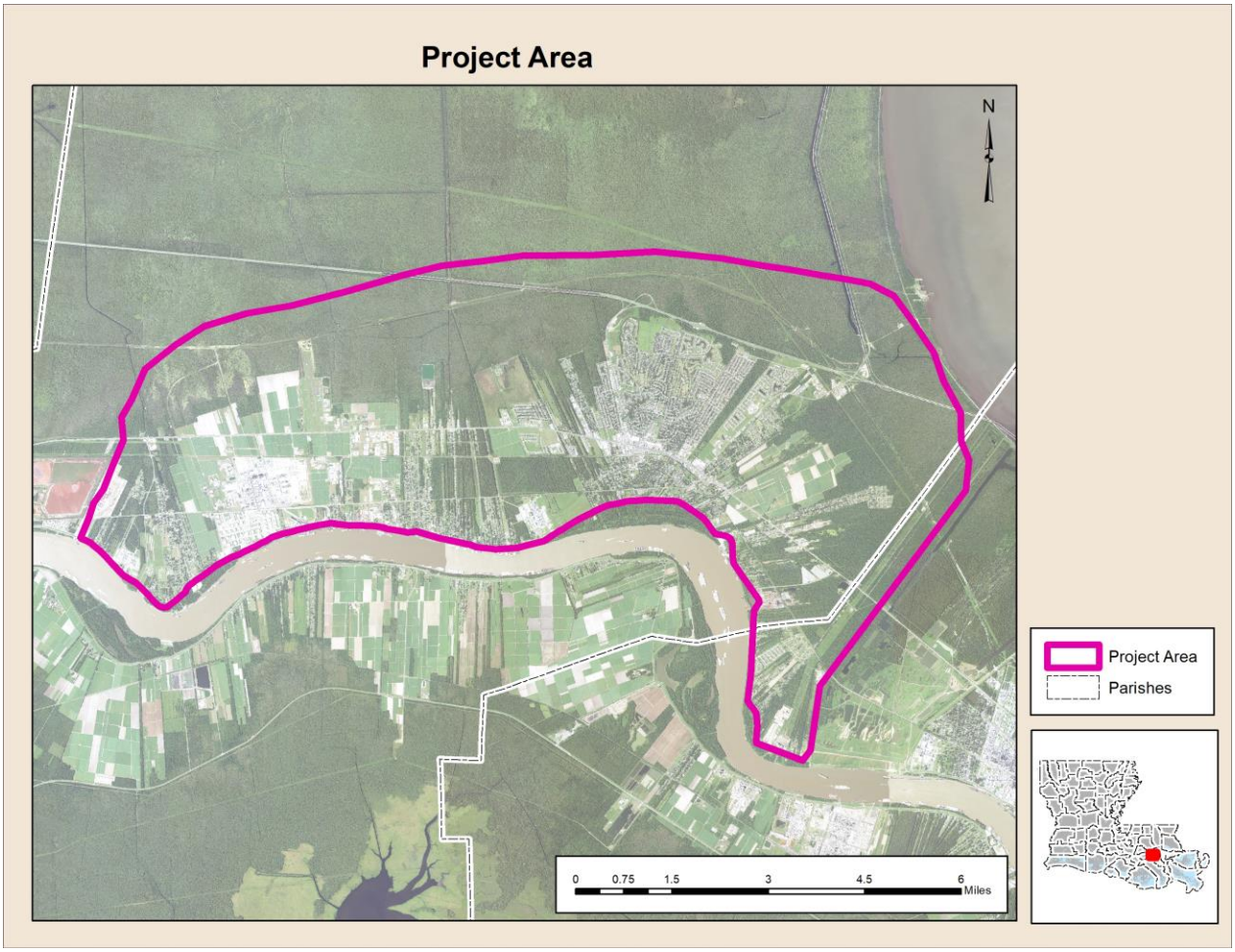
DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Structural Alignment Surveys and Borings Investigations

St. Charles and St. John the Baptist Parishes, Louisiana

SEA #570



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

Table of Contents

1. Introduction 4
   1.1 Proposed Action 4
   1.2 Authority 7
   1.3 Purpose and Need for the Proposed Action 7
   1.4 Prior Studies 7
   1.5 Public Concerns 8
   1.6 Wetland Value Assessment 8
2. Alternatives Including the Proposed Action 10
   2.1 No-Action Alternative (Future without Project (FWOP)) 10
   2.2 Proposed Action 10
3. Affected Environment 19
   3.1 Description of the Project Area 19
      3.1.1 Climate, Climate Change, Sea-level Rise, and Subsidence 19
      3.1.2 Geology 20
   3.2 Relevant Resources 20
      3.2.1 Wetlands 22
      3.2.2 Wildlife Resources 23
      3.2.3 Aquatic and Fisheries Resources 24
      3.2.4 Threatened, Endangered, and Protected Species 25
      3.2.5 Water Quality 25
      3.2.6 Cultural Resources 26
      3.2.7 Soils and Prime and Unique Farmlands 27
      3.2.8 Aesthetics and Visual Resources 27
      3.2.9 Recreational Resources 28
      3.2.10 Environmental Justice 28
      3.2.11 Air Quality 31
      3.2.12 Noise 32
      3.2.13 Transportation 33
4. Environmental Consequences 33
   4.1 Wetlands 34
   4.2 Wildlife Resources 35
   4.3 Aquatic Resources/Fisheries 36
   4.4 Threatened and Endangered Species 37
   4.5 Water Quality 39
   4.6 Cultural Resources 40
   4.1 Soils and Prime and Unique Farmlands 42

4.2 Aesthetics and Visual Resources....43
4.3 Recreation Resources....44
4.4 Environmental Justice....45
4.5 Air Quality....46
4.6 Noise....47
4.7 Transportation....48
4.8 Cumulative Impacts Analysis....49
5. Mitigation....52
6. Compliance with Environmental Laws and Regulations....53
7. Conclusion....61
8. Prepared By....62
9. References....62

FIGURES

Figure 1: Project Area Map .... **Error! Bookmark not defined.**
Figure 2: Proposed Action Map....182
Figure 3: Typical Surveys and Borings Clearing and Grubbing ROW.... **Error! Bookmark not defined.**3
Figure 4: Comparison between EIS and Proposed Action.... **Error! Bookmark not defined.**8

TABLES

Table 1: Relevant Prior Studies and Reports 8
Table 2: Relative Sea Level Rise Estimates....20
Table 3: Relevant Resources and Their Institutional, Technical, and Public Importance 20
Table 4: Relevant Resources Comparison between SEA and EIS 22
Table 5: Percentage Minority Population by CDP, Project Area....30
Table 6: Low Income Population by CDP, Study Area....31
Table 7: Primary and Secondary NAAQS for the Seven Contaminants Established by EPA .... **Error! Bookmark not defined.**
Table 8. Annual average daily traffic for major traffic routes within the study area....33
Table 9. Total direct wetland impacts associated with the Proposed Action....34
Table 10. Noise sensitive receptors....48
Table 11. List of preparers....62

APPENDICES

Appendix A: Agency Coordination
Appendix B: Draft 404(b)(1) Determination
Appendix C: Programmatic Agreement
Appendix D: Representative Species Table
Appendix E: List of Acronyms

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SEA 570

1. Introduction

The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Division, Regional Planning and Environment Division South, has prepared this Supplemental Environmental Assessment (SEA) for the New Orleans District (CEMVN) to evaluate potential impacts of surveys and borings, and related activities necessary to investigate geophysical and environmental conditions in areas that are being considered for potential changes to the structural alignment levee footprint in St. John the Baptist and St. Charles Parishes, Louisiana (LA), as described in the West Shore Lake Pontchartrain Environmental Impact Statement (2016 WSLP EIS; http://www.mvn.usace.army.mil/About/Projects/West-Shore-Lake-Pontchartrain/). Additionally, the SEA also evaluates adding 5 stockpile/staging areas for WSLP construction related activities as well as the addition of a mitigation bank credit purchase option into the mitigation plan approved in the 2016 WSLP EIS for compensating bottomland hardwoods (BLH) impacts. The Record of Decision (ROD) for the 2016 WSLP EIS was signed by the Assistant Secretary of the Army on September 14, 2016. The 2016 WSLP EIS and ROD are hereby incorporated by reference. This SEA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This SEA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, and CEMVN District, to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Potential changes to the WSLP levee alignment in St. John the Baptist and St. Charles Parishes and the addition of the 5 stockpile/staging areas being considered would occur outside of the Right of Way (ROW) described in the 2016 WSLP EIS. The proposed stockpile and staging areas would provide the ROW necessary for construction related activities approved in the 2016 WSLP EIS. The proposed surveys and borings would obtain the data necessary to further investigate potential alignment changes, and would aid in the engineering and design of the levee. At present, three potential levee alignment shifts are being considered that could aid in the constructability, improve the engineering, and decrease the utility relocations needed for the alignment. One of the shifts being considered would aid in constructability and construction safety at interstate crossings. Another shift would accommodate the River Reintroduction into Maurepas Swamp Project (PO-0029). If the results of the investigations discussed in this SEA and further engineering and design of the WSLP levee suggests an alignment shift is warranted, evaluation of the impacts associated with potential changes to the structural alignment identified in the 2016 WSLP EIS as well as any other construction related changes would be discussed in subsequent NEPA documentation.

1.1 Proposed Action

The proposed action consists of conducting surveys and borings required to investigate geophysical and environmental conditions in areas where CEMVN is considering potential changes to and to further refine engineering and design of the 2016 WSLP EIS's levee alignment in St. John the Baptist and St. Charles Parishes as well as adding 5 stockpile/staging locations and access roads for construction related activities. Cross-sectional surveys, soil borings and cone penetration testings (CPTs), environmental and cultural resources investigations, and Hazardous, Toxic, and Radioactive Waste (HTRW) assessments would be conducted outside of the levee alignment right of way (ROW) discussed in the 2016 WSLP EIS. Additionally, the ability purchase mitigation bank credits as an option to mitigate BLH impacts from construction of the levee is being added to the mitigation plan discussed in the 2016 WSLP EIS.

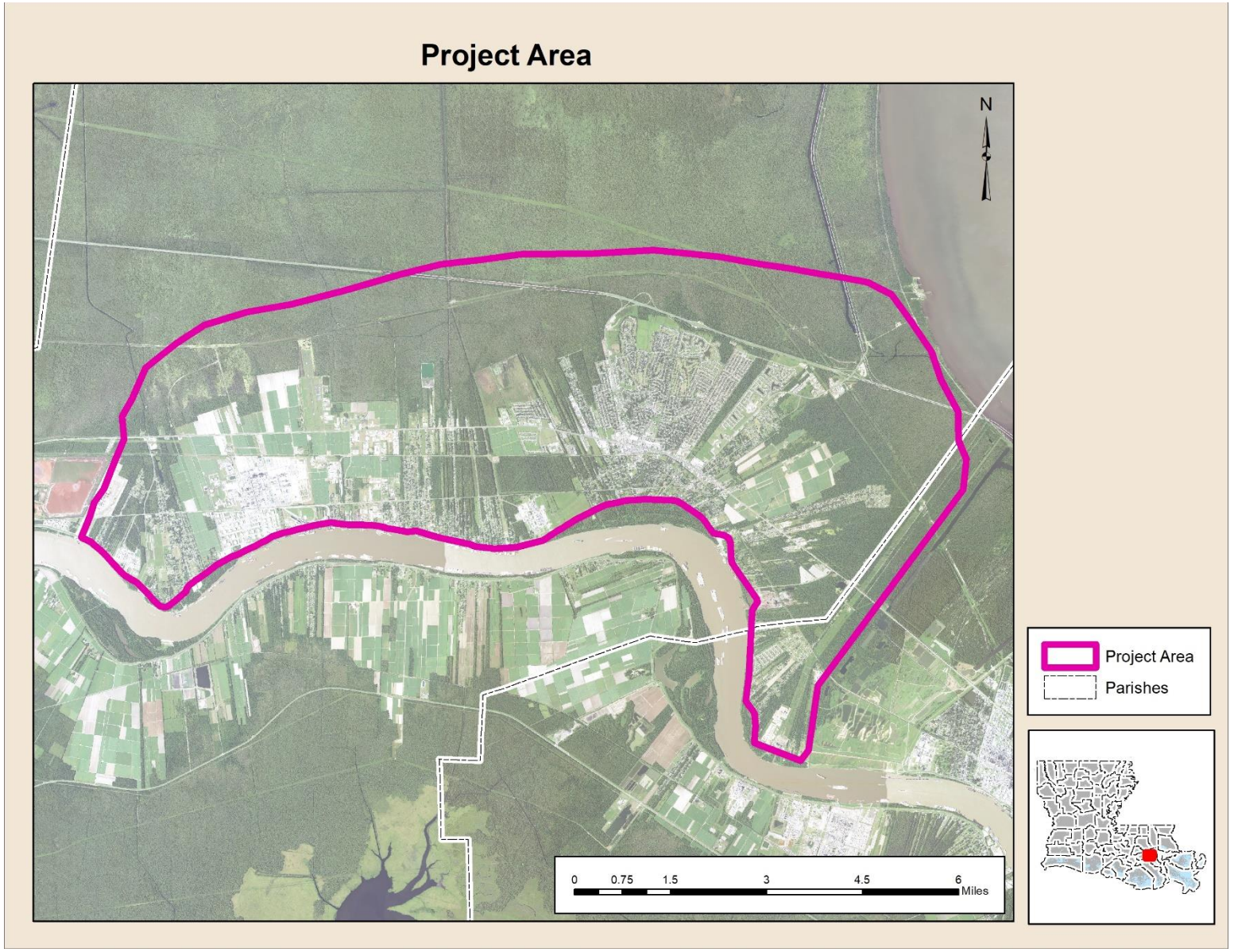

Figure 1: Project Area

1.2 Authority

Construction of the West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Project (WSLP Project) was authorized as part of the Water Infrastructure Improvement for the Nation Act (WIIN Act, Public Law 114-322) in 2016. Construction of the WSLP Project was funded by the Bipartisan Budget Act of 2018 (BBA 2018, Public Law 115-123).

1.3 Purpose and Need for the Proposed Action

The purpose of the proposed action is to collect the data and information necessary for further engineering design of the 2016 WSLP EIS levee alignment, including information that would be used to determine whether a levee alignment shift is preferable to the current alignment. The stockpile and staging areas are needed for construction related activities whether the 2016 WSLP EIS alignment is built or a shift occurs in the future. The location of the Proposed Action is in St. John the Baptist and St. Charles Parishes near the communities of Montz in St. Charles Parish, and Laplace, Reserve, and Grayville in St. John the Baptist Parish, Louisiana. The addition of the option to purchase mitigation bank credits into the mitigation plan approved in the 2016 WSLP EIS also provides greater flexibility and potential time savings in satisfying the BLH mitigation requirements for this project. Under this option, in-kind BLH credits could be purchased from any bank with released credits in the Lake Pontchartrain Basin watershed.

1.4 Prior Studies

A number of studies, reports, and environmental documents on water resources development in the Project Area have been prepared by the USACE, other Federal, state, and local agencies, research institutes, and individuals. The most relevant prior studies, reports, and projects are described in Table 1.

Table 1: Relevant prior reports and studies.

Comprehensive Planning Studies		Relevance to Proposed Action			
		Data Source	Consistency	Structural Measures	FWOP Conditions
1980	LA Coastal Resources Program	X	X	X	X
1999	Coast 2050: Toward a Sustainable Coastal LA	X	X	X	X
2004	LA Coastal Area (LCA), LA Ecosystem Restoration Study	X	X	X	X
2017	LA's Comprehensive Master Plan for a Sustainable Coast	X	X	X	X
Related Hurricane and Flood Damage Risk Reduction Projects and Reports					
1927	"Flood Control, Mississippi River and Tributaries" Published as House Document 90, 70th Congress 1st Session	X	X	X	X
1965	Chief of Engineers Report on Lake Pontchartrain and Vicinity, LA Hurricane Protection Project	X	X	X	X
1967	Amite River and Tributaries, Comite River Basin, LA	X	X	X	X
1984	Chief of Engineers Report on Lake Pontchartrain and Vicinity, LA Hurricane Protection Project	X	X	X	X
1990	LA Coastal Area Mississippi River Delta Study	X	X	X	X
1994	LA Coastal Wetlands Restoration Plan	X	X	X	X
1994	Southeast LA Hurricane Preparedness Study	X	X	X	X
2010	LCA Ecosystem Restoration Study, Volume II of VI, Final Integrated Feasibility Study and Supplemental Environmental Impact Statement for the Amite River Diversion Canal Modification Ascension and Livingston Parishes, LA	X	X	X	X
2010	LCA Ecosystem Restoration Study, Volume IV of VI , Final Integrated Feasibility Study & Supplemental Environmental Impact Statement for the Small Diversion at Convent/Blind River St. James Parish, LA	X	X	X	X
Previous West Shore Lake Pontchartrain Reports					
1985	West Shore Lake Pontchartrain Initial Evaluation Report	X	X	X	X
1987	Lake Pontchartrain West Shore, LA Hurricane Protection Reconnaissance	X	X	X	X
1997	West Shore Lake Pontchartrain, LA Hurricane Protection Project, Reconnaissance	X	X	X	X
2003	St. John the Baptist Parish, LA East Bank Urban Flood Control Reconnaissance Report	X	X	X	X
2016	West Shore lake Pontchartrain Hurricane and Storm Damage Risk Reduction Study	X	X	X	X

1.5 Public Concerns

Many public concerns were raised during scoping and the public review process of the 2016 WSLP EIS. Public comments and USACE responses can be found in Appendix A, Annex P of the 2016 WSLP EIS. Those comments covered a broad range of topics including concerns about project design, impacts to property and infrastructure, potential induced flooding impacts, and adverse environmental impacts.

