or enhanced.
5. Commercial, industrial, agricultural, or residential uses of the property.
6. No other human activities that result in the material degradation of habitat within the area shall occur.

However, it is understood that the mitigation plan shall not prohibit hunting, fishing, trapping, non-consumptive recreational pursuits and exploration and production of minerals. Exploration and production of minerals shall be conducted in accordance with all applicable laws and regulations. The Service acknowledges that such activities have the potential to reduce the ability of the area to achieve the mitigation goal, depending on the extent of the impacts to the mitigation lands.

Modification and finalization of the “GUIDELINES – WET BLH HABITAT ENHANCEMENT, SWAMP HABITAT RESTORATION, AND SWAMP HABITAT ENHANCEMENT” is needed. This plan addresses restoration and enhancement techniques such as reforestation planting, Chinese tallow tree removal and control methods; monitoring guidelines, schedule and responsibilities; success criteria; and some remedial actions. The Service has provide recommendations to the tree species list and the percentages proposed for planting to ensure successful reforestation, while some modifications have been made, some revisions are still needed. In a 2005 report the Service provided Chinese tallow tree removal and control methods for WBV mitigation, since that time the methodology has changed to improve the success of such efforts. The Service also provided recommendations for the plan in our September 25, 2013, comment letter on the Draft Programmatic IER for the LPV mitigation and our June 28, 2013 report for the Comprehensive Environmental Document. These revised methods should be incorporated into the mitigation reforestation plan. The methodology proposed to determine reforestation and restoration of jurisdictional wetland success should be modified to more closely reflect those standards utilized by mitigation banks. Success criteria

for forested areas should reflect changes proposed in the Bayou Sauvage Task Force Guardian BLH mitigation monitoring plan.

The Service recommends that the Corps maintain full responsibility for any mitigation project for a minimum of 4-years post planting. That would allow the 4-year success criteria to be evaluated, prior to turning operation and maintenance responsibilities over to the local sponsor. Based on our experience, it would be virtually impossible to reasonably forecast the likely future success of the mitigation project based solely on mitigation activities accomplished prior to this time. The second monitoring event, performed 4 years after the initial mitigation activities, would provide significantly more insight into the continued development, success, and effectiveness of the implemented features.

The Corps has been working with the Service and other natural resource agencies to develop marsh mitigation specifications; the Service incorporates, via reference, changes presented in the LPV PIER 36 to the Mitigation Success Criteria and Mitigation Monitoring: Marsh Mitigation Features section. To further ensure future success of the marsh mitigation projects the Corps should maintain full responsibility for all marsh mitigation projects until monitoring demonstrates the projects are fully compliant with success and performance requirements.

At this time none of the mitigation planning documents describe in detail actions needed by the Corps and/or the local sponsor if mitigation is not succeeding as planned. The Service recommends that this important component of the mitigation plan be immediately developed.

The Service encourages the Corps to finalize mitigation plans and proceed to mitigation construction so that it will be concurrent with project construction and revising the impact and mitigation period-of-analysis to reflect additional temporal losses would not be required.

## **SERVICE POSITION AND RECOMMENDATIONS**

The Service supports the Corps' current constructible features and recognizes that additional Tiered IERs will further address individual mitigation features that are still in early design phases. We support the Corps' plan to mitigate impacts to fish and wildlife resources associated with WBV HSDRRS provided that the following fish and wildlife conservation recommendations are incorporated into future project planning and implementation and outstanding issues are adequately resolved via ongoing planning efforts:

1. Impacts to Essential Fish Habitat (EFH) should be avoided and minimized to the greatest extent possible. Because impacts to designated EFH habitat may need to be mitigated the Corps should coordinate with the NMFS regarding this need and maintain an account of all EFH habitats (e.g., openwater, marsh) impacted and mitigated.
2. Impacts to wetland habitat (including SAV habitat) and non-wet BLH associated with the construction of the mitigation features should be avoided and minimized to the greatest extent possible. The Corps shall fully compensate for any unavoidable losses of wetland habitat or non-wet BLH caused by mitigation

features through sizing (i.e., boundary adjustments) of the mitigation features in close coordination with the natural resource agencies.

3. Sediment borrow sites for the marsh creation areas should be designed to avoid and minimize impacts to water quality. The general guidelines for borrow design found in Appendix A should be incorporated into project design, and close coordination with the natural resource agencies should continue since borrow design can be case specific and influenced by a number of factors.
4. The Corps should coordinate with the natural resource agencies to ensure that necessary information to conduct detailed project planning/design and finalize the WVA analysis is developed and available. Final sizing of mitigation must be based on revised WVAs conducted on advanced project designs.
5. Further detailed planning of project features (e.g., Design Documentation Report, Engineering Documentation Report, Plans and Specifications, Water Control Plans, or other similar documents) should be coordinated with the Service, NMFS, LDWF, EPA and Louisiana Department of Natural Resources (LDNR). The Service shall be provided an opportunity to review and submit recommendations on all work addressed in those reports.
6. A fully defined mitigation plan should be included in the authorizing report and Decision Record. The mitigation plan should be developed including locations and AAHUs vetted through the natural resource agencies. Only existing mitigation banks and existing credits released by the Corps' Regulatory Branch may be considered.
7. The Corps should continue to coordinate with land managing agencies during planning of mitigation features that may be built on their lands or lands to be turned over to them for management. Coordination should continue until construction of the projects are complete and prior to any subsequent maintenance. For National Park Service (NPS) lands within the area please contact Superintendent Lance Hatten, (504) 589-3882 extension 108, (lance\_hatten@nps.gov), or Chief of Resource Management Guy Hughes (504) 589-3882 extension 128, (guy\_hughes@nps.gov).
8. If the local project-sponsor is unable to fulfill the financial mitigation requirements for operation and/or maintenance of mitigation lands, then the Corps should provide the necessary funding to ensure mitigation obligations are met on behalf of the public interest.
9. Any proposed change in mitigation features or plans should be coordinated in advance with the Service, NPS, NMFS, LDWF, EPA and LDNR.
10. The Service encourages the Corps to finalize mitigation plans and proceed to mitigation construction so that it will be concurrent with project construction. If

construction is not concurrent with mitigation implementation then revising the impact and mitigation period-of-analysis to reflect additional temporal losses will be required.

11. The Service recommends that the Corps immediately finalize selection and approval of mitigation and augmentation features in coordination with federal and state natural resource agencies and with required approval from EPA. All necessary studies for the mitigation and augmentation features have been completed and agencies have reached agreement on those features. Further, the Service recommends that all such mitigation and augmentation features be implemented as soon as possible. All terms and conditions specified in the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination should be followed with regard to mitigation and augmentation requirements.
12. The Corps should immediately develop a long-term monitoring plan for the Bayou aux Carpes 404(c) area, as required under the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination. The plan should be coordinated with the natural resources agencies and approved by EPA. All terms and conditions specified in the EPA 2009 Modification to the Bayou aux Carpes CWA Section 404(c) Final Determination with regard to the long-term monitoring and operation plan should be followed. Once approved, that plan should be implemented as soon as possible.
13. The Service recommends that all of the terms and conditions outlined in the EPA Bayou aux Carpes 404(c) 2009 modification be implemented without delay. The Corps is responsible for funding all mitigation and augmentation features in this agreement. A link to the 2009 final modified determination may be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov) under the EPA heading for IER 12.
14. The Service recommends that the Corps work with the natural resource agencies to incorporate previously proposed modifications and finalize the “GUIDELINES – WET BLH HABITAT ENHANCEMENT, SWAMP HABITAT RESTORATION, AND SWAMP HABITAT ENHANCEMENT” and incorporate all changes in the Mitigation Success Criteria and Mitigation Monitoring: Marsh Mitigation Features from the LPV PIER 36 and the Bayou Sauvage Task Force Guardian BLH mitigation monitoring plan.
15. The Service recommends that the Corps maintain full responsibility for any BLH mitigation project for a minimum of 4-years post planting. The Corps should maintain full responsibility for all marsh mitigation projects until monitoring guidelines to be developed are completed and should demonstrate the projects are fully compliant with success and performance requirements. Documentation should be provided and referenced to demonstrate funding obligation for the Corps to fulfill initial success criteria at a minimum.

16. The Service recommends that all mitigation planning documents should describe in detail actions needed by the Corps and/or the local sponsor if mitigation is not succeeding as planned.
17. The Corps should avoid adverse impacts to bald eagle and osprey nesting locations and wading bird colonies through careful design of project features and timing of construction. Forest clearing associated with project features should be conducted during the fall or winter to minimize impacts to nesting migratory birds, when practicable.
18. We recommend that the Corps re-initiate ESA consultation with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat. Subsequently, ESA consultation should be reinitiated should the proposed project features change significantly or are not implemented within one year of the last ESA consultation with this office to ensure that the proposed project does not adversely affect any federally listed threatened or endangered species or their habitat.

## LITERATURE CITED

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- Lowery, A.H. 1974. Louisiana birds. La. State Univ. Press. 651 pp.
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## Appendix A

### Draft Borrow Design and General Marsh Creation Guidelines for WBV Mitigation

1. Fill elevations - settlement curves should be provided during PED
2. Access corridors across marsh should be backfilled prior to demobilization
3. Earthen Containment and Shoreline Protection (if any) constructed on marsh ultimately would need to be assessed in direct impacts.
4. Earthen Containment in open water - upland portions will not be credited as marsh
5. Degrading/Gapping plan would need to be development and should be tailored case specifically.  
The following is offered as a general design of dike gapping :
  - A. If total dike degradation is not feasible, at a minimum, 1, 25-foot (ft) gap (bottom width) no less than every 1,000 ft, every 500 ft is preferred
  - B. Depth of gap dependent on if it is in open water or on marsh,
  - C. if on a high wave energy or protected energy shoreline:
    - a. Open Water - should be to the pre-project water depth;
    - b. Marsh - on both sides - should be to average marsh elevation
    - c. If scour aprons are included, the bottom should be grubbed out so that the depth is measured to the installed top of the armoring.
    - d. Degraded material should be placed on adjacent remaining dikes and not marsh.
6. Spill boxes should be directed into adjacent deteriorating marsh to the greatest extent practicable.
7. Staging areas should be located to avoid and minimize impacts.
8. Borrow Impact Assessment - generically 2,000 ft from shore is sufficient to avoid inducing wave impacts. Further development with the interagency team should be conducted post 35% and AEP and prior to finalization of the IERs.
9. Monitoring of dissolved oxygen and rate of infilling is recommended for the borrow site. It is recommended that monitoring plans used by the USGS for the MRGO Ecosystem Restoration Study and IER 11 be considered as models for developing that monitoring effort.
10. Borrow Pit Design should be case specific but should also consider the following:
  - a. Avoidance of oyster reefs to the maximum extent practicable
  - b. Avoidance of submerged aquatic vegetation
  - c. Avoidance of induced slope failure
  - d. Avoidance of induced wave refraction/diffraction erosion of shoreline
  - e. Avoidance of pipelines
  - f. Avoidance of inducing hypoxia – close coordination with the resource agencies is recommended as this is case specific and influenced by a number of factors such as water column stratification, current velocities and patterns, infilling rates, and urban discharge, etc. Other factors will need to be considered such as impacts to threatened or endangered species habitat and SAVs.

