



REPLY TO  
ATTENTION OF

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

**Regional Planning and  
Environment Division South  
Environmental Planning Branch**

**FINDING OF NO SIGNIFICANT IMPACT  
(FONSI)**

**Supplemental Environmental Assessment to  
Tier 1 of Programmatic Individual Environmental Report (PIER) 37  
Lake Cataouatche Borrow Area Expansion and Access Features  
Jean Lafitte National Historical Park and Preserve Mitigation Features, West Bank and  
Vicinity, Hurricane and Storm Damage Risk Reduction System Mitigation  
Jefferson Parish, Louisiana**

**Environmental Assessment #548**

**Description of Proposed Action.** The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN) has prepared Supplemental Environmental Assessment (EA #548) as a supplement to the PIER # 37, Tier 1 EA entitled Lake Cataouatche Borrow Area Expansion Jean Lafitte National Historical Park and Preserve (JELA) Mitigation Features, West Bank and Vicinity (WBV), Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation Jefferson Parish, Louisiana to evaluate the potential impacts associated with design modification necessary to implement two of the JL1B4 and JL1B5 marsh creation features of the approved PIER 37 mitigation plan situated within JELA. These projects would mitigate for impacts incurred through construction of the WBV HSDRRS to fresh marsh located both on and off JELA. The EA is attached hereto and is incorporated by reference herein. The TIER 1 EA is also incorporated by reference.

The two wetland creation projects would be combined and constructed in Yankee Pond on JELA, with construction activities occurring in St. Charles Parish and Jefferson Parish, Louisiana. Engineering design modifications to the project that were not covered under the Tier 1 EA of PIER #37 are addressed in this supplemental EA. Proposed modifications include the expansion of the borrow area in Lake Cataouatche, the use of a mechanical dredge instead of a hydraulic cutterhead dredge, a small increase in the footprint of retention dikes, and additional access dredging (i.e., deepening) for vessels to access the borrow area and the marsh restoration sites. The size of wetland creation from mitigation projects JL1B4 and JL1B5 have not changed since the PIER 37, Tier 1 EA and together the features would produce approximately 55.54 AAHUs of fresh marsh benefits.

Marsh restoration would now require increasing the borrow area by 53 acres (to 112 acres) in order to produce approximately 1,100,000 cubic yards of material necessary for construction of the marsh platform. The material would no longer be hydraulically dredged as originally described in the Tier 1 EA, but would now be dredged mechanically using a bucket dredge (with barge haul to the site) from Lake Cataouatche. It is anticipated that mechanical fill could achieve with a single lift an initial elevation of +3.0 feet. The borrow site would continue to be situated a minimum 2000 feet from the lake shore. The open water borrow site would be approximately 1,890 feet by 2,590 feet and the maximum depth would continue to be (-) 20 feet NAVD88. The borrow area would be expanded by 59 acres from the original design (expanding from 53 acres to 112.0 acres). There are 2,260,000 cubic yards of material available in the borrow pit in Lake Cataouatche, including approximately 1,100,000 cubic yards in the expanded area. Approximately 100,000 cubic yards of material of that total would be needed for dike construction. Throughout the initial construction phase, project construction would be coordinated with the US Coast Guard to assure safe passage of recreational boaters during barge hauling of material.

All access would be via state water bottom through Bayou Segnette, Lake Cataouatche, and/or Lake Salvador via the Gulf Intracoastal Waterway. Water depths are limited once the floating plant leaves the GIWW. With an approximate water surface at (+) 1.0 feet, the Contractor, in general would have a minimum of approximately 5 to 6 feet of draft throughout the proposed limits of marine access. However, approximately 6.5 acres of flotation excavation is now required for an approximate 3,500 foot reach in Lake Cataouatche where it enters Bayou Segnette. This area will be dredged to provide an access corridor between the borrow area and the entrance to the bayou. This dredging reach would be to a maximum elevation of -6.0 feet with an 80 foot bottom width, resulting in a cut of approximately 2.5 feet and approximately 25,000 cubic yards of dredging. The material excavated for access from Lake Cataouatche to the entrance of Bayou Segnette would be placed adjacent to the access corridor (north side) and used to back fill the corridor at the conclusion of construction or would be hauled to the marsh creation site and used as fill.

Approximately 4.5 acres of flotation dredging adjacent to the marsh creation area immediately fronting Bayou Segnette is also now required to allow material barges access for the placement of the sand base and stone paving necessary for retention dike construction. This approximate 3,300 foot reach of proposed flotation dredging would be restricted to a 60 foot width initiating 40 feet from the toe of the retention dike berm, except at the very southern terminus of the flotation access where the flotation channel and the entrance into Yankee Pond intersect. This proposed dredging reach would be to a maximum elevation of -6.0 feet with a 60 foot bottom width, resulting in a total cut of approximately 2.5 feet and approximately 18,000 cubic yards of dredging. The excavated material would be placed adjacent to the access corridor (east side) and would be used to back fill the corridor at the conclusion of construction.

Approximately 8,700 linear feet of retention dike would be required for this mitigation feature. Approximately 3,300 linear feet of the 8,700 total length would be

armored/capped with stone (well graded riprap with a proposed top size stone of 650 pounds). This armored dike segment would be located along the eastern boundary of the feature adjacent to Bayou Segnette. Maximum 10 foot stability berms would be included. Dike heights would be to elevation +3.5 feet for the dike along Bayou Segnette and +3.0 feet for the dikes along the existing marsh and the keyhole canal. Borrow for these retention dikes would be obtained from the borrow source in Lake Cataouatche, and barged to the site. A sand base for the retention dikes along Bayou Segnette will be hauled in from a commercial source. The dike segment along Bayou Segnette will be paved with a 2-foot stone cap to elevation +3.0 feet. The foot print of the dikes would increase from 3.6 acres to 3.8 acres.

It is estimated that the initial project construction activities discussed above (mobilization, dike construction, marsh fill, rock placement, demobilization) would require approximately 15 months. Once these activities are completed there would be an idle period of approximately 1 year to allow the marsh platform 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.

**Agency & Public Involvement.** The proposed action has been coordinated with appropriate Federal, state, and local agencies; businesses, organizations, and individuals through distribution of the EA #548 for 30-day review and comment period from August 10, 2016 through September 10, 2016. EA #548 is attached hereto and made a part of this FONSI.

Public Comments: No public comments were received.

Agency Comments: In an email dated September 9, 2016 the National Marine Fisheries Service offered two comments:

1. A WVA should be completed through coordination with NMFS, U.S. Fish and Wildlife Service, and other interested natural resource agencies on the Yankee Pond mitigation to determine if the amount of created marsh is sufficient and determine the mitigation potential of banks to be considered when purchasing in kind credits for any remainder.

CEMVN Response: Concur. Final WVAs were completed in coordination with NMFS, U.S. Fish and Wildlife Service, and other interested natural resource agencies to ensure sufficient mitigation for WBV HSDRRS general and NPS fresh marsh impacts is achieved. The results from the final Yankee Pond (JL1B4/JL1B5) WVA analysis identified 55.54 AAHUs of total net benefits from construction of 108 acres of fresh marsh. The final WVA for the Geocrib marsh construction (JL15-identified in PIER #37 Tier 1) identified an additional benefit of 26.0 AAHUs from constructing 50.4 acres of fresh marsh. The combined benefit from Yankee Pond and the Geocrib (JL1B4, JL1B5, and JL15) equals 81.54 AAHUs of fresh marsh. Because only 69.12 AAHUs are necessary to compensate for project-related impacts to fresh marsh, a surplus of fresh marsh benefits remains in the amount of 12.42 AAHUs for the project. As such, additional credits from a mitigation bank are not warranted.

2. The SEA and/or Finding of No Significant Impact should incorporate recommendations in the draft Fish and Wildlife Coordination Act Report to be developed for this SEA.

CEMVN Response: Recommendations in the final Fish and Wildlife Coordination Act Report have been incorporated into the final EA and this FONSI.

**Factors Considered in Determination.** CEMVN has considered and concurs with the comments received during the 30-day public review and comment period. CEMVN also has evaluated the “no action” alternative and has assessed the impacts of the proposed action on important resources including wetlands and other surface waters, wildlife, threatened and endangered species, fisheries, aquatic resources, water quality, essential fish habitat, hydrology, cultural resources, and recreation, air quality, socioeconomics and environmental justice, and the potential of the project to encounter HTRW. Environmental compliance for the Federal action was achieved based upon the following actions:

**Clean Water Act Section 404(b)(1):** Clean Water Act Section 404(b)(1) evaluation was completed and released for public review on August 10, 2016. No comments were received on the evaluation and it was signed on September 14, 2016.

**Clean Water Act Section 401:** State Water Quality Certification 151207-02 was amended August 10, 2016.

**Endangered Species Act:** On August 1, 2016, USFWS concurred with CEMVN's determination that the proposed action would not likely adversely affect the West Indian Manatee.

**Fish and Wildlife Coordination Act:** The USFWS reviewed the proposed action in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 USC 661 et seq.). This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter dated October 21, 2016 from the USFWS. The Louisiana Department of Wildlife and Fisheries indicated no objection to the project in a letter dated August 29, 2016.

**Magnuson-Stevens Fishery Conservation and Management Act:** CEMVN received an email from NMFS with requirements per this act on September 9, 2016. CEMVN responded by email dated September 30, 2016 concurring with their requirements and aforementioned. NMFS responded by email dated October 5, 2016 and stated CEMVN concurrence with the aforementioned conservation recommendations was compliant with the Act.

**Migratory Bird Treaty Act:** 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 nest becomes active within the project area. If nests are found, construction would not take place within 660 ft of active bald eagles nests or within 1,000 ft of colonial nesting bird nests.

**Coastal Zone Consistency:** The Louisiana Department of Natural Resources, Office of Coastal Management, in a letter dated August 4, 2016, determined that the proposed project was consistent with the Louisiana Coastal Resources Plan.

**National Historic Preservation Act:** The CEMVN is coordinating Section 106 consultation pursuant to the National Historic Preservation Act of 1966, as amended, with the National Park Service (NPS), Jean Lafitte National Historical Park and Preserve and New Orleans Jazz National Historical Park. The Louisiana State Historic Preservation Officer determined by letter dated September 7, 2016 that no known historic properties would be affected by the proposed action. In partial fulfillment of responsibilities under Executive Order 13175, the National Environmental Policy Act, and Section 106 of the National Historic Preservation Act, on August 15, 2016 the NPS offered federally-recognized Tribes the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands. The Caddo Nation of Oklahoma concurred with the determination of no adverse effect via email on August 30, 2016. The Jena Band of Choctaw Indians concurred with the determination of no adverse effect via email on August, 16 2016. The Choctaw Nation of Oklahoma concurred with the determination of no adverse effect via email on October 7, 2016. As requested by each entity above, CEMVN agrees to stop work and reinitiate coordination upon discovery of archeological artifacts or human remains.

**Environmental Design Commitments:** The following commitments are an integral part of the proposed action:

1. If the proposed action is changed significantly or is not implemented within one year, CEMVN will reinitiate coordination with the USFWS to ensure that the proposed action would not adversely affect any Federally-listed threatened or endangered species, or their critical habitat.
2. If any unrecorded cultural resources are determined to exist within the proposed project site, then work will not proceed in the area containing these cultural resources until a CEMVN staff archeologist has been notified and final coordination with the Louisiana State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer has been completed.
3. All contract personnel associated with the project will be informed of the potential presence of the West Indian manatees and the need to avoid collisions with manatees. Standard manatee protection measures will be followed when construction activities take place in areas where manatees could occur.
4. A survey will be performed prior to construction to identify the presence of colonial nesting wading birds or nesting bald eagles. If colonial nesting water birds are present, best management practices, developed in coordination with USFWS, would be implemented to avoid potential impacts. This could include using bird abatement procedures before nesting begins in February to avoid impacting the nesting population. If, despite use of these measures, nesting still occurs, work

will be required to take place outside of the USFWS and LDWF declared buffer zone of 1,000 ft during nesting season. Work within the buffer zone could only take place during non-nesting season (September 1 to February 15). If nesting bald eagles are present, the National Bald Eagle Management Guidelines would be followed.


Based on CEMVN's evaluation of the no action alternative and the proposed projects set forth in the PIER 37, TIER 1 EA, and Supplemental EA #548 to compensate for impacts to fresh marsh caused by construction of the WBV HSDRRS, CEMVN determined that the above-described project is the environmentally preferred mitigation plan and that it will adequately compensate for WBV HSDRRS fresh marsh impacts while avoiding and minimizing additional adverse impacts.

**Decision.** The CEMVN Environmental Planning Branch has assessed the potential environmental impacts of the proposed action described in EA #548 and has reviewed the comments received during the public review period for EA #548.

In accordance with the environmental considerations discussed above, the public interest will be best served by implementing the proposed action mitigating WBV HSDRRS construction impacts as evaluated in the PIER 37, TIER 1 EA, namely the construction of the JL1B5 project mitigating general fresh marsh impacts, and the JL1B4 project mitigating Park fresh marsh impacts.

I have reviewed the EA #548 and have considered comments and recommendations received during public review. I find the proposed mitigation plan will allow CEMVN to fully offset impacts to fresh marsh caused by the construction of the WBV HSDRRS to NPS lands and to fresh marsh that was not on NPS lands as directed by the Water Resources Development Acts of 1986 and 2007 (Public Law 99-662 §906 and Public Law 110-114 §2036) and other laws. The plan is justified and in accordance with environmental statutes. It is in the public interest to implement the proposed action in Supplemental EA #548.

02 Nov 16  
Date

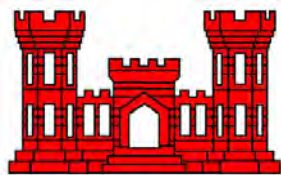
  
for  
Michael N. Clancy  
Colonel, U.S. Army  
District Commander

**SUPPLEMENTAL ENVIRONMENTAL  
ASSESSMENT**

**#548**

**DESIGN REVISIONS FOR JEAN LAFITTE NATIONAL  
HISTORICAL PARK AND PRESERVE MARSH  
MITIGATION FEATURES  
FINAL ENVIRONMENTAL ASSESSMENT AND  
ASSESSMENT OF EFFECT**

**WEST BANK AND VICINITY HURRICANE AND STORM DAMAGE RISK  
REDUCTION SYSTEM, JEFFERSON PARISH, LOUISIANA**



**U.S. Army Corps of Engineers  
Mississippi Valley Division  
Regional Planning and Environmental Division South  
New Orleans District**

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# **SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

## **#548**

### **Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Jefferson Parish, Louisiana**

**1.0 INTRODUCTION.** The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN) has prepared this Supplemental Environmental Assessment (EA #548) as a supplement to the Programmatic Individual Environmental Report # 37, Tier 1 EA (PIER #37 Tier 1 EA) entitled Jean Lafitte National Historical Park and Preserve Mitigation Features, Final 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. The U.S. National Park Service (NPS), Jean Lafitte National Historical Park and Preserve (JELA, Preserve) has collaborated with CEMVN during the planning and development of this assessment as a Cooperating Agency.

The PIER #37, entitled West Bank and Vicinity (WBV) Hurricane and Storm Damage Risk Reduction System (HSDRRS) Mitigation, Jefferson, Lafourche, Plaquemines, and St. Charles Parishes, Louisiana identified the overall plan for mitigating impacts to fresh marsh, swamp, dry bottomland hardwoods (BLH-Dry) and wet bottomland hardwoods (BLH-Wet) incurred as a result of construction of the WBV HSDRRS. Properties impacted included JELA and the Environmental Protection Agency's (EPA) Bayou aux Carpes Clean Water Act Section 404c area (404c). Projects on JELA were identified in the PIER #37 mitigation plan to mitigate impacts to general fresh marsh; to Park fresh marsh, swamp and BLH-Wet; and to 404c BLH-Wet and swamp through the restoration and/or enhancement of said habitat types. These projects were programmatic in nature and 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 occurred during completion of the PIER #37, Tier 1 EA.

This assessment supplements the PIER #37, Tier 1 EA by addressing recent project design modifications related to the expansion of the borrow area within Lake Cataouatche, the use of a mechanical dredge for borrow excavation, access dredging (i.e., deepening) in Bayou Segnette and in Lake Cataouatche, and a slight increase in the footprint of retention dikes. This assessment focuses on the design modifications necessary to construct the two fresh marsh mitigation components (i.e., projects) addressed in PIER #37 Tier 1, specifically JL1B4 (park fresh marsh) and JL1B5 (general fresh marsh). The projects, like the remainder of those addressed in PIER #37 Tier 1, would remain exempt from the requirement for a wetland statement of findings under NPS wetland policies in Director's Order 77-1 and its accompanying Procedural Manual (2016) because they satisfy the terms and conditions of Excepted Action 4.2.1.9 in the Procedural Manual: "Actions designed to restore degraded (or completely lost) wetland, stream, riparian, or other aquatic habitats or ecological processes."

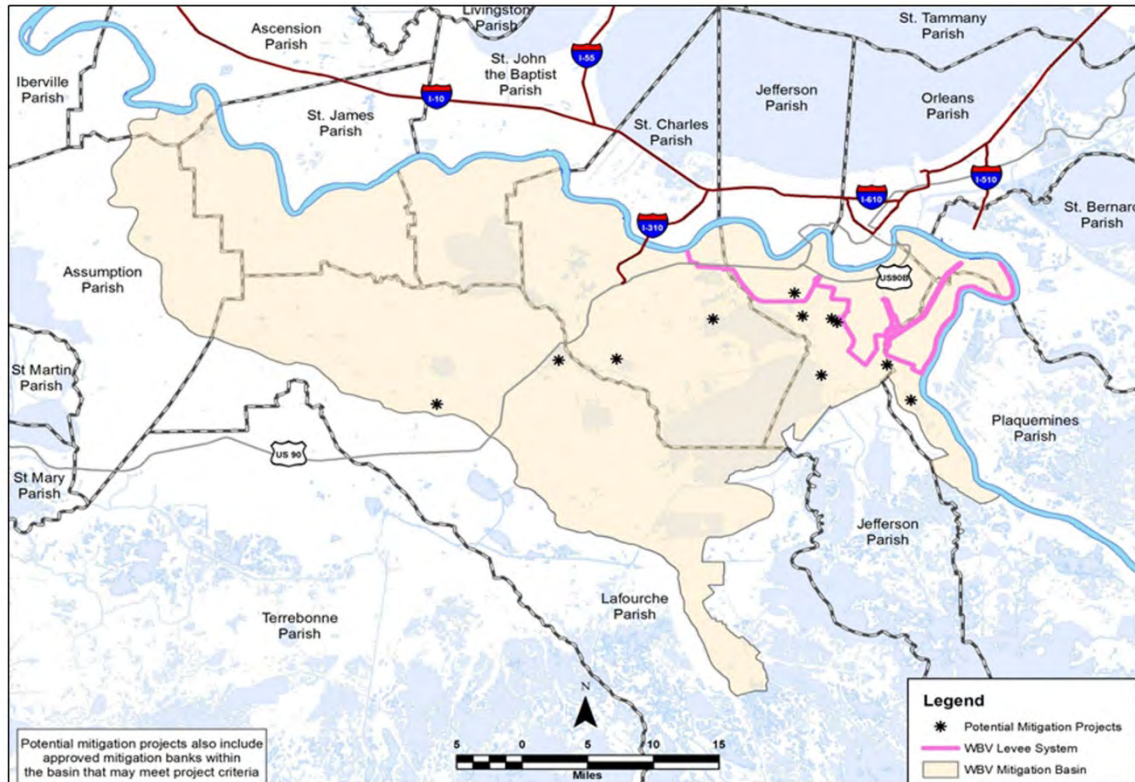
The WBV HSDRRS work consisted of upgrading the existing system of levees, floodwalls and gates around the New Orleans Metropolitan Area on the West bank of the Mississippi River to provide the 100-year level of risk reduction. The term “100-year level of risk reduction,” refers to a level of risk reduction that reduces the risk of hurricane surge and wave driven flooding that the New Orleans Metropolitan Area experiences to a 1 percent chance each year. Compensatory mitigation is an integral feature of the HSDRRS work. The CEMVN is required by the Water Resources Development Acts (WRDAs) of 1986 and 2007 to offset unavoidable habitat impacts through compensatory mitigation by replacing the lost habitat’s functions and services in-kind to the extent possible. WRDA 1986, Section 906(d)(1), as amended by WRDA 2007, Section 2036(a), requires the Secretary to include in reports to Congress a recommendation with a specific mitigation plan to mitigate fish and wildlife losses or a determination that such project will have negligible adverse impact on fish and wildlife. Specific mitigation plans shall ensure that impacts to bottomland hardwood forests are mitigated in-kind and other habitat types are mitigated to not less than in kind conditions to the extent possible. Pursuant to the Corps' Implementation Guidance for Section 2036(a) of the Water Resources Development Act (WRDA) of 2007, compensatory mitigation should be located within the same hydrologic basin (watershed) as where the impacts occurred. WRDA 2007, Section 2036(a), as amended by WRDA 2014, Section 1040, requires the use of a watershed approach when designing mitigation projects. The Clean Water Act (CWA) Section 404(b)(1) Guidelines also require compensatory mitigation for unavoidable habitat losses.

Supplemental EA #548 has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality’s (CEQ) Regulations [40 Code of Federal Regulations (CFR) 1500-1508], as reflected in the USACE Engineering Regulation, ER 200-2-2 and the NPS Director’s Order 12 and accompanying NPS NEPA Handbook (2015), and Section 106 of the National Historic Preservation Act of 1966, as amended.

Supplemental EA #548 provides sufficient information on the potential adverse and beneficial environmental effects to allow the CEMVN District Commander and NPS Southeast Regional Director to make informed decisions on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). This draft EA will be distributed for a 30-day public review and comment period. A public meeting specific to the proposed action may be held if requested during the review period. Any comments received during that review period and public meeting would be considered part of the official record. After the 30-day comment period, and public meeting (if requested), the CEMVN Commander and the NPS Southeast Regional Director would make a decision on the proposed action. Each agency would document its decision in a Finding of No Significant Impact (FONSI) or publish a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

**1.1 Proposed Action.** As proposed the modified mitigation project would continue to involve the restoration of fresh marsh habitats for general fresh marsh (JL1B5) and NPS impacts to fresh marsh (JL1B4) as addressed by PIER #37 Tier 1. The two wetland creation projects would be combined and constructed in Yankee Pond on JELA, with construction activities occurring in St. Charles Parish and Jefferson Parish, Louisiana (**Figure 1**).

