DEEPWATER HORIZON OIL SPILL

LOUISIANA TRUSTEE IMPLEMENTATION GROUP FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR THE WETLANDS CENTER PROJECT MODIFICATION

JANUARY 2020

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Deepwater Horizon Natural Resource Damage Assessment Trustee Council

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Abbreviations

CFR	Code of Federal Regulations
DOI	U.S. Department of the Interior
Draft RP/EA #4	Draft Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use
Draft Supplemental EA	Louisiana Trustee Implementation Group Draft Supplemental Environmental Assessment for the Wetlands Center Project Modification
DWH	Deepwater Horizon
DWH Trustees	Deepwater Horizon Oil Spill Trustees
EO	executive order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
Final RP/EA #4	Final Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use
Final Supplemental EA	Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification
FONSI	Finding of No Significant Impact
HUC	Hydrologic Unit Code
LA TIG	Louisiana Trustee Implementation Group
LAC	Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
NEPA	National Environmental Policy Act of 1969
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NRDA	Natural Resource Damage Assessment
OPA	Oil Pollution Act of 1990
PDARP/PEIS	Deepwater Horizon Oil Spill Final Programmatic Damage Assessment and Restoration Plan/Programmatic Environmental Impact Statement
ROD	Record of Decision
RS	Louisiana Revised Statute
SHPOs	State Historic Preservation Offices
SOP	Standard Operating Procedure
SWPPP	Stormwater Pollution Prevention Plan
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1 INTRODUCTION/BACKGROUND

This document, *Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification* (Final Supplemental EA), was prepared by the Louisiana Trustee Implementation Group (LA TIG) to assess the environmental impacts from modifications to the originally proposed Wetlands Center project scope and design that was evaluated and selected in the *Final Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use* (Final RP/EA #4), which was finalized in July 2018 (LA TIG 2018a).

The LA TIG is responsible for restoring the natural resources and services within the Louisiana Restoration Area that were injured by the April 20, 2010, Deepwater Horizon (DWH) oil spill and associated spill response efforts. The LA TIG includes five Louisiana state trustee agencies and four federal trustee agencies: Louisiana Coastal Protection and Restoration Authority; Louisiana Department of Natural Resources; Louisiana Department of Environmental Quality (LDEQ); Louisiana Oil Spill Coordinator's Office; Louisiana Department of Wildlife and Fisheries; U.S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); U.S. Department of the Interior (DOI), represented by the U.S. Fish and Wildlife Service (USFWS) and National Park Service; U.S. Department of Agriculture (USDA); and U.S. Environmental Protection Agency (EPA).

The Final RP/EA #4 (LA TIG 2018a) was prepared pursuant to the Oil Pollution Act of 1990 (OPA) and the National Environmental Policy Act of 1969 (NEPA) and is consistent with the Deepwater Horizon Oil Spill Trustees' (DWH Trustees') findings in the *Deepwater Horizon Oil Spill Final Programmatic Damage Assessment and Restoration Plan/Programmatic Environmental Impact Statement* (PDARP/PEIS) and Record of Decision (ROD) and the 2016 Consent Decree resolving civil claims by the DWH Trustees against BP Exploration and Production, Inc., arising from the DWH oil spill (DWH Trustees 2016a). Details on the background and settlement can be found in the PDARP/PEIS (DWH Trustees 2016a). The release of the *Draft Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use* (Draft RP/EA #4; LA TIG 2018b), which included a preliminary Finding of No Significant Impact (FONSI), and opening of the public comment period for the Draft RP/EA #4 was publicized on April 20, 2018, in the *Federal Register* and announced on the LA TIG website (https://www.gulfspillrestoration.noaa.gov/2016/04/welcome-louisiana-trustee-implementation-group) (LA TIG 2018b). A public meeting was held on April 24, 2018, in New Orleans, Louisiana. The public comment period closed May 21, 2018, and the Final RP/EA #4 and FONSI were released on July 20, 2018.

1.1 Rationale for this Final Supplemental EA

The original scope and design of the Wetlands Center project was evaluated in the Draft and Final RP/EA #4 (LA TIG 2018a, 2018b). Following release of the Final RP/EA #4, the Town of Jean Lafitte requested that the LA TIG consider collocating the Wetlands Center immediately adjacent to the town's existing facility that contains the town's library, multipurpose facility, and Lafitte's Barataria Museum. The original location was approved for construction at the trailhead of the Town of Jean Lafitte's Nature Study Trail, within the wetland area that is adjacent to Lafitte's Barataria Museum. The LA TIG prepared this Final Supplemental EA to evaluate modifications to the Wetlands Center project and consider alternatives consistent with the purpose and need of the original project. The original Wetlands Center alternative is herein described as Alternative A, Original Project Scope. This Final Supplemental EA evaluates two new alternatives: Alternative B, Revised Location with Observation Deck (Preferred), and Alternative C, Revised Location without Observation Deck. This Final Supplemental EA also considers a No Action Alternative, Alternative D.

In the Draft and Final RP/EA #4 (LA TIG 2018a, 2018b), the LA TIG evaluated the Wetlands Center project using the OPA Natural Resource Damage Assessment (NRDA) regulatory evaluation standards found at 15 Code of Federal Regulations (CFR) 990.54. This analysis is found in the Final RP/EA #4, Section 3.3.14 (LA TIG 2018a). The OPA analysis indicates that the cost of the originally proposed Wetlands Center project, identified herein as Alternative A, is well documented, reasonable, and appropriate. The project has a strong nexus to the recreational injury caused by the DWH oil spill and can reasonably be expected to provide benefits to the public over an extended timeframe. The project would improve public awareness, compensate for trust resources that were injured by the DWH oil spill, and has a high probability of success. Public safety issues are not expected to be a concern. For consistency, the LA TIG has reviewed the original OPA analysis and determined the two new alternatives, Alternative B (revised Wetlands Center project location with observation deck) and Alternative C (revised Wetlands Center project location without observation deck), do not substantively change the original analysis under OPA. From this review, we note that both Alternatives B and C would further minimize the potential for collateral injury, in comparison to Alternative A, because construction would occur outside of wetland habitats. Also, Alternative B would provide enhanced recreational use benefits to those offered by Alternative C because of the additional outdoor observation deck feature. The funding level of $2,000,000 for the revised Wetlands Center project is the same as that approved by the LA TIG for the original project design and location.

The LA TIG has prepared this Final Supplemental EA in compliance with NEPA to evaluate modifications to the Wetlands Center location and design, consider alternatives, and evaluate potential environmental impacts from these modifications that differ from the impact analysis of the original project scope described in the Final RP/EA #4 (LA TIG 2018a). This Final Supplemental EA will inform the LA TIG's decision regarding proposed modification of the Wetlands Center project. The Monitoring and Adaptive Management Plan for the Wetlands Center is provided in Appendix A.

1.2 Lead and Cooperating Agencies

In accordance with 40 CFR 1508.12, the LA TIG designated the EPA as the lead federal agency responsible for NEPA compliance for the Final RP/EA #4 (LA TIG 2018a) and this Final Supplemental EA. The federal and state agencies participating on the LA TIG are acting as cooperating agencies for the purposes of compliance with NEPA in the development of this Final Supplemental EA. In accordance with 40 CFR 1506.3(a), each of the three federal cooperating agencies (DOI, NOAA, and USDA) participating on the LA TIG will review the documents for adequacy in meeting the standards set forth in its own NEPA implementing procedures and make a decision on adoption of the NEPA analysis.

1.3 Public Involvement

The LA TIG released the Draft RP/EA #4 (LA TIG 2018b) for public comment on April 20, 2018, as published in the *Federal Register,* the Louisiana Register, and on the NOAA Gulf Spill web portal. This release also included the announcement of a public meeting in New Orleans, Louisiana, on April 24, 2018. The Final RP/EA #4 was revised and completed in response to comments received on the Draft RP/EA #4. Section 7 of the Final RP/EA #4 (LA TIG 2018a) provides a description of the comment analysis process, a summary of public comments received, and the LA TIG's responses to those comments.

The Draft Supplemental EA and preliminary FONSI were made available for a 30-day public review between December 23, 2019 and January 22, 2020.

During the 30-day public comment period, the public was able to submit comments on the Draft Supplemental EA by one of following methods:

Online: http://www.gulfspillrestoration.noaa.gov/restoration-areas/louisiana

By mail (hard copy), addressed to:

U.S. Fish and Wildlife Service
P.O. Box 29649
Atlanta, Georgia 30345

Having received no substantive public comments by the close of the 30-day public comment period, the LA TIG finalized the Supplemental EA and FONSI.

1.4 Purpose and Need

The LA TIG has undertaken this recreational use restoration planning effort in the Final RP/EA #4 to meet the purpose of restoring those natural resources and services injured as a result of the DWH oil spill. This Final Supplemental EA falls within the scope of the purpose and need identified in the Final PDARP/PEIS (DWH Trustees 2016a). As described in Section 5.3 of the Final PDARP/PEIS, the five DWH Trustee programmatic restoration goals for restoration work independently and together to benefit injured resources and services (DWH Trustees 2016a). This Final Supplemental EA focuses on the restoration of injuries to Louisiana's natural resources and services—in particular to Restoration Type: "Provide and Enhance Recreational Opportunities," using funds made available in Early Restoration and through the DWH Consent Decree (see Final PDARP/PEIS [DWH Trustees 2016a:Chapter 4]).

For the purpose of restoring natural resources and services injured as a result of the DWH oil spill, the DWH Trustees need to address the associated recreational loss that occurred in Louisiana. The DWH Trustees propose to implement compensatory restoration projects that would provide the public with additional and enhanced recreational use services in Louisiana in a manner consistent with the Final PDARP/PEIS (DWH Trustees 2016a). Impacts to Louisiana from the DWH oil spill, including oiled shorelines, the closure of fishing and recreational areas, and the cancellation of recreational trips, resulted in losses to the public's use of natural resources for outdoor recreation and other recreational activities.

Louisiana Trustees have identified lost recreational opportunities, such as fishing, camping, hunting, boating, and hiking, as the most significantly impacted recreational use in the state. The lost recreational opportunities occurred statewide because people in non-coastal areas cancelled trips to the coast during closures related to the DWH oil spill. Given these widespread impacts of the spill, Louisiana's approach to restoring lost recreational use in the Final Supplemental EA uses a combination of many of the recreational use restoration approaches described in the Final PDARP/PEIS (DWH Trustees 2016a), including enhancing public access to natural resources for recreational use; enhancing recreational experiences; and promoting environmental stewardship, education, and outreach. The proposed alternatives described in this Final Supplemental EA are consistent with restoration techniques for the recreational use injuries caused by the DWH oil spill, while also providing educational and outreach components to promote responsible use of natural resources.

The purpose and need for the modified Wetlands Center project is consistent with the purpose and need described in Section 1.5 of the Final RP/EA #4 (LA TIG 2018a).

1.5 Finding of No Significant Impact

In this Final Supplemental EA, the LA TIG addresses NEPA requirements by tiering from environmental analyses conducted in the Final PDARP/PEIS (DWH Trustees 2016a), evaluating existing analyses provided in the Final RP/EA #4 (LA TIG 2018a), and preparing environmental consequences analyses for the alternatives as appropriate. Based on the programmatic analysis provided by the Final PDARP/PEIS, (DWH Trustees 2016a) and with consideration of the environmental consequences in this Final Supplemental EA, the LA TIG's findings (see Appendix B) indicate that the alternatives evaluated in this Final Supplemental EA would not result in any significant impacts on the human environment in accordance with the guidelines for determining the significance of proposed federal actions (40 CFR 1508.27).

2 MODIFICATION OF THE WETLANDS CENTER AND ALTERNATIVES CONSIDERED

Section 2 of the Final RP/EA #4 (LA TIG 2018a) provides a detailed description of the restoration planning process, including the screening of alternatives for the restoration of recreational use. The alternative screening process included in the Final RP/EA #4 is incorporated herein by reference. The goal of the LA TIG's screening process was to identify a set of proposed alternatives that provided a reasonable range of options that would compensate the public for Louisiana's lost recreational use caused by the DWH oil spill. The federal trustees of the LA TIG have reviewed the Final RP/EA #4 screening process that was applied to the project universe (consisting of 117 recreational use projects). The screening process was used to identify 23 reasonable alternatives that were carried forward for analysis in the Final RP/EA #4, of which one was the Wetlands Center. That analysis is valid and applicable to the proposed Wetlands Center project modification alternatives analyzed in this Final Supplemental EA.

Four alternatives for the Wetlands Center have been identified for analysis in this Final Supplemental EA, all of which would be located in the Town of Jean Lafitte, Jefferson Parish, Louisiana. Alternatives A, B and C are action alternatives associated with the Wetlands Center. Alternative A is the original project scope and location of the Wetlands Center, as defined in the Final RP/EA #4 (LA TIG 2018a). Alternative B is the revised location of the Wetlands Center immediately adjacent to the east of the existing Lafitte's Barataria Museum, and includes an observation deck. Alternative C is the same location as Alternative B, without the outdoor amenity of the proposed observation deck. Alternative D is the No Action Alternative, and it is incorporated by reference from the Final RP/EA #4. Under all action alternatives, the LA TIG would allocate $2,000,000 of NRDA funds to the Town of Jean Lafitte for the Wetlands Center. This funding level is the same as originally approved in the Final RP/EA #4.

2.1 Alternative A: Original Project Scope

The full project description for Alternative A is described in Section 3.3.14 of the Final RP/EA #4 (LA TIG 2018a), and is incorporated by reference into this Final Supplemental EA. A brief summary of the project description for Alternative A is provided below.

Under Alternative A, the Wetlands Center would be constructed at the trailhead of the Town of Jean Lafitte's Nature Study Trail, within the wetland area that is adjacent to Lafitte's Barataria Museum at 4917 City Park Dr., Jean Lafitte, Louisiana 70067 (Figure 2-1).

Alternative A would involve the development of a theater and exhibits inside of the Wetlands Center, as well as a portion of the funding for construction of the Wetlands Center. The alternative would promote and enhance the protection and management of wetland resources and the application of sound science to wetland management efforts through training and educational opportunities. To accomplish this, the alternative proposes construction of the three-level Wetlands Center building with an entry promenade. This building would serve as an orientation to the wetland ecosystems of Louisiana prior to visitors' exploration of the Nature Study Trail.

The promenade would be approximately 30 feet wide, with approximately 100 linear feet of promenade leading from the existing Multipurpose Resource Facility to the levee at City Park Drive, and approximately 300 linear feet of promenade crossing over the levee and connecting to the existing trailhead of the elevated Nature Study Trail. Conceptual designs for the 3,500-square-foot lower level of the Wetlands Center proposes the building on raised piers. The 7,300-square-foot main level of the Wetlands Center would be supported in part by the 3,500-square-foot lower level. A 4,000-square-foot deck would connect the entry promenade to the main level of the Wetlands Center and the existing Nature Study Trail.