## Appendix B

### Modification of Bayou aux Carpes CWA Section 404(c) Final Determination

**Excerpt Only – This is not a complete document**

#### ***B. Modification and Conditions***

The October 16, 1985, Bayou aux Carpes Final Determination is hereby modified, subject to conditions specified below, by adding the following: The US Army Corps of Engineers may discharge dredged or fill material for the purpose of constructing the West Closure Complex alternative, as described by Colonel Alvin B. Lee, District Commander for the New Orleans District, in the November 4, 2008, letter requesting modification of the 1985 Bayou aux Carpes 404(c) FD. In this letter (Appendix 1), Colonel Lee requested modification of the 404(c) designation of the site to allow for the construction of a 4,200 foot floodwall and earthen berm within a 100 ft by 4,200 ft corridor along the eastern boundary of the Bayou aux Carpes 404(c) site, Jefferson Parish, Louisiana.

As stated above, this modification is subject to the specific conditions that EPA found were necessary in order for the Agency to grant this modification. The conditions are consistent with EPA and Corps regulations for mitigation and must be implemented in order for any discharges of dredged or fill material to comply with the terms of the 1985 Bayou aux Carpes 404(c) Final Determination. Not-with-standing the fact that the conditions contained in the Final Determination are binding requirements on the Corps, in order to demonstrate the high level of inter-agency cooperation and commitment that compensatory mitigation projects will be provided and maintained, a letter agreeing to the conditions below must be provided by the Corps to EPA (e.g., a formal, documented commitment from a government agency or public authority) (33 CFR 332.3 (n)), as soon as possible and in any event prior to any construction activities authorized by this Final Determination modification. The District Commander for the New Orleans Corps District must provide in writing to EPA AAOW a commitment to plan, design, ensure full funding, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this modification was based to the satisfaction of EPA. EPA recognizes that full funding of the mitigation, augmentation and monitoring measures is subject to the availability of appropriated funds, however the District Commander for the New Orleans Corps District would agree to request through the Corps' budget process the funding that is necessary to fully implement and monitor the mitigation, augmentation and monitoring measures as detailed below.

As set forth in this modification, this action is reflective of a unique set of circumstances. The modification granted today does not have any bearing on any other CWA Section 404(c) designations or modification requests. Each CWA Section 404(c) designation represents a unique situation that responds to a specific set of parameters unlike any other.

***i. Project Design and Construction***

1. During final project design, the New Orleans District of the Corps (Corps) shall utilize all feasible engineering and construction practices to reduce impacts to the Bayou aux Carpes CWA Section 404(c) wetlands.<sup>1</sup>

2. During project construction, the Corps shall comply with the conservation recommendations as specified in the “Fish and Wildlife Coordination Act Report, Individual Environmental Report (IER) 12, Harvey to Algiers” (February 18, 2009), or as they may be amended by the USFWS, Ecological Service, Lafayette.

***ii. Mitigation***

1. The New Orleans District of the Corps shall insure full funding and implementation of mitigation measures to compensate for the unavoidable adverse impacts of the project. EPA will make the final determination as to whether compensation is adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (GNOHSDRRS) interagency review team, prior to implementing any mitigation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each mitigation feature by the National Park Service (Jean Lafitte National Historical Park and Preserve), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), US Geological Survey (USGS), Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The New Orleans District of the Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any mitigation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

***iii. Augmentation Features***

1. The New Orleans District of the Corps shall insure full funding and implementation of augmentation features to enhance the wetland functions and values of the site. EPA will make the determination as to whether augmentation features are adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing any augmentation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each augmentation feature by the NPS (Jean Lafitte National

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<sup>1</sup> This commitment was stated in a November 4, 2008, request for Section 404(c) modification letter to Mr. Lawrence E. Starfield, Deputy Regional Administrator EPA Region 6 from Colonel Alvin B. Lee, District Commander for the New Orleans District for the US Army Corps of Engineers (Appendix 1). Note: enclosed documents referenced in this letter are not attached in Appendix 1, but can be found in EPA Region 6 Recommended Determination dated April 2, 2009.

Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any augmentation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

***iv. Long-term Monitoring and Operation***

1. The New Orleans District of the Corps shall coordinate the development of a long-term site monitoring plan, to be approved in writing by EPA, after consulting with the GNOHSDRRS interagency review team. EPA will make the determination as to whether the monitoring plan is adequate and appropriate.

2. The New Orleans District of the Corps and EPA Region 6 shall develop and sign a Memorandum of Agreement with those willing and active State, federal, and local participants with natural resource management missions who have participated on the IER # 12<sup>2</sup> interagency review team. The Memorandum of Agreement shall document the commitment to participate in the planning and analyses specified by the long-term monitoring plan.

3. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing the long-term monitoring plan. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on the long-term monitoring plan by the NPS (Jean Lafitte National Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

4. The New Orleans District of the Corps shall be responsible for ensuring implementation of a long-term site monitoring plan, to extend no less than the first 50 years of the Corps project life, unless otherwise addressed in a long-term agreement with another party approved by EPA.<sup>3</sup> The long-term monitoring plan for the Bayou aux Carpes Modification mitigation and augmentation features will focus on monitoring both the mitigation and augmentation features, as well as the impacts of the floodwall. The plan should provide for making adjustments if the mitigation or

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<sup>2</sup> The Corps has divided the study area for the GNOHSDRRS into 17 project component areas. Each of these component areas will report on plans for those areas in Individual Environmental Reports (IERs). The proposed plans for the Bayou aux Carpes CWA Section 404(c) area are reported in IER #12.

<sup>3</sup> The ultimate responsibility to plan, design, fully fund, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this determination was based are the responsibility of the U.S. Army Corps of Engineers. Although the Corps may enter into long term agreements with another party with respect to the work authorized by this modification, such agreements do not obviate the Corps' responsibility for meeting the conditions of this modification, and any concerns EPA may have will be raised with the Corps, not other involved parties.

augmentation features prove not to perform as expected. Though it is not expected that the Corps would need to make future adjustments to the floodwall, the effects of the floodwall are to be monitored to determine unexpected impacts which may warrant other corrective actions.

5. The New Orleans District of the Corps shall provide EPA Region 6 with digital aerial photography of the site (season and flood stage to be determined jointly) prior to constructing the floodwall along the perimeter of the site and annually for the first five years after its construction, and at other times as specified by EPA Region 6.

6. The New Orleans District of the Corps shall gather the monitoring data and report results to EPA Region 6 annually, on a schedule to be specified by EPA Region 6, each year for the first five years, and at other times as specified by EPA Region 6.

7. Throughout the life of the project, the New Orleans District of the Corps shall ensure that any necessary adaptive construction modifications, including removal or repair, of any mitigation or augmentation feature is instituted based on the recommendations of EPA.

8. In the event that EPA determines during the life of the project that operation, maintenance, or long-term management by the Corps of the flood protection/risk reduction features, mitigation features, or augmentation features is causing unanticipated and unacceptable wetland impacts, EPA may modify the terms of these conditions.

## SECTION 404(b)(1) EVALUATION

The following short form 404(b)(1) evaluation follows the format designed by the Office of the Chief of Engineers. As a measure to avoid unnecessary paperwork and to streamline regulation procedures while fulfilling the spirit and intent of environmental statutes, the New Orleans District is using this format for all proposed project elements requiring 404 evaluation, but involving no significant adverse impacts.

**PROJECT TITLE.** PIER 37, TIER 1 Jean Lafitte National Historic Park and Preserve Mitigation Features Environmental Assessment and National Historic Preservation Act Assessment of Effects, West Bank and Vicinity (WBV) Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation, Jefferson Parish, Louisiana

**PROJECT DESCRIPTION.** The proposed action would consist of building on Jean Lafitte National Historic Park and Preserve (JELA) the JL7 project for Park/404c swamp impacts (figure 1), the JL14A project for Park/404c BLH-Wet impacts (figure 1), the JL1B4 project for Park fresh marsh impacts (figure 2), and the JL1B5 and JL15 projects for general fresh marsh impacts incurred during construction of the WBV HSDRRS improvements (figures 3 and 4). The JL7 project consists of gapping existing spoil banks along Millaudon and Horseshoe Canals in 6 places to restore hydrologic connection and natural sheet flow across existing impounded swamp habitat. Material obtained from the gapping (approximately 2,000 cy) would be side cast into Millaudon or Horseshoe Canals. The JL14A project consists of filling approximately 8 acres of disturbed open water in a borrow pit adjacent to the WBV HSDRRS levee to elevations that could support BLH-Wet. Borrow for this action (200,000 cy of sand and 41,000 cy of clay) would come from previously approved government or contractor furnished off site borrow pits. The area would be planted with BLH species once target elevations are reached. The JL1B4 and JL1B5 projects would obtain 750,000 cy of borrow material from Lake Salvador water bottoms to fill Yankee Pond to elevations conducive to fresh marsh establishment. The project area would be armored on the Bayou Segnette side to prevent future erosion from wave action. The JL15 project consists of eradication of nuisance tree species, augmentation of the existing foreshore dike, and the creation of several fish dips in that dike. Material excavated to create the fish dips would either be cast into open water/low areas inside the project area or used to augment the existing rock dike. The proposed actions consist of measures to minimize the adverse effects of storm water erosion and thus require no separate measures or controls for compliance with CWA Section 402(p) and LAC 33:IX.2341.B.14.j.

1. Review of Compliance (s230.10 (a)-(d)).

Preliminary<sup>1</sup>

Final<sup>2</sup>

A review of this project indicates that:

a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for environmental assessment alternative);

YES

NO\*

YES

NO

b. The activity does not appear to: (1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act; (2) jeopardize the existence of Federally listed endangered or threatened species or their habitat; and (3) violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);

YES

NO\*

YES

NO

c. The activity will not cause or contribute to significant degradation of waters of the United States including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, esthetic, and economic values (if no, see section 2);

YES

NO\*

YES

NO

d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5).

YES

NO\*

YES

NO

2. Technical Evaluation Factors (Subparts C-F).

N/A      Not Significant      Significant\*

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C).

- (1) Substrate impacts.
- (2) Suspended particulates/turbidity impacts.
- (3) Water column impacts.
- (4) Alteration of current patterns and water circulation.
- (5) Alteration of normal water fluctuations/hydroperiod.
- (6) Alteration of salinity gradients.

|  |   |   |
|--|---|---|
|  |   | X |
|  | X |   |
|  | X |   |
|  |   | X |
|  | X |   |
|  | X |   |

b. Biological Characteristics of the Aquatic Ecosystem (Subpart D).

- (1) Effect on threatened/endangered species
- (2) Effect on the aquatic food web.
- (3) Effect on other wildlife (mammals, birds, reptiles, and amphibians).

|   |   |  |
|---|---|--|
| X |   |  |
|   | X |  |
|   | X |  |

c. Special Aquatic Sites (Subpart E).

- (1) Sanctuaries and refuges.
- (2) Wetlands.
- (3) Mud flats.
- (4) Vegetated shallows.
- (5) Coral reefs.
- (6) Riffle and pool complexes.

|   |   |  |
|---|---|--|
| X |   |  |
|   | X |  |
|   | X |  |
|   | X |  |
| X |   |  |
| X |   |  |

d. Human Use Characteristics (Subpart F).

- (1) Effects on municipal and private water supplies.
- (2) Recreational and commercial fisheries impacts.
- (3) Effects on water-related recreation.
- (4) Esthetic impacts.
- (5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

|   |   |  |
|---|---|--|
| X |   |  |
|   | X |  |
|   | X |  |
|   | X |  |
|   | X |  |

Remarks. Where a check is placed under the significant category, preparer has attached explanation.