**Figure 1 - Location Map**



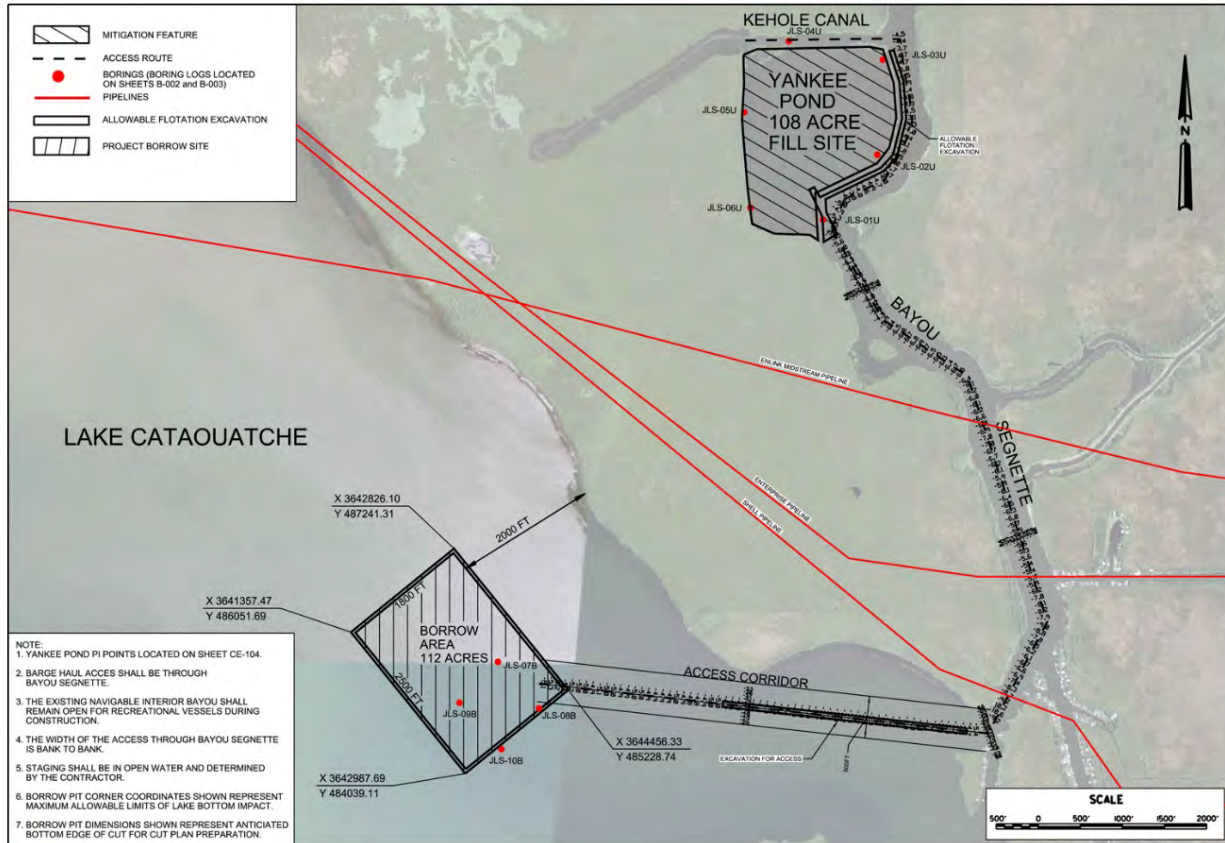
**WBV HSDRRS Mitigation  
EA #458**

August, 2016

Engineering modifications to the project that were not covered under Tier 1 of PIER #37 are addressed in this supplemental EA. Proposed modifications include the expansion of the borrow area in Lake Cataouatche, the use of a mechanical dredge instead of a hydraulic cutterhead dredge, a small increase in the footprint of retention dikes, and additional access dredging (i.e., deepening) for vessels to access the borrow area and the marsh restoration sites. The size of wetland creation from mitigation projects JL1B4 and JL1B5 have not changed since the PIER 37, Tier 1 EA and together the features would establish approximately 108 acres of fresh marsh, and would produce approximately 55.54 AAHUs of fresh marsh benefits (**Figures 2-5**).

Marsh restoration would now require increasing the borrow area by 53 acres (to 112 acres) in order to produce approximately 1,100,000 cubic yards of material necessary for construction. The material would no longer be hydraulically dredged as originally described in the Tier 1 EA, but would now be dredged mechanically (with barge haul to the site) from Lake Cataouatche. It is anticipated that mechanical fill would achieve the desired elevation with a single lift to elevation +3.0 feet, whereas it would take multiple lifts using a hydraulic dredge. The borrow site would continue to be situated a minimum 2000 feet from the lake shore. The open water borrow site would be approximately 1,890 feet by 2,590 feet

**Figure 2 - Site Plan**

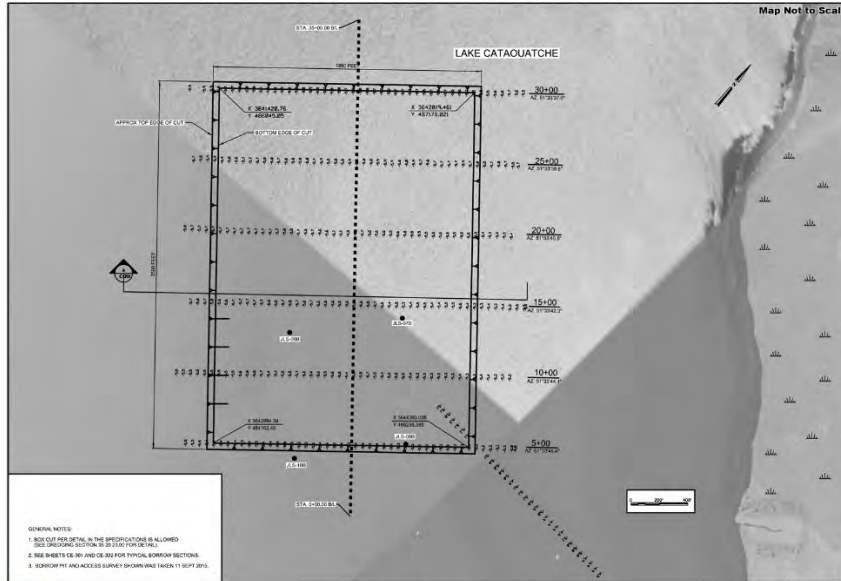


US Army Corps  
of Engineers  
New Orleans District

**WBV HSDRRS Mitigation  
EA #458**

August, 2016

**Figure 3 - Site Detail Plan**

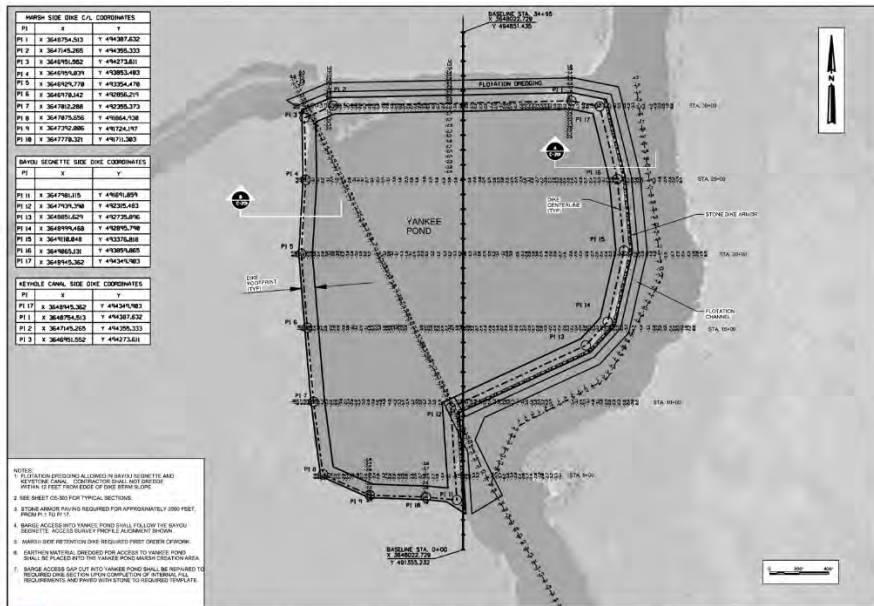


**US Army Corps of Engineers**  
New Orleans District

**WBV HSDRRS Mitigation EA #458**

August, 2016

**Figure 4 - Site Detail Plan**

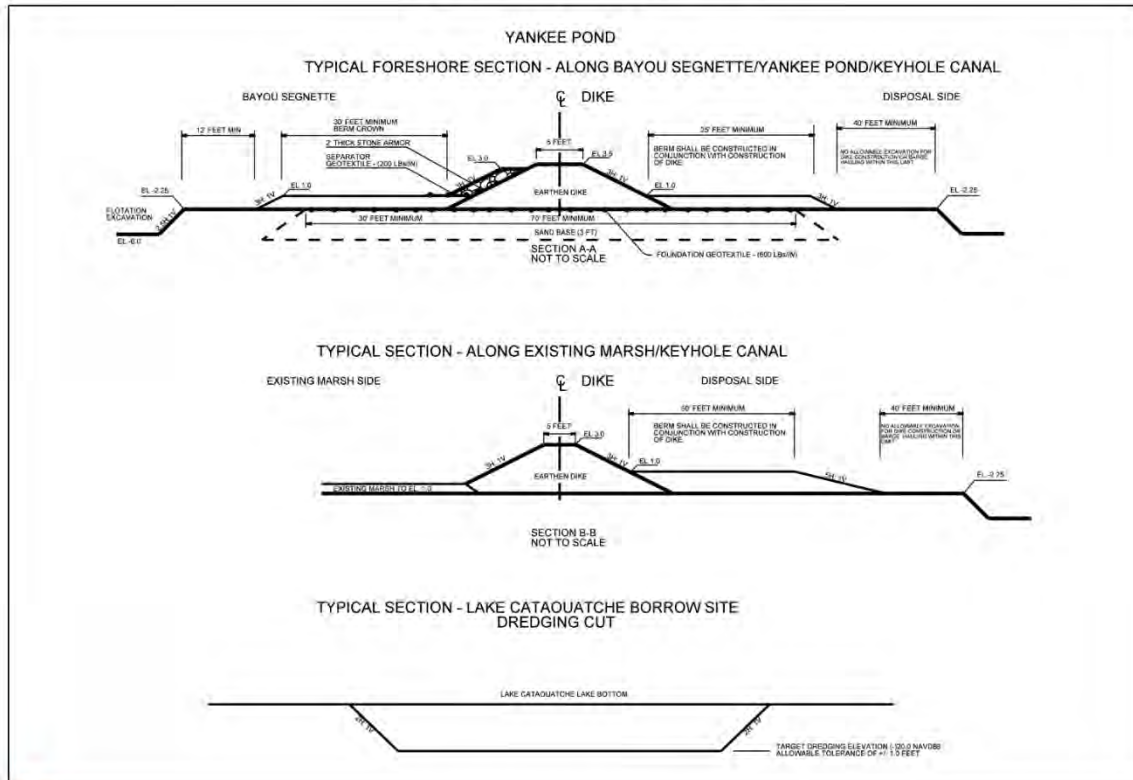


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New Orleans District

**WBV HSDRRS Mitigation EA #458**

August, 2016

**Figure 5 - Design Details**



**WBV HSDRRS Mitigation  
EA #458**

August, 2016

and the maximum depth would continue to be (-) 20 feet NAVD88. The borrow area would be expanded by 59 acres from the original design (to 112.0 acres) There are 2,260,000 cubic yards of material available in the borrow pit in Lake Cataouatche. Approximately 100,000 cubic yards of material of that total would be needed for dike construction. Throughout the initial construction phase, project construction would be coordinated with the US Coast Guard to assure safe passage of recreational boaters during barge hauling of material.

All access will be via state water bottom through Bayou Segnette, Lake Cataouatche, and/or Lake Salvador via the Gulf Intracoastal Waterway. Water depths are limited once the floating plant leaves the GIWW. With an approximate water surface at (+) 1.0 feet, the Contractor, in general will have a minimum of approximately 5 to 6 feet of draft throughout the proposed limits of marine access. However, approximately 6.5 acres of flotation excavation is now required for an approximate 3,500 foot reach in Lake Cataouatche where it enters Bayou Segnette to provide sufficient depth for an access corridor between the borrow site and the entrance to the bayou. This dredging reach would be to a maximum elevation of - 6.0 feet with an 80 foot bottom width, resulting in a cut of approximately 2.5 feet and approximately 25,000 cubic yards of dredging. The material excavated for access from Lake Cataouatche to the entrance of Bayou Segnette would be placed adjacent to the access corridor (north side) and would be used to back fill the corridor at the conclusion of construction or would be hauled to the marsh creation site and used as fill.

Approximately 4.5 acres of flotation dredging adjacent the marsh creation area immediately fronting Bayou Segnette is also now required to allow material barges access for the placement of the sand base and stone paving necessary for retention dike construction. This approximate 3,300 foot reach of proposed flotation dredging would be restricted to a 60 foot width initiating 40 feet from the toe of the retention dike berm, except at the very southern terminus of the flotation access where the flotation channel and the entrance into Yankee Pond intersect. This proposed dredging reach would be to a maximum elevation of -6.0 feet with a 60 foot bottom width, resulting in a total cut of approximately 2.5 feet and approximately 18,000 cubic yards of dredging. The excavated material would be placed adjacent to the access corridor (east side) and would be used to back fill the corridor at the conclusion of construction.

Approximately 8,700 linear feet of retention dike would be required for this feature. Approximately 3,300 linear feet of the 8,700 total length would be armored/capped with stone (well graded riprap with a proposed top size stone of 650 pounds). This armored dike segment would be located along the eastern boundary of the feature adjacent to Bayou Segnette. Maximum 10 foot stability berms would be included. Dike heights would be to elevation +3.5 feet for the dike along Bayou Segnette and +3.0 feet for the dikes along the existing marsh and the keyhole canal. Borrow for these retention dikes would be obtained from the borrow source in Lake Cataouatche, and barged to the site. A sand base for the retention dikes along Bayou Segnette would be hauled in from a commercial source. The dike segment along Bayou Segnette would be paved with a 2-foot stone cap to elevation +3.0 feet. The foot print of the dikes would increase from 3.6 acres to 3.8 acres.

Upon the conclusion of construction, dikes along Bayou Segnette will be lowered to the marsh platform elevation and the flotation 3,300 foot access corridor would be backfilled to pre-project conditions. It is estimated that the project construction activities discussed above (mobilization, dike construction, marsh fill, rock placement, demobilization) would require approximately 15 months.

**1.2 Purpose and Need.** The purpose of the proposed action is to provide compensatory mitigation for impacts to fresh marsh incurred during construction of the West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System, specifically park fresh marsh (JL1B4) and general fresh marsh (JL1B5). This habitat type is described in Section 3.1 of this EA. The proposed compensatory mitigation would replace the lost functions and services of the impacted habitat through restoration or enhancement activities designed to create/increase/improve the habitat functions and services at the specific mitigation sites.

**1.3 Authority.** Congress passed a series of supplemental appropriations acts following Hurricanes Katrina and Rita to repair and upgrade the flood and storm damage risk reduction projects damaged by these storms. The WBV project was originally 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 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. Additional supplemental appropriations provided the remaining funding needed to complete the WBV HSDRRS.

**1.4 Prior Reports.** A number of studies and reports on water resources development in the WBV basin have been prepared by CEMVN, other Federal, state, and local agencies, research institutes, and individuals. Pertinent USACE studies, reports, and projects are discussed in Tier 1 of PIER #37 and are incorporated into this tier by reference.

**1.5 Public Concerns.** Throughout the WBV basin, the public has expressed concern that sufficient funding be allocated for the HSDRRS mitigation efforts, that the HSDRRS mitigation is completed in a timely manner, and that those impacts to JELA are sufficiently mitigated on JELA.

**1.6 Reasons for the Revised Mitigation Plan.** The previously-approved design in the Tier 1 EA did not identify sufficient borrow to achieve required elevations in the marsh creation area. To obtain sufficient borrow material, the planned borrow site has been expanded by 59 acres. Additionally, during advanced engineering analysis of the approved plan, using fill obtained by mechanical means (rather than using hydraulic dredging) was found to require only one placement event to reach the targeted marsh elevation; use of hydraulic dredging would require multiple lifts and multiple dewatering periods, which would require a much longer construction period. Advanced engineering surveys also found that the retention dike adjacent to Bayou Segnette required a sand base for stability and that without floatation dredging adjacent to the dike, placement of this base as well as the required armoring would be extremely problematic and may not even be possible. The proposed changes evaluated in this EA would allow much faster establishment of the marsh habitat and a much greater likelihood of success.

## 2.0 ALTERNATIVES

**2.1 No Action.** NEPA requires that when analyzing alternatives to a proposed action, a Federal agency consider an alternative of “No Action”. The No Action alternative represents the Future Without Project (FWOP) condition and provides a baseline for the comparison of action alternatives. The No Action alternative would not satisfy CEMVN’s mitigation obligation. Because compensatory mitigation for unavoidable impacts is required by law (e.g. Clean Water Act and the Water Resources Development Acts of 1986 and 2007), the No Action alternative to the proposed action is not considered a reasonable or legally viable alternative that could be selected.

For purposes of this analysis, the no action alternative is leaving the condition of the resources as-is without mitigation. Under the no action alternative, the Barataria basin would continue a trend of land loss caused by both natural factors such as subsidence, erosion, tropical storms and sea level rise, and human factors such as flood risk reduction activities, dredging, development, interruption of accretion processes, and oil and gas exploration.



**2.2 Proposed Action.** The proposed action (Section 1.1) is the environmentally preferred alternative and would allow the CEMVN to offset the impacts incurred during construction of the WBV HSDRRS improvements to general and NPS fresh marsh in a more reliable, less risky, timely, and more cost effective manner.

The proposed action evaluated in this EA builds on the analysis and evaluation of the previously approved action in the TIER 1 EA. The effects evaluated in this document would be in addition to the effects evaluated in the TIER 1 EA. The TIER 1 EA evaluation is incorporated by reference herein.

Since finalization of the modeling to determine the benefits produced by the proposed projects within JELA has not been completed, there is a possibility that these projects would not fully satisfy the general fresh marsh mitigation requirement. If finalization of the modeling effort for these projects concludes that they do not meet the whole general fresh marsh mitigation requirement, then any outstanding portion of that requirement would be fulfilled at a mitigation bank through the purchase of in kind credits.

### **3.0 AFFECTED ENVIRONMENT**

#### **3.0.1 Environmental Setting**

The WBV HSDRRS Mitigation Basin is bounded to the north by the Mississippi River starting east in Ascension Parish to west in Plaquemines Parish. In Plaquemines Parish, the boundary then proceeds south then north and west bordering the southern portion of Lake Salvador before turning south again to Golden Meadow. It then turns northwest to Assumption Parish (Figure 1). Major features in the WBV Mitigation basin include: Lakes Cataouatche and Salvador and their adjacent wetlands; Lac des Allemands and its adjacent wetlands and the Mississippi River.

#### **3.0.2 Description of the Watershed**

Extensive bottomland hardwood forests lie adjacent to the Mississippi River and Bayou Lafourche. Wet BLH forests in the WBV Basin are dominated by water oak, nuttall oak, green ash, red maple, and pignut hickory. Fresh marsh is dominated by cattail, water lily, iris, duckweed, cutgrass, wild rice, bullwhip, and bulltongue. Swamps are dominated by bald cypress and water tupelo, which have regenerated since extensive logging of virgin forest more than 70 years ago. The Louisiana swamps generally lack a mature canopy as was present in the forests before logging occurred and have lower productivity where isolated from riverine influences (Shaffer et al., 2003).

#### **3.0.3 Climate**

The West Bank basin is located within a subtropical latitude. The climate is influenced by the many water surfaces of the nearby wetlands, rivers, lakes, streams, and the Gulf of Mexico. Throughout the year, these water areas modify relative humidity and temperature conditions,

decreasing the range between the extremes. Summers are long and hot, with an average daily temperature of 82° Fahrenheit (°F), average daily maximum of 91°F, and high average humidity. Winters are influenced by cold, dry polar air masses moving southward from Canada, with an average daily temperature of 54°F and an average daily minimum of 44°F. Annual precipitation averages 54 inches.

### **3.0.4 Geology/Geomorphic Setting**

Most of the present landmass of southeast LA was formed by deltaic processes of the Mississippi River. The WBV Basin is bound on each side by distributary ridges formed by the present and a former channel of the Mississippi River. Several large lakes occur between these ridges. The southern half of the basin consists of tidally influenced marshes. Freshwater and sediment input into the basin is limited by the flood protection levees along the Mississippi River and the closure of Bayou Lafourche at Donaldsonville. Riverine input into the basin's wetlands occurs through the Davis Pond diversion and the Naomi and West Pointe a la Hache siphons.

The JELA is positioned within the upper Barataria estuarine basin between two distributary arms of the Mississippi River (the current main stem of the river and Bayou Lafourche) and straddles an older distributary arm, the Bayou des Familles/Bayou Barataria. Archeological evidence suggests this deltaic lobe was formed by the Mississippi River roughly 3,000 to 1,500 years ago before present (Törnqvist et al. 1996).

The soils within the preserve are characteristic of those developed in a subtropical, humid climate under frequently flooded conditions within coastal and deltaic plains. The flat topography of the preserve and abundance of slowly decaying organic matter present conditions that allow for the constant buildup of both mineral and organic sediments (NPS 2009).

Soils within project areas are highly disturbed if they are present at all. Most of the project areas are open water. The remainder consists of remnant levee/spoil bank along the northern and eastern edges of Yankee Pond generated by dredging through Kenner muck (NRCS 2013). Soils within spoil banks are generally elevated, compacted, dewatered, and have lost much of their organic component when compared to their sources.

## **3.1 Relevant Resources**

This section contains a description of relevant resources that could be impacted by the project. The important resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to not be affected by the alternative under consideration: bottomland hardwoods, terrestrial resources, aesthetic resources, prime and unique farmlands, and natural and scenic rivers and therefore are not analyzed further.

### **3.1.1 Wetlands**

#### Existing Conditions

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Marsh habitats (herbaceous and scrub/shrub wetlands) comprise about 5500 hectares (61%) of JELA and the Barataria Preserve (BARA) and consist of freshwater marsh, intermediate marsh, and scrub/shrub habitats (White 1983, Nolfo-Clements 2006, Urbatsch 2009, Jin et al. 2013). These are highly productive systems that support a variety of flora and fauna and a floating peat/organic marsh system called flotant (JELA 1997, Nolfo-Clements 2006).

The project site in Yankee Pond is primarily open water and is surrounded by fresh marsh. Freshwater marsh covers an extensive area in the JELA-BARA from the shorelines of Lakes Cataouatche and Salvador eastward to the Kenta Canal (Urbatsch 2009), though it is important to note that the southern portions of this marsh have alternately been classified as intermediate marsh (Linscombe and Chabreck 2001, Sasser et al. 2008, Sasser et al. 2014).

The majority of these freshwater marshes are flotant where plants are rooted in an organic mat that detaches from the substrate and shifts vertically as water levels below rise and drop (Swarzenski et al. 1991). There are three distinct types of floating communities within JELA—thin mat, thick mat, and wax-myrtle thicket, which are distinguished by the thickness of the floating mat and the dominant vegetation (Nolfo-Clements 2006, Urbatsch 2009).

Invasive species of concern in marsh habitats include: Chinese tallow (*Triadica sebifera*) which invades wax-myrtle thickets, Johnson grass (*Sorghum halapense*), and giant salvinia (*Salvinia molesta*) (JELA 1997, Nolfo-Clements 2006). Concerns for marsh communities also include altered hydrology due to levees and canals, erosion, subsidence, saltwater intrusion, and relative sea level rise (NPS 2015).

### **3.1.2 Water Quality, Aquatic Resources and Fisheries**

#### Existing Conditions

Major water bodies within the upper WBV basin include Lac des Allemands, Lake Boeuf, Bayou Gauche, Lake Salvador, Lake Cataouatche, and the Mississippi River. These water bodies and adjacent wetlands provide nursery and foraging habitats which support varieties of economically, recreationally, and ecologically important marine and freshwater fishery species, including shrimp, bay anchovy, gizzard shad, buffalo, yellow bass, largemouth bass, sunfish, catfish, spotted gar, bowfin, mosquitofish, least killifish, sailfin molly, striped mullet, Atlantic croaker, Gulf menhaden, spotted and sand sea trout, southern flounder, black drum, and blue crab. Some of these species also serve as prey for other fish species managed under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) by the Gulf of Mexico Fishery Management Council (e.g., mackerel, snapper, and grouper) and highly migratory species managed by the National Marine Fisheries Service (NMFS) (e.g., billfish and shark).