1.6 Wetland Value Assessment

During coordination with the U.S. Fish and Wildlife Service (USFWS) for the 2016 WSLP EIS, evaluations of the effects of the alternatives to fish and wildlife resources were conducted using the Wetland Value Assessment (WVA) methodology (2016 WSLP EIS, Appendix A, Annexes G and R). These evaluations were used to estimate the effects of the alternatives to fish and wildlife services for SEA 570. Coordination with USFWS occurred during WVA re-evaluations for SEA 570.

Calculation of the WVA requires that habitat quality and quantity (acreage) are measured for baseline conditions, and predicted for future without-project and future with-project conditions. Each WVA model utilizes an assemblage of variables considered important to the suitability of that habitat type to support a diversity of fish and wildlife species.

The WVA provides a quantitative estimate of project-related impacts to fish and wildlife resources; however, the WVA is based on separate models for bottomland hardwoods (BLH), swamp, chenier/coastal ridge, fresh/intermediate marsh, brackish marsh, and saline marsh. Although the WVA may not include every environmental or behavioral variable that could limit populations below their habitat potential, the WVA is widely acknowledged to provide a cost-effective means of assessing restoration measures in coastal wetland communities.

The WVA models assume that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to that optimum to provide an index of habitat quality. Habitat quality is estimated and expressed through the use of a mathematical model developed specifically for each wetland type. Each model consists of: (1) a list of variables that are considered important in characterizing community-level fish and wildlife habitat values; (2) a Suitability Index (SI) graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and, (3) a mathematical formula that combines the SI for each variable into a single value for wetland habitat quality, termed the Habitat Suitability Index (HSI).

The product of an HSI value and the acreage of available habitat for a given target year is known as the Habitat Unit (HU) and is the basic unit for measuring project effects on fish and wildlife habitat. HUs are annualized over the project life to determine the Average Annual Habitat Units (AAHUs) available for each habitat type. The change (increase or decrease) in AAHUs for each future with-project scenario, compared to future without-project conditions, provides a measure of anticipated impacts. A net gain in AAHUs indicates that the project is beneficial to the fish and wildlife community within that habitat type; a net loss of AAHUs indicates that the project would adversely impact fish and wildlife resources.

Swamp and BLH WVAs performed for the 2016 WSLP EIS were used to estimate impacts for the Proposed Action. In the 2016 WSLP EIS, estimated impacts to wetlands from the WSLP structural alignment were geographically divided into eight different categories based on existing conditions. Direct impacts, where habitats would be directly converted from wetland to upland, were distinguished from indirect impacts, where there would be potential negative impacts not caused by direct habitat conversion. Impacts were also categorized by habitat type (i.e., swamp and BLH) and swamp habitats were further categorized by habitat quality based on field investigations and available data. Wetland impacts for SEA 570 were estimated by applying the impacts categories calculated in the 2016 WSLP EIS to potential impacts from the proposed action. AAHUs/acre were calculated using information from the 2016 WSLP EIS for each impacts category. Each location of impacts in the proposed action was matched to an impacts category from the 2016 WSLP EIS. Then the matching AAHUs/acre value was applied to

estimate impacts for the proposed action. For information on how these impacts categories were initially calculated and how WVAs were implemented, see the 2016 WSLP EIS and its appendices, which are incorporated herein by reference.

2. Alternatives Including the Proposed Action

Since the Proposed Action consists of actions necessary to obtain the required data to investigate potential levee shifts, includes all viable stockpile/staging locations in the vicinity of the project area, and only adds an additional option for mitigating BLH impacts into the original mitigation plan, only the No-Action Alternative (Future Without Project Action) and the proposed action were considered.

2.1 No-Action Alternative (Future without Project (FWOP))

NEPA requires that in analyzing alternatives to a proposed action, a Federal agency must consider an alternative of "No Action." The No Action alternative evaluates the impacts associated with not implementing the proposed action and represents the Future without Project (FWOP) condition against which alternatives considered in detail are compared. The FWOP provides a baseline essential for impact assessment and alternative analysis.

In the FWOP condition (no-action), the Proposed Action would not occur. As such, surveys and borings data would not be available outside of the 2016 WSLP EIS ROW, new staging and stockpiling areas would not be available and the mitigation plan would remain unchanged from the 2016 WSLP EIS. However, similar activities consistent with the 2016 WSLP EIS would occur in the vicinity to the proposed action. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur adjacent to the proposed action, but within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). Approximately 89.8 acres of swamp habitat would be impacted by the clearing and grubbing of a 100-foot corridor adjacent to the Proposed Action.

A levee approximately 18 miles in length would be constructed as part of the WSLP Project in St. John the Baptist and St. Charles Parishes, LA. Approximately 1,235 acres of direct (595.3 AAHUs swamp and 95.5 AAHUs BLH), and 8,432 acres of indirect (494.5 AAHUs swamp and 3.1 AAHUs BLH) negative impacts to forested wetlands would occur. See the 2016 WSLP EIS for more information on construction of the structural alignment.

2.2 Proposed Action

A map indicating where the Proposed Action activities would occur is provided (Figure 2). There are five distinct activities in the Proposed Action in addition to the option to purchase Mitigation Bank credits for BLH impacts. They are: creation of approximately 15 access routes, clearing and grubbing, creation of stockpiling and staging areas, soil borings and CPTs, and other surveys. Each activity is discussed below. The duration for the Proposed Action activities would be approximately nine months. Some or all of the stockpile/staging areas and access roads would continue to be use throughout construction of the WSLP Project. The entire survey ROW would be approximately 600 feet wide, with the clearing and grubbing necessary for the soil borings and CPT's occurring within a 100-foot corridor within the 600-foot ROW. All vegetation would be removed within the clearing and grubbing corridor and within the access roads. All tree felling would be performed in a manner intended to avoid damage to trees left standing, to existing structures and installations, and with due regard for the safety of employees and others. No other areas or activities would involve the felling of trees. Other

surveys, which include topographical surveys, cross-sectional surveys, environmental and cultural resources investigations, and HTRW assessments would be conducted within the approximately 600-foot ROW surrounding the 100-foot clearing and grubbing corridor. A typical survey ROW plan view is shown in Figure 3.

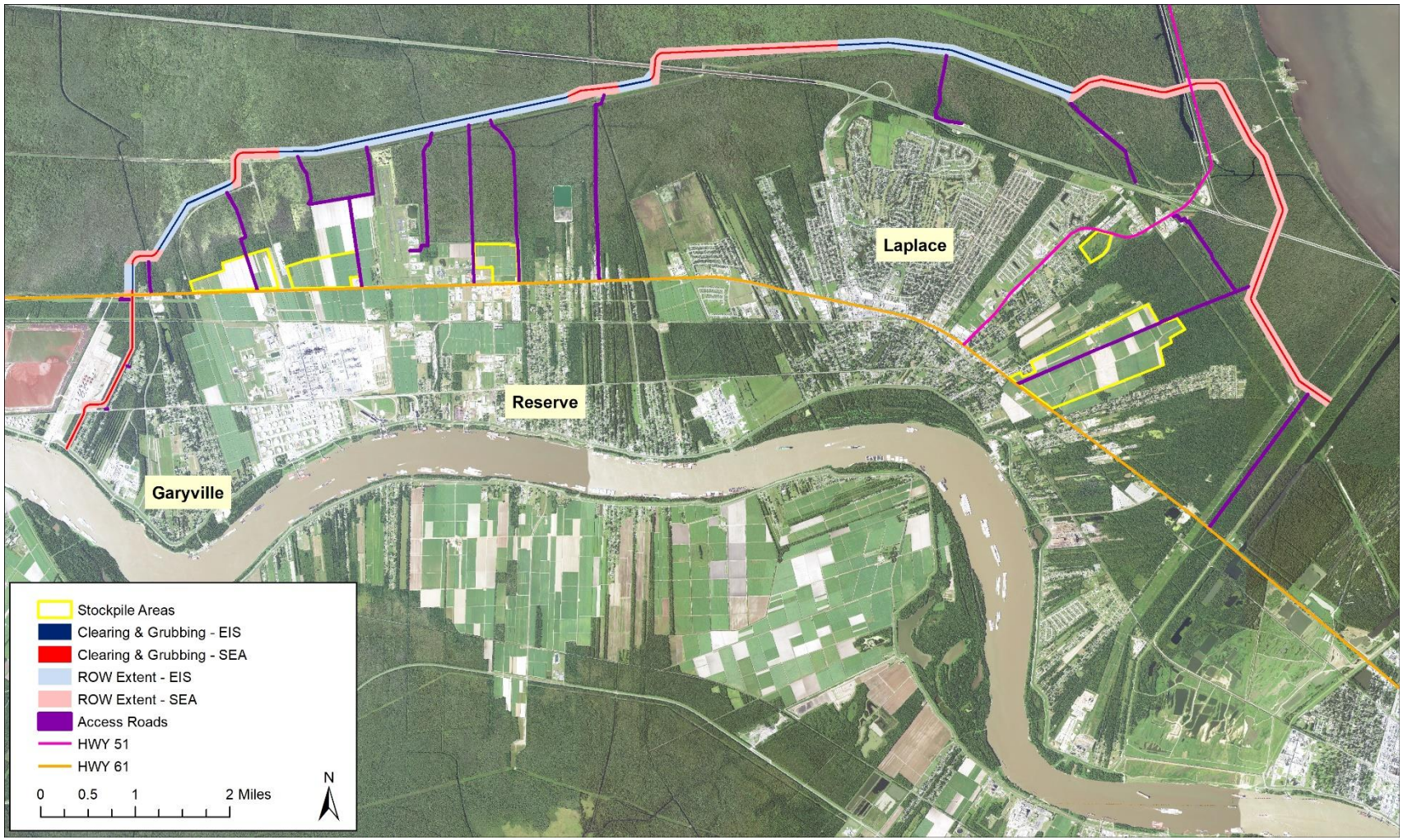

Figure 2: Map showing the Proposed Action. There are 15 proposed access routes, with one access route bifurcating into two roads near the surveys and boring/CPT area. "Clearing & Grubbing" indicates the extent to which tree felling, borings/CPTs, and stockpiling would occur. "ROW Extent" refers to the extent to which other surveys would occur. Areas with "EIS" are within the ROW from the 2016 WSLP EIS and are shown for reference as they are not part of the Proposed Action. Areas with "SEA" refer to the Proposed Action.

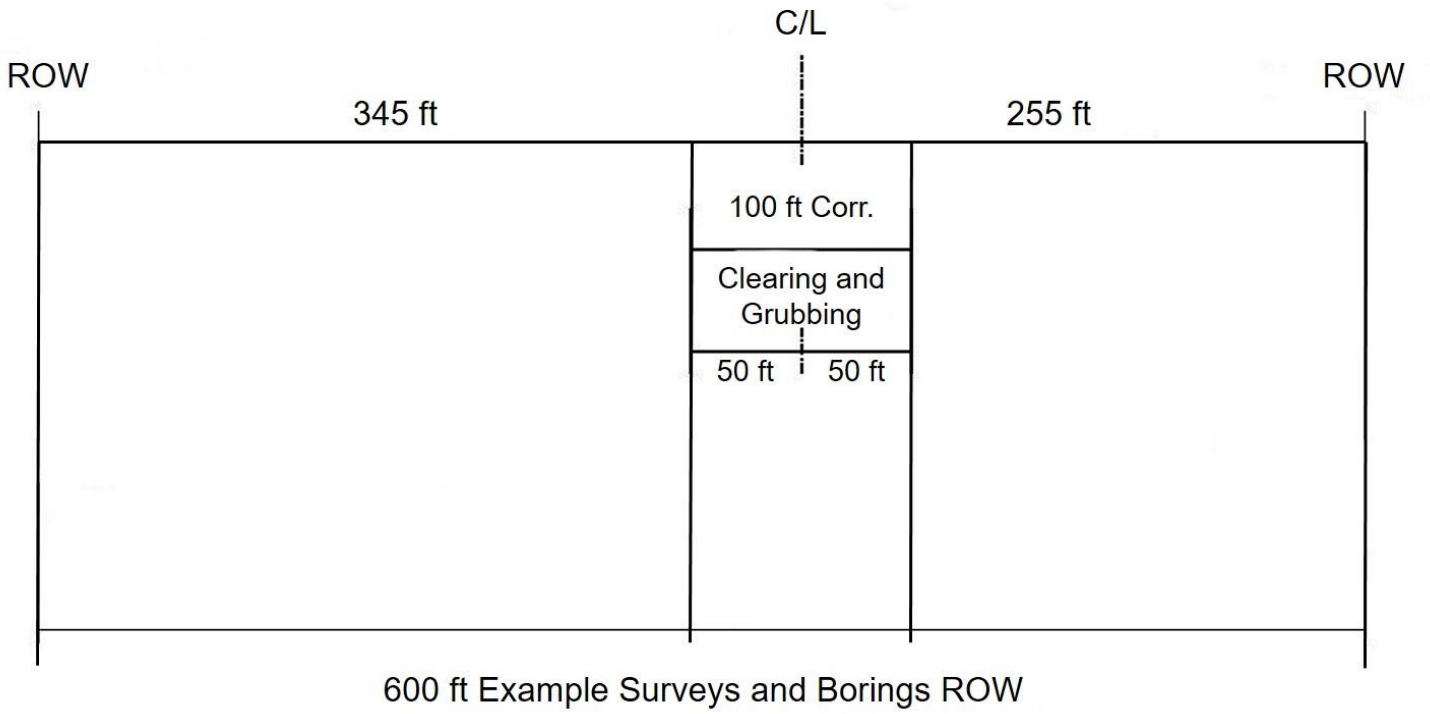

Figure 3: Plan view drawing of a typical ROW for the Proposed Action.

Access

Access routes would be created to allow access to the WSLP Project, to the proposed staging/stockpile areas, and to the proposed new corridors from existing roads when feasible. In some areas, new roads would be built and in others areas existing roads would be improved by adding material to allow passage of equipment and trucks. Access for clearing and grubbing of the 100-foot corridor, cross-sectional surveys, soil borings/CPTs, environmental and cultural resources investigations, and HTRW assessments would be from U.S. Highway 61 (Airline Hwy), LA Hwy 44, LA Hwy 54, 1-10 Service Road, Old US HWY 51, Frenier Road, Prescott Road, other existing roads, trails, pipeline corridors, and along Reserve Canal leading to the alignment (Figure 1). These 15 proposed access routes would be utilized for the delivery of survey, tree clearing, and boring/CPT equipment. Any and all access roads to be used for surveys, borings, and stockpiling could be used to haul materials to the levee construction sites. Some, but not all, of the access roads could be made permanent. Some of the proposed access routes would require the clearing of vegetation for the movement of this equipment. Culverts would be added to maintain existing hydrologic conditions when constructing new roads. Improvements to existing culverts would be considered when improving existing roads for access. Clearing and grubbing for access routes would be limited to a 40-foot width, which is the minimum width necessary for the passage of surveys and borings/CPTs equipment. A 60-foot road width would be allowed for access roads within pipeline ROWs to allow for pipeline protection. The extra width would accommodate for special construction considerations to minimize impacts to infrastructure. Coordination with pipeline companies is ongoing to determine the best method to accommodate pipeline infrastructure and minimize environmental impacts. For instance, timber matting or similar measures may be required across some pipeline corridors. Clearing would consist of the complete removal of all trees, stumps, downed timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris within access route corridors. Debris resulting from access road clearing and grubbing operations could be stockpiled in temporary windrows within access corridors, or within the stockpile and staging areas described below. Felled timber may be chipped on-site prior to hauling and disposal, and other cleared debris and timber would be hauled offsite and disposed of according to applicable laws and regulations. Approximately 91 acres have been identified as access routes with a maximum impact to coastal swamp habitat of approximately 78 acres. All equipment to be utilized for the surveys are described in the subsequent sections. Best management practices for dust abatement would be used, including maintaining a water truck onsite to water down areas when hauling along access roads.

Clearing and Grubbing

Clearing and grubbing would occur within a 100-foot corridor and would provide the necessary work area for the completion of soil boring/CPT activities. The corridor is broken into six distinct segments shown in red in Figure 2 totaling approximately 138 acres and 11.4 linear miles. Approximately 135 of these 138 acres are forested wetlands, with approximately 115 acres being swamp and approximately 20 acres are BLH. A width of 100 feet is needed for operation of equipment and for stockpiling of cut trees and undergrowth. All trees, stumps, down timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris would be cleared within the clearing and grubbing corridor. Trees on dry land would be cut flush with the natural ground, while trees in water would be cut flush with the natural ground or mud line underwater. In limited circumstances, the removal of tree stumps and rootballs below the ground surface may be necessary to provide unobstructed and safe access for equipment. Rootball removal is not expected to exceed 20% of the corridor.

Trees, stumps, down timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris resulting from clearing and grubbing operations could be stockpiled

in temporary windrows within the clearing and grubbing corridor, spaced approximately every 300 feet. Windrows would alternate between land side and flood side of the project centerline. Debris may be placed in neat windrows or piles with the tree limbs trimmed sufficiently to make the windrow as small as practicable. No windrowed debris or cleared material shall extend beyond the 100-foot clearing and grubbing limit. Debris could also be stockpiled in the stockpile and staging areas described below. Debris removal would occur during the levee construction phase.

Stockpiling and Staging

Two options for temporary stockpiling of trees, stumps, down timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris resulting from clearing and grubbing operations would be available to the contractor. Material could be stockpiled within any of the five stockpile areas shown in Figure 2, or material could be temporarily stockpiled within the 100-foot clearing and grubbing corridor or access roads ROWs. Descriptions of how material could be stockpiled within the clearing and grubbing corridor and access roads are discussed in their respective sections.

The five temporary stockpile/staging areas total approximately 1,020 acres (583 acres, 40 acres, 98 acres, 143 acres, and 156 acres respectively from east to west) and are shown in Figure 2. Originally nine stockpile/staging areas were considered, but four were eliminated from further consideration due to potential impacts to wetlands, cultural resources, Environmental Justice communities, or local development plans. The five remaining stockpile areas are larger than what is estimated to be necessary to stockpile this material.