2.a.(1) and (4)The JL14A project will convert open water to BLH-wet by altering the substrate elevation. Therefore, changes in water circulation, depth, and current pattern are expected. The benthic community will also change from shallow open water benthic organisms to wetland benthic organisms. The borrow for this action is not expected to contribute to the toxicity of benthic organisms in the wetland restoration area. The JL1B4 and JL1B5 projects will convert open water to fresh marsh habitat. The conversion will change water circulation, depth, and current patterns along with benthic communities. Gapping in the spoil banks along Millaudon and Horseshoe Canals is expected to alter the water circulation. This alteration is intended to nourish the existing swamp habitat and therefore is not expected to negatively impact the area. The creation of fresh marsh and BLH-wet using dredged material is expected to alter the substrate elevation, which would result in changes in water circulation and current pattern. As a result, changes in: location, structure, and dynamics of aquatic communities; substrate erosion and deposition rates; the deposition of suspended particulates; and the rate and extent of mixing of dissolved and suspended components of the water body are expected. The same results are expected from the JL15 project foreshore dike augmentation. These alterations are desired, and are considered to be beneficial effects of wetland restoration.

\* See attached memo for additional details

3. Evaluation of Dredged or Fill Material (Subpart G).<sup>3</sup>

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material.

|                                                                                                                                                                                       |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| (1) Physical characteristics .....                                                                                                                                                    | <u>  X  </u>      |
| (2) Hydrography in relation to known or anticipated sources of contaminants .....                                                                                                     | <u>          </u> |
| (3) Results from previous testing of the material or similar material in the vicinity of the project .....                                                                            | <u>          </u> |
| (4) Known, significant sources of persistent pesticides from land runoff or percolation .....                                                                                         | <u>          </u> |
| (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances .....                                                                                | <u>  X  </u>      |
| (6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources .....                                                          | <u>  X  </u>      |
| (7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities ..... | <u>          </u> |
| (8) Other sources (specify) .....                                                                                                                                                     | <u>          </u> |

Appropriate references:

1. Environmental Regulatory Code, Part IX. Water Quality Regulation, Louisiana Department of Environmental Quality, 1994, 3<sup>rd</sup> Edition.
2. State of Louisiana Water Quality Management Plan, Volume 5, Part B – Water Quality Inventory, Louisiana Department of Environmental Quality, Office of Water Resources, 1994.
3. Louisiana DEQ, Chapter 11 Surface Water Quality Standards, May 2007:  
<http://www.deq.louisiana.gov/portal/LinkClick.aspx?link=planning%2fregs%2ftitle33%2f33v09.pdf&tabid=1674>
4. Louisiana Department of Environmental Quality. 2015. *2014 Louisiana Water Quality Inventory: Integrated Report*.  
<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2014IntegratedReport.aspx>. Last accessed on August 7, 2015
5. NOAA, Screening Quick Reference Tables, November 2006: <http://response.restoration.noaa.gov/>
6. US Coast Guard, National Response Center: [www.nrc.uscg.mil/index.htm](http://www.nrc.uscg.mil/index.htm)
7. US EPA, CERCLIS Database of Hazardous Waste Sites:  
[www.epa.gov/superfund/sites/cursites/index.htm](http://www.epa.gov/superfund/sites/cursites/index.htm)
8. US EPA, EnviroMapper StoreFront: <http://www.epa.gov/enviro/html/em/index.html>
9. US EPA, National Recommended Water Quality Criteria, 2006:  
<http://epa.gov/waterscience/criteria/wqcriteria.html>
10. US EPA, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, July 2004: <http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf>

b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or the material meets the testing exclusion criteria.

YES

NO

4. Disposal Site Delineation (230.11(f)).

a. The following factors, as appropriate, have been considered in evaluating the disposal site.

- |                                                                                                              |               |
|--------------------------------------------------------------------------------------------------------------|---------------|
| (1) Depth of water at disposal site .....                                                                    | <u>  X  </u>  |
| (2) Current velocity, direction, and variability at disposal site .....                                      | <u>      </u> |
| (3) Degree of turbulence .....                                                                               | <u>      </u> |
| (4) Water column stratification .....                                                                        | <u>      </u> |
| (5) Discharge vessel speed and direction .....                                                               | <u>      </u> |
| (6) Rate of discharge .....                                                                                  | <u>      </u> |
| (7) Dredged material characteristics (constituents, amount, and type of material, settling velocities) ..... | <u>  X  </u>  |
| (8) Number of discharges per unit of time .....                                                              | <u>      </u> |
| (9) Other factors affecting rates and patterns of mixing (specify) .....                                     | <u>      </u> |

Appropriate references:

Same as 3(a)

b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.

YES                       NO\*

5. Actions to Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken, through application of the recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

YES                       NO\*

Actions taken: All material will be placed in a manner conducive to wetlands creation or will be placed in a manner so as not to cause unnecessary suspension of sediments (gapping of spoil banks and disposal of gap material would occur by bucketed equipment). Available data shows material not to be a carrier of contaminants.

6. Factual Determination (230.11).

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term (adverse) environmental effects of the proposed discharge as related to:

- |                                                                                     |                              |                              |
|-------------------------------------------------------------------------------------|------------------------------|------------------------------|
| a. Physical substrate at the disposal site (review sections 2a, 3, 4, and 5 above). | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| b. Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5).   | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5)               | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| d. Contaminant availability (review sections 2a, 3, and 4).                         | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5).   | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| f. Disposal site (review sections 2, 4, and 5).                                     | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| g. Cumulative impact on the aquatic ecosystem.                                      | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |
| h. Secondary impacts on the aquatic ecosystem.                                      | <input type="checkbox"/> YES | <input type="checkbox"/> NO* |

\*A negative, significant, or unknown response indicates that the proposed project may not be in compliance with the Section 404(b)(1) Guidelines.

<sup>1</sup>Negative responses to three or more of the compliance criteria at this stage indicates that the proposed project may not be evaluated using this "short form procedure". Care should be used in assessing pertinent portions of the technical information of items 2a-d, before completing the final review of compliance.

<sup>2</sup>Negative responses to one of the compliance criteria at this stage indicates that the proposed project does not comply with the guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision making process, the "short form" evaluation process is inappropriate.

<sup>3</sup>If the dredged or fill material cannot be excluded from individual testing, the "short form" evaluation process is inappropriate.

7. Evaluation Responsibility.

Evaluation prepared by: Lindsey Foster, Elizabeth Behrens

Position: Student Environmental Engineer, Senior Biologist

Date: 08/12/2015

Evaluation reviewed by: Amena Henvill; Sandra Stiles

Position: Supv. Civil Engineer, CEMVN-PDN Section Chief

Date: 10/8/2015

8. Findings.

a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines .....  X

b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions ..... \_\_\_\_\_

c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reason(s):

(1) There is a less damaging practicable alternative ..... \_\_\_\_\_

(2) The proposed discharge will result in significant degradation of the aquatic ecosystem ..... \_\_\_\_\_

(3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem ..... \_\_\_\_\_

Dec 3, 2015  
Date

Joan M. Exnicios  
Joan M. Exnicios  
Chief, Environmental Planning Branch











**US Army Corps of Engineers,  
New Orleans District**

To: File  
From: Lindsey Foster, CEMVN-ED-H  
CC:  
Date: 12 August 2015  
Re: Additional PIER 37, TIER 1 Jean Lafitte National Historic Park and Preserve Mitigation Features and NHPA Assessment of Effects, West Bank and Vicinity (WBV) Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation

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Historic water and sediment quality data from Bayou Segnette, Lake Salvador, and Lake Cataouatche were used to make factual determinations for the subject actions. The following summarizes the review process and comments noted:

1. **Review of Compliance (230.10 (a)-(d))**

- b. *230.10 (b) (1)*: After consideration of disposal site dilution and dispersion, there are no expected violations of State water quality from the proposed Federal actions.

2. **Technical Evaluation Factors (Subparts C-F)**

**Subpart C – Physical and Chemical Characteristics of the Aquatic Ecosystem**

*230.20 – (1) Substrate Impacts*: The material obtained from gapping for the JL7 project will be side cast into the canals to prevent substrate impacts. The restoration of hydrologic connection and natural sheet flow to these canals will improve the current swamp habitat and have minimal effect on the substrate or benthic community.

The JL14A project will convert approximately 8 acres of open water to BLH-wet by altering the substrate elevation. Therefore, changes in water circulation, depth, and current pattern are expected. The benthic community will also change from shallow open water benthic organisms to wetland benthic organisms. The borrow for this action will come from federally approved off-site borrow pits, and therefore should not contribute to the toxicity of benthic organisms in the wetland restoration area.

The JL1B4 and JL1B5 projects will convert open water to fresh marsh habitat using borrow from Lake Salvador. The conversion will change water circulation, depth, and current patterns along with benthic communities. The former open water benthic community will be replaced with by benthic organisms found in nearby wetlands.

The material cast into open water in Lake Salvador from eradicating nuisance trees, augmenting the foreshore dike, and creating fish dips for JL15 project should not negatively impact the substrate properties or benthic communities in the area.

*230.21 – (2) Suspended Particulates/Turbidity Impacts*: Side cast from the gapping along Millaudon and Horseshoe Canals, the filling of Yankee Pond, and the material from augmenting the foreshore dike in Lake Salvador would cause a temporary increase in suspended particles and turbidity. This may result in the elevation of oxygen demand and

dissolved solids, lower the rate of photosynthesis, raise water temperature, or increase the biological availability of constituents in the water column and substrate. However, no significant long-term suspended particulates/turbidity impacts are expected due to dredging or placement of dredged material in the mitigation area.

*230.22 – (3) Water Column Impacts:* Physical and chemical factors associated with dredging, placement of dredged material, and construction would be expected to cause a temporary reduction in pH. These pH variations would be minor and short-lived. Therefore, no impacts to the water column are expected.

*230.23 – (4) Alteration of Current Patterns and Water Circulation:* Gapping in the spoil banks along Millaudon and Horseshoe Canals is expected to alter the water circulation by restoring hydrologic connection and natural sheet flow across the impounded swamp. This alteration is intended to nourish the existing swamp habitat and therefore is not expected to negatively impact the area.

The creation of fresh marsh and BLH-wet using dredged material is expected to alter the substrate elevation, which would result in changes in water circulation and current pattern. As a result, changes in: location, structure, and dynamics of aquatic communities; substrate erosion and deposition rates; the deposition of suspended particulates; and the rate and extent of mixing of dissolved and suspended components of the water body are expected. The same results are expected from the JL15 project foreshore dike augmentation. These alterations are desired, and are considered to be beneficial effects of wetland restoration.

*230.24 – (5) Alteration of Normal Water Fluctuations/Hydroperiod:* The creation of fresh marsh and BLH-wet using dredged material is expected to alter the substrate elevation, which would result in changes in water fluctuation. However, the impacts to normal water fluctuations/hydroperiod would not be significant based on the location of the wetland restoration area as well as the footprint of the project features.

*230.25 – (6) Alteration of Salinity Gradients:* No significant alteration of salinity gradients are expected due to the proposed project. Because of the location of the project features, there is little reason to believe that any effect on salinity gradients would occur.