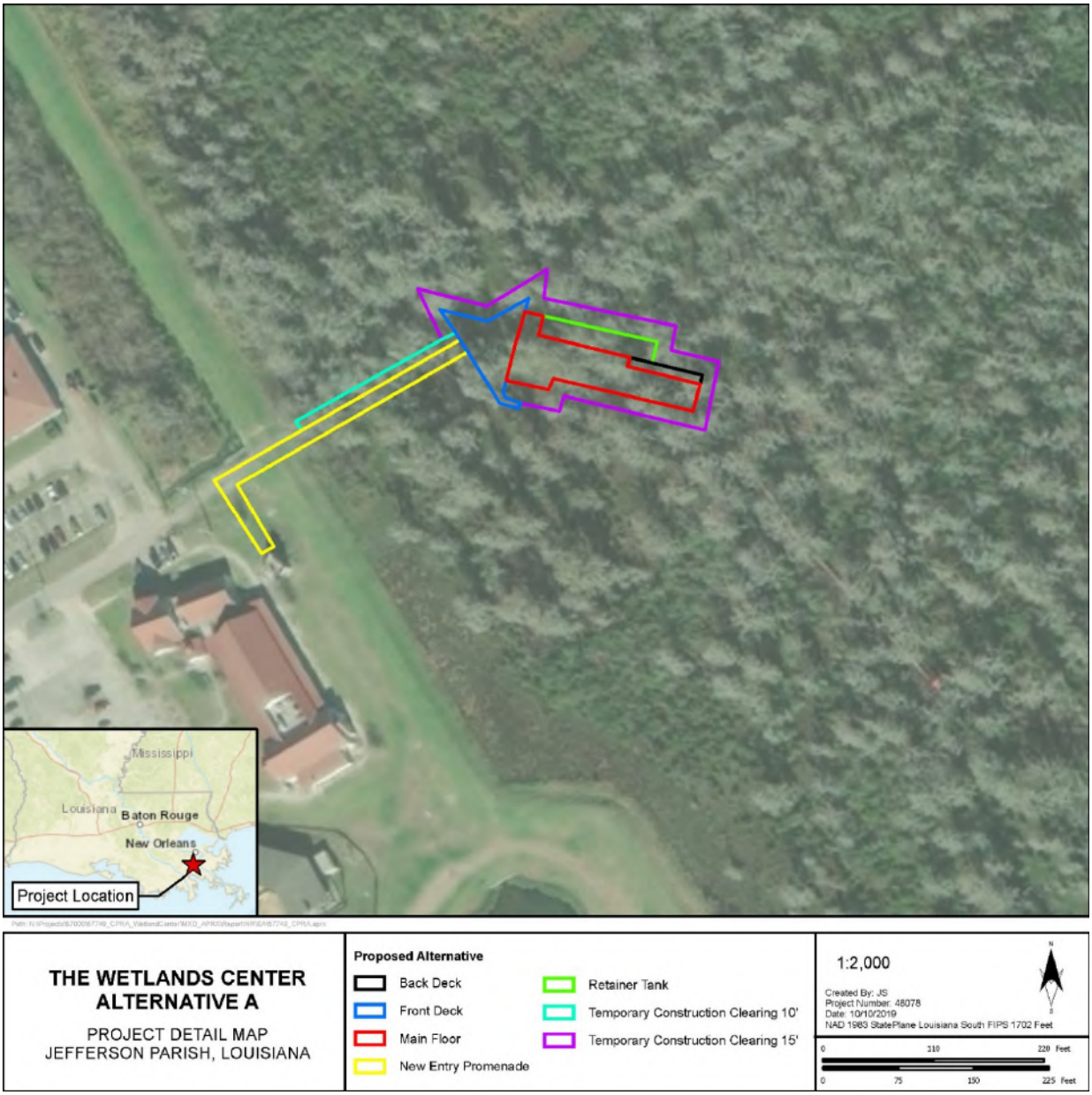

Figure 2-1. Location of the Wetlands Center, Alternative A.

The alternative would provide funding for a variety of museum-quality exhibits, interactive elements, meeting spaces, and digital media features at the Wetlands Center, including the following:

- Reception area
- Combination classroom and film viewing theater with seating for approximately 80 students
- Small meeting rooms for private research
- Restoration and preservation of wetlands displays
- Interactive exhibit galleries
- Static exhibit galleries
- Live interactive exhibits

- Large observation windows on all elevations
- Outdoor observation decks
- An observation tower
- Gift shop with snacks and drinks
- First aid station
- Restrooms

The Town of Jean Lafitte would charge a combined entrance fee for the Wetlands Center, Lafitte's Barataria Museum, and the Nature Study Trail to help fund operation and maintenance costs for these facilities. The current admission fee for Lafitte's Barataria Museum is $6.00. The entrance fee could be adjusted as the Town of Jean Lafitte monitors the operation and maintenance costs for the Wetlands Center over time.

Project implementation would include final design and permitting, as well as construction activities. It is estimated that final design would take approximately 12 months and permitting efforts would run concurrently. It is estimated that construction of project elements would take approximately 12 months.

The cost to implement the alternative is reasonable, appropriate, and comparable to other equivalent restoration alternatives. The estimated NRDA-funded cost for the alternative is $2,000,000. The estimated cost represents the best estimates of the Town of Jean Lafitte. The Town of Jean Lafitte would fund and be responsible for all operation, maintenance, and monitoring related to the Wetlands Center project. All work would be awarded in compliance with Louisiana's public bid laws and regulations, ensuring that the alternative is constructed at current market rates.

2.2 Alternative B: Revised Location with Observation Deck

Under Alternative B, the Wetlands Center would be constructed immediately northeast of Lafitte's Barataria Museum at 4917 City Park Dr., Jean Lafitte, Louisiana 70067. The Wetlands Center would be situated on approximately 0.1 acre at the site of an existing maintained green space between the museum and the Fisher Basin tidal levee, which is a Town of Lafitte tidal levee (Figure 2-2). As with Alternative A, the Wetlands Center would be operated by the Town of Jean Lafitte, who also operates the Lafitte's Barataria Museum. The Town of Jean Lafitte would be responsible for all operation and maintenance expenses associated with the Wetlands Center.

Under Alternative B, the Wetlands Center would be approximately 3,000 square feet of building area, with the following amenities:

- Reception area
- Small meeting areas that can be adapted to accommodate future uses
- Displays highlighting the restoration and preservation of wetlands
- Multi-media, interactive exhibits
- Approximately 800-square-foot observation deck on cantilever balcony overlooking the levee and wetlands
- First aid station
- Audio visual equipment room
- Other storage rooms
- Restrooms

The building foundation would be a combination of timber piles with concrete piers and cast-in-place concrete on driven piles. Public access to the Wetlands Center would be provided by an open-air walkway connecting the Wetlands Center with the Lafitte's Barataria Museum. Lafitte's Barataria Museum would be the main point of entrance for visitors accessing the Wetlands Center. The collocation of the two facilities would provide enhanced opportunities for the public to play and learn in one centralized area. The Town of Jean Lafitte would charge a combined entrance fee for the Wetlands Center, Lafitte's Barataria Museum, and the Nature Study Trail to help fund operation and maintenance costs for these facilities. The current admission fee for Lafitte's Barataria Museum is $6.00. The entrance fee could be adjusted as the Town of Jean Lafitte monitors the operation and maintenance costs for the Wetlands Center over time. This proposed location under Alternative B would also avoid construction within wetland habitats when compared to Alternative A.

Figure 2-2. Location of the Wetlands Center, Alternative B.

Project implementation would include final design and permitting, as well as construction activities. It is estimated that final design would take approximately 8 months and permitting efforts would run concurrently. It is estimated that construction of project elements would take approximately 12 months.

The current total budget for the Wetlands Center is $3,425,000. The estimated NRDA-funded cost for the alternative is $2,000,000. Other funding sources, such as Community Development Block Grant, capital outlay, and local government matching funds would make up the remaining $1,425,000 for the Wetlands Center. The estimated cost represents the best estimates of the Town of Jean Lafitte and does not include funds for operation, maintenance, or monitoring of the alternative. All work would be awarded in compliance with Louisiana's public bid laws and regulations, ensuring that the alternative is constructed at current market rates.

2.3 Alternative C: Revised Location without Observation Deck

Alternative C would be the same as Alternative B, without the addition of an approximately 800-square-foot observation deck on the east side of the Wetlands Center building (Figure 2-3). The design and benefits of the Wetlands Center proposed under Alternative C would be similar to those described for Alternative B, except the public would not be able to use the outdoor amenity of the observation deck to view the adjacent levee and wetland area.

Project implementation would include final design and permitting, as well as construction activities. It is estimated that final design would take approximately 8 months and permitting efforts would run concurrently. It is estimated that construction of project elements would take approximately 12 months.

The current total budget for the Wetlands Center without the observation deck is $3,383,000. The estimated NRDA-funded cost for the alternative is $2,000,000. Other funding sources, such as Community Development Block Grant, capital outlay, and local government matching funds would make up the remaining $1,383,000 for the Wetlands Center. The estimated cost represents the best estimates of the Town of Jean Lafitte and does not include funds for operation, maintenance, or monitoring of the alternative. All work would be awarded in compliance with Louisiana's public bid laws and regulations, ensuring that the alternative is constructed at current market rates.

Figure 2-3. Location of the Wetlands Center, Alternative C.

2.4 Alternative D: No Action

In accordance with OPA regulations, the Final PDARP/PEIS (DWH Trustees 2016a) considers a "natural recovery alternative in which no human intervention would be taken to directly restore injured natural resources and services to baseline" (15 CFR 990.53[b][2]). Under a natural recovery alternative, the DWH Trustees would not implement additional restoration to accelerate the recovery of injured natural resources or to compensate for lost services. The DWH Trustees would allow natural recovery processes to occur, which could result in one of four outcomes for injured resources: 1) gradual recovery, 2) partial recovery, 3) no recovery, or 4) further deterioration. Although injured resources could presumably recover to baseline or near baseline conditions under this scenario, recovery would take much longer compared to a scenario in which restoration actions were undertaken. The Final PDARP/PEIS (DWH

Trustees 2016a:5-92) notes that interim losses of natural resources, and the services natural resources provide, would not be compensated under a natural recovery/No Action Alternative. Given that technically feasible restoration approaches are available to compensate for interim natural resource and service losses, the DWH Trustees rejected this alternative from further OPA evaluation within the Final PDARP/PEIS (DWH Trustees 2016a).

Based on this determination, tiering this Final Supplemental EA from the Final PDARP/PEIS (DWH Trustees 2016a), and incorporating that analysis by reference, the LA TIG did not further evaluate natural recovery as a viable alternative under OPA. The LA TIG rejects the natural recovery/No Action Alternative as a viable means of compensating the public for the lost recreational use injuries caused by the DWH oil spill. Natural recovery is not considered further in this Final Supplemental EA.

NEPA requires consideration of a No Action Alternative as a basis for comparison of potential environmental consequences of the action alternatives(s). The No Action analysis presents the conditions that would result if the LA TIG did not elect to undertake any additional restoration for injured natural resources or to compensate for lost services at this time. The No Action Alternative is not re-evaluated herein because impacts are not substantially different from the No Action Alternative described in the Section 4.4 of the Final RP/EA #4 (LA TIG 2018a), which is incorporated by reference.

3 SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

3.1 Introduction

The Wetlands Center project was analyzed in the Final RP/EA #4 at an originally proposed location, which is an undeveloped site in the Town of Jean Lafitte at the end of City Park Street on the east side of the Fisher Basin tidal levee. That analysis is incorporated by reference into this Final Supplemental EA as part of Alternative A, Original Project Scope (see Sections 3 and 4 of the Final RP/EA #4 [LA TIG 2018a]).

This Final Supplemental EA considers two additional alternatives to evaluate the Wetlands Center project with modifications at a revised location on the northeast side of an existing Town facility in Jefferson Parish. The two additional alternatives are: Alternative B, Revised Location with Observation Deck (Preferred), and Alternative C, Revised Location without Observation Deck. Both Alternatives B and C are in close proximity to the location considered under Alternative A. The analysis of the No Action Alternative is incorporated by reference into this Final Supplemental EA and is not further evaluated herein because impacts are not substantially different from the No Action Alternative described in the Final RP/EA #4 (LA TIG 2018a). The Affected Environment for the originally proposed location, Alternative A, generally remains the same, and is therefore incorporated by reference unless substantive changes have occurred since the release of the Final RP/EA #4 in July 2018. Site-specific elements or differences among the alternatives that could change the outcome of the environmental analysis are also described. The Affected Environment for Alternatives B and C would be similar, with the only difference being the addition of the an approximately 800-square-foot outdoor observation deck under Alternative B.

The following subsections describe the existing environment for the revised location of the Wetlands Center project and potential environmental consequences from construction and operation of the proposed modifications to the Wetlands Center project. This Final Supplemental EA incorporates by reference information contained within the Environmental Consequences analyses for the Wetlands Center project in Section 4.6.14 of the Final RP/EA #4 (LA TIG 2018a), including the criteria for impacts determinations, as appropriate. This Final Supplemental EA does not reevaluate eight resource topics (Table 3-1.) because there has been no change in the affected environment between the original and revised project scopes, the resource is not present in the proposed project area, or no impact to the resource would occur based on existing conditions.

Table 3-1. Resource Topics Dismissed from Detailed Analysis and Rationale

Resource Topic	Rationale for Dismissal from Detailed Analysis
Wildlife Species (including birds)	Project site is within existing development in an urban environment. Wildlife species present in the area are tolerant of human structures and activities; therefore, no impact to wildlife species is anticipated.
Marine and Estuarine Fauna, Essential Fish Habitat and Managed Fish Species	Project site is within existing development in an urban, upland environment. No marine or estuarine fauna, essential fish habitat, or managed fish species are present; therefore, no impacts would occur to these species.
Protected Species	No suitable habitat for protected species is present at the project site. Therefore, no impact to protected species is anticipated.
Land and Marine Management	Project site is within the existing town complex areas and the project site is consistent with land use in the area; therefore, no impact to land use would occur.
Infrastructure	Section 4.6.14.3.3 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be localized, minor, long-term beneficial impacts from the addition of a new recreational use in the community of Jean Lafitte. No new adverse impacts to infrastructure have been identified for Alternatives B and C.

Resource Topic	Rationale for Dismissal from Detailed Analysis
Fisheries and Aquaculture	No known aquaculture locations occur in or near the proposed alternatives for the Wetlands Center; therefore, the alternatives would have no impact on fisheries or aquaculture.
Marine Transportation	No known marine transportation corridors occur in or near the proposed alternatives for the Wetlands Center; therefore, the alternatives would have no impact on marine transportation.
Aesthetics and Visual Resources	The proposed project site is within existing development in an urban landscape. New facilities with landscaping might provide a beneficial impact to aesthetics, but otherwise no impact to the aesthetic or visual quality of the area is anticipated.

3.1.1 Impact Threshold Definitions

NEPA requires federal agencies to consider the environmental effects of their actions that include impacts (also referred to as effects) on social, cultural, and economic resources, as well as on natural resources. To determine whether an action has the potential to result in significant impacts, the context and intensity of the action must be considered. Context refers to area of impacts (local, state-wide, etc.) and their duration (e.g., whether they are short- or long-term impacts). Intensity refers to the severity of impact and could include the timing of the action (more intense impacts would occur during critical periods like high visitation or wildlife breeding/rearing, etc.). Intensity is also described in terms of whether the impact would be beneficial or adverse.