These temporary stockpile/staging areas may be used for various activities during the investigative and construction phases of the WSLP Project. Use of these areas is expected to continue for so long as construction of the WSLP Project is ongoing, which is currently anticipated to conclude in 2023. The sites may be used for the storage of felled trees, staging of investigative and construction equipment such as drilling rigs, small boats, bulldozers, excavators, pile driving equipment, and/ or storage of construction materials such as steel sheet piling, steel piles, and other materials and items for construction of pump stations and drainage structures. The construction contractor or USACE may also set up trailers to serve as office space during construction within one or more of the stockpile/staging areas.

Some of the stockpile/staging areas would also be used for the temporary stockpiling of clay and sand for levee or floodwall construction. Up to 5,000,000 cubic yards of clay material and approximately 1,000,000 cubic yards of sand would be used to construct the WSLP Project levee. These materials could be transported to the stockpile areas from the Bonnet Carré Spillway (BCS) borrow pits, as approved in the 2016 WSLP EIS, using dump trucks. Sand could be obtained from commercially available sources or within the BCS. Approximately 338,000 truck trips would be required to haul 6,000,000 cubic yards of material. All stockpile/staging areas are located along major highways. Material would be hauled from BCS to five stockpile/staging areas exclusively via Highway 61 for the four stockpile areas located adjacent to Highway 61, and via Highways 61 and 51 for the northernmost stockpile area that is adjacent to Highway 51.

Working hours in the stockpiling areas would be limited to weekday daylight hours. Best management practices for dust abatement would be used, including maintaining a water truck onsite to water down areas within stockpiles and when hauling along access roads. Final layout

of stockpile area configurations at one or more of the potential stockpile areas would locate stockpiles and staging sites as far as feasibly possible from residences and recreational areas.

Soil Borings and Cone Penetration Testing (CPTs)

Soil borings and CPTs would be conducted within the clearing and grubbing corridor at intervals of 500 feet. The borings would consist of undisturbed type borings. Borings and CPTs would be taken with truck and track mounted equipment. The boring holes would be backfilled in accordance with standard criteria.

Two and four wheel drive vehicles, standard boring and land surveying equipment, machetes, chainsaws, a small boat and trailer (as required), and marsh buggies would be used.

Other Surveys

Other surveys include topographical surveys to locate features and utilities, define the project baseline alignment, and define ROW extent; as well as those necessary to complete cross-sections, HTRW assessments, cultural resource investigations, and environmental surveys. Small vehicles (such as all-terrain vehicles or other similar small 4x4s), small boats, air boats, and marsh buggies would be allowed to operate within the approximately 600 foot ROW surrounding the clearing and grubbing corridor (see other surveys area in Figure 2). Foot traffic would also be permitted. Cross-sectional surveys would occur at intervals between 50 and 300 feet.

Environmental surveys would include vegetative surveys such as plant identification and measurements. HTRW assessments would include traversing the area to identify potential HTRW concerns. If any suspected HTRW concerns are noticed, soil and/or water samples may be taken. Environmental surveys and HTRW assessments would be performed by two- to four-person crews that would traverse the area.

Similarly, cultural resources (CR) investigations would be completed with two- to four-person crews. Some CR subsurface investigations may be required to determine if buried cultural remains exist within the site limits. The subsurface investigation would be accomplished by hand auger or shovel. If items of seeming cultural significance are discovered during the initial traverse of the site, the CR investigation would be expanded to include, at the most, a series of 2-meter by 2-meter holes or 1-meter wide trenches evacuated to depths of 1 to 2 meters. Excavation would be accomplished by hand augers and/or shovels. All excavations would be held to the absolute minimum required to determine the apparent existence or non-existence of significant cultural remains. All excavations would be backfilled upon completion of the excavations. Artifacts discovered during the survey would be marked for identification and removed from the site for analysis and examination to determine historical significance. Permission to remove the items from the site would be obtained through personal contact with the landowner. All objects removed from the site would be returned to the landowner, if required, upon completion of the analysis and report. If the landowner does not require the return of the objects discovered, they would be donated to the State Historic Preservation Officer (SHPO) for permanent curation. If the investigations reveal the existence of cultural remains significant enough to render the site eligible for the National Register, additional right-of-entry (ROE) for more extensive excavations and mitigation would be required.

No roads, fences, buildings, or other improvements within the area would be disturbed. No trees would be felled outside of the access routes and the 100 foot clearing and grubbing corridor in Figure 2. Branch cutting would be allowed for small vehicle passage, if necessary within the 600-foot ROW.

Purchase of Mitigation Bank Credits

In addition to the mitigation plan approved in the 2016 WSLP EIS, USACE-approved mitigation banks with a service area that encompasses the WSLP Project impacts, with perpetual conservation servitudes and that are currently in compliance with their mitigation bank instrument, and with BLH credits would be an option for mitigating BLH impacts incurred from the WLSP project. If the BLH impacts are wetlands and/or incurred within the coastal zone, the purchase of mitigation bank credits would also have to meet these requirements in kind. Mitigation banks would be required to run the same version of the WVA model as was used to assess the impacts from constructing the WSLP project to ensure that the assessment of the functions and services provided by the mitigation bank match the assessment of the lost functions and services at the impacted site.

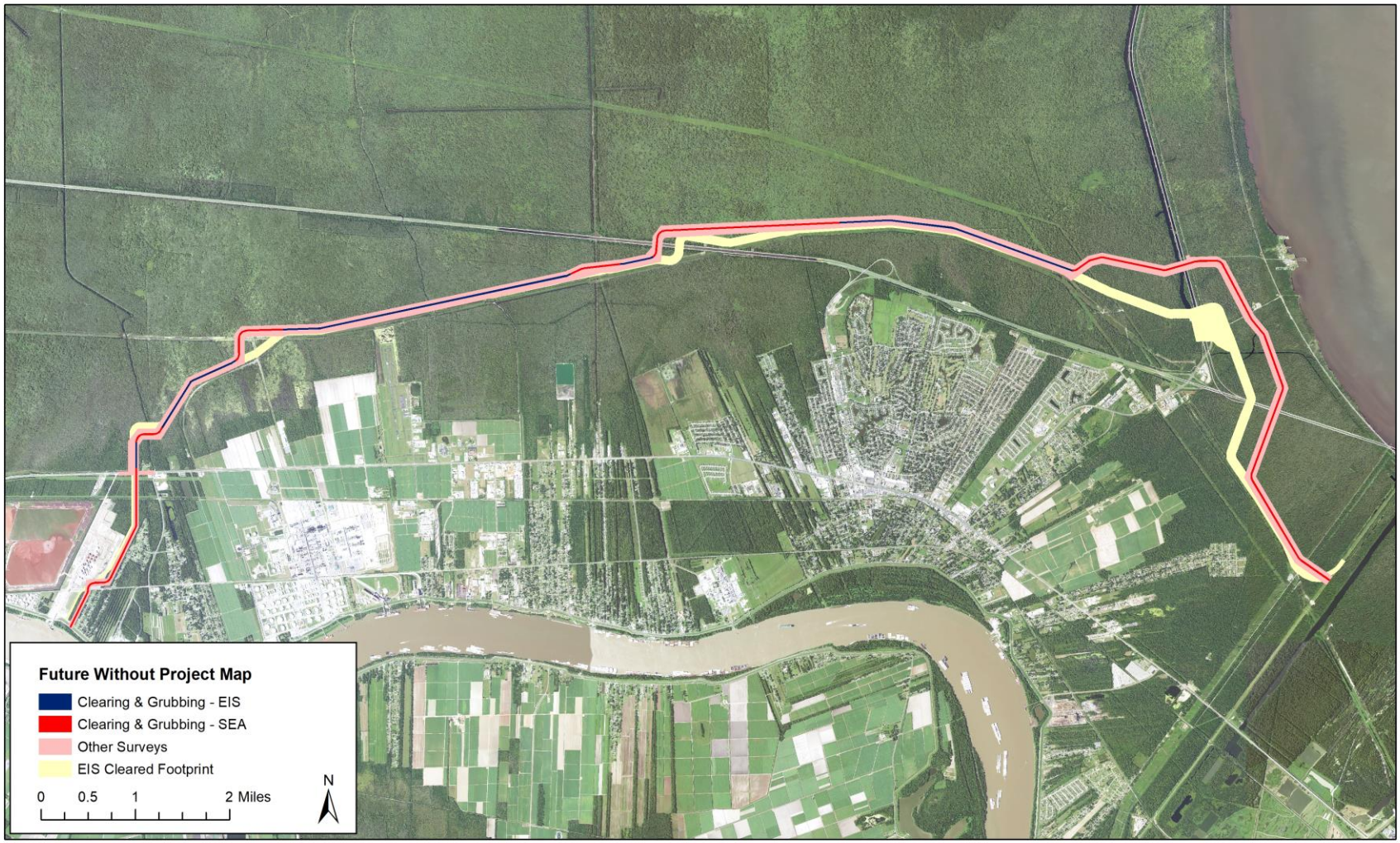

Figure 4: Map comparing features of the Proposed Action with the 2016 WSLP EIS levee footprint. Areas with "EIS" are within the ROW from the 2016 WSLP EIS and are shown for reference as they are not part of the Proposed Action. Areas with "SEA" refer to the Proposed Action.

3. Affected Environment

3.1 Description of the Project Area

The proposed Project Area is located within the St. John the Baptist and St. Charles Parishes in southeastern Louisiana between the Mississippi River, and Lakes Maurepas and Pontchartrain. The towns of Montz, Laplace, Reserve, and Garyville are communities found within the Project Area (Figure 2). The Project Area occupies a portion of one of the oldest delta complexes in the Mississippi River Deltaic Plain. It is in the lower Mississippi River alluvial plain in the Pontchartrain Basin and includes residential and commercial developments south of Interstate 10 (I-10). West of Laplace, a majority of the developed areas in the Project Area are found between U.S. Highway 61 (US-61) and the Mississippi River levee. Much of the undeveloped area consists of forested wetlands, including swamp and bottomland hardwood forests. The State of Louisiana's Maurepas Swamp Wildlife Management Area (MSWMA) lies north of I-10 within the Project Area.

3.1.1 Climate, Climate Change, Sea-level Rise, and Subsidence

The climate is subtropical marine with long humid summers and short moderate winters. The seasonal rainy period occurs from mid-December to mid-March with dry periods in May, October and November. Average annual rainfall is 60 inches with a monthly maximum of 20 inches. The heaviest rainfalls usually occur during the summer, with July being the wettest month averaging 6.42 inches. October is usually the driest month, averaging 3.01 inches of rain.

The 2014 USACE Climate and Resiliency Policy Statement states the "USACE shall continue to consider potential climate change impacts when undertaking long-term planning, setting priorities, and making decisions affecting its resources, programs, policies, and operations." Climate change was considered for the 2016 WSLP EIS and will be used in further engineering and design. Habitat impacts analysis for the Proposed Action was based on analyses that considered climate change impacts.

The area has one of the highest land subsidence rates in the country, estimated at 0.4 inch annually. The rate is variable along the coast (Couvillon et al., 2017). Coastal Louisiana is more prone than other areas to subsidence and land loss. Human actions have exacerbated the problem.

Shoreline erosion along Lake Maurepas, measured by the USGS Coastal and Marine Geology Program since 1899, shows an average shoreline loss between 1899 and 1995 of approximately 3.25 feet per year (Zganjar et al. 2002). Erosion may be attributed to storm surge, lack of sediment entering the area, canal construction, logging, and waves. Relative Seas Level Rise (RSLR) and associated saltwater influx has increased erosion in coastal wetland areas.

Sea level rise (SLR) conditions were modeled for the 2016 WSLP EIS. See Table 2 below displaying the model results from that study.

Table 2: Relative sea level rise estimates from the 2016 WSLP EIS.

Scenario	SLR (NAVD88 feet)		RSLR (NAVD88 feet)	
	2020	2070	2020	2070
Low SLR	0.06	0.33	0.3	1.81
Intermediate SLR	0.1	0.85	0.34	2.32
High SLR	0.23	2.47	0.47	3.95

3.1.2 Geology

The geology of the lower Mississippi River alluvial valley and the Louisiana coast is summarized in the LCA Ecosystem Restoration Study (USACE 2004), which is incorporated by reference. Lakes Maurepas and Pontchartrain occupy a portion of the old Mississippi River pathway known as the St. Bernard Delta. The complex formed in what was then Pontchartrain Bay, enclosing a portion of it to form Lake Pontchartrain. The St. Bernard delta complex was formed by Mississippi River deposits between 3,000 and 4,000 years ago (Frazier, 1967). The majority of other landform features include inland swamp, tidal channels, shallow lakes and bays, natural levee ridges along active and abandoned channels, barrier islands and beaches.

3.2 Relevant Resources

This section contains a description of relevant resources that could be impacted by the Proposed Action. Relevant resources described are those recognized by: National, state, or regional agencies and organizations as required by laws, executive orders, regulations, and other official standards of; technical or scientific agencies, groups, or individuals; and the general public. Table 3 provides summary information of the institutional, technical, and public importance of these resources.

Twenty-one resources were included in the WSLP 2016 EIS, some of which are particular examples of more general resource designations found in Table 3. Of those twenty-one particular resources, twelve are included in SEA 570 plus one additional resource not included in the WSLP 2016 EIS. Table 4 summarizes resources included in the WSLP 2016 and whether they were included in SEA 570.

Table 3: Relevant resources and their institutional, technical, and public importance are included.

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.

Resource	Institutionally Important	Technically Important	Publicly Important
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended; Clean Water Act of 1977, as amended; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940	USACE, USFWS, NMFS, NRCS, EPA, LDWF, and LDNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and Louisiana State & Local Coastal Resources Act of 1978	USACE, USFWS, NMFS, NRCS, EPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality and the national and state standards established to assess water quality.	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values, and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Soils and Prime and Unique Farmland	Farmland Protection Policy Act of 1981	USDA's NRCS recognizes the importance of prime and unique farmlands. Prime farmland is available land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops, such as citrus, tree nuts, olives, and vegetables.	Prime and unique farmland provides food, feed, forage, fiber, and oilseed crops for public consumption.
Aesthetics and Visual Resources	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, the Coastal Barrier Resources Act of 1990, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program	Visual accessibility to unique combinations of geological, botanical, and cultural features may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of the local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the tentatively selected plans.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.
Air Quality	Clean Air Act of 1963, Louisiana Environmental Quality Act of 1983	State and Federal agencies recognize the status of ambient air quality in relation to the NAAQS.	Virtually all citizens express a desire for clean air.
Transportation	National Environmental Policy Act, (Public Law 91-190)	ER-200-2-2, Procedures for Implementing NEPA	Changes to the transportation and traffic patterns affect the public and are of interest to the community.

Table 4. Comparison of relevant resources included in SEA 570 and the 2016 WSLP EIS, and their impacts on the Proposed Action.

Relevant Resource	Included in EIS?	Included in SEA?	Impacted by Proposed Action?
Population and Housing	Y	N	N
Employment, Business, and Industrial Activity (including Agriculture)	Y	N	N
Public Facilities and Services	Y	N	N
Transportation	Y	Y	Y
Community and Regional Growth	Y	N	N
Tax Revenues and Property Values	Y	N	N
Community Cohesion	Y	N	N
Environmental Justice	Y	Y	N
Soils, and Prime and Unique Farmlands	Y	Y	Y
Vegetation Resources*	Y	Y*	Y
Aquatic and Fisheries Resources	Y	Y	Y
Wildlife Resources	Y	Y	Y
Essential Fish Habitat (EFH)	N	N	N
Threatened and Endangered Species	Y	Y	N
Flow and Water Levels**	Y	Y**	Y
Sedimentation and Erosion**	Y	Y**	Y
Water Quality and Salinity**	Y	Y**	Y
Cultural Resources	Y	Y	N
Aesthetics and Visual Resources	Y	Y	Y
Recreation Resources	Y	Y	Y
Noise	Y	Y	Y
Air Quality	N	Y	Y

*Wetland impacts are the only vegetation resource potentially being impacted by the Proposed Action, and therefore, wetlands are the only vegetation resource impacts discussed.
**Sedimentation and Erosion, and Water Quality and Salinity are considered collectively as Water Quality by SEA 570.

3.2.1 Wetlands

Historic and Existing Conditions

Wetlands perform important functions of water filtration and water quality improvement, floodwater storage, fish and wildlife habitat, and biological productivity. The Project Area includes BLH, swamps, and estuarine emergent wetlands.

Vast virgin stands of bald cypress-tupelo swamp habitat once stretched from the bottomlands of northern Louisiana to the Gulf of Mexico (Conner and Day 1976). The Maurepas Swamp was vegetated by an expanse of old growth, freshwater forested swamp that extended as far as 26 miles north from the Mississippi River to the Baton Rouge-Denham Springs fault line. Historically, forested wetlands in the Project Area and vicinity were subjected to flooding and drying events. Seasonal flooding by the Mississippi River provided nutrient and sediment input. The area was subjected to extensive logging through the 1930s resulting in loss of old-growth

trees. Remnant logging railroad embankments and canal systems used to extract the harvested timber have resulted in increased land loss. Forested wetlands in the vicinity are highly degraded due to subsidence, permanent inundation, lack of sediment and nutrient input, nutria (*Myocastor coypus*) herbivory, and saltwater intrusion (Shafer et al., 2016). Recent observations of forested wetlands within the Project Area and vicinity include high tree mortality rates, little to no observed regeneration, and low growth rates for many native swamp tree species (Shafer et al., 2009; Bradley Breland pers. communication, 2018). With the loss of forested wetlands/swamp habitats, a significant loss of wetland function in relation to wildlife and aquatic species, recreational opportunities, aesthetics, and storm surge protection has occurred.

