Draft Environmental Assessment

Bayou Sara Streambank Stabilization

FEMA-DR-1603- LA

West Feliciana Parish, Louisiana
Hazard Mitigation Grant Program
Project Number 1603-0436

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FEMA

U.S. Department of Homeland Security
FEMA Region VI
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ACHP	Advisory Council on Historic Preservation
ACM	Articulated Concrete Mat
AQSC	American Queen Steamboat Company
APE	Area of Potential Effects
BA	Biological Assessment
BFE	Base Flood Elevation
BG	Block Group
BGEPA	Bald and Golden Eagle Protection Act
BSBSP	Bayou Sara Bank Stabilization Project
CAA	Clean Air Act
CEA	Cumulative Effects Analysis
CEI	Coastal Environments, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	Cubic feet/second
CIP	Channel Improvement Program
CNO	Choctaw Nation of Oklahoma
CO	Carbon monoxide
CPEX	Center for Planning Excellence
CT	Census Tract
CWA	Clean Water Act
CY	Cubic Yards
dBA	Decibels measured on the A-weighted scale
DHS	Department of Homeland Security
E911	Enhanced Universal Emergency Number
EA	Environmental Assessment
EHP	Environmental and Historic Preservation
EIS	Environmental Impact Statement
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
ESO	Ecological Services Office
EO	Executive Order
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FWP	Fish and Wildlife Propagation
GEC	Gulf Engineers and Constructors
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
Ha	Hectares
HEC-RAS	Hydraulic Engineering Center – River Analysis System
HMGP	Hazard Mitigation Grant Program

HP	Historic Preservation
ILT	Interior Least Tern
LA	Louisiana
LBB	Louisiana Black Bear
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LESO	Louisiana Ecological Services Office
LF	Linear Feet
LMR	Lower Mississippi River
LNHP	Louisiana Natural Heritage Program
LPDES	Louisiana Pollutant Discharge Elimination System
LRO	Louisiana Recovery Office
MBTA	Migratory Bird Treaty Act
MMT	Million Metric Tons
MS	Mississippi
NAAQS	National Ambient Air Quality Standards
NBEM	National Bald Eagle Management
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOD	New Orleans District
NPS	National Park Service
NRC	National Response Center
NRHP	National Register of Historic Places
NWP	Nationwide Permit
NWR	National Wildlife Refuge
OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCR	Primary Contact Recreation
PEM	Palustrine Emergent
PFO	Palustrine Forested
PM	Particulate Matter
PMT	Pole Mounted Transformer
PS	Pallid Sturgeon
RBS	River Bend Station
RCP	Riverfront Concept Plan
RCRA	Resource Conservation and Recovery Act
RM	River Mile
ROI	Regional of Influence
RRP	Riverfront Redevelopment Plan
SCR	Secondary Contact Recreation
SDWA	Safe Drinking and Water Act
SFHA	Special Flood Hazard Area
SFPD	St. Francisville Police Department

SHPO	State Historic Preservation Office/Officer
SIP	State Implementation Plan
SNO	Seminole Nation of Oklahoma
SOV	Solicitation of Views
SOW	Scope of Work
SPOC	Single Point of Contact
SSA	Sole Source Aquifer
STP	Sewage Treatment Plant
TM	Treatment Measure
T & E	Threatened and Endangered
TSCA	Toxic Substances Control Act
UDA	Urban Design Associates
UMR	Upper Mississippi River
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USHR	United States House of Representatives
WFPSB	West Feliciana Parish School Board
WQC	Water Quality Certification
WSE	Water Surface Elevation

1.0 INTRODUCTION

1.1 Project Authority

On August 29, 2005 Hurricane Katrina, a category 3 hurricane with a storm surge well above normal high tide levels, moved across the Louisiana (LA), Mississippi (MS), and Alabama Gulf Coasts. Maximum sustained winds at landfall were estimated at 140 miles per hour. President George W. Bush declared a major disaster for the state of Louisiana due to damages from Hurricane Katrina and signed a disaster declaration (FEMA-1603-DR-LA) authorizing the Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of Louisiana. FEMA is administering this disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended 42 United States Code (U.S.C.) 5121, et seq. § 404 of the Stafford Act authorizes FEMA's Hazard Mitigation Grant Program (HMGP) to provide funds to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), and FEMA's procedures for implementing NEPA (FEMA Instruction 108-1-1).

West Feliciana Parish, through the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), applied for funding under FEMA HMGP to prevent streambank erosion from damaging utility and road infrastructure in the Parish. The purpose of this EA is to analyze potential environmental impacts of the proposed project. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.2 Background

West Feliciana Parish is located in southeastern Louisiana with elevations ranging from 25 to 360 feet above mean sea level. The Parish is approximately 426 square miles in size and is bordered by the Mississippi River to the south and west, East Feliciana Parish on the east, and the State of Mississippi on the north (see Figure 1). There are two (2) major land resource areas in the Parish are the Southern Mississippi Valley Silty Uplands and the Southern Mississippi Valley Alluvium along the Mississippi River. In the vicinity of the lower end of Bayou Sara floodplains extend from Tunica Street in St. Francisville southward to the Mississippi River. Major roads in the Parish include U.S. Highway 61, and Louisiana Highways 10 and 66.

Primary watersheds in the Parish include Bayou Sara, Thompson Creek, and the Lower Mississippi. Riverine flooding from the Mississippi River poses the largest flood hazard. Most flood events in the parish have resulted from high water levels in the river causing elevation of water levels in Bayou Sara. Other streams in West Feliciana Parish include Alligator Bayou (upstream portions are known as Alexander Creek), Barrow Fork Creek, and Wickliffe Creek.

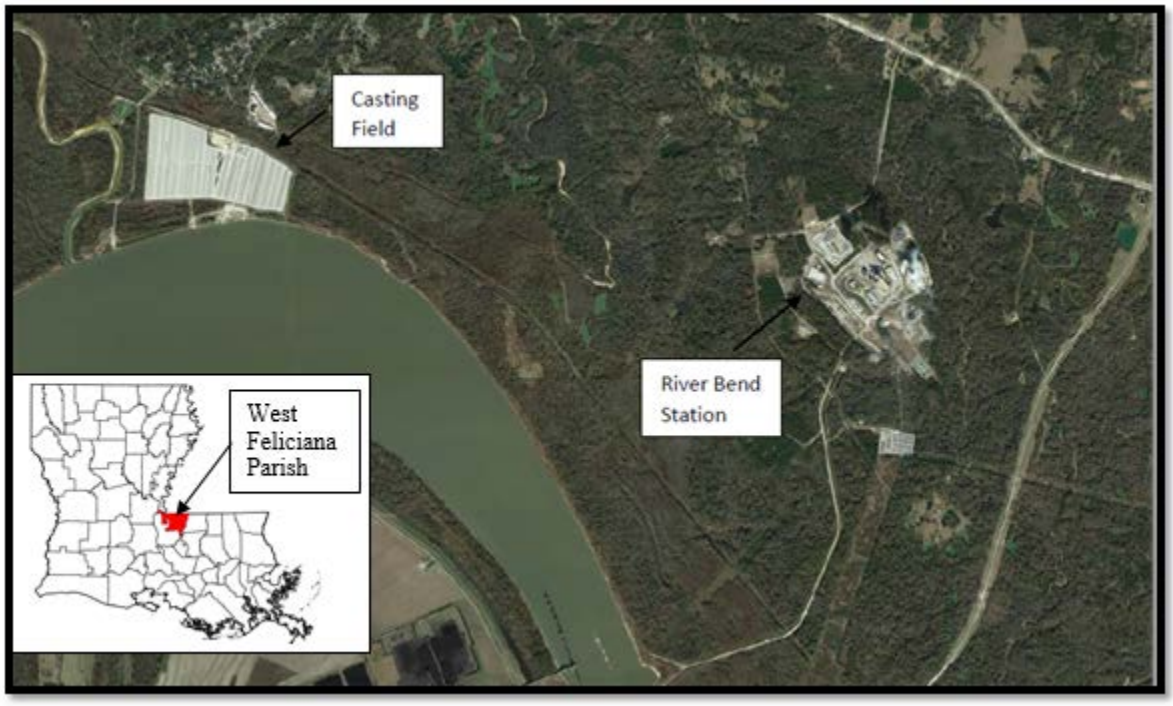

Figure 1: Bayou Sara Vicinity Map

2.0 PURPOSE AND NEED

The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

The purpose of this project is to mitigate future erosion from Bayou Sara and protect the St. Francisville Sewage Treatment Plant (STP) and road (Arcadis 5/31/16 and 9/30/16; West Feliciana Parish, 2015). The east bank of Bayou Sara has experienced significant erosion on the reach between St. Francisville and the confluence with the Mississippi River. The bench area adjacent to a large bend on the east bank of the Bayou and an access road west of the St. Francisville STP sewage treatment lagoon has experienced significant erosion since at least 1998. Streambank erosion at this location was estimated to average over five (5) feet per year from 1998 to 2005, over eight (8) feet per year in 2006 and 2007, over 14 feet per year from 2008 to 2010, and approximately four (4) feet per year from 2012 to 2014. An estimated 3.4 acres of land at this bench area has been lost to streambank erosion during this period. The cumulative loss of streambank at this location during this period is shown in the aerial image on Figure 2. At this rate of streambank loss the STPis in danger of losing the treatment lagoons in 15 to 20 years. If the streambank erosion was left unabated, Ferdinand Street, located as close as 130 feet to the east of the STP, would be undercut by the Bayou in 10-13 years. The loss of the STP lagoons would result in the discharge of raw, untreated sewage from the St. Francisville sanitary sewer system.

Currently, the applicant needs to protect the sewage treatment lagoon, which serves more than 700 customers, and also provide erosion protection for Ferdinand Street, which provides access to a U.

S. Army Corps of Engineers (USACE) storage facility to the east of the street and a local boat launch. Ferdinand Street serves as St. Francisville's sole road access to the Mississippi River, which is important for local tourism derived from riverboat visits.

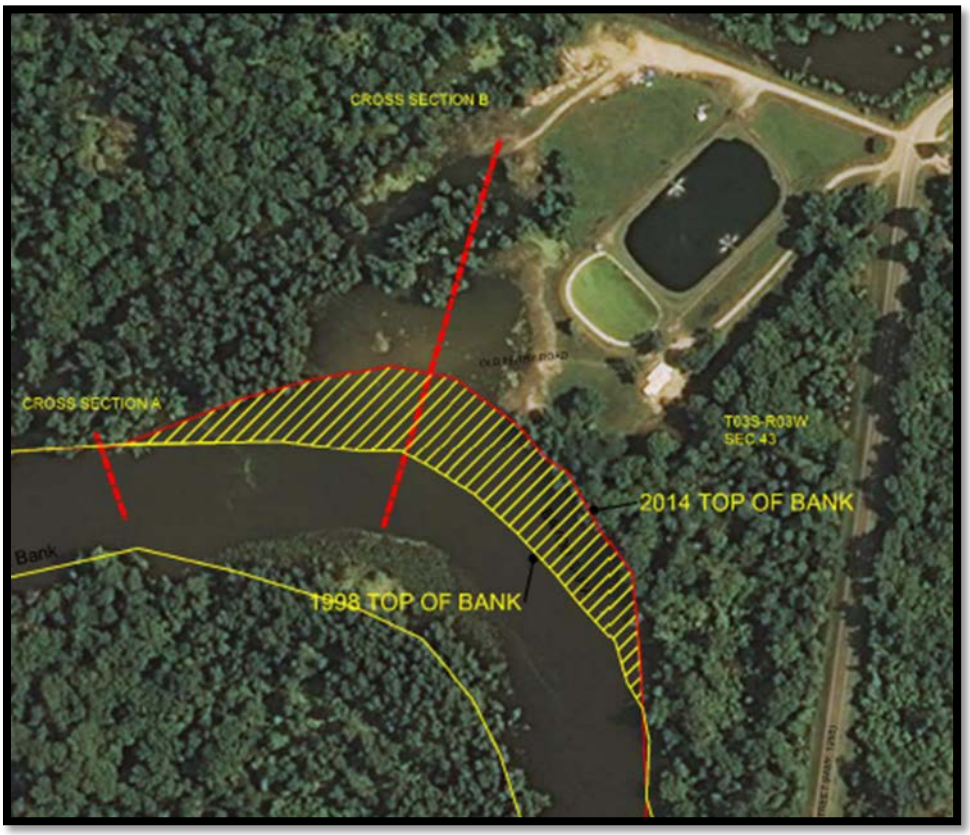

Figure 2: Bayou Sara Cumulative Streambank Losses 1998 – 2014
(Arcadis Design & Consultancy and Manchac Consulting Group, Inc., May 2016)

3.0 ALTERNATIVES

3.1 No Action Alternative

Under the No Action Alternative, Bayou Sara would continue to erode the streambank on the large bend adjacent to the STP lagoon and eventually threaten the containment of the STP lagoon; risking a major sewage release into Bayou Sara and the Mississippi River. Another large bend in Bayou Sara to the south of the STP lagoon would also continue to erode and eventually threaten the portion of Ferdinand Street between St. Francisville and the Mississippi River. This alternative does not meet the purpose and need, but will continue to be evaluated throughout this EA and serve as a baseline comparison.

3.2 Proposed Action: Construct Two (2) Revetments Adjacent to the St. Francisville STP and the Oyster Bar

The proposed action is to construct two (2) revetments along the large bends on the east bank of Bayou Sara adjacent to the STP (Reach 1) and downstream near the Oyster Bar (Reach 2). Latitude and longitude coordinates for the upstream edges and downstream ends of each revetment are summarized in Table 1 (Arcadis, January 2017)(see Figure 3).

Table 1. Bayou Sara Revetment and Access Road Coordinates

Project Feature	Latitude/Longitude Coordinates
Existing Access Roads at STP	--
North Road at STP Gate	30.772804°/-91.39275°
South Road at STP Gate	30.772658°/-91.392805°
Upstream Revetment 1	--
Upstream Edge	30.771449°/-91.396681°
Downstream End	30.770269°/-91,394525°
Access Roads for South Revetment	--
North of Oyster Bar at Ferdinand St.	30.766832°/-91.393742°
To the Oyster Bar off Ferdinand St.	30.76585°/-91.395035°
Downstream Revetment	--
Upstream Edge	30.767477°/-91.394645°
Downstream End	30.765819°/-91.396711°

Each revetment would include a base of riprap fill extending from a revetment toe at a 2:1 slope up to or above the Ordinary High Water Mark (OHWM). The upper portion of the streambank would consist of concrete block mats with a 3:1 slope (see Figure 4). Prior to placement of the revetment materials, the existing streambank slopes would be cut, filled with compacted fill to achieve the desired slopes, and then covered with a geotextile filter fabric. The excavated streambank materials would be deposited within the 0.87 acre Excess Cut Placement Area located between the STP lagoons and the loop access road around the STP (see Figure 5). Key trenches would be installed at the upstream and downstream edges of each of the two (2) revetments to anchor the structures. Pole gauges would be installed at the top edge of streambanks upstream and downstream from each of the two (2) revetments to provide a visual indication of erosion. A riprap pole gauge would also be installed in the south revetment to provide data on any changes in riprap thickness (Arcadis, January 2017).