For purposes of this document, impacts are characterized as minor, moderate, or major, and short term or long term. The analysis of beneficial impacts focuses on the duration (short or long term), without attempting to specify the intensity of the benefit. The definition of these characterizations is consistent with that used in the Final PDARP/PEIS (DWH Trustees 2016a:Section 6, Table 6.3-2). The environmental consequences sections (Sections 3.2 through 3.4) analyze the beneficial and adverse impacts that would result from implementing any of the alternatives considered in this Final Supplemental EA.

3.1.2 Best Practices

The Final PDARP/PEIS (DWH Trustees 2016a:Section 6, Appendix A) contains best practices to avoid or minimize impacts to natural resources, including protected and listed species and their habitats. Additional best practices are identified below, which generally include design criteria, best practices, lessons learned, expert advice, and tips from the field. The environmental consequences described in Sections 4.2 through 4.4 acknowledge that the best practices in the Final PDARP/PEIS (DWH Trustees 2016a) and those listed below may be established during project planning and implementation to avoid or minimize the potential adverse impacts from an alternative.

3.1.2.1 GEOLOGY AND SUBSTRATES

Specific measures would be implemented during construction to minimize erosion and overall soil impacts. To the extent possible, the alternatives would use the existing development footprints and disturbed areas (e.g., parking areas). These would include following established best practices for construction activities such as implementing an erosion control and stormwater management plan, installing sediment traps prior to commencement of construction activities, and ongoing construction monitoring to ensure compliance.

3.1.2.2 HYDROLOGY AND WATER QUALITY

Pollution prevention plans would be prepared as necessary, in conjunction with the National Pollutant Discharge Elimination System permitting process prior to construction. These plans would include all specifications and best practices necessary for controlling erosion and sedimentation due to construction-related activities. The construction best practices, in addition to other avoidance and mitigation measures as required by state and federal regulatory agencies, would minimize impacts to water quality and hydrology.

3.1.2.3 CULTURAL RESOURCES

Measures that serve to mitigate impacts to cultural resources, if present, include the following:

- Cultural and historic resources would be considered when preparing site-specific restoration measures and management actions.
- Where there is a likelihood of disturbance of cultural resources, cultural resources managers would conduct appropriate surveys to assess the methods and location of restoration and management actions.
- Restoration measures and management actions would be designed to avoid cultural resources to the extent practicable.
- If any cultural material is discovered during the construction of this project, work would cease in the vicinity of the discovery and the project proponent would contact the DOI Gulf Restoration Office immediately.

3.1.2.4 INFRASTRUCTURE

Measures that serve to mitigate impacts to infrastructure include the following:

- Prior to construction, a traffic control plan would be developed and implemented to ensure minimal interruptions to the transportation network. Care would be taken during construction activities to prevent impeding traffic flow and obstructing access to the alternative area.
- The use of impervious materials would be avoided as much as feasible.

3.1.2.5 PUBLIC HEALTH AND SAFETY

Measures that serve to mitigate impacts to public health and safety include the following:

- The use of impervious materials would be avoided as much as feasible.
- Erosion and sedimentation control measures, including minimizing the amount of clearing and exposed soil, would be implemented and maintained.
- Sedimentation controls would be installed prior to the start of construction and maintained throughout the construction period.
- Disturbed areas would be revegetated with native species as soon as possible after work has been completed.
- Caution would be taken to prevent spills of oils and grease if handling fuels on site.
- Spill mitigation measures would be employed immediately following a spill of any hazardous material.
- The load compartments of trucks hauling dust-generating materials would be covered.

- Heavy water spray or chemical dust suppressant would be used in exposed areas to control airborne dust.
- Any produced waters or human waste would not be discharged unless the Department of Health and Hospitals requirements are met or exceeded.
- Flood access and evacuation plans would be filed on site.
- The resiliency of the proposed structures to sustain storm surges and hurricanes would be determined during final design.

3.2 Physical Environment

3.2.1 Geology and Substrates

3.2.1.1 AFFECTED ENVIRONMENT

The geology and substrates affected environment for Alternative A is described in Section 4.2.1.1 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to geology and substrate resources within the resource study area analyzed in the Final RP/EA #4.

The geology and substrates resource study area under Alternatives B and C includes the proposed Wetlands Center site, which is located in Jefferson Parish on a previously disturbed parcel. The Wetlands Center building would be located between the existing Lafitte's Barataria Museum and Fisher Basin tidal levee. The area immediately surrounding the project area includes a mix of municipal buildings, city parks, and ball fields. The Fisher Basin tidal levee runs northwest to southeast on the east side of the existing Lafitte's Barataria Museum, with an extensive wetland area further east of the levee.

The geology in the project area is characterized by deposits of natural levee complexes of the St. Bernard delta lobe, predominately silt, silty clay, and clay (Louisiana Geological Survey 2011). The project area includes very poorly drained Barbary muck soils made of fluid clayey alluvium derived from sedimentary rock and urban land dominated by impervious surfaces (Natural Resources Conservation Service [NRCS] 2019). The site is identified as frequently flooded (NRCS 2019) and is flat with elevations up to approximately 4 feet above sea level, referenced to the North American Vertical Datum of 1929 (U.S. Geological Survey [USGS] 2018, 2019).

3.2.1.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.1.1 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be localized, temporary, and permanent disturbances to soils and substrates from construction of Alternative A, which would result in minor, short- and long-term adverse impacts on geology and substrates.

Alternative B: Revised Location with Observation Deck

Alternative B would require ground-disturbing activities, surficial digging, and sitework (foundations) for the construction of the Wetlands Center building and sidewalks. The depth of disturbance for constructing the facility would be determined during final engineering and design.

Construction activities under Alternative B would result in short-term disturbance of geologic materials and substrates, including soils. These short-term adverse impacts would include contributions to localized erosion and soil compaction. However, the area for Alternative B has been previously developed and is

therefore already disturbed. Staging for equipment and materials would be placed onsite at the proposed parking areas, or in a different location deemed appropriate during final engineering and design. Under Alternative B, locating staging in areas where disturbance has previously occurred or where disturbance would occur as part of other planned construction would reduce the overall area and intensity of disturbance that could contribute to erosion or compacting of soils. In addition, the project design would implement erosion and sediment control best practices described in Section 3.1.2 as part of a Stormwater Pollution Prevention Plan (SWPPP), which would include installing sediment traps prior to commencing construction activities and monitoring throughout the construction period.

Temporary disturbance to geology and substrates would be detectable but would not result in changes to geologic features or soil characteristics, and erosion and soil compaction would be localized. Permanent disturbance of geologic materials and substrates, including soils, would not lead to changes in local geologic features or soil characteristics, and long-term effects are not expected. Therefore, Alternative B would result in minor, short-term adverse impacts on geology and substrates.

Alternative C: Revised Location without Observation Deck

The types of construction and operation activities under Alternative C would be the same as those described under Alternative B and would result in the same types and magnitude of effects on geology and substrates.

3.2.2 Hydrology and Water Quality

3.2.2.1 AFFECTED ENVIRONMENT

The proposed project would not involve any activities that would require or disrupt groundwater resources. Therefore, this analysis is limited to the hydrology and water quality of surface water resources.

The hydrology and water quality affected environment for Alternative A is described in Section 4.2.1.2 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to surface water resources under Alternative A.

Alternatives A, B, and C are located approximately 0.3 mile to the east of Bayou Barataria within the Bayou Perot-Little Lake watershed (Hydrologic Unit Code [HUC]-0809030104), which is part of the East Central Louisiana Coastal Subbasin (HUC-08090301) (EPA 2019).

Alternatives A, B, and C are within the 100-year floodplain with the static base flood elevation determined to be 8 feet (Federal Emergency Management Agency [FEMA] 2019).

The closest surface waterbodies to the alternatives proposed for the Wetlands Center are:

- Bayou Barataria approximately 0.3 mile to the west
- California County Canal approximately 0.2 mile to the southeast
- Intercoastal Waterway approximately 1 mile to the west

The *2018 Louisiana Water Quality Inventory: Integrated Report* (LDEQ 2018a, 2018b, 2018c) identifies the Intercoastal Waterway as not supporting fish and wildlife propagation due to turbidity due to sediment resuspension. This segment of the Intercoastal Waterway, from Bayou Villars to the Mississippi River, fully supports primary and secondary contact for recreation.

3.2.2.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.1.2 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be temporary and permanent disturbances to hydrology and water quality from construction of Alternative A, which would result in minor, short- and long-term adverse impacts on hydrology and water quality. Short-term impacts would be minimized through best practices, and long-term impacts would be minimized through avoidance and mitigation measures as required by state and federal regulatory agencies.

Alternative B: Revised Location with Observation Deck

Alternative B would require ground-disturbing activities, surficial digging, and sitework for the construction of building and sidewalks. These construction activities would contribute to localized, short-term erosion and sedimentation of soils into surface waterbodies and changes to surface water flows, which would temporarily alter surface hydrology and degrade surface water quality. Incidental spills of fuels, oils, lubricants, or other hazardous materials used for construction equipment could reach surface waterbodies, including through stormwater runoff, also resulting in temporary degradations to water quality. These impacts would be similar to those described under Alternative A.

The Alternative B project area has been previously disturbed and is dominated by impervious surfaces. Long-term changes to surface water hydrology from reduced infiltration and increased stormwater runoff would be the same as those occurring under existing conditions. As a result, Alternative B would not contribute to any long-term changes to surface hydrology and water quality and would not result in changes to existing floodplains.

Erosion and sediment control best practices implemented as part of the SWPPP, in addition to preparing and implementing a Spill Prevention, Control, and Countermeasure Plan, would avoid changes to surface water hydrology and quality by minimizing sediment and pollution loads into Bayou Barataria, the California County Canal and controlling stormwater runoff. The final design of the Wetlands Center site would include details on stormwater management and drainage plans to be included in the SWPPP. For example, a stormwater retention pond may be constructed to capture and control stormwater runoff if determined necessary during final engineering and design.

Activities during the construction period of Alternative B would lead to changes to surface hydrology and water quality. However, these changes would be temporary and localized, quickly becoming undetectable, and would not exceed state water quality standards or result in detectable changes to natural or beneficial floodplain values. In the event of a spill of hazardous materials reaching surface waterbodies through stormwater runoff, detectable changes to water quality would be expected, but changes would be small and localized and would quickly become undetectable. Therefore, Alternative B would result in minor, short-term adverse impacts on surface hydrology and water quality.

Alternative C: Revised Location without Observation Deck

The types of construction and operation activities under Alternative C would be the same as those described under Alternative B and would result in the same types and magnitude of effects on hydrology and water quality.

3.2.3 Air Quality

3.2.3.1 AFFECTED ENVIRONMENT

The air quality affected environment for Alternative A is described in Section 4.2.1.3 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to air quality within the resource study area analyzed in the Final RP/EA #4.

The air quality resource study area for Alternatives B and C is Jefferson Parish, which is the same resource study area analyzed for the original project scope for Alternative A. Jefferson Parish remains in attainment for all U.S. National Ambient Air Quality Standards (EPA 2018) and is therefore in compliance with all air quality standards.

3.2.3.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.1.3 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be temporary, minor increases in criteria pollutant and other emissions from construction of Alternative A. Long-term, ongoing impacts could include a slight increase in emissions from the increase in recreational use of the site; however, residents already use the adjacent Nature Study Trail and Lafitte's Barataria Museum, therefore, the potential increase in emissions would be negligible. These increases in air emissions would result in minor, localized, short-term adverse impacts on air quality.

Alternative B: Revised Location with Observation Deck

The impacts from Alternative B would be the same as Alternative A, because the air quality resource study area for Alternative B (Jefferson Parish) is the same as the resource study area analyzed for Alternative A; there have been no changes to existing conditions related to air quality. Construction activities required for Alternative B would be comparable to those required under Alternative A. Therefore, Alternative B would result in minor, localized, short-term and negligible long-term adverse impacts on air quality.

Alternative C: Revised Location without Observation Deck

The impacts from Alternative C would be the same as Alternatives A and B, because the air quality resource study area for Alternative C (Jefferson Parish) is the same for all action alternatives. Construction activities required for Alternative C would be comparable to those required under Alternatives A and B. Therefore, Alternative C would result in minor, localized, short-term and negligible long-term adverse impacts on air quality.

3.2.4 Noise

3.2.4.1 AFFECTED ENVIRONMENT

The noise affected environment for Alternative A is described in Section 4.2.5.1 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to noise resources or receptors within the resource study area analyzed in the Final RP/EA #4.

Noise is generally defined as unwanted sound. Sound becomes noise when it interferes with normal activities such as speech, concentration, or sleep. Ambient noise (the existing background noise

environment) can be generated by a number of noise sources, including mobile sources such as automobiles and trucks, and stationary sources such as construction sites, machinery, or industrial operations. Ambient noise at the Action Alternative sites is from vehicular traffic, primarily from Jean Lafitte Boulevard and periodic noise from the nearby city parks and ballfields. The closest sensitive noise receptors to the Action Alternative sites is the Jean Lafitte Elementary School, located directly west of the Alternative A site and directly north of the site for Alternatives B and C. The level of noise heard at the school varies, depending on the season, time of day, number and types of noise sources, and distance from the noise source.

3.2.4.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.5.1 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be temporary generation of noise during construction of Alternative A and on-going generation of noise associated with visitor parking and recreation. These increases in noise disturbance would result in localized, minor, short- and long-term adverse impacts to noise receptors.

Alternative B: Revised Location with Observation Deck

The impacts from Alternative B would be the same as Alternative A, because the potentially effected noise receptors for the two alternatives are very similar and construction activities under either alternative are also similar. Alternative B would generate construction noise associated with equipment during construction of the proposed alternative. Construction activities would include mobilizing equipment; preparing the site; installing/constructing the foundation; excavating; grading; fill placement; and all activities related to construction of the building, such as framing, roofing, decking, etc. Jean Lafitte Boulevard would be the primary access route for construction activities. Noise impacts from construction activities from Alternative B would be minor, short-term adverse impacts, and there would be negligible long-term impacts from traffic associated with visitors of the facility.

Alternative C: Revised Location without Observation Deck

The noise impacts from Alternative C would the same as those described for Alternatives A and B. Noise impacts from construction activities from Alternative C would be minor, short-term adverse impacts, and there would be negligible long-term impacts from traffic associated with visitors of the facility.

3.3 Biological Environment

3.3.1 Habitats

3.3.1.1 AFFECTED ENVIRONMENT

The proposed project site for Alternative A is currently undeveloped, and the activities of the alternative would take place in bald cypress (*Taxodium distichum*) wooded marsh habitat. The environment surrounding Alternative A is a transitional mix of estuarine and freshwater habitats, consisting of bald cypress woodland marsh and ridges of American persimmon (*Diospyros virginiana*), swamp red maple (*Acer rubrum*), pumpkin ash (*Fraxinus profunda*), and buttonbush (*Cephalanthus occidentalis*), flanked by wax myrtle shrub (*Morella cerifera*) marsh-surrounded estuarine canals with adjacent residential development (Hop et al. 2017). Freshwater ponds and associated herbaceous marshes are also present in the vicinity of Alternative A (USFWS 2019).