Forested wetlands/swamp and typical BLH dominant and co-dominant species include bald cypress, water tupelo, green ash, swamp red maple, blackgum, diamond oak, black willow, southern wax myrtle, buttonbush, and the invasive Chinese tallow. BLH species in the Project Area include swamp red maple, green ash, swamp tupelo, various oak species, and the invasive and non-native Chinese privet. Swamp red maple and green ash typically comprise the sub-dominant mid-story (Conner and Day 1976). Scrub species, including black willow, wax myrtle, and buttonbush are sporadically present in areas with diminished canopy cover. Chinese tallow and Chinese privet are of minimal wildlife value and can proliferate until nearly monocultural stands exist, limiting food available for wildlife. Detailed descriptions of common plants are presented in the LCA report (USACE 2004, 2010) and representative plant species can be seen in Appendix C, Annex E.

3.2.2 Wildlife Resources

Historic and Existing Conditions

The swamp, BLH, and other wetlands in the Project Area provide birds and wildlife with shelter, nesting, feeding, roosting, cover, nursery, and other life requirements. Wetlands provide neotropical migrants with essential stopover habitat on annual migrations (Zoller 2004) and critical bird breeding habitat (Wakeley and Roberts 1996).

Birds: Area wetlands have historically supported an abundance of neotropical and other migratory and non-migratory birds, including the bald eagle (a recently delisted Endangered Species) and colonial nesting waterbirds (e.g., herons, egrets, ibises, night-herons, and roseate spoonbills). Since 1985, most bird species and species groups in the area have exhibited either increasing or stable populations in the area. See Appendix C, Annex A for representative bird species.

Mammals: Since 1985, populations of furbearers, such as beavers (*Castor canadensis*), mink (*Neovison vison*), foxes (*Vulpes vulpes* and *Urocyon cineroargenteus*), and North American river otter (*Lontra canadensis*), have typically remained stable across the Upper Pontchartrain Basin (LCWCRTF & WCRA 1999). The West Indian manatee (*Trichechus manatus*), a Federally-listed Endangered Species, is known to occur or occasionally enter the area. Nutria are an invasive rodent that occurs in the Project Area. Throughout the Maurepas Swamp, nutria eat seedling cypress and other swamp and wetland BLH tree species preventing regeneration (Shafer et al., 2016). See Appendix C, Annex B for representative mammal species.

Reptiles and Amphibians: Due to the ecological and economic importance of the American alligator, historical and current figures on population numbers are available. Louisiana Department of Wildlife and Fisheries (LDWF) survey data from 1996 to 2000 shows alligator nest densities in the area are classified as medium (approximately 1 nest per 250 acres). In contrast, data on other reptiles and amphibians in the area is limited, but the bald cypress-

tupelo ecosystem likely supports a wide variety of reptiles and amphibians. LDWF provided a list of reptiles and amphibians likely to occur within the Project Area vicinity that included 23 snake species, five lizard species, thirteen turtle species, fifteen frogs and toads, seven salamanders, and one crocodilian (Michon, pers. comm. 2019; Appendix C; Annex C).

3.2.3 Aquatic and Fisheries Resources

Historic and Existing Conditions

Submerged Aquatic Vegetation (SAV) communities were historically dominated by native species such as fanwort, coontail, small pondweed, bladderwort, water nymph, widgeon grass, and wild celery. SAV are an important food source and habitat for both aquatic organisms and terrestrial wildlife. SAV provides structure and habitat for many invertebrates that are food for various life stages of fish. SAV also provides food for waterfowl and feeding habitat for fish-eating birds such as herons and egrets.

SAV can be replaced by invasive floating aquatic plants, especially in areas of low flow. Floating aquatic invasive plants include water hyacinth, alligatorweed, hydrilla, common salvinia, and giant salvinia. These invasive species compete with native flora for resources such as nutrients and light, and in turn can negatively impact community structure and composition, and ecosystem processes.

Plankton and benthic organisms serve as the lowest food resource level for many species of fish and shellfish. Plankton can often indicate benthic, nutrient, and water quality health (Stone et al. 1980). Because many benthic organisms are sessile or have limited mobility, they cannot move away from environmental stressors. Therefore community profiles reveal information about environmental health (Porrier et al. 2009). There is little data available on Lake Maurepas and the upstream Maurepas Swamp plankton communities. Data for Lake Maurepas suggests the dominance of *Anabaena*, dinoflagellates, diatoms, and cyanobacteria with occasional strong presence of chlorophytes (Atilla et al. 2007, 2016 WSLP EIS).

Benthic macroinvertebrates tend to dominate deepwater swamp invertebrate communities. Characteristic species include crayfishes, clams, oligochaete worms, snails, freshwater shrimp, midges, amphipods, and various immature insects (Mitsch and Gosselink 1993). One of the main functions of a benthic community is secondary production, the conversion of plant material by benthic detritivores and herbivores to animal tissue, thereby forming major links in the aquatic food web between plants and predators. Limited data exists on benthic communities in the Project Area. Species present are likely typical of deepwater forested wetlands and slow-flowing rivers in the region.

The relatively low salinity of these waters provides transitional habitat for freshwater fish and provides nursery and foraging habitat for marine fish and shellfish. Freshwater fish, such as largemouth bass, sunfish, catfish, and crappie are taken by recreational fishermen (USACE 2010, LDWF 2009, Hastings, 1987). Crawfish and crabs may be harvested from the swamp (Fox et al. 2007). Fisheries surveys have been performed in the vicinity starting in the 1970s (Watson et al. 1981). Many fishes have been sampled in the area, including estuarine, freshwater, catadromous, and anadramous species. Kelso and others (2005) sampled 20 locations in the Maurepas Swamp finding 26 taxa and a total of 1,425 individuals. This study found spotted gar (*Lepisosteus oculatus*) and striped mullet (*Mugil cephalus*) to be the most numerically dominant species. See Appendix C, Annex D for representative fish species.

3.2.4 Threatened, Endangered, and Protected Species

Historic and Existing Conditions

One Threatened Species, the Gulf sturgeon (*Acipenser oxyrhynchus desotoi*), one Endangered Species, the West Indian manatee, and one delisted species, the bald eagle (*Haliaeetus leucocephalus*), are known to occur or may occasionally enter the Project Area. The area is also known to support colonial nesting waterbirds (e.g., herons, egrets, and others), protected under the Migratory Bird Treaty Act (MBTA).

Gulf Sturgeon: The Gulf sturgeon is an anadromous fish that occurs in many rivers, streams, and estuarine waters along the northern Gulf coast between the Mississippi River and the Suwannee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, rivers and lakes of the Lake Pontchartrain basin, and adjacent estuarine areas. While sturgeon have been documented in nearby waterways, the Project Area does not contain Gulf sturgeon critical habitat.

West Indian Manatee: West Indian manatees (*Trichechus manatus*) occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). Substantial food sources (submerged or floating aquatic vegetation) have not been observed in the Project Area vicinity. Given the extensive areas of relatively undisturbed wetlands in the region and the paucity of food sources in the Project Area, it is considered unlikely for the manatee to frequent and utilize waterways within the Project Area, although manatees could pass through this area while transiting the lake.

Bald Eagle: The bald eagle was delisted as a federally threatened species in 2007 for most of the United States; however, it is protected under the Bald and Golden Eagle Protection Act (BGEPA), and the MBTA. Habitats suitable for use by the bald eagle are present in St. Charles and St. John the Baptist, and occurrences of the bald eagle have been recorded there. The bald eagle is known to nest and forage in the vicinity but recent coordination with USFWS indicates there are no known nests within 650 feet of the Proposed Action (Trahan, pers. comm. 2019). However, there are many bald eagle nests within the project vicinity, and new active, inactive, or alternate nests may exist, but not be known.

Colonial Nesting Waterbirds: The Proposed Action would be located in an area where colonial nesting waterbirds, such as anhingas, cormorants, great blue herons, great egrets, snowy egrets, little blue herons, tricolor herons, reddish egrets, cattle egrets, green herons, black-crowned night-herons, yellow crowned night-herons, ibises, and roseate spoonbills occur. There are two historic colonial nesting waterbird sites within 1000 feet of the Proposed Action (Trahan, pers. comm. 2019).

3.2.5 Water Quality

Historic and Existing Conditions

As part of its surface water quality monitoring program, the Louisiana Department of Environmental Quality (LDEQ) routinely monitors 25 parameters on a monthly or bimonthly basis using a fixed station, long-term network (Monitored Assessments; LDEQ 1996). Based upon those data and the use of less-continuous information (Evaluated Assessments), such as fish tissue contaminants data, complaint investigations, and spill reports, the LDEQ assesses water quality fitness for the following uses: primary contact recreation (swimming), secondary contact recreation (boating, fishing), fish and wildlife propagation, drinking water supply, and shellfish propagation (LDEQ 1996). Based upon existing data and more subjective information,

water quality is determined to either fully, partially, or not support those uses. A designation of "threatened" is used for waters that fully support their designated uses but that may not fully support certain uses in the future because of anticipated sources or adverse trends in pollution.

According to the LDEQ "2018 Louisiana Water Quality Inventory: Integrated Report," there are two subsegements that include the study area. The Pass Manchac subsegment (LA040601_00), which includes Pass Manchac from Lake Maurepas to Lake Pontchartrain, including interlacustrine waters from North Pass to the Mississippi River levee, was found to fully support all designated uses: primary contract recreation (swimming), secondary contact recreation (boating), and fish and wildlife propagation (swimming). The Lake Maurepas subsegment (LA040602_00) was found to fully support two designated uses, primary contact swimming and secondary contact recreation. The Lake Maurepas subsegment was found to not support the designated use for fisheries and wildlife propagation. There are two suspected causes for impaired use: dissolved oxygen and non-native aquatic plants.

3.2.6 Cultural Resources

Eight cultural units are used to characterize the prehistoric cultural sequence in southeast Louisiana: Paleo-Indian (10000–8000 B.C.), Archaic (8000–1000 B.C.), Poverty Point (1700–500 B.C.), Tchefuncte (500 B.C.–A.D. 100), Marksville (A.D. 100–500), Baytown (A.D. 400–700), Coles Creek (A.D. 700–1200), and Mississippian/Plaquemine (A.D. 1200–1700). Historic perspectives generally cover the colonial period to approximately 1764, Acadian migration to the area, end of the Colonial period, the antebellum period, the Civil War, late 19th century reconstruction, and the early 20th century.

Historic and Existing Conditions

The Project Area (Figure 1) extends from the western edge of St. Charles Parish westward through St. John the Baptist Parish. Background research by CEMVN staff in 2017 and 2018 identified historic properties based on a review of National Register of Historic Places (NRHP) database, the Louisiana Cultural Resources Map, a review of cultural resources survey reports, and cultural resources discussions found in previous NEPA documents. Most of the cultural resources surveys in the Project Area have concentrated on proposed pipeline projects, the majority of which are in an east-west orientation. Prominent among these are by Price, 1977 (report 22-0011); Price, 1987 (report 22-1210); Kelley and others, 2011 (report 3879); and Kelley and others, 2013 (report 22- 4327). Linear surveys on a predominately north-south orientation are by Twiner, 1986 (report 22-1103); Rothrock and Moreno, 2015 (report 22-4868); Rynar and Hahn, 2016 (report 22- 5121); and Stanton and others, 2004 (report 22-2628). Data gathered by previously reported archaeological sites were used to develop a predictive model that indicated high and medium probability areas within four miles of the Mississippi River (Lee et al. 2003, report 22-2572). A literature review revealed five cultural resources surveys that located six archaeological sites and eleven standing structures within the Project Area. There are three standing structures (48-00431, 48-01032, and 48-01185) within 0.5 miles of the Project Area. With the exception of Angelina Plantation (16SJB 68) and the 1915 Memorial Cemetery (16SJB69), all of the archaeological sites are more than 0.5 miles from the Project Area. The standing structure (48-01185) near Angelina Plantation was evaluated in May 2014 and found not to meet any NRHP criteria (Wells et al. 2014, report 22-4571).

The majority of the Project Area is forested wetlands with higher elevations to the south that are either developed or farmland. The Angelina Plantation is a recorded archaeological site

(16SJB68) on the southwestern side of the Proposed Action that has been surveyed for various activities (Beavers and Chatelain 1979, report 22-0641; Foreman et al 2016, report 22-5158; Rothrock and Moreno 2015, report 22-4868; Wells 2008, report 22-3023). Those east-west surveys in the northern part of the plantation produced no indication of significant historic activity (Beavers and Chatelain 1979, report 0498; Hubachen 2014, report 22-4531; Watkins 1994, report 22-1807). Angelina Plantation was recorded as an archaeological site and much of the southern part was evaluated in 2012 (Glass and Jackson 2013, report 22-4288). Locus A, which is an area of archaeological deposits representing slave quarters and later tenant houses for Angelina Plantation, located in the southwestern part of the site was tested in 2014 and approximately half of the 431 acre Locus A area was recommended eligible for the NRHP (Glass et al 2014, report 22-4690). A portion of the Project Area was surveyed for cultural resources in May 2014 for the "Phase I Cultural Resources Survey and Reconnaissance of Alternative C, West Shore Lake Pontchartrain Levees Project, St. John the Baptist and St. Charles Parishes, Louisiana" (Wells et al. 2014, report 22-4571). Part of the Angelina Plantation was evaluated during the 2014 survey and determined not eligible for the NRHP, and the Frenier 1915 Memorial Cemetery was evaluated and recommendations made that the site is considered a potential cultural property and avoidance was recommended. A large part of the vicinity of the Proposed Action was surveyed as part of the Maurepas Pipeline Project by Rothrock and Moreno (2015, report 22-4868). These surveys included six of the proposed access roads. None of the areas surveyed for the Maurepas Pipeline Project in St. John the Baptist Parish produced archaeological remains.

A Programmatic Agreement (PA) regarding the West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction System was executed on May 16, 2014 among the Louisiana State Historic Preservation Officer (SHPO), the Advisory Council of Historic Preservation (ACHP) and the CEMVN pursuant to Section 106 of the National Historic Preservation act and its implementing regulation found at 36 CFR 800.14(b). The stipulations of the PA would be implemented and complied with for the proposed project.

3.2.7 Soils and Prime and Unique Farmlands

Historic and Existing Conditions

Farmland classification soil survey data provided by NRCS in February 2019 determined that prime farmland is located within the Project Area. However, unique farmland is not located in the Project Area. Affected soils in the area include Cacienne silt loam, Cacienne silty clay, Carville silt loam, Gramercy silty clay, and Schriever clay which are best suited for food, feed, fiber, forage, and oilseed crops. All of the proposed staging and stockpile areas contain prime farmland. Prime farmland in the Project Area is currently dedicated to common Bermuda grass, improved Bermuda grass, soybeans, wheat, sugar cane, bahia grass, and corn. No other agricultural activities are currently taking place in the Project Area.

3.2.8 Aesthetics and Visual Resources

Historic and Existing Conditions

Aerial photography shows visual conditions of the area changed over the past 20 years. The landscape along with its view sheds have changed due to development and the conversion of swamps into marsh and open water. The scenery has changed from natural to a more developed state with residential, commercial and industrial development dominating US-61, US-51 and US-44, and other corridors. The only major exception is I-10, which traverses the area, giving near unobstructed views of a native landscape that remains aesthetically pleasing.

Primary view sheds have been and still are best taken from the local road system and in some instances the Mississippi River levee.

There are two Scenic Streams in the area's vicinity. Blind River stretches south 25 miles from Lake Maurepas, crossing under I-10 and ending near US-61 west of the Project Area. Bayous LaBranche and Trepagnier are located east of the Project Area sourcing from Lake Pontchartrain and stretching south, crossing under I-10 and US-61 and ending near Norco (Bayou Tepagnier) and Good Hope (Bayou LaBranche). Other water resources in the vicinity include the Mississippi River, numerous canals, streams, and creeks that crisscross the native habitat between I-10 and the developed areas along the river.

There is a Scenic Byway in the vicinity which includes the Great River Road traversing US-61. The Great River Road is one segment to an overall scenic byway that stretches on multiple thoroughfares from Canada to the Gulf of Mexico. It is state and federally designated and has an "All American Road" status, making it significant in culture, history, recreation, archeology, aesthetics, and tourism.

3.2.9 Recreational Resources

Historic and Existing Conditions

The Project Area overlaps with parts of the southern perimeter of the 124,567-acre MSWMA. There are a few private camps in the MSWMA. The LDWF provides 16 self-clearing permit stations located throughout the MSWMA. Access into the MSWMA area is generally by boat via the numerous boat launches in the area; however, several locations provide foot access. Many canals and bayous traverse the MSWMA. Consumptive recreation includes hunting deer, squirrels, rabbits, and raccoons; fishing for bass, sunfish and crappie; and trapping alligators and nutria. Non-consumptive recreation includes bird watching, sightseeing, and boating. There is a 0.5 mile nature trail and two tent-only camping areas in the MSWMA

Within the Project Area, Cajun Pride Swamp Tours is located off Frenier Road near US-51. This commercial operation provides boat tours in their private refuge and in the Manchac Swamp. Belle Terre Country Club and Golf Course is located in the Project Area, providing various recreational facilities including a golf course, outdoor swimming pool, and tennis courts. There are local recreational parks including Regala Park, Montz Park, Bethune Park, and Laplace Recreation and Youth Organization (Larayo) Youth Park. Regala Park facilities include an outdoor swimming pool, softball/baseball fields, picnic pavilions, tennis courts, playground, racquetball courts, 1 mile walking path, and soccer field. Montz Park provides a walking path, baseball fields, basketball courts, playground, and picnic pavilions. Bethune Park provides baseball fields. Larayo Youth Park provides baseball fields, tennis courts, and a swimming pool.

3.2.10 Environmental Justice

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994 (EO 12898) and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, some other race, or a combination of two or more races. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2017 are those whose income is at or below

$24,500 for a family of four and are identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a census tract or block group with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level.

Historic and Existing Conditions

An EJ analysis focuses on the potential for disproportionately high and adverse impacts to minority and low-income populations during the construction and normal operation of the Federal action, in this case, the proposed surveys and borings activities. The analysis will assess if EJ communities are disproportionately exposed to high and adverse effects of the Federal action. If the impact is appreciably more severe or greater in magnitude on minority or low-income populations than the adverse effect suffered by the non-minority or non-low-income populations after taking offsetting benefits into account, then there may be a disproportionate finding. Avoidance and mitigation are then required.