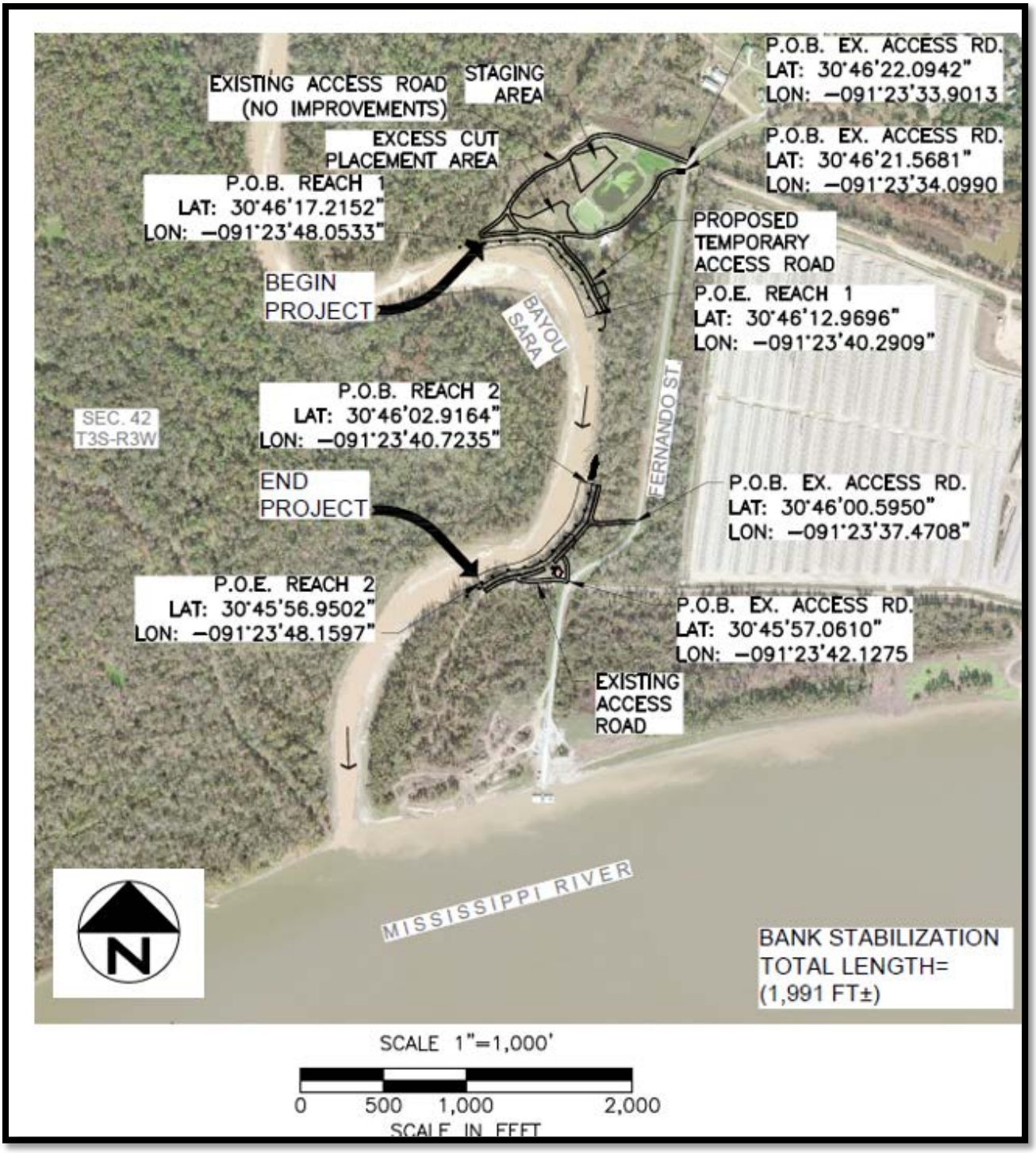

Figure 3: Map of Proposed Bayou Sara Revetments and Access Roads
(ARCADIS Design & Consultancy Biological Resources and Wetlands Finding Report, May 2017)

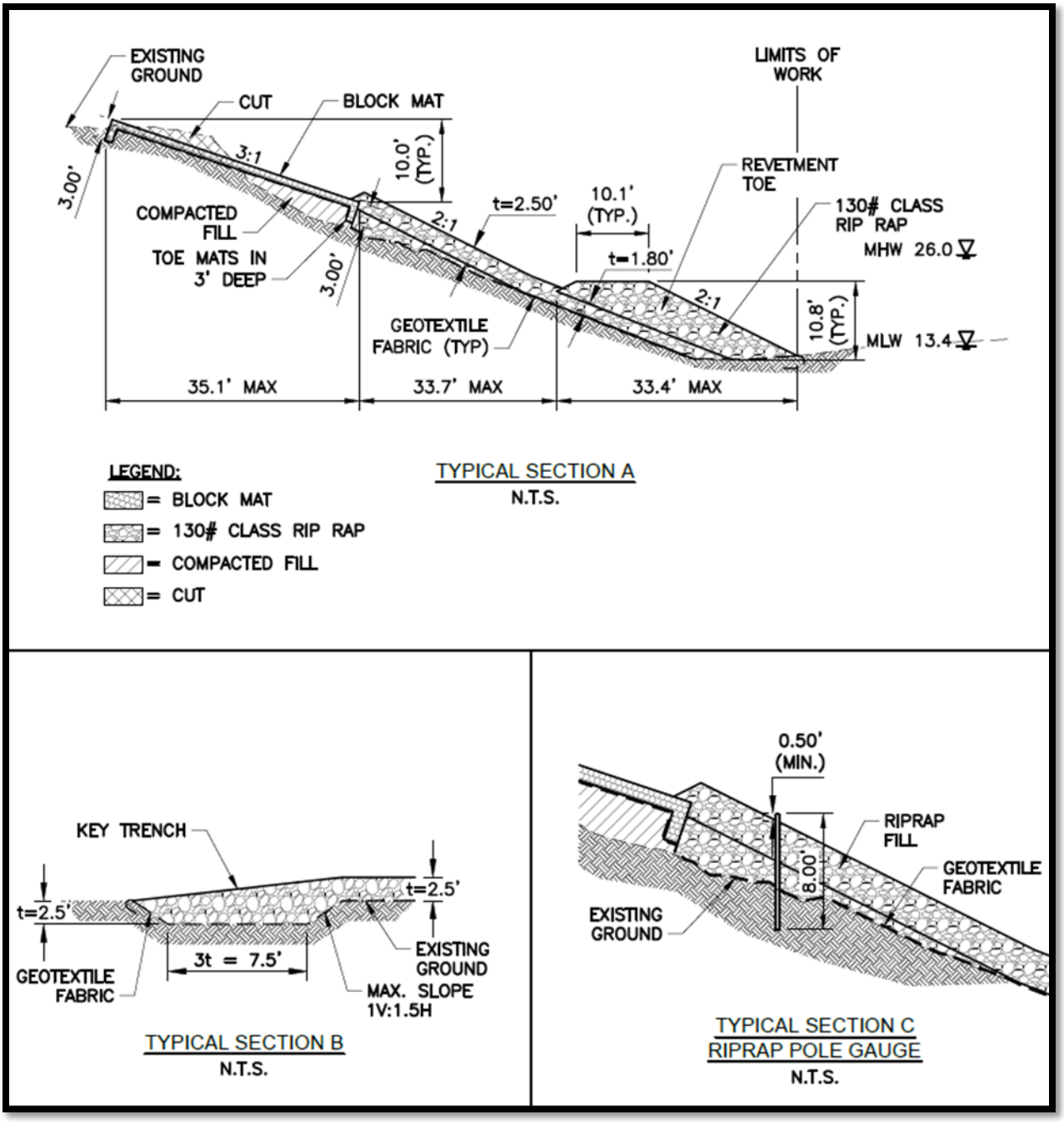

Figure 4: Revetment Design Details for Bayou Sara Streambank Stabilization
(ARCADIS Design & Consultancy Biological Resources and Wetlands Finding Report, May 2017)

To facilitate the revetment installation, existing access roads between Ferdinand Street and the planned revetments at the following locations would be utilized:

- On both sides of the sewage treatment plant lagoons, which are accessed through a gate on Ferdinand Street (each is roughly 1,500 linear feet (LF)(see Figures 3 and 5)(loop length approximately 2,700 LF)

- Off of Ferdinand Street north of the Oyster Bar (approximately ~250 LF)(see Figure 6)(approximate length 250 LF)
- On both sides of the Oyster Bar, which are accessed off of Ferdinand Street (approximate combined length of 400 LF)(Arcadis January 2017)

Latitude and longitude coordinates for each of these access roads are summarized in Table 1.

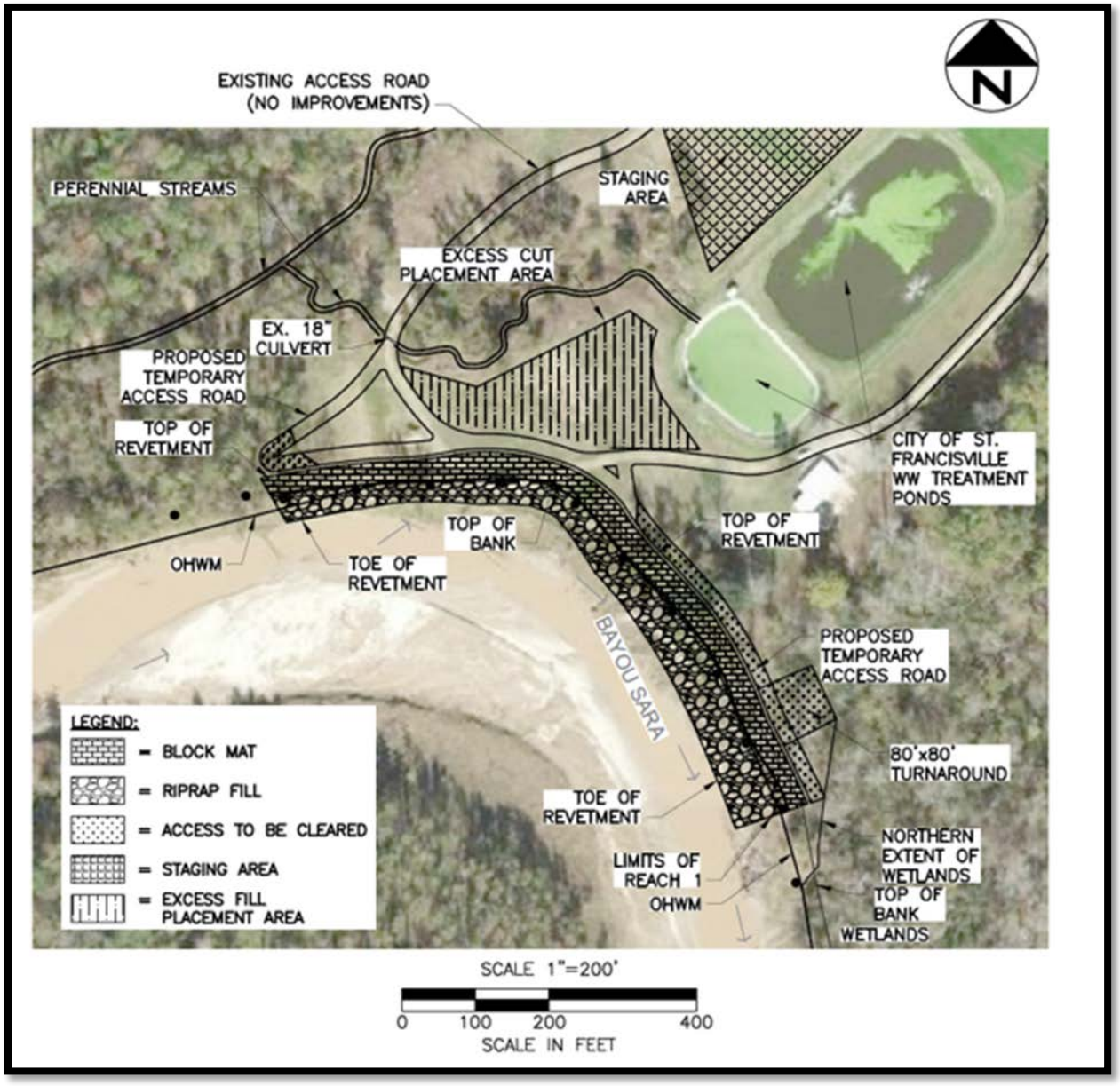

Figure 5: Map of Project Details for the Reach 1 Revetment
(ARCADIS Design & Consultancy Biological Resources and Wetlands Finding Report, May 2017)

Additional temporary access roads would also be constructed at the following locations:

- Adjacent to the upstream end of Reach 1 extending from the southwest portion of the existing access road that loops around the STP lagoons (length of approximately 125 LF)(see Figure 5)
- Adjacent to the downstream ½ of Reach 1 (length of approximately 475 LF)
- Adjacent to the entire length of Reach 2, except for a small gap directly behind the Oyster Bar (approximate length of 1,050 LF)(see Figure 6)
- From the end of the existing access road on the east side of Oyster Bar to Reach 2 (approximate length of 100 LF)(Arcadis, January 2017)

An 80-foot by 80-foot turnaround area would also be cleared adjacent to the access road constructed along the downstream half of Reach 1 (see Figure 4). A 0.95 acre staging area would be located between the northern portion of the loop access road and the STP lagoons to provide space for parking and materials storage (Arcadis, January 2017). Additional project design data are located in Appendices B and C.