The proposed project site for Alternatives B and C is located within a heavily disturbed area consisting primarily of an existing building and mown lawn. No wetlands are present on the proposed site for Alternatives B and C.

No marine habitat is present within any of the alternatives considered for the Wetlands Center.

3.3.1.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.2.1.1 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be minor, long-term adverse impacts to terrestrial and coastal-nearshore habitats from Alternative A.

Under Alternative A, the primary impacts to terrestrial and coastal-nearshore habitats would be through habitat removal or modification, such as increased sedimentation. An estimated 0.77 acre of vegetation clearing would be required within the footprint of the entry promenade, deck, and Wetlands Center building. Approximately 0.5 acre of clearing would be permanent. The remaining 0.27 acre of clearing would be short term and revegetated upon completion of construction. Although these impacts would reduce or modify habitats in the localized area, the permanent footprint would be negligible, resulting in minor effects. Wildlife would likely use plentiful suitable habitats nearby. Therefore, Alternative A would not be anticipated to have adverse, long-term effects on terrestrial or coastal nearshore habitats.

Alternative B: Revised Location with Observation Deck

No impacts to habitats are anticipated under Alternative B due to the heavily disturbed and managed nature of the site.

Alternative C: Revised Location without Observation Deck

No impacts to habitats are anticipated under Alternative C due to the heavily disturbed and managed nature of the site.

3.4 Socioeconomic Environment

3.4.1 Socioeconomics and Environmental Justice

3.4.1.1 AFFECTED ENVIRONMENT

The socioeconomic resources and environmental justice affected environment description for Alternative A is described in Section 4.2.3.1 in the Final RP/EA #4 (LA TIG 2018a).

The project areas for Alternatives A, B, and C are located within the Town of Jean Lafitte, Jefferson Parish, Louisiana. The population in Jean Lafitte and Jefferson Parish comprise 0.04% and 9.5%, respectively, of Louisiana's population. Jefferson Parish has a minority population of approximately 37%, which is slightly greater than the minority populations of Louisiana (approximately 36%) and greater than the minority population of the United States (approximately 25%). Approximately 6% of the Town of Jean Lafitte identifies as part of the minority population. Demographic, economic, and social data for Alternatives A, B, and C are described in Table 3-2.

Table 3-2. Demographic, Economic, and Social Data for the Wetlands Center

Description	Jean Lafitte	Jefferson Parish	Louisiana	United States
Total Population	1,903	432,552	4,533,372	308,745,538
Total Minority Population*	6%	37%	36%	25%
Population Under the Age of 5	7%	7%	7%	7%
Population 65 and Older	10%	14%	12%	13%
Median Age	37.8	39.0	35.8	37.8
Median Household Income	$54,896	$50,868	$	$57,652
Population below Poverty Level	13%	16%	20%	15%
Less than High School Graduate (Population 25 Years and Over)	30%	15%	16%	13%

* Minority populations comprise non-white populations, including Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and other races, as described by U.S. Census Bureau (2019).

3.4.1.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.3.1 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be no socioeconomic impacts from implementing Alternative A. Per Executive Order (EO) 12898, for environmental justice to be a concern, the alternative would have a "disproportionately high and adverse" effect on a minority or low-income population. Although the alternative is located in Jefferson Parish, which contains a minority and low-income population, the alternative would not have a disproportionally adverse effect to these communities and, in fact, could provide a net benefit to local residents by providing additional public education and outreach opportunities.

Alternative B: Revised Location with Observation Deck

Similar to Alternative A, Alternative B would not result in adverse socioeconomic impacts nor disproportionately high and adverse effects to minority or low-income populations. Minor, long-term beneficial impacts to the local community would result from additional public education and outreach opportunities under Alternative B.

Alternative C: Revised Location without Observation Deck

Alternative C would not result in adverse socioeconomic impacts nor disproportionately high and adverse effects to minority or low-income populations. Minor, long-term beneficial impacts to the local community would result from additional public education and outreach opportunities under Alternative C.

3.4.2 Cultural Resources

3.4.2.1 AFFECTED ENVIRONMENT

The description of the affected environment and legal requirements for cultural resources is described in Section 4.2.3.4 in the Final RP/EA #4 (LA TIG 2018a). The description provided in the Final RP/EA #4 pertains to Alternatives A, B, and C. There have been no changes to the original cultural resources analysis within the resource study area analyzed in the Final RP/EA #4.

3.4.2.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.3.4 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be no known short- or long-term impacts on cultural resources because Alternative A would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources. Cultural and historic resources would be considered when preparing site-specific restoration measures and management actions. Where there is a likelihood of disturbance of cultural resources, cultural resources managers would conduct appropriate surveys to assess the methods and location of restoration and management actions. Restoration measures and management actions would be designed to avoid cultural resources to the extent practicable.

Alternative B: Revised Location with Observation Deck

An archaeologist meeting the Secretary of the Interior's Professional Qualification Standards used the Louisiana Division of Archaeology's Louisiana Cultural Resources Map (2019), a limited-access online database, to conduct an archaeological records review for potential cultural resources located within or in the vicinity of Alternative B. A previous cultural resources survey encompasses the alternative; however, intensive investigations were not conducted near the alternative (Santeford et al. 1996). No previously identified cultural resources are recorded within the footprint of Alternative B. The nearest recorded resources included a historic bridge over Bayou Barataria, approximately 550 meters southwest of Alternative B, and archaeological sites along the east and west banks of Bayou Barataria, approximately 600 to 700 meters from Alternative B.

Historical topographic maps and aerial photographs dating to the late nineteenth and twentieth centuries provide additional information on the vicinity of the project (Google Earth 1998, 2007, 2009; USGS 1892, 1962, 1972). As early as 1892, the location of the Wetlands Center under Alternative B is depicted in backswamps off Bayou Barataria, and all structures are shown on the west side of the bayou, away from the alternative. It is likely that the project site would have been largely uninhabitable in the prehistoric and early historic period. In the mid-twentieth century, occupation along Bayou Barataria was generally west of Jean Lafitte Boulevard (Louisiana Highway 45). Between 1972 and 1998, the Fisher Basin tidal levee and tennis courts were constructed at the east end of City Park Street, with the Lafitte's Barataria Museum occupying the location beginning in approximately 2007–2009.

Based on a preliminary review of the previously conducted cultural resources surveys and previously identified historic resources, no previously recorded cultural resources are located within the vicinity of the project; however, the area has not been intensively surveyed for cultural resources. However, based on a review of historical topographic maps and aerial photographs, it appears that the area has been poorly suited for human habitation throughout the prehistoric and historic period, and has only been intensively occupied within the last 40 years. During that time, the area has been intensively developed with the construction of a municipal hurricane protection levee and recreational facilities, such that it is unlikely to contain intact, significant cultural resources. Consultation with the Louisiana State Historic Preservation Office and tribes to determine any additional requirements would occur prior to any ground-disturbing activities for the Wetlands Center.

Alternative C: Revised Location without Observation Deck

Potential impacts to cultural resources from Alternative C would be the same as described for Alternative B.

3.4.3 Tourism and Recreational Use

3.4.3.1 AFFECTED ENVIRONMENT

The tourism and recreational use affected environment for Alternative A is described in Section 4.6.14.3.2 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to tourism and recreational use resources within the resource study area analyzed in the Final RP/EA #4.

The Town of Jean Lafitte and surrounding area offer several tourist and recreational use destinations for locals and tourist alike. Activities in the area include fishing and wildlife watching at the Jean Lafitte National Historic Park and Preserve, the Jean Lafitte Art Gallery, and private swamp tours (Town of Jean Lafitte 2019).

The project sites for Alternatives A, B, and C are located adjacent to Lafitte's Barataria Museum and the Nature Study hiking trail. The Barataria Museum tells the 200-year-old story of the Town of Jean Lafitte, a historic fishing village 20 miles southwest of New Orleans. Featuring a multi-media theatre presentation, the museum leads visitors on a journey through the life of pirate Jean Lafitte, the stories and folk traditions of wetland dwellers and the realities of coastal erosion and natural and man-made disasters. At the end of the exhibit, visitors emerge to a 1.5-mile cypress swamp hiking trail leading to a bayou, rookery, and marsh area, filled with alligators, snakes, spiders and exotic birds (Town of Jean Lafitte 2019).

3.4.3.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.3.2 of the Final RP/EA #4 (LA TIG 2018a) concluded that Alternative A would provide a long-term beneficial impact by drawing visitors to the area, enhancing recreational opportunities, and increasing recreation and tourism activity long term.

Alternative B: Revised Location with Observation Deck

Alternative B would provide educational and recreational opportunities to both locals and tourists. The Wetlands Center would enhance the recreational use and education opportunities in the Town of Jean Lafitte and the region. Visitors to the Wetlands Center would learn about the local ecosystems and engage in passive recreation and wildlife viewing. The outdoor observation deck would allow recreational users to have a close view of the adjacent wetland area. The project site location is of high benefit because it is located near other town facilities, such as Lafitte's Barataria Museum, parks, and the Jean Lafitte Elementary School, which draw and provide services to tourists and locals. Overall, Alternative B would provide long-term beneficial impacts to users and serve to enhance the visitor experience and boost tourism to the Town of Jean Lafitte.

Alternative C: Revised Location without Observation Deck

Potential impacts to tourism and recreation from Alternative C would be similar as described for Alternative B. Under Alternative C, the Wetlands Center would not have an outdoor observation deck—thereby limiting the passive recreation opportunities to the indoor displays and educational components only. As a result, the long-term benefits to locals and tourists would be slightly fewer under Alternative C compared to Alternatives A and B.

3.4.4 Public Health and Safety, Including Flood and Shoreline Protection

3.4.4.1 AFFECTED ENVIRONMENT

The public health and safety, including flood and shoreline protection, affected environment for Alternative A is described in Section 4.2.5 in the Final RP/EA #4 (LA TIG 2018a). At the time of this analysis, there have been no changes to public health and safety resources within the resource study area analyzed in the Final RP/EA #4.

The public health and safety resource study area under Alternatives B and C is the same as Alternative A. All three action alternatives fall within the 100-year floodplain with the static base flood elevation determined to be 8 feet (FEMA 2019).

3.4.4.2 ENVIRONMENTAL CONSEQUENCES

Alternative A: Original Project Scope

Section 4.6.14.5 of the Final RP/EA #4 (LA TIG 2018a) concluded there would be short- and long-term adverse impacts to public health and safety from construction activities within the 100-year floodplain, which may be susceptible to storm surges. The finished floor elevation for the Wetlands Center under Alternative A would be determined during final design and would account for future subsidence and potential wave action during a storm. These impacts would be reduced by applying mitigation measures, such as those listed in Section 3.1.2.5 of this Final Supplemental EA. As a result, there would be minor, short- and long-term adverse impacts on public health and safety under Alternative A.

Alternative B: Revised Location with Observation Deck

Similar to Alternative A, Alternative B is located within the 100-year floodplain, which could lead to short- and long-term adverse impacts to public health and safety from storm surge. However, the finished floor of the building would be placed above the minimum floodplain elevation by at least 1 to 2 feet, which would account for future subsidence and potential wave action during a storm. Flood access and evacuation plans would be filed on site, and other best practices identified herein would also be incorporated during construction to minimize impacts on public health and safety. As a result, there could be minor, short- and long-term adverse impacts on public health and safety under Alternative B.

In comparison to Alternative A, Alternative B would have beneficial impacts to public health and safety because the Wetlands Center would be constructed on the protected side of the Fisher Basin tidal levee, thereby reducing the chance for flooding during a storm event.

Alternative C: Revised Location without Observation Deck

Impacts to public health and safety under Alternative C would be the same as described for Alternative B.

3.5 Cumulative Impacts

3.5.1.1 ALTERNATIVE A: ORIGINAL PROJECT SCOPE

Section 5.2.4 of the Final RP/EA #4 (LA TIG 2018a) analyzes potential cumulative impacts of the Wetlands Center under the original project scope (i.e., Alternative A). Because there were no changes to resources that would result in different effects determinations than described in the Final RP/EA #4, the

cumulative impact analysis for the original project scope would remain the same for Alternative A. Resource areas identified as those potentially adversely impacted from implementing Alternative A and therefore warranted analysis for cumulative impacts included the following:

- Geology and substrates
- Hydrology and water quality
- Air quality
- Noise
- Habitats
- Wildlife species
- Aesthetics and Visual Resources
- Public health and safety, including flood and shoreline protection

The cumulative impact assessment described in the Final RP/EA #4 (LA TIG 2018a) included Alternative A, along with projects that have been completed or are planned within or in the vicinity of the project area. Alternative A would not result in adverse cumulative impacts on marine and estuarine fauna, essential fish habitat and managed fish species, protected species, land and marine management, environmental justice, cultural resources, or aesthetics and visual resources.

Alternative A would result in cumulative beneficial impacts on socioeconomics and tourism and recreational uses. However, the project, in combination with other projects, would lead to short- and long-term adverse cumulative impacts on geology and substrates, hydrology and water quality, air quality, noise, habitats, wildlife, and public health and safety, including flood and shoreline protection. These adverse impacts would be mitigated through best practices implemented during construction or as part of project design. Due to the size of the Wetlands Center building, Alternative A is not expected to contribute substantially to short- or long-term adverse cumulative impacts on infrastructure when analyzed in combination with other past, present, and reasonably foreseeable future actions.

3.5.1.2 ALTERNATIVE B (PREFERRED) AND ALTERNATIVE C

The analysis of potential cumulative impacts from Alternatives B and C is based on the same methodologies as those described in Section 5 of the Final RP/EA #4 (LA TIG 2018a). This cumulative analysis utilizes the same spatial boundaries described in this document for each resource (Sections 3.2 through 3.4) to evaluate potential cumulative impacts from actions occurring at or adjacent to the project area, including the proposed project, as described under Alternatives B and C. Past, present, and reasonably foreseeable activities at or near the project area include road construction and maintenance, commercial construction and waterfront development along Fleming Canal, and additional tourism opportunities at Rosethorn Park (Table 3-3.).

Alternatives B and C would contribute minor, short-term, adverse, incremental impacts on geology and substrates, hydrology and water quality, and air quality; and minor, long-term, adverse, incremental impacts on noise and public health and safety, including flood and shoreline protection. Alternatives B and C would contribute minor, long-term, beneficial, incremental impacts to socioeconomics tourism and recreational use.

Potential short- and long-term, incremental environmental impacts identified for Alternatives B and C would be minimized by implementing best practices as discussed throughout Section 3 of this analysis.

Due to the short-term nature and low intensity of impacts from Alternatives B and C, the alternatives would not substantially contribute to adverse cumulative impacts on any resource.