Environmental Justice: Minority and Low-Income Population

The communities that are located in the study area include Garyville, Reserve, and Laplace, all within St. John the Baptist Parish. All three of these communities are identified by the US Census Bureau (USCB) as a Census Designated Place (CDP).

In order to identify whether the potential alternatives may disproportionately affect minorities or impoverished citizens, an analysis was conducted utilizing CDP data, obtained from the USCB's American Community Survey (ACS). The following information was collected in the study area.

Racial and Ethnic Characteristics – race and ethnic populations in each CDP were characterized using the following racial categories: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or more Races. Persons of Hispanic Origin are also identified. These categories are consistent with the affected populations requiring study under Executive Order 12898. See Table 5 for a listing of race and ethnic characteristics for the CDPs in the Study area.

Percentage of Minority Population – As defined by the USCB, the minority population includes all non-Whites. According to Council of Environmental Quality (CEQ) guidelines, "Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis." See Table 6 for a listing of race and ethnic characteristics for the CDPs in the Study area.

Low-Income Population – The percentage of persons living below the poverty level, as identified in the 2013-2017 ACS, was one of the indicators used to determine the low-income population in a CDP. Low-income population is defined as a CDP with 20 percent or more of its residents below the poverty threshold.

Population by Race, for each CDP, is shown in Table 5. Two of the three CDPs, Reserve and Laplace, are considered Environmental Justice communities, having approximately 63 and 56 percent minority residents. The vast majority of minority residents are Black or African American while those identifying as "Some Other or Two or more Races" make up 2.4 percent or less of the CDP population. Persons of Hispanic or Latino population (of any race) is no

higher than 6.6 percent of the population of any CDP. The percent of residents identifying as minority or of Hispanic/Latino origin in Reserve and Laplace is similar to the minority and Hispanic origin percentages for St. John the Baptist Parish.

Garyville and Reserve CDPs are also EJ communities when considering the poverty threshold criteria. Approximately 32 percent and 21 percent, respectively, of people residing in these communities have incomes in the past 12 months below the poverty level. Approximately 18% of residents in St. John the Baptist Parish have incomes below the poverty level. See Table 6 for low income population by CDP.

Table 5: Percentage Minority Population by CDP, Project Area

	St. John the Baptist Parish		Garyville		Reserve		Laplace	
RACE	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total population	43565		2225		9995		28218	
One race	42720	98%	2225	100%	9851	99%	27535	98%
White	17716	41%	1214	55%	3656	37%	12433	44%
Black or African American	24175	56%	1011	45%	5962	60%	14506	51%
American Indian and Alaska Native	0	0%	0	0%	0	0%	0	0%
Asian	391	1%	0	0%	25	0%	366	1%
Native Hawaiian and Other Pacific Islander	0	0%	0	0%	0	0%	0	0%
Some other race	438	1%	0	0%	208	2%	230	1%
Two or more races	845	2%	0	0%	144	1%	683	2%
Minority	25849	59%	1011	45%	6339	63%	15785	56%
Hispanic or Latino (of any race)								
Total population	43565		2225		9995		28218	
Hispanic or Latino (of any race)	2524	6%	23	1%	635	6%	1866	7%

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Table 6: Low Income Population by CDP, Project Area

CDP	Total Population Estimate*	Low Income As Percent of Total Population
Garyville	2,171	32%

Reserve	9,927	20%
Laplace	27,587	15%
St. John the Baptist	42,804	18%

*For Whom Poverty Status is Determined
Source: U.S. Census ACS 2013-2017

3.2.11 Air Quality

Existing Conditions

National Ambient Air Quality Standards (NAAQS) (see Table 7) have been set by the EPA for six common pollutants (also referred to as criteria pollutants) including: ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. States are required by the Code of Federal Regulations to report to the EPA annual emissions estimates for point sources (major industrial facilities) emitting greater than or equal to 100 tons per year of volatile organic compounds, nitrogen dioxide, sulfur dioxide, particulate matter less than 10 microns in size; 1,000 tons per year of carbon monoxide; or 5 tons per year of lead. Since ozone is not an emission, but the result of a photochemical reaction, states are required to report emissions of volatile organic compounds (VOC), which are compounds that lead to the formation of ozone.

St. John the Baptist and St. Charles Parishes are currently in attainment for all Federal NAAQS pollutants, including the 8-hour ozone standard (EPA 2013).

Table 7: National Ambient Air Quality Standards

Pollutant	Time Frame	Primary	Secondary	Form
CO	8-hour	9 ppm (10,000 µg/m^3)	NA	Not to be exceeded more than once per year
	1-hour	35 ppm (40,000 µg/m^3)	NA	

Pb[b]	Quarterly	0.15 µg/m^3	0.15 µg/m^3	Not to be exceeded
NO2	Annual	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)	Annual mean
	1-hour	0.100 ppm	NA	98th percentile, averaged over 3 years
O3[c]	8-hour	0.070 ppm (150 µg/m^3)	0.070 ppm (150 µg/m^3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM2.5	Annual	12 µg/m^3	15 µg/m^3	Annual mean, averaged over 3 years
	24-hour	35 µg/m^3	150 µg/m^3	98th percentile, averaged over 3 years
PM10	24-hour	150 µg/m^3	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2[d]	3-hour	NA	0.5 ppm (1,300 µg/m^3)	Not to be exceeded more than once per year
	1-hour	75 ppb (195 µg/m^3)	NA	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

a µg/m^3 = micrograms per m3; Pb = lead; O3 = ozone; ppb = part(s) per billion.

b In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.

c Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

d The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (b) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the require NAAQS.

3.2.12 Noise

Historic and Existing Conditions

There are noise ordinances in St. Charles and St. John the Baptist parishes. The maximum permissible sound levels for St. John the Baptist parish during the hours of 7:00 am to 10:00 pm are 70 dBA for residential areas and 75 dBA for business and commercial areas (Code 1988, § 16:126; Ord. No. 88-66, 7-28-1988). The maximum permissible sound levels for St. Charles parish during the hours of 7:00 am to 10:00 pm are 60 dBA for residential areas and 65 dBA for commercial areas (St. Charles Parish Code §24-1 et seq.; Ord. No. 09-7-12, § 1, 7-20-09).

Background noise levels surrounding the St. Charles, St. James, and St. John the Baptist Parishes are variable depending on the time of day and climatic conditions. Near developed areas, automobile and train traffic, and to a lesser extent air traffic, contribute to the background noise levels.

A number of sensitive noise receptors are located adjacent to or near the Project Area such as parks, wildlife management areas, and wildlife. These public lands are sensitive noise receptors where serenity and quiet are an important public resource. The areas with the greatest number of sensitive noise receptors, such as residential homes and apartments, schools, churches, and parks, are located in St. James and St. John the Baptist Parishes. They are located adjacent to the I-10 and I-55 highway system and along state route 3125. In

addition, rural neighborhood communities such as Gramercy and Grand Point contain a large number of residential sensitive noise receptors in St. James Parish.

3.2.13 Transportation

Existing Conditions

There are two major roadways within the Project Area, US Highway 61 and US Highway 51. Louisiana Department of Transportation & Development conduct routine traffic counts on major roadways. Table 8 presents Estimated Annual Average Daily Traffic Routine Traffic Counts on US Highway 61 (W. Airline Highway) and US Highway 51 (New Highway 51).

Table 8. Annual average daily traffic for major traffic routes within the project area.

Annual Average Daily Traffic (AADT)			
US Highway 61		US Highway 51	
Year	AADT	Year	AADT
2017	20,755	2017	17,734
2014	15,772	2014	7,615
2011	16,032	1999	15,173
2008	18,562	1997	10,800
2005	14,058	1994	10,130
2002	14,499	1991	9,752

State of Louisiana Department of Transportation & Development

4. Environmental Consequences

This section describes the environmental consequences of the No Action Alternative (Future Without-Project Conditions; FWOP) and the Proposed Action Alternative (Future Conditions with the Proposed Action; FWP). Indirect and direct impacts are discussed for each scenario and resource section. Cumulative effects are discussed in Section 4.14.

Impacts incurred as part of the No Action Alternative would mirror the Structural Alignment impacts of the recommended plan presented in the 2016 WSLP EIS, which is incorporated here by reference. The sections presenting the impacts related to the No Action Alternative summarize relevant information from the 2016 WSLP EIS approved plan, because funding for construction of this feature is authorized by BBA 2018, PL 115-123 and this scenario represents the predicted course of events absent approval of the proposed action. Impacts associated with clearing and grubbing activities that are not a part of the Proposed Action (see section 2.4 for more details) would occur within the 2016 WSLP EIS impact footprint under the prior-approved plan.

For an evaluation of the anticipated impacts if the Corps were to take no action to construct the WSLP Project, including under the previously-approve plan, refer to the evaluation of the No Action Alternative and Future Without Project Condition contained in the 2016 WSLP EIS, which evaluation is incorporated here by reference.

4.1 Wetlands

No Action Alternative

Forested wetland habitats within the vicinity are degraded and this trend is expected to continue into the future (Shaffer et al., 2009; Shaffer et al., 2016; Breland pers. communication, 2018).

WSLP Project levee construction would directly impact approximately 1,114 acres of swamp (595.6 AAHUs) and approximately 120 acres of BLH (95.5 AAHUs). Levee construction would also indirectly impact approximately 8,432 acres of swamp (494.5 AAHUs) and 89 acres of BLH (3.1 AAHUs). These impacts could include some rare and unique or imperiled vegetation communities (LDWF, 2013). All unavoidable impacts associated with the WSLP Project would be mitigated using only the mitigation plan outlined in the 2016 WSLP EIS. Mitigation plan features (total of 1,189 AAHUs) would occur in the Lake Pontchartrain Basin watershed.

Under the No Action Alternative, 213 acres of wetlands, including 167 acres of swamp and 46 acres of BLH, would not be permanently destroyed by the creation of new access routes, investigation corridors and stockpile and staging areas.

Proposed Action Alternative

Direct Impacts: The Proposed Action would have approximately 167 acres of direct, negative impacts to swamp habitat (approximately 91 AAHUs), and would have approximately 46 acres of direct, negative impacts to BLH habitats (approximately 36 AAHUs). These acres would be cleared and grubbed and the trees felled. The total impacts to wetlands associated with the Proposed Action are approximately 213 acres and 127 AAHUs. These impacts are described below. See Table 9 indicating impacts to wetlands by the Proposed Action.

Table 9. Total direct wetland impacts associated with the Proposed Action.

Description	Total Acres	Wetland Acres	Swamp Acres	BLH Acres	Total AAHUs	Swamp AAHUs	BLH AHHUs
100 ft. clearing and grubbing corridor for surveys and borings	138	135	115	20	79	63	16
access roads for surveys and borings*	91	78	52**	26**	48	28	20
TOTAL	**229**	**213**	**167**	**46**	**127**	**91**	**36**
100 ft. clearing and grubbing corridor for surveys and borings X LDWF land	42	42	42	0	24	24	0
access roads for surveys and borings* x LDWF land	7	7	4	3	4	2	2
TOTAL for LDWF property	**49**	**49**	**46**	**3**	**28**	**26**	**2**

*Access road impacts represent maximum based on USFWS's National Wetland Inventory. Aerial photography and on the ground surveys indicate that some of this includes existing roads; therefore it represents an estimated maximum wetland impact
**Estimated using Shaefer et al., 2016 map

Clearing and grubbing of the 100-foot corridor would remove all vegetation and debris on approximately 115 acres (approximately 63 AAHUs) of swamp habitat and 20 acres (approximately 16 AAHUs) of BLH habitat. Vegetation would be allowed to regrow in areas that are not converted to other uses (such as levee). However, these impacts are considered to be

permanent because the low recruitment of trees within the area indicate regrowth is unlikely (Shafer et al., 2009, Breland pers. communication 2018).

Clearing of vegetation for access roads would remove vegetation and debris from approximately 22 acres (approximately 12 AAHUs) of swamp habitat and 11 acres (approximately 9 AAHUs) of BLH habitat.

A total of 49 acres (46 acres, 26 AAHUs for swamp; 3 acres and 2 AAHUs for BLH) of negative impacts to forested wetlands would occur on LDWF property. There would be seven (4 acres, 2 AAHUs for swamp, and 3 acres and 2 AAHUs for BLH) acres of impacts associated with access roads and 42 (42 acres, 24 AAHUs all swamp) acres associated with the 100-foot clearing and grubbing corridor.

All activities within stockpiling and staging areas would have no wetland or BLH impacts. A no work zone buffer of 50 feet would be maintained around all wet pasture wetlands within stockpile areas. A no work zone buffer of 150 feet or trip drip line, whichever is longest, would be maintained around all forested wetlands within the stockpile areas.

Indirect Impacts: The Proposed Action could have minor indirect impacts to vegetation resources of an unknown nature due to altered hydrology. Clearing and grubbing of the 100-foot corridor and improvement of access roads could alter hydrology which could impact vegetation resources. The nature of these impacts are not known, but are expected to be minor. See indirect impacts in the water quality section for more information.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

All impacts to wetlands would be offset through either the purchase of mitigation bank credits or the construction of new, restored or enhanced habitats to replace the lost habitats in accordance with the Clean Water Act, Section 404(b)(1) and the Water Resources Development Act of 1986, Section 906, as amended.

4.2 Wildlife Resources

No Action Alternative

WSLP Project levee construction would directly or indirectly impact approximately 9,758 acres of high quality wildlife habitat (forested wetlands) if the proposed action is not implemented. During construction any wildlife present would relocate to avoid the construction but could quickly return to any areas that have not converted to other land uses after construction ends. Some aquatic wildlife ingress and egress from the protected side of the levee would be limited.

Under the No Action Alternative, conversion of 213 acres of forested wetland to open water and/or freshwater emergent habitats would not occur.

Proposed Action Alternative

Direct Impacts: The Proposed Action would have long-term negative impacts, and short-term temporary, negative impacts to wildlife resources.

The Proposed Action would convert 213 acres of forested wetland to open water and/or freshwater emergent habitats. During construction, wildlife species would either relocate to adjacent habitats or expire. Since the existing habitat will be converted from swamp to marsh or open water, some of these species may never return. Temporary impacts would also occur in the vicinity of the Proposed Action. Use and transportation of equipment could cause wildlife in the vicinity of the Proposed Action to relocate. However, they would likely return to the vicinity after the Proposed Action is completed.

Indirect Impacts: Indirect, impacts to wildlife could occur as a result of altered hydrology affecting forested wetlands. See Indirect Impacts in the Water Quality and Wetlands sections for more information. Wildlife species pushed from impacted areas into adjacent habitat may exceed the carrying capacity of the adjacent habitat and affect the overall health of the population for that species. This may be a temporary or permanent impact depending on the species. However, if CEMVN constructs new habitats to replace the lost habitats within the vicinity of the project area, upon completion of mitigation measures and replacement of the impacted habitat, these same species may experience rebound.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.3 Aquatic Resources/Fisheries

No Action Alternative

WSLP Project levee construction would convert approximately 1,114 acres of existing benthos swamp habitat into upland grass covered (levee) habitat. Sessile organisms would be buried during construction and expire. Mobile species of fish, shellfish and other aquatic resources would either avoid the area during construction (fish) or be moved out of the way due to water displacement (plankton). Up to 8,432 acres of forested wetland and swamp habitats utilized by aquatic and fisheries recourses could be indirectly impacted when those acres are enclosed by a levee and other flood risk reduction structures that would reduce migration of organisms, and alter the hydrology and water quality. Aquatic organism access ingress and egress from the Project Area would be impacted.

Under the No Action Alternative, conversion of 213 acres of forested wetland to open water and/or freshwater emergent habitats would not occur.

Proposed Action Alternative

Direct Impacts: The Proposed Action would have temporary negative impacts and minor long-term negative impacts to aquatic resources and fisheries.

The Proposed Action would convert 213 acres of forested wetland to open water and/or freshwater emergent habitats. Sessile aquatic organisms could be injured or killed during clearing and grubbing of the 100-foot corridor, and or during the vegetative clearing of the access roads. Mobile species of fish, shellfish and other aquatic resources would either leave the area during clearing and grubbing (fish), or expire, or be moved out of the way due to water displacement (plankton).

Forested wetlands and emergent vegetation are generally of higher quality than open water habitats. The Proposed Action impacts to aquatic resources and fisheries are considered to be minor for two reasons. One, it is likely that some of the swamp habitat would be converted to high quality emergent vegetation habitat. Two, all unavoidable impacts to forested wetlands would be mitigated by construction of replacement habitat or through the purchase of mitigation bank credits.

Indirect Impacts: The Proposed Action would have minor indirect impacts to vegetation resources of an unknown nature. Aspects of the Proposed Action could alter the hydrology which could produce minor indirect impacts. Clearing and grubbing of the 100 foot corridor and improvement of access roads could alter hydrology. The altered hydrology could impact aquatic resources and fisheries beyond those directly impacted. The nature of these impacts are not known, but are expected to be minimal. See Water Quality Section for more details.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.4 Threatened and Endangered Species

No Action Alternative

A discussion on potential impacts to bald eagles, colonial nesting waterbirds, Gulf sturgeon, and West Indian manatees was included in the 2016 WSLP EIS. The 2016 WSLP EIS was found to not likely to adversely affect any listed species. WSLP Project levee construction would directly or indirectly impact approximately 9,758 acres of high quality wildlife habitat (forested wetlands). This plan would destroy approximately 1,237 acres of primarily swamp habitats and BLH. However, other adjacent habitats are available for listed species.

Under the No Action Alternative conversion of 213 acres of primarily swamp and BLH, potentially utilized by the bald eagle and colonial nesting waterbirds would not occur.

Proposed Action Alternative

Based on review of existing data, preliminary field surveys, the rarity of occurrences, and the use of best management practices (BMPs) documented in Appendix A, Annex N of the 2016 WSLP EIS and described below, CEMVN has determined that the Proposed Action is not likely to adversely affect any of the listed species, bald eagles or colonial nesting water birds. USFWS guidelines would be utilized during construction of the Proposed Action to avoid any impacts to the species described below, if encountered.