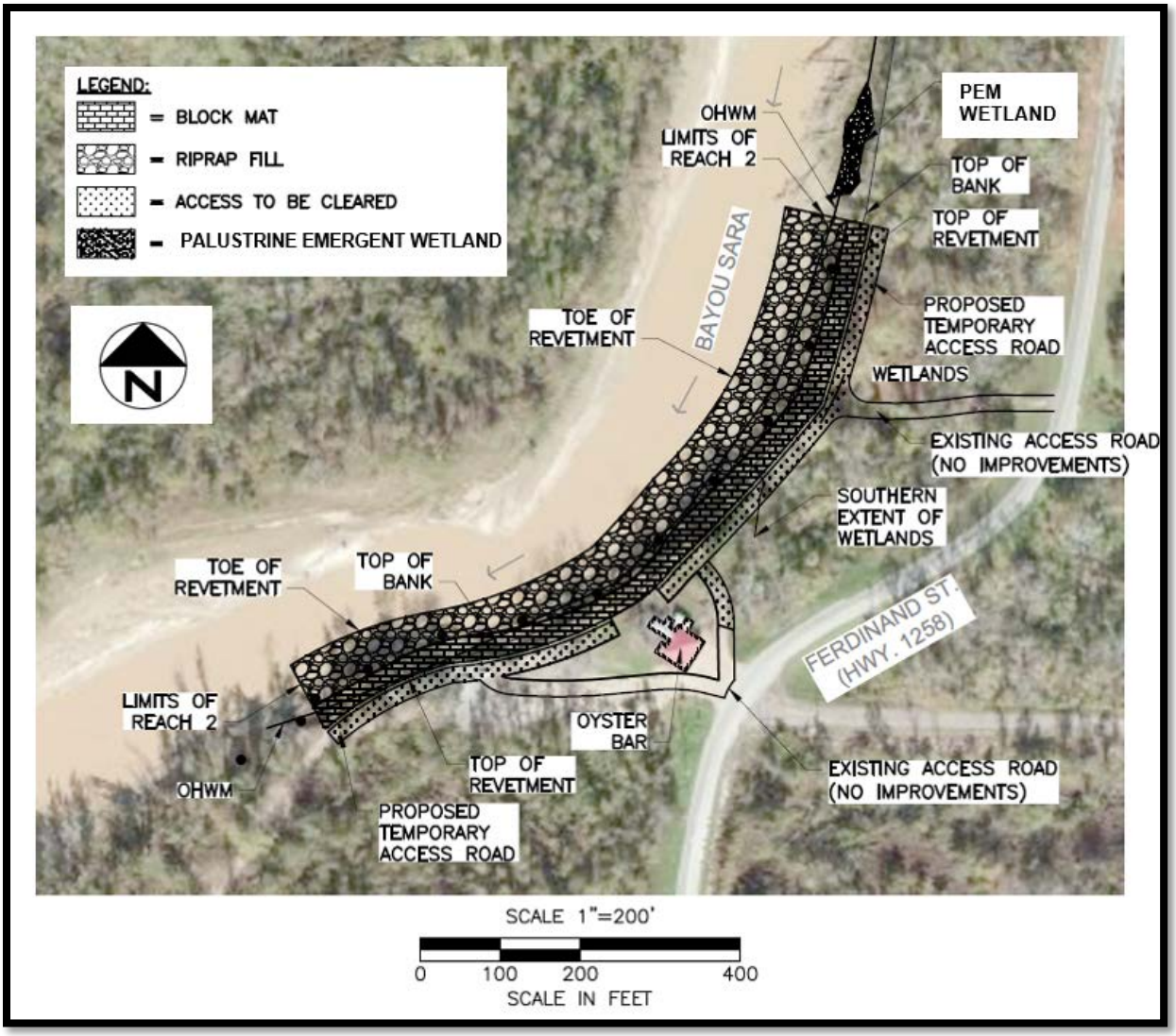

Figure 6: Map of Project Details for the Reach 2 Revetment
(ARCADIS Design & Consultancy Biological Resources and Wetlands Finding Report, May 2017)

3.3 Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Under this alternative, the straight section of the east bank of Bayou Sara between the two (2) large bends (Reach 3) that would be armored under the proposed action (Reaches 1 and 2) would also be armored with a revetment (see Figure 7)(West Feliciana Parish, 4/5/17). The straight section revetment would generally be identical in design to the proposed action revetment design with a base of riprap fill extending from a revetment toe at a 2:1 slope up to or above the OHWM with the upper portion of the streambank consisting of concrete block mats with a 3:1 slope. Prior to placement of the revetment materials, the existing streambank slopes would also be cut, filled with compacted fill to achieve the desired slopes, and then covered with a geotextile filter fabric. The excavated streambank materials would be deposited within 0.87 acre excess cut area located

adjacent to the STP lagoons. The most upstream and downstream key trench locations under the proposed action alternative would also remain the same, but the key trenches at the downstream edge of the north revetment and the upstream edge of the south revetment under the proposed action alternative would not be installed as the revetment would be one (1) continuous segment.

A design process would be utilized to determine the locations and placement of pole gauges and riprap pole gauges for the continuous revetment, and to determine the need for and location of any additional staging area. The access roads proposed for use under the proposed action would be utilized plus an additional access for a temporary road adjacent to the straight section of revetment would likely be required. Hand tools would be used to clear access along the middle section of revetment. This access road would likely consist of timber mats or other materials that would minimize damage to wetlands.

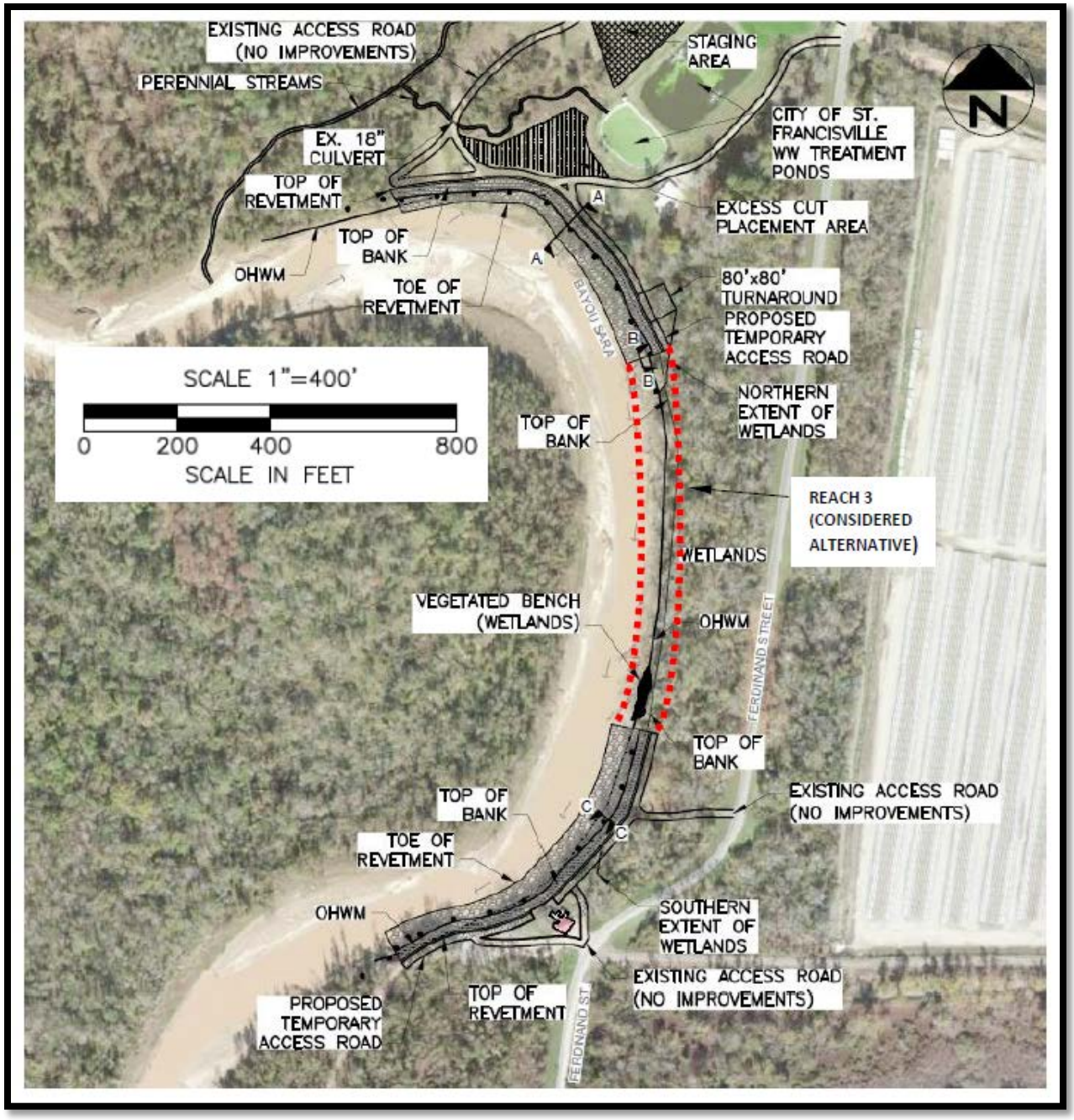

Figure 7: Map of Showing Revetment Footprint Area in Reach 3 Added for Considered Alternative
(ARCADIS Design & Consultancy Biological Resources and Wetlands Finding Report, May 2017)

4.0 AFFECTED ENVIRONMENT AND ALTERNATIVES ANALYSIS

FEMA-Environmental and Historic Preservation (EHP) staff has reviewed and assessed whether or not there are potential impacts to the natural and human environment by the proposed action, considered alternative and the no action alternative.

4.1 Physical Resources

4.1.1 Geology and Soils,

The Farmland Protection Policy Act (Public Law 97-98, §§ 1539-1549; 7 U.S.C. § 4201 et seq.) was enacted in 1981 and is intended to minimize the impact federal actions have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. This law assures that, to the extent possible, federal programs and policies are administered in a way that is compatible with state and local farmland protection policies and programs.

Soils at the project site include Moganfield and Bigbee soils, which are frequently flooded. Morganfield soils consist of silt loam and are found on floodplains. Bigbee soils consist of excessively drained loamy sand and sand. These soils are not classified as prime farmland and are not subject to the Farmland Protection policy Act. Areas subject to runoff and erosion within the project work limits above the OHWM include access roads, non-wetland portions of the revetment footprint, the staging area and the excess cut placement area (U.S. Department of Agriculture, 2001).

No Action Alternative

The "No Action" alternative would have no impacts to prime farmland, unique farmland, farmland of statewide or local importance, or other important geologic resources.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Areas subject to runoff and erosion within the project work limits above the OHWM include access roads, non-wetland portions of the revetment footprint, the staging area; and the excess cut placement area. Vegetative cover would be removed from a six (6)-acre area during construction creating the potential of increased runoff during storm events. Erosion of soils from the area of vegetation removal would be reduced and minimized through the selection, installation and monitoring of appropriate erosion and sediment controls, and stabilization practices.

The applicant would be required to ensure that best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the Clean Water Act (CWA) and Executive Order (EO) 11990.

A Solicitation of Views (SOV) request was sent to the Louisiana Department Environmental Quality (LDEQ) on August 9, 2016. LDEQ's response dated September 12, 2016, stated that if any hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required; and all precautions should be observed to control nonpoint source pollution from construction activities (see Appendix D). See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

This area of potential soil erosion would be 0.4 acre larger as compared to the same area under the proposed action due to the need to clear vegetation adjacent to the Bayou Sara streambank between Reaches 1 and 2 (total clearance of 6.4 acres). The applicant would be required to ensure that best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the CWA and EO 11990. Overall impacts to soils along the project corridor would be expected to be negligible. All precautions should be observed to control nonpoint source pollution from construction activities.

4.1.2 Air Quality

The Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.) is the federal law that regulates air emissions from stationary and mobile sources. This law tasks the U.S. Environmental Protection Agency (USEPA), among its other responsibilities, with establishing primary and secondary air quality standards. Primary air quality standards protect the public's health, including the health of "sensitive populations, such as people with asthma, children, and older adults." Secondary air quality standards protect the public's welfare by promoting ecosystem health, preventing decreased visibility, and reducing damage to crops and buildings. The USEPA also has set National Ambient Air Quality Standards (NAAQS) for the following six (6) criteria pollutants: carbon monoxide (CO), lead, nitrogen oxides, ozone, particulate matter (less than 10 micrometers [PM_{10}] and PM less than 2.5 micrometers [$PM_{2.5}$]), and sulfur dioxide.

Under the 1990 amendments to the CAA, the USEPA may delegate its regulatory authority to any state which has developed an approved State Implementation Plan (SIP) for carrying out the mandates of the CAA. The State of Louisiana's initial SIP was approved on 5 July 2011, and its CAA implementing regulations are codified in Title 33.III of the Louisiana Environmental Regulatory Code. The SIP has been revised several times since its original approval.

According to 40 CFR § 93.150(a), "No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan." In addition, 40 CFR § 93.150(b) states, "A Federal agency must make a determination that a Federal action conforms to the applicable implementation plan in accordance with the requirements of this subpart before the action is taken." As a result, when FEMA provides financial assistance for a project, such as the one (1) currently under review in this drat EA, the CAA requires a General Conformity determination whenever the project site is located in a "non-attainment area" for any one (1) of the six (6) criteria pollutants (Revisions to the General Conformity Regulations 2010).

West Feliciana Parish is classified as attainment with the NAAQS and has no general conformity determination obligations.

No Action Alternative

There would be no revetment construction activities and no construction-related emissions. No impacts to air quality would occur.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Potential short-term, localized impacts to air quality from construction equipment (compressors) and engine emissions would occur. These effects would be considered to be negligible.

Vehicle operation times should be kept to a minimum. Area soils must be covered and/or wetted, if necessary, during construction to minimize dust. LDEQ responded to the August 8, 2016 SOV requests stating West Feliciana Parish is currently in attainment with the NAAQS and has no general conformity determination requirements. See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Potential short-term, localized impacts to air quality from construction equipment (compressors) and engine emissions would occur. Vehicle operation times should be kept to a minimum. Area soils must be covered and/or wetted during construction to minimize dust. These effects would be considered to be negligible.

4.2 Water Resources

West Feliciana Parish is not located in the Louisiana Coastal Zone and does not have designated Coastal Barrier Resources System units. There are no designated National or state Wild and Scenic Rivers in West Feliciana Parish or surrounding Parishes. These resource categories will not be evaluated further in this EA.