Table 3-3. Cumulative Action Scenario

Project Type	Project Description	Key Resources with Potential Cumulative Impacts
Road construction and maintenance	Over the life of the Wetlands Center project, the road system in the Town of Jean Lafitte may be expanded or improvements made to accommodate additional traffic and improve multi-modal transportation opportunities.	Short-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Air quality • Infrastructure • Public Health and Safety Long-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Air quality • Noise • Public Health and Safety
Commercial construction and waterfront development along Fleming Canal	The land around Fleming Canal would be redeveloped with pavilions, boardwalks, and open areas to attract local residents and tourists to a new community attraction.	Short-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Infrastructure • Public Health and Safety Long-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Noise • Public Health and Safety
Cajun Village/Fisherman's market at Rosethorn Park	A new Cajun Village/Fisherman's market in Rosethorn park would provide visitors with a taste of the real Louisiana bayou culture. Fishing boats would be able to dock and unload fresh catch. Fish market stalls would enhance bayou commerce. The Cajun Village would also feature a covered music hall to support demonstrations of live music, local dance, crafts, and cooking traditions.	Short-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Public Health and Safety Long-term adverse impacts to: • Geology and substrates • Hydrology and water quality • Noise • Public Health and Safety

Source: Town of Jean Lafitte n.d.

3.6 Comparison of Alternatives

Based on the evaluation of environmental impacts (Table 3-4) and benefits among Alternative A (original project scope), Alternative B (revised location with observation deck), and Alternative C (revised location without observation deck), Alternatives B and C have fewer environmental impacts than Alternative A. Alternative B is the preferred alternative due to the enhanced recreational use benefit of the outdoor overlook.

Table 3-4. Alternatives Comparison for the Wetlands Center

Resource	No Action	Alternative A	Alternative B	Alternative C
Geology and Substrates				
Short-term	No impact	Minor adverse	Minor adverse	Minor adverse
Long-term	No impact	Minor adverse	No impact	No impact
Cumulative	--	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts
Hydrology and Water Quality				
Short-term	No impact	Minor adverse	Minor adverse	Minor adverse
Long-term	No impact	Minor adverse	No impact	No impact
Cumulative	--	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts
Air Quality				
Short-term	No impact	Minor adverse	Minor adverse	Minor adverse
Long-term	No impact	Negligible adverse	Negligible adverse	Negligible adverse
Cumulative	--	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts
Noise				
Short-term	No impact	Minor adverse	Minor adverse	Minor adverse
Long-term	No impact	Minor adverse	Negligible adverse	Negligible adverse
Cumulative	--	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts	No substantial contribution to short- or long-term adverse cumulative impacts
Habitats				
Short-term	No impact	Minor adverse	No impact	No impact
Long-term	No impact	Minor adverse	No impact	No impact
Cumulative	--	No substantial contribution to short- or long-term adverse cumulative impacts	No impact	No impact
Socioeconomics and Environmental Justice				
Short-term	No impact	Beneficial; no disproportionate impacts on environmental justice populations	Beneficial; no disproportionate impacts on environmental justice populations	Beneficial; no disproportionate impacts on environmental justice populations
Long-term	No impact	Beneficial; no disproportionate impacts on environmental justice populations	Beneficial; no disproportionate impacts on environmental justice populations	Beneficial; no disproportionate impacts on environmental justice populations
Cumulative	--	Minor, long-term beneficial cumulative impacts	Minor, long-term beneficial cumulative impacts	Minor, long-term beneficial cumulative impacts

Resource	No Action	Alternative A	Alternative B	Alternative C
Cultural Resources				
Short-term	No impact	Consultation with the Louisiana State Historic Preservation Office (SHPO) to determine any additional requirements may be necessary.	Consultation with the Louisiana SHPO to determine any additional requirements may be necessary.	Consultation with the Louisiana SHPO to determine any additional requirements may be necessary.
Long-term	No impact	Consultation with the Louisiana SHPO to determine any additional requirements may be necessary.	Consultation with the Louisiana SHPO to determine any additional requirements may be necessary.	Consultation with the Louisiana SHPO to determine any additional requirements may be necessary.
Cumulative	--	None identified	None identified	None identified
Tourism and Recreational Use				
Short-term	No impact	No impact	No impact	No impact
Long-term	No impact	Beneficial	Beneficial	Beneficial, although fewer than Alternatives A and B
Cumulative	--	Minor, long-term beneficial cumulative impacts	Minor, long-term beneficial cumulative impacts	Minor, long-term beneficial cumulative impacts
Public Health and Safety, including Flood and Shoreline Protection				
Short-term	No impact	Minor adverse	Minor adverse	Minor adverse
Long-term	No impact	Minor adverse	Minor adverse	Minor adverse
Cumulative	--	No substantial contribution to short- and long-term adverse cumulative impacts	No substantial contribution to short- and long-term adverse cumulative impacts	No substantial contribution to short- and long-term adverse cumulative impacts

Note: Cumulative impacts are not specified for the No Action Alternative, because the No Action Alternative would not result in any direct or indirect impacts.

All three alternatives would meet the purpose and need of the Final RP/EA #4 (LA TIG 2018a), which allows the LA TIG to implement restoration projects that would provide the public with additional and enhanced recreational use services in Louisiana in a manner consistent with the Final PDARP/PEIS (DWH Trustees 2016a). However, Alternative B provides the best opportunity to provide the public with additional and enhanced recreational use services due to the incorporation of the observation deck.

Environmental impacts of Alternatives B and C would be short- and long-term, minor to moderate adverse impacts to the physical environment. Impacts to the physical environment include localized short-term disturbances to geology and substrates from ground disturbance, surficial digging, and sitework; localized short-term changes to hydrology and water quality from ground disturbance, surficial digging, sitework, and incidental spills; localized short- and long-term increases in emissions from construction activities and equipment, and visitor travel to the Wetlands Center; and localized short-term increases in noise from construction activities and transportation and use of construction equipment and materials. Impacts to the social environment include short- and long-term impacts on public health and safety from construction activities. Alternatives B and C would provide short- and long-term socioeconomic benefits to the community by providing jobs and educational and recreational opportunities; and long-term benefits to tourism and recreation, which would be available to the general public.

Based on the above analysis, the LA TIG finds that the project modifications are consistent with NEPA and support selection of the modified project. This analysis remains subject to the results of additional consultations and reviews as required for compliance with all other laws, including consideration of any significant new circumstances or information presented as part of those processes.

4 COMPLIANCE WITH OTHER LAWS AND REGULATIONS

In addition to the requirements of NEPA, other laws may apply to the alternatives in this Final Supplemental EA. The LA TIG would ensure compliance with these relevant authorities, which are listed in Sections 4.1 and 4.2. Technical assistance with National Marine Fisheries Service (NMFS) is complete and NOAA, on behalf of the LA TIG, has determined that the project in the newly proposed location will have no effect on species or habitats protected under the Endangered Species Act, Magnuson-Stevens Act, or Mammal Marine Protection Act under the jurisdiction of NMFS (Appendix C). Technical assistance with USFWS is complete, and DOI, on behalf of the LA TIG, has also determined that the project will have no effect on listed species or designated critical habitats, as there is no suitable habitat present within the project area.

Examples of applicable federal and state laws or federal EOs include, but are not necessarily limited to, those listed in this section. Additional federal laws may apply to the alternatives considered in this Final Supplemental EA. Legal authorities applicable to restoration alternative development are fully described in the context of the DWH restoration planning in the Final PDARP/PEIS, Section 6.9, Compliance with Other Applicable Authorities, and Final PDARP/PEIS Appendix 6.D, Other Laws and Executive Orders, which are incorporated by reference in this section (DWH Trustees 2016a).

Federal environmental compliance responsibilities and procedures follow the Trustee Council standard operating procedures (SOP), which are laid out in Section 9.4.6 of that document (DWH Trustees 2016b). Following this SOP, the Implementing Trustees for each alternative will ensure that the status of environmental compliance (e.g., *completed* versus *in progress*) is tracked through the DWH project portal. The Implementing Trustees will keep a record of compliance documents (e.g., Endangered Species Act letters, permits) and ensure that they are submitted for inclusion in the administrative record. The current status of environmental compliance by project can be viewed at any time on the Trustee Council's website (http://www.gulfspillrestoration.noaa.gov/environmental-compliance/).

4.1 Additional Federal Laws

Additional federal laws may apply to the preferred alternative considered in this Final Supplemental EA. Federal laws, regulations, and EOs that may be applicable include the following:

- Endangered Species Act (16 United States Code [USC] 1531 et seq.)
- Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq.)
- Marine Mammal Protection Act (16 USC 1361 et seq.)
- Coastal Zone Management Act (16 USC 1451 et seq.)
- National Historic Preservation Act (16 USC 470 et seq.)
- Coastal Zone Management Act (16 USC 1451 et seq.)
- Migratory Bird Treaty Act (16 USC 703 et seq.)
- Bald and Golden Eagle Protection Act (16 USC 668 et seq.)
- Clean Air Act (42 USC 7401 et seq.)
- Clean Water Act (33 USC 1251 et seq.)
- Marine Protection, Research and Sanctuaries Act (16 USC 1431 et seq. and 33 USC 1401 et seq.)
- Estuary Protection Act (16 USC 1221 – 1226)

- Archaeological Resource Protection Act (16 USC 470aa – 470mm)
- Abandoned Shipwreck Act of 1987 (43 USC 2101 – 2106)
- American Indiana Religious Freedom Act (42 USC 1996)
- Antiquities Act of 1906 (54 USC 320301 – 320303 and 18 USC 1866[b])
- Archaeological and Historic Preservation Act of 1974 (16 USC 469 – 469c)
- Historic Sites Act of 1935 (54 USC 320101)
- Native American Graves and Repatriation Act (25 USC 3001 – 3013)
- Sunken Military Craft Act (10 USC 113 note)
- National Marine Sanctuaries Act (16 USC 1431 et seq.)
- Farmland Protection Policy Act (7 USC 4201 – 4209)
- Rivers and Harbors Act (33 USC 401 et seq.)
- EO 11988: Floodplain Management (augmented by EO 13690, January 30, 2015)
- EO 11990: Protection of Wetlands
- EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 12962: Recreational Fisheries
- EO 13007: Indian Sacred Sites
- EO 13112: Safeguarding the Nation from the Impacts of Invasive Species
- EO 13175: Consultation and Coordination with Indian Tribal Governments
- EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 13693: Planning for Federal Sustainability in the Next Decade

4.2 State and Local Laws

The LA TIG would ensure compliance with all applicable state and local laws and other applicable federal laws and regulations relevant to the State of Louisiana. Additional laws and regulations are as follows:

- Archeological Finds on State Lands (Louisiana Revised Statute [RS] 41:1605)
- Coastal Wetlands Conservation and Restoration Authority (RS 49:213.1)
- Coastal Wetlands Conservation and Restoration Plan (RS 49:213.6)
- Louisiana State and Local Coastal Resources Management Act (RS 49:214.21 – 214.42)
- Louisiana Oil Spill Prevention and Response Act (RS 30:2451 et seq.)
- Management of State Lands (RS 41:1701.1 et seq.)
- Louisiana Coastal Resources Program (Louisiana Administrative Code [LAC] 43:700 et seq.)
- Louisiana Surface Water Quality Standards (LAC 33.IX, Chapter 11)

- Louisiana Archaeological Resources Law (RS 41:1601 – 1615)
- Louisiana Administrative Code (LAC Part I)
- Louisiana Unmarked Human Burial Sites Preservation Act (RS 8:671–681)
- Louisiana Historic Cemetery Preservation Act (RS 25:931–943)
- Louisiana Desecration of Graves (RS 14:101)
- Oyster Lease Relocation Program (LAC 43:I, 850-859, Subchapter B)
- Louisiana Scenic Rivers Program (RS 56:1856)

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APPENDIX A

Monitoring and Adaptive Management Plan for the Wetlands Center

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1 INTRODUCTION

The Wetlands Center would be located in Jefferson Parish, Lafitte, Louisiana. The Wetlands Center would be constructed immediately northeast to Lafitte's Barataria Museum at 4917 City Park Dr., Jean Lafitte, Louisiana 70067. The Wetlands Center would be situated on approximately 0.1 acre at the site of an existing maintained green space between the museum and the Fisher Basin tidal levee, which is a Town of Lafitte tidal levee (Figure 1). The Wetlands Center would be operated by the Town of Jean Lafitte, who also operates the Lafitte's Barataria Museum. The Town of Jean Lafitte would be responsible for all operation and maintenance expenses associated with the Wetlands Center.

The Wetlands Center would be approximately 3,000 square feet of building area, with the following amenities:

- Reception area
- Small meeting areas that can be adapted to accommodate future uses
- Displays highlighting the restoration and preservation of wetlands
- Multi-media, interactive exhibits
- Approximately 800-square-foot observation deck on cantilever balcony overlooking the levee and wetlands
- First aid station
- Audio visual equipment room
- Other storage rooms
- Restrooms

The building foundation would be a combination of timber piles with concrete piers and cast-in-place concrete on driven piles. An open-air walkway would connect the Wetlands Center with the Lafitte's Barataria Museum. The collocation of the two facilities would provide enhanced opportunities for the public to play and learn in one centralized area.

Project implementation would include final design and permitting, as well as construction activities. It is estimated that final design would take approximately 8 months and permitting efforts would run concurrently. It is estimated that construction of project elements would take approximately 12 months.

The current total budget for the Wetlands Center is $3,425,000. The estimated Natural Resource Damage Assessment (NRDA)-funded cost for the project is $2,000,000. Other funding sources, such as Community Development Block Grant, capital outlay, and local government matching funds, would make up the remaining $1,425,000 for the Wetlands Center. The estimated cost represents the best estimates of the Town of Jean Lafitte and does not include funds for operation, maintenance, or monitoring of the Wetlands Center. All work would be awarded in compliance with Louisiana's public bid laws and regulations, ensuring that the project is constructed at current market rates.

Figure A-1. Proposed location of the Wetlands Center.

1.1 Restoration Type Goals and Project Restoration Objectives

One of the five programmatic goals for restoration, as outlined by the Deepwater Horizon (DWH) Oil Spill Trustees (DWH Trustees) in the *Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement* (Final PDARP/PEIS) is to "provide and enhance recreational opportunities" across the Gulf Coast (DWH Trustees 2016:Section 1.5.3). Through the restoration planning process, the DWH Trustees then identified 13 distinct restoration types that pertain to the five programmatic goals, and further identified specific goals for each restoration type. The project fits within the restoration type "provide and enhance recreational opportunities." The goals of this restoration type are as follows (DWH Trustees 2016:Section 5.5.14.1):

- Increase recreational opportunities such as fishing, beach-going, camping, and boating with a combination of ecological restoration and creation of infrastructure, access, and use opportunities.
- Use education and outreach to promote engagement in restoration and stewardship of natural resources, which could include education programs, social media, and print materials.

The proposed project falls within the second restoration type goal: to provide education and outreach to promote engagement in the restoration and stewardship of natural resources by designing and potentially constructing the Wetlands Center. The project would meet the restoration goals outlined in the PDARP/PEIS (DWH Trustees 2016) by creating natural resources-related education facilities and programs as a restoration technique.