## **Subpart F – Human Use Characteristics**

*230.50 – (1) Effects on Municipal and Private Water Supplies: N/A*

### **3. Subpart G – Evaluation of Dredged or Fill Material**

a. *230.61 – Considerations in Evaluating the Biological Availability of Possible Contaminants in Dredged or Fill Material:* Research of environmental records and spills lists did not return any results for possible contaminants in the dredged and fill materials of Lake Salvador or Millaudon and Horseshoe Canals. Therefore, the dredge material is expected to be free of contaminants. Also, sediment excavated and placed for fill and retention dikes would be relocated directly adjacent to those areas from which they were excavated. These actions constitute a like on like dredged material removal and placement condition, which is not expected to result in any negative substrate impacts.

Appropriate references: See Paragraph 7 below

b. An evaluation of the appropriate information in VI(a) above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or the material meets the testing exclusion criteria: YES

#### **4. Disposal Site Delineation (§230.11(f))**

- a. *Considerations in Evaluating the Disposal Site:* Retention dikes will be constructed for Project JL1B5 to allow fresh marsh to settle and prevent erosion during an idle period. All but the east side of the dike will be degraded after that period with most of the sediment generated being returned to the restoration feature. The JL1B4 feature will also use a retention dike. The material and debris excavated for JL7 project will be side cast into the adjacent canals.
- b. An evaluation of the appropriate factors in V(a) above indicates that the disposal site and/or size of mixing zone are acceptable: YES

#### **5. Subpart H - Actions to Minimize Adverse Effects**

All appropriate and practicable steps have been taken, through application of the recommendations of 230.70 – 230.77 to ensure minimal adverse effects of the proposed discharge: YES

#### **6. Factual Determinations (§230.11)**

A review of appropriate information as identified in items I - VI above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge:

- a. Physical substrate at the disposal site (review sections II, IV, V, and VI above): NO  
The JL14A project will convert approximately 8 acres of open water to BLH-wet by altering the substrate elevation. Therefore, changes in water circulation, depth, and current pattern are expected. The creation of fresh marsh and BLH-wet using dredged material is expected to alter the substrate elevation, which would result in changes in water circulation and current pattern. As a result, changes in: location, structure, and dynamics of aquatic communities; substrate erosion and deposition rates; the deposition of suspended particulates; and the rate and extent of mixing of dissolved and suspended components of the water body are expected. The same results are expected from the JL15 project foreshore dike augmentation. These alterations are desired, and are considered to be beneficial effects of wetland restoration.
- b. Water circulation, fluctuation and salinity (review sections II, IV, V, and VI): NO  
The JL14A project will convert approximately 8 acres of open water to BLH-wet by altering the substrate elevation. Therefore, changes in water circulation, depth, and current pattern are expected. The benthic community will also change from shallow open water benthic organisms to wetland benthic organisms. The creation of fresh marsh and BLH-wet using dredged material is expected to alter the substrate elevation, which would result in changes in water circulation and current pattern. As a result, changes in: location, structure, and dynamics of aquatic communities; substrate erosion and deposition rates; the deposition of suspended particulates; and the rate and extent of mixing of dissolved and suspended components of the water body are expected. The same results are expected from the JL15 project foreshore dike augmentation. These alterations are desired, and are considered to be beneficial effects of wetland restoration.
- c. Suspended particulates (review sections II, IV, V, and VI): YES
- d. Contaminant availability (review sections II, IV, and V): YES

#### **7. References**

- a. Environmental Regulatory Code, Part IX. Water Quality Regulation, Louisiana Department of Environmental Quality, 1994, 3rd Edition.

- b. State of Louisiana Water Quality Management Plan, Volume 5, Part B – Water Quality Inventory, Louisiana Department of Environmental Quality, Office of Water Resources, 1994.
- c. Louisiana DEQ, Chapter 11 Surface Water Quality Standards, May 2007:  
<http://www.deq.louisiana.gov/portal/LinkClick.aspx?link=planning%2fregs%2ftitle33%2f33v09.pdf&tabid=1674>
- d. Louisiana Department of Environmental Quality. 2015. 2014 Louisiana Water Quality Inventory: Integrated Report.  
<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2014IntegratedReport.aspx>. Last accessed on August 7, 2015
- e. NOAA, Screening Quick Reference Tables, November 2006:  
<http://response.restoration.noaa.gov/>
- f. US Coast Guard, National Response Center: [www.nrc.uscg.mil/index.htm](http://www.nrc.uscg.mil/index.htm)
- g. US EPA, CERCLIS Database of Hazardous Waste Sites:  
[www.epa.gov/superfund/sites/cursites/index.htm](http://www.epa.gov/superfund/sites/cursites/index.htm)
- h. US EPA, EnviroMapper StoreFront: <http://www.epa.gov/enviro/html/em/index.html>
- i. US EPA, National Recommended Water Quality Criteria, 2006:  
<http://epa.gov/waterscience/criteria/wqcriteria.html>
- j. US EPA, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, July 2004: <http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf>

**PUBLIC NOTICE**

**Jean Lafitte National Historical Park and Preserve Mitigation Features and National Historic  
Preservation Act Assessment of Effects  
West Bank and Vicinity Hurricane and Storm Damage Risk Reduction Mitigation  
Jefferson Parish, Louisiana**

**PIER 37, TIER 1**

Introduction. This Public Notice is issued in accordance with provisions of Title 33 CFR Parts 336.1(b)(1) and 337.1, which establish policy, practices, and procedures to be followed on federal actions involving the disposal of dredged or fill material into waters of the United States.

Project Authority. The WBV project was authorized by the WRDA of 1986 (P.L. [Public Law] 99-662, Section 401(b)). The WRDA of 1996 modified the project and added the Lake Cataouatche Project and the East of Harvey Canal Project (P.L. 104-303, 101(b)(11) & P.L. 104-303, Section 101(a)(17)). The WRDA 1999 (P.L. 106-53, Section 328) combined the three projects into one project as the West Bank and Vicinity Hurricane Protection Project. The Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act of 2006 (3rd Supplemental - PL 109-148, Chapter 3, Construction, and Flood Control and Coastal Emergencies) authorized accelerated completion of the WBV project and restoration of project features to design elevations at full Federal expense. The Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery of 2006 (4th Supplemental - PL 109-234, Title II, Chapter 3, Construction, and Flood Control and Coastal Emergencies) authorizes modification to WBV to provide the level of protection necessary to achieve the certification required for participation in the National Flood Insurance Program; the replacement or reinforcement of floodwalls; and the construction of levee armoring at critical locations.

Location. Jean Lafitte National Historical Park and Preserve (JELA, Park) in Jefferson Parish, Louisiana.

Project Description. The proposed action consists of building the JL7 project for Park/404c swamp impacts, the JL14A project for Park/404c BLH-Wet impacts, the JL1B4 project for Park fresh marsh impacts, and the JL1B5 and JL15 projects for general fresh marsh impacts incurred during construction of the WBV Hurricane Storm Damage Risk Reduction System (HSDRRS) improvements.

**JL1B5 and JL15 General Fresh Marsh Projects.** This project would involve the restoration of fresh marsh habitats at two locations on JELA.

Feature JL1B5 (figure 1) would occupy approximately 91.2 acres of open water (87.6 acres of marsh restoration + 3.6 acres of dikes). 8,400 linear feet (ft) of retention dike would be required and approximately 3,100 linear ft of the 8,400 ft would be armored/capped with well graded riprap (with a proposed top size stone of 650 pounds) during the second project construction phase. This armored dike segment would be located along the eastern boundary of the feature adjacent to Bayou Segnette. Retention dikes would be constructed to maintain a minimum of one foot of freeboard during dredging operations. The retention dikes would be constructed to elevation +5.0 ft, with a 5-ft crown to assure dike integrity. Borrow for these retention dikes would be excavated with a marsh buggy from within the marsh creation footprint. The borrow ditch would be offset a minimum of 40 ft from the dike to assure dike stability. For initial quantity estimates, the dikes were assumed to have 1V:4H side slopes. A low level weir or spill boxes would be constructed in the western retention dike where it borders existing marsh habitats to allow for effluent water release from within the marsh restoration area and potentially nourish

the adjacent existing marsh. If deemed necessary by the construction contractor, a low level interior weir could be constructed to assist in vertical stacking of dredged material. Marsh restoration at this feature would require approximately 600,000 cubic yards (cy) of material hydraulically dredged from Lake Cataouatche. It is anticipated that the proposed borrow source would contain approximately 10 percent sand. The borrow site would be situated a minimum 2,000 ft from the lake shoreline and borrow would be removed by a hydraulic cutter-head dredge. The borrow site would be approximately 1,200 ft X 1,500 ft (roughly 42.0 acres) with a maximum cut of 10 ft. The material would be hydraulically pumped from the borrow site to the feature via 18,000 linear ft of pipeline routed through Lake Cataouatche to the western bank of Bayou Segnette Waterway (BSSW). Floating pipeline (discharge pipe on pontoons) would be used in the BSSW. The main navigation channel in the BSSW ranges from 300 to 450 ft wide. The portion of the slurry pipeline routed adjacent to the west bank of the BSSW would have a pipeline corridor width of 100 ft. The eastern boundary of this corridor would not extend into the limits of or cross the main BSSW navigation channel. This corridor would be marked on 150 foot centers to prevent boat hazards in the lake and along the bayou. Markers would include lighted and reflective buoys. As the pipeline would need to cross a portion of Lake Cataouatche from the borrow site to the BSSW, a small segment of submerged pipeline would be utilized with appropriate signage to ensure safe passage of vessels over the line. Throughout the initial construction phase, project construction would be coordinated with the US Coast Guard.

The initial target marsh elevation (elevation of slurry fill) for this feature would be +3.5 ft. It is estimated that the initial project construction activities discussed above would require approximately 5 to 6 months. Once these activities are completed there would be an idle period of approximately 1 year to allow the marsh feature to settle to the desired final target elevation of approximately +1.0 to +1.5 ft. The final construction phase would begin following settlement and dewatering of the created marsh platform. In the final construction phase, all perimeter dikes except for the one bordering Bayou Segnette (e.g. east dike) would be degraded with a marsh buggy such that the crest of the dikes would be the same as the final target elevation of the marsh platform. Approximately 2-ft of dike degrading is anticipated after the initial year of settlement to revert the dike footprint to desired marsh elevation. The dike segment along the eastern edge of feature JL1B5 would first be degraded to elevation +3.0 ft. Armoring would then be placed along the eastern face of this dike, constructed with a 2-foot stone cap to elevation +3.0 ft. During this process, fish dips" (essentially armored gaps) would be constructed in the armored dike segment. The fish dips would allow water exchange and provide aquatic organism access to the marsh feature. Each fish dip would have a bottom width of approximately 100 ft, a bottom elevation no greater than 0 ft, and 1V:3H side slopes. At this phase of design, it was assumed that there would be one fish dip established for every 500 ft of armored dike (i.e. 500-foot spacing). Sediment generated during the dike degrading process would be placed back into the depression that may result from incomplete filling of the interior borrow ditch within the restoration feature.