There are existing bald eagle nests in the area; however, based on information provided by USFWS, all nests are beyond 650 feet from features of the Proposed Action. Two potentially active colonial nesting water bird rookeries exist within 1,000 feet of the proposed alignments. Initial field surveys are underway and the USFWS and CEMVN will continue to survey the area to confirm whether or not the rookeries are active. Additionally, the entire Proposed Action ROWs will be surveyed for colonial nesting waterbirds and bald eagle nests. To deter colonial nesting water birds from establishing active nesting colonies in the vicinity, a Nesting Prevention Plan is being developed, in coordination with the USFWS and LDWF.

If measures to prevent colonial nesting bird populations are not successful in the area, activities that would occur within 1,000 feet of a colony could be restricted to the non-nesting period, which in this region generally extends from September 1 to February 15, depending on the species present. This restriction would likely pose significant problems to schedules. If waterbird nesting colonies become established in the area, the 1,000 foot buffer must be maintained unless coordination with the USFWS indicates that the buffer zone may be reduced based on the species present or an agreement is reached with USFWS that allows a modified process to be adopted.

During in-water work in areas that potentially support manatees, all personnel associated with the project would be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel would be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel would be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable.

Direct Impacts: The Proposed Action would directly impact 213 acres of primarily swamp and BLH, destroying habitats potentially utilized by the bald eagle and colonial nesting waterbirds: and forcing those species to utilize other adjacent forested wetlands and swamp habitats.

Indirect Impacts: Clearing and grubbing of the 100 foot corridor and improvement of access roads could alter hydrology in the vicinity of the Proposed Action. These hydrologic alterations could also have indirect impacts to adjacent vegetation resources. Negative vegetation impacts could affect Bald and Golden Eagle Protection Act (BGEPA) or MBTA trust species. See the Water Quality and Wetlands sections for more information.

Much of the adjacent area and vicinity is forested wetlands and swamp habitats. ESA, BGEPA, and MBTA trust species could move to adjacent habitats because of indirect and direct impacts associated with the proposed action. None of the Proposed Action area or vicinity is critical habitat for the West Indian manatee or the Gulf sturgeon, and those species are thought to visit the vicinity of the Proposed Action only seasonally and infrequently. Therefore, it is not likely that a loss in habitat would affect ESA trust species. Bald eagles and colonial waterbirds frequent the vicinity of the Proposed Action. The alteration of habitat and subsequent relocation of BGEPA and MBTA trust species as a result of the Proposed Action could have population level impacts if adjacent habitats are at or near carrying capacity in the abundant, adjacent forested wetlands, however, such impacts are not expected. Best management practices, including monitoring, use of recommended buffers, and development of a nesting prevention plan for colonial nesting waterbirds would minimize impacts to bald eagles and colonial waterbirds. Additionally, if CEMVN constructs new habitat in the vicinity to replace the impacted habitat, upon completion of mitigation measures and replacement of the impacted habitat, any impacts to BGEPA and MBTA trust species could be reduced or eliminated. Therefore, it is expected that any relocation of ESA, BGEPA, or MBTA trust species caused by the proposed action would be a minor indirect impact.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.5 Water Quality

No Action Alternative

Structural measures would provide storm damage risk reduction for communities in St. John the Baptist and St. Charles Parishes. Levee construction would reduce the risk of flow and water levels in the interior of the protected levee and pump system during a storm surge. Major indirect impacts would be a decrease in tidal interchange between the interior (protected side) and exterior (unprotected side) areas of the levee alignment.

Sedimentation and erosion impacts associated with levee construction would generally be minor and short-term, lasting only during construction of the proposed project features. Indirect impacts would include significant reduction of erosion and sedimentation associated with storm events.

Levee construction would result in some wetland and open water areas being converted to upland habitat, which would no longer provide water quality benefits. Because fill and construction materials are anticipated to be free of contaminants, discharge of these materials into existing adjacent waters is not expected to result in adverse effects to aquatic organisms. Indirect impacts include the interruption of water exchange between the flood and protected side of the levee system.

Under the No Action Alternative, there would be no disturbances to ambient water and sediment by the Proposed Action.

Proposed Action Alternative

Direct Impacts: During the Proposed Action, there would be some disturbances to ambient water and sediment quality; however, direct impacts would be short-lived and highly localized. Temporary reductions in light penetration due to increased turbidity may indirectly affect phytoplankton (i.e., primary) productivity in the area as the amount of photosynthesis carried out by phytoplankton is reduced. Localized temporary pH changes, as well as a reduction in dissolved oxygen levels, may also occur during the Proposed Action. Water quality is expected to return to pre-construction conditions soon after the completion of the Proposed Action.

Indirect Impacts: The Proposed Action would convert 213 acres of forested wetlands to open water and/or freshwater emergent vegetation habitat. This habitat change could slightly alter hydrology of the Project Area and vicinity. The complete extent and nature of this alteration is unknown. However, the stockpiling of vegetation would impede flow into, out of, and within the 100-foot clearing and grubbing corridor. The removal of trees could also affect the hydrology. Trees and other vegetation buffer flow and decrease flow velocities, which facilitates many important ecosystem processes, such as the uptake of nutrients, filtering of pollutants, and sediment deposition. There are many hydrologic modifications in the vicinity, including maintained right of ways, impoundment, saltwater intrusion, and a lack of nutrient and sediment inputs. Therefore, it is expected that indirect impacts would be minimal.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.6 Cultural Resources

No Action Alternative

In the Future Conditions with No Action, the Proposed Action would not occur**.** Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place in the vicinity but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). Under the No Action alternative, cultural resource surveys of the proposed new corridors, routes and stockpile/staging areas would not occur and undiscovered resources in those areas would not be disturbed. The CEMVN would implement and comply

with the stipulations identified in the PA for the West Shore Lake Pontchartrain Hurricane Storm Damage Risk Reduction System as executed on May 16, 2014.

Proposed Action Alternative

Several locations subject to activities associated with the proposed 600 foot wide surveys and borings corridor were surveyed for the 2016 WSLP EIS (Figure 4) and were documented in the management summary "Phase I Cultural Resources Survey and Reconnaissance of Alternate C, West Shore Lake Pontchartrain Levees Project, St. John the Baptist and St. Charles Parishes, Louisiana" (Wells et al. 2014, report 22-4571). The Frenier 1915 Memorial Cemetery (16SJB69) is outside of the Proposed Action area and would not be impacted by the activities associated with the Proposed Action. Angelina Plantation (16SJB68) is located on the west side of the Proposed Action area in an area where clearing and grubbing of trees is to occur as part of the Proposed Action. The clearing and grubbing activities would occur in a portion of the Angelina Plantation site that has been determined ineligible for listing to the NRHP. On December 13, 2018, a records search was conducted for the entire project area through the SHPO Geographic Information System (GIS) database; the site record for the Frenier 1915 Memorial Cemetery is the only new site information reported since then. The eastern portion of the Proposed Action near Lake Pontchartrain has not been previously surveyed for cultural resources and little is known regarding the presence of cultural resources. This area would be subjected to standard field practices to identify cultural resources prior to work associated with the Proposed Action.

Temporary areas for stockpiling vegetation, timber, and construction material would be used. All five stockpile areas would be north of Airline Highway (U.S. 61) on previously cleared ground. Limited archaeological survey of 47 acres in the vicinity of Stockpile Area 1 by Fogg et al. (2012, report 22-3718) produced negative results. Roussel's Restaurant and Bar (structure 48-00431) located just outside of Stockpile Area 1 at 650 East Airline Highway has been determined not eligible for the NRHP. There have been no standing structure or archaeological surveys on or near Stockpile Area 2. Airline Reserve is a standing structure (48-01032) on the south of Stockpile Area 3. Several archaeological surveys have been conducted in the vicinity of Stockpile Area 4 and 5 (Rothrock and Moreno 2015, report 22-4868; Kelley and Blank 2013, report 22-4327; Foreman and others 2016, report 22-5158; Hale and others 2011, report 22-3793). There have been no standing structure surveys in the vicinity of either Stockpile Area 4 or 5. Due to the limited coverage of the archaeological surveys in or near the proposed five stockpile areas, all would be subjected to standard field practices to identify cultural resources prior to work associated with the Proposed Action.

Temporary access roads planned for the project would be used to haul equipment and personnel for surveys and borings activities. Many follow existing roads or are along pipeline routes that have been surveyed previously for cultural resources by Rothrock and Moreno (2015, SHPO report 22-4868). The four unsurveyed roads are all in St. John the Baptist Parish and would be investigated for cultural resources prior to work associated with the Proposed Action.

The CEMVN would implement and comply with the stipulations identified in the PA for the West Shore Lake Pontchartrain Hurricane Storm Damage Risk Reduction System as executed on May 16, 2014.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH

impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.1 Soils and Prime and Unique Farmlands

No Action Alternative

Under the FWOP condition, the Proposed Action would not occur. Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). With the No Action Alternative, 1,008 acres of prime farmland soils located within the Proposed Action area would not be affected. Prime and unique farmland resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices and policies.

Proposed Action Alternative

Direct Impacts: Implementation of the Proposed Action would result in the temporary removal of 1008 acres of prime farmland soils from agricultural use and into use as stockpile areas for the Proposed Action. The loss of prime farmland soils as a result would not be significant to agricultural production locally or regionally, as those soils would be only temporarily impacted and the vicinity has ample farmland. The areas to be impacted are currently dedicated to common Bermuda grass, improved Bermuda grass, soybeans, wheat, sugar cane, bahia grass, and corn, and would not remain available for the duration of activity.

Stockpile Area 1 consists of 583 acres of which approximately 98% is rated as prime farmland. The majority of the 571 acres of prime farmland consists of Carville silt loam. A very small amount of the prime farmland consists of Cacienne silt loam.

Stockpile Area 2 consists of 40 acres of which approximately 100% is rated as prime farmland. The entire prime farmland consists of Carville silt loam.

Stockpile Area 3 consists of 98 acres of which approximately 100% is rated as prime farmland. Approximately 43% of the prime farmland consists of Schriever clay. Approximately 22% of the prime farmland consists of Cacienne silt loam. Approximately 20% of the prime farmland consists of Cacienne silty clay. Approximately 15% of the prime farmland consists Gramercy silty clay.

Stockpile Area 4 consists of 143 acres of which approximately 100% is rated as prime farmland. Approximately 69% of the prime farmland consists of Cacienne silt loam. Approximately 21% of

the prime farmland consists of Cacienne silty clay. Approximately 10% of the prime farmland consists of Schriever clay.

Stockpile Area 5 consists of 156 acres of which approximately 100% is rated as prime farmland. Approximately 50% of the prime farmland consists of Cacienne silt loam. Approximately 24% of the prime farmland consists of Cacienne silty clay. Approximately 20% of the prime farmland consists Gramercy silty clay. Approximately 6% of the prime farmland consists of Carville silt loam.

Indirect Impacts: There would be no indirect impacts through implementation of the Proposed Action as the stockpile/staging areas would be returned to pre-existing conditions upon project completion and no material is being mined from these areas.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.2 Aesthetics and Visual Resources

No Action Alternative

In the FWOP condition, the Proposed Action would not occur**.** Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). Similar impacts would still occur from access, clearing and grubbing, stockpiling of debris, and other surveys adjacent to the Proposed Action, but within the 2016 WSLP EIS Structural Alignment ROW. Much of the previously authorized levee system would be in areas that are screened by deep forest and swamp, or are remote and have minimal access. Where once a natural landscape of water, marsh, or swamp could be seen, a green topped levee with a wide footprint and storm damage walls would now be seen; however, the limited impacts to visual resources from the Proposed Action would not occur.

Proposed Action Alternative

Direct Impacts: Direct impacts from the Proposed Action to visual resources would be minimal in residential and agricultural areas. Much of the clearing and grubbing within the 100-foot wide corridor, access roads, and stockpile areas would be in areas that are screened by forested wetlands or are remote and have minimal access. The River Road Scenic Byway may see minimal increases in truck traffic, dust, and noise levels during activities associated with the Proposed Action thus reducing the visual quality of the drive. This is a temporary impact and

conditions should return to existing conditions after completion. View sheds from I-10 may also be altered near the intersection with I-55 and further west where the proposed 100-foot wide clearing and grubbing corridor crosses under the interstate. Where once a natural landscape of water, marsh, or swamp could be seen, a 100-foot wide corridor void of vegetation would now be seen. Approximately 1 mile of the proposed 100-foot wide clearing and grubbing corridor is within the MSWMA. The MSWMA may be temporarily less accessible by land and water to recreation users.

Indirect Impacts: The affected area of wetlands south of the proposed 100-foot wide clearing and grubbing corridor could change the landscape of the region due to changes in water quality as the result of the removal of vegetation. Runoff and water exchange alterations could lead to localized changes in plant communities near activity. Further examination is provided in the Water Quality and Wetlands Sections.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.3 Recreation Resources

No Action Alternative

In the FWOP condition, the Proposed Action would not occur**.** Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). Impacts would still occur from access, clearing and grubbing, stockpiling of debris, and other surveys adjacent to the Proposed Action, but within the 2016 WSLP EIS Structural Alignment ROW. Under the No Action alternative, there would be no impacts to recreation due to stockpiling of borrow or the staging of construction materials in the stockpile/staging areas near parks or pools and no disruption of access to recreation areas that could be caused by clearing and grubbing activities.

Proposed Action Alternative

Direct Impacts: Stockpile area 4 is adjacent to River Parishes Community College Reserve Campus as well as Regala Park. Regala Park recreational facilities include an outdoor swimming pool, softball/baseball fields, picnic pavilions, tennis courts, playground, racquetball courts, 1 mile walking path, and soccer field. Due to adjacent trucking traffic and the potential for increased noise and dust that could temporarily impact park users during the project, a buffer measure would be considered in proximity to these facilities. A temporary buffer of a 100

percent sight-obscuring fence, a minimum of eight feet in height, for the duration of work would be considered where recreational resource use is high. Working hours in the stockpiling areas would be limited to weekday daylight hours. Best management practices for dust abatement would be used, including maintaining a water truck onsite to water down areas within stockpiles and when hauling along access roads. Final layout of stockpile area configurations at one or more of the potential stockpile areas would locate stockpiles and staging sites as far as feasibly possible from residences and recreational areas.

Habitat changes associated with the proposed aciton (i.e., clearing 49 acres of forests) and other similar would have negative impacts to recreational resources within the MSWMA such as hunting and wildlife viewing opportunities. See Wetlands section for a breakdown of forest impacts to LDWF property.

Indirect Impacts: With the proposed 100-foot wide clearing and grubbing corridor, recreationists may have less access to MSWMA. Approximately 1 mile of the proposed 100-foot wide clearing and grubbing corridor is within the MSWMA. The MSWMA may be less accessible by land and water to recreational users as a result of the Proposed Action, including but not limited to those who use the Reserve Relief Canal and boat launch. The CEMVN is coordinating with camp owners, the LDWF, and other stakeholders to minimize and reduce indirect recreational impacts associated with the Proposed Action to the extent practicable.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.4 Environmental Justice

No Action Alternative

In the FWOP condition, the Proposed Action would not occur**.** Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). Impacts from completing surveys and borings necessary for the construction of the 2016 WSLP levee are not expected to have impacts on Environmental Justice (EJ) communities. There are no direct, indirect or cumulative impacts from the surveys and borings that will take place under the previously-approved plan. Under the No Action alternative, EJ communities would not be affected by construction activities at the stockpile/staging areas.

Proposed Action Alternative

Direct Impacts: There are no direct impacts to EJ resources from activities associated with the proposed action.

Indirect Impacts: SEA 570 covers the required NEPA documentation of impacts associated with stockpile sites, which were not discussed in the 2016 WSLP EIS. The surveys and borings activities would not have indirect impacts to EJ communities. However, continued use of the stockpiling and staging areas for construction related activities could result in an increase in truck traffic in the Garyville, Reserve, and Laplace communities. Material could be stockpiled for a period of 3-4 years, until year 2023. A total of five stockpile sites have been identified to hold a total of approximately 4 million cubic yards of material. All five of the stockpile sites are located in St. John the Baptist Parish. Stockpile areas 1 and 2 are in Laplace, Stockpile area 3 is in Reserve, and Stockpile areas 4 and 5 are in Garyville. All three of the communities, Laplace, Reserve, and Garyville, contain EJ communities as defined by minority or low-income criteria. A majority of the material stockpiled will likely be earthen fill (borrow material) to be used for the levee enlargement project. However, trees and other debris from clearing and grubbing of a 100-foot corridor adjacent to the Proposed Action along with clearing wider access routes could be transported to the stockpile sites. Since all five stockpile sites are directly accessed via US Highway 61 (Airline Hwy.) and US Highway 51, high adverse impacts to the community are not anticipated. Highway 61 and Highway 51 are DOTD classified 3, Principal Arterial, 4-lane, divided highways. Additional truck traffic will be evident to residents using this road for several years, as material is transported from the Bonnet Carré Spillway to the stockpile sites. See the Transportation section for more information on transportation impacts. There may be temporary, low adverse impacts felt by the surrounding low income and minority neighborhoods. These impacts, however adverse, are not disproportionate since the minority and low income composition is similar to the Parish as a whole and the benefits of the levee improvement will be felt by both EJ and non EJ communities and outweigh the adverse impacts associated with traffic congestion.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.5 Air Quality

No Action Alternative

St. John the Baptist and St. Charles Parishes are currently in attainment for all Federal NAAQS pollutants, including the 8-hour ozone standard (EPA 2013). This classification is the result of area-wide air quality modeling studies. There would be temporary and localized increases in air pollutants related to levee construction under the previously-approved plan. However, it is expected that these parishes would maintain attainment throughout the WSLP construction period. Under the No Action alternative, temporary impacts to air quality due to dust and

emissions from activities within the stockpile/staging areas and the new corridors would not occur.