As described in Chapter 3 of the *Louisiana Trustee Implementation Group Restoration Plan and Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use* (Louisiana Trustee Implementation Group [LA TIG] 2018), hereafter referred to as the RP/EA, and Section 1 of the *Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification* (LA TIG 2019), the proposed project would meet the Oil Pollution Act (OPA) criteria for the trustee restoration goals and objectives because the project has a strong nexus to the public's lost recreational fishing and access to shoreline uses during the DWH oil spill. As discussed in the Final PDARP/PEIS, residents and visitors depend on Gulf Coast resources for varied recreation activities, including boating, fishing, and beach-going. An estimated 17 million boating, fishing, and other shoreline activity user days were lost throughout the five affected states as a result of the spill, with the losses occurring across multiple years (DWH Trustees 2016). Educational activities provide additional recreational opportunities that improve the connectedness of the public to the environment. These opportunities enhance the community's stewardship of coastal Gulf resources that were injured and, therefore, inaccessible during the DWH oil spill and response activities (DWH Trustees 2016). The proposed Wetlands Center project would address losses through education and engagement of Louisiana residents in the restoration and stewardship of coastal resources.

The overall objectives of this project are to provide educational opportunities that promote engagement in restoration and stewardship of the natural environment by constructing an educational facility that includes classrooms, interactive and static exhibits, and observation opportunities. Specific objectives include the following:

- Increase access to environmental education, resources, and outreach opportunities at the existing Nature Study Trail and Lafitte's Barataria Museum.
- Educate visitors about natural resources and restoration by designing and constructing the Wetlands Center.

- Increase educational opportunities for the public to gain an understanding of the natural science and environment of the Gulf coastal region by designing and potentially building relevant exhibits, hosting classes, and conducting interactive activities at the Wetlands Center.

1.2 Conceptual Setting

The conceptual setting for any restoration project is the interaction and linkages between the project and the environment in which it is implemented. It is important to understand how the ecological system may affect the project and how the project may affect the ecological system. This understanding allows the project proponent to identify potential issues that may arise during the implementation and monitoring phases, as well as any long-term maintenance issues that could occur. Information on the existing environmental conditions and potential environmental impacts of the project can be found in the *Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification* in Section 3 (LA TIG 2019).

As noted and approved in the *Monitoring and Adaptive Management* [MAM] *Procedures and Guidelines Manual Version 1.0* (MAM Manual) (DWH Trustees 2017), the LA TIG has chosen not to include some conceptual setting elements for this type of restoration project. Because this is a Provide and Enhance Recreational Opportunities restoration type, the information necessary to describe the conceptual setting of the project is not as in-depth as some other restoration types. For example, if the project were a Wetlands, Coastal, and Nearshore Habitats restoration type, chemical and biological attributes of the project would need to be considered as part of the conceptual setting. In addition, the critical thresholds of ecological processes and how those thresholds would be affected by the proposed project would also need to be considered.

Some aspects of the ecological system that may be affected include water quality, habitat, and rates of erosion. For example, water quality may be impacted during construction of the facility included in the project unless erosion control measures are implemented. Disturbed areas, such as those that would be cleared during construction, could create an opportunity for invasive plant species to establish and spread unless monitoring and maintenance activities are conducted to ensure the success of restored temporary impact areas. Post-construction, hydrology at and around the constructed facility could be altered. Additional information about the conceptual setting and impacts to the ecological system should be evaluated and incorporated into this MAM plan as more project information becomes available. The following sections discuss how the project-specific attributes would interact with the environment, and vice versa, as well as what the major drivers are that may influence the outcomes of the project.

1.2.1 Drivers

Drivers are outside forces, natural or anthropogenic, that have the potential to influence the outcomes of a restoration project (DWH Trustees 2017:Section E.6.3). Drivers tend to be large-scale, long-term forces that are not easily controlled at the scale of a single restoration project (Harwell et al. 2016). When evaluating the proposed project, the following outside drivers and stressors were considered:

- Lack of understanding of the natural science, resources, and environment of the Gulf coastal region
- Human attachment to or interest in the environment
- Public opinion of environmental issues
- Time and resources (e.g., income, transportation) available to take advantage of educational or recreational opportunities

- Public acceptance and use
- State of the economy
- Interest or need in the educational facility and programs

This list should not be considered exhaustive; additional drivers may be identified as the project is implemented and/or monitored. These drivers may affect the achievement of the restoration goals and objectives of this project. For example, if the state of the economy changes, and the region was to experience a recession or depression, the public many not be able to afford traveling to and visiting the site. It is likely that the Wetlands Center would attract visitors from nearby New Orleans, including tourists from various parts of the country. If the state of the economy is affecting tourist travel to New Orleans, it is possible that the proposed project would be unable to achieve the restoration goal of education and outreach to promote engagement in the stewardship of natural resources. If any drivers negatively impact the project, adaptive management may be necessary to ensure the project's goals and objectives are being achieved. The adaptive management strategy for this project is outlined in Section 3 of this plan.

1.2.2 Potential Sources of Uncertainty

Project uncertainties, or information gaps, have the potential to affect adaptive management decisions for restoration projects, such as how to improve the likelihood of achieving the goals and objectives of the project, or identifying corrective actions if the project is not performing as intended. When evaluating this recreational use project, the following uncertainties were considered:

- Ability to attract public interest and use of the area
- Potential impacts to the ecosystem as a result of increased use of the area (e.g., impacts to species and habitat)
- Potential need for ecological restoration (e.g., as a result of increased use of the area)
- Potential impact on local community (e.g., noise related to having too many visitors, trash)
- Optimum location of outreach materials or opportunities to maximize public access or participation
- Optimum medium to communicate information (e.g., visual, written, oral materials, information)

This list should not be considered exhaustive; additional uncertainties may be identified as the project is implemented and/or monitored. During the planning phase of the project, it was assumed that the new Wetlands Center would attract public interest and use of the area. However, anticipated user data for the project were not collected (e.g., traffic counts and visitor use data at the existing nature trail and Lafitte's Barataria Museum was not collected). Therefore, the ability of the proposed project to educate the public on natural resource stewardship in the area is unknown. Likewise, the potential impacts to the ecosystems as a result of increased use of the area, with installation of the facility, is not fully known at this time. Impacts to the environment are considered in the RP/EA (LA TIG 2018). Best management practices to mitigate the potential environmental impacts of the project are also outlined in the Final PDARP/PEIS (DWH Trustees 2016) and the RP/EA (LA TIG 2018).

As the project is implemented and ongoing success monitoring is conducted, project uncertainties may become apparent. If negative impacts from the project occur, or if the project is unable to attract recreational users, adaptive management may be necessary to ensure the project's goals and objectives are achieved. The focus for adaptive management is on identifying and, where possible, reducing those uncertainties that affect the decisions within the scope of the project. If not addressed, uncertainties may

delay the time it takes to achieve the restoration objectives or hinder the project's ability to fully achieve its objectives. The adaptive management strategy for the project is outlined in Section 3 of this plan.

2 PROJECT MONITORING

Monitoring is necessary to determine if the project achieves the restoration goals and objectives outlined by the LA TIG. To conduct successful project monitoring, parameters need to be established to evaluate progress toward the restoration goals. The monitoring parameters that may be considered should be geared toward resolving project uncertainties, explaining outside drivers, optimizing project implementation, supporting adaptive management and decisions about corrective actions, and informing the planning of future DWH NRDA restoration projects. The sections below outline the Wetlands Center project's monitoring parameters and the methods for measuring these parameters.

Before implementing this MAM plan, the project team must revisit the monitoring parameters and methods outlined below with the LA TIG to ensure they have been sufficiently updated to incorporate new project information.

2.1 Monitoring Parameters

As identified in the MAM Manual, the DWH Trustee's identified two types of monitoring parameters under the "Enhance Public Access to Natural Resources for Recreational Use Restoration Approach" (DWH Trustees 2017):

1. Core performance monitoring parameters applicable to recreational use projects. Core performance monitoring parameters are those used consistently across projects in order to facilitate the aggregation of project monitoring results and the evaluation of restoration progress for each restoration type (DWH Trustees 2016:Appendix 5.E.4).
2. Objective-specific performance monitoring parameters that are only applicable to a project based on a particular restoration objective

Two core performance monitoring parameters have been identified for the project:

- Visitor use
- Nature and extent of educational materials produced and distributed

In addition, several project-specific objectives have been identified for the proposed project. The monitoring parameters associated with the project-specific objectives outlined in Table 1 would be collected in addition to the core performance monitoring parameters listed above.

Table A-1. Project-Specific Objectives and Performance Monitoring Parameters for the Wetlands Center

Project-Specific Objective	Objective-Specific Performance Monitoring Parameters
Increase access to the educational and recreational facilities at the Wetlands Center (e.g., wildlife viewing along the nature trail and use of the existing museum) by planning and potentially implementing additional educational facilities.	The nature and extent of recreational and educational activities used by the public (i.e., visitor use).
Ensure visitor satisfaction of the recreational and educational facilities at the Wetlands Center.	The nature and extent of recreational activities used by the public (i.e., visitor use).
Enhance natural resource education through the planning and installation of new educational facilities at the Wetlands Center.	Infrastructure constructed and completed as designed.
Increase educational opportunities for the public to gain an understanding of natural resources through planning and implementation of new educational facilities at the Wetlands Center.	Visitor satisfaction of the nature and distribution of educational materials.

Section 2.2, below, outlines the measurement unit(s) and monitoring methods for each parameter. All methods have been cross-referenced to the recreational use restoration approach for this project to ensure the methods are appropriate.

2.2 Monitoring Methods

The monitoring methods for each parameter are outlined below, along with guidance on how, when, and where to conduct monitoring.

2.2.1 Parameter 1: Visitor Use

The preferred methodology for monitoring this parameter is direct observation. Direct observation includes staging monitoring on-site to count and record the recreational users at the proposed project site. Hand counters and data recording forms should be used to note the number of vehicles and users at the project site. Establishing a camera on-site to record this information may also be used to determine if visitor use has occurred at the project site. Other methods for sensing the amount of recreational use at the proposed project site includes use of remote sensing tools such as pressure pads at the entrance to the Wetlands Center or in the parking lot. The information generated from remote sensing would not be as accurate as an on-site monitor because only a single pass count of vehicles would be recorded, and the total users and recreational activities being undertaken would need to be estimated. For guidance and methodologies of how to measure visitor use/access, see Cessford and Muhar (2003), Horsch et al. (2017), Leggett (2015, 2017), Moscardo and Ormsby (2004), and U.S. Fish and Wildlife Service (2005).

Because visitor use patterns may vary depending on the activity, the number of individuals engaged, and the areas these activities take place, the counting locations should be identified at strategic locations that are representative of the whole recreational use area. For this project, the priority area for counts should be at the newly constructed Wetlands Center. By establishing the monitoring location(s) at the new recreational facility, the on-site monitor can count the number of vehicles and recreational users that access and use the project site. In addition, the monitor can record the types of recreational activities the users are engaged in (such as strictly visiting the Center, or if users are also participating wildlife viewing and nature hiking). However, because the proposed project also involves engineering and design, the exact monitoring locations should be selected once the planning process is complete.

Data collection should be conducted post-implementation at the facility and throughout various times of the year. As noted above, it is understood that at this time, the proposed project includes engineering and

design. Therefore, this MAM plan should be updated once the planning phase is over to include information regarding the appropriate frequency and duration of monitoring efforts, in addition to the exact monitoring locations. However, recreational user counts should be representative of as full a range of site conditions as possible, taking into account varying times of the day, week, or year; seasonal variations; weather variation; and special-use occasions, such as holidays or community events (DWH Trustees 2017:Section E.9). To accurately determine the number of recreational users at the project site accessing the new facility, data should be collected during different seasons and on weekdays, weekends, and holidays. If this methodology is not used, skewed results may occur (e.g., more people recreating on holidays versus a normal weekday). Data should be collected on-site whenever possible. At this time, it is recommended that monitoring for visitor use at the constructed Wetlands Center occur for at least 1 year after project implementation.

Data would be collected in a manner that offers one monitoring session per week. These weekly monitoring sessions would capture recreational usage at varying times of day (morning, mid-day, afternoon/evening) and varying times of the week (weekend and weekday) to quantify varying usage rates. The total number of 52 survey sessions would be conducted during the 1-year monitoring period. If after 1 year of monitoring, visitor usage and access to the new facility does not occur, corrective actions may be taken. Potential corrective actions could include public outreach and marketing for the project (e.g., news articles or signage promoting the new educational facility). Promoting the new additions to the Wetlands Center may increase the user attendance at the project site. Table 2 provides a sample methodology outlining the preferred monitoring location, duration, frequency, and sample size for the proposed project. This methodology must be updated in collaboration with the LA TIG as additional information becomes available, and before construction of the Wetlands Center.

Table A-2. Monitoring Parameter 1 Sample Methodology

Monitoring Parameter	Location	Frequency	Monitoring Session Length	Sample Size	Duration
Visitor use and access	To be determined, but located at the newly constructed facility.	52 monitoring sessions: 1 session per week, equally covering morning, afternoon, and evening timeframes as well as weekday and weekend sessions.	4 hours	Vehicles and user counts within 4-hour periods	1 year

2.2.2 Parameter 2: Nature and Distribution of Educational Materials

The recommended methodology for monitoring this parameter is similar to those outlined in Parameter 1. In order to gauge if the nature and distribution of educational materials (in this case the various educational and recreational facilities proposed) are achieving the goal of education to promote engagement in the stewardship of natural resources, an on-site monitor should be present after the project is constructed. The on-site monitor would survey the Wetlands Center visitors in order to determine if the information being presented at the Wetlands Center is appropriate for the users, and if the facility is located in an area that reaches the maximum users. In addition, the on-site monitor should determine if the facility is constructed appropriately to the specifications outlined in the engineered drawings.

The recommended methodology for monitoring this parameter includes using social indicator monitoring systems. These systems measure the nature and distribution of educational materials within restoration project areas and monitor response behavior toward restoration activities. A social indicator system that is typically employed on these types of restoration projects are user surveys. User surveys should be administered at the project site and include questions that are geared toward education. Because the methodology of the first parameter includes an on-site monitor, it is recommended that the same on-site

monitor be used to gauge the nature and distribution of educational materials at the proposed project. On-site surveys would be conducted at the same locations as the user counts (i.e., to-be-determined locations at the newly constructed education and recreation facility). Visitor educational outcomes may be influenced by an array of outside drivers. Consideration of the following factors during the survey can help interpret survey responses (DWH Trustees 2017:Section E.9):

- Visitor characteristics, especially motives and levels of experience with both the places visited and activities participated in, and cultural background
- Visitors' perceptions of the quality of the educational opportunities
- Interactions with other people
- Perceived quality of the service provided
- Perceived quality of the facility and built infrastructure

Educational outcome surveys could also be designed to collect information on visitor impact on the landscape. This information would help guide decisions made during adaptive management (if necessary) for protection or restoration of the natural environment. Sampling strategies for determining impacts within the project site, or any associated and linkages (e.g., trails), are well developed and have been extensively reviewed (e.g., Monz [2000], and others) and applied (Monz and Leung 2006). The National Park Service *Visitor Impact Phase 1 and 2 Reports* can provide additional guidance on monitoring methods (Monz and Leung 2003a, 2003b).