In conjunction with the dike degrading efforts, trenasses would be constructed as necessary to serve as tidal creeks to facilitate water exchange and create shallow water interspersed features within JL1B5. The trenasses would be rutted to a lower than marsh elevation by performing two passes of a marsh buggy along the desired alignment. The acceptable trenasse width, if constructed in this fashion, would be the width of marsh buggy. If the resulting depression is not adequate for minimal water flow, the marsh equipment may excavate material along the proposed alignment, not to exceed a 5-foot bottom width by 1-foot deep channel. It is anticipated that the final phase of construction activities (degrading dikes, constructing trenasses and fish dips, installation of dike armoring) would take approximately 3 to 4 months. Additional activities that would occur during the project construction phase would include periodic eradication of invasive/nuisance plant species within the mitigation feature as well as mitigation monitoring and reporting. It is assumed that appropriate fresh marsh plant species would naturally colonize the marsh restoration feature; hence, no planting of the feature is proposed. If 85% the site does not colonize with native herbaceous species vegetation within 3 years, planting would be initiated. Various activities would be necessary during the OMR&R phase of the project. At a minimum, these would include periodic eradication of invasive/nuisance plants in the mitigation feature and mitigation monitoring and reporting. The armored perimeter dike would likely need to be maintained once every 15 years through the additional of armoring (stone/rip-rap). Approximately 2,000 tons of stone may be required each 15 year maintenance cycle.

Feature JL15 would be situated in an area along the shoreline of Lake Salvador where prior work has already largely established a marsh platform that was previously an open water portion of the lake. Feature JL15 would encompass a total of approximately 55.5 acres. As part of the proposed project, existing low quality BLH species (black willow) would be eradicated, existing rock armament of the lakeside dike would be augmented, and several fish dips would be constructed in the dike. Low quality BLH species on the dike itself would not be removed. The new fish dips would be designed to prevent interior erosion from lake wave action and would provide water exchange and aquatic organism access to the marsh feature. During refurbishment of the rock dike, the two existing fish dips would be improved so as to prevent further interior erosion resulting from lake wave action. It is anticipated that the JL15 construction activities (herbicide application, refurbishment of rock dike, constructing fish dips) would require approximately 4 to 5 months.

**JL1B4 Park Fresh Marsh Project.** The JL1B4 project would involve restoring 20.4 acres of fresh marsh habitat from open water in the southwest corner of Yankee Pond (Figure 2). This project would merge with the JL1B5 feature to create one overall marsh restoration project occupying approximately 108 acres. The armored dike constructed along the eastern edge of JL1B5 would protect both JL1B5 and JL1B4. Approximately 2,000 linear ft of retention dike would be required for JL1B4. Retention dikes would be constructed in the same manner as those for the JL1B5 feature. A low level weir would be constructed in the southwest corner of the restoration project to allow for effluent water release from within the marsh restoration area and potentially nourish the existing marsh adjacent to the west side of JL1B4. Marsh restoration would require approximately 150,000 cy of material hydraulically dredged from Lake Cataouatche. The borrow site would be adjacent to the borrow site for the JL1B5 feature and approximately 1,500 ft X 300ft (roughly 10.3 acres) with a maximum cut of 10 ft. All other construction details would be the same as those specified for the JL1B5 feature.

**JL7 Park/404c Swamp Project.** The JL7 project would involve restoring hydrologic connection and natural sheet flow across existing impounded swamp habitat as mitigation for Park/404c swamp impacts. Existing spoil berms along the north side of the Millaudon and Horseshoe Canals will be gapped to improve exchange of surface water between swamp habitats in the area. Spoil berm gaps would be excavated at 3 locations along Millaudon Canal and 3 locations along Horseshoe Canal. The spoil berms would be degraded approximately 4.5 ft, to elevation -1.5 NAVD88 which is below the typical elevations found in existing swamp habitats near this project. This bottom elevation would allow water movement in the adjacent swamp to mimic the tidal range experienced in the adjacent canals and would discourage re-growth of woody plant species in the gaps. Gaps constructed on Millaudon Canal would be excavated to a bottom width of 25 ft, approximately 60 ft long with 1:3 side slopes. Gaps constructed on Horseshoe Canal would be excavated to a bottom width of 100 ft, approximately 60 ft long with 1:3 side slopes. The proposed project would require excavation of approximately 470 cy for each cut along Horseshoe Canal and 140 cy for each cut along the Millaudon Canal.

Materials and vegetative debris excavated by gapping canal spoil berms shall be placed immediately south of the gaps in the adjacent canals using marsh tracked excavators or excavators on small modular barges to stay within the canal and avoid additional impacts to spoil bank habitat. Construction equipment would access the project site via an access roadway along an existing levee from Tusa Drive off of Barataria Blvd. After reaching the levee, construction equipment would follow the West Bank Hurricane Protection Levee west to Horseshoe Canal or north to Millaudon Canal. The proposed construction access route would require building temporary earthen access ramps on either side of the levees within the existing levee ROW for equipment movement over the existing levee. Construction equipment, consisting of long reach marsh buggies, would then access the gap locations by traveling adjacent to the spoil berm, within the banks of the canal, on the north side of the canals. If instead of tracking in the canal, modular barges are used they would be brought in by trailer from Barataria Blvd. and connected onto a work platform in the canal. Equipment would then construct the gaps from the barges.

**JL14A Park/404c BLH-Wet Project.** The JL14A project would involve restoring BLH-Wet habitat from open water areas and would produce approximately 5.2 AAHUs of BLH-Wet benefits. This project would require filling 8.1 acres of an existing borrow pit to elevations conducive to BLH establishment. The existing bottom elevation of the borrow pit is likely around -20.0 ft. The pit would first be filled with 15 ft of

sand to elevation -5 ft. A 5- 6 ft clay cap would then be placed on top of the sand fill, followed by 1.5 – 2 ft of topsoil to the initial target elevation of 2.5 - 3 ft. Clearing of vegetation and debris from within the pits, and trimming of overhanging trees along the edge of the mitigation project may be required prior to placement of fill. The proposed project would require approximately 210,000 cy of sand, 80,000 cy of clay, and 30,000 cy of topsoil hauled from off-site commercial, contractor furnished, and/or government furnished borrow pits. Construction equipment, including dump trucks, would access the project site via an existing levee access roadway situated about 0.3 miles south of Tusa Drive off Barataria Blvd. After reaching the levee, construction equipment would follow the West Bank Hurricane Protection Levee west to JL14. A temporary road will be required along the flood-side berm of the levee. Approximately 100 – 20 cy dump trucks would be accessing the site per day during the estimated 210 day construction duration for this project. The initial construction phase is estimated to be less than 2 years. Once the mitigation project has reached the desired target grade, the project would be planted with native canopy and mid-story BLH species. The proposed action itself consists of measures to minimize the adverse effects of storm water erosion and thus requires no separate measures or controls for compliance with CWA Section 402(p) and LAC 33:IX.2341.B.14.j.

Discharges by Others. There are no known discharges of fill material at or near the proposed project site.

Other Information. The EA will begin its 30-day public review period October 13, 2015. PIER 37, TIER 1 addresses the impacts associated with construction of the projects mitigating for habitat losses incurred during construction of the WBV HSDRRS within the WBV basin to fresh marsh, and on JELA and the EPA's 404c area to fresh marsh, swamp, and BLH-Wet.

Properties Adjacent to Disposal Sites. All projects are on JELA property except for JL 15 which is on the Lake Salvador shoreline and partly on Jefferson parish school board property. Adjacent land owner for the JL14A project is Jefferson Parish.

Status of Environmental Assessment (EA) and Coordination. Environmental compliance for the proposed action would be achieved upon: coordination of the EA and draft Finding of No Significant Impact with appropriate agencies, organizations, and individuals for their review and comments; U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; Louisiana Department of Natural Resources concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program; receipt of a Water Quality Certificate from the State of Louisiana; public review of the Section 404(b)(1) Public Notice; signature of the Section 404(b)(1) Evaluation; receipt of the Louisiana State Historic Preservation Officer Determination of No Affect on cultural resources; receipt and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act recommendations; receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the EA; and receipt and acceptance or resolution of all NMFS Essential Fish Habitat recommendations. The FONSI would not be signed until the proposed action achieves environmental compliance with applicable laws and regulations.

Evaluation Factors. Evaluation includes application of the Section 404(b)(1) guidelines promulgated by the Administrator of the U.S. Environmental Protection Agency, through 40 CFR 230.

Public Involvement. The purpose of this notice is to solicit comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties. Comments received within 30-days of this publication will be in the evaluation of potential impacts of the proposed action on important resources.

For further information regarding the proposed action, please contact Ms. Elizabeth Behrens at (504) 862-2025 or by electronic mail at elizabeth.h.behrens@usace.army.mil.