Proposed Action Alternative

Direct Impacts: St. John the Baptist and St. Charles Parishes are currently in attainment of all NAAQS and direct impacts to ambient air quality as a result of the Proposed Action are expected to be temporary, and primarily due to the emissions of surveys and borings equipment. Best management practices for dust abatement would be used, including maintaining a water truck onsite to water down areas within stockpiles and when hauling along access roads. Final layout of stockpile area configurations at one or more of the potential stockpile areas would locate stockpiles and staging sites as far as feasibly possible from residences and recreational areas. Due to the short duration of the Proposed Action, any increases or impacts to ambient air quality are expected to be short-term and minor and are not expected to cause or contribute to a violation of Federal or State ambient air quality standards. The stockpiling of borrow in the staging areas and the use of earthmoving equipment to move this material around those sites and to and from trucks may cause an increase in dust in areas adjacent to those sites throughout the construction period of approximately four years. Once all activities associated with the Proposed Action cease, air quality within the vicinity is expected to return to existing conditions. St. John the Baptist and St. Charles Parishes would remain in attainment of all NAAQS.

Indirect Impacts: Any indirect impacts to ambient air quality as a result of the Proposed Action are expected to be temporary, and primarily due to the emissions of surveys and borings equipment.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.6 Noise

No Action Alternative
There would be increased noise levels related to levee construction within the WSLP Project ROW and in adjacent areas. Noise effects associated with levee construction are expected to be localized, temporary and minor.

Under the No Action Alternative, there would be no temporary and localized increases in noise levels resulting from the Proposed Action.

Proposed Action Alternative

Direct Impacts: There would be temporary and localized increased noise levels during activities during construction of the Proposed Action. Effects would be limited to within the immediate vicinity. Felling of trees along the access roads and the 100-foot clearing and grubbing corridor would mostly be in remote areas and would have minor effects on wildlife populations that would already be relocating due to construction activity. Increased traffic associated with transportation of material to stockpiling and staging areas would have minor effects on noise levels. Increases in traffic congestion are expected to be minor and so would increases in associated noise levels. Table 10 shows the 350 structures, by type, within 1,000 feet of the five stockpile areas. Earth-moving construction equipment that could be used at the stockpile areas produce noise emissions of approximately 81 dBA. A noise model referenced in the 2016 WSLP EIS projected that noise levels from such equipment would attenuate to 75 dBA at a distance of approximately 100 ft. Local noise ordinances would be followed to reduce and minimize impacts to these noise sensitive receptors to the extent practicable. Working hours in the stockpiling areas would be limited to weekday daylight hours. Final layout of stockpile area configurations at one or more of the potential stockpile areas would locate stockpiles and staging sites as far as feasibly possible from residences and recreational areas.

Table 10. Noise sensitive receptors, by structure type, within 1,000 of the proposed stockpile areas.

Structure Type	Count
Residential	242
Commercial / Industrial	102
Churches / Not for Profits	3
Government	2
School	1
Total	350

Indirect Impacts: There would be no indirect impacts due to noise.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.7 Transportation

No Action Alternative

In the FWOP condition (a.k.a no-action), the Proposed Action would not occur. Surveys and borings data would not be gathered outside of the 2016 WSLP EIS ROW. However, surveys and borings would take place but only in the WSLP Project Area as identified in the 2016 EIS. Environmental compliance has been achieved (2016 WSLP EIS) and funding has been authorized (PL 115-123) for the WSLP Project. Access, clearing and grubbing, stockpiling of debris, and other surveys would occur within the 2016 WSLP EIS Structural Alignment ROW (Figure 4). There would be no stockpiling of material in the FWOP, but approximately 9,000,000 cubic yards of material was identified in the 2016 WSLP EIS and would be transported from Bonnet Carré Spillway to the vicinity of the WSLP ROW for construction related to WSLP Structural Alignment. Transportation for this is likely to occur along major roadways such as US Highways 61 and 51. The traffic counts on both Highways 61 and 51 show increasing traffic through 2017 and it is expected to increase into the future. There would be increased traffic related to WSLP levee construction. Transportation effects related to transportation are expected to be minor compared to existing traffic on the highways.

Proposed Action Alternative

Direct Impacts: A majority of the material stockpiled would likely be earthen fill (borrow material) to be used for the levee enlargement project. However, trees and other debris from clearing and grubbing of a 100-foot corridor adjacent to the Proposed Action, along with clearing wider access routes could be transported to the stockpile sites. Since all five stockpile sites are directly accessed via US Highway 61 (Airline Hwy.) and US Highway 51, there will be increased traffic along these routes. It is expected that 328,000 truck trips would be needed to haul 6 million cubic yards of material to the stockpile areas. This would happen over a 4.5 year period, 365 days per year. This would equate to an increase of 199 vehicles per day on to Highways 61 and 51 which already have AADT counts of 20,755 and 17,734 vehicles per day, respectively. This increase in traffic is expected to have a minor impact on traffic within the area and is not considered significant. Other features and activities associated with the Proposed Action would only have minor impacts to traffic.

Indirect Impacts: There would be no significant indirect impacts to transportation by implementation of the proposed action.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new direct or indirect impacts to this resource would be incurred.

4.8 Cumulative Impacts Analysis

CEQ Regulations define cumulative impacts (CI) as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or

person undertakes such other actions. CI can result from individually minor but collectively significant actions taking place over a period of time."

Coastal Louisiana, including the Project Area, has been greatly impacted by natural subsidence, levees, hurricanes, and oil and gas infrastructure. Direct and indirect impacts of past, present and reasonably foreseeable future events were considered in the analysis of the Proposed Action consequences. These impacts include historical and predicted future land loss rates for the area and other restoration projects in the vicinity.

Wetland resource cumulative effects include historical degradation of forested wetlands, likely future trends of degradation within the vicinity, and other reasonably foreseeable activities negatively impacting wetland resources.

Forested wetlands in the vicinity and across coastal Louisiana have experienced a decline over the recent past. It is likely that this trend will continue into the future and wetland impacts as part of the Proposed Action would add to this trend. At least one large scale restoration projects is being planned, the River Reintroduction into Maurepas Swamp Project (PO-0029; Buras et al., 2018), and smaller scale restoration plans are being implemented, such as Lake Pontchartrain Basin Foundation's Maurepas Landbridge Swamp Restoration Project (Hillmann et al., 2017). However, there are no restoration projects being planned, funded, or implemented that are expected to be large enough to completely reverse the likely long-term decline (Shafer et al., 2016).

The Proposed Action is one of three reasonably foreseeable activities within the Project Area vicinity that would have negative impacts to forested wetlands.

The Proposed Action would have negative impacts to 213 acres of forested wetlands. Up to approximately 78 acres of impacts would be from access roads. One hundred and thirty five acres of these impacts would be in the 100-foot clearing and grubbing corridor. Adjacent to the clearing and grubbing corridor would be another approximately 91-acre clearing and grubbing corridor (Figure 2). All vegetation would be removed from this corridor as well, which would also be used for surveys and borings for the WSLP levee alignment. The cumulative impact of both of these actions is approximately 225 acres of forested wetlands (swamp and BLH) along a contiguous 100-foot corridor.

Construction of the WSLP levee is another reasonable foreseeable activity with negative impacts to forested wetlands. The 2016 WSLP EIS estimates that approximately 1,114 acres of swamp (595.6 AAHUs) and approximately 120 acres of BLH (95.5 AAHUs) would be directly negatively impacted. Levee construction would indirectly impact approximately 8,432 acres of swamp (494.5 AAHUs) and 89 acres of BLH (3.1 AAHUs). The clearing and grubbing corridor adjacent to the Proposed Action is within the 2016 WSLP EIS levee alignment. A mitigation plan was developed that would fully mitigate for unavoidable habitat impacts associated with the WSLP Project (2016 WSLP EIS).

Lastly, if there is a shift in the WSLP levee alignment, it is likely that the shifted alignment ROW would include the Proposed Action's clearing and grubbing corridor ROW. If there is no shift, then impacts associated with the Proposed Action would be in addition to other levee alignment features. All impacts to wetlands associated with the Proposed Action would be completely mitigated for whether or not a shift occurs. If further design determines a shift is preferable to the current alignment, anticipated construction-related WSLP Project impacts associated with that shift would be assessed via subsequent NEPA documentation. If further design determines

that the current mitigation plan is not practicable to offset anticipated habitat losses, the mitigation plan in the 2016 WSLP EIS would also be re-assessed. If necessary, modifications to the mitigation plan would occur in subsequent NEPA documentation. Therefore, although there will be temporary impacts from the loss of this habitat, overall a significant cumulative change in wetlands due to impacts associated with this Proposed Action is not anticipated.

Wildlife resources, and aquatic resources, and fisheries resources cumulative effects would mirror the trend of wetland loss. The cumulative losses of forested wetland habitats, as described above, would have a negative long-term impact on terrestrial and avian wildlife resources. However, since impacts to forested wetland habitats would be mitigated, the impacts to these resources would be temporary and not anticipated in result in an overall increase in cumulative impacts. Aquatic resources and fisheries resources would also experience negative long-term and cumulative effects as forested wetlands are anticipated to convert to emergent wetlands and eventually open water in the area of the Proposed Action and vicinity. There would not be a significant cumulative change in wildlife resources, and aquatic resources and fisheries resources from implementation of the Proposed Action as mitigation for these impacts would be completed as required by law.

Water quality cumulative effects would include the incremental direct and indirect effects on flows and water levels attributable to the Proposed Action in addition to the direct and indirect impacts to flows and water levels attributable to other past, present, and reasonably foreseeable future actions including previous, existing and authorized levee systems in the Pontchartrain Basin, and the authorized and funded WSLP levee system. Impacts associated with the approximately 203 miles of levee systems within the Greater New Orleans Hurricane and Storm Damage Risk Reduction System are reported in the numerous NEPA evaluations of the various features of the HSDRRS documented in the Individual Environmental Reports (produced under NEPA Emergency Alternative Arrangements) and the “Comprehensive Environmental Document, Phase I, Greater New Orleans HSDRRS”, (USACE 2013). Impacts associated with the approximately 18-mile WSLP levee are discussed in the 2016 WSLP EIS. Water quality impacts associated with the Proposed Action are likely to be minor and localized. Therefore, there would not be a significant cumulative change in water quality due to impacts associated with this Proposed Action.

Much of the clearing and grubbing within the 100-foot wide corridor, access roads, and stockpile areas would be in areas that are screened by forested wetlands or are remote and have minimal public access. However, cumulative change in aesthetics and visual resources would take place on approximately 1 mile of the proposed 100-foot wide clearing and grubbing corridor which is within the MSWMA. A total of 49 acres of negative impacts to forested wetlands would occur on LDWF property. There would be seven acres of impacts associated with access roads and 42 acres associated with the 100-foot clearing and grubbing corridor within the MSWMA. Habitat changes associated with the proposed action and other similar habitat changes associated with WSLP Project activities in the reasonably foreseeable future would have negative cumulative impacts on recreational resources such as hunting and wildlife viewing opportunities.

Access to LDWF boat launches at the Hope Canal and Reserve Relief Canal, a swamp tour, the I-55 launch and the I-10 launch, and a recreational camp, which are in the vicinity on the southern side of the proposed 100-foot wide clearing and grubbing corridor, would be either partially or completely blocked during construction of the proposed action. Boat access from the Reserve Relief Boat Launch via the Reserve Relief Canal to the MSWMA could be temporarily blocked during the Proposed Action. Therefore, the Proposed Action may have temporary

cumulative impacts associated with recreation on the southern side of the proposed clearing and grubbing corridor. The CEMVN is coordinating with camp owners, the LDWF, and other stakeholders to minimize and reduce recreational impacts associated with the Proposed Action to the extent practicable.

Noise, air quality, transportation, and soils and prime and unique farmlands impacts associated with the Proposed Action would be temporary, minor, and during construction only. Therefore, the Proposed Action would not significantly increase cumulative effects for these resources.

Any adverse cumulative impacts to Environmental Justice communities associated with Proposed Action are not disproportionate since the minority and low income composition is similar throughout the Parish as a whole, the benefits of the levee improvement will be felt by both EJ and non EJ communities alike, and the benefits of the levee improvement outweigh the adverse impacts associated with traffic congestion which are temporary in nature.

Under the Proposed Action, the mitigation plan approved in the 2016 WSLP EIS would be augmented by adding the purchase of mitigation bank credits as an option to mitigate BLH impacts. Approved mitigation banks construct, operate and maintain wetland habitats pursuant to the requirements and schedule set forth in their Mitigation Banking Instrument. Mitigation banks are required to meet certain habitat performance milestones regardless of credit sales. These banks are established at existing approved sites. The purchase of credits from a mitigation bank does not change the environmental conditions at the bank. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions, if in-kind mitigation bank credits were purchased as part of the WSLP mitigation plan from banks with a service area that encompasses the impacts, no new cumulative impacts to any resource would be incurred.

In conclusion, there would be no significant cumulative effects for any resource.

5. Mitigation

The Proposed Action would have approximately 166 acres of direct, negative impacts to swamp habitat (approximately 91 AAHUs), and would have approximately 46 acres of direct, negative impacts to BLH habitats (approximately 36 AAHUs).

The mitigation plan approved in the 2016 WSLP EIS was developed to fully mitigate for unavoidable impacts associated with the WSLP Project. The Proposed Action surveys are being taken because current existing conditions in the project area suggest a shift in levee alignment may be prudent and will be studied further. Additional mitigation above what was already identified in the 2016 WSLP EIS may be needed. If it is determined that an alignment shift is preferred, a NEPA document will be prepared to evaluate such a shift and its impacts, including impacts to habitat. If it is determined that the previously-approved WSLP Project mitigation plan is not sufficient to offset the habitat losses to be incurred, the mitigation plan from the 2016 WSLP EIS would be revisited and additionally augmented to ensure all impacts from the WSLP project are fully mitigated, including the impacts identified in SEA 570. If necessary, modifications to the mitigation plan would occur in NEPA documentation.

Coordination and Public Involvement

A Public Notice for SEA 570 would be published in the Baton Rouge and New Orleans Advocate for 15 days beginning April 3, 2019 and ending April 17, 2019.

Preparation of this SEA and FONSI was coordinated with appropriate Congressional, Federal, Tribal, state, and local interests, as well as environmental groups and other interested parties. The following agencies, as well as other interested parties, received copies of the draft EA and draft FONSI:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service, State Conservationist
U.S. Coast Guard Sector New Orleans
U.S. Coast Guard Marine Safety Unit Baton Rouge
Maritime Navigation Safety Association
The Associated Branch (Bar) Pilots
Crescent River Port Pilots Association
New Orleans Baton Rouge Steamship Pilot Association
Associated Federal Pilots
Big River Coalition
Lower Mississippi River Committee (LOMRC)
Coastal Protection and Restoration Authority Board of Louisiana
Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer
Plaquemines Parish Government
Alabama-Coushatta Tribe of Texas
Caddo Nation of Oklahoma
Chitimacha Tribe of Louisiana
Choctaw Nation of Oklahoma
Coushatta Tribe of Louisiana
Mississippi Band of Choctaw Indians
MCN – Muscogee (Creek) Nation
Jena Band of Choctaw Indians
Seminole Tribe of Florida
Seminole Nation of Oklahoma
Tunica-Biloxi Tribe of Louisiana

6. Compliance with Environmental Laws and Regulations

There are many Federal and state laws pertaining to the enhancement, management and protection of the environment. Federal projects must comply with environmental laws, regulations, policies, rules, and guidance. Compliance with laws will be accomplished upon 30-day public and agency review of this SEA 570 and associated Finding of No Significant Impact. There are many federal and state laws pertaining to the enhancement, management, and protection of the environment. Federal projects must comply with environmental laws, regulations, policies, rules, and guidance. Compliance with laws was accomplished during a public and agency review comment period beginning INSERT DATE HERE and ending INSERT DATE HERE of this SEA #570, and associated Finding of No Significant Impacts.

Clean Air Act of 1972

The Clean Air Act (CAA) sets goals and standards for the quality and purity of air. It requires the Environmental Protection Agency to set NAAQS for pollutants considered harmful to public health and the environment. The Project Area is in St. John the Baptist and St. Charles Parishes, which are currently in attainment of NAAQS. A general conformity determination is not required.

Clean Water Act of 1972 – Section 401 and Section 404

The CWA sets and maintains goals and standards for water quality and purity. Section 401 requires a Water Quality Certification (WQC) from the LDEQ that a proposed project does not violate established effluent limitations and water quality standards. Coordination with LDEQ regarding Section 401 compliance is ongoing (Appendix A, Annex A).

As required by Section 404(b)(1) of the CWA, an evaluation to assess the short- and long-term impacts associated with the discharge of dredged and fill materials into waters of the United States resulting from this Project has been completed. Section 404(b) (1) public notice was mailed out for public review comment period beginning April 3, 2019 and ending April 17, 2019. The Draft 404(b)(1) document is located in Appendix B.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) requires that "each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section 307, a Consistency Determination was submitted on March 11, 2019 to Louisiana Department of Natural Resources (DNR) for the Proposed Action. DNR's response would be located in Appendix A, Annex B.

Endangered Species Act of 1973

The Endangered Species Act (ESA) is designed to protect and recover Threatened and Endangered (T&E) species of fish, wildlife, and plants. The USFWS identified two T&E species, the gulf sturgeon, and the West Indian manatee, which are known to occur or believed to occur within the vicinity of the Proposed Action. On March 27, 2019, USFWS reviewed this project for effects to Federal trust resources under their jurisdiction and currently protected by the Endangered Species Act of 1973, concurring that the project, as proposed, is not likely to adversely affect these resources (Appendix A, Annex D).