4.2.1 Wetlands and Waters of the United States

The dredging and filling of wetlands and waters of the U.S. is regulated by USACE under CWA § 404. CWA § 401 requires state certification of all federal licenses and permits in which there is a "discharge of fill material into navigable waters." Waters of the U.S. are defined in 33 CFR § 328.3 and include a broad scope of surface waters. Wetlands, a subset of waters of the U.S., are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR § 328.3[b]) (Regulatory Programs of the Corps of Engineers 1986).

Section 10 of the Rivers and Harbors Act of 1899 regulates structures or work in or affecting navigable waters. Navigable waters under this statute are defined as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce" (33 CFR § 329.4) (Regulatory

Programs of the Corps of Engineers 1986). The USACE implements a permit program to evaluate impacts to navigable waters and their navigable capacity under § 10 (jointly with § 404 of the CWA when a discharge of fill material is also involved). Regulated structures include such objects as buoys, piers, docks, bulkheads, and jetties, while work includes dredging or filling activities.

EO 11990, *Protection of Wetlands*, directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands for federally funded projects (US President 1977). FEMA regulations for complying with EO 11990 are found at 44 CFR Part 9, Floodplain Management and Protection of Wetlands.

No Action Alternative

If no mitigation action is taken, the natural erosional processes along Bayou Sara would continue unabated and eventually result in the loss of up to 4.9 acres of palustrine forested (PFO) wetland located just to the south of proposed revetment at Reach 1 extending southward along the top of the bank adjacent to Bayou Sara and ending at the proposed revetment for Reach 2 (see Figure 2 in Appendix F). This would be considered a minor, localized loss of wetlands.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

A wetlands survey of the proposed project corridor was conducted on October 27, 2016 by Arcadis Design and Consultancy. Visible indicators of wetland vegetation, hydrology and soils were recorded, and assessed using the technical guidelines and methods for wetland delineations in the USACE Wetland Delineation Manual and the USACE Regional Supplement to this manual for the Atlantic and Gulf Coastal Plan Region.

Per the Biological Resources and Wetland Findings Report, dated March 20, 2017, approximately 0.09 acres of the PFO wetland would be permanently lost to the revetment due to the placement of 79.5 cubic yards (CY) of block mats. Vegetation removal along an existing access road within this wetland adjacent to portions of Reach 2 north of the Oyster Bar would also occur. This portion of the access road is approximately 375 feet long and covers 0.17 acre. Vegetation would be removed using hand tools. Timber mats would be placed over the access road section within the PFO wetland surface, if necessary. Upon completion of revetment construction, access roads would be restored to pre-project conditions. Clearing would be limited to the minimum required for construction and the use of wetland areas outside the construction limits would be prohibited for support activities, including borrow sites, parking and access road use. The proposed action would include all practicable measures to minimize harm to wetlands that may result from this project. See also Section 7.0 Conditions and Mitigation Measures.

An August 8, 2016 SOV request was sent to LDEQ and USEPA, Region 6 Wetlands Section. LDEQ responded that if any of the proposed work is located in wetlands or other areas subject to USACE jurisdiction, USACE should be contacted regarding permitting issues. The R6 Wetlands Section responded that a preliminary review indicated that jurisdictional waters of the U.S. occur on the proposed site. USEPA does not object to the project as proposed and recommended coordination with the USACE New Orleans District (NOD) to verify permits needed.

A Pre-Construction Notice for Nationwide Permit (NWP) 13 coverage and the Biological Resources and Wetland Findings Report was sent to the USACE NOD on March 21, 2017 (West Feliciana Parish, 3/21/17). USACE NOD required West Feliciana Parish to purchase 0.1 acre of bottomland hardwood restoration from an approved wetlands mitigation bank. On February 20, 2018, West Feliciana Parish purchased 0.1 acre of credit from Cypress Plantation Mitigation Bank. The wetland impacts from construction of the proposed action would be expected to be minor. The purchase of the mitigation bank credits is judged by USACE NOD to be suitable mitigation for this impact.

A water quality certification (WQC) from the issuing state, LDEQ in this case, is required prior to the issuance of the relevant federal license or permit. For this project, a USACE CWA § 404 permit is required for placement of fill and revetment materials in Bayou Sara and on wetlands adjacent to this bayou. Per USACE letter dated March 9, 2018, USACE issued a MVN-2017-0368-CQ Nationwide Permit-13 for this project. LDEQ issued WQC 160629-02 for the USACE Reissuance of NWPs, including NWP 13, to the USACE NOD on February 14, 2017. The WQC is subject to the State of Louisiana NWP Regional Conditions, February 2017.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

In addition to the PFO wetlands identified October 27, 2016, the wetlands survey also identified a palustrine emergent (PEM) wetland located just north of Reach 2 below the OHWM for Bayou Sara that covers an area of 0.07 acre (see Figure 6). This wetland would be permanently lost to the additional revetment that would be constructed between Reaches 1 and 2 (Arcadia, 3/20/17).

Construction of this revetment would protect the PFO wetland adjacent to Reach 3 along the east bank as well as the portion of Ferdinand Street between the Casting Field and Oyster Bar. Since 1909, several blocks of the Bayou Sara town site have been eroded away as Bayou Sara cut eastward toward Ferdinand Street (see Figure 4 in the SHPO Consultation Letter, Appendix E). The revetment would likely be designed very similar to proposed action revetments along Reaches 1 and 2, and would be expected to deflect erosional energy preventing the further eastward movement of the bayou.

Vegetation would be removed using hand tools. Timber mats would be placed over the access road section within the PFO wetland surface, if necessary. Upon completion of revetment construction, access roads would be restored to pre-project conditions. Clearing would be limited to the minimum required for construction and the use of wetland areas outside the construction limits would be prohibited for support activities, including borrow sites, parking and access road use). All practicable measures to minimize harm to wetlands that may result from this project would be taken. Should this alternative become the preferred, FEMA EHP and the applicant would coordinate with USACE to determine what permits and mitigation would be required.

4.2.2 Hydrology and Floodplains

EO 11988, Floodplain Management, requires federal agencies to avoid direct or indirect support or development within or affecting the 1% annual chance Special Flood Hazard Area (SFHA) (i.e., the 100-year floodplain) or, for "Critical Actions," within the 0.2% annual chance SFHA (i.e., the

500-year floodplain), whenever there is a practicable alternative (U.S. President 1977). FEMA's regulations for complying with EO 11988 are found at 44 CFR § 9, Floodplain Management and Protection of Wetlands (1980).

Floodplains are defined as the lowland and relatively flat areas adjoining inland and coastal waters, including at a minimum that area subject to a 1% or greater chance of flooding in any given year. FEMA's regulations for complying with EO 11988 are found at 44 CFR Part 9.

FEMA uses Flood Insurance Rate Maps (FIRMs), created by the National Flood Insurance Program, as the best available flood data. According to the FIRM Community Panel Number 22045 0006B, Effective Date of February 13, 1979, the lower portions of Bayou Sara to the west of St. Francisville downstream to the confluence with the Mississippi River are in Zone A, which is defined as the area inundated by a 1% annual chance of flooding for which no Base Flood Elevations (BFE) have been determined. Per 44 CFR 9.11(d)(4) "there shall be no encroachments, including fill, new construction, substantial improvements of structures or facilities, or other development within a designated regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the base floodplain unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.".

The applicant hired Arcadis Design and Consultancy to conduct and H & H Study. A single-beam bathymetric survey was conducted on Bayou Sara in March 2016 by Morris P. Hebert, Inc., an Arcadis subcontractor, to gather data to support the hydrographic analysis. A 100-year flow of 40,329 cubic feet per second (cfs) for Bayou Sara was used to alter the model upstream boundary. On the downstream side, the Lower Mississippi River (LMR) was assumed to be under normal flow conditions. Additional simulations were conducted to assess flow velocity and size the riprap for bank protection (Arcadis, 5/31/16 and 5/5/17).

Water surface elevations (WSEs) were calculated at the following locations to estimate pre-project and post-project conditions:

- At River Mile (RM) 302.8, approximately 37 miles upstream from the Bayou Sara confluence
- At the confluence of LMR and Bayou Sara (RM 265.8) and
- At Baton Rouge (RM 228.5)(Arcadis, 5/31/16)

No Action Alternative

Under the "No Action" alternative, natural erosional processes would continue to reshape the floodplain. Aerial imagery from 1998 – 2014 indicate variable rates of erosion from 4 – 14 feet/year. An image of the project footprint overlain on the 1909 United States Geological Survey (USGS) St. Francisville Quadrangle Map (see Figure 4; page 11 of GOHSEP letter, Appendix E)

indicates that the last mile of Bayou Sara has migrated eastward eroding away several blocks of the Bayou Sara townsite over the past 100+ years.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Per the H & H Addendum dated May 15, 2017, the Hydraulic Engineering Center – River Analysis System (HEC-RAS) model results showed a maximum increase in WSE of 0.70 feet in Bayou Sara when the Mississippi River discharge is very low (approximately 400,000 cfs), such as in August and September. The results showed no change in WSEs in cross-sections near the revetments when stages were at or higher than the 100-year BFE. For downstream cross-sections near the Mississippi River, there was no observable differences in WSE due to implementation of the project (Arcadis, 5/15/17). The model results show that the proposed revetments would not increase the WSE in Bayou Sara or the Mississippi River more than one (1) foot and that their design satisfies the EOs 11988 and 11990, and the FEMA regulation at 44 CFR 9.11(d)(4).

The overall impact of the proposed action on the hydrology and floodplain of Bayou Sara and the Mississippi River would be expected to be negligible (Arcadis, 5/31/16). The West Feliciana Parish Code requires a development permit for revetment construction to be obtained from the Floodplain Administrator. No mitigation beyond coordination with the West Feliciana Floodplain Administrator prior to the start of any activities is required. See also Section 7.0 Conditions and Mitigation Measures.

All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to GOHSEP and FEMA for inclusion in the permanent project files. New construction must also be compliant with current codes and standards. See the 8-Step Process in Appendix F.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

If this alternative would be chosen for the proposed project, the HEC-RAS model would be run for a 100-year flood scenario to simulate post-project conditions upstream and downstream from the revetment to determine WSEs and compared to the pre-project conditions on Bayou Sara as described under the proposed action alternative. The HEC-RAS model run would also utilize the bathymetric survey data as described under the proposed action alternative. The overall impact of the proposed action on the hydrology and floodplain of Bayou Sara and the Mississippi River would be determined based on the model results.

All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to GOHSEP and FEMA for inclusion in the permanent project files. The applicant is required to coordinate with the local floodplain administrator regarding floodplains permit(s) prior to the start of any activities. New construction must be compliant with current codes and standards.

4.2.3 Surface Water and Water Quality

Bayou Sara (approximate drainage area of 1,400 square miles) originates near Woodville, Mississippi, flows 12 miles across the state line, drains a large portion of West Feliciana Parish, and flows southward 31 miles from the state line before reaching the project site. Bayou Sara flows into the Mississippi River approximately 1,200 feet from the downstream-most portion of the revetment.

An unnamed tributary to Bayou Sara discharges approximately 540 feet upstream of the planned revetment for Reach 1. Outflow from the southernmost pond at the St. Francisville STP flows through a 12-inch culvert beneath the access road and discharges to this unnamed tributary approximately 500 feet to the west of the lagoon (Arcadis, 3/20/17).

The Mississippi River at Bayou Sara, RM 265.83, has a drainage area of 1,129,400 square miles, 99% of which is in the U.S. The watershed of the river covers 41% of the U.S. Water levels in the river can fluctuate up to 33 feet. The Mississippi River at Bayou Sara is part of an 85-mile subsegment from the Old River Control structure just above the Mississippi state line downstream to Monte Sano Bayou, located just upstream from Baton Rouge, that has been designed as impaired for primary contact recreation (PCR) due to suspected impairment from fecal coliform. PCR is defined as recreational contact, such as swimming, skiing or diving, where the probability of ingesting water is considerable. Bayou Sara has also been designated as impaired for PCR due to fecal coliform from the Mississippi state line to the river. The suspected sources of impairment for Bayou Sara include sanitary sewer overflows and sanitary collection system failures. In addition to the St. Francisville STP, there are at least 22 known small sources of sanitary wastewater discharge in the Bayou Sara watershed which have LPDES discharge permits (all but four (4) have less than 1,000 gallons/day discharge). Recreational fishing has been observed in Bayou Sara in 2016. Even though Bayou Sara is impaired for fecal coliform, the 2016 Water Quality Integrated Report for Louisiana shows that Bayou Sara water quality fully support its designated fish and wildlife propagation (FWP) use. Mississippi River water quality at Bayou Sara fully supports its designated FWP and drinking water source uses. Water quality in Bayou Sara and the Mississippi River fully supports their designated Secondary Contact Recreation (SCR) uses. SCR is defined as fishing, boating and other activity where contact with the water is either incidental or accidental, and the probability of ingesting water is minimal.

Fish collected from the LMR by LDEQ have been analyzed for over 100 toxic chemicals. Fish tissue samples did not have detectable levels for 95% of the chemicals tested. The levels of toxic chemicals that were detected were all below the U.S. Food and Drug Administration standards for edible fish. Neither Bayou Sara or the LMR are included in the LDEQ list of water bodies that have advisories issued for fish consumption due to the presence of mercury in fish tissues (Caffey et al, 2002; LDEQ, 6/26/17).

No Action Alternative

Adverse impacts to water quality from fecal coliform in Bayou Sara and the Mississippi River would continue unless sanitary sewer upgrades were completed to eliminate/reduce sanitary overflows and system failures. Overall water quality would remain unchanged. In addition, sediment impacts and erosion would continue to occur at the site.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

The construction of the two (2) revetment sections would extend a combined length of 1,991 feet along the east bank of Bayou Sara and would result in the emplacement of approximately 17,270 CY of material below the OHWM including 121 CY of block mats, 367 CY of compacted fill, and 16,781 CY of riprap. The area of fill placement below the OHWM is 2.06 acres (Arcadis, 3/29/17).

During construction increased erosion and sedimentation of streambanks would occur, but would be minimized by establishing cofferdams at the revetment construction limits. The downstream movement of eroded materials would be limited to the revetment footprint by the cofferdams and would be permanently fixed in place by geotextile fabric, then anchored with the riprap materials. After completion of the revetments, sediment loads in the lowermost 1,200 feet of Bayou Sara would be reduced due to the decreased erosion from the armoring of the two (2) upstream bends along the east banks. Some scouring of Bayou Sara below the revetments would be expected. Construction workers would utilize sanitary facilities at the STP or use portable toilets, if necessary. Project construction would not result in any appreciable increase in sanitary flows to the STP or to Bayou Sara and would not contribute to water quality impairment from fecal coliform in Bayou Sara or the Mississippi River. The unnamed tributary to Bayou Sara west of the STP would not be effected by the revetment.