The proposed project includes the planning and design process; therefore, exact location, methodology, frequency, and duration of monitoring this parameter cannot be determined at this time. However, suggestions on these variables are discussed below. Once the planning process is complete, this MAM plan should be updated to include project-specific information related to each of these monitoring parameters.

It is recommended that the selection of survey respondents should be random and can be chosen using a systematic random sampling procedure. Randomization is intended to weed out bias and ensure that the respondents have an equal probability of being asked to participate. In addition, by using a random sampling method, the choice of target respondents would be determined by the sampling system, and not by the surveyors. The survey should be conducted post-implementation of the facility and throughout various times of the year. To accurately determine if recreational users have beneficial educational outcomes at the new facility at the project site, the surveys should be conducted during different seasons and on weekdays, weekends, and holidays. If this methodology is not used, skewed survey results may occur (e.g., more people recreating on holidays versus a normal weekday). The surveys should be conducted on-site whenever possible, for at least 1 year after project implementation. Off-site regional telephone surveys may also be used to supplement the on-site monitoring.

It is also recommended that the surveys be conducted in a manner that offers one survey sessions per week (two randomized weekend survey sessions and two randomized weekday survey sessions per month). These monthly observation survey sessions should capture recreational usage at varying times of day (morning, mid-day, afternoon/evening) to quantify varying usage rates. The total number of 52 survey sessions would be conducted during the 1-year monitoring period. If after 1 year of monitoring, educational outcomes are insufficient, then corrective actions may be taken. Potential corrective actions could include modifying exhibits and education materials based on user feedback or demographics (e.g., tailoring exhibits to match the age range and education level of the average recreational user) and/or routine maintenance activities (e.g., cleaning and updating equipment and exhibits).

2.2.3 Parameter 3: Infrastructure Completed as Designed

The recommended methodology for this monitoring parameter is direct review of project documents and on-site comparison. Reviewing design plans, contractor reports, and permitting and planning documents (such as the RP/EA) would equip the project monitor with all of the relevant information needed to make a decision on whether the project has been implemented properly. On-site inspections during and after project implementation would need to be conducted in order to accurately compare the as-built project to the specifications outlined in the engineering drawings, project planning documents, and permits. Monitoring would occur during all design stages and construction activities from start to completion. It is estimated that final design would take approximately 8 months and permitting efforts would run concurrently. It is estimated that construction of project elements would take approximately 12 months. If the project is not being constructed as designed, planned, and permitted, then the on-site monitor would work with the construction contractor to ensure that all contract terms and permit requirements are met.

3 ADAPTIVE MANAGEMENT

As outlined in the MAM Manual, it is not appropriate for all projects to have an adaptive management plan. Adaptive management is appropriate for large-scale, complicated projects that propose novel restoration techniques or that have high-levels of uncertainty (DWH Trustees 2017:Section 2.4.5). Adaptive management should not be used for projects where learning is unlikely, where decisions are irreversible, or where no opportunity exists to revise or reevaluate decisions based on new information (Doremus et al. 2011).

The Wetlands Center project proposes to use standard engineering specifications and tried-and-tested construction methodology to install the proposed facility. No novel restoration approaches would be used for this small-scale, localized project. In addition, this project is proposed to occur over a 20-month period, which is a standard and realistic timeframe. Because this project proposes to establish physical infrastructure, the decision to implement the project is mostly irreversible, as is the opportunity to revise or reevaluate the decision to construct educational facilities at this location. For these reasons, an adaptive management plan is not included in this MAM plan. However, if monitoring determines that the project is not meeting its goals and objectives, then corrective actions should be used. Suggested corrective actions are described in Section 2 and 5 of this document.

4 EVALUATION

The project would be considered successful if it meets the restoration goals and project-specific objectives as outlined in this document. Project performance would be assessed against the following performance criteria, all of which are based on the project's goals and objectives:

- Provide public access to recreational use of the restoration elements and services at the Wetlands Center.
- The Wetlands Center restoration project is designed, constructed, and implemented according to plans and permitting requirements.
- Increase in the public's interest and understanding of the natural resources of coastal Louisiana is taking place through the implementation of the new educational facilities at the Wetlands Center.

Methods for analyzing, evaluating, and interpreting the monitoring data collected for the project to determine if the performance criteria are being met, could include the following:

- Data summarization and characterization: This analysis would include calculating the basic statistics of the monitoring data (e.g., how many users recreate at the site on a monthly basis). This information would form the basis for more compressive analysis (if needed). Data from this analysis can be presented in both graphical and tabular formats.
- Status determination: This evaluation would help determine if the project is meeting the performance criteria. Observed values from the monitoring efforts would be compared to the performance criteria and perhaps to observed historical values. For example, if the monitoring results indicate that users are not satisfied by the educational information presented at the Wetlands Center, then the project is not achieving its restoration goal. Or, it may be possible to compare the number of users at the project site to other comparable educational facilities along the coast of Louisiana, to see if project is attracting a comparable number of recreational users. This evaluation methodology would involve both expert interpretation and statistical analysis.
- Trends evaluation: This evaluation methodology can be used to address whether there is a change in recreational users over time. This analysis can inform how trends form, and if those trends are randomly occurring.

Data evaluation would be refined at a later date when additional project information becomes available.

5 PROJECT-LEVEL DECISIONS: PERFORMANCE CRITERIA AND POTENTIAL CORRECTIVE ACTIONS

Performance criteria and potential corrective actions have been developed for each monitoring parameter for the proposed project (Table 3). Additional corrective actions may be identified during project implementation, as well as during post-implementation, as appropriate. If additional corrective actions are identified, then this section of the MAM would be updated to reflect changes throughout project implementation.

Table A-3. Performance Criteria and Potential Corrective Actions by Monitoring Parameter

Monitoring Parameter	Final Performance Criteria	Potential Corrective Actions
Visitor Use	Increased recreational opportunities following implementation of the restoration elements and services.	Improve project infrastructure. Conduct routine maintenance activities (e.g., ensuring educational exhibits are clean and readable).
Nature and Distribution of Educational Materials	Nature of educational materials at the Wetlands Center is appropriate for visitors, and the location of the facility is reaching a high number of visitors.	Change information in exhibits, classes, or films to better connect with the Wetlands Center visitors. Potentially move some project exhibits or displays in order to reach higher numbers of visitors.
Infrastructure Completed as Designed	Project is designed, constructed, and implemented according to plans and permitting requirements.	Work with the construction contractor to ensure that all contract terms and permit requirements are met.

6 MONITORING SCHEDULE

The schedule for the project monitoring is shown in Table 4, separated by monitoring activity. The duration of monitoring would be determined prior implementing this MAM plan. This information would be added and revised as needed whenever monitoring methods are refined or revised.

Table A-4. Project Monitoring Schedule

Monitoring Parameter	Monitoring Timeframe		
	Pre-construction	Construction	Post-construction
Visitor use and access			X
Nature and distribution of educational materials			X
Infrastructure completed as designed	X	X	X

7 DATA MANAGEMENT

Qualitative and quantitative data would be collected as part of this MAM plan. The type of data to be collected, as well as how those data would be collected, processed, reviewed, stored, and shared, is outlined below. Section 3 of the MAM Manual (DWH Trustees 2017) provides detailed guidance on data collection, review, storage, and accessibility, and should be followed, along with this MAM plan.

7.1 Data Description

Table 5 describes the data to be collected as part of this MAM plan.

Table A-5. Project Data

Monitoring Parameter	Data Description			
	Type of Data	Collection Method	Timing and Frequency	Location and Quantity
Visitor use and access	Total counts of vehicles and users	Direct observation conducted in-person and on-site	One count per week, post-project implementation (2 randomized weekend and 2 randomized weekday counts per month) for 1 year.	To be determined, but located at the newly constructed facility. 52 surveys would be collected during the 1-year period.
Nature and distribution of educational materials	Visitor surveys	Personal survey conducted in-person and on-site via randomization method	One survey per month, post-project implementation (2 randomized weekend surveys and 2 randomized weekday surveys per month) for 1 year.	To be determined, but located at the newly constructed facility. 52 surveys would be collected during the 1-year period.
Infrastructure completed as designed	Monitoring datasheets and photographs confirming construction is completed to the engineering specifications and permit requirements	Direct observation conducted in-person and on-site	Daily during project implementation. Once after project is constructed.	On-site. The quantity would depend on the construction schedule.

All data would be collected either by hand on monitoring or survey forms or by tablet on electronic forms. If data are recorded on hardcopy field datasheets, these entries would be scanned to a Portable Document Format (PDF) file, and archived, along with the hardcopy. All photographs, datasheets, notebooks, and revised data files would be retained. If data are collected electronically, metadata would be developed for consistency. All electronic files would be stored in a secure location in such a way that the LA TIG would have guaranteed access to all versions of the data.

All data would be collected following the standard guidelines that were developed during early restoration, as discussed in the MAM Manual (DWH Trustees 2017:Section 3.2).

7.2 Data Review

A quality assurance project plan (QAPP) would be required by the LA TIG prior to project implementation. This QAPP would outline the appropriate quality assurance/quality control (QA/QC) process in accordance with the data management section of the MAM Manual (DWH Trustees 2017). The plan should include, at minimum, information and guidance on the following QA/QC procedures:

1. Data verification: Ensure the data were collected correctly, errors are identified and addressed appropriately, and that any metadata are in standard format. In addition, if transcription of data is required, then the QAPP should include a process to verify that the transcription process is completely accurately.
2. Data procurement: Ensure that the submittal of data to the DWH Trustees via the online portal, Data Integration Visualization Exploration and Reporting (DRIVER), is done correctly.
3. Data validation and final QA/QC: Ensure that the Town of Jean Lafitte can adequately conduct a final QA/QC check for non-data entry errors (date/time, latitude/longitude, units, expected value range, etc.).
4. Information package creation: Guidance for the Town of Jean Lafitte to create a public information package.

7.3 Data Storage and Accessibility

MAM data would be stored in the DIVER Restoration Portal. Data would be submitted as soon as possible, but no more than 1 year from when the data were collected. Data would be submitted yearly. Data storage and accessibility would be consistent with the guidelines in Section 3.1.3 of the MAM Manual (DWH Trustees 2017).

7.4 Data Sharing

The LA TIG would ensure that data sharing follows standards and protocols set forth in the Open Data Policy (Trustee Council 2016: Section 10.6.6). No data release can occur if it is contrary to federal or state laws (Trustee Council 2016: Section 10.6.4). The DWH Trustees would provide notification to the Cross-TIG MAM work group when new data and information packages have been uploaded to DIVER (DWH Trustees 2017). In the event of a public records request related to project data and information that are not already publicly available, the trustee to whom the request is addressed would provide notice to the other LA TIG Trustees prior to releasing any project data that are the subject of the request.

As noted in Section 7.3, the project's data would be stored in the DIVER Restoration Portal. These data would be shared with the public by publishing the data to the Trustee Council website (Trustee Council

2016: Section 10.6.6). For further instructions on this process, see the DIVER Restoration Portal Manual (National Oceanic and Atmospheric Administration DWH Data Management Team, Undated).

8 REPORTING

Reporting should follow the guidelines set forth in Section 2.6.3 and Attachment D of the MAM Manual (DWH Trustees 2017). Information to be reported includes the following:

1. An introduction that provides an overview of the project, location, and restoration activities, as well as restoration objectives and performance criteria applicable to the project
   a. This information can be taken from this MAM plan and repeated in all reports.
2. A detailed description of the methods used for implementation of the MAM
   a. This information can be taken from this MAM plan and repeated in all reports.
3. Results from the reporting period, or, in the case of the final report, a comprehensive summary of results from the entire MAM plan implementation period
   a. Results should be presented clearly and show progress that has been made toward performance criteria and/or restoration objectives. Information that can be used to present results includes tables or graphs, site visit summaries, and other datasets that support analysis of the project's progress toward meeting performance standard.
4. A discussion of the results (optional for interim reports, required for final report)
5. Conclusions that summarize the findings, progress toward meeting performance criteria and restoration objectives, and recommendations for corrective actions (optional for interim reports, required for final report)
6. Project highlights showcasing lessons learned to inform future project planning and implementation
7. Transmission of data and meta-data used in the report, as well as a description of all data collected during the reporting period, even if they were not used in the report
8. A complete list of references

Three reports should be submitted, excluding any additional reports deemed necessary as a result of corrective actions that require an extension of the monitoring period. The first report should be submitted after the completion of pre-construction monitoring, the second report should be submitted after the completion of construction monitoring, and the third (final) report should be submitted after completion of the 1-year post-construction monitoring.

The DWH Trustees, as stewards of public resources under OPA, should inform the public on the restoration project's progress and performance. Therefore, the LA TIG should report the process of the proposed project via the DIVER Restoration Portal, as outlined in Chapter 7 of the PDARP/PEIS (DWH Trustees 2016).

9 ROLES AND RESPONSIBILITIES

The LA TIG is responsible for "addressing MAM objectives that pertain to their restoration activities and for communicating information to the Trustee Council or Cross-TIG MAM work group" (DWH Trustees 2016). This includes reviewing and approving MAM plans, identifying MAM priorities for the Louisiana Restoration Area, ensuring that MAM implementation is compatible with the MAM Manual guidelines (DWH Trustees 2017) and that data are submitted to the Restoration Portal, aggregating and evaluating

MAM data, ensuring QA/QC of MAM data, and communicating regarding implementation status and results of MAMs with the Trustee Council and Cross-TIG MAM work group.

As the implementing trustee, the Town of Jean Lafitte is responsible for developing the MAM plan, conducting all monitoring activities, evaluating project progress toward restoration objectives using the identified performance criteria, identifying the need for and proposing corrective actions to the LA TIG, and submitting MAM data and project information into the Restoration Portal in accordance with the data management procedures outlined within this MAM (Trustee Council 2016).

The project proponent, the Town of Jean Lafitte, is responsible for all maintenance activities and costs related to the Wetlands Center project, including any repairs needed over the life of the facility.

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11 MAM PLAN REVISION HISTORY

Version No.	Date Updated	Reason for Update	Summary of Changes
1	June 1, 2018	Draft MAM Plan	N/A
2	October 18, 2019	Revised Draft MAM Plan	MAM Plan was updated to reflect proposed revised location adjacent to the existing town complex.
3	January 21, 2020	Finalized MAM Plan	MAM Plan was finalized during the development of the Final Supplemental EA and FONSI.