The WBV Basin encompasses parts of three U.S. Geological Survey (USGS) Cataloging Units: 08090301 – East Central Louisiana Coastal Watershed, 08070100 - Lower Mississippi - Baton Rouge and 08090100 – Lower Mississippi-New Orleans. Within each of these Cataloging Units, the state has delineated hydrologic units, or sub-segments. Section 305(b) of the Clean

Water Act requires each state to monitor and report on surface and groundwater quality, which the EPA synthesizes into a report to Congress. The Louisiana Department of Environmental Quality (LDEQ) produces a Section 305(b) Water Quality Report that provides monitoring data and water quality summaries for hydrologic units (sub-segments) throughout the state.

Water quality criteria are elements of state water quality standards that represent the quality of water that will support a particular designated use. These criteria are expressed as constituent concentrations, levels, or narrative statements. There are currently eight designated uses adopted for Louisiana's surface waters: Primary Contact Recreation, Secondary Contact Recreation, Fish and Wildlife Propagation ("subcategory" for Limited Aquatic life and Wildlife), Drinking Water Supply, Oyster Propagation, Agriculture, and Outstanding Natural Resource Waters.

The Barataria Preserve incorporates a complex set of aquatic habitats, and the waters of the preserve are primarily fresh, with brackish influence at the southern end of the park (Schultz 2006, NPS 2015). The combination of aquatic habitats allows for the potential presence of a number of fish fauna including seasonal migrants and provides critical habitat for varying life stages of marine species from the Gulf of Mexico (see Section 3.1.3).

The waterways of the Barataria Preserve contain relatively low dissolved oxygen concentrations associated with very warm slow moving water, thus freshwater fish communities are relatively low in diversity (Schultz 2006). However, the adjacent low salinity coastal marshes include different species that increase overall fish diversity (NPS 2015). Preserve wetlands have been affected by channelization and levee construction, and their further modification, even for the purpose of restoration or mitigation, could affect fish habitat (Neill and Turner 1987, NPS 2015). Eutrophication is a major issue for many water bodies associated with the preserve as the canals provide direct channels for nutrient runoff that would be typically processed slowly through wetlands and relatively shallow, sinuous waterways. Canals also allow for brackish water and storm surges to infiltrate the fresh systems of the preserve more easily, causing mortality to native plants, increased erosion, and potential loss of fish habitat (NPS 2009, NPS 2015).

Fifty-six fish species were reported from the preserve during the most recent 2003-2005 fish inventory (Schultz 2006). No federal or state threatened or endangered fish species were reported from the park. Most samples reported from the inventory conducted by Schultz (2006) had low proportions of intolerant species and catch rates were low, indicating that a good portion of the park's available habitat is unsuitable for sensitive species that serve as indicators of good water quality (NPS 2015). Fishing, including commercial fishing, is permitted at the preserve in accordance with state and Federal regulations.

Aquatic vegetation provides multiple ecological functions and benefits including: habitat and forage for fish and wildlife, decreasing wave energy, protecting soils, and increasing sediment accretion (Ward et al. 1984, Hemminga and Duarte 2000, Cronk and Fennessy 2001, Poirrier et al. 2009, Poirrier et al. 2010). Additionally, submerged aquatic vegetation (SAV) can be a good indicator of environmental quality as it is sensitive to changes in salinity, turbidity, and nutrient levels (Davis and Brinson 1980, Dennison et al. 1993, Poirrier et al. 2009).

Poirrier et al. (2009, 2010) surveyed SAV at 146 locations within the preserve and adjacent waters of Lake Cataouatche and Lake Salvador during the years 2006-2008, focusing on SAV but also recording some floating aquatics. During this study, nine native and five exotic SAV and floating aquatics species were found, and the authors concluded that the park contains a diverse and robust SAV community (Porrier et al. 2009, 2010, NPS 2015). Factors that control SAV community structure and/or threaten the community include: salinity, turbidity, armored shorelines, nuisance growth, and invasive species, including a floating aquatic species of major concern, giant salvinia (*Salvinia molesta*).

Park managers have described the exotic floating aquatic vegetation present in the preserve as constituting one of the most problematic invasive species incursions in the region; along with impeding boat and fishing access via the formation of exceptionally dense mats, the invasive plant species also alter the quality of food available to native wetland inhabitants, compete with native plant species, and have the potential for cascading impacts on the physicochemical characteristics, community structure and biological diversity of the Preserve's waterways.

Tippling (2007) attempted to establish populations of salvinia weevil (*Cyrtobagous salviniae*) for the control of common salvinia within the preserve. In 2011, the park's Natural Resource Management team began regular introductions of the same weevils to salvinia affected waterways at the preserve. Subsequent monitoring of these introductions has provided encouraging results in that weevil populations in many sites appear to be stable and at densities sufficient to control *Salvinia molesta* during the growing season (Botello-Young 2013, NPS 2015).

Since long term monitoring by the NPS began in 2008, there have been 126 violations of state and NPS water quality standards and screening criteria at the Barataria Preserve. Violations of dissolved oxygen and *E. coli* standards during that time are particularly concerning given that they have occurred every year from 2008-2014 on a somewhat regular basis (NPS 2015). Unfortunately, surface water quality within the preserve is influenced by external inputs that are beyond the park's control. Water in the preserve originates from multiple sources: rainfall, pumped stormwater from adjacent communities, saline storm surges, overland flow, and inflow from the Davis Pond Diversion of the Mississippi River (NPS 2014b). In a synthesis report, the NPS Water Resources Division (1994) concluded that the water quality within JELA is typical of developed coastal areas and has been impacted by industrial effluents, stormwater runoff, and waterway navigation (NPS 2015).

### **3.1.3 Essential Fish Habitat**

#### Existing Conditions

The Magnuson-Stevens Fishery Conservation Management Act (MSFCMA) (50 CFR 600) states that essential fish habitat (EFH) is "those waters and substrate necessary for fish for spawning, breeding or growth to maturity" (16 United States Code [USC] 1802(10); 50 CFR 600.10). The 2005 amendments to the MSFCMA set forth a mandate for the NMFS of the National Oceanic and Atmospheric Administration, regional Fishery Management Councils, and other Federal agencies to identify and protect EFH of economically important marine and

estuarine fisheries. A provision of the MSFCMA requires that FMCs identify and protect EFH for every species managed by a Fisheries Management Plan 16 USC 1853. The public places a high value on seafood and recreational and commercial opportunities provided by EFH. Specific categories of EFH include all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities), sub-tidal vegetation (sea grasses and algae), and adjacent intertidal vegetation (marshes and mangroves). The existing emergent wetlands and shallow open water within the WBV Basin provide important habitat that may be classified as EFH, including transitional habitat between estuarine and marine environments used by migratory and resident fish, as well as other aquatic organisms for nursery, foraging, spawning, and other life requirements. Historically and currently, the area provides valuable recreational and commercial fishing habitat, oyster culture, and nursery areas for a wide variety of finfish and shellfish. Several economically valuable species utilize the project area at different stages of their life cycles (Tables 1-2).

**Table 1: Zones and Abundance for Federally Managed Species in WBV Basin**

Salinity Zone	Life Stage	Brown Shrimp	White Shrimp	Red Drum	Coastal Migratory Pelagic	Reef Fish
0 -0.5 ppt.	Adults		R	R		
	Eggs					
	Juveniles	C to HA	R to C	R		
	Larvae					
	Spawners					
0.5 - 5 ppt.	Adults	R	R	R to C		
	Eggs					
	Juveniles	C to HA	C to A	C	R	R
	Larvae					
	Spawners					
<b>Relative Abundance:</b> Blank - Not Present A – Abundant R – Rare HA - Highly Abundant C – Common (Variation in abundance due to seasonality) (NMFS, 1998)						

**Table 2: Essential Fish Habitat for Life Stages**

Species	Life Stage	Essential Fish Habitat
Brown Shrimp	Adults	Gulf of Mexico <110 m, Silt sand, muddy sand
	Juvenile	Marsh edge, submerged aquatic vegetation (SAV), tidal creeks, inner marsh
White Shrimp	Adults	Gulf of Mexico <33 m, Silt, soft mud
	Juvenile	Marsh edge, SAV, marsh ponds, inner marsh, oyster reefs
Red Drum	Adults	Gulf of Mexico & estuarine mud bottoms, oyster reef
	Juvenile	SAV, estuarine mud bottoms, marsh/water interface

<b>Coastal Migratory Pelagic</b>	Juvenile	Beaches, estuaries, inlets, Coastal & shelf, Gulf, pelagic
<b>Reef fish</b>	Juvenile	SAV, mangroves, sand, mud, reefs, hard bottom

### 3.1.4 Hydrology

#### Existing Conditions

The JELA Barataria Preserve is largely shaped by its hydrologic history. With its close proximity to the Mississippi River, many of the preserve’s features and processes have been driven by both the natural and anthropogenic influences of this major water body. A third of the water from the continental United States drains from the Mississippi River, and prior to human influence, sediment flows from the river had the greatest influence on the creation and alteration of new land in the region (NPS 2015). The Barataria Preserve lies within the upper, freshwater portion of the Barataria Basin, which is defined as the portion of the Mississippi Delta bounded by Bayou Lafourche and the Mississippi River (NPS 2012).

In recent history, anthropogenic effects have played a large role in shaping the hydrology of the park. Before human intervention, hydrology was primarily affected by the Mississippi River, tidal actions, and precipitation. Construction of artificial levees and closing of channels has kept river water from entering the upper basin. Prior to the extensive levee construction on the Mississippi River, rainwater and river floodwaters provided freshwater inputs into the marshes and lakes through surface flow (NPS 2012). Recent mitigation efforts, and most notably the Davis Pond Freshwater Diversion Project, have helped to restore inflow from the Mississippi River (NPS 2014b).

Levees constructed for storm protection, the WBV HSDRRS, separate JELA-BARA from portions of the uppermost Barataria Basin (NPS 2015). Pumping stations that lift precipitation over these levees create points where large volumes of water containing runoff from adjacent developed areas intermittently flow into preserve waterways. In addition, drainages, canals, and channelization of the streams in the area have significantly altered hydrology and increase influence from the Gulf of Mexico.

Tidal action is also a potential player in the park’s hydrology. While tidal influence is minimal in the upper portion of the basin, the occasional strong storm surge can bring saltwater into the freshwater habitats (NPS 2012). Saltwater intrusion has the potential to negatively affect plants and animals that tolerate low levels of salinity. In addition, salinity indirectly affects soil respiration via reductions to root productivity, and potentially directly affects respiration of the microbial community with tidal action (Krauss et al. 2012). Historically, marshes buffered the influx of saltwater from storm surges, but reductions in marsh area in the region have diminished their abilities to slow the intrusions. Within JELA-BARA, relatively intact wetlands continue to buffer interior sections of the basin (NPS 2015) and the WBV HSDRRS.

Park efforts at managing their hydrologic resource have been ongoing for decades. Restoration of the natural water flow in the unit's waterways has been underway since the 1982 General Management Plan was developed (NPS 1982). Recent efforts to restore "functions, resources, and values related to hydrology" in JELA-BARA have been made through the Canal Reclamation project (NPS 2009). Over 20 miles of non-historic canals will be reclaimed to allow wetlands to be restored to their natural function. This project is the result of recognition of external pressures applied to the park's hydrology and the need to maintain integrity and improve resiliency of its ecosystems to both subsidence and climate change impacts (NPS 2009, NPS 2015).

### **3.1.5 Wildlife**

#### Existing Conditions

Louisiana's coastal wetlands support numerous neotropical and other migratory avian species, such as rails, gallinules, shorebirds, wading birds, and numerous songbirds. The rigors of long distance flight require most neotropical migratory birds to rest and refuel several times before they reach their final destination. Louisiana coastal wetlands provide neotropical migratory birds essential stopover habitat on their annual migration routes. The coastal wetlands in the WBV Basin provide important fish and wildlife habitats, especially transitional habitat between estuarine and marine environments, used for shelter, nesting, feeding, roosting, cover, nursery, and other life requirements.

Open water habitats such as Lakes Salvador and Cataouatche provide wintering and multiple use functions for brown pelicans, seabirds, and other open water residents and migrants. Open water habitats provide wintering and multiple use functions for brown pelicans, seabirds, dabbling and diving ducks, coots, and gallinules as well as other open water residents and migrants (LCWCRTF & WCRA, 1999).

JELA supports a diverse bird community. Moreover, JELA-BARA is part of one of the largest and most productive estuaries in the USA (Watson 2005). JELA-BARA is located within the Mississippi Alluvial Valley (MAV) which supports the largest forested floodplain in North America and serves as important habitat for wintering waterfowl, wading birds, and migrating shorebirds (Watson 2005).

The preserve itself is located within the Barataria-Terrebonne estuary and this region is designated as an Important Bird Area by the National Audubon Society (National Audubon Society 2013). A variety of efforts have reported around 240 species from the park (NPS 2014, Muth unpublished data). No threatened or endangered species are included in this dataset, although at least 43 species of conservation concern use the park (NPSpecies 2014, Muth unpublished data), including Prothonotary Warbler (*Protonotaria citrea*), Reddish Egret (*Egretta rufescens*), and Swallow-tailed Kite (*Elanoides forficatus*) (NPS 2015).

A comprehensive inventory of mammals was conducted at JELA from 2003 to 2006, and employed a variety of sampling methods (Hood 2006). Following the initial efforts of this inventory, Hood (2012) re-surveyed the large mammal and bat communities of JELA-BARA



using camera traps and other methods, incidentally capturing medium-sized mammals as well. The park provides habitat for at least seven species of bats, some that were found to be reproductively active on parklands.

White-tailed deer (*Odocoileus virginianus*) were the most commonly reported mammals in both of the most recent inventories. At high densities, white-tailed deer have the potential to alter and possibly negatively impact vegetation communities, and potentially change habitat for other species (NPS 2015).

Negative impacts from non-native mammals represent an important class of threat in the park. Seven non-native or domestic species were reported from the park (Hood 2006, Hood 2012). These included black rat (*Rattus rattus*), coyote (*Canis latrans*), domestic cat (*Felis catus*), feral hog (*Sus scrofa*), house mouse (*Mus musculus*), nine-banded armadillo (*Dasypus novemcinctus*), and nutria (*Myocastor coypus*) (NPS 2015).

Until the recent invasion of feral hogs, nutria were likely the greatest mammalian threat to the native habitat at the JELA-BARA (NPS 2015). Nutria can cause severe damage to marsh vegetation (LDWF 2002), and their substantial herbivory has affected levees, and could increase bank erosion, and nutria potentially outcompete native aquatic mammals such as beaver, muskrat, and mink (NPS 2014a). Active control measures for this species have been, and continue to be, implemented on JELA-BARA and land adjacent to the Park.

Feral hogs were not detected in 2003-2005 (Hood 2006), but were subsequently observed in JELA-BARA after 2006 (Hood 2012). This is an especially significant change that has occurred in the last decade, since they were undetected in the first survey and thought to have been extirpated in the 1980s. Hogs have spread rapidly in JELA-BARA and are now in every major habitat in the park. Active control measures for individual problem animals are currently being designed and utilized for this species, as well as monitoring that will help to estimate their impact on the native flora and fauna (NPS 2015).

Three inventories of the herpetofauna in JELA-BARA (Smalley 1982, Rossman and Demastes 1989, Anderson and Seigel 2003) documented a total of 48 species. Starting in 2011, the NPS began monitoring the herpetofauna in JELA-BARA, with sampling occurring on a monthly basis (Woodman 2013). To date, no threatened or endangered species have been reported from the park. One exotic frog species that had not been previously detected, the greenhouse frog (*Eleutherodactylus planirostris*) was found during recent monitoring efforts (Woodman 2013).

### **3.1.6 Threatened and Endangered Species**

#### Existing Conditions

Within the State of Louisiana there are 33 animal and three plant species (some with critical habitat) under the jurisdiction of the USFWS and/or the National Marine Fisheries Service (NMFS), presently classified as endangered or threatened. The USFWS and the NMFS share jurisdictional responsibility for sea turtles and the Gulf sturgeon. Other species that were

listed on the Endangered Species List but have since been de-listed because population levels have improved are the bald eagle and the brown pelican. Currently, American alligators and shovelnose sturgeon are listed as threatened under the Similarity of Appearance clause in the Endangered Species Act (ESA) of 1973, as amended but are not subject to ESA Section 7 consultation.

According to U.S. Fish and Wildlife Service, there is a potential for 10 threatened, endangered, or candidate species to be present in the West Bank and Vicinity project area. No critical habitat for threatened or endangered species was identified within project areas. A list of these species can be found in Table 3.

**Table 3: Threatened and Endangered Species in the WBV Basin**

Species	Parish	Critical Habitat	Status	Jurisdiction	
				USFWS	NFMS
<b>Animal</b>					
West Indian Manatee ( <i>Trichechus manatus</i> )	Asc, J, L, O, PI, St. C, St. J, St. JB,		E	X	
Pallid sturgeon ( <i>Scaphirhynchus albus</i> )	Asc, J, O, PI, St. J, St. C, St. JB,		E	X	
Piping plover ( <i>Charadrius melodus</i> )	J, L, O, PI	X	T	X	
Red knot ( <i>Calidris canutus</i> )	J, L, PI		T	X	
Green Sea Turtle ( <i>Chelonia mydas</i> )	J, L, PI		T	X	X
Hawksbill Sea Turtle ( <i>Eretomchelys imbricata</i> )	J, L, PI		E	X	X
Kemp's Ridley Sea Turtle ( <i>Lepidochelys kempii</i> )	J, L, PI		E	X	X
Leatherback Sea Turtle ( <i>Dermochelys coriacea</i> )	J, L, PI		E	X	X
Loggerhead Sea Turtle ( <i>Caretta caretta</i> )	J, L, PI		T	X	X

### 3.1.7 Cultural Resources

#### Existing Conditions

The proposed action includes modifications to fresh marsh restoration project features JL1B4 and JL1B5 located in Yankee Pond, the expansion of the proposed borrow area in Lake Cataouatche, 6.5-acres of access dredging in Lake Cataouatche from the borrow area to Bayou Segnette, and 4.5 acres of floatation dredging adjacent to the Bayou Segnette side of Yankee Pond. Yankee Pond is located within the JELA-BARA and approximately 2.5 miles north of the Barataria Unit National Register Historic District. Yankee Pond may be a culturally important landscape feature, but has lost much of the integrity that would lend to its significance. Unfortunately, existing literature on Yankee Pond is not comprehensive but limited research has shown that the pond was a small example of an early 20<sup>th</sup> century land reclamation project undertaken for agriculture in coastal areas, but the project at Yankee Pond had failed and converted to open water by the time it was included in a USGS topographic map from 1932.

A borrow source for the Yankee Pond marsh restoration project has been identified in Lake Cataouatche. As part of proposed modifications being evaluated in this supplemental EA, the borrow area in Lake Cataouatche would be expanded from 53-acres to 112-acres. Mechanical dredging would be used to remove material from the borrow area and place the material into the fresh marsh project areas in Yankee Pond. Access from the borrow area to Bayou Segnette would be provided by a 6.5-acre channel constructed by floatation dredging. The access channel would be excavated to a bottom depth of -6.0-feet with an 80-foot bottom width.

The areas surrounding Yankee Pond and Bayou Segnette have been the subject of several surveys for cultural resources. Previous surveys have not identified cultural resources within either of the areas. Remote sensing surveys have not previously been conducted in the proposed borrow area located in Lake Cataouatche, and submerged cultural resources could exist within the borrow area. Several oil wells are present in the vicinity of the proposed borrow area and access corridor in Lake Cataouatche, including one dry and plugged well that is located in the southeast corner of the proposed borrow area. Activities associated with the construction, operation, and maintenance of oil wells in the vicinity of the proposed borrow area and access corridor may have damaged or destroyed submerged cultural resources that existed in the area.

Section 106 consultation with the SHPO was originally conducted for the JELA mitigation features by the NPS in a letter dated October 13, 2015. The SHPO concurred with a finding of no adverse effect to historic properties on December 3, 2015. The SHPO also concurred that no known historic properties would be affected by the undertaking on November 2, 2015. This Environmental Assessment is being used to comply with the National Historic Preservation Act of 1966 as amended and its implementing regulation at 36 CFR 800.8(c), and continues Section 106 consultation with respect to the changes proposed for the Yankee Pond projects and the undertakings potential effect on historic properties.

Federally recognized Indian Tribes were consulted pursuant to Section 106 of the National Historic Preservation Act and Executive Order (EO) 13175 for Consultation and Coordination with Indian Tribal Governments in letters dated October 13, 2015. Tribes consulted included the Seminole Tribe of Florida, Seminole Nation of Oklahoma, Quapaw Tribe of Oklahoma, Caddo Nation, Choctaw Nation of Oklahoma, Tunica-Biloxi Tribe of Louisiana, Mississippi Band of Choctaw Indians, Jena Band of Choctaw Indians, Chitimacha Tribe of Louisiana, Alabama Coushatta Tribe of Texas, and Coushatta Tribe of Louisiana. The Caddo Nation concurred with

the effects determination in an email dated November 9, 2015 and asked to be kept updated on any information regarding the mitigation project. The Jena Band of Choctaw Indians concurred with the effects determination on November 24, 2015 and requested that all Tribes with an interest in the area be notified if inadvertent discoveries occur. The Choctaw Nation of Oklahoma recommended by email on December 8, 2015 that any un-surveyed portions of the Area of Potential Effect (APE) be surveyed for cultural resources, that buffer zones be established around known cultural resources within the APE, and a map indicating the project APE showing known cultural resources within a one mile radius. Consultation with Tribes will continue as requested for the proposed mitigation project.

### **3.1.8 Recreational Resources**

#### Existing Conditions

The WBV Basin is a large area that includes an abundance of water resources, landscape types, terrain, historical and culturally significant features. In terms of public and institutional significance, the area boasts the Great River Road, which runs adjacent to the Mississippi River Road, the Louisiana Scenic Bayou Byway, which runs from Donaldsonville south towards Houma, and the Wetlands Cultural Trail, which is made up of a plethora of roadways crisscrossing the area around Houma and southeast towards Larose and Golden Meadow. The byways in the basin range from state designated roads to All American Roads.

Land use varies across the spectrum, but the majority of uses include residential, agricultural and some light and highway commercial use. There are a great number of urban areas including that of southern New Orleans (including Algiers, Harvey, Gretna, Westwego, Estelle, Timberlane, a.k.a. “the West Bank”), and other smaller communities such as Larose, Raceland, and Donaldsonville, just to name a few. The majority of communities throughout the basin are clustered along the banks of major waterways and roadways where natural levees and ridges can be found.

With the variety of land uses present, user activity is relatively high throughout the region. The region is filled with commuters going to and from the New Orleans Metro Area for work, hunters and fishermen, and shrimping and shipping, just to name a few. Access throughout is abundant with major U.S. Highways and State Highways crisscrossing the region. However, there are still many areas and thousands of acres that are remote; where access can only be attained via watercraft.