*for Sandra Stiles*  
Joan M. Exnicios  
Chief, Environmental Planning Branch

COMMENT PERIOD FOR THIS PUBLIC NOTICE EXPIRES: November 12, 2015

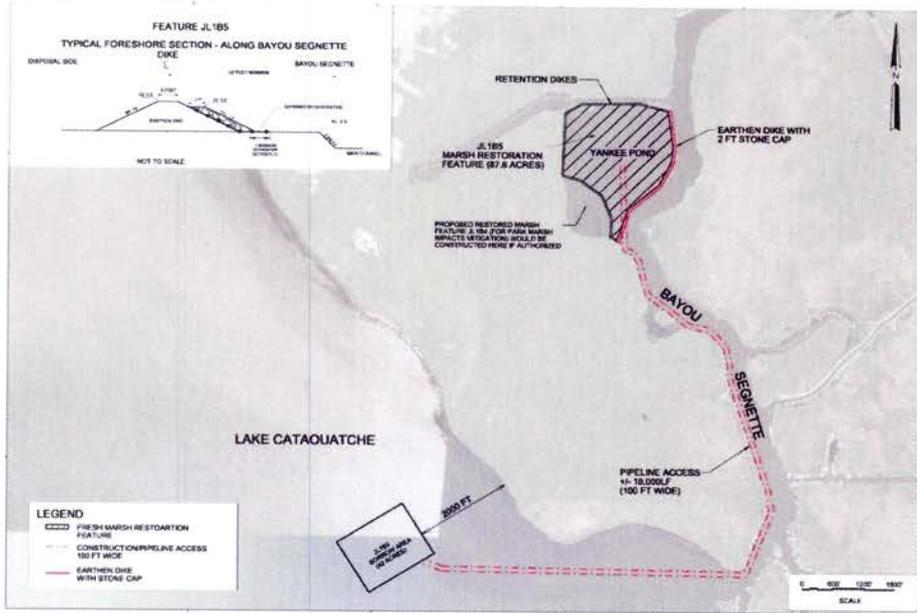


Figure 1: The JL1B4 Fresh Marsh Project for General Impacts

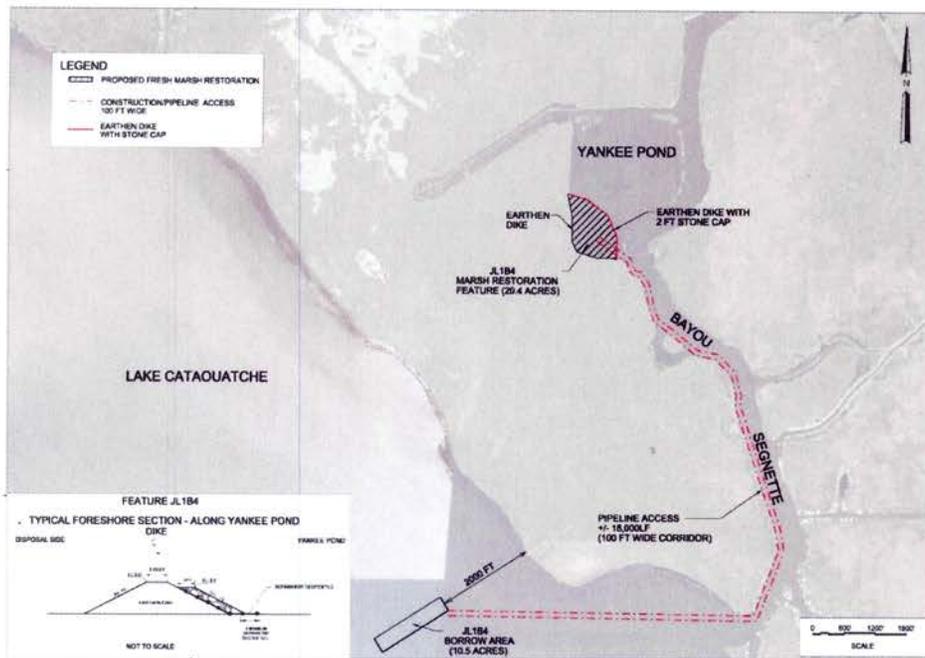


Figure 2: Jean Lafitte Fresh Marsh Project for Park Impacts

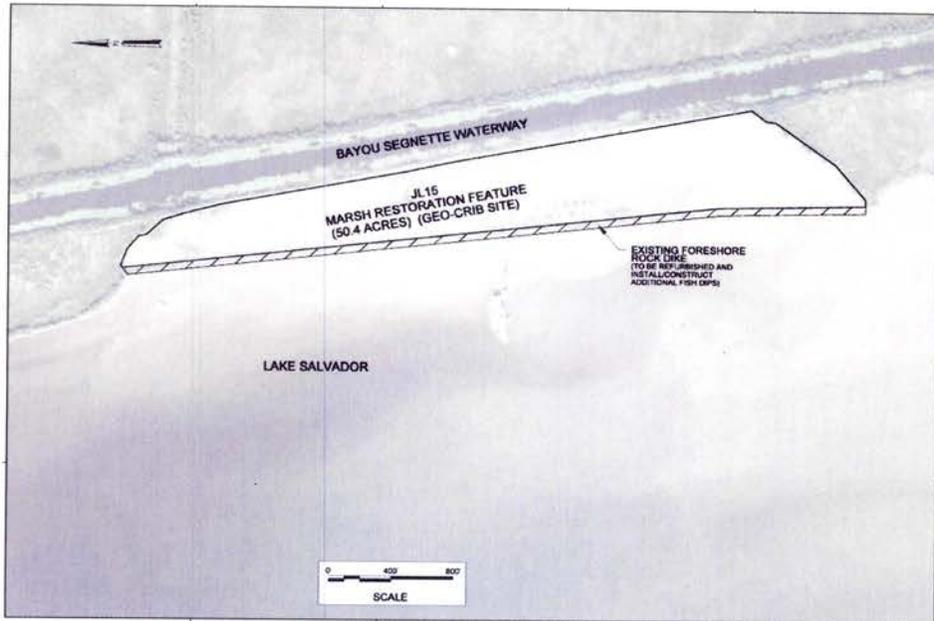


Figure 3: JL15 Fresh Marsh Project for General Impacts (Geocrib)

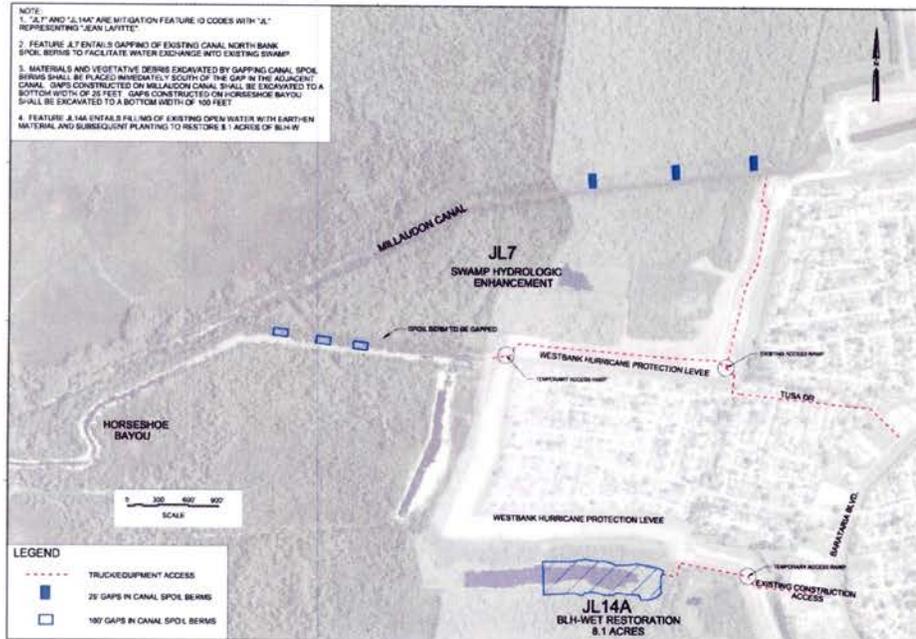


Figure 4: JL14A BLH-Wet and JL7 Swamp Restoration Projects for Park/404(c) impacts

BOBBY JINDAL  
GOVERNOR



PEGGY M. HATCH  
SECRETARY

# State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

DEC 08 2015

Ms. Elizabeth Behrens  
US Army Corps of Engineers, New Orleans District  
Planning, Programs, and Project Management Division  
Environmental Planning and Compliance Branch  
CEMVN-PM-RS  
P. O. Box 60267  
New Orleans, LA 70160-0267

AI No.: 101235  
Activity No.: CER20150005

RE: Jean Lafitte National Historical Park Marsh and Bottomland Hardwoods Restoration Project  
Water Quality Certification WQC 151207-02  
Jefferson Parish

Dear Ms. Behrens:

The Louisiana Department of Environmental Quality, Water Permits Division (LDEQ), has reviewed the application to deposit fill to restore fresh marsh habitat in the Jean Lafitte National Historical Park at Yankee Pond, Lake Salvador, Millaudon Canal and Horseshoe Canal near Estelle, Jefferson Parish.

The information provided in the application has been reviewed in terms of compliance with State Water Quality Standards, the approved Water Quality Management Plan and applicable state water laws, rules and regulations. LDEQ determined that the requirements for a Water Quality Certification have been met. LDEQ concludes the discharge of fill material will not violate water quality standards as provided for in LAC 33:IX.Chapter 11. Therefore, LDEQ hereby issues the US Army Corps of Engineers, New Orleans District Water Quality Certification, WQC 151207-02.

Should you have any questions concerning any part of this certification, please contact Elizabeth Hill (225) 219-3225 or by email at [elizabeth.hill@la.gov](mailto:elizabeth.hill@la.gov). To ensure all correspondence regarding this certification is properly filed into the Department's Electronic Document Management System, please reference Agency Interest (AI) number 101235 on all future correspondence to this Department.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Guilliams".

Scott Guilliams  
Administrator  
Water Permits Division

c: IO-W

PUBLIC NOTICE TO RUN IN

THE ADVOCATE OF BATON ROUGE

P.O. Box 588

Baton Rouge, LA 70821

Phone: 225-388-0128

Fax: 225-388-0164

Attn: Public Notices

Notice is hereby given that the US Army Corps of Engineers, New Orleans District has applied for a 401 Water Quality Certification/Corps of Engineers 404 permit to the restore fresh marsh habitat in the Jean Lafitte National Historical Park at Yankee Pond, Lake Salvador, Millaudon Canal and Horseshoe Canal near Estelle, Jefferson Parish. The US Army Corps of Engineers, New Orleans District is applying to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with statutory authority contained in the LAC 33:IX.1507.A-E and provisions of Section 401 of the Clean Water Act.

Comments concerning this application can be filed with the Water Permits Section within ten days of this notice by referencing WQC 151207-02 AI 101235 to the following address:

Louisiana Department of Environmental Quality  
Water Permits Division  
P.O. Box 4313  
Baton Rouge, LA 70821-4313  
Attn: Elizabeth Hill

A copy of the application is available for inspection and review at the LDEQ Public Records Center, on the first floor of the Galvez Building, Room 127 at 602 North Fifth Street, Baton Rouge, LA 70802, from 8:00 a.m. to 4:30 p.m.

**From:** [Linda \(Brown\) Hardy](#)  
**To:** [Behrens, Elizabeth MVN](#)  
**Cc:** [Yasoob Zia](#)  
**Subject:** [EXTERNAL] DEQ SOV 151021/1470 USACE Jean Lafitte National Historic Park and Preserve Mitigation  
**Date:** Monday, November 16, 2015 3:55:54 PM

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November 16, 2015

Elizabeth Behrens

USACE Regional Planning and Environmental Division South

P.O. Box 60267

New Orleans, LA 70160-0267

elizabeth.h.behrens@usace.army.mil <<mailto:elizabeth.h.behrens@usace.army.mil>>

RE: 151021/1470

USACE Jean Lafitte National Historic Park and Preserve Mitigation

USACE Funding

Jefferson Parish

Dear Ms. Behrens:

The Department of Environmental Quality (LDEQ), Business and Community Outreach Division has received your request for comments on the above referenced project.

After reviewing your request, the Department has no objections based on the information provided in your submittal. However, for your information, the following general comments have been included. Please be advised that if you should encounter a problem during the implementation of this project, you should immediately notify LDEQ's Single-Point-of-contact (SPOC) at (225) 219-3640.

\* Please take any necessary steps to obtain and/or update all necessary approvals and environmental permits regarding this 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.
- \* All precautions should be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permits Division at (225) 219-9371 to determine if your proposed project requires a permit.
  
- \* If your project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit is required. An application or Notice of Intent will be required if the sludge management practice includes preparing biosolids for land application or preparing sewage sludge to be hauled to a landfill. Additional information may be obtained on the LDEQ website at [Blockedhttp://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx](http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx) <Blocked<http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx>> or by contacting the LDEQ Water Permits Division at (225) 219- 9371.
  
- \* 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 regarding permitting issues. 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, Jefferson Parish is classified as attainment with the National Ambient Air Quality Standards and has no general conformity determination obligations.

Please send all future requests to my attention. If you have any questions, please feel free to contact me at (225) 219-3954 or by email at [linda.hardy@la.gov](mailto:linda.hardy@la.gov) <<mailto:linda.hardy@la.gov>> .

Sincerely,

Linda M. Hardy

Louisiana Department of Environmental Quality

Office of the Secretary

P.O. Box 4301

Baton Rouge, LA 70821-4301

Ph: (225) 219-3954



# United States Department of the Interior



NATIONAL PARK SERVICE  
Jean Lafitte National Historical Park and Preserve  
New Orleans Jazz National Historical Park  
419 Decatur Street  
New Orleans, Louisiana 70130-1035

IN REPLY REFER TO:

1.A.2

October 13, 2015

Mr. Phil Boggan  
State Historic Preservation Officer  
P.O. Box 44247  
Baton Rouge, LA 70804

The proposed undertaking will have no adverse effect on historic properties. This effect determination could change should new information come to our attention.