Fish and Wildlife Coordination Act of 1934

The Fish and Wildlife Coordination Act (FWCA) provides authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. The FWCA requires that fish and wildlife resources receive equal consideration to other project features. The FWCA also requires federal agencies that construct, license or permit water resource development projects to first consult with the USFWS, NMFS and state resource agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. Section 2(b) requires the USFWS to produce a coordination act report (CAR) that details existing fish and wildlife resources in a Project Area, potential impacts due to a proposed

project and recommendations for a project. The USFWS reviewed the proposed action and provided a draft CAR with project specific recommendations on February 19, 2019 (Appendix A, Annex C). The Draft CAR and CEMVN's responses to the USFWS recommendations are as follows:

1. For proposed work on the Maurepas Swamp WMA (MSWMA), LDWF requires the USACE obtain a Letter of Authorization request to construct a survey right-of-way, which will require clearing forested wetland habitat within MSWMA, AND obtain the survey permission for all preliminary survey activities (i.e., Timber Assessments) to ensure the safety of crews within the recreational hunting seasons. The permission request shall include specific timeframe (dates) that survey activities will occur.

   Response 1 – Concur. A survey permission for Timber Assessments and other preliminary survey activities will be obtained prior to work on LDWF property. A Letter of Authorization will be obtained prior to clearing and grubbing of forested wetland habitat within MSWMA.

2. At this time, LDWF and USFWS are requesting a letter of intent regarding the alignment of the proposed levee system. Currently, there are no objections to proposed activities to clear a new right-of-way with appropriate compensatory mitigation; however LDWF expresses concern for habitat loss in the event that the alignment is changed after completion of the survey and soil boring evaluations. The referenced letter of intent would provide assurances that levee construction will occur along the centerline of the cleared survey right-of-way.

   Response 2 – Partial Concur. CEMVN would provide a letter of intent discussing the levee construction footprint and the cleared survey right of way to the LDWF and USFWS. It is anticipated and likely that levee construction footprint will include the cleared survey right of way.

3. In an effort to reduce impacts, LDWF and USFWS recommends that the USACE consider reducing the proposed 100-foot right-of-way to the greatest extent practicable. Reducing the survey right-of-way to 50' - 75' in width is deemed more reasonable for the nature of these activities. Please provide justification for the need of the proposed right-of-way width if reduction is not possible.

   Response 3 – Concur. CEMVN is considering reducing the proposed 100-foot right-of-way to the greatest extent practicable and will provide a justification to LDWF and USFWS, if necessary.

4. LDWF recommends the value of the cleared timber be determined in consultation with LDWF and appropriate compensation must be provided to LDWF.

Response 4 – Partial Concur. The value of the cleared timber on MSWMA property will be determined in consultation with LDWF. CEMVN would mitigate MSWMA impacts in kind on LDWF property to the extent practicable.

5. LDWF and USFWS recommend that all impacts occurring on MSWMA shall be mitigated for on MSWMA or within the LDWF's WMA primarily system. Therefore in an effort to provide meaningful and permanent mitigation, LDWF primarily desires the USACE investigate the recommended mitigation projects identified in the attached map and summary (Appendix A). LDWF is open to discussing land donations via acquisition of adjacent properties by the USACE.

   Response 5 – The mitigation plan approved in the 2016 WSLP EIS was developed to fully mitigate for unavoidable impacts associated with the WSLP Project. If it is determined that the previously-approved WSLP Project mitigation plan is not sufficient to offset the habitat losses to be incurred, the mitigation plan from the 2016 WSLP EIS would be revisited and additionally augmented to ensure all impacts from the WSLP project are fully mitigated, including the impacts identified in SEA 570. CEMVN will consider these recommendations if modifications to the mitigation plan would be necessary.

6. The proposed levee alignment will isolate portions of MSWMA on the protected side of the levee. These fragmented and isolated properties may provide less value as for wildlife and recreation. LDWF recommends discussions take place on how best to address these losses.

   Response 6 – Concur. CEMVN will continue to coordinate with LDWF regarding fragmentation and isolation of MSWMA property as a result of the WSLP Project.

7. Avoid adverse impacts to bald eagles and their nesting activities through careful design of project features and timing of construction. During any project construction, on-site personnel should be informed of the possible presence of nesting bald eagles in the vicinity of the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within 1,500 feet of the proposed Project Area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/es/baldeagle/. Refer to the Fish and Wildlife Resources section of this report for more details.

   Response 7 – Concur. An aerial survey would be performed to identify any historic, alternate, or in-use bald eagle nests and BMPs would be used to reduce, minimize, and avoid impacts. If any historic, alternate, or in-use bald eagle nests are observed to be within 1,500 feet of the proposed Project Area, USFWS would be contacted immediately and an evaluation would be conducted using the USFWS recommended website.

8. Avoid adverse impacts to nesting wading bird colonies through careful design project features and timing of construction. USFWS and LDWF recommend that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season (i.e., February 15 through September 1 for wading bird nesting colonies and October through mid-May for bald eagles). Refer to the Fish and Wildlife Resources section of this report for more details.

   Response 8 - Concur. The Proposed Action would avoid adverse impacts to nesting wading birds. A qualified biologist would inspect Proposed Action ROWs during the nesting season for waterbirds and bald eagles. Bird abatement procedures would be implemented to prevent wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants from nesting during their nesting period. In the event that implementation of the bird abatement plan is not successful and nesting does occur, all activity occurring within the distance provided by USFWS would be suspended and further coordination with USFWS would occur.

9. West Indian manatees (*Trichechus manatus*) occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). During in-water work in areas that potentially support manatees all personnel associated with the project should be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel should be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable. For more detail on avoiding contact with manatee contact this office. Should a Proposed Action directly or indirectly affect the West Indian manatee, further consultation with this office will be necessary.

   Response 9 - Concur. All personnel associated with project in-water work areas will be instructed about the potential presence of manatees; to obey speed zones; and to avoid collisions with manatees; and be advised that there are civil and criminal penalties for harming, harassing, or killing manatees. Personnel will also be instructed not to attempt to feed or otherwise interact with the manatee. The USACE will consult with the USFWS should a Proposed Action potentially directly or indirectly affect the West Indian manatee.

10. Clearing and investigations will occur partly within the boundaries of Maurepas Swamp WMA. Please coordinate all activities within the WMA with LDWF. Please contact Jill Day 985-543-4785 or jday@wlf.la.gov and Cornelius Williams at 225-763-8807 or cjwilliams@wlf.la.gov for more information about appropriate WMA authorizations.

    Response 10 – Concur. Coordination with LDWF regarding impacts to the Maurepas Swamp WMA is ongoing. Appropriate authorizations and permissions would be attained prior to work within the boundaries of Maurepas Swamp WMA. Coordination with Mr. Williams and Ms. Day will continue for the Proposed Action and other WSLP Project activities.

11. The impacts to Essential Fishery Habitat should be discussed with the NMFS to determine if the project complies with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Magnuson-Stevens Act; P.L. 104-297, as amended) and its implementing regulations.

    Response 11 – There are no anticipated impacts to Essential Fish Habitat (EFH) as a result of the Proposed Action. In a letter dated October 1, 2013, NMFS stated that the project described in the draft 2016 WSLP EIS does not contain Essential Fish Habitat and recommended EFH sections be deleted from the final EIS.

12. Access roads across existing wetlands should be avoided if possible and secondary impacts to wetland hydrology should be prevented or reduced. To avoid changes to hydrology USFWS recommends appropriately sized culverts (minimum 24 inch culverts) be installed and maintained every 300 feet across access roads through wetlands with additional culverts placed at stream crossings and drainage features. Alternatively, upon completion of construction activities, access roads should be degrading to restore natural hydrology.

    Response 12 – Partial concur. Culverts would be added to maintain existing hydrologic conditions when constructing new roads. Improvements to existing culverts would be considered when improving existing roads for access. Construction related impacts, including access roads for construction, would be addressed in subsequent NEPA documentation.

13. USFWS recommends monitoring changes to wetland hydrology resulting from impacts of stockpiling debris and building access roads. The proposed alternative may alter natural periods of inundation or soil saturation in the impounded wetlands and could prove detrimental to their function and longevity. Therefore, USFWS recommends hydrologic gauges be placed and maintained in appropriate locations to assist in determining future impacts to surrounding forested wetlands and assist in determining the adequacy of placed culverts or the need for installation of additional culverts and/or water control structures to ensure adequate water exchange. Gauges could be supported or cost-shared through existing activities such as through the US Geological Survey (USGS) or Coastwide Reference Monitoring System (CRMS).

    Response 13 – Monitoring for the WSLP Project is being considered. Coordination with the USFWS will continue regarding this. Upon completion of the Proposed Action, any access roads not be improved for construction of the WSLP Project would be returned to their existing condition to the extent practicable. Stockpiling of felled trees within the clearing and grubbing corridor would be temporary.

14. The clearing of forested wetlands for the Proposed Action is necessary for investigative work. Full, in-kind compensation (quantified as Average Annual Habitat Units) is recommended for unavoidable direct adverse impacts on forested wetlands. To help ensure that the proposed mitigation features meet their goals, USFWS provides the following recommendations.

    a. If applicable, a General Plan should be developed by the Corps, LDWF, and USFWS in accordance with Section 3(b) of the Fish and Wildlife Coordination Act for mitigation lands.

b. Continued mitigation planning should be closely coordinated with USFWS, LDWF, and other interested natural resource agencies and should include any additional losses identified during future monitoring and engineering and design studies.
c. As mitigation measures for WSLP investigations will coincide with mitigation for the construction of the WSLP levee, USFWS recommends an accounting of impacts from activities that occur prior to construction be maintained, shared with the agencies and presented in subsequent NEPA documents.
d. If mitigation is not implemented concurrent with levee construction, the amount of mitigation needed should be reassessed and adjusted to offset temporal losses of wetlands.
e. The Corps should remain responsible for the required mitigation until the mitigation is demonstrated to be fully compliant with interim success and performance criteria. At a minimum, this should include compliance with the requisite vegetation, elevation, acreage, and dike gapping criteria.
f. The acreage restored and/or managed for mitigation purposes, and adjacent affected wetlands, should be monitored over the project life. This monitoring should be used to evaluate project impacts, the effectiveness of the compensatory mitigation measures, and the need for additional mitigation should those measures prove insufficient.

Response 14 – Concur. Full, in-kind compensation (quantified as Average Annual Habitat Units) for unavoidable adverse impacts to wetlands would occur as required by law. In order to fulfill mitigation requirements and adequately plan mitigation for project impacts, an accounting of all impacts will be maintained and shared with the resource agencies. If it is determined that the previously-approved WSLP Project mitigation plan is not sufficient to offset the habitat losses to be incurred, the mitigation plan from the 2016 WSLP EIS would be revisited and additionally augmented to ensure all impacts from the WSLP project are fully mitigated, including the impacts identified in SEA 570. If necessary, modifications to the mitigation plan would occur in NEPA documentation. Coordination with USFWS and LDWF regarding the mitigation plan and its details will continue to ensure the mitigation fully offsets the project's impacts. If a delay in mitigation implementation is experienced, the USACE understands that temporal losses, until such time as the mitigation is implemented, may be assessed.

15. USFWS recommends that the USACE contact USFWS for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. Additional consultation as a result of any of the above conditions or for changes not covered in this consultation should occur before changes are made and or finalized.

Response 15 – Concur.

Hazardous, Toxic, and Radioactive Waste

The discharge of dredged material into waters of the United States is regulated under the Clean Water Act (CWA). In the absence of a known Hazardous, Toxic, and Radioactive Waste (HTRW) concern, the Proposed Action would not qualify for an HTRW investigation.

Engineer Regulation (ER) 1165-2-132 provides that in the Planning, Engineering and Design (PED) Phase that, for proposed project in which the potential for HTRW problems has not been considered, an HTRW initial assessment, as appropriate for a reconnaissance study, should be conducted as a first priority. If the initial assessment indicates the potential for HTRW, testing as warranted and analysis similar to a feasibility study should be conducted prior to proceeding with the project design. The NFS will be responsible for planning and accomplishing any HTRW response measures, and will not receive credit for the costs incurred.

An ASTM E 1527-05 Phase 1 Environmental Site Assessment (ESA), HTRW 18-05 dated December 19, 2019 and addendum on March 14, 2019 has been completed and a copy is being maintained on file at CEMVN. The probability of encountering HTRW for the Proposed Action is low based on the initial site assessment. If a recognized environmental condition is identified in relation to the Project Area, CEMVN would take the necessary measures to avoid the recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

Magnuson-Stevens Fisheries Conservation and Management Act

These laws govern marine fisheries management in the U.S. Essential Fish Habitat (EFH) does not intersect the proposed alignment or the enclosed area in the near term. The USACE has determined that the Recommended Plan would have no impacts to EFH. In a letter dated October 1, 2013, the National Marine Fisheries Service stated the WSLP Project, as described in the 2016 WSLP Draft EIS, would not adversely impact EFH and that an EFH assessment is unnecessary (Appendix A, Annex E).

Migratory Bird Treaty Act

The bald eagle was removed from the List of Endangered and Threatened Species in August 2007 but continues to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Colonial nesting wading bird, neotropical migratory birds, and other birds are protected under the MBTA (50 CFR 10.13). During nesting season, construction and other related activities must take place outside of USFWS/LDWF buffer zones. A USACE Biologist and USFWS Biologist will survey for nesting birds prior to implementation of the Proposed Action. In addition, CEMVN recommends that on-site contract personnel be trained to identify colonial nesting birds and their nests and avoid affecting them during the breeding season. Coordination with the USFWS pursuant to the BGEPA and MBTA has been initiated and is ongoing. Surveys for bald eagle nests and colonial nesting waterbird nests are underway. BMPs, included the development of a NPP, would be used. Coordination with the USFWS and the LDWF is ongoing for MBTA trust species.

National Historic Preservation Act and Tribal Consultation

In compliance with Section 106 of the act and 36 CFR Part 800, Federal agencies must take into account the effects of their actions on historic properties and afford the Advisory Council on Historic Properties (ACHP) a reasonable opportunity to comment on such undertakings. Historic properties include any prehistoric or historic district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places. A Federal

agency shall consult with any federally recognized Indian Tribe that attaches religious and cultural significance to such properties. Agencies shall afford the State Historic Preservation Officer (SHPO) and Indian tribes a reasonable opportunity to comment before decisions are made. Section 106 consultation was initiated for the WSLP project with the SHPO and Indian tribes on May 3, 2013. USACE has determined that the effects on historic properties cannot be fully determined before plan approval, and pursuant to 36 CFR 800.14(b) CEMVN has elected to fulfill its obligations under Section 106 of the National Historic Preservation Act of 1966, as amended, through the execution and implementation of a Programmatic Agreement (PA). In accordance with the stipulations of the PA, the proposed action as described in SEA #570 will be coordinated with the SHPO and identified federally recognized Indian Tribes and any necessary cultural resources surveys will be conducted prior to implementation of the proposed action. A copy of the executed PA for consultation, identification of historic properties, assessment and resolution of adverse effects is included in Appendix C.

7. Conclusion

The Proposed Action would consist of surveys and borings and related activities necessary to investigate potential changes to and further refine engineering and design of the 2016 WSLP EIS's levee alignment in St. John the Baptist and St. Charles Parishes, Louisiana. These activities would result in 166 acres of direct, negative impacts to swamp habitat (approximately 91 AAHUs), and would have approximately 46 acres of direct, negative impacts to BLH habitats (approximately 36 AAHUs). Direct negative impacts to wildlife, aquatic, and fisheries resources, including ESA, BGEPA, and MBTA trust species would be a result of the loss of this forested habitat. Loss of forested habitat as a result of the Proposed Action would impact wildlife resources and aquatic resources and fisheries. There is similar adjacent habitat, so these impacts are expected to be minor. The majority of these impacts would be remote, so impacts to visual resources are expected to be minor.

Approximately 46 acres of swamp (26 AAHUs) and 3 acres of BLH (2 AAHUs) would be impacted on LDWF property. The loss of habitat on LDWF property would occur within the Maurepas Swamp Wildlife Management Area, causing a negative impact to recreational use to a portion of this 124,567-acre WMA.

There would be some temporary, minor impacts to soils and prime and unique farmlands associated with the use of stockpiling/staging areas. No wetlands would be impacted from use of these stockpile/staging areas and these areas would be returned to pre-existing conditions upon project completion. No significant increases in traffic are expected from transportation of material from borrow locations to stockpiling areas. There could be some minor impacts to EJ communities associated with transportation, but these are expected to not be disproportionate.

If approved, after the surveys and investigations associated with the Proposed Action are concluded and CEMVN determines whether an alignment shift for the WSLP levee is warranted, the anticipated habitat impacts of the WSLP Project would be re-assessed. If CEMVN concludes that additional compensatory mitigation is required, mitigation for these impacts would be addressed in subsequent NEPA documentation to be prepared for the potential levee alignment shift. Additionally, the Proposed Action also includes the use of 5 stockpile/staging locations for construction related activities and the addition of a mitigation bank purchase option to mitigate BLH impacts. Since permitted banks exist as reasonably foreseeable projects in the FWOP conditions and as the purchase of mitigation bank credits does not affect environmental conditions, adding this option into the mitigation plan approved in the 2016 WSLP EIS would incur no new impacts.

This office has assessed the environmental impacts of the Proposed Action and has determined that the Proposed Action would have no significant adverse impact on the human and natural environment.

8. Prepared By

SEA 570 and the associated FONSI were prepared by Patrick Smith, PhD, Biologist. Table 10 lists the preparers of relevant sections of this report and the project managers. Dr. Smith can be reached at U.S. Army Corps of Engineers, New Orleans District; Regional Planning and Environment Division South, PDS-C; 7400 Leake Avenue; New Orleans, Louisiana 70118.

Table 11. This table shows the list of preparers for SEA #570.

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Senior Environmental Manager Team Lead	Elizabeth Behrens, CEMVN
Environmental Manager, Lead	Patrick Smith, CEMVN
Senior Project Manager	Chris Gilmore, CEMVN
Project Manager	Tutashinda Salaam, CEMVN
Project Manager	Sean Brunet, CEMVN
Cultural Resources	John Penman, CEMVN
Aesthetics, Recreation, Soils and Prime and Unique Farmland	John Milazzo, CEMVN
Environmental Justice	Andrew Perez, CEMVN
Transportation	Diane Karnish, CEMVR
HTRW	Joe Musso, CEMVN

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