Appropriate erosion controls would be implemented to prevent runoff and sediment from the excess cut displacement area from reaching the STP lagoon outflow. All work below the OHWM would be permanently stabilized at the earliest practicable date. This work would be done during low-flow periods to the maximum extent possible. Impacts to Bayou Sara from construction of the proposed action would be expected to be minor. The level of suspended sediment discharge on the LMR is estimated at over 150 million metric tons (MMT)/year. Impacts to the Mississippi River from construction of the proposed action would be negligible (Arcadis, 3/20/17; USACE, 12/21/16; U.S. Fish and Wildlife Service (USFWS, 2013; USGS, 1995). See also Section 7.0 Conditions and Mitigation Measures.

LDEQ provided the following responses to FEMA EHP's August 8, 2016 SOV request:

- If project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater (not part of project).
- A Sewage Sludge and Biosolids Use of Disposal Permit is required if the project will include a sanitary wastewater treatment facility (it does, but the St. Francisville STP does not require this permit; the volume of sludge sludge it generates is so low that removal from the lagoons is not necessary).
- If water system improvements include water softeners, contact LDEQ Water Permits to determine if special water quality-based limitations are necessary for softener generated wastewaters (not part of the project).

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

The construction of an additional revetment section between Reaches 1 and 2 would extend a distance of approximately 1,000 feet along the east bank of Bayou Sara in addition to the 1,991 LF for the proposed action alternative revetments for a total distance of approximately 2,990 feet. Approximately 25,940 CY of material would be placed below the OHWM including 180 CY of block mats, 550 CY of compacted fill and 25,200 CY of riprap. The area of fill placement below the OHWM would be an estimated 3.1 acres.

Appropriate erosion controls would be implemented to prevent runoff and sediment from the excess cut displacement area from reaching the STP lagoon outflow. All work below the OHWM would be permanently stabilized at the earliest practicable date. This work would be done during low-flow periods to the maximum extent possible. FEMA EHP would coordinate with resource agencies, however, overall impact to surface water from construction of a continuous revetment would be expected to be slightly greater than the proposed action, while remaining a localized, minor adverse effect.

4.2.4 Ground Water

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The Southern Hills Regional Aquifer System in southeastern Louisiana has been designated as a Sole Source Aquifer (SSA) under the § 1424(e) of the SDWA. Federally funded projects reviewed by USEPA under the SSA Program include construction projects involving discharge of storm water, such as the Bayou Sara Streambank Stabilization. The SSA designation area for this aquifer spans ten (10) Parishes in Louisiana including West Feliciana Parish. In southeastern Louisiana, the aquifer system has been divided into as many as 13 aquifer units. These units include aquifers in alluvial and upland deposits consisting of ten (10) sand layers between 400 and 2,800 foot depths. Groundwater resources in the vicinity of the project site include the Evangeline and Jasper equivalent aquifers. The Evangeline Equivalent Aquifer System includes the “800-foot,” “1,000-foot,” “1,200-foot,” “1,500-foot,” and “1,700-foot” sands of the Baton Rouge area. The Jasper Equivalent Aquifer lies below the Jasper system. The division in the aquifer units is based on the presence of clayey confining layers interbedded with sandy aquifer units within the system’s sedimentary sequence. These aquifer units are recognized to collectively operate as a single aquifer system (USEPA; Buono, 1983; Kuniansky et al, 1989; Kuniansky, 1989; USGS, 2014).

No Action Alternative

There would be no effect on the quality of groundwater underlying the site.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Project construction would not have an adverse effect on the quality of groundwater underlying the site.

SOV requests were sent to the USEPA Region 6 SSA Program and LDEQ on October 21 and August 8, 2016. The LDEQ SOV response dated September 12, 2016, indicated that all precautions should be observed to protect the groundwater and that if any hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required (see Attachments1 and 2 in Appendix C). The USEPA SSA Program response from December 14, 2016 stated that the project should not have an adverse effect on the quality of groundwater underneath the project corridor (see Appendix D). See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Project construction is not expected to have an adverse effect on the quality of groundwater underlying the site. Should this alternative become the proposed project FEMA EHP would send SOVs to resources agencies and impacts would be reassessed based on the agency responses.

4.3 Biological Resources

4.3.1 Federally Protected Species and Critical Habitats

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1543) prohibits the taking of listed, threatened, and endangered species unless specifically authorized by permit from the USFWS or the National Marine Fisheries Service (NMFS). "Take" is defined in 16 U.S.C. 1532 (19) as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3).

Section 7(a)(2) of the ESA requires the lead federal agency to consult with either the USFWS or the NMFS, depending which agency has jurisdiction over the federally listed species in question, when a federally funded project either may have the potential to adversely affect a federally listed species, or a federal action occurs within or may have the potential to impact designated critical habitat. The lead agency must consult with the USFWS, the NMFS, or both (Agencies) as appropriate and will determine if a biological assessment (BA) is necessary to identify potentially adverse effects to federally listed species, their critical habitat, or both. If a BA is required, it will be followed by a biological opinion from the USFWS, the NMFS, or both depending on the jurisdiction of the federally listed species identified in the BA. If the impacts of a proposed federal project are considered negligible to federally listed species, the lead agency may instead prepare a letter to the Agencies with a "May Affect, but Not Likely to Adversely Affect" determination requesting the relevant agency's concurrence. This draft EA serves to identify potential impacts and meet the ESA § 7 requirement by ascertaining the risks of the proposed action and alternatives to known federally listed species and their critical habitat, as well as providing a means for consultation with the Agencies.

Unless otherwise permitted by regulation, the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712) prohibits pursuing; hunting; taking; capturing; killing; attempting to take, capture, or kill; possessing; offering for sale; selling; offering to purchase; purchasing; delivering for

shipment; shipping; causing to be shipped; delivering for transportation; transporting; causing to be transported; carrying or causing to be carried by any means whatever; receiving for shipment, transportation, or carriage; or exporting; at any time or in any manner, any migratory bird or any part, nest, or egg of any such bird, that is included on the list of protected bird species (General Provisions; Revised List of Migratory Birds 2013). The USFWS is responsible for enforcing the provisions of this Act.

Pallid sturgeon (PS) is an endangered species that inhabits the Mississippi River. No other federally-listed threatened and endangered (T & E) species are listed for West Feliciana Parish. The Cat Island National Wildlife Refuge Draft Comprehensive Conservation Plan identifies the LMR in West Feliciana Parish within the potential range of the Interior Least Tern (ILT). ILT foraging habitat is present along Bayou Sara, but no barren sandbars suitable for ILT nesting were found during the October 2016 wetlands survey (USFWS, 8/11/16; Arcadis, 3/26/17; USFWS, March 2015).

The main channels of the Mississippi and Missouri Rivers provide 3,350 miles of habitat for the federally-endangered PS. Most PS reported from the LMR, which runs from the Ohio River confluence downstream have been captured immediately below the Old River Control structures, located over 40 miles upstream from Bayou Sara. As of 2012, over 1,050 miles of revetment have been constructed on the banks of the LMR as part of USACE's Channel Improvement Program (CIP). As of 2013, over 500 PS have been captured in the LMR. PS population size has not been quantitatively defined within the LMR. The PS comprised 2.2% of fish captured on winter set trotlines, and ranked fifth in relative abundance out of 22 species collected during two (2) years of trotline sampling at Vicksburg and Tunica, Mississippi. Telemetry studies in the LMR have shown use of multiple channel habitats by larger size classes of PS, such as point bars, secondary channels, island tips, natural banks, and river engineering structures, such as wing dikes and revetted banks. Telemetry monitoring of sonic tagged individuals has shown that PS occur throughout most of the 950-mile reach of the LMR. There is also evidence that the LMR PS population can sustain removal of substantial numbers of individuals from the population. PS recruitment in the LMR has been documented by the capture of multiple age classes and annual mortality is low (< 12%). Since the PS was listed as endangered in 1990, the status of the species has improved and is considered stable. Recent studies of the Mississippi River have shown that suitable PS habitat is available in unimpounded reaches, such as the LMR. Fisheries surveys conducted in the LMR between RM 240 and RM 273 near St. Francisville and the Entergy River Bend Station (RBS) did not encounter any threatened or endangered species. Habitat modifications from the CIP has not adversely affected the status of PS in the LMR. **(**USFWS, 2013 and 2014; USACE, 2014; LMRCC, 2015; Entergy Operations, 2008). Arcadis recommended a determination of no effect for PS in the Biological Resources and Wetlands Finding Report.

The Mississippi River Flyway hosts the world's largest bird migration. Approximately 70% of migratory waterfowl in the U.S. use the flyway. Cat Island National Wildlife Refuge (NWR) covers 9,623 acres, is located slightly over two (2) miles west of Bayou Sara and is also a priority bird conservation area (see Figure 8). Cat Island is also known as Tunica Swamp, which covers a total of 36,500 acres of bottomland forests that provide habitat for migratory and wading birds. A total of 177 avian species have been recorded in the RBS vicinity.

In addition to the listed pallid sturgeon, the project area may provide nesting habitat for the bald eagle (*Haliaeetus ieucocephalus*) which was officially removed from the List of T & E Species as of August 8, 2007. However, the bald eagle remains protected under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) and the MBTA (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). The Louisiana Department of Wildlife and Fisheries (LDWF) has not collected comprehensive bald eagle survey data since 2008, and new active, inactive, or alternate nests may have been constructed within the proposed project area since that time.

In southern Louisiana parishes, eagles typically nest in mature trees (e.g., baldcypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Bald eagles may also nest in mature pine trees near large lakes in central and northern Louisiana.

No Action Alternative

The "No Action" alternative would entail no project and, therefore, would have no impact on species federally listed as threatened or endangered or on federally-listed critical habitat.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

The composition and abundance of PS forage species in the lower most portions of Bayou Sara may change as a result of revetment construction. The PS is a bottom-dwelling species that is not generally found in shallow depths and would not be expected to occur in Bayou Sara (USACE, 2015; Arcadis, 3/21/17).

An informal online consultation with the USFWS Louisiana Ecological Services Office (ESO) on August 11, 2016 determined that the proposed project is not an activity that would affect a federally listed T & E species or critical habitat, and that no further ESA coordination with USFWS is necessary. On February 8, 2018 FEMA EHP submitted an SOV to the USFWS ESO since the one (1) year period for the informal online consultation had expired. USFWS online response stated "Based on the information provided in this report, as well as any pertinent correspondence and documentation saved to the project file at our office (if applicable), the Service concurs with your "not likely to adversely affect" determination for the following species- Pallid Sturgeon"

"Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

"A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12."

"If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected (e.g. adverse, beneficial, insignificant or discountable) by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license Sub-Recipients, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF or by contacting our office at the number above."

The USFWS indicated that one (1) threatened, endangered, or candidate species should be considered in an impacts analysis for the proposed project. According to the USFWS, there is one (1) species critical habitat located wholly or partially within the project area: that of the Pallid Sturgeon (*Scaphirhynchus albus)* (Appendix D).

FEMA prepared a BA for the project. This BA was submitted to USFWS on (April 10, 2018). FEMA has again made a "May Affect, but Not Likely to Adversely Affect" determination for the Pallid sturgeon. This determination was made based upon the following features within the BA: implementation of the Section 6.0 Recommended Conditions/Conservation Measures, the behavioral attributes and biological needs of the species, and existing habitat conditions within the action area. Per the documentation provided, the water in Bayou Sara is normally too low and too warm for Pallid sturgeon, and any approved construction work would be done in the fall during low water, outside the Pallid sturgeon spawning season.

USFWS concurred with FEMA EHP's determination on June 27, 2018. The letter also states "Section 7 Consultation for the proposed action is concluded. To ensure continued compliance with ESA, reinitiate consultation when: 1) new information reveal that the action may affect listed species or designated critical habitat in a manner or to an extent not considered in this consultation; 2) the action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this consultation; 3) a new species is listed or critical habitat designated that the action may affect.

The USFWS developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at:
http://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then USFWS requires an evaluation to 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/our-services/eagle-technical-assistance. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary.

In accordance with the MBTA of 1918 (as amended), please be advised should the project area be located in or near wetland habitats which may be inhabited by colonial nesting waterbirds and/or seabirds, additional restrictions may be necessary.

Colonies may be present that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries. That database is updated primarily by (1) monitoring previously known colony sites and (2) augmenting point-to-point surveys with flyovers of adjacent suitable habitat. Although several comprehensive coast-wide surveys have been recently conducted to determine the location of newly-established nesting colonies, we recommend that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season because some waterbird colonies may change locations year-to-year. To minimize disturbance to colonial nesting birds please refer to our colonial nesting waterbird guidance on the Louisiana Ecological Services Office (LESO) Web page https://www.fws.gov/lafayette/Migratory _Birds/MigBird. html.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Construction of this alternative would result in similar determinations as the proposed alternative. Should this alternative become the proposed action, FEMA EHP would conduct a BA and complete consultation with USFWS.

4.3.2 Vegetation and Wildlife

The Fish and Wildlife Coordination Act provides the basic authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires Federal agencies that construct, license, or permit water resource development projects to first consult with the Service and State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

The Mississippi River Flyway hosts the world's largest bird migration. Approximately 70% of migratory waterfowl in the U.S. use the flyway. Cat Island National Wildlife Refuge (NWR) covers 9,623 acres, is located slightly over two (2) miles west of Bayou Sara and is also a priority bird conservation area (see Figure 8). Cat Island is also known as Tunica Swamp, which covers a total of 36,500 acres of bottomland forests that provide habitat for migratory and wading birds. A total of 177 avian species have been recorded in the RBS vicinity. A total of 88 species of reptiles and amphibians are known or expected on the NWR. A diverse population of mammalian species are present or are historically known to occur at Cat Island NWR. Terrestrial mammals found at the RBS site, located four (4) miles downstream of Bayou Sara on the Mississippi River, that would be expected to be present in the project corridor include beaver, bobcat, red fox, mink, opossum, cottontail and swamp rabbits, raccoons, skunks, fox and gray squirrels, and white-tailed deer (USACE, 2015; USFWS, 2015; Entergy Operations, 2008; North American Native Fishes Association).