Recreation areas in the WBV Basin include Salvador Wildlife Management Area (WMA), Timken WMA, JELA, Bayou Segnette State Park, and Lake Boeuf WMA. Other recreational features are provided by parishes and historic communities that attract visitors to a variety of heritage and cultural festivals, historical sites, parks offering opportunities for passive and active recreation that include tennis courts, soccer and softball fields, swimming pools, and golf courses. There are 37 boat launches throughout the WBV Basin. Table 4 shows the number of fishing licenses, hunting licenses and boat registrations as well as the percent of state licenses and boat registrations in the WBV Basin.

**Table 4: 2012 Fishing, Hunting Licenses & 2011 Boating Licenses Sold by Parish and in the WBV Basin**

Parish	Resident Salt *	NR Salt*	Resident Fresh*	NR Fresh*	Residential Hunting*	NR Hunting *	Boat
Assumption	1,833	13	2,971	3	1,186	0	3,607
St. James	2,027	1	2,456	1	763	0	2,135
St. John the Baptist	3,609	7	3,973	7	861	0	2,269
La Fourche	14,628	33	15,556	33	4,464	2	11,878
St. Charles	5,519	17	5,930	19	1,477	0	4,343
Jefferson	30,860	171	31,707	184	4,935	5	18,627
Orleans	11,544	98	12,059	122	1,466	6	4,649
Plaquemines	3,400	15	3,464	16	1,100	1	3,937
<b>Total WBV Basin</b>	<b>73,420</b>	<b>355</b>	<b>78,116</b>	<b>385</b>	<b>16,252</b>	<b>14</b>	<b>51,445</b>

Information is provided by the Louisiana Department of Wildlife and Fisheries ([www.wlf.louisiana.gov](http://www.wlf.louisiana.gov))

\* Numbers are for one license per year per individual; Salt= salt water fishing; Fresh =fresh water fishing; NR =Non-resident; Boat= boat license

The Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP) provides a statewide inventory of recreation resources and identifies recreational needs. While regions defined in the SCORP do not fit perfectly within the WBV Basin, SCORP Regions 1 and 3 include the WBV Basin. The state and Federally-managed areas described previously represent just a portion of the more than 282,000 acres of recreational facilities inventoried for SCORP Region 1. Federal, state, parish, and municipal public recreational facilities within Region 1 provide more than 196,000 acres for hunting, 123 boat ramps, 1,833 picnic tables, 10 beaches, and 320 acres for camping with 263 tent sites and 1,739 trailer sites. Region 3 includes more than 107,000 acres for hunting, 194 boat lanes at 105 boat ramps; 131 acres with 365 tables for picnicking; 1 beach of 37 acres; and 71 acres for camping, 34 tent-sites and 422 trailer-sites. In a 2008 Residents Survey, most important outdoor recreational activities for residents in Region 1 are visiting natural places, fishing, and visiting botanic gardens. Residents in Region 3 are identified fishing, visiting natural places, and public access to state waters as most important. Within the same survey, Region 1 residents had the highest participation rates in the following activities: driving for pleasure, fishing, and camping. Region 3 residents participated most in driving for pleasure, fishing, swimming, and camping.

Funds from the Land and Water Conservation Fund (L&WCF) have supported 65 different recreational projects within the same parishes as the WBV Basin since 1964. L&WCF provides funding for numerous boat ramps, other facilities or lands that enhance opportunities for recreation.

The following is a description of the federal and state recreation areas within the WBV Basin:

#### **Salvador Wildlife Management Area (WMA)**

Salvador WMA is 31,520 acres and is located in St. Charles Parish, along the northwestern shore of Lake Salvador about 12 miles southwest of New Orleans. Access is limited to boat travel via three major routes: Bayou Segnette from Westwego into Lake Cataouatche, then west to area; Sellers Canal to Bayou Verrett into Lake Cataouatche, then west to area; or via Bayou Des Allemands. Accessibility into the interior marshes is excellent via the many canals, bayous, and ditches on the area.

Game species include waterfowl, deer, rabbits, squirrels, rails, gallinules, and snipe. Furbearing animals present are mink, nutria, muskrat, raccoon, opossum, and otter. Salvador WMA supports a large population of alligators and provides nesting habitat for the bald eagle.

Excellent freshwater fishing is available on Lake Salvador. Bass, bream, crappie, catfish, drum, and garfish are abundant. Commercial fishing is prohibited on the WMA. Non-consumptive forms of recreation available are boating, nature study, and picnicking.

### **Timken Wildlife Management Area**

The Timken WMA is a 3,000-acre marsh island that is leased by the City Park Commission of New Orleans. The area is identified as Couba Island on maps; however, it has been named the Timken WMA after the former landowner who donated it to the City Park Commission of New Orleans. The area is located immediately east of the Salvador Wildlife Management Area and can be accessed by Lake Cataouatche. Like the Salvador WMA, Timken WMA consists of fresh to intermediate marsh and provides excellent habitat for waterfowl, furbearers, and alligators. Game species include waterfowl, deer, rabbits, squirrels, rails, gallinules, and snipe. Furbearing animals present are mink, nutria, muskrat raccoon, opossum, and otter.

### **Jean Lafitte National Historical Park and Preserve**

JELA consists of six physically separated sites, including the Acadian Cultural Center; Prairie Acadian Cultural Center; Wetlands Acadian Cultural Center; Barataria Preserve; Chalmette Battlefield and National Cemetery; and French Quarter Visitor Center. The projects would only affect the Barataria Preserve. The Barataria Preserve features trails and waterways through bottomland hardwood forests, swamps, and marsh. Additionally, there is an Education Center providing curriculum-based programming for school groups and a visitor center providing a film and exhibits. Hunting; trapping; and fishing, including commercial fishing, is permitted by the NPS at the preserve.

### **Bayou Segnette State Park**

Bayou Segnette State Park offers recreational opportunities including, boating, fishing, canoeing, picnicking, playgrounds, a one mile nature trail, boat launches and a wave pool. Bass, catfish, bream, perch, redbfish, and trout are common in the area. Twenty waterfront cabins are available for overnight rental, as well as, 98 locations for RV and tent camping. The park also includes comfort stations with showers and laundry, an RV dump station, and a group camp with kitchen and dormitories for up to 120 people.

## Lake Boeuf WMA

The Lake Boeuf WMA is located east of Louisiana Highway 308, north of Raceland, Louisiana. The area includes approximately 800 acres of fresh marsh/swamp habitat and is accessible only by boat via Theriot Canal, Foret Canal, or Lake Boeuf. Hunting opportunities include archery, small game, waterfowl, and unmarked hogs.

Data for annual number of visitors at JELA is available starting in 1978. After a low point shortly after the park establishment, visitation rose steadily until the early 2000s. Since that time, annual visitation has fluctuated around a mean of 650,000. Visitation dropped dramatically in 2002 and following Hurricane Katrina in 2005. Generally, visitation is highest during the summer months, and is also influenced by holidays and park events. Visitation at the Barataria Preserve in “backcountry” areas away from visitor use developments like trails and visitor centers is dominated by hunters and fishermen arriving by boat. Access to undeveloped areas of the preserve is restricted by park policy. Access to waterways is often restricted by condition.

### 3.1.9 Environmental Justice and Socio-Economics

#### Existing Conditions

The Department of Defense’s Strategy on Environmental Justice of 1995, directs Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, or Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population.

In accordance with NPS Management Policies (2006), the NPS must apply appropriate land protection methods to protect park resources and values from incompatible land uses. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs agencies to address environmental and human health conditions in minority and low-income communities to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. Population demographics were reviewed for the communities adjacent to the preserve. None of the adjacent communities is identified as an environmental justice community based on the available U.S. Census Bureau Data (2010).

The NPS intermittently issues permits for commercial fishing (often crabbing) in Barataria Preserve waterways. Commercial fishers utilize navigation channels within and adjacent to the preserve. Several swamp tour companies are located adjacent to the Barataria Preserve. Most of these companies provide public tours on lands and waters outside the preserve. One provides public tours within the preserve under a commercial use authorization from the NPS. There are no commercial/industrial properties, public facilities, or transportation infrastructure within the boundaries of the proposed projects. The nearest major thoroughfare is LA Highway 45

(Barataria Boulevard). The major nearest navigable waterways are Bayou Segnette and Lake Cataouatche, LA.

### **3.1.10 Air Quality**

#### Existing Conditions

The EPA, under the requirements of the Clean Air Act of 1963 (CAA), has established National Ambient Air Quality Standards (NAAQS) for seven contaminants, referred to as criteria pollutants (40 CFR 50). These are carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM) less than 10 microns in diameter (PM10), PM less than 2.5 microns in diameter (PM2.5), lead, and sulfur dioxide. The NAAQS standards include primary and secondary standards. The primary standards were established at levels sufficient to protect public health with an adequate margin of safety. The secondary standards were established to protect the public welfare from the adverse effects associated with pollutants in the ambient air, like visibility, vegetation health, and building integrity. Areas that meet the NAAQS for a criteria pollutant are designated as being “in attainment;” areas where a criteria pollutant level exceeds the NAAQS are designated as being “in nonattainment.” Air quality is an important issue in the region and appears to be currently stable (NPS 2015). Managing regional air pollution sources and climate conditions are outside the scope of the park’s management, although park management may work to mitigate the impacts of these large-scale forces (NPS 2015). The proposed action is in St. Charles and Jefferson Parish which are currently in attainment of the NAAQS. Currently, all parishes in the WBV Basin are in attainment of the NAAQS.

Ozone is a major air quality consideration in the region. In the case of ozone, the NAAQS primary and secondary standard concentrations were lowered starting on May 27, 2008 from 0.080 ppm to 0.075 ppm for ozone over 8-hr periods. As a result, violations of this standard are defined as 3-year averages of the 4th highest daily maximum 8-hour average ozone concentration (4th Hi Max 8-hr means) that exceed 0.075 ppm (EPA 2014, NPS 2015).

Both the NPS Air Resources Division (ARD) and the Louisiana Department of Environmental Quality monitor ozone concentrations, and the NPS ARD produces interpolated estimates of ozone metrics, including for JELA. In a final working draft natural resource condition assessment for the park that evaluated information provided by both of these sources, the NPS (2015) found that values of the 4<sup>th</sup> highest maximum 8-hour ozone concentration varied slightly among sources, but were generally within the range of moderate concern.

Atmospheric deposition is a regional concern, and sources of pollution exist near the park. Airborne constituents can affect ecological systems through acidification, soil fertilization, and surface water loading.

Deposition resulting from the production of mercury, nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) are particular issues. These pollutants are typically divided into wet (e.g. precipitation, condensation) and dry (e.g. adsorption, particulate, direct contact) sources, which can negatively affect growing conditions for biota, among other effects (NPS 2015). If mercury reaches aquatic environments, it can be taken up by biota, where it is converted to a different



form known as methyl-mercury ( $[\text{CH}_3\text{Hg}]^+$ ). The accumulation of methyl-mercury in organisms, known as bioaccumulation, is particularly evident in aquatic ecosystems, where organisms higher in the food chain (e.g. fish) can build up relatively high concentrations of mercury (NADP 2014).

The final working draft natural resource assessment for JELA (NPS 2015) examined data from the National Atmospheric Deposition Program (NADP) Mercury Deposition Network. The mean deposition rate was 292 nanograms per square meter ( $\text{ng m}^{-2}$ ) at a station in Hammond, LA that is likely most representative of mercury deposition at JELA, but no trend could be determined. There are no federal or state standards for mercury deposition, but there are defined thresholds for different organisms that indicate mercury contamination risk from consumption (Landers et al. 2008, NPS 2015)

The final working draft natural resource assessment for JELA (NPS 2015) also examined data collected as part of the NADP for nitrogen oxides and sulfur dioxide. Wet deposition of nitrogen oxides and sulfur dioxide was relatively high at regional monitoring stations, and mean values for the last five years available were above the NPS Air Resources Division threshold for posing threats to ecosystem health of 3 kilograms per hectare per year ( $\text{kg ha}^{-1} \text{yr}^{-1}$ ). Data suggest that deposition rates are stable in the region (NPS 2015).

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 Wetlands**

#### Future Conditions with No Action

Without construction of the proposed action, there would be an overall loss of fresh marsh within the WBV basin and on the JELA Barataria Preserve that once provided cover, resting, nesting and foraging habitat for wildlife, fisheries, and aquatic species. Marsh habitat would continue to be restored through other restoration and programs, such as the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) and the Coastal Impact Assistance Program (CIAP), however CEMVN's legal obligation to compensate for habitat losses caused by construction of the WBV HSDRRS would not be satisfied. Without action, the marshes adjacent to Yankee Pond would continue to experience erosion from wave action in Yankee Pond. Subsidence and erosion currently experienced in the basin would continue to cause the conversion of flood side marsh systems to open water.

#### Future Conditions with the Proposed Action

The proposed project would result in 108 acres of fresh marsh in Yankee Pond. Wetland establishment would actually occur faster as a result of using mechanical bucket dredges vs. the previously planned hydraulic dredging allowing for faster colonization of the marsh. Specific success criteria and monitoring for the NPS fresh marsh and the general fresh marsh were addressed previously in PIER #37 Tier 1 and are incorporated by reference.

## 4.2 Water Quality, Aquatic Resources, and Fisheries

### Future Conditions with No Action

Without construction of the proposed action, there would be an overall loss of fresh marsh within the WBV basin and JELA that once provided cover, spawning and foraging habitat for fisheries and aquatic species. The loss of wetlands and the detritus and filtering function they provide would indirectly impact fisheries productivity and water quality through a reduction in primary productivity and increased nutrient and sediment loads in these systems. CEMVN's legal obligation to compensate for habitat losses caused by construction of the HSDRRS would not be satisfied.

### Future Conditions with the Proposed Action

The proposed project modifications are not anticipated to have significant effects on water quality, aquatic resources and fisheries. With implementation of the proposed action, some impacts to fisheries, aquatic resources, and water quality would result from excavating approximately 59 additional acres of open water bottom habitat and the associated increases in turbidity during construction activities (the borrow area was approximately 53 acres in the Tier 1 EA; total borrow area would now be 112 acres). Approximately 108 acres of new marsh would still be created in Yankee Pond as originally designed. As such, the long term benefits of marsh creation is anticipated to offset the temporary construction impacts to the aquatic environment.

Local water quality and fisheries would not be significantly altered by the proposed expansion of the borrow area by approximately 59 acres, the deepening of the Lake Cataouatche access by 2.5 feet (6.5 acres) and the construction of Bayou Segnette floatation channel (4.5 acres). The material dredged in Bayou Segnette would be stockpiled adjacent to the bayou in open water and would be used to backfill the floatation canal at the completion of construction. A 2.5 ft reduction in lake-bottom elevations would occur from the access dredging in Lake Cataouatche. If not backfilled at the completion of construction, the site would largely backfill naturally over time due to localized sedimentation and wave action in the area. It is anticipated that anoxic conditions would continue to be avoided with the depth of dredging in the borrow pit and that mobile fishery species would avoid the proposed borrow site during construction, thereby minimizing impacts to those species. There would be short term direct impacts to the benthic communities at the borrow sites within open water areas. The animals that live on or in the material to be dredged would most likely be killed during removal, transportation, or placement of the dredge material. It is anticipated that the bottoms of the borrow area would re-colonize with species similar in composition to those existing before the dredge activity since anoxic conditions would be avoided and similar communities exist adjacent to the borrow site. The deepening of the Lake Cataouatche water bottom is expected to have a net benefit to fisheries in the area, as a thermal refuge during colder periods experienced during the winter months.

Sediment particles suspended due to changes in construction activities may impact filter feeding benthic invertebrates by fouling feeding apparatus if the concentration of such particles is excessively high adjacent to the dredge site or the stockpile site. Some fish species in the

stockpile area adjacent to Bayou Segnette may be killed during dredged material placement. However, these species are commonly found throughout the basin and on JELA Barataria Preserve in similar shallow water environments that exist in abundance. As such, impacts to the overall population of these species in the basin and on JELA Barataria Preserve from the borrow placement are expected to be negligible. Impacts caused by increases in suspended sediments during placement of stabilization materials would be minimal, localized, and short-lived. The filtering function that the created marsh would provide would be a long term benefit to the water quality in JELA. The conversion of an additional .2 acres of open water to retention dike would result in a minor additional reduction in fisheries habitat.

### **4.3 Essential Fish Habitat**

#### Future Conditions with No Action

Without construction of the proposed action, there would be an overall loss of fresh marsh habitat within the WBV basin and on JELA that once provided cover, spawning and foraging habitat for EFH species. Intertidal marshes are designated EFH. Loss of marsh habitat in the basin would equate to conversion of intertidal marsh EFH to open water EFH in the basin.

#### Future Conditions with the Proposed Action

Project modifications are anticipated to have minor negative effects to essential fish habitat primarily during the construction period. The amount of EFH converted from open water to marsh and those associated impacts would remain the same as the original plan. Excavation of additional borrow from Lake Cataouatche would deepen estuarine water column and may expose a different bottom substrate, which could impact managed species by reducing available cover and foraging habitat. Access dredging would increase the depth of the water bottom by 2.5 feet in approximately 6.5 acres of Lake Cataouatche and 4.5 acres in Bayou Segnette. The material dredged in Bayou Segnette would be stockpiled adjacent to the bayou in open water and would be used to backfill the floatation canal at the completion of construction. The access dredging in Lake Cataouatche, if not backfilled at the completion of construction, would largely backfill naturally over time due to localized sedimentation and wave action in the area.

### **4.4 Hydrology**

#### Future Conditions with No Action

Without construction of the proposed action, hydrology within the basin and JELA would remain the same. There would be no conversion of open water to fresh marsh.

#### Future Conditions with the Proposed Action

The proposed project modifications are not anticipated to have negative effects on hydrology. The borrow area would deepen approximately 59 additional acres of existing lake water bottoms (112 acres total). Access dredging would increase the depth of the water bottom by 2.5 feet in approximately 6.5 acres of Lake Cataouatche and 4.5 acres in Bayou Segnette.

The material dredged in Bayou Segnette would be stockpiled adjacent to the bayou in open water and would be used to backfill the floatation canal at the completion of construction. The access dredging in Lake Cataouatche, if not backfilled at the completion of construction, would largely backfill naturally over time due to localized sedimentation and wave action in the area.

#### **4.5 Wildlife**

##### Future Conditions with No Action

Without construction of the proposed action, there would be an overall loss of fresh marsh caused by construction of the WBV HSDRRS within the WBV basin that once provided cover, resting, nesting and foraging habitat for wildlife species. These species were either forced into adjacent habitat that may not have been able to permanently support an increase in its wildlife population or died during construction of the WBV HSDRRS. Without mitigation, wildlife populations in the basin may be permanently affected by the overall habitat losses incurred by construction of the HSDRRS and CEMVN's legal obligation to compensate for these habitat losses would not be satisfied.

##### Future Conditions with the Proposed Action

The additional project modifications are not anticipated to have negative effects on wildlife. The proposed modifications include using bucket dredging instead of hydraulic dredging which would result in faster marsh establishment (less settlement and dewatering), which would be beneficial in the form of faster creation of cover, resting, nesting and foraging habitat for brown pelican, and habitat for wading birds, shorebirds, and raptors (LCWCRTF and WCRA, 1999) as well as habitat for muskrat, raccoon and river otter wildlife species. Species that utilize transition zones (i.e. raccoon, bobcat, fox) would benefit from the faster establishment of fresh marsh habitat. The loss of open water habitat would not be expected to adversely affect species (American alligator) that utilize this habitat currently as there is ample open water habitat in the basin. Wildlife in the area may be temporarily displaced to adjacent habitat by noise during construction activities, including the additional barge and access dredging work, but would return to the area once construction is complete.

#### **4.6 Threatened and Endangered Species**

##### Future Conditions with No Action

Without construction of the proposed action, there would be an overall loss of fresh marsh within the WBV basin caused by construction of the WBV HSDRRS that once had the potential to provide cover, resting, nesting and foraging habitat for threatened and endangered species. Based on previous coordination with USFWS, USACE has determined that the manatee is the only federally protected species that may occur in the immediate project vicinity, and because the manatee utilizes and inhabits shallow open water, the loss of marsh would expand its available habitat.

##### Future Conditions with the Proposed Action

The additional project modifications are not anticipated to have any effects on threatened and endangered species, nor on designated critical habitat. Of the federally-listed threatened and endangered species in the vicinity of the project areas, only the West Indian manatee has the potential to occur within the immediate project vicinity. This species has never been reported in the park (NPS 2015). If present, the presence of construction-related activity, machinery, and noise would be expected to cause individuals of the species to avoid the project area during the construction. In order to minimize the potential for construction activities to cause adverse impacts to manatees, standard protection measures would be implemented when activities are proposed that would impact habitat where manatees could occur (see appendix G of the PIER 37, Tier 1 EA). The proposed action may affect but is not likely to adversely affect the manatee. This determination was submitted to USFWS along with a request for concurrence on July 21, 2016.

#### **4.7 Cultural Resources**

##### Future Conditions with No Action

Without implementation of the proposed action, there would be no direct, indirect, or cumulative impacts to cultural resources. Cultural resources would continue to be affected by natural processes such as erosion, subsidence, and flooding.

##### Future Conditions with the Proposed Action

It is not likely that activities associated with the proposed restoration project would have a direct impact on cultural resources within the project area. Submerged cultural resources could still exist within the borrow area located in Lake Cataouatche and in Yankee Pond, and the removal or placement of borrow, the construction of expanded dikes, and dredging for access could have a direct impact on those cultural resources. As indicated in the PIER #37 Tier 1 EA/Assessment of Effect, it is important to recognize that Yankee Pond has lost much of its cultural integrity over time and that the overall condition of the landscape that surrounds Yankee Pond is critical to maintaining the cultural integrity of the Barataria Unit National Historic District. On balance it is important to restore these areas to build resiliency of the natural and cultural landscape of the Preserve, and the proposed changes to the projects are not expected to change the overall effect of the undertaking on cultural resources. Therefore, the agencies have determined that the changes to the projects would have no adverse effect on historic resources.

The NPS will continue consultation pursuant to Section 106 of the National Historic Preservation Act with the LA SHPO for the proposed modifications to the restoration projects that are located on NPS managed lands. Consultation with federally recognized American Indian tribes that have indicated an interest in the project will continue in accordance with Section 106 and EO 13175.

#### **4.8 Recreation Resources**

##### Future Conditions with No Action

Without construction of proposed action, there would be an overall loss of fresh marsh that once provided cover, resting, nesting and foraging habitat for wildlife, fisheries, and aquatic species. The loss of these habitats, and the effect such losses would have on wildlife and fish species, could cause recreational opportunities in the basin to also suffer loss since some recreational activities (such as fishing or bird-watching) are habitat dependent.

#### Future Conditions with the Proposed Action

Project modifications are not anticipated to have additional negative effects on recreational resources. Under the originally designed project, the project areas would not be available for recreation use such as hunting, fishing, and boating during construction. Fishing in areas adjacent to the projects in Lake Cataouatche and Yankee Pond may be temporarily impacted during construction by increased turbidity during dredging and placement activities. Additionally, barge traffic in Bayou Segnette would temporarily restrict access and may inconvenience boaters traveling in the area during construction.

With the conversion of open water areas to emergent wetlands, a change in the type of recreation conducted on these sites would occur, from largely fishing and hunting to largely hunting and bird watching. Boating and fishing access in Yankee pond would be eliminated, but new opportunities associated with the creation of marsh habitat would result. Many nearby areas for boating and fishing would remain and these activities would be minimally effected.

### **4.9 Environmental Justice and Socio-Economics**

#### Future Conditions with No Action

Without construction of the proposed action, there would be no impacts to socioeconomic, land use, transportation, and commercial fishing.