APPENDIX B

Finding of No Significant Impact (FONSI) from Implementation of the Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification

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1 INTRODUCTION

The Louisiana Trustee Implementation Group (LA TIG) prepared the *Louisiana Trustee Implementation Group Final Supplemental Environmental Assessment for the Wetlands Center Project Modification* (Final Supplemental EA) to assess the environmental impacts from modifications to the originally proposed Wetlands Center project scope and design that was evaluated and selected in the *Final Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use* (Final RP/EA #4). The Final RP/EA #4 was finalized in July 2018 (LA TIG 2018). The LA TIG is responsible for restoring the natural resources and services within the Louisiana Restoration Area that were injured by the April 20, 2010, Deepwater Horizon (DWH) oil spill and associated spill response efforts. The LA TIG includes five Louisiana state trustee agencies and four federal trustee agencies: the Louisiana Coastal Protection and Restoration Authority; the Louisiana Department of Natural Resources; the Louisiana Department of Environmental Quality; the Louisiana Oil Spill Coordinator's Office; the Louisiana Department of Wildlife and Fisheries; the U.S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service and National Park Service; the U.S. Department of Agriculture; and the U.S. Environmental Protection Agency (EPA).

The Final Supplemental EA fulfills the requirements under the implementing regulations of the National Environmental Policy Act (NEPA), and is consistent with the Deepwater Horizon Oil Spill Trustees' (DWH Trustees') findings in the *Deepwater Horizon Oil Spill Final Programmatic Damage Assessment and Restoration Plan/Programmatic Environmental Impact Statement* (PDARP/PEIS) and Record of Decision (ROD) and the 2016 Consent Decree resolving civil claims by the DWH Trustees against BP Exploration and Production, Inc., arising from the DWH oil spill (DWH Trustees 2016). The Final Supplemental EA tiers from the environmental analysis conducted in the Final PDARP/PEIS, incorporates applicable analyses provided in the Final RP/EA #4, and evaluates the environmental consequences of additional alternatives considered in the Final Supplemental EA.

The original scope and design of the Wetlands Center project was evaluated in the Draft and Final RP/EA #4. Following release of the Final RP/EA #4, the Town of Jean Lafitte requested that the LA TIG consider collocating the Wetlands Center immediately adjacent to the town's existing facility that contains the town's library, multipurpose facility, and Lafitte's Barataria Museum. The original location was approved for construction at the trailhead of the Town of Jean Lafitte's Nature Study Trail, within the wetland area that is adjacent to Lafitte's Barataria Museum. The LA TIG prepared the Final Supplemental EA to consider alternatives consistent with the purpose and need of the original project and evaluate potential environmental impacts from these modifications that differ from the impact analysis of the original project scope described in the Final RP/EA #4.

2 LEAD AND COOPERATING AGENCIES

The Council on Environmental Quality's NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508) require a federal agency to serve as lead agency to supervise the NEPA analysis when more than one federal agency is involved in the same action (40 CFR 1501.5[a]). The LA TIG designated the EPA as the lead agency responsible for NEPA analysis for the Final Supplemental EA. Each of the other federal and state co-Trustees is participating as a cooperating agency pursuant to NEPA regulations (40 CFR 1508.5) and the *Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the Deepwater Horizon (DWH) Oil Spill* (SOP) (Trustee Council 2016).

3 PUBLIC PARTICIPATION

The Draft Supplemental EA was published on the NOAA Restoration Portal (http://www.gulfspillrestoration.noaa.gov/restoration-areas/louisiana). Comments on the Draft Supplemental EA were accepted from December 23, 2019, to January 22, 2020. The LA TIG accepted public comments through web-based comment submission and via U.S. mail. No substantive public comments were received during the 30-day public comment period.

3.1 Adoption of the Final Supplemental EA NEPA Analysis

Each federal agency on the LA TIG must make its own independent evaluation of the NEPA analysis in support of its decision-making responsibilities. In accordance with 40 CFR 1506.3(a) and the SOP, each of the federal agencies participating in the LA TIG has reviewed the Final Supplemental EA, found that it meets the standards set forth in its own NEPA-implementing procedures, and accordingly has adopted the NEPA analysis.

4 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

NEPA and the Council on Environmental Quality's NEPA regulations require the federal agency decisionmaker to consider the environmental effects of the Proposed Action and a reasonable range of alternatives, including the No Action Alternative (42 United States Code [USC] 4332; 40 CFR 1502.14). The Final Supplemental EA considers a total of four alternatives for the Wetlands Center project. A detailed description of each of the alternatives considered in the Final Supplemental EA is provided in Section 2 of the Final Supplemental EA.

4.1 Action Alternatives

Four alternatives for the Wetlands Center have been identified for analysis in the Final Supplemental EA, all of which would be located in the Town of Jean Lafitte, Jefferson Parish, Louisiana. Alternatives A, B and C are action alternatives associated with the Wetlands Center. Alternative A is the original project scope and location of the Wetlands Center, as defined in the Final RP/EA #4 (LA TIG 2018). Alternative B is the revised location of the Wetlands Center immediately adjacent to the east of the existing Lafitte's Barataria Museum and includes an observation deck. Alternative C is the same location as Alternative B, without the outdoor amenity of the proposed observation deck. Alternative D is the No Action Alternative. Under all action alternatives, the LA TIG would allocate $2,000,000 of NRDA funds to the Town of Jean Lafitte for the Wetlands Center. Table B-1 summarizes the action alternatives analyzed in the Final Supplemental EA.

Table B-1. Action Alternatives

Alternative Name	Location	Summary	Preferred Alternative
Alternative A: Original Project Scope	Town of Jean Lafitte, Jefferson Parish	A three-level Wetlands Center with entry promenade and observation tower built on piers over an active wetland complex.	No
Alternative B: Revised Location with Observation Deck	Town of Jean Lafitte, Jefferson Parish	Wetlands Center located immediately adjacent to the east of the existing Lafitte's Barataria Museum. This alternative includes an 800-square-foot outdoor observation deck.	Yes
Alternative C: Revised Location without Observation Deck	Town of Jean Lafitte, Jefferson Parish	Wetlands Center located immediately adjacent to the east of the existing Lafitte's Barataria Museum. This alternative does not include an outdoor observation deck.	No

4.2 No Action Alternative

Under the No Action Alternative (Alternative D), the LA TIG would not, at this time, select and implement additional recreational use restoration intended to compensate for lost natural resources or their services resulting from the DWH oil spill. Accordingly, the No Action Alternative would not meet the purpose and need for implementing alternatives that address lost natural resources and their services as described in Section 5.3.2 of the Final PDARP/PEIS and in Section 1.4 of the Final Supplemental EA. The No Action Alternative would not meet the DWH Trustees' goals of providing and enhancing recreational opportunities. If the No Action Alternative was implemented, none of the action alternatives would be selected for implementation and restoration benefits and services associated with these action alternatives would not be achieved at this time. The LA TIG rejects the No Action Alternative as a viable means of compensating the public for the lost recreational use injuries caused by the DWH oil spill.

4.3 Preferred Alternative

After evaluating a total of four alternatives for the Wetlands Center project, including the No Action Alternative, the LA TIG is proposing Alternative B: Revised Location with Observation Deck as the preferred alternative for implementation. Based on the analysis presented in the Final Supplemental EA, the LA TIG finds that the project modifications of Alternative B are consistent with NEPA and the LA TIG supports selection of the modified project. This analysis remains subject to the results of additional consultations and reviews as required for compliance with all other laws, including consideration of any significant new circumstances or information presented as part of those processes.

5 ANALYSIS SUMMARY

The Proposed Action—which is to implement the Preferred Alternative B and associated project elements described in the Final Supplemental EA—and alternatives were analyzed to determine the context and intensity of potential environmental impacts that might result from the alternatives per NEPA. Section 3 of the Final Supplemental EA provides the analysis needed to assess the significance of the impacts of the Proposed Action. The Final Supplemental EA tiers from the environmental analysis conducted in the Final PDARP/PEIS, incorporates applicable analyses provided in the Final RP/EA #4, and evaluates the environmental consequences of additional alternatives considered in the Final Supplemental EA. The Final Supplemental EA evaluated both beneficial and adverse impacts of the Proposed Action.

The analysis included in the Final Supplemental EA supports the following conclusions:

- The Proposed Action will have no significant adverse impacts to unique characteristics of the geographic areas. The Proposed Action is not expected to have any significant adverse effects on wetlands, floodplains, municipal water sources, ecologically critical areas, wild and scenic river corridors, park lands, wilderness, wilderness research areas, research natural areas, inventoried roadless areas, national recreation areas, or prime farmlands, particularly on a regional basis, beyond those disclosed and evaluated in the Final PDARP/PEIS. The effects on these geographic areas from the restoration techniques in the Final Supplemental EA were evaluated in the Final Supplemental EA and found to be within the scope of effects evaluated in the Final PDARP/PEIS. The purpose of the Proposed Action is to improve the condition of natural resources and provide recreational use opportunities lost as a result of the DWH oil spill.
- The effects of the Proposed Action on the quality of the human environment are not controversial. No substantive public comments were received for the Draft Supplemental EA between December 23, 2019, to January 22, 2020.
- The Proposed Action neither establishes a precedent for future LA TIG actions with significant effects nor represents a decision in principle about a future consideration. Future LA TIG actions will be determined through separate planning processes.
- The Proposed Action will have no significant adverse cumulative impacts. Due to the primarily short-term nature and low intensity of impacts from the Proposed Action, this alternative will not substantially contribute to adverse cumulative impacts on any resource.
- The Proposed Action will have no significant adverse impacts on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural, or historical resources. The Proposed Action will be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.
- Based on information in the Final Supplemental EA, the Proposed Action is not expected to violate federal, state, or local laws or requirements imposed for environmental protection. However, the project will be monitored appropriately, and approaches and designs may be applied, adopted, or modified from other similar projects as deemed necessary.
- The Proposed Action is not expected to impact Endangered Species Act-listed endangered or threatened species, or their critical habitat because no listed species nor critical habitat occur in the project area.
- The Proposed Action will not have adverse impacts on vulnerable marine or coastal ecosystems because these ecosystems do not occur in the project area.
- The Proposed Action is not expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.) because the project area is disturbed with little to no habitat that would contribute to species biodiversity or ecosystem function.
- The Proposed Action will not adversely affect marine mammals protected under the Mammal Marine Protection Act or managed fish species under the jurisdiction of NOAA due to the location of the action (see Final Supplemental EA Appendix C).
- The Proposed Action is not expected to result in the introduction or spread of a nonindigenous species. Any construction-related activities with potential for introduction of invasive species will follow provisions for invasive species management and best practices to minimize the risk of the introduction or spread of nonindigenous species.

- The Proposed Action will have no significant adverse impacts on public health and safety. The restoration activities will provide long-term benefits for improved recreational access, and best practices will be implemented on a site-specific basis to mitigate the potential for adverse impacts to occur to public health and safety during implementation.
- The Proposed Action is expected to comply with all applicable federal laws and regulations relevant to the project. Environmental reviews and consultations will be finalized prior to initiating the relevant project activities. Table B-2 provides a summary of the federal regulatory compliance review and approvals as of December 15, 2019. For all environmental statutes in which the compliance status is labeled as complete, no significant or adverse effects were found. Environmental reviews and consultations not yet completed will be finalized prior to initiating the relevant project activities.
- The Proposed Action has no highly uncertain, unique, or unknown risks. The land acquisition, habitat restoration and management activities, and conservation practices are successful, well-established, and commonly used practices for habitat restoration and land conservation.

Table B-2. Current Status of Federal Regulatory Compliance for Proposed Action

Alternative Name	Bald and Golden Eagle Protection Act (U.S. Fish and Wildlife Service [USFWS])	Coastal Barrier Resources Act (USFWS)	Coastal Zone Management Act	Endangered Species Act Section 7 (National Marine Fisheries Service [NMFS])	Endangered Species Act Section 7 (USFWS)	Essential Fish Habitat (NMFS)	Marine Mammal Protection Act (NMFS)	Marine Mammal Protection Act (USFWS)	Migratory Bird Treaty Act (USFWS)	National Historic Preservation Act	Rivers and Harbors Act/Clean Water Act (U.S. Army Corps of Engineers Permit)
Alternative B: Revised Location with Observation Deck	Complete	In Progress	In Progress	Complete	Complete	Complete	Complete	Complete	Complete	In Progress	In Progress

6 LITERATURE CITED

Deepwater Horizon Oil Spill Trustees (DWH Trustees). 2016. *Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement*. Available at: http://www.gulfspillrestoration.noaa.gov/restoration-planning/gulf-plan.

Louisiana Trustee Implementation Group (LA TIG). 2018. *Louisiana Trustee Implementation Group Final Restoration Plan/Environmental Assessment #4: Nutrient Reduction (Nonpoint Source) and Recreational Use.* Available at: https://la-dwh.com/restoration-plans/ Accessed October 14, 2019.

Trustee Council. 2016. *Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the* Deepwater Horizon *(DWH) Oil Spill.* November 15, 2016. Available at: http://www.gulfspillrestoration.noaa.gov/sites/default/files/wp-content/uploads/DWH-SOPs.pdf.

7 DETERMINATION

Based on the information presented in this document and the analysis contained in the Final Supplemental EA, it is hereby determined that implementation of the Wetlands Center Alternative B: Revised Location with Observation Deck will not significantly impact the quality of the human environment, as described above. Therefore, an Environmental Impact Statement will not be prepared.

FOR THE U.S. DEPARTMENT OF THE INTERIOR

_____

DEBORA L. MCCLAIN

Alternate Department of the Interior Natural Resources Trustee Official for the Louisiana Trustee Implementation Group

Date: _____

FOR THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

_____

CHRISTOPHER D. DOLEY

Principal Representative, National Oceanic and Atmospheric Administration

Date: _____

_____

TONY PENN

Chief, Assessment and Restoration Division

National Ocean Service

Date: _____

FOR THE U.S. DEPARTMENT OF AGRICULTURE

_____

HOMER L. WILKES

Principal Representative, U.S. Department of Agriculture

Date: _____

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

_____

MARY KAY LYNCH

Alternate to Principal Representative, U.S. Environmental Protection Agency

Date: _____

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APPENDIX C

Endangered Species Act, Essential Fish Habitat, and Marine Mammal Protection Act No Effect Determination Letter

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

MEMORANDUM FOR: FILE

FROM: Christy Fellas, DWH Environmental Compliance Coordinator
NOAA Restoration Center, Southeast Region

DATE: November 15, 2019

SUBJECT: The Wetlands Center Project Modification from the LA TIG RP/EA #4 Supplemental: ESA, EFH and MMPA No Effect Determinations

This project was previously analyzed in LA TIG RP/EA #4 and the current supplemental EA was issued to analyze the change in location. Based on my review of supplemental EA and the BE form (Fall 2019), the NOAA Restoration Center (RC) determined that the modification of the Wetland Center Project located in in Jean Lafitte, LA, will have no effect to species or habitats listed under the Endangered Species Act or designated Essential Fish Habitat or protected under the Marine Mammal Protection Act under the jurisdiction of National Marine Fisheries Service.

This is due to the nature of project work occurring in upland locations outside of wetland areas in a currently disturbed urban area. There will be no in-water work associated with this project. This project will not require further evaluation under ESA, EFH or MMPA for species or habitats under the jurisdiction of NOAA. If the project is modified in a way that could change these determinations, it will be reevaluated as appropriate.