The NatureServe Network lists 89 fish species present in the Bayou Sara-Thompson Creek watershed (FishMap.org). Several fish species, such as gars, bowfin, common carp, buffalos,

channel and blue catfish, white bass, crappie, and freshwater drum forage in the floodplains of the LMR, which includes the project corridor, during high water periods. Muskrat and river otter have also been documented at the RBS site.

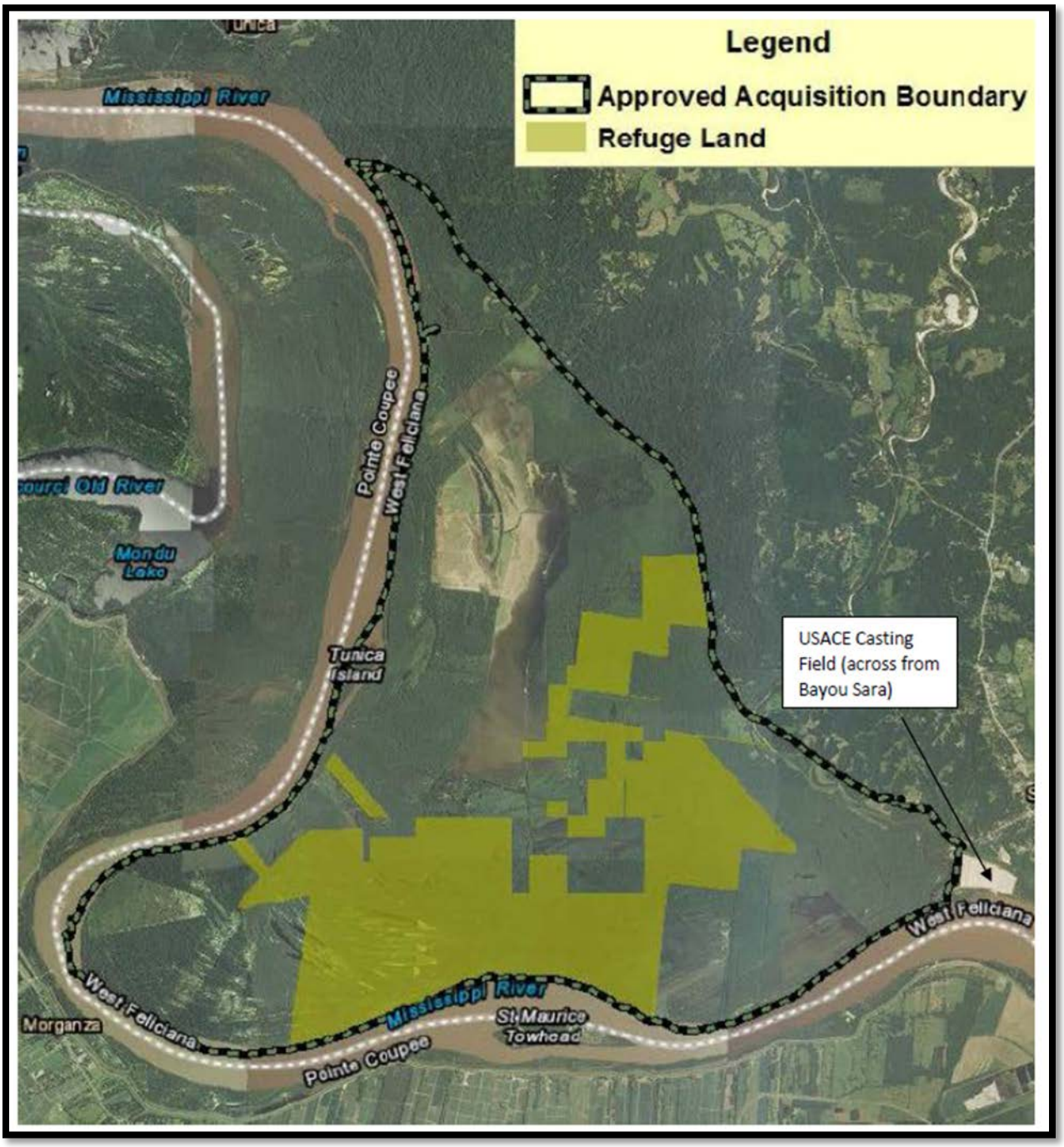

Figure 8: Cat Island NWR Location Map
(Cat Island NWR Draft Comprehensive Conservation Plan and EA, March 2015)

Icthyoplankton surveys of larval fishes near the RBS site have documented 45 species with drums, herrings, minnows and suckers representing 95% of the species collected. A total of 195

freshwater fish species have been documented in the river, which is 1/3 of the total of these species found in North America. Most fish in the LMR spawn in backwater habitats. Commercial harvest in the Upper Mississippi River (UMR) is dominated by common carp, buffalos (bigmouth and smallmouth), catfishes (channel and flathead), and freshwater drum. These same UMR species are also dominant in the LMR commercial fishery (Entergy Operations, 2008).

The Louisiana Natural Heritage Program (LNHP) species list for West Feliciana Parish includes 15 animal and 21 plant species (see the Louisiana Department of Wildlife and Fisheries Species by Parish list at http://www.wlf.louisiana.gov/wildlife/species-parish-list?id=274&type1=All. This LNHP list includes five (5) avian, four (4) mammalian, four (4) fish one (1) amphibian (salamander), and one (1) insect species. The avian species include the Bald eagle, which is protected under the Bald and Golden Eagle Protection Act.

The mammalian species in this list includes the Louisiana Black Bear (LBB), which has been delisted from the Federal T & E species list in March 2016 due to the successful recovery of this species. However, the Black Bear remains protected under Louisiana State Law, and LDWF continues to actively manage this subspecies. The Service and LDWF have developed a plan to extensively monitor the status of the Louisiana black bear for 7 years following its delisting (until year 2022). That monitoring will be undertaken to detect any potential population decreases or threat increases that may warrant the implementation of measures to ensure that the Louisiana black bear remains secure from risk of extinction.

The Mississippi River is characterized by strong, variable flows and heavy sediment loads that constantly scour benthic habitat. Aquatic vegetation is mostly limited to filamentous algae on floating and anchored objects, such as fallen trees along the banks. High turbidity in the LMR limits the growth and production of phytoplankton and other primary producers, limiting food and habitat resources for riverine aquatic species. Scour from the high sediment load in the river exposes gravel and bedrock on the bottom, which limits the growth and production of the benthic community. Over 150 MMT/year of suspended sediment is discharged to the LMR annually (Entergy Operations, 2008).

More than 110 taxa of planktonic algae have been collected from the river at the Entergy RBS nuclear plant, located approximately four (4) miles downstream from the Bayou Sara confluence. Zooplankton surveys of the river near RBS have resulted in the identification of more than 140 invertebrate taxa.

No Action Alternative

The "No Action" alternative would entail no project and, therefore, would have no impact on vegetation, migratory birds or other wildlife.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Clearance of access roads through existing woodlands would result in the temporary loss of 0.9 acres of riparian vegetation, which would result in a negligible loss of foraging habitat for terrestrial species, such as the LBB (this clearance activity would result in permanent loss of the wetland area covered by this access road as stated in Section 4.2.1). No suitable nesting habitat

for the LBB was identified near the project corridor. After construction, riparian vegetation along the access road would be restored (Arcadis, 3/20/17).

During construction fish and other motile animals would likely avoid the project site. The revetments would not appreciably reduce the foraging area for these species. The revetments would provide an increase in habitats for organisms that live on rock surfaces, but there would be a decrease of 2.06 acres of habitat for organisms that live in soft substrates (area below the OHWM) that is converted to rock substrate (USACE, 12/21/16; Arcadis, 3/20/17). This change in benthic habitat would be localized.

A USACE Engineer Research and Development Center Environmental Laboratory review of the environmental effects of many stream stabilization projects revealed the following impacts from riprap on aquatic resources:

- Impacts to warm water aquatic organisms are generally beneficial. The list of fish species that have benefited from riprap projects includes sturgeon, paddlefish, striped bass, flathead and blue catfish, and freshwater drum.
- Armor techniques favor species that use interstitial voids as shelter or cover, and usually result in an increase in macroinvertebrate biomass and density (Fischenich, 2003).

The overall impacts to Bayou Sara would be expected to be a minor. No impacts to avian species would be expected. In response to FEMA EHP SOV request dated August 8, 2016, LDWF responded "After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats within Louisiana's boundary are anticipated for the proposed project. No state or federal parks, wildlife refuges or scenic streams are known at the specified site within Louisiana's boundaries."

If at any time any species that are tracked by the LNHP are encountered, contact the LNHP Data Manager at 225-765-2643 (see Appendix D). See also Section 7.0 Conditions and Mitigation Measures.

During the project impact analysis process developers should identify project-related impacts to migratory birds and the conservation measures that will be used to mitigate them. For additional Migratory Bird Conservation recommendations, guidance and tools to help reduce impacts to birds and their habitats please visit the LESO webpage: https://www.fws.gov/lafayette/Migratory _Birds/MigBird. html and the Service's Migratory Bird Program Webpage (https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/communication-towers. php).

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

The area of riparian vegetation clearance for access roads through woodlands along Bayou Sara would be increased by up to 0.45 acre in addition to the 0.9 acre clearance area for the proposed action. There would be a decrease of 3.1 acres of habitat for organisms that live in soft substrates (area below the OHWM) that is converted to rock substrate. This change in benthic habitat would be localized. The overall impacts to vegetation and wildlife would be as stated for

the proposed action. FEMA EHP would consult with LDWF to ensure all impacts resources are identified.

4.4 Cultural Resources

The consideration of impacts to historic and cultural resources is mandated under § 101(b)4 of NEPA as implemented by 40 CFR, Parts 1501-1508. Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account their effects on historic properties (i.e., historic and cultural resources) and allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. FEMA has chosen to address potential impacts to historic properties through the "Section 106 consultation process" of the NHPA as implemented through 36 CFR, Part 800.

In order to fulfill its Section 106 responsibilities, FEMA has initiated consultation on this project in accordance with the "Programmatic Agreement Among the Federal Emergency Management Agency, the Louisiana State Historic Preservation Officer (SHPO), the Governor's Office of Homeland Security and Emergency Preparedness, and Participating Tribes" executed on December 21, 2016 (2016 Louisiana State-Specific Hazard Mitigation Grant Program Programmatic Agreement (LA Statewide PA); see https://www.fema.gov/media-library/assets/documents/128322). The *LA Statewide PA* was created to streamline the Section 106 review process.

The "Section 106 process" outlined in the *LA Statewide PA* requires the identification of historic properties that may be affected by the proposed action or alternatives within the project's area of potential effects (APE). Historic properties, defined in § 101(a)(1)(A) of NHPA, include districts, sites (archaeological and religious/cultural), buildings, structures, and objects that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). Historic properties are identified by qualified agency representatives in consultation with interested parties. The *LA Statewide PA* was created to streamline the Section 106 review process. Below is a consideration of various alternatives and their effects on historic properties.

No Action Alternative

This alternative would not include any FEMA undertaking; therefore FEMA has no further responsibilities under § 106 of the NHPA.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

A review of this alternative was conducted in accordance with the *LA Statewide PA*. Historic Properties within the APE were identified based on FEMA's review of the NRHP database, the *Louisiana Cultural Resources Map* provided by SHPO, historic map research, and an archaeological site visit conducted by FEMA Historic Preservation (HP) staff on July 28, 2016. This data was evaluated by FEMA using the NRHP Criteria. FEMA additionally verified that there are no standing structures located within the APE. The APE is not located within a listed or eligible National Register Historic District, nor is the APE located within the view-shed of a property individually listed in the NRHP. Based on the results of FEMA's desktop review and the July 28, 2016, site visit, FEMA determined that the Bayou Sara Bank Stabilization Project (BSBSP), as

proposed, would affect portions of the former village of Bayou Sara. Bayou Sara was first identified through archival research in 1983 by National Park Service (NPS) archaeologists conducting a cultural resources study for the USACE. During that time NPS conducted a site visit and performed limited surface collection. This investigation resulted in the recordation of Archaeological Site 16WF37 (Bayou Sara; Greene et al., 1984). At the time the presumed function of the site was classified as a trading post and townsite. No determination regarding the eligibility of Site 16WF37 for inclusion in the NRHP was made.

FEMA's background research indicated that only a portion of the former village of Bayou Sara was included within the recorded boundary of Site 16WF37, and FEMA's July 28, 2016, site visit did not provide enough information to determine the extent and the NRHP eligibility of Site 16WP37. In November of 2016, FEMA contracted Coastal Environments, Inc. (CEI) to conduct a Phase I archaeological survey of the BSBSP area. The Phase I archaeological survey identified historic features and artifacts associated with the former village both at the ground level and within the exposed cut-banks of Bayou Sara throughout the majority of the project area. Based on the results of the aforementioned survey, CEI submitted an LA SHPO Site Form Update proposing to increase the boundary of 16WF37 to encompass the entire former extent of the village of Bayou Sarah as is indicated in historic map overlays (Carpenter and Kelly 2017). On March 7, 2017, SHPO adopted the proposed site boundary change increasing the total size of the site from 0.98 acres (0.39 hectares; ha) to 122.73 acres (49.66 ha); encompassing the majority of the BSBSP APE.

The purpose of the NRHP is to list properties that are "significant in American, history, architecture, archaeology, and culture (NHPA § 101(a)(1)." Typically, archaeological sites are evaluated on Criterion D, though other criteria may apply as well. The quality of significance is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and (d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4). Based on the aforementioned Identification and Evaluation, FEMA has determined that there is one (1) historic property (Site 16WF37; Bayou Sara) as defined in 36 CFR 800.16(l) within the BSBSP project area and that Site 16WF37 is eligible for NRHP under Criterion D for purposes of this Section 106 review. As proposed, the BSBSP includes ground disturbing activities that would affect this historic property in a way that will directly affect the characteristics that make the property eligible for the NRHP and per 36 CFR 800.6 constitute an adverse effect. Therefore, FEMA has determined a finding of Adverse Effect to Historic Properties for this Undertaking.

Following Stipulation II.C.5(b) of the *LA Statewide PA*, FEMA requested that West Feliciana Parish Government (Applicant) consider ways to revise the Scope of Work (SOW) to substantially conform to the standards, and/or avoid or minimize adverse effects for National Register listed or eligible traditional cultural properties and/or archaeological properties. As a result, the proposed SOW for this project was re-examined, and based on hydraulic studies, it was determined that the overall project footprint could be reduced to minimize potential impacts to cultural and wetland resources while also decreasing total project costs by eliminating the portion of the revetment between Reaches 1 and 2, which is evaluated in this EA as the Considered Alternative (Appendix E). In an effort to further minimize the construction footprint and potential effects to Site 16WF37, the Applicant has committed to using existing access roads to the maximum extent possible and

staging construction activities from within the previously disturbed stream channel as is feasible. The current proposed action project design in Appendix A reflects these minimization efforts.