#### Future Conditions with the Proposed Action

The additional modifications are not anticipated to have negative effects on environmental justice and social-economics. Minimal impacts to employment, businesses, industry, public facilities and services, community and regional growth community cohesion, or tax revenues and property values are anticipated to occur with design modifications as proposed. Construction of the proposed action would result in construction contracts, as well as the associated purchase of materials, supplies, and fuel. Workers would likely purchase meals, incidentals, and lodging in the surrounding area for the duration of construction. Additional work during the OMRR&R phase could result in vegetation or invasive animal species management contracts, or additional construction contracts.

The overall land use of the park would not change. Project features would be managed in perpetuity, and that management may utilize different strategies than standard NPS management protocol, which could result in additional effort by the NPS to exclude the features from the

standard management (e.g., prescribed burns). However, management of the features is expected to be highly compatible with overall NPS management of the preserve.

Reserved minerals under project areas should be accessible from adjacent surface locations. There are no commercial/industrial properties, public facilities, or transportation infrastructure within the project boundaries therefore there will be no direct impacts to land use.

According to 2010 U.S. Census data, there are no residents or housing units located within the boundaries of the proposed action and therefore no impacts to population, housing, or minority or low-income populations are expected to occur.

There could be impacts to navigation and/or commercial fishing such as minor detours, temporary delays, and no wake zones during the dredging of Lake Cataouatche for borrow and the transportation of borrow via barge. However, these impacts would be minor and temporary during the period of construction.

#### **4.10 Air Quality**

##### Future Conditions with No Action

Jefferson Parish and St. Charles Parish are currently in attainment of the NAAQS. Air quality in the region appears to be stable (NPS 2015). The current air quality trends in the parish would be expected to continue under future without project conditions.

##### Future Conditions with the Proposed Action

Impacts to air quality as a result of project design modifications are expected to be minimal in extent and short term in duration. During project construction an increase in air emissions would be expected. These emissions could include 1) exhaust emissions from operations of various types of marine construction equipment such as vessels, excavators, marsh buggies, etc.

Activities associated with the changes in approach to dredging and fresh marsh restoration would continue to produce localized, temporary increases in pollutant levels associated with operation of heavy machinery mainly through the combustion of diesel fuel. The highest levels would occur at the borrow area, along dredged material movement corridors in Lake Cataouatche and Bayou Segnette, and at the active work zone in Yankee Pond. Pollutant concentrates are still expected to diminish exponentially with distance from construction and return to ambient levels in close proximity to the work areas. Upon completion of the work, no additional discharges or sustained impacts will be associated with the project. Periodic thunderstorms and windy conditions near Lake Cataouatche are expected to disperse pollutants rapidly from the areas. Emissions are not expected to be at a level that would contribute measurably to greenhouse gases on a wider scale, and are not expected to produce conditions that would alter the EPA's classification of Jefferson Parish in attainment of the NAAQS. Because the project areas are in parishes in attainment of the NAAQS, a conformity analysis is not required and has not been done.

#### **4.11 Hazardous, Toxic and Radioactive Waste**

No Recognized Environmental Conditions (RECs) were noted within the proposed mitigation areas, and the mitigation areas contain no sites of interest which pose potential environmental concerns. An environmental records search and aerial photograph analysis also did not identify any significant data suggesting environmental concerns to be present in the mitigation areas. Several oil and gas wells and natural gas pipelines exist within one mile of the proposed mitigation sites. These findings should be considered as *de minimis* conditions and not RECs; therefore, they would not be expected to have a negative impact on the project site. The probability of encountering HTRW on any of the mitigation sites is low.

The records search indicated the presence of one dry and abandoned oil/gas well within the proposed borrow area and two orphaned oil/gas wells adjacent to the borrow area. Two crude-oil pipelines and one natural-gas pipeline cross beneath the Bayou Segnette borrow material access corridor. One dry and plugged oil/gas well is also located along the Bayou Segnette borrow material access corridor. The dry and abandoned oil/gas wells, the orphaned oil/gas wells, and the oil/gas pipelines are considered RECs and extreme caution shall be exercised to avoid damaging the wells and pipelines.

#### **4.12 Cumulative Impacts**

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)." Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

Per the NPS DO 12 NEPA Handbook, connected, similar, and cumulative actions are actions that result as a direct or indirect consequences of the proposed action and can be undertaken by federal, state, or local entities. Connected actions associated with the proposed action include construction of the WBV HSDRRS, including construction of its mitigation features, infrastructure relocation as a result of the WBV HSDRRS, borrow pit construction for previous levee improvements, and Lake Salvador shoreline protection. Similar actions are those that have similar geography, timing, purpose, or other similar feature to the proposed action. Cumulative actions are those actions that have additive or cumulative, impacts on a particular resource. Cumulative actions may have occurred in the past, present, or are reasonably foreseeable to take place in the future.

NEPA requires a Federal agency to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impacts of the action. This section provides an overview of other actions, projects, and occurrences that may contribute to the cumulative impacts previously discussed.





Project Name	Project Type	Wetlands and Other Surface Waters	Wildlife	Threatened and Endangered Species	Fisheries, Aquatic Resources, and Water Quality	Essential Fish Habitat	Cultural Resources	Recreational Resources	Aesthetic Resources	Air Quality	Noise	Socioeconomics	Environmental Justice
CIAP BA-43 (EB): EB-Long Distance Mississippi River Sediment Pipeline	Diversion	+	+/-	0	+/-	+/-	0	+/-	0	0	0	0	0
CWPPRA BA-39: Mississippi River Sediment Delivery System - Bayou Dupont	Diversion	+	+/-	0	+/-	+/-	0	+/-	0	0	0	0	0
State of Louisiana BA-03: Naomi Siphon Diversion	Diversion	+	+/-	0	+/-	+/-	0	+/-	0	0	0	0	0
WRDA BA-01: Davis Pond Freshwater Diversion and Forced Drainage Area	Diversion	+	+/-	0	+/-	+/-	0	+/-	0	0	0	0	0
CIAP BA-62: West Bank Wastewater Assimilation Plant	Habitat Enhancement	+	+	0	0	+/-	0	+/-	0	0	0	0	0
CIAP (PO-90) WLDS-SP: West Lac Des Allemands Shoreline Protection	Habitat Preservation	+	+	0	+/-	+/-	0	0	+	0	0	0	0
CIAP BA-61: West Bank Wetland Conservation and Protection	Habitat Preservation	+	+	0	0	0	0	0	+	0	0	0	0
CWPPRA LA-16 Non-rock Alternatives to Shoreline Protection Demonstration	Habitat Preservation	+	+	0	+/-	+/-	0	0	+	0	0	0	0
National Park Service: Jean Lafitte National Historic Park Beneficial Use Site	Habitat Preservation	+	+	0	-	-	0	0	0	0	0	0	0
National Park Service: Lake Salvador Shoreline Protection 2011	Habitat Preservation	+	+	0	+/-	+/-	0	0	0	0	0	0	0
Pre-Katrina WBV Mitigation: Land Acquisition and BLH Mitigation	Habitat Preservation	+	+	0	0	0	0	0	+	0	0	0	0

State of Louisiana BA05c: Baie de Chactas	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
State of Louisiana BA-15x1: Lake Salvador Shoreline Protection Extension Project	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
State of Louisiana BA-16: Bayou Segnette	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
Surplus Funds 2007 BA-75-1: Jean Lafitte Tidal Protection/Fishers basin	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
Texaco Oil Spill Mitigation: Texaco Oil Discharge Mitigation 1991 (Netherlands Area)	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
US Department of Justice: St Charles Levee Conservation Easement	Habitat Preservation	+	+	o	o	o	o	o	+	o	o	o	o
National Park Service: Lake Salvador Shoreline Protection 1997 shoreline protection and geocrib	Habitat Preservation	+	+	o	+/-	+/-	o	o	o	o	o	o	o
National Park Service: Lake Salvador Shoreline Protection 2005	Habitat Preservation	+	+	o	+/-	+/-	+	+	o	o	o	o	o
CIAP BA-15x-2 (EB): EB-Lake Salvador Shoreline Protection Phase III	Habitat Restoration	+	+	o	+/-	+/-	o	+	o	o	o	o	o
CWPPRA BA-15: Lake Salvador Shore Protection Demonstration	Habitat Restoration	+	+	o	+/-	+/-	o	+	o	o	o	o	o
CWPPRA BA- 03c: Naomi Outfall Management	Hydrologic Restoration	+	+	o	+/-	+/-	o	o	o	o	o	o	o
CWPPRA BA-02: GIWW (Gulf Intracoastal	Hydrologic Restoration	+	+	o	+/-	+/-	o	o	o	o	o	o	o

Waterway) to Clovelly Hydrologic Restoration													
National Park Service: 2002 Canal Partial Back Fillings	Marsh Creation	+	+	0	-	-	0	+	0	0	0	0	0
National Park Service: 2010 Canal Partial Back Fillings	Marsh Creation	+	+	0	-	-	0	+	0	0	0	0	0
State of Louisiana LA-01a: Dedicated Dredging Program - Lake Salvador	Marsh Creation	+	+	0	+/-	-	0	+	0	0	0	0	0
CIAP BA-59: Waterline Booster Pump Station, West Bank	Structure	+/-	+/-	0	+/-	0	0	-	-	0	0	+	0
Louisiana DOTD: Future I-49 Corridor	Structure	+/-	+/-	0	0	-	0	-	-	0	+	+	0
US Army Corps of Engineers: Davis Pond Freshwater Diversion Structure	Structure	+/-	+/-	0	0	0	0	-	-	0	0	0	0
Algiers Lock	Structure	+/-	+/-	0	-	-	0	+/-	-	0	0	-	0
Algiers Non-federal Levee (Donner Canal Levee)	Structure	+/-	+/-	0	0	0	0	-	-	0	0	+	0
Bayou Gauche Ring Levee (Sunset Levee)	Structure	+/-	+/-	0	0	0	0	-	-	0	0	+	0
Coastal Protection and Restoration Authority (CPRA) and North Lafourche Conservation, Levee and Drainage District, Valentine to Larose Levee, TE-111	Structure	+/-	+/-	0	0	0	0	-	-	0	0	+	0
Empire Lock	Structure	+/-	+/-	0	-	-	0	+/-	-	0	0	-	0
English Turn Non-federal Levee (Donner Canal Levee)	Structure	+/-	+/-	0	0	0	0	-	-	0	0	+	0

GIWW Navigation System	Structure	+/-	+/-	o	+/-	+/-	+/-	+/-	o	o	o	+	o
Harvey Canal Lock	Structure	+/-	+/-	o	-	-	o	+/-	-	o	o	-	o
Hurricane and Storm Damage Risk Reduction System (HSDRRS), West Bank and Vacinity	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
Larose to Golden Meadow, Louisiana, Hurricane Protection Project (LGM)	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
Mississippi River Levees : MR&T Project	Structure	+/-	+/-	o	-	-	+/-	-	-	o	o	+	o
Mississippi River Navigation Operations and Maintenance	Structure	+/-	+/-	o	+/-	+/-	o	-	o	o	o	+	o
New Orleans to Venice (NOV) levee project, Incorporation of Non-federal Levees (NFL) into NOV	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
New Orleans to Venice (NOV) levee project, St. Jude to Venice	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
Oakville to La Reussite Non-federal Levee	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
St. Charles Parish Levee - West Bank Ellington Phase 3 (BA-85-3)	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
St. Charles Parish Levee - West Bank Magnolida Ridge Phase 1 (BA-85-1)	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
St. Charles Parish Levee - West Bank Willow Ridge Phase 2 (BA-85-2)	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
State of Louisiana - Surplus Fund 2007 project, Lafitte Tidal Protection, BA-75-3, 2007	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o

State of Louisiana Surplus Fund 2007 Project - East of Harvey Canal Interim Hurricane Protection - Phase 1	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
State of Louisiana- Surplus Fund 2007 project, Jean Lafitte Tidal Protection, BA-75-1, 2007	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o
West Plaquemines Non-federal Levee	Structure	+/-	+/-	o	o	o	o	-	-	o	o	+	o

The impact of past, present and reasonably foreseeable projects in the WBV basin on the important resources documented in this EA are represented by Table 5. Ecosystem restoration type projects in the basin work to enhance and restore historic ecosystem processes within the basin. Although these projects may result in temporal impacts and tradeoffs within the important resources, their overall effects on the system from a human and natural environmental perspective would be wholly positive. The structural projects (e.g. levee systems), to a large degree, produce socioeconomic benefits (primarily in the form of navigation or flood control) that are the impetus for their construction. Though impacts to the natural environment from construction of these projects have been avoided to the maximum extent practicable, remaining unavoidable impacts would require mitigation. Environmental Justice impacts have been avoided during design of these projects. However, the structural projects have resulted in impacts to the aesthetics and recreational opportunities within the system. Some of these projects have resulted in impacts to cultural resources in the basin; however, those impacts have been mitigated by excavating the site, removing the cultural pieces, and documenting the site. In the same vein, construction of many of the structural features in the future without project (FWOP) has resulted in the protection of cultural sites found within the protection of the levee system. Ecosystem restoration plans in the WBV basin and in the region that improve estuarine habitat also provide benefits to the commercial fishing industry.

**Table 5: Cumulative Impacts of Past Present and Reasonably Foreseeable Projects in the WBV Basin**

Modifications to the construction design of this fresh marsh restoration project, when added to other past, present, and reasonably foreseeable ecosystem restoration and mitigation projects in the basin allow the project to be constructed, thus helping to slow the loss of wetlands and combat the current trend of conversion of marsh to open water, combat the overall decline of wildlife species within the basin, and would be beneficial in preserving species bio-diversity;

there would be an overall loss of open water habitat in the WBV basin and on JELA, but no permanent adverse impacts are anticipated because this habitat is prevalent throughout the basin and on JELA. Any additional impacts from the design modifications to SAVs and EFH would continue to be mitigated by the proposed project via the restoration of 108 acres of fresh marsh.

The proposed modifications that include the use of a bucket dredge vs. hydraulic dredging would result in faster marsh establishment, and would be cumulatively beneficial in the form of additional cover, resting, nesting and foraging habitat for wildlife species versus the original design. The proposed modifications would result in minor additional loss of fisheries habitat (.2 acres of additional retention dike). Water quality and benthic species would still be expected to rebound once project construction is complete. The restoration of fresh marsh in areas that are currently open water would provide indirect benefits to fisheries in the future by providing nutrients to the system in the form of detritus thereby increasing the primary productivity in the wetland system.

Those projects in the FWOP conditions which include marsh restoration as well as the proposed action for WBV HSDRRS Mitigation could have the long- term beneficial impacts of increasing dissolved oxygen levels and the overall filtering function of wetlands which helps control local turbidity. The temporary water quality impacts from borrow excavation/expansion and the placement of such material are not anticipated to be substantial enough to cause water quality impairment under the standards of Louisiana Administrative Code, Title 33, Part IX, Chapter 11. This project would cause one type of EFH in the WBV basin to be replaced by another type of EFH. The switching of EFH types from construction of the proposed project is not anticipated to have a significant impact to the overall EFH in the WBV basin or on JELA. Impacts to cover and foraging for managed species are not anticipated to contribute significant increases in cumulative impacts to managed species as the borrow areas are small in size compared to the available EFH habitat in the basin and on JELA providing similar habitat.

No threatened or endangered species, cultural resources or HTRW sites are expected to be impacted by the construction design modifications of the proposed project.

Since mitigation replaces impacted habitats, recreational opportunities dependent on these habitats would merely shift from the area of impact to the area of mitigation, preventing the loss of these resources in the basin. The impacts associated with borrow expansion and construction access dredging for the mitigation project would be short term and not result in a significant increase in cumulative impacts to recreational resources in the basin.

Cumulative impacts to air quality in the project area due to construction modifications as proposed, in addition to the other construction activities within the WBV basin that may be occurring concurrently would be temporary and minimal. After the construction period, there would be no incremental contribution to cumulative air quality impacts due to the proposed action. All project areas are located in a parish in attainment of the NAAQS. Construction of the proposed action is not anticipated to add significantly to the cumulative effect of noise in the WBV basin as the projects are situated in remote areas and noise from construction activities is buffered by vegetation and the HSDRRS levee.

The cumulative impacts of the project modifications, when added to other past, present, and reasonably foreseeable ecosystem restoration, mitigation or other type projects in the basin would minimally and temporarily affect socio-economic resources. Due to the remote and generally unpopulated areas where the projects would be constructed and the temporary nature of the project construction activities, the proposed modifications would add very little and only temporary impacts to any other impacts resulting from past, present and reasonably foreseeable projects in the region and would not contribute significantly to cumulative impacts to socio-economic resources in the basin.

Construction design modifications would temporarily disrupt transportation, navigation and commercial fishing in project areas, however, these impacts would continue to be minor and temporary during the period of construction when compared to the previous design. Land use impacts, such as impacts to commercial/industrial properties and public facilities, are not anticipated as the projects are typically located in unpopulated areas.

Additional evaluation of cumulative impacts associated with construction of the HSDRRS and other Corps water resource projects and public and private construction projects can be found in the Comprehensive Environmental Document, Phase 1, which may be accessed at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov). Those discussions are incorporated by reference.

## **5.0 COORDINATION**

### **5.1 Public Involvement**

Extensive public involvement has been sought in planning the mitigation for the HSDRRS impacts. A public notice of the NEPA Alternative Arrangements was published in the Federal Register on 13 March 2007 (Federal Register Volume 72, No. 48) which included a commitment to analyze alternatives to determine appropriate mitigation. The notice is also available on the website [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov). Publication in the Federal Register of a formal announcement concerning the cessation of use of the Alternative Arrangements occurred on June 26, 2015 (Federal Register Volume 80, No. 123).

The following public meetings were held to obtain public input on the planning process for the WBV HSDRRS mitigation, to obtain any suggestions on potential projects to mitigate WBV HSDRRS impacts, and to update the public on the project status:

1. 31 August 2009 at U.S. Army Corps of Engineers Office in New Orleans, LA
2. 13 May 2010 at Delgado Community College Westbank in Algiers, LA
3. 17 May 2010 at Westwego Tassin Senior Center in Westwego, LA
4. 19 May 2010 at NP Trist Middle School in Meraux, LA
5. 9 December 2010 at Westwego Tassin Senior Center in Westwego, LA
6. 31 July 2012 at Westwego Tassin Senior Center in Westwego, LA
7. 21 May 2014 at Mathews Government Complex in Mathews, LA

Public notices for each meeting ran in local newspapers and press releases were disseminated to the media in advance of each meeting. The public was able to provide verbal



comments during the meetings, written comments after each meeting in person, by mail, and via [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov). Additional, public comments were accepted anytime during the IER process via [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov). The presentations given at all of these meetings can be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov).

The Draft PIER was distributed for a 30-day public review and comment period beginning April 4, 2014 and ending May 5, 2014. A public meeting was held in Lafourche Parish on May 21, 2014. Additional public comments were accepted through May 23, 2014. Analysis of the comments revealed nothing substantial that would prevent signature of the Decision Record (DR). The PIER 37 DR was signed by the CEMVN commander on June, 13 2014. Responses to all comments were generated and can be found in the final PIER 37. The Draft WBV PIER 37 Tier 1 EA was released for thirty-day public review and comment on October 13, 2015. Public and agency comments were addressed in Tier 1 of PIER #37. The FONSI for Tier 1 was signed on December 17, 2015. The additional project modifications are considered minor in extent. As such, additional public meetings are not anticipated.

## 5.2 Agency Coordination

The public will be notified through The Advocate of the USACE's application for a State Water Quality Certificate pursuant to Section 401 of the Department of Environmental Quality in that regard. A public notice will also be distributed by the USACE pursuant to Section 404 (b) (1) of the Clean Water Act. The notice will seek comments on the deposition of dredged material into waters of the United States. Comments on the EA can be submitted to Steve Roberts at U.S. Army Corps of Engineers, New Orleans District; Coastal Environmental Planning Section, P.O. Box P.O. Box 60267, New Orleans, LA 70118.

Preparation of this EA has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The following agencies, as well as other interested parties, are receiving notice that this EA is available.

U.S. Department of the Interior, Fish and Wildlife Service  
U.S. Environmental Protection Agency, Region VI  
U.S. Department of Commerce, National Marine Fisheries Service  
U.S. Natural Resources Conservation Service, State Conservationist  
Louisiana Coastal Protection and Restoration Authority  
Advisory Council on Historic Preservation  
Louisiana Department of Wildlife and Fisheries  
Louisiana Department of Natural Resources, Coastal Management Division  
Louisiana Department of Natural Resources, Coastal Restoration Division  
Louisiana Department of Environmental Quality  
Louisiana State Historic Preservation Officer  
Southeast Louisiana Flood Protection Authority West, West Jefferson Levee District  
Alabama-Coushatta Tribe of Texas  
Caddo Nation of Oklahoma  
Chitimacha Tribe of Louisiana  
Choctaw Nation of Oklahoma

Coushatta Tribe of Louisiana  
Quapaw Tribe of Oklahoma  
Mississippi Band of Choctaw Indians  
Jena Band of Choctaw Indians  
Seminole Tribe of Florida  
Seminole Nation of Oklahoma  
Tunica-Biloxi Tribe of Louisiana

MVN received the draft Coordination Act Report (CAR) from USFWS dated September 23, 2016. The Final CAR and WVA was received on October 21, 2016 (Appendix A). The results from the Yankee Pond (JLB14/JIB15) WVA analysis identified 55.54 AAHUs of total net benefits from the construction of 108 acres of fresh marsh. USFWS also provided 12 conservation recommendations, provided below with MVN's responses:

Recommendation 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., open water, marsh) impacted and mitigated.

CEMVN Response 1: Concur. The USACE would seek to avoid impacts to EFH and would coordinate with NMFS on any unavoidable impacts. All impacts are being maintained in the WBV HSDRRS GIS database. CEMVN received an email from NMFS with requirements per the Magnuson-Stevens Fishery Conservation Act on September 9, 2016. CEMVN responded by email dated September 30, 2016 concurring with their requirements aforementioned. They responded by email dated October 5, 2016 and stated CEMVN concurrence with the aforementioned conservation recommendations was compliant with the Act.

Recommendation 2: Impacts to wetland habitat (including SAV habitat) 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 caused by mitigation features through sizing (i.e., boundary adjustments) of the mitigation features in close coordination with the natural resource agencies.

CEMVN Response 2: Concur.

Recommendation 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.

CEMVN Response 3: Concur. Best management practices would be employed to minimize impacts to water quality from borrow dredging activities. The general guidelines for borrow pit design would be incorporated into the design to the maximum extent practicable. Close coordination with the natural resource agencies would continue on the mitigation project designs.

Recommendation 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.

CEMVN Response 4: The final WVA for Yankee Pond was completed and incorporated into the final CAR dated October 21, 2016. All mitigation for project-related impacts to fresh marsh is fulfilled by construction of JL1B5, JL1B5 and JL15 (See Section 6).

Recommendation 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, NPS, 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.

CEMVN Response 5: Concur. The USFWS and other resource agencies would be provided an opportunity to review and comment on the proposed HSDRRS mitigation plans during the project feasibility study and Pre-Construction Engineering and Design.

Recommendation 6: The Corps should continue to coordinate with the NPS 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).

CEMVN Response 6: Concur.

Recommendation 7: 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.