Phil Boggan  
Deputy State Historic Preservation Officer

Re: Notice of Availability of an Environmental Assessment (EA) and  
National Historic Preservation Act (NHPA)/Assessment of Effect

Date

12/03/2015

Dear Mr. Boggan:

The National Park Service (NPS) and the U.S. Army Corps of Engineers, New Orleans District (CEMVN) are considering actions at Jean Lafitte National Historical Park and Preserve (JELA) to compensate for impacts incurred by construction of the West Bank and Vicinity (WBV) Hurricane & Storm Damage Risk Reduction System to fresh marsh, swamp, and bottomland hardwoods on JELA and the Environmental Protection Agency's Bayou aux Carpes 404c area as well as general fresh marsh in the WBV basin.

The CEMVN and NPS have developed a joint environmental assessment and National Historic Preservation Act assessment of effect entitled "Jean Lafitte National Historical Park and Preserve (JELA) Mitigation Features, Jefferson Parish, Louisiana" (Programmatic Individual Environmental Report (PIER) #37, TIER 1) to describe the effects of the project on the human environment, and to provide the public with an opportunity to comment. The PIER #37, TIER 1 tiers off of the PIER #37 and presents the further analysis and agency coordination required for the programmatic features of the West Bank and Vicinity (WBV) Hurricane Storm Damage and Risk Reduction System (HSDRRS) Mitigation Plan identified in PIER #37 on JELA.

The agencies have determined that the project would have **no adverse effect** on cultural resources. The PIER #37, TIER 1 is now available for review and comment at <http://parkplanning.nps.gov/jela>. Click on the project title "WBV HSDRRS Wetland Mitigation," and follow the instructions.

Any questions should be addressed to Chief of Resource Management, Guy Hughes, at [guy\\_hughes@nps.gov](mailto:guy_hughes@nps.gov), or by phone at 504-589-3882 x128.

Sincerely,

Lance Hatten  
Superintendent



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
P.O. BOX 60267  
NEW ORLEANS LA 70160-0267

OCT 16 2014

Programs and Project Management Division  
Protection and Restoration Office

Mr. Lance Hatten  
Superintendent  
Jean Lafitte National Historical Park and Preserve  
419 Decatur Street  
New Orleans, Louisiana 70130-1035

Dear Mr. Hatten:

Your letter of August 7, 2014, presented three options that would satisfy the National Park Service's wetland policies with respect to swamp impacts incurred during construction of the West Bank and Vicinity, Hurricane and Storm Damage Risk Reduction System on the Commercial Investment Trust (CIT) tract, a parcel that is part of the Jean Lafitte National Historical Park and Preserve (Park). As previously discussed, impacts that occurred on the CIT tract are not required to be mitigated in accordance with National Park Service policies due to the provisions of the Omnibus Public Land Management Act of 2009, which transferred administrative control of the CIT tract from this agency to the National Park Service. Nevertheless, we are willing to consider potential projects that would satisfy Park Service concerns when such projects could be implemented at a cost and timeframe similar to the cost and timeframe to implement the proposed project.

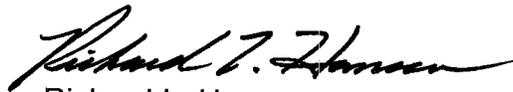
The project delivery team's review of the three suggested options determined that they would not be more time or cost efficient than the currently selected projects for the following reasons:

- a. Options 1 and 2 involved mitigation construction on the Bayou des Familles ridge and/or degradation of spoil banks. The Bayou des Familles ridge and other identified spoil banks currently support bottomland hardwood (BLH) habitat. Destroying BLH habitat to create swamp habitat would result in no net environmental benefit as impacts to existing BLH would require mitigation. Additionally, the Bayou des Familles ridge is located on privately-owned lands. Compared to mitigation on public lands, acquisition of private lands is much more expensive and can require a significant amount of time.
- b. Option 3 involved "other canal filling opportunities within the park...." The U. S. Army Corps of Engineers' (Corps') mitigation plan already identifies canal and borrow pit filling to accomplish BLH and swamp mitigation. The canals and borrow pits identified in the Corps' Mitigation Plan were coordinated with the Park and represent the most economical and environmentally beneficial locations for mitigation projects within the Park.

After analyzing the latest proposals for Park mitigation, the Corps is confident that it has, in conjunction with the Park, selected the most cost efficient, ecologically beneficial mitigation projects to address the required Park/404c compensatory mitigation and to address the mitigation required for impacts on the CIT tract. As you agreed that the Corps' current Mitigation Plan on Park land "...likely meet[s] [your] policy requirements overall," we would like your concurrence to move forward with implementation of the previously presented Corps' Park/404c Mitigation Plan and General Marsh Project (enclosed). Your response is requested by October 31, 2014.

If you have any questions or need additional information that would help expedite resolution of this matter, please contact me or Mr. Troy G. Constance, Acting Deputy District Engineer for Project Management, at (504) 862-2204.

Sincerely,



Richard L. Hansen  
Colonel, U. S. Army  
District Commander

Enclosure



# United States Department of the Interior



NATIONAL PARK SERVICE  
Jean Lafitte National Historical Park and Preserve  
New Orleans Jazz National Historical Park  
419 Decatur Street  
New Orleans, Louisiana 70130-1035

IN REPLY REFER TO:

1.A.2 (BARA)

November 19, 2014

Colonel Richard L. Hansen  
New Orleans District Commander  
US Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160

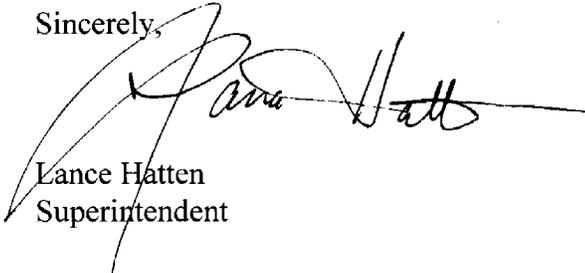
Dear Colonel Hansen:

We have received and reviewed your letter of October 16, 2014 regarding options for the mitigation of swamp and other impacts incurred during construction of the West Bank and Vicinity, Hurricane Storm Damage Risk Reduction System at Jean Lafitte National Historical Park and Preserve. While disagreement remains between us regarding policy application for impacts that occurred on the Commercial Investment Trust tract, we agree that moving forward on the Preliminary Park/404c Mitigation Plan of August 5, 2013, and General Marsh Project revised design for the PIER of February 14, 2013, is the right course of action now. As discussed previously, the preliminary overall plan for mitigation on park lands, including the park/404c and general marsh features JL7, JL8, JL9, JL14A, JL14B, JL1B4, JL1B5, and JL15 as described in the enclosures to your October 16, 2014 letter and Final Programmatic Environmental Report #37 West Bank and Vicinity (WBV) Hurricane Storm Damage Risk Reduction System (HSDRRS) Mitigation, would likely meet our policy requirements if selected for implementation in its entirety.

We appreciate the New Orleans District project delivery team's review of our suggested options to determine if they would be more time or cost efficient than the currently selected projects. While we disagree in particular that "destroying BLH habitat [along the Bayou des Familles ridge] to create swamp habitat" is a fair characterization of what we suggested in our first option, we are nevertheless comfortable moving ahead as above.

We look forward to continuing our work with the project delivery team to move this project toward implementation. If you have questions or need additional information from us in order to make forward progress, please contact me or Guy Hughes, Chief of Resource Management, at 504-512-2558.

Sincerely,



Lance Hatten  
Superintendent



BOBBY JINDAL  
GOVERNOR

## State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES  
OFFICE OF WILDLIFE

ROBERT J. BARHAM  
SECRETARY

JIMMY L. ANTHONY  
ASSISTANT SECRETARY

**November 3, 2015**

Attn: Joan M. Exnicios  
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: PIER #37*  
*Applicant: U.S. Army Corps of Engineers-New Orleans District/ U.S. National Park Service*  
*Notice Date: October 13, 2015*

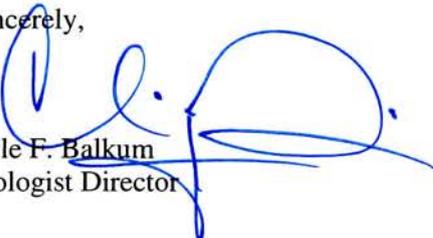
Dear Ms. Exnicios:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced Public Notice detailing mitigation efforts compensating for wetland impacts resulting from the Hurricane Storm Damage and Risk Reduction System within the Jean Lafitte National Historic Park, in Jefferson Parish, Louisiana. Based upon this review, the following has been determined:

LDWF has no objection to the mitigation options provided for wetland impacts associated with the Hurricane Storm Damage and Risk Reduction System on the Jean Lafitte National Historic Park provided that those projects are held to the same standards and requirements as recently established mitigation banks within the New Orleans District.

The Louisiana Department of Wildlife and Fisheries submits these recommendations to the U.S. Army Corps of Engineers in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). Please do not hesitate to contact Habitat Section biologist Zachary Chain at 225-763-3587 should you need further assistance.

Sincerely,

  
Kyle F. Balkum  
Biologist Director

zc



DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

Regional Planning and Environment  
Division South

October 13, 2015

Ms. Pam Breaux  
State Historic Preservation Officer  
LA Office of Cultural Development  
P.O. Box 44247  
Baton Rouge, LA 70804-4247

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.

*Phil Boggan* 11-2-15  
Phil Boggan Date  
Deputy State Historic Preservation Officer

Dear Ms. Breaux:

Please find enclosed the joint environmental assessment entitled "Jean Lafitte National Historical Park and Preserve (JELA) Mitigation Features, Jefferson Parish, Louisiana" (Programmatic Individual Environmental Report (PIER) #37, TIER 1) prepared by the U.S. Army Corps of Engineers, New Orleans District and the U.S. National Park Service. The PIER #37, TIER 1 tiers off of the PIER #37 and presents the further National Environmental Policy Act analysis and agency coordination required for the programmatic features of the West Bank and Vicinity (WBV) Hurricane Storm Damage and Risk Reduction System (HSDRRS) Mitigation Plan as identified in PIER #37 on JELA. The proposed action would compensate for impacts incurred by construction of the WBV HSDRRS to fresh marsh, swamp, and bottomland hardwoods on JELA and the Environmental Protection Agency's 404c area as well as general fresh marsh in the WBV basin.

Please review the enclosed documents and provide comments within 30 days of the date of this letter. The decision record will not be signed until all environmental review and compliance requirements have been completed. A copy of the signed decision record will be provided upon request.

Comments can be mailed to the attention of Ms. Elizabeth Behrens; U.S. Army Corps of Engineers; Regional Planning and Environment Division South; New Orleans Environmental Branch; CEMVN-PDN-CEP; P.O. Box 60267; New Orleans, Louisiana 70160-0267, provided by email to [elizabeth.h.behrens@usace.army.mil](mailto:elizabeth.h.behrens@usace.army.mil), by fax to (504) 862-2088, or submitted at <http://parkplanning.nps.gov/jela>. Ms. Elizabeth Behrens may be contacted at (504) 862-2025 if questions arise.

RECEIVED

OCT 13 2015

ARCHAEOLOGY

*Sandra Stiles*

for Joan M. Exnicios  
Chief, Environmental Planning Branch

**From:** [Hughes, Guy](#)  
**To:** [Williams, Eric MVN](#)  
**Cc:** [Behrens, Elizabeth MVN](#); [Dusty Pate](#)  
**Subject:** [EXTERNAL] Fwd: Question on National Park Service and Caddo Nation consultation  
**Date:** Monday, November 09, 2015 1:42:09 PM  
**Attachments:** [kpenrod.vcf](#)

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Hi Eric -

We will need to keep the Caddo updated with the requested information throughout the project, but they don't currently require a meeting or have specific concerns about the project.