Since it would be impossible to avoid adversely effecting those portions of Site 16WF37 contained within the eroding bank, even with the footprint minimization measures, in accordance with II.C.6(a) of the *LA Statewide PA*, Abbreviated Consultation Process, on April 10, 2016, FEMA initiated consultation with SHPO,and the Tribes, with the proposal to resolve the adverse effects of the undertaking through the implementation of the *LA Statewide PA*, Appendix C Treatment Measure (TM; not an appendix to this EA), IX: Archaeological Research Design and Data Recovery Plan (Phase III) and TM III: Public Interpretation.

FEMA EHP has determined that the significance of site 16WF37 can be documented through archaeological data recovery and believes that the adverse effects of the undertaking would be adequately mitigated through the implementation of TMs IX and III, which are fully described in Appendix E. The Phase III process would be anticipated to record enough information so that the complete or partial destruction of the site within the proposed action footprint would not result in the loss of significant amount of archaeological data.

SHPO concurrence with the proposed use of these TMs and the Phase III research design was received May 08, 2017 (see Appendix E). Consultation with the following affected Tribes was conducted per 36 CFR §800.2(c)(2)(i)(B):

- Choctaw Nation of Oklahoma (CNO)
- the Coushatta Tribe of Louisiana
- the Eastern Shawnee Tribe of Oklahoma
- the Jena Band of Choctaw Indians
- Kialegee Tribal Town
- the Mississippi Band of Choctaw Indians
- Muscogee Creek Nation
- the Seminole Nation of Oklahoma (SNO) and
- the Tunica-Biloxi Tribe of Louisiana

The SNO provided written concurrence on May 12, 2017, Additionally, the CNO responded on May 10, 2017, with the determination "that since there are no known Choctaw cultural or sacred sites located in the APE, the Choctaw Nation Historic Preservation Department deferred to the other consulting parties." The remaining consulted tribes did not object within the regulatory timeframes; therefore, in accordance with Stipulation II.C.4 of the PA and 36 CFR part 800.5(c)1, FEMA may proceed with funding the undertaking assuming concurrence. Additionally, the applicant must comply with the NHPA conditions described in this document (Louisiana Unmarked Human Burial Sites Preservation Act and Inadvertent Discovery Clause; These Conditions are specified in Section 7.0).

Copies of FEMA's April 10, 2016 consultation letter were also sent to the GOHSEP, West Feliciana Parish Government, the West Feliciana Historical Society, and the ACHP along with a description of the application of these TMs to the proposed action (Appendix E). FEMA also posted a public notice of the intended use of these formal TMs on the website hosted by the

Louisiana Department of Culture, Recreation, and Tourism: http://www.crt.state.la.us/dataprojects/culturalassets/fema106/, for a 15-day comment period and received no objections to FEMA's proposed resolution of the adverse effect (Appendix E). This notice was also posted on the following West Feliciana Parish website: http://wfparish.org/news/2017/4/fema-seeking-public-comment. Furthermore, FEMA notified the ACHP of this determination and provided documentation of all responses received in correspondence dated May 18, 2017 (see Appendix E).

The Phase III research design builds on the results of the Phase I archaeology survey, and is intended to collect data from the archaeological site, through sampling of cultural deposits, and the identification and excavation of additional historic features, analyze artifacts to determine their integrity and significance. The research design specifically proposes to excavate between four (4) and six (6) test units within the Reach 1 and 2 revetment footprints. Each test unit would consist of a one (1) meter x one (1) meter hand-excavated area to isolate cultural material for further processing, documentation, and study in accordance with the Louisiana Division of Archaeology' Phase III Standards (http://www.crt.state.la.us/cultural-development/archaeology/section-106/field-standards/phase-iii-data-recovery/index) and the ACHP's *Recommended Approach for Consultation on Recovery of Significant Information for Archaeological Sites* (64 FR 27085). Furthermore, FEMA would require the production of a detailed map that includes all features within, and in reasonably close proximity to the archaeological APE. Following completion of the Phase III archaeological fieldwork and analysis, FEMA, GOHSEP, and West Feliciana would consult with SHPO, participating Tribes, and others, as appropriate, to design an education or public interpretive plan in compliance with TM III.

FEMA EHP also emphasizes that the remaining area of site 16WF37 between Ferdinand Street, Bayou Sara and the project footprints, would not be destroyed by construction of the proposed action, and would to a certain extent be protected and preserved from further erosion and washout from Bayou Sara, which has already eroded away several blocks of the former townsite as shown in Figure 4 of the SHPO Consultation Letter in Appendix E Implementation of these measures along with the TMs would reduce potentially major impacts to cultural resources to a moderate level. The mitigation requirements to complete the Phase III Data Recovery Process for TM IX and the Public Interpretation for TM III have been added to Section 7.0.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Because the considered alternative would impact a larger area within the footprint of the form town of Bayou Sara than the proposed action would, the Considered Alternative would likely result in an Adverse Effect to portions of Site 16WF37 and would require consultation under Section 106 of the NHPA. FEMA would follow its Section 106 review procedures, described previously in this section, if this proposed action is submitted to FEMA for funding consideration. Any additional conditions or requirements would be documented at that time.

4.5 Socioeconomic Resources/Issues

4.5.1 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was signed on 11 February 1994. This EO directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic, and social effects of their programs, policies, and activities on minority and/or low-income populations.

The proposed revetments are located in the southwest corner of Census Tract (CT) 9518, which includes the southeast portion of West Feliciana Parish. CT 9518 is divided into four (4) Block Groups (BGs). The southern tip of BG 9518.003 includes the strip of land between Bayou Sara and Ferdinand Street and continues northward between the St. Francisville city limit and Bayou Sara. The southwest edge of BG 9518.002 lies to the east of Ferdinand Street and continues northward to include the entire St. Francisville city limit plus an area to the southeast of town between the Barrow Fork River (also known as Alligator Bayou), Thompson Creek and the Mississippi River. The two (2) other BGs within CT 9518 are located over 2.5 miles to the east of the project corridor. A summary of racial population statistics for these BGs compared to Louisiana and the U.S. are presented in Table 2.

Table 2. Summary of Racial Data

Racial Group	United States	Louisiana	BG 9518.002	BG 9518.003
White	77.1%	63.2%	49.04%	82.71%
Black	13.3%	32.5%	49.29%	16.06%
Hispanic	17.6%	5%	0%	4.31%
Asian	5.6%	1.8%	1.1%	0%

Block Groups (BG) 9518.002 and 9518.003 are two (2) of the four (4) BGs within Census Tract 9518.
(Source: U.S. Census Bureau, 2016; NEPAssist, 7/27/17)

BG 9518.003 has a greater proportion of white population relative to the U.S. and Louisiana. This BG has smaller proportions of Hispanic and Asians than the U.S. and Louisiana. The proportion of black residents in this BG is greater than the U.S. average, and less than ½ the percentage of black residents in Louisiana. The population of BG 9518.002 is evenly balanced between black and white residents. The percentage of black residents in this BG is higher than the Louisiana and U.S. averages while the proportion of white populations is less than the U.S and Louisiana averages.

In 2014, the federal poverty level for a family of four was set at $23,834. The percentage of the population in CT 9518 with an income below the poverty line in 2015 was 18.9%, which is below the Louisiana poverty rate of 19.8%, but greater than the U.S. poverty rate of 13.5%.

No Action Alternative

There are no residents or dwellings within the project corridor. The Oyster Bar, located at 11101 Ferdinand Street adjacent to the planned revetment in Reach 2, is a small bar and restaurant. This

business may eventually be eroded away and undercut by the continued natural migration of the Bayou Sara channel. The loss of this business would not have a significant effect to the local economy, but would adversely affect the business owner and employees. No adverse effects on populations near the project corridor would be anticipated if no action is taken.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

During construction, the loss or reduction of available parking and increased noise from truck traffic and construction equipment may result in temporary disruption and loss of business at the Oyster Bar. At the completion of construction, normal business activity would be expected to resume. The slowdown of business activity during construction may result in reduced revenue for the Oyster Bar, and reduced wages for its workers, but would not be significant community level economic impact. No adverse effects to resident populations near the project would be expected. No mitigation would be required for this issue.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Long-term impacts to the Oyster Bar would be similar to those described under the proposed action, as would the short-term impacts, however the construction period would likely be longer. No adverse effects on populations near the project corridor would be expected under this alternative. No mitigation would be required for this issue.

4.5.2 Public Health and Safety

Public safety resources in St. Francisville include police, fire, ambulance and Enhanced Universal Emergency Number (E911) Services. The St. Francisville Police Department (SFPD) is located at 11936 Ferdinand Street. The St. Francisville Fire Department is next door to the SFPD at 11922 Ferdinand Street. These locations are just over one (1) mile from the St. Francisville STP. The West Feliciana Parish Fire Department can provide additional technical rescue capabilities including water rescues, if needed on Bayou Sara. Emergency Medical Services and transport in West Feliciana Parish are provided by West Feliciana Parish Hospital located at 5266 Commerce Street in St. Francisville, which is approximately 1.2 road miles from the STP. Two (2) ambulances with Advanced Life Support and advanced cardiac care capability are staffed 24 hours a day. These ambulances can send patient information directly to emergency room physicians, which reduced door-to-door service time. E911 services are provided by the 911 Communications District, which was created by the West Feliciana Parish Police Jury. Recreational activities occurring on Bayou Sara include hiking, boating, fishing and canoeing (WFPH; Arcadis, 3/20/17).

No Action Alternative

Under the "No Action" alternative there would be no new project and the existing public health and safety resources would not be effected. Eventually, however, unmitigated streambank erosion would result in the erosion and undercutting of the St. Francisville STP treatment lagoons.

Considerable expenditure would result from having to site and construct a replacement STP to provide adequate treatment of sewage from the St. Francisville sanitary system.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

No effects to local emergency services would be expected under the Proposed Action Alternative. Public access to the St. Francisville STP is restricted by a chain link fence. Operations personnel would continue to access the STP via a locked access gate at the northeast corner off Ferdinand Street. All construction activities would be conducted in accordance with the Occupational Health and Safety Administration (OSHA) Construction Industry Standards at 29 CFR 1926, including the cofferdam requirements at 29 CFR 1926.802. Appropriate signage and access barriers would be placed adjacent to the revetments prior to the start of construction activities to alert Bayou Sara recreationists of project activities.

Recreational use of Bayou Sara cannot be restricted under Louisiana's public trust doctrine, which allow the public to use navigable rivers for activities related to navigation, such as boating and fishing (Louisiana 20th Judicial District Court). During the construction period for the proposed action, implementation of a "no wake" rule in the project corridor is recommended to ensure that boating activities do not create waves that could overtop the coffer dams set up for revetment construction.

Temporary fencing between the Oyster Bar parking lot and adjacent working areas would also be desirable to prevent public access to Reach 2. It is not known at this time if any overhead power lines at the STP would need to be temporary removed to provide adequate clearance for equipment/vehicle access to the Staging and Excess Cut Placement Areas at the STP. Should the distribution power line at the STP need to be relocated, proper circuit lock-out, tag-out, deactivation and de-energizing procedures would be followed prior to moving the power line, and to re-energize the overhead line once they have been relocated. These procedures would be required to comply with the OHSA Power Line Safety regulations at 29 CFR 1926.1407-1411, and comply with the National Electrical Safety Code and National Electric Code, as appropriate. See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Impacts to public health and safety would be expected to be the same as stated for the proposed action. The proposed action mitigation measures would also be expected to be sufficient for implementing this alternative.

4.6 Noise

Noise is commonly defined as unwanted or unwelcome sound, and most commonly measured in decibels on the A-weighted scale (dBA), which is the scale most similar to the range of sounds that the human ear can hear. Sound is federally regulated by the Noise Control Act of 1972, which charges the USEPA with preparing guidelines for acceptable ambient noise levels. USEPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of

55 dB day-night average sound level are "normally unacceptable" for noise-sensitive land uses including residences, schools, or hospitals.

Construction equipment and vehicles that would likely be used at the site include cranes, trucks, backhoes, graders, compressors, generators, bulldozer, dump trucks, excavators, front end loaders, pumps, and compactors. Noise levels measured 50 feet from these vehicles and equipment ranges from 76 dBA for pumps, 80 dBA for backhoes, 85 dBA for dozers, to 88 dBA for trucks.

There are no noise-sensitive receptors, such as residences, schools, and day care centers in the immediate vicinity of the project site. The nearest residence, church, and day care facilities are approximately 600, 1100 and 2300 feet away, respectively. St. Francisville students attend public schools in the community of Bains, located two (2) miles north of town. There are no nursing homes within the St. Francisville town limits (St. Francisville Churches webpage at http://www.stfrancisville.net/residents/churches-in-town.htm.; West Feliciana Parish Schools webpage at http://www.wfpsb.org/contact_us.).

No Action Alternative

There would be no change the ambient noise environment in the project corridor.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Residents along Ferdinand Street would experience minor increases in noise from project traffic during the construction period. Recreationists would be expected to avoid travel along Bayou Sara during project construction. Fishing and boating activities on the Mississippi River would not be expected to be effected by project construction noise. Project construction activities would be limited to normal working hours, which would not include evening and night time hours, and would not be expected to adversely affect St. Francisville residents. These noise impacts would be considered to be negligible.

If noise levels from project construction create incompatible uses on adjoining properties, the West Feliciana Parish Code Chapter 115, § 115-1 requires the use of buffers or screens to make adjoining uses compatible. See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

The noise effects from construction of the revetment would be the same as state for the proposed action. Buffers or screens would be required if construction noise levels created temporary incompatibilities with the use of adjoining properties per the Parish Code Chapter 115.

4.7 Excavation and Waste Management Issues

4.7.1 Excavated Material Management

The objectives of the Resource Conservation and Recovery Act (RCRA) are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and

natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum products or certain chemicals.

Paper, plastic and glass bottles were visible in the eroded streambank adjacent to the STP during the July 28, 2016 site visit. On January 20, 2017 LDEQ received a citizen's complaint regarding trash and debris washing into Bayou Sara at this same location. The Bayou Sara streambank is also eroding away the edge of the paved area behind the Oyster Bar in Reach 2.