CEMVN Response 7: Project Partnership Agreements (PPAs) between the Federal government and the Non-Federal Sponsor (CPRA in this case) have been executed for the LPV and WBV HSDRRS projects, and these PPAs provide the requisite high level of confidence that the Non-Federal Sponsor will fulfill its obligations to operate and to maintain the HSDRRS mitigation projects. In the event that the Non-Federal Sponsor fails to perform, CEMVN has the right to complete, operate, maintain, repair, rehabilitate, or replace any project feature, including mitigation features. However, such an action would not relieve the Non-Federal Sponsor of its responsibility to meet its obligations and would not preclude the Federal government from pursuing any remedy at law or equity to ensure the Non-Federal sponsor's performance.

Recommendation 8: Any proposed change in mitigation features or plans should be coordinated in advance with the Service, NPS, NMFS, LDWF, EPA and LDNR.

CEMVN Response 8: Concur.

Recommendation 9: The Service recommends that the Corps maintain full responsibility for any 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.

CEMVN Response 9: Presently, the USACE intends to issue a Notice of Construction Supplemental Environmental assessment (EA) #548 entitled “Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Jefferson Parish, Louisiana Completion (NCC) for authorized Corps-constructed mitigation projects to the Non-Federal Sponsor (NFS) once construction is complete (e.g. project would shift from the “construction” phase to the “operation, maintenance, repair, replacement, and rehabilitation” or OMRR&R phase at this point). As stated in the monitoring plan in appendix D of PIER #37 Tier 1, on a cost shared basis, USACE will monitor completed mitigation until it meets its initial success criteria to determine whether additional construction, invasive species control and/or planting are necessary to achieve mitigation success. During that time, USACE will undertake additional actions necessary to achieve mitigation success in accordance with cost sharing applicable to the project and subject to the availability of funds. Once USACE determines that the mitigation has achieved initial success criteria, monitoring will be performed by the NFS as part of its OMRR&R obligations. If, after meeting initial success criteria, the mitigation fails to meet its intermediate and/or long-term ecological success criteria, USACE will consult with other agencies and the NFS to determine whether operational changes would be sufficient to achieve ecological success criteria. If, instead, structural changes are deemed necessary to achieve ecological success, USACE will implement appropriate contingency management measures in accordance with the contingency plan and subject to cost sharing requirements, availability of funding, and current budgetary and other guidance.

Recommendation 10: 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.

CEMVN Response 10: Concur. See appendices D and E of PIER #37 Tier 1.

Recommendation 11: The Corps should adhere to the NPS monitoring plan and provide that plan to the local sponsor.

CEMVN Response 11: Concur. The USACE will adhere to the monitoring plan presented in Appendix D of PIER # 37, TIER 1 that was developed in conjunction with the resource agencies including the NPS. This plan will also be provided to the local sponsor.

Recommendation 12: 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.

CEMVN Response 12: CEMVN will reinitiate coordination if the project changes or if the project is not initiated within one year of August 19, 2016.

In an email dated September 9, 2016 the National Marine Fisheries Service offered two comments in regards to the Magnuson-Stevens Fishery Conservation and Management Act:

1. A WVA should be completed through coordination with NMFS, U.S. Fish and Wildlife Service, and other interested natural resource agencies on the Yankee Pond mitigation to determine if the amount of created marsh is sufficient and determine the mitigation potential of banks to be considered when purchasing in kind credits for any remainder.

CEMVN Response: Concur. Final WVAs were completed in coordination with NMFS, U.S. Fish and Wildlife Service, and other interested natural resource agencies to ensure sufficient mitigation for WBV HSDRRS general and NPS fresh marsh impacts is achieved. The results from the final Yankee Pond (JL1B4/JL1B5) WVA analysis identified 55.54 AAHUs of total net benefits from construction of 108 acres of fresh marsh. The final WVA for the Geocrib marsh construction (JL15-identified in PIER #37 Tier 1) identified an additional benefit of 26.0 AAHUs from constructing 50.4 acres of fresh marsh. The combined benefit from Yankee Pond and the Geocrib (JL1B4, JL1B5, and JL15) equals 81.54 AAHUs. Because only 69.12 AAHUs are necessary to compensate for project-related impacts to fresh marsh, a surplus of fresh marsh benefits remains in the amount of 12.42 AAHUs for the project. As such, additional credits from a mitigation bank are not warranted.

2. The SEA and/or Finding of No Significant Impact should incorporate recommendations in the draft Fish and Wildlife Coordination Act Report to be developed for this SEA.

CEMVN Response: Recommendations in the final Fish and Wildlife Coordination Act Report have been incorporated into the final EA and this FONSI.

## **6.0 MITIGATION**

Modifications to the proposed action will allow implementation of the JL1B4 and JL1B5 fresh marsh mitigation features that would provide compensatory mitigation for impacts to Park and non-Park fresh marsh incurred during construction of the West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System. The results from the final Yankee Pond (JL1B4/JL1B5) WVA analysis identified 55.54 AAHUs of total net benefits from construction of 108 acres of fresh marsh. The final WVA for the Geocrib marsh construction (JL15-identified in PIER #37 Tier 1) identified an additional benefit of 26.0 AAHUs from constructing 50.4 acres of fresh marsh. The combined benefit from Yankee Pond and the Geocrib (JL1B4, JL1B5, and JL15) equals 81.54 AAHUs of fresh marsh. Because only 69.12 AAHUs are necessary to compensate for project-related impacts to fresh marsh, a surplus of fresh marsh benefits remains in the

amount of 12.42 AAHUs for the project. As such, additional credits from a mitigation bank are not warranted.

## **7.0 MITIGATION SUCCESS CRITERIA, MONITORING, REPORTING, AND CONTINGENCY MANAGEMENT**

An effective monitoring program is required (WRDA 2007, Section 2036) to determine if the project outcomes are consistent with the identified success criteria. The plan identifies success criteria and targets, a general schedule for the monitoring events and the specific content for the monitoring reports that measure progress towards meeting the success criteria. The purpose of contingency management (CM) activities in the life-cycle of the project is to address ecological and other uncertainties that could prevent successful implementation of a project. CM also establishes a framework for decision making that utilizes monitoring results and other information, as it becomes available, to update project knowledge and adjust management/mitigation actions. Hence, early implementation of CM and monitoring allows for a project that can succeed under a wide range of conditions and can be adjusted as necessary. Furthermore, careful monitoring of project outcomes both advances scientific understanding and helps adjust operations changes as part of an iterative learning process. Specific success criteria and monitoring for the NPS fresh marsh and the general fresh marsh were addressed in the monitoring plan found in appendix D to PIER #37 Tier 1 and have not changed.

The proposed mitigation action includes construction, with the non-Federal sponsor (NFS) responsible for operation and maintenance of functional portions of work as they are completed. On a cost shared basis, USACE will monitor completed mitigation until it meets its initial success criteria to determine whether additional construction, invasive species control and/or planting are necessary to achieve mitigation success. During that time, USACE will undertake additional actions necessary to achieve mitigation success in accordance with cost sharing applicable to the project and subject to the availability of funds. Once USACE determines that the mitigation has achieved initial success criteria, monitoring will be performed by the NFS as part of its OMRR&R obligations. If, after meeting initial success criteria, the mitigation fails to meet its intermediate and/or long-term ecological success criteria, USACE will consult with other agencies and the NFS to determine whether operational changes would be sufficient to achieve ecological success criteria. If, instead, structural changes are deemed necessary to achieve ecological success, USACE will implement appropriate contingency management measures in accordance with the contingency plan and subject to cost sharing requirements, availability of funding, and current budgetary and other guidance.

## **8.0 COMPLIANCE WITH ENVIRONMENTAL LAWS, REGULATIONS, AND GUIDANCE**

Environmental compliance for the proposed action would be achieved upon the following:

- coordination of the EA #548 and draft FONSI with appropriate agencies, organizations, and individuals for their review and comment; the public comment period began August 10, 2016 and concluded on September 10, 2016.

- Louisiana Department of Natural Resources (LDNR) concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program. Concurrence letter received Aug 4, 2016.
- Receipt of and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act recommendations; CEMVN is in receipt of Draft CAR dated September 23, 2016, USFWS recommendations have been accepted or resolved and responses are provided in Section 5.0, Coordination. The Final CAR was received October 21, 2016.
- Resolution of any Louisiana Department of Environmental Quality (LDEQ) comments on the air quality impact analysis documented in the EA #548. LDEQ offered no comment on the CEMVN determination that the project areas are in parishes that are in attainment of the NAAQS, and a conformity analysis is not required.
- USFWS concurrence with a determination of not likely to adversely affect Federally-listed threatened or endangered species, or their critical habitat, under the jurisdiction of USFWS. Concurrence received August 19, 2016.
- CEMVN received an email from NMFS with requirements per the Magnuson-Stevens Fishery Conservation Act on September 9, 2016. CEMVN responded by email dated September 30, 2016 concurring with their requirements and aforementioned. They responded by email dated October 5, 16 and stated CEMVN concurrence with the aforementioned conservation recommendations was compliant with the Act.
- Receipt of a State Water Quality Certificate from the Louisiana Department of Environmental Quality. Certificate 151207-02 was issued on August 10, 2016.
- Public notice for the Section 404(b)(1) Evaluation. The Section 404(b)(1) evaluation was released for a 30 public comment period concurrent with EA #548. The 404(b)(1) evaluation was signed on September 14, 2016.
- Louisiana State Historic Preservation Officer (SHPO) concurrence with a finding of no adverse effect on historic properties. Concurrence letter received September 7, 2016.
- Receipt of a “no historic properties affected” finding that included the APE from the federally-recognized Tribes. Consultation with these Tribes would continue and coordination of the proposed modifications to the undertaking is occurring concurrent with the 30-day public review period of the draft EA. The Caddo Nation of Oklahoma concurred with the determination of no adverse effect via email on August 30, 2016. The Jena Band of Choctaw Indians concurred with the determination of no adverse effect via email on August 16, 2016. The Choctaw Nation of Oklahoma concurred with the determination of no adverse effect via email on October 7, 2016

The FONSI would not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

## 9.0 CONCLUSION

The proposed modifications would allow for the compensatory mitigation for fresh marsh impacts that occurred both on and off JELA during construction of the WBV HSDRRS improvements. This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no significant adverse impact on the human and natural environment and that the proposed action is the environmentally-preferable alternative. Adverse impacts have been avoided and minimized to the extent possible.

## 10.0 PREPARED BY

Supplemental EA #548 and the associated draft FONSI were prepared by Steve Roberts, biologist, with relevant sections prepared by: Joe Musso - HTRW; Eric Williams and Dusty Pate (NPS), - Cultural Resources. The address of the preparers is: U.S. Army Corps of Engineers, Mississippi River Valley Regional Planning and Environmental Division South, MVN-PDN-CEC, P.O. Box 60267, New Orleans, LA 70160-0267. Mr. Pate can be reached at Jean Lafitte National Historic Park and Preserve, 419 Decatur Street, New Orleans, LA 70130.

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## 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. Supplemental EA #548 “Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Jefferson Parish, Louisiana.”

PROJECT DESCRIPTION. This mitigation project would involve the restoration of fresh marsh habitats for general fresh marsh and NPS impacts to fresh marsh. The JL1B4 project mitigating for NPS fresh marsh impacts and the JL1B5 mitigating for general fresh marsh impacts would be built together at Yankee Pond on JELA in Jefferson Parish. A portion of the borrow site for these projects is located in St. Charles Parish.

Mitigation features JL1B4 and JL1B5 have not changed since the original design, and would be combined and built in an open water portion of Yankee pond. The features would occupy approximately 112 acres (108 acres of marsh restoration and 3.8 acres of dikes), and would produce approximately 60.4 AAHUs of fresh marsh benefits. Changes to the project consist of an expansion of the borrow area from 53 acres to 112 acres, use of mechanical instead of hydraulic cutterhead dredge (which results in lower dike heights and lower initial target elevation since the material will be more compact), an increase in total dike footprint from 3.6 acres to 3.8 acres, 6.5 acres of access dredging in Lake Cataouatche and 4.5 acres of flotation dredging adjacent to the Bayou Segnette side of the marsh creation area (see Figures 1-4).

All access would be via state water bottom through Bayou Segnette, Lake Cataouatche, and/or Lake Salvador via the Gulf Intracoastal Waterway. Water depths are limited once the floating plant leaves the GIWW. With an approximate water surface at (+) 1.0 feet, the Contractor, in general would have a minimum of approximately 5 to 6 feet of draft throughout the proposed limits of marine access. However, flotation excavation is now required for an approximate 3,500 foot reach in Lake Cataouatche where it enters Bayou Segnette. This dredging reach would be to a maximum elevation of -6.0 feet with an 80 foot bottom width, resulting in a cut of approximately 2.5 feet and approximately 25,000 cubic yards of dredging. The material excavated for access from Lake Cataouatche to the entrance of Bayou Segnette would be placed adjacent to the access corridor (north side) and would be used to back fill the corridor at the conclusion of construction or would be hauled to the marsh creation site and used as fill.

Approximately 4.5 acres of flotation dredging adjacent to the side of the marsh creation area immediately fronting Bayou Segnette is also now required to allow material barges access for the placement of the sand base and stone paving necessary for retention dike construction. This approximate 3,300 foot reach of proposed flotation dredging would be restricted to a 60 foot width initiating 40 feet from the toe of the retention dike berm,

except at the very southern terminus of the flotation access where the flotation channel and the entrance into Yankee Pond intersect. This proposed dredging reach would be to a maximum elevation of -6.0 feet with a 60 foot bottom width, resulting in a total cut of approximately 2.5 feet and approximately 18,000 cubic yards of dredging. Material excavated along this shoreline would be cast into the marsh creation area. The excavated material would be placed adjacent to the access corridor (east side) and would be used to back fill the corridor at the conclusion of construction.

Retention dikes would be constructed along the perimeter of the dredge fill operation. Maximum 10 foot stability berms would be included. Dike heights would be to elevation +3.5 feet for the dike along Bayou Segnette and +3.0 feet for the dikes along the existing marsh and the keyhole canal. Borrow for these retention dikes would be obtained from the borrow source in Lake Cataouatche, and barged to the site. A sand base for the retention dikes along Bayou Segnette will be hauled in from a commercial source. The dike segment along Bayou Segnette will be paved with a 2-foot stone cap to elevation +3.0 feet.

The most substantial change concerning plans that were identified in PIER #37 Tier #1 EA concern the need to expand the original borrow area situated in Lake Cataouatche from 53 acres to 112 acres. Marsh restoration at this feature would now require approximately 1,100,000 cubic yards of material. The material would no longer be hydraulically dredged as originally described in Tier #1, but would now be dredged mechanically (with barge haul to the site) from Lake Cataouatche. It is anticipated that mechanical fill could be achieved by a single lift to elevation +3.0 feet. The borrow site would be situated a minimum 2000 feet from the lake. The borrow site would be approximately 1,890 feet by 2,590 feet (roughly 112.0 acres) with a maximum cut to elevation (-) 20 feet NAVD88. There are 2,260,000 cubic yards of material available in the borrow pit in Lake Cataouatche. Approximately 1,200,000 cubic yards of material are required for marsh creation and dike construction. Throughout the initial construction phase, project construction would be coordinated with the US Coast Guard to assure safe passage of recreational boaters during barge hauling of material.

It is estimated that the initial project construction activities discussed above (mobilization, dike construction, marsh fill, rock placement, demobilization) would require approximately 15 months. Once these activities are completed there would be an idle period of approximately 1 year to allow the marsh platform 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. the eastern 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. Full tidal interchange would occur along the keyhole canal located on the north boundary of the project. 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 25 feet, a bottom elevation no

greater than 0.0 feet NAVD88, and 1V:3H side slopes. At this phase of design, it was assumed that there would be one fish dip established for every 1,000 feet of armored dike (i.e. 1000 foot spacing).

In conjunction with the dike degrading efforts, trenasses (if not having naturally developed) could 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 (in and out). The acceptable trenasse width, if constructed in this fashion, would be the width of marsh buggy (approximately 10 to 12 feet). If the resulting depression is not adequate for minimal water flow, material may be excavated 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, fish dips, constructing trenasses) would take approximately 2 to 3 months. It is assumed that appropriate fresh marsh plant species would naturally colonize the marsh restoration feature; hence, no planting of the feature is proposed.

Additional activities that would occur during the project construction phase would include mitigation monitoring and reporting conducted in accordance with the applicable guidelines contained in Appendix D (i.e. monitoring and reporting necessary prior to transfer of monitoring responsibilities to the non-Federal sponsor). Consistent with the success criteria in Appendix D, if 85% the site does not colonize with native herbaceous species vegetate within 3 years, planting would be initiated as specified in the planting guidelines in Appendix D. Various activities would be necessary during the 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 as prescribed in Appendix D. Additional activities may need to be performed to ensure compliance with applicable mitigation success criteria (see Appendix D). The armored perimeter dike would likely need to be maintained once every 15 years through the addition of armoring (stone/rip-rap). Approximately 2,000 tons of stone may be required each 15 year maintenance cycle.

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

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

Preliminary<sup>1</sup>

Final<sup>2</sup>

A review of this project indicates that:

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
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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
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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
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N/A      Not Significant      Significant\*

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

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/hydro period.
- (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.

	X	
	X	
X		
	X	
X		



N/A      Not Significant      Significant\*

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

(6) Riffle and pool complexes.

x		
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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 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 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. These alterations are desired, and are considered to be beneficial effects of wetland restoration.

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 .....	x
(2) Hydrography in relation to known or anticipated sources of contaminants .....	_____
(3) Results from previous testing of the material or similar material in the vicinity of the project .....	_____
(4) Known, significant sources of persistent pesticides from land runoff or percolation .....	_____
(5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances .....	x
(6) Other public records of significant introduction of contaminants from industries, municipalities, or other sources .....	x
(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 .....	_____
(8) Other sources (specify) .....	x

Remarks: Other sources included conversations and email communications from USACE staff members from 6/29/2016 to 7/11/2016, including Joseph Musso, Jeff Corbino, Danny Wiegand, Jason Binet, Elizabeth Behrens and Steve Roberts

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

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 (Fill) Site Delineation (3230.11(f)).

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

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

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\*

Position: Civil/Environmental Engineer, Senior Biologist

Date: 07/11/2016

Evaluation reviewed by: Clyde Barre, Elizabeth Behrens

Position: Acting Hydraulics Section Supv. Civil Engineer; Acting CEMVN-PDN-CEP Section Chief

Date: 7/11/2016

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 ..... \_\_\_\_\_

9/14/16  
Date

  
Sandra Stiles  
Acting Chief, Environmental Planning Branch

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* |
| q. 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.

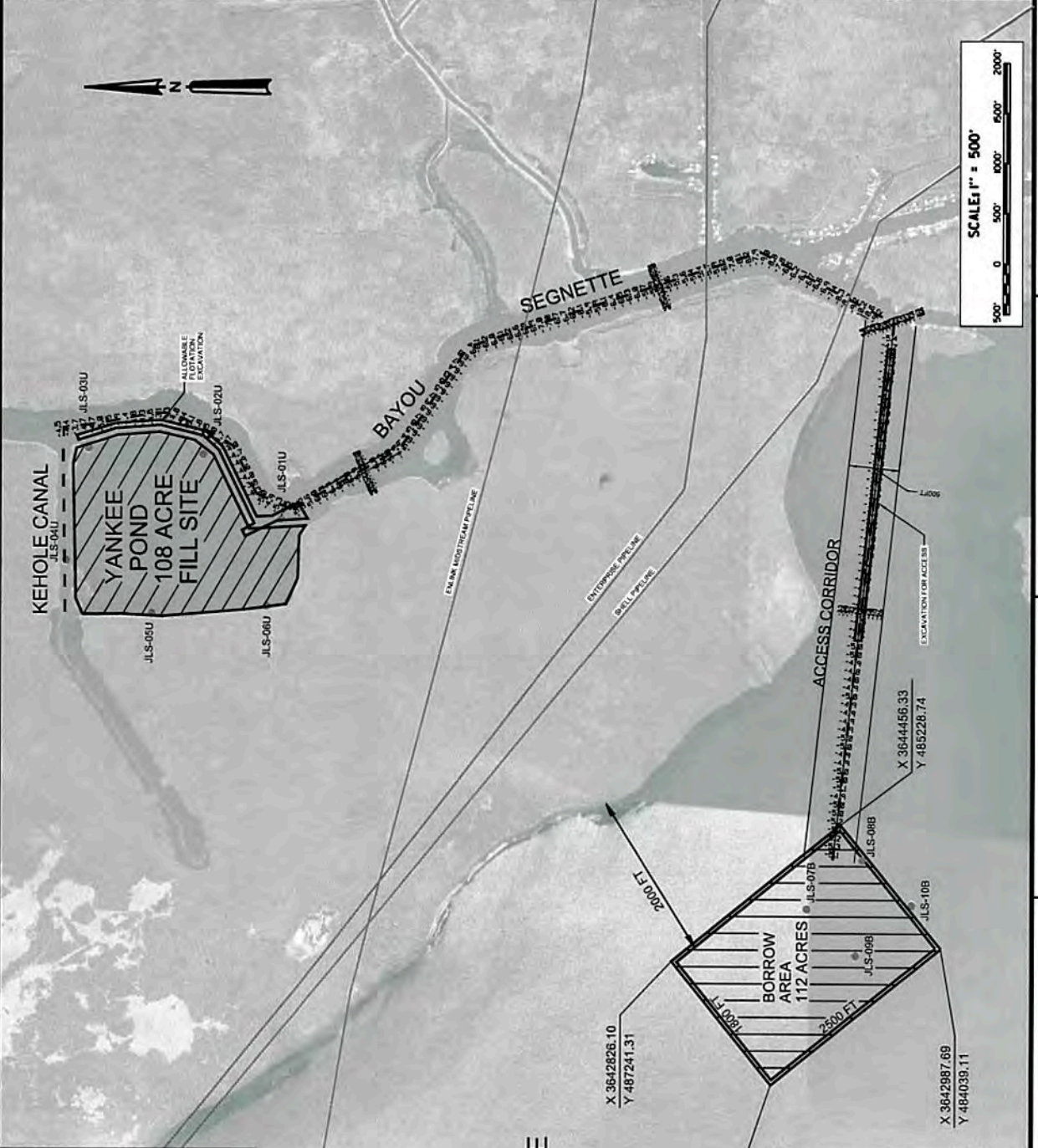
<sup>2</sup>Negative responses to one of the compliance criteria at this stage indicates that the proposed project does not comply with the guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the "short form" evaluation process 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: David A. Bates, P.E. (Civil & Environmental Engineer, State of LA P.E. # 24664; Steve Roberts, Environmental Manager

 MITIGATION FEATURE  ACCESS ROUTE  BORINGS (BORING LOGS LOCATED ON SHEETS B-002 AND B-003)  PIPELINES  ALLOWABLE FLOTATION EXCAVATION  PROJECT BORROW SITE	<b>LAKE CATAOUATCHÉ</b>  SEGNETTE BAYOU  KEHOLE CANAL  YANKEE POND 108 ACRE FILL SITE  BORROW AREA 112 ACRES  ACCESS CORRIDOR  EXCAVATION FOR ACCESS	U.S. ARMY CORPS OF ENGINEERS NEW ORLEANS DISTRICT NEW ORLEANS, LOUISIANA WASH CREATION AT JEFFERSON PARISH, LOUISIANA YANKEE POND ACCESS ED-15-038	SHEET IDENTIFICATION <b>CE-101</b>
---	--	---	--



**LEGEND**


-  MITIGATION FEATURE
-  ACCESS ROUTE
-  BORINGS (BORING LOGS LOCATED ON SHEETS B-002 AND B-003)
-  PIPELINES
-  ALLOWABLE FLOTATION EXCAVATION
-  PROJECT BORROW SITE

**NOTE:**

1. YANKEE POND PI POINTS LOCATED ON SHEET CE-104.
2. BARGE HAUL ACCESS SHALL BE THROUGH BAYOU SEGNETTE.
3. THE EXISTING NAVIGABLE INTERIOR BAYOU SHALL REMAIN OPEN FOR RECREATIONAL VESSELS DURING CONSTRUCTION.
4. THE WIDTH OF THE ACCESS THROUGH BAYOU SEGNETTE IS BANK TO BANK.
5. STAGING SHALL BE IN OPEN WATER AND DETERMINED BY THE CONTRACTOR.
6. BORROW PIT CORNER COORDINATES SHOWN REPRESENT MAXIMUM ALLOWABLE LIMITS OF LAKE BOTTOM IMPACT.
7. BORROW PIT DIMENSIONS SHOWN REPRESENT ANTICIPATED BOTTOM EDGE OF CUT FOR CUT PLAN PREPARATION.