Guy

----- Forwarded message -----

From: Kim Penrod <kpenrod@caddonation.org <<mailto:kpenrod@caddonation.org>> >  
Date: Mon, Nov 9, 2015 at 1:17 PM  
Subject: Re: Question on National Park Service and Caddo Nation consultation  
To: "Hughes, Guy" <guy\_hughes@nps.gov <[mailto:guy\\_hughes@nps.gov](mailto:guy_hughes@nps.gov)> >  
Cc: "kpenrod@caddonation.org <<mailto:kpenrod@caddonation.org>> " <kpenrod@caddonation.org <<mailto:kpenrod@caddonation.org>> >, Somier Harris <sharris@caddonation.org <<mailto:sharris@caddonation.org>> >

Hi Guy,

Thank you for updating the contact information and the follow up phone call.

I have looked at the plan and this looks fine for us currently. If you would just keep us updated by email and then include a time line for this project for our database we should be set .

I look forward to hearing from you,

Kim

On 11/06/15, "Hughes, Guy" <guy\_hughes@nps.gov <[mailto:guy\\_hughes@nps.gov](mailto:guy_hughes@nps.gov)> > wrote:

Hi Somier -

Please find the attached letter for Chairman Fourkiller containing an electronic link to our Draft EA and Assessment of Effect regarding the Hurricane & Storm Damage Risk Reduction System in Westbank and vicinity of New Orleans.

I will contact you next week concerning any questions that you may have, and to inquire how Chairman Fourkiller would like to consult on this project.

Thank you,

Guy

On Fri, Nov 6, 2015 at 1:08 PM, Hughes, Guy <guy\_hughes@nps.gov <[mailto:guy\\_hughes@nps.gov](mailto:guy_hughes@nps.gov)> > wrote:

Hi Somier -

We just spoke on the telephone.

Superintendent Lance Hatten initiated formal consultation with in a letter addressed to Chairman Edwards dated June 3, 2015 regarding Hurricane Storm Damage Risk Reduction System in Barataria Preserve.

Chairman Fourkiller responded by email to Dusty Pate June 17th, 2015 indicating a wish to consult and to receive further information regarding this project and to communicate with yourself and Kim Penrod as well as changing the points of contact.

We humbly apologize for not updating our mailing files with Chairman Fourkiller. We have recently had staff turnover with our Section 106 Coordinator, and we recently sent additional information erroneously addressed again to Chairman Edwards and THPO Cast dated October 13, 2015 (attached).

I called today to follow up personally to notify you of this mistake and to inform you that Superintendent Hatten will be sending out another letter to Chairman Fourkiller next week.

I will email you a copy of the corrected letter next week.

Thank you,

Guy

--

Guy D. Hughes, Chief, Resource Management  
Jean Lafitte National Historical Park and Preserve  
New Orleans Jazz National Historical Park  
419 Decatur St., New Orleans, LA. 70130  
504 589-3882 x 128  
504-512-2558 cell  
504 589-3851 fax

--

Guy D. Hughes, Chief, Resource Management  
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--

Respectfully,  
Kim Penrod  
Director  
Caddo Nation Heritage Museum, Library and Archives  
Acting NAGPRA Coordinator  
Caddo Nation of Oklahoma  
P.O. Box 487  
Binger, OK 73047  
405-656-2344 wk

## Behrens, Elizabeth MVN

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**From:** Williams, Eric MVN  
**Sent:** Wednesday, December 09, 2015 12:14 PM  
**To:** Behrens, Elizabeth MVN  
**Subject:** FW: [EXTERNAL] Re: Follow up on HSDRRS Mitigation consultation (UNCLASSIFIED)

**Classification:** UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

You will need this email from the Jena Band of Choctaw Indians.

Eric

-----Original Message-----

**From:** Hughes, Guy [mailto:guy\_hughes@nps.gov]  
**Sent:** Tuesday, November 24, 2015 3:35 PM  
**To:** Alina Shively <ashively@jenachoctaw.org>  
**Cc:** Williams, Eric MVN <Eric.M.Williams@usace.army.mil>; Dusty Pate <haigler\_pate@nps.gov>  
**Subject:** [EXTERNAL] Re: Follow up on HSDRRS Mitigation consultation

Ms. Shively -

Thank you!

We will certainly contact you and all Tribes with interest if there is discovery.

Best -

Guy

On Tue, Nov 24, 2015 at 3:09 PM, Alina Shively <ashively@jenachoctaw.org <mailto:ashively@jenachoctaw.org> > wrote:

Mr. Hughes,

Regarding the above-mentioned project, the Jena Band of Choctaw Indians' THPO hereby concurs with the determination of No Adverse Effect. Should any inadvertent discoveries occur, please contact all Tribes with interest in this area. Thank you.

Sincerely,

Alina J. Shively

Jena Band of Choctaw Indians

Deputy Tribal Historic Preservation Officer

P.O. Box 14

Jena, LA 71342

(318) 992-1205

ashively@jenachoctaw.org <mailto:ashively@jenachoctaw.org>

From: Hughes, Guy [mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> ]  
Sent: Friday, November 6, 2015 3:22 PM  
To: Alina Shively <ashively@jenachoctaw.org <mailto:ashively@jenachoctaw.org> >  
Cc: Dusty Pate <haigler\_pate@nps.gov <mailto:haigler\_pate@nps.gov> >; Williams, Eric MVN  
<Eric.M.Williams@usace.army.mil <mailto:Eric.M.Williams@usace.army.mil> >  
Subject: Follow up on HSDRRS Mitigation consultation

Dear THPO Shively,

Superintendent Hatten initiated consultation June 3, 2015 with a scoping letter to Chief Smith.

We are following up with this electronic copy of the letter we mailed in October that contains an electronic link to our Draft EA.

Please feel free to contact me if you have any questions,

Thank you,

Guy

--

Guy D. Hughes, Chief, Resource Management

Jean Lafitte National Historical Park and Preserve

New Orleans Jazz National Historical Park

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CLASSIFICATION: UNCLASSIFIED

## Behrens, Elizabeth MVN

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**From:** Pate, Dusty <haigler\_pate@nps.gov>  
**Sent:** Tuesday, December 15, 2015 11:20 AM  
**To:** Behrens, Elizabeth MVN  
**Cc:** Hughes, Guy; Williams, Eric MVN  
**Subject:** Re: [EXTERNAL] Re: Jean Lafitte National Historic Park and Preserve (JELA) Mitigation Features, Jefferson Parish, LA

Hey Libby,

Sorry that was unclear.

We'll continue to consult with the Choctaw, but we, and they, are ready to move forward with decision documents.

Thanks,

Dusty

On Tue, Dec 15, 2015 at 10:51 AM, Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil  
<mailto:Elizabeth.H.Behrens@usace.army.mil> > wrote:

So is consultation closed? Sorry I'm unfamiliar with this, but I need to know if we have what we need to sign the FONSI before I start routing the package for the executive office.

Elizabeth Behrens  
Biologist  
US Army Corps of Engineers  
CEMVN-PDN-CEP  
P.O. Box 60267  
New Orleans, LA 70160-0267  
504-862-2025

The supreme quality for leadership is unquestionably integrity. Without it no success is possible, no matter whether it is on a section gang, a football field, in an army, or in an office. Dwight D. Eisenhower

-----Original Message-----

From: Pate, Dusty [mailto:haigler\_pate@nps.gov <mailto:haigler\_pate@nps.gov> ]  
Sent: Tuesday, December 15, 2015 8:21 AM  
To: Hughes, Guy <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> >  
Cc: Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil  
<mailto:Elizabeth.H.Behrens@usace.army.mil> >; Williams, Eric MVN <Eric.M.Williams@usace.army.mil  
<mailto:Eric.M.Williams@usace.army.mil> >  
Subject: [EXTERNAL] Re: Jean Lafitte National Historic Park and Preserve (JELA) Mitigation Features, Jefferson Parish, LA

The Choctaw Nation of Oklahoma recommended that any unsurveyed portions of the area of potential effects for the project be surveyed for cultural resources.

As discussed in the EA, it is important to recognize that unsurveyed portions of the project area either have no cultural significance or have lost their cultural integrity over time. Project areas are open water and canal spoilbanks. On balance, it is most important to restore these areas to build resiliency in the natural and cultural landscape of the Barataria Preserve, and surveys would be unlikely to produce useful information.

On Mon, Dec 14, 2015 at 5:12 PM, Hughes, Guy <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> <mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> > > wrote:

Choctaw Nation comment.

----- Forwarded message -----

From: Lindsey Bilyeu <lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> <mailto:lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> > >

Date: Tue, Dec 8, 2015 at 4:55 PM

Subject: RE: Jean Lafitte National Historic Park and Preserve (JELA) Mitigation Features, Jefferson Parish, LA

To: "Hughes, Guy" <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> <mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> > >

Mr. Hughes,

The Choctaw Nation of Oklahoma thanks Jean Lafitte National Historic Park and Preserve for the correspondence regarding the above referenced project. The concern that the Choctaw Nation has with the mitigation features is the possibility of disturbance to any archaeological sites within the APE. The Choctaw Nation Historic Preservation Department recommends that any un-surveyed portions of the APE be surveyed for cultural resources. We would also recommend buffer zones for cultural resources that lie within the APE, so that they can be protected from possible disturbances. Would it be possible for our office to receive a copy of the project APE that shows known sites within a 1 mile radius?

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu

NHPA Senior Section 106 Reviewer

Historic Preservation Department

Choctaw Nation of Oklahoma

P.O. Box 1210

Durant, OK 74701

580-924-8280 ext. 2631

From: Hughes, Guy [mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov>  
<mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> > ]  
Sent: Monday, December 07, 2015 11:04 AM  
To: Lindsey Bilyeu <lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com>  
<mailto:lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> > >  
Subject: Re: Jean Lafitte National Historic Park and Preserve (JELA) Mitigation Features, Jefferson Parish, LA

Dear Lindsey -

I'm sorry that the letter got so delayed through snail mail system.

Allison was on extended leave, and our system of both mailing and emailing our letters did not happen for this correspondence.

If you can get your comments in soon, we might be able to publish them in the decision document, and we are happy to consult with you on the project regardless of whether your comments are published.

Best -

Guy

On Fri, Dec 4, 2015 at 5:13 PM, Lindsey Bilyeu <lbilyeu@choctawnation.com  
<mailto:lbilyeu@choctawnation.com> <mailto:lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> > >  
wrote:

Mr. Hughes,

The Choctaw Nation of Oklahoma received a Notice of Availability for the above referenced project on October 28, 2015. When I accessed the website to download the PIER #37 document, it stated that the comment period had closed for the project. The dates listed for comment were 10/13/2015-11/12/2015. While I apologize that our response is late, will our office still be allowed to comment on this project?

Thank you,

Lindsey D. Bilyeu

NHPA Senior Section 106 Reviewer

Historic Preservation Department

Choctaw Nation of Oklahoma

P.O. Box 1210

Durant, OK 74701

580-924-8280 ext. 2631

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--

Guy D. Hughes, Chief, Resource Management

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Haigler "Dusty" Pate

Natural Resource Program Manager

Jean Lafitte National Historical Park and Preserve

504 382-4937 cell

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Haigler "Dusty" Pate  
Natural Resource Program Manager  
Jean Lafitte National Historical Park and Preserve  
504 382-4937 cell