1 2 3 4 5

SCALE 1" = 500'

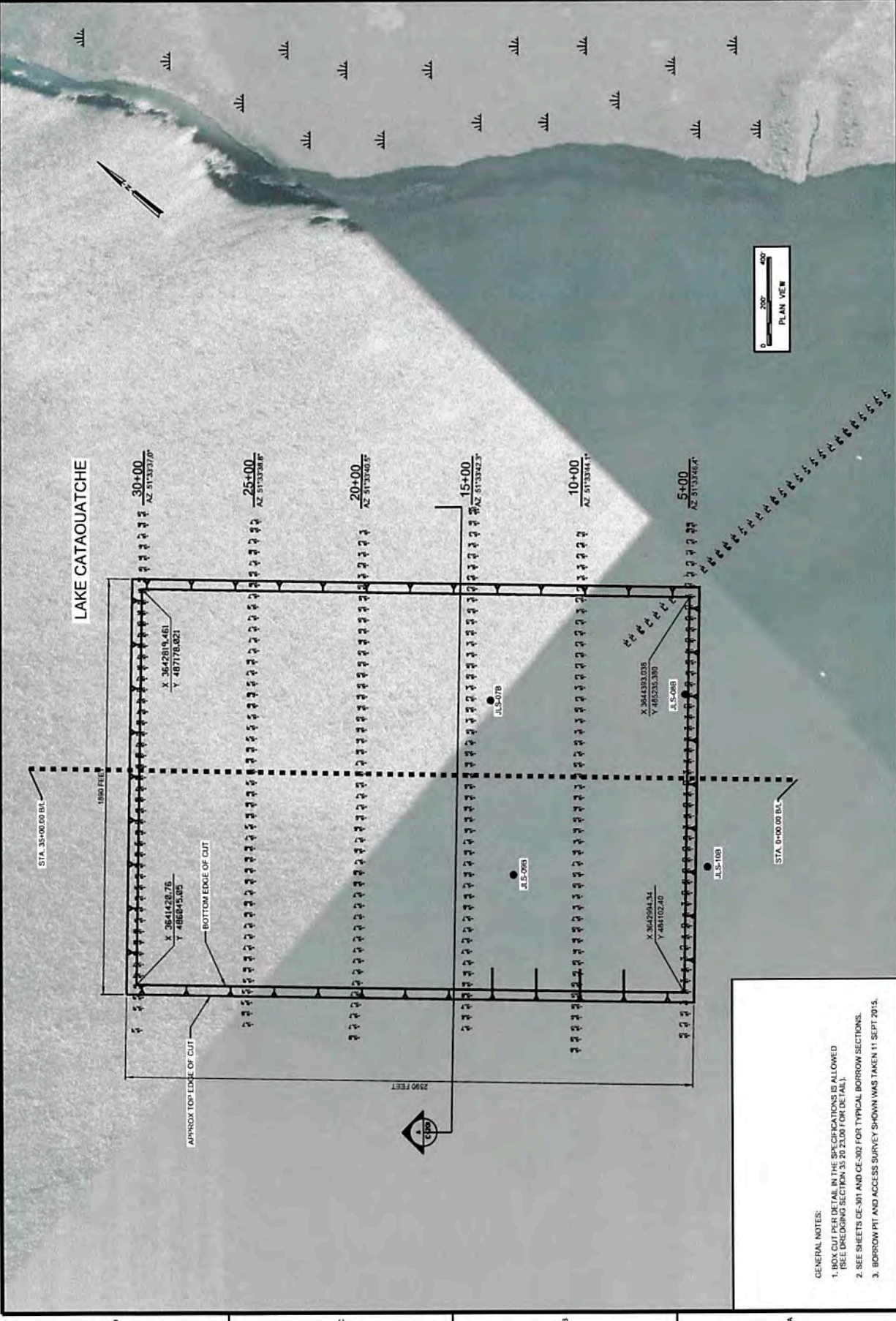


U.S. ARMY CORPS OF ENGINEERS  
NEW ORLEANS DISTRICT

NO.	DATE	DESCRIPTION	BY	CHECKED

PROJECT NO.	
DISTRICT	NEW ORLEANS DISTRICT
DATE	
SCALE	
DRAWN BY	
CHECKED BY	
APPROVED BY	
TITLE	

**U.S. ARMY CORPS OF ENGINEERS**  
NEW ORLEANS DISTRICT  
JEFFERSON PARISH, LOUISIANA  
YANKEE POND AND D-CMS  
BORROW SITE PLAN



**GENERAL NOTES:**

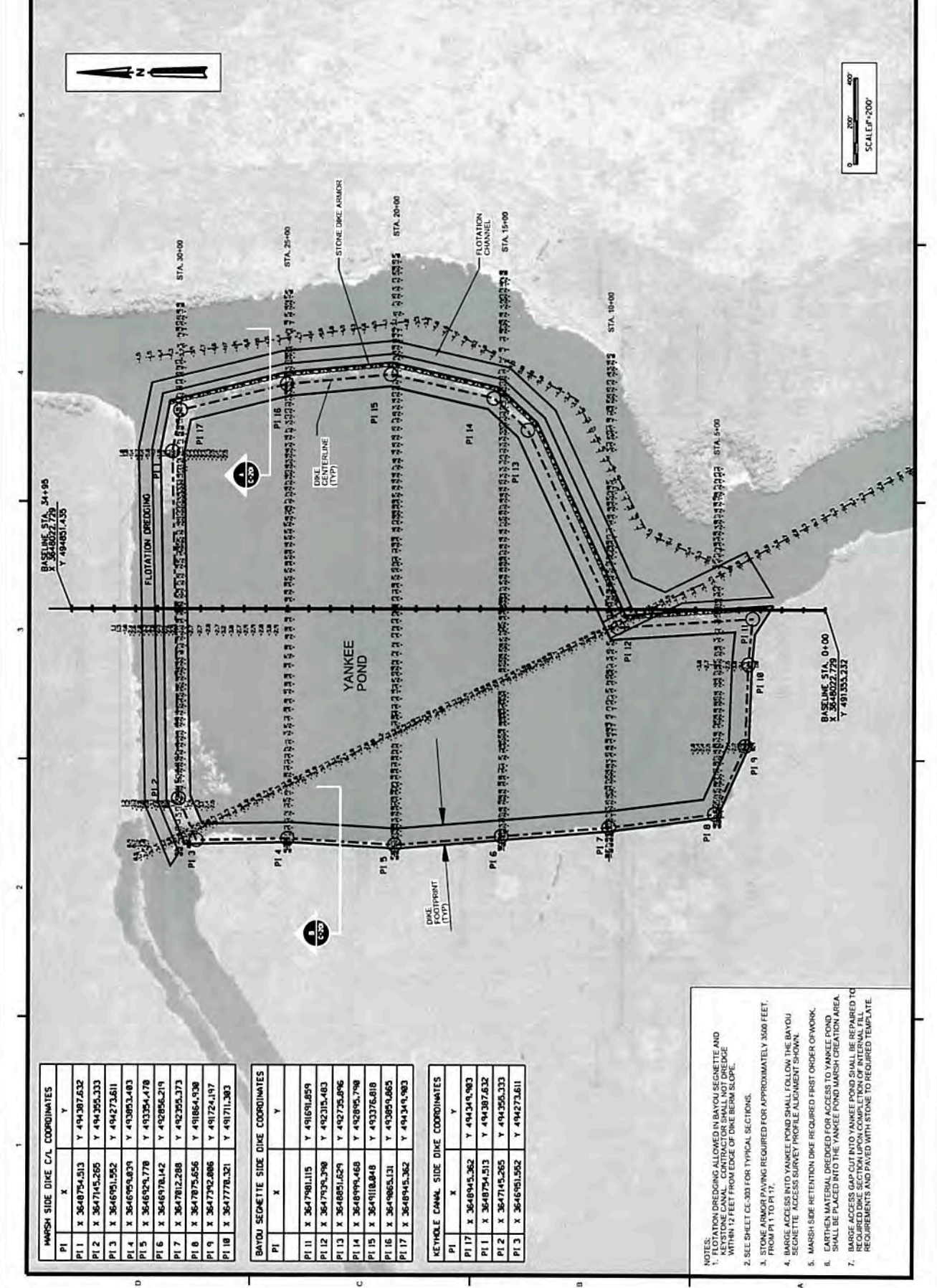
1. BOX CUT SKIN DETAIL IN THE SPECIFICATIONS IS ALLOWED (SEE DREDGING SECTION 35 20 23.00 FOR DETAIL).
2. SEE SHEETS CE-301 AND CE-302 FOR TYPICAL BORROW SECTIONS.
3. BORROW PIT AND ACCESS SURVEY SHOWN WAS TAKEN 11 SEPT 2015.

NO.	DESCRIPTION	DATE	BY	CHECKED BY	APPROVED BY

NO.	DESCRIPTION	DATE	BY	CHECKED BY	APPROVED BY

NEW ORLEANS DISTRICT  
NEW ORLEANS, LOUISIANA  
JEFFERSON PARK, LOUISIANA  
MARSH CREATION AT  
YANKEE POND AND DED-CHN  
PLAN VIEW YANKEE POND

SHEET IDENTIFICATION  
CE-104



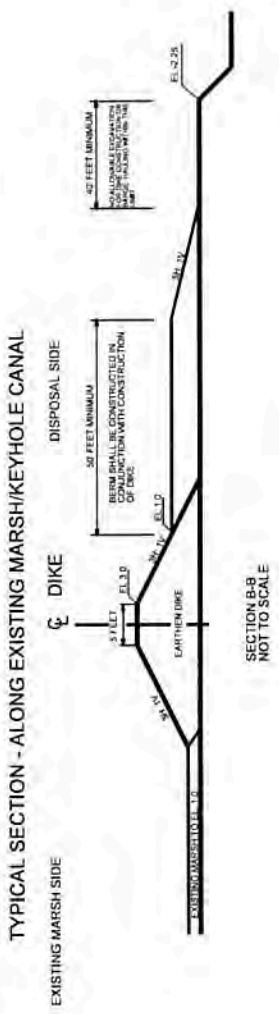
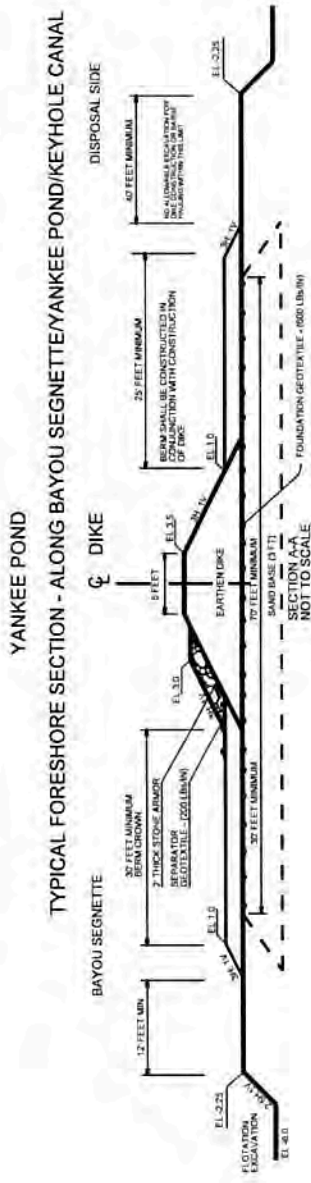
PI	X	Y
PI 1	3648754.513	494387.632
PI 2	3647145.265	494355.333
PI 3	3646951.552	494273.611
PI 4	3646953.839	493953.483
PI 5	3646929.778	493954.478
PI 6	3646978.142	492956.219
PI 7	3647812.288	492955.373
PI 8	3647875.656	491864.438
PI 9	3647792.886	491724.197
PI 10	3647778.321	491711.303

PI	X	Y
PI 11	3647981.115	491691.859
PI 12	3647935.398	492315.483
PI 13	3646851.629	492735.896
PI 14	3646994.468	492895.798
PI 15	3649118.848	493376.818
PI 16	3649885.131	493891.685
PI 17	3648945.362	494344.983

PI	X	Y
PI 17	3648945.362	494344.983
PI 1	3648754.513	494387.632
PI 2	3647145.265	494355.333
PI 3	3646951.552	494273.611

NOTES:  
 1. FLOTATION DREDGING ALLOWED IN BAYOU SEGNETTE AND KEYHOLE CANALS. CONTRACTOR SHALL NOT DREDGE WITHIN 14 FEET FROM EDGE OF DIKE BEHIND SLOPE.  
 2. SEE SHEET CE-303 FOR TYPICAL SECTIONS.  
 3. STONE ARMOR PAVING REQUIRED FOR APPROXIMATELY 3500 FEET FROM PI 1 TO PI 17.  
 4. BARGE ACCESS INTO YANKEE POND SHALL FOLLOW THE BAYOU SEGNETTE ACCESS SURVEY PROFILE ALIGNMENT SHOWN.  
 5. MARSH SIDE RETENTION DIKE REQUIRED FIRST ORDER OF WORK.  
 6. CARTON MATERIAL DREDGED FOR ACCESS TO YANKEE POND SHALL BE PLACED INTO THE YANKEE POND MARSH CREATION AREA.  
 7. BARGE ACCESS GAP CUT INTO YANKEE POND SHALL BE REPAIRED TO ORIGINAL PROFILE AND PAVED WITH STONE TO REQUIRED TEMPLATE.

		PROJECT NO. 10-00000000 CONTRACT NO. 10-00000000 DRAWING NO. 10-00000000	
DATE: 10/15/10 DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN APPROVED BY: J. B. BROWN		PROJECT LOCATION: NEW ORLEANS, LOUISIANA NEW ORLEANS DISTRICT NEW ORLEANS OFFICE	
THEORETICAL SECTION YANKEE POND DIKE JEFFERSON PARISH, LOUISIANA YANKEE POND AND BAYOU SEGNETTE WMA #38000000 WMA #38000000		U.S. ARMY CORPS OF ENGINEERS NEW ORLEANS DISTRICT NEW ORLEANS OFFICE PROJECT NO. 10-00000000 CONTRACT NO. 10-00000000 DRAWING NO. 10-00000000	
SHEET IDENTIFICATION <b>CE-201</b>			



NOT TO SCALE

1 2 3 4 5

D C B A K



## Roberts, Steve W MVN

---

**From:** Bruser, B. Aven MVN  
**Sent:** Friday, October 28, 2016 2:16 PM  
**To:** Roberts, Steve W MVN  
**Cc:** Sims, Christopher N (Nick) MVN; Stiles, Sandra E MVN; Behrens, Elizabeth MVN; Bruser, B. Aven MVN  
**Subject:** RE: Final legal sufficiency for EA #548 (Yankee Pond) (UNCLASSIFIED)  
**Attachments:** EA 548 -FinalDQCd.docx; FONSI EA 548 Final.docx

I have reviewed the attached EA and FONSI and they are **legally sufficient**.

Thanks,

B. Aven Bruser  
Assistant District Counsel  
Office of Counsel  
US Army Corps of Engineers, New Orleans District  
504-862-1326

Privileged and Confidential  
Attorney Work Product  
Do Not Copy, Do Not Release

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

**From:** Roberts, Steve W MVN  
**Sent:** Friday, October 28, 2016 12:12 PM  
**To:** Bruser, B. Aven MVN <Bonny.A.Bruser@usace.army.mil>  
**Cc:** Sims, Christopher N (Nick) MVN <Christopher.N.Sims@usace.army.mil>; Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil>; Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil>  
**Subject:** RE: Final legal sufficiency for EA #548 (Yankee Pond) (UNCLASSIFIED)

Aven,

Please see updates...thanks.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517

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

**From:** Bruser, B. Aven MVN  
**Sent:** Thursday, October 27, 2016 2:51 PM  
**To:** Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil>  
**Cc:** Sims, Christopher N (Nick) MVN <Christopher.N.Sims@usace.army.mil>; Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil>; Bruser, B. Aven MVN <Bonny.A.Bruser@usace.army.mil>  
**Subject:** RE: Final legal sufficiency for EA #548 (Yankee Pond) (UNCLASSIFIED)

Revised response to no. 4 is fine.

For no. 12, I recommend deleting "Concur." The comment says to reinitiate coordination now AND in a year if the project is not constructed. By concurring we are saying that we will re-initiate coordination NOW. There is no reason for us to do that so why would we say that we would do that? The remaining sentence is fine.

Also not resolved - The coordination list states that we will achieve environmental compliance when:

- Receipt and acceptance or resolution of all Louisiana Department of Environmental Quality (LDEQ) comments on the air quality impact analysis documented in the EA #548.

Steve - if I am reading your email from yesterday correctly, we did not get any comments from DEQ on the air quality analysis. Please add a statement to this effect to this coordination point.

Thanks,

B. Aven Bruser  
Assistant District Counsel  
Office of Counsel  
US Army Corps of Engineers, New Orleans District  
504-862-1326

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Attorney Work Product  
Do Not Copy, Do Not Release

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

From: Roberts, Steve W MVN  
Sent: Thursday, October 27, 2016 9:29 AM  
To: Bruser, B. Aven MVN <Bonny.A.Bruser@usace.army.mil>  
Cc: Sims, Christopher N (Nick) MVN <Christopher.N.Sims@usace.army.mil>; Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil>  
Subject: RE: Final legal sufficiency for EA #548 (Yankee Pond) (UNCLASSIFIED)

Aven,

Please see updates to Recommendations 4 and 12. Thanks.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517

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

From: Roberts, Steve W MVN  
Sent: Wednesday, October 26, 2016 5:47 PM  
To: Bruser, B. Aven MVN <Bonny.A.Bruser@usace.army.mil>; Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil>  
Cc: Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil>; Boe, Richard E MVN <Richard.E.Boe@usace.army.mil>; Sims, Christopher N (Nick) MVN <Christopher.N.Sims@usace.army.mil>  
Subject: RE: Final legal sufficiency for EA #548 (Yankee Pond) (UNCLASSIFIED)

**ESA MEMO**

To: David Walther, USFWS

646 Cajundome Blvd., Suite 400

Lafayette, LA 70506

Fax: (337) 291-3139

From: Steve Roberts

FAX: (504) 862-2517

Date: July 21, 2016

**Subject:** ESA coordination for Supplemental EA #548 "Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Jefferson Parish, Louisiana."

Dear Mr. Walther:

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), is preparing to perform the work described in Draft Supplemental EA #548 entitled "Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Jefferson Parish, Louisiana." We are requesting concurrence with our threatened and endangered species determination of "not likely to adversely affect". Your office concurred that the previous design of this project as presented in PIER #37 Tier 1 was not likely to adversely affect threatened or endangered species nor their critical habitat on July 7, 2015.

**Project Description**

As proposed the modified mitigation project would continue to involve the restoration of fresh marsh habitats for general fresh marsh (JL1B5) and NPS impacts to fresh marsh (JL1B4) as addressed by PIER #37 Tier 1. The two wetland creation projects would be combined and constructed in Yankee Pond on JEL.A, with construction activities occurring in St. Charles Parish and Jefferson Parish, Louisiana (**Figure 1**).

Engineering modifications to the project that were not covered under the PIER #37, Tier 1 EA are addressed in this supplemental EA. Proposed modifications include the expansion of the borrow area in Lake Cataouatche, the use of a mechanical dredge instead of a hydraulic cutterhead dredge, a small increase in the footprint of retention dikes, and additional access dredging (i.e., deepening) for vessels to access the borrow area and the marsh restoration sites. The size of wetland creation from mitigation projects JL1B4 and JL1B5 have not changed since the PIER 37, Tier 1 EA and together the features would occupy approximately 108 acres, and

*(Vertical text on the right side of the page, possibly a routing slip or signature block)*  
Date: 7/21/2016  
By: Steve Roberts  
Title: Wetland Biologist  
Signature: [Handwritten Signature]



## Roberts, Steve W MVN

---

**From:** Roberts, Steve W MVN  
**Sent:** Wednesday, October 26, 2016 11:53 AM  
**To:** Stiles, Sandra E MVN; Behrens, Elizabeth MVN  
**Cc:** Walther, David  
**Subject:** Geocrib benefits

All,

I just spoke to David Walther and informed him the final marsh platform for the geocrib site is 50.4 acres, and not 51.8 acres. After entering that into the WVA model over the phone he informed me that the final benefits achieved from the geocrib will be reduced from 26.72 AAHUs to 26.0 AAHUs. I will incorporate these new numbers and pass to Sandy for final DQC before OC review.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517



## Roberts, Steve W MVN

---

**From:** Patrick Williams - NOAA Federal <patrick.williams@noaa.gov>  
**Sent:** Wednesday, October 05, 2016 9:21 AM  
**To:** Roberts, Steve W MVN  
**Cc:** Stiles, Sandra E MVN; Behrens, Elizabeth MVN; Walther, David; Richard Hartman - NOAA Federal  
**Subject:** Re: [EXTERNAL] SEA 548  
**Attachments:** 20160923\_\_\_DFCAR\_LFOtoNOD\_EA548-1.pdf

Steve,

thank you for the reply.

CEMVN's concurrence with the National Marine Fisheries Service's two EFH conservation recommendations is noted and appreciated. As it relates to EFH conservation recommendation number two, please note Service Positions and Recommendations three (and Appendix A) and seven in the Draft Fish and Wildlife Coordination Act dated September 23, 2016. Specifically, dissolved oxygen monitoring of the borrow area is requested by reference to Appendix A (i.e., item nine) and more importantly if the USACE is unable to fulfill the financial requirements the USACE should provide the necessary funds to ensure mitigation obligations are met. This is proactively brought to CEMVN's attention prior to signature of the FONSI to ensure CEMVN's understanding of obligations associated with the concurrence and to inquire how USACE will ensure adequate funding to meet all mitigation needs.

Consistent with Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act and NMFS' implementing regulations at 50 CFR 600.920(k), your office must provide a substantive response to NMFS justifying the reasons for not implementing our EFH conservation recommendations if the USACE determines concurrence is no longer possible. If the USACE amends their position on the EFH consultation, such a response must be provided 10-days prior to final approval of the action (i.e., signature of the FONSI).

If there are questions, please contact me to continue cooperative collaboration on HSDRRS mitigation.

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

From: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> >  
Date: Wed, Oct 5, 2016 at 7:36 AM  
Subject: RE: [EXTERNAL] SEA 548  
To: Patrick Williams - NOAA Federal <patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> >

Hi Pat,

Please confirm that you received this and that we are on schedule for a 10 day response? Many thanks!

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517>

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

From: Roberts, Steve W MVN  
Sent: Friday, September 30, 2016 12:44 PM  
To: 'Patrick Williams - NOAA Federal' <patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> >  
Cc: Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil <mailto:Elizabeth.H.Behrens@usace.army.mil> >;  
Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil <mailto:Sandra.E.Stiles@usace.army.mil> >  
Subject: FW: [EXTERNAL] SEA 548

Pat,

Apologies, I forgot to advise that we concur with your 2 recommendations.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517>

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

From: Behrens, Elizabeth MVN  
Sent: Wednesday, September 14, 2016 5:22 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> >  
Subject: RE: [EXTERNAL] SEA 548

We would agree to both of these things. We can't sign the FONSI until we have the final CAR anyways. You just need to be ready to adjust the EA as per any recommendations that changed since the draft CAR. I'm assuming we got a draft CAR, right? When you talk with Dave, if he's not done with the final CAR see if he can at least send you the recommendations so you can work on getting them into the document and be ready to route for signature once he gets the final to you.

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

From: Roberts, Steve W MVN  
Sent: Monday, September 12, 2016 10:20 AM  
To: Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil <mailto:Elizabeth.H.Behrens@usace.army.mil> >  
Subject: FW: [EXTERNAL] SEA 548

Please see comments below and let me know your thoughts. Thanks.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517>

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

From: Patrick Williams - NOAA Federal [mailto:patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> ]  
Sent: Friday, September 09, 2016 12:03 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> >  
Cc: Swafford, Rusty <rusty.swafford@noaa.gov <mailto:rusty.swafford@noaa.gov> >; Richard Hartman - NOAA Federal <Richard.Hartman@noaa.gov <mailto:Richard.Hartman@noaa.gov> >; Noah Silverman - NOAA Federal <noah.silverman@noaa.gov <mailto:noah.silverman@noaa.gov> >; David Dale - NOAA Federal <david.dale@noaa.gov <mailto:david.dale@noaa.gov> >; Walther, David <david\_walther@fws.gov <mailto:david\_walther@fws.gov> >; Kyle Balkum <kbalkum@wlf.la.gov <mailto:kbalkum@wlf.la.gov> >; Chris Allen (CPRA) <Chris.Allen@la.gov



<mailto:Chris.Allen@la.gov> >; Stiles, Sandra E MVN <Sandra.E.Stiles@usace.army.mil  
<mailto:Sandra.E.Stiles@usace.army.mil> >; Keeler, Barbara <Keeler.Barbara@epa.gov  
<mailto:Keeler.Barbara@epa.gov> >  
Subject: [EXTERNAL] SEA 548

Steve,

The NOAA's National Marine Fisheries Service received the Supplemental Environmental Assessment #548 (SEA #548) entitled "Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Final Environmental Assessment and Assessment of Effect, West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System, Jefferson Parish, Louisiana" by your electronic mail dated August 22, 2016. This document supplements Programmatic Individual Environmental Report #37 and its Tier 1 Environmental Assessment. Supplements covered in SEA #548 include expanding the borrow area in Lake Cataouatche by 59 acres, use of a mechanical instead of a hydraulic dredge for borrow and access dredging, and increasing the footprint of containment dikes. The features continue to pertain to mitigation for fresh marsh impacts (general and on the National Park) with the West Bank and Vicinity Hurricane Surge Damage Risk Reduction System.

A Wetland Value Assessment (WVA) based on advanced design details has not been completed to determine if the proposed Yankee Pond marsh creation mitigation is adequate or identify any remainder that would be required with purchasing in kind credits from a mitigation bank under the proposed plan. Use of a mitigation bank is an acceptable option provided determination of the mitigation potential (acres/Average Annual Habitat Unit) of the bank to offset the project impacts is coordinated with interested natural resource agencies. Because this work is ongoing, a Fish and Wildlife Coordination Act has not be drafted or reviewed for the SEA.

The NMFS has a "findings" with the New Orleans District (NOD) on the fulfillment of coordination requirements under provisions of the Magnuson-Stevens Fishery Conservation and Management Act. In those findings, the NOD and NMFS agreed to complete EFH coordination requirements for federal civil works projects through our review and comment on National Environmental Policy Act documents prepared for those projects. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

1. A WVA should be completed through coordination with NMFS, U.S. Fish and Wildlife Service, and other interested natural resource agencies on the Yankee Pond mitigation to determine if the amount of created marsh is sufficient and determine the mitigation potential of banks to be considered when purchasing in kind credits for any remainder.
2. The SEA and/or Finding of No Significant Impact should incorporate recommendations in the draft Fish and Wildlife Coordination Act Report to be developed for this SEA.

We appreciate the opportunity to review and comment on the draft SEA.

On Wed, Aug 24, 2016 at 3:00 PM, Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil  
<mailto:Steve.W.Roberts@usace.army.mil> <mailto:Steve.W.Roberts@usace.army.mil  
<mailto:Steve.W.Roberts@usace.army.mil> > > wrote:

Pat,

September 10, thanks.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517> <tel:504-862-2517 <tel:504-862-2517> >

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

From: Patrick Williams - NOAA Federal [mailto:patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> <mailto:patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> > ]  
Sent: Wednesday, August 24, 2016 1:31 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> > >  
Subject: [EXTERNAL] Re: FW: SEA 548

Steve,

when are comments due?

thanks

On Mon, Aug 22, 2016 at 1:03 PM, Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil > > > > > wrote:

Hi Pat, here you go!

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517> <tel:504-862-2517 <tel:504-862-2517> > <tel:504-862-2517 <tel:504-862-2517 <tel:504-862-2517 <tel:504-862-2517 > > >

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

From: Behrens, Elizabeth MVN  
Sent: Monday, August 22, 2016 12:28 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil > > > > >

Cc: Patrick.Williams@noaa.gov <mailto:Patrick.Williams@noaa.gov> <mailto:Patrick.Williams@noaa.gov>  
<mailto:Patrick.Williams@noaa.gov> > <mailto:Patrick.Williams@noaa.gov <mailto:Patrick.Williams@noaa.gov>  
<mailto:Patrick.Williams@noaa.gov <mailto:Patrick.Williams@noaa.gov> > >  
Subject: SEA 548

Could you please send an electronic version of the draft SEA to Pat? Thanks,

Libby

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

--

Patrick Williams  
NOAA's National Marine Fisheries Service  
Habitat Conservation Division  
(225)389-0508 ext 208 <tel:%28225%29389-0508%20ext%20208> office

--

Patrick Williams  
NOAA's National Marine Fisheries Service  
Habitat Conservation Division  
(225)389-0508 ext 208 <tel:%28225%29389-0508%20ext%20208> office

--

Patrick Williams  
NOAA's National Marine Fisheries Service  
Habitat Conservation Division  
(225)389-0508 ext 208 office

## Roberts, Steve W MVN

---

**From:** Patrick Williams - NOAA Federal <patrick.williams@noaa.gov>  
**Sent:** Friday, September 09, 2016 12:03 PM  
**To:** Roberts, Steve W MVN  
**Cc:** Swafford, Rusty; Richard Hartman - NOAA Federal; Noah Silverman - NOAA Federal; David Dale - NOAA Federal; Walther, David; Kyle Balkum; Chris Allen (CPRA); Stiles, Sandra E  
**Subject:** [EXTERNAL] SEA 548

Steve,

The NOAA's National Marine Fisheries Service received the Supplemental Environmental Assessment #548 (SEA #548) entitled "Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features, Final Environmental Assessment and Assessment of Effect, West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System, Jefferson Parish, Louisiana" by your electronic mail dated August 22, 2016. This document supplements Programmatic Individual Environmental Report #37 and its Tier 1 Environmental Assessment. Supplements covered in SEA #548 include expanding the borrow area in Lake Cataouatche by 59 acres, use of a mechanical instead of a hydraulic dredge for borrow and access dredging, and increasing the footprint of containment dikes. The features continue to pertain to mitigation for fresh marsh impacts (general and on the National Park) with the West Bank and Vicinity Hurricane Surge Damage Risk Reduction System.

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<mailto:Steve.W.Roberts@usace.army.mil> > wrote:

Pat,

September 10, thanks.

Steve Roberts  
Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517>

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

From: Patrick Williams - NOAA Federal [mailto:patrick.williams@noaa.gov <mailto:patrick.williams@noaa.gov> ]  
Sent: Wednesday, August 24, 2016 1:31 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> >  
Subject: [EXTERNAL] Re: FW: SEA 548

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when are comments due?

thanks

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<mailto:Steve.W.Roberts@usace.army.mil> > > wrote:

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Environmental Manager  
New Orleans District  
504-862-2517 <tel:504-862-2517> <tel:504-862-2517 <tel:504-862-2517> >

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

From: Behrens, Elizabeth MVN  
Sent: Monday, August 22, 2016 12:28 PM  
To: Roberts, Steve W MVN <Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil>  
<mailto:Steve.W.Roberts@usace.army.mil <mailto:Steve.W.Roberts@usace.army.mil> > >  
Cc: Patrick.Williams@noaa.gov <mailto:Patrick.Williams@noaa.gov> <mailto:Patrick.Williams@noaa.gov  
<mailto:Patrick.Williams@noaa.gov> >  
Subject: SEA 548

Could you please send an electronic version of the draft SEA to Pat? Thanks,

Libby

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

--

Patrick Williams  
NOAA's National Marine Fisheries Service  
Habitat Conservation Division  
(225)389-0508 ext 208 <tel:%28225%29389-0508%20ext%20208> office

--

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NOAA's National Marine Fisheries Service  
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(225)389-0508 ext 208 <tel:%28225%29389-0508%20ext%20208> office







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

August 4, 2016

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

RE: **C20140014 mod 03**, Coastal Zone Consistency  
**New Orleans District, Corps of Engineers**  
Direct Federal Action  
Changes to two mitigation projects, JL1B4 and JL1B5, partially located in Jean Lafitte  
NHPP  
**Jefferson Parish, Louisiana**

Dear Mr. Roberts:

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: Dave Butler, LDWF  
Frank Cole, OCM  
Jason Smith, Jefferson





JOHN BEL EDWARDS  
GOVERNOR

State of Louisiana  
DEPARTMENT OF WILDLIFE AND FISHERIES

CHARLES J. MELANCON  
SECRETARY

August 29, 2016

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: EA #548(Supplemental)*  
*Applicant: U.S. Army Corps of Engineers-New Orleans District*  
*Notice Date: August 10, 2016*

Dear Ms. Exnicios:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced Public Notice for modifications to fresh marsh mitigation projects approved in the Programmatic Individual Environmental Report #37, Tier 1EA (PIER #37, Tier 1 EA) entitled Jean Lafitte National Historical Park and Preserve Mitigation Feature, Final Environmental Assessment and National Historic Preservation Act Assessment of Effects, West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System Mitigation, Jefferson Parish, Louisiana. Based upon this review, the following has been determined:

LDWF has no objection to the modifications proposed for marsh creation efforts approved under the PIER #37, Tier 1 EA.

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 Chris Davis at 225-765-2642 should you need further assistance.

Sincerely,

  
Kyle F. Balkum  
Biologist Director

zc/cm



JOHN BEL EDWARDS  
GOVERNOR



CHUCK CARR BROWN, Ph.D.  
SECRETARY

**State of Louisiana**  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES

August 10, 2016

Mr. Steve Roberts  
US Army Corps of Engineers, New Orleans District  
Regional Planning and Environment Division South  
Environmental Compliance Branch  
CEMVN-PDC-CEC  
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 Revision  
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 for design revisions for Jean Lafitte national Historical Park and Preserve marsh mitigation features in Jefferson Parish.

The information provided in the application received August 2, 2016, 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 concludes the discharge of fill material will not violate water quality standards as provided for in LAC 33:IX.Chapter 11. Therefore, LDEQ hereby amends 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 blue ink, appearing to read "Scott Guilliams".

Scott Guilliams  
Administrator  
Water Permits Division

c: IO-W



**From:** [Hughes, Guy](#)  
**To:** [DCRT Section 106](#)  
**Subject:** JELA HSDRRS Supplemental EA and Assessment of Effects  
**Date:** Monday, August 15, 2016 5:26:24 PM  
**Attachments:** [SHPO\\_WBV\\_HSDRRS\\_EA\\_548\\_NOAforNHPA20160815.pdf](#)  
[EA 548 -Release.pdf](#)

---

Louisiana State Historic Preservation Officer  
Mr. Phil Boggan  
Baton Rouge, LA 70804

Attention: 106 Review

Dear SHPO,

We previously communicated on this project with our scoping letter June 3, 2015, and we provided you opportunity to comment and consult upon the U.S. Army Corps of Engineers New Orleans District and Jean Lafitte National Historical Park and Preserve Mitigation Features, Programmatic Individual Environmental Report (PIER) #37, Tier 1, on October 13, 2015.

We are continuing to inform you on this project that has required a Supplemental Environmental Assessment and Assessment of Effects - PEPC 66675.

The Corps required a supplemental EA due to design and engineering changes to the open water to fresh marsh mitigation proposed feature in Yankee Pond.

The change that required the supplement were modifications to the area of potential affect. The changes involve open water areas inside and outside the park.

If you have any questions or wish to consult on this project, please contact me.


Sincerely,

Guy D. Hughes

--

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

No known historic properties will be affected by this undertaking. Therefore, our office has no objection to the implementation of this project. This effect determination could change should new information come to our attention.



Phil Boggan  
State Historic Preservation Officer

Date

09/07/2016



## 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

August 15, 2016

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

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

Dear Mr. Boggan:

The National Park Service (NPS) and the U.S. Army Corps of Engineers New Orleans District (CEMVN) propose to modify previously planned features designed to compensate for impacts to fresh marsh, swamp, and bottomland hardwoods on Jean Lafitte National Historical Park and Preserve (JELA) and the Environmental Protection Agency's Bayou aux Carpes 404c area as well as general fresh marsh in the WBV basin, that resulted from the construction of the West Bank and Vicinity (WBV) Hurricane & Storm Damage Risk Reduction System. The originally proposed undertaking and project features were described in Programmatic Individual Environmental Report (PIER) #37, TIER 1 entitled "*Jean Lafitte National Historical Park and Preserve (JELA) Mitigation Features, Jefferson Parish, Louisiana*". Our letter dated October 13, 2015 (enclosed) provided information for your review of PIER #37 TIER 1 and proposed a finding of "*no adverse effect*" to historic properties.

The CEMVN and NPS have developed a joint supplemental Environmental Assessment (EA) to the October 2015 PIER #37 Tier 1 entitled "*Supplemental Environmental Assessment #548 Design Revisions for Jean Lafitte National Historical Park and Preserve Marsh Mitigation Features Final Environmental Assessment and Assessment of Effect West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System, Jefferson Parish, Louisiana*" to describe the effects of the proposed project changes on the human environment, and to provide the public with an opportunity to comment. The EA supplements the PIER #37, TIER 1 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 undertaking would lead to changes to fresh marsh restoration project features JL1B4 and JL1B5 located in Yankee Pond, the expansion of the proposed borrow area in Lake Cataouatche, 6.5-acres of access dredging in Lake Cataouatche from the borrow area to Bayou Segnette, and 4.5 acres of floatation dredging adjacent to the Bayou Segnette side of Yankee Pond. The fresh marsh restoration site (Yankee Pond) is located within the Jean Lafitte National



**Roberts, Steve W MVN**

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**From:** Hughes, Guy <guy\_hughes@nps.gov>  
**Sent:** Friday, October 07, 2016 4:15 PM  
**To:** Dusty Pate; Williams, Eric MVN; Behrens, Elizabeth MVN; Stiles, Sandra E MVN; Roberts, Steve W MVN  
**Subject:** [EXTERNAL] Fwd: JELA HSDRRS Supplemental EA and Assessment of Effects

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

From: Lindsey Bilyeu <lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> >  
Date: Fri, Oct 7, 2016 at 3:53 PM  
Subject: RE: JELA HSDRRS Supplemental EA and Assessment of Effects  
To: "Hughes, Guy" <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> >

Mr. Hughes,

The Choctaw Nation of Oklahoma thanks Jean Laffitte for the correspondence regarding the above referenced project. The Choctaw Nation is unaware of any cultural or sacred sites located in the immediate project area. The Choctaw Nation Historic Preservation Department **concur**s with the finding of "no adverse effect". However, we ask that work be stopped and our office contacted immediately in the event that Native American artifacts or human remains are encountered.

If you have any questions, please contact me.

Thank you,

Lindsey D. Bilyeu

Senior Compliance Review Officer

Historic Preservation Department

Choctaw Nation of Oklahoma

P.O. Box 1210

Durant, OK 74702

580-924-8280 ext. 2631

From: Hughes, Guy [mailto:guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> ]  
Sent: Monday, August 15, 2016 5:14 PM  
To: Ian Thompson <ithompson@choctawnation.com <mailto:ithompson@choctawnation.com> >  
Cc: Lindsey Bilyeu <lbilyeu@choctawnation.com <mailto:lbilyeu@choctawnation.com> >; Ryan Spring  
<rspring@choctawnation.com <mailto:rspring@choctawnation.com> >  
Subject: JELA HSDRRS Supplemental EA and Assessment of Effects

Dear THPO,

We previously communicated on this project with our scoping letter June 3, 2015, and we provided you opportunity to comment and consult upon the U.S. Army Corps of Engineers New Orleans District and Jean Lafitte National Historical Park and Preserve Mitigation Features, Programmatic Individual Environmental Report (PIER) #37, Tier 1, on October 13, 2015.

We are continuing to inform you on this project that has required a Supplemental Environmental Assessment and Assessment of Effects - PEPC 66675.

The Corps required a supplemental EA due to design and engineering changes to the open water to fresh marsh mitigation proposed feature in Yankee Pond.

The change that required the supplement were modifications to the area of potential affect. The changes involve open water areas inside and outside the park.

If you have any questions or wish to consult on this project, please contact me.

Sincerely,

Guy D. Hughes

## Roberts, Steve W MVN

---

**From:** Williams, Eric MVN  
**Sent:** Tuesday, August 30, 2016 8:56 AM  
**To:** Roberts, Steve W MVN; Behrens, Elizabeth MVN  
**Subject:** FW: [EXTERNAL] Fwd: JELA HSDRRS Supplemental EA and Assessment of Effects (UNCLASSIFIED)  
**Attachments:** kpenrod.vcf  
**Classification:** UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

Tribal response for EA 548

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

**From:** Hughes, Guy [mailto:guy\_hughes@nps.gov]  
**Sent:** Tuesday, August 30, 2016 8:49 AM  
**To:** Dusty Pate <haigler\_pate@nps.gov>; Williams, Eric MVN <Eric.M.Williams@usace.army.mil>  
**Subject:** [EXTERNAL] Fwd: JELA HSDRRS Supplemental EA and Assessment of Effects

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

**From:** Kim Penrod <kpenrod@caddonation.org <mailto:kpenrod@caddonation.org> >  
**Date:** Tue, Aug 30, 2016 at 8:40 AM  
**Subject:** Re: JELA HSDRRS Supplemental EA and Assessment of Effects  
**To:** "Hughes, Guy" <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> >  
**Cc:** Kim Penrod <kpenrod@caddonation.org <mailto:kpenrod@caddonation.org> >

Guy,  
Thank you for the recent correspondence related to the Supplemental EA associated with the Federal undertaking Project with the US Army Corp New Orleans and the Jean Lafitte National Historic Park and Preserve located in Jefferson Parish, Louisiana.  
The protection of our tribal cultural resources and tribal trust resources will take all of us working together.  
We look forward to working with you and your agency.  
With the information you have submitted we can concur at present with this proposed plan.

As with any new project, we never know what may come to light until work begins.  
The Caddo Nation of Oklahoma asks that you keep us up to date on the progress of this project and if any discoveries arise please contact us immediately.  
Kim

On 08/15/16, "Hughes, Guy" <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> > wrote:

Dear THPO,

We previously communicated on this project with our scoping letter June 3, 2015, and we provided you opportunity to comment and consult upon the U.S. Army Corps of Engineers New Orleans District and Jean Lafitte

National Historical Park and Preserve Mitigation Features, Programmatic Individual Environmental Report (PIER) #37, Tier 1, on October 13, 2015.

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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

--

Respectfully,  
Kim Penrod  
Cultural Preservation Director  
Caddo Nation Heritage Museum, Library and Archives  
NAGPRA Coordinator  
THPO  
Caddo Nation of Oklahoma  
P.O. Box 487  
Binger, OK 73009  
405-656-2344 wk  
405-924-9485 cell  
kpenrod@caddonation.org <mailto:kpenrod@caddonation.org>  
kimpenrod@yahoo.com <mailto:kimpenrod@yahoo.com>

Be who you are and say what you feel, because those who mind don't matter and those who matter don't mind.~Dr. Seuss <Blocked<http://www.brainyquote.com/quotes/quotes/d/drseuss104299.html>>

## Roberts, Steve W MVN

---

**From:** Williams, Eric MVN  
**Sent:** Wednesday, September 07, 2016 9:41 AM  
**To:** Roberts, Steve W MVN  
**Cc:** Pate, Dusty; Behrens, Elizabeth MVN  
**Subject:** FW: [EXTERNAL] Fwd: JELA HSDRRS Supplemental EA and Assessment of Effects (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

From the Jena Band of Choctaw

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

**From:** Hughes, Guy [mailto:guy\_hughes@nps.gov]  
**Sent:** Tuesday, August 16, 2016 10:11 AM  
**To:** Williams, Eric MVN <Eric.M.Williams@usace.army.mil>  
**Cc:** Dusty Pate <haigler\_pate@nps.gov>; Behrens, Elizabeth MVN <Elizabeth.H.Behrens@usace.army.mil>  
**Subject:** [EXTERNAL] Fwd: JELA HSDRRS Supplemental EA and Assessment of Effects

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

**From:** Alina Shively <ashively@jenachoctaw.org <mailto:ashively@jenachoctaw.org> >  
**Date:** Tue, Aug 16, 2016 at 9:39 AM  
**Subject:** RE: JELA HSDRRS Supplemental EA and Assessment of Effects  
**To:** "Hughes, Guy" <guy\_hughes@nps.gov <mailto:guy\_hughes@nps.gov> >

Mr. Hughes:

Regarding the above-mentioned Supplemental EA and Assessment of Effect, the Jena Band of Choctaw Indians' THPO hereby concurs that the project shall have No Adverse Effect on properties that are significant to the Tribe. Should any inadvertent discoveries or unanticipated impacts occur, please contact all Tribes with interest in this area. Should the project plans be altered, the Section 106 review process should be applied.

Sincerely,

Alina J. Shively

Jena Band of Choctaw Indians

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: Monday, August 15, 2016 5:18 PM  
To: Alina Shively <ashively@jenachoctaw.org <mailto:ashively@jenachoctaw.org> >  
Subject: JELA HSDRRS Supplemental EA and Assessment of Effects

Dear THPO,

We previously communicated on this project with our scoping letter June 3, 2015, and we provided you opportunity to comment and consult upon the U.S. Army Corps of Engineers New Orleans District and Jean Lafitte National Historical Park and Preserve Mitigation Features, Programmatic Individual Environmental Report (PIER) #37, Tier 1, on October 13, 2015.

We are continuing to inform you on this project that has required a Supplemental Environmental Assessment and Assessment of Effects - PEPC 66675.

The Corps required a supplemental EA due to design and engineering changes to the open water to fresh marsh mitigation proposed feature in Yankee Pond.

The change that required the supplement were modifications to the area of potential affect. The changes involve open water areas inside and outside the park.