The Phase I archaeological investigation found buried artifacts within the historic footprint of the Bayou Sara townsite, which covers all of the project corridor, including glass, brick, ceramics, asphalt paving, metal, and rubble.

No Action Alternative

No excavation of the Bayou Sara streambed would occur. There would be no need to manage excavated materials; however, it is possible that additional trash and debris that is buried in the streambank adjacent to the STP would be eroded and released into Bayou Sara. Such releases would be considered a minor adverse impact to Bayou Sara.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Visual assessments of the Bayou Sara townsite debris that are excavated from the streambank and placed in the Excess Cut Placement Area would be made. Inert material, which is defined as not being chemically or biologically reactive and will not decompose, would not be separated from the excavated soils. Any visibly non-inert, modern trash and solid waste that has been excavated and placed within the Excess Cut Placement Area would be segregated from the rest of the materials and containerized, along with the trash observed in the Reach 1 streambank for offsite disposal at a permitted solid waste disposal facility. Removal and segregation of non-inert materials from the streambank for proper disposal would prevent the eventual erosion of these materials into Bayou Sara and prevent future impacts to water quality. These activities would be considered to have a minor beneficial impact.

The applicant shall handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance with all local, state, and Federal requirements. The sub-applicant/construction contractor shall not offer solid waste to transporters or disposal facilities that have not received authorization and/or the required permits necessary to receive and/or manage the generators solid waste. All coordination pertaining to these activities should be documented and copies forwarded to GOHSEP and FEMA as part of the permanent project files. An SOV was prepared and sent to LDEQ on August 9, 2016. LDEQ responded on September 12, 2016 (Appendix D). The SOV response stated that if any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required. All precautions must also be taken to protect workers from hazardous constituents. See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Additional excavation of streambank material along Reach 3 would likely be needed to provide proper slopes for the revetment materials. The volume of excavated materials would be expected to be 50% greater than the volume removed along Reaches 1 and 2 or about 6,600 CY. These materials would also be managed in the Excess Cut Placement Area. If this 0.87-acre area is insufficient to adequately manage this volume of material, it would be moved to another suitable location within the STP grounds and enlarged.

Visual assessments of material excavated from the streambank and placed in the Excess Cut Placement Area would be conducted to identify and remove non-inert trash and debris for containerization and property disposal. This activity would be considered to have a minor beneficial impact, if the mitigation measures specified for the proposed action were followed.

4.7.2 Hazardous Material Management

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, authorizes USEPA to respond to releases, or threatened releases, of hazardous substances that may endanger public health, welfare, or the environment, that might come from any source. Superfund also grants USEPA authority to force parties responsible for environmental contamination to clean it up or to reimburse response costs incurred by USEPA.

The Superfund Amendments and Reauthorization Act of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA). EPCRA regulations establish several types of reporting obligations for facilities that store or manage specified chemical, including chemicals used by the construction industry, such as solvents.

The Toxic Substances Control Act (TSCA) allows USEPA to collect data on chemicals to evaluate, assess, mitigate, and controls risks which may be posed by their manufacture, processing, and use. TSCA regulates polychlorinated biphenyl (PCB) in electrical equipment, including pole-mounted transformers (PMTs) which are present on overhead power lines between the Staging Area and STP lagoons.

No Action Alternative

There would be no need to manage hazardous materials used in construction equipment since no construction would occur. The normal chlorination of STP effluent in the chlorine contact chamber would continue (LDEQ, 5/29/12). The use of chlorine gas for this purpose would continue. No hazardous materials impacts would be expected.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

The PCB status of PMTs at the STP is not known. Per NEPAssist, no CERCLA, TSCA, radiation, toxic release, Brownfields or hazardous waste sites have been identified at or near the project corridor (Accessed at http://nepassisttool.epa.gov/nepassist/entry.aspx.) Project construction would be expected to encounter minimal or no hazardous materials or toxic waste during access

road clearance, excavation, or fill activities. Spills of fuels, oils, and hydraulic fluids from vehicles and equipment used in construction could reach the streambed and adjacent soils and vegetation. The construction crew would be equipped with spill control supplies, such as sorbent pads, to quickly stop the release of these materials and promptly containerize any contaminated materials and/or sediment/soil. Leaky vehicles and equipment would be taken out of service, if required, and repaired prior to being placed in service again at the project site. Adverse effects to Bayou Sara and floodplain soils from spills and leaks would not be expected. No permits for hazardous materials and toxic waste management and disposal would be anticipated to be needed.

If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable federal, state, and local regulations. The contractor would be required to take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area.

The construction contractor shall comply with CERCLA hazardous substance release reporting requirement, if an applicable release occurs. An SOV was prepared and sent to LDEQ on August 9, 2016. LDEQ's response from September 12, 2016 stated that if any hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required. Precautions should also be taken to protect workers from hazardous constituents (see Appendix D). Notify the National Response Center (NRC) at 800-424-8802 if an oil discharge to water occurs. See also Section 7.0 Conditions and Mitigation Measures

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Impacts from the management of hazardous materials would be the same as those described under the proposed action. Mitigation measures would also be the same as stated for the proposed action.

4.8 Traffic and Transportation

Ferdinand Street provides access to the St. Francisville STP, the USACE Casting Fields site, the Oyster Bar restaurant at 11101 Ferdinand Street, and a boat launch site on the Mississippi River. Recreationists also park in the Oyster Bar parking lot to access Bayou Sara.

No Action Alternative

There would be no changed to traffic volume or traffic patterns on Ferdinand or surrounding local streets.

Proposed Action: Construct two (2) Revetments Adjacent to the STP and the Oyster Bar

Project construction would produce a localized increase in traffic from the haul trucks transporting 22,720 CY of concrete block mats, riprap stone, compacted fill and timber mats to the project corridor. The number of trips required to bring all of these materials to the project corridor would be dependent on the sizes of haul trucks used. Over 1,800 trips would be required if 20-ton

capacity trucks were used (based on 1.67 tons/CY of riprap). With an anticipated construction timeframe of at least three (3) months, this level of project construction traffic would temporarily increase overall daytime traffic on Ferdinand Street. Vehicular traffic would be maintained on Ferdinand Street during the construction period. Parking and project haul traffic conflicts at the Oyster Bar may occur. These traffic and transportation effects would be considered negligible.

Coordination of haul truck delivery schedules with the STP operators and the Oyster Bar is recommended. West Feliciana Parish and St. Francisville do not have any local requirements for hauling or road permits. Coordination with the St. Francisville Maintenance Department is recommended to determine the need for traffic management measures during the project construction period. See also Section 7.0 Conditions and Mitigation Measures.

Considered Alternative: Construct a Continuous Revetment from the St. Francisville STP to the Oyster Bar

Project construction would produce a localized increase in traffic from the haul trucks transporting 25,940 cubic yards of concrete block mats, riprap stone, compacted fill, and timber mats to the project corridor. The number of trips required to bring all of these materials to the project corridor would be dependent on the sizes of haul trucks used. Over 2,100 trips would be required if 20-ton capacity trucks were used, which would be approximately 300 more trips than would be required under the proposed action. With an anticipated construction timeframe of up to several months, this level of project construction traffic would temporarily increase overall daytime traffic on Ferdinand Street. Vehicular traffic would be maintained on Ferdinand Street during the construction period. Parking and project haul traffic conflicts at the Oyster Bar may occur. These traffic and transportation effect would be considered negligible.

Coordination of haul truck delivery schedules with the STP operators and the Oyster Bar would be recommended. Coordination with the St. Francisville Maintenance Department would also recommended to determine the need for traffic management measures during the project construction period.

5.0 CUMULATIVE IMPACTS

The President's CEQ regulations state that the cumulative impact of a project represents 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).

In its comprehensive guidance on cumulative impacts analysis under NEPA, CEQ notes that "the range of actions that must be considered includes not only the project proposal, but all connected and similar actions that could contribute to cumulative effects" (Regulations for Implementing the Procedural Provisions of the NEPA 2005). The term, "similar actions," may be defined as "reasonably foreseeable or proposed agency actions [having] similarities that provide a basis for

evaluating the environmental consequences together, such as common timing or geography" (40 CFR § 1508.25[a][3]).

Because some effects may be irrelevant or inconsequential to decisions about the proposed action and alternatives, the focus of the cumulative effects analysis should be narrowed to important issues of national, regional, or local significance. To assist agencies in this narrowing process, CEQ (2007) provides a list of several basic questions to be considered, including: (1) Is the proposed action one of several similar past, present, or future actions in the same geographic area; (2) Do other activities (governmental or private) in the region have environmental effects similar to those of the proposed action?; (3) Have any recent or ongoing NEPA analyses of similar or nearby actions identified important adverse or beneficial cumulative effect issues?; and (4) Has the impact been historically significant, such that the importance of the resource is defined by past loss, past gain, or investments to restore resources?

It is normally insufficient when conducting a cumulative effects analysis (CEA) to merely analyze effects within the immediate area of the proposed action. Geographic boundaries should be expanded for cumulative effects analysis and conducted on the scale of human communities, landscapes, watersheds, or airsheds. Temporal frames should be extended to encompass additional effects on the resources, ecosystems, and human communities of concern. A useful concept in determining appropriate geographic boundaries for a CEA is the project impact zone, that is, the area (and resources within that area) that could be affected by the proposed action. The area appropriate for CEA will, in most instances, be a larger geographic area occupied by resources outside of the project impact zone (CEQ 2007).

The resource categories described in Sections 4.1 through 4.8 that have the potential for minor or moderate environmental effects are wetlands, surface water and water quality, vegetation and wildlife, cultural resources, public health and safety, and excavated material management. The regions of influence (ROI) considered for CEA for this EA are as follows:

- Wetlands: Bayou Sara downstream from the STP to the confluence with the Mississippi River plus the adjacent bottomland hardwood forest and it associated wetlands on the west side of Bayou Sara including the Cat Island NWR
- Surface Water/Water Quality, Vegetation and Wildlife, and Excavated Material Management: Bayou Sara downstream from the STP to the confluence with the Mississippi River
- Cultural Resources: The former Bayou Sara townsite including the St. Francisville Casting Field

Past, present and reasonably forseeable future actions for the project area are discussed further in this section to determine the potential for these environmental resources to be effected in a cumulative significant manner. Past and present projects in the vicinity of the Bayou Sara Streambank Stabilization Projects include:

- A Riverfront Concept Plan (RCP) for the vicinity of the Bayou Sara/Mississippi River confluence
- the USACE St. Francisville Articulated Concrete Mattress (ACM) Casting Field at 11376 Ferdinand Street, which is located on the former Bayou Sara townsite
- Redevelopment of the old St. Francisville High School property to the north of the RRP parcel
- A Riverfront Redevelopment Plan (RRP) for an industrial property at 4664 Princeville Road located adjacent to the northwside of the STP

In 2005, the U.S. Congress authorized funding for a study to determine the feasibility of a riverfront development to enhance public access and recreation along lower Bayou Sara and the Mississippi Riverfront. An RCP was developed by Gulf Engineers' and Constructors (GEC) for the USACE NOD. This plan consisted of conceptual sketches of various facilities in this area including pedestrian trails, parking, bicycle lanes along Ferdinand Street, public shelters, restrooms, picnic areas, an overlook/amphitheater, a promenade/bridge, a lawn area, visitor center/ecocenter, café and a boardwalk/fishing platform extending into Bayou Sara downstream from the Oyster Bar (USHR, 2005; CEC, 2010). As of 2017 these concept plans have not been further developed.

Certain features of the RCP, such as roadway modifications, parking areas, trails, overlook/amphitheater, public shelter, restrooms and a boardwalk/fishing platform in Bayou Sara, could contribute to localized impacts to wetlands along Bayou Sara. Additional wetland jurisdictional determinations would be needed to determine wetland impacts from these facilities. Combined with the projected loss of 0.09 wetland acres for the proposed action, these potential wetland impacts would not be expected to be significant given that designs for the locations of such facility along and/or near Bayou Sara would be expected to be informed by additional wetlands survey data so that facility designs could be maximized to avoid or minimized further effects to wetlands, and the fact that the 10,473 acres of bottomland hardwood forest and its associated wetlands within the Cat Island NWR would continue to be protected. The boardwalk/fishing platform component of the RCP is the only feature that could directly impact Bayou Sara during construction. Combined with the proposed action, this structure would not create a locally significant impact to Bayou Sara water quality. The RCP roadway modifications, parking areas, trails and boardwalk/fishing platform features of the RCP would be expected to have negligible effects.

The RCP roadway modifications and some of the trails are located on the Bayou Sara townsite footprint and would require additional archaeological determinations to avoid or minimize loss to historic resources. The completion of additional archaeological work would be expected to provide sufficient data so impacts to these resources could be minimized and avoided. The effects of these activities to historic resources in combination with the Phase III data recovery effort for the proposed action would not be expected to be locally significant.

The development of the Casting Field probably caused significant damage to artifacts associated with the Bayou Sara townsite. This site appears to occupy the eastern half of the townsite as shown

on the 1909 USGS Bayou Sara Quadrangle Map. No mitigation was likely required since the NHPA was not enacted until after site development in 1966.

Activities and features at the USACE ACM Casting Field include the operation of a concrete batch plant; the bulk delivery of bulk cement, fly ash, sand and gravel by river barge; the washing of fine aggregates; the casting, curing and repair of ACM; drainage ditch maintenance, and the fueling and lubrication of vehicles and equipment (the west portion of the Casting Field is shown in Figures 4, 7 and 8).–There is very little potential for Casting Field operations to effect the proposed project due to the presence of a levee embankment at an elevation of 49 feet above sea level around its entire perimeter, which would prevent any stormwater or process wastewaters from migrating eastward toward Bayou Sara. Estimates of the river crest at Bayou Sara indicate this river level may have been exceeded seven (7) ties since 1961 when Casting Field operations began. Also the outfalls at the facility discharge to the Mississippi River downstream from Bayou Sara (LDEQ, 4/4/14; USACE, November 2014; West Feliciana Parish, 2015).

Planning efforts for the RRP are being led by the St. Francisville Area Foundation and the Center for Planning Excellence (CPEX) in Baton Rouge. The RRP parcel is over 70 acres in size and was previously used as a cannery and pallet manufacturing facility. Redevelopment ideas for this parcel include single family residential, cabins, a boutique hotel and additional commercial developments, such as a brewery, restaurant/brewpub, and a recreational outfitter. The southern portion of this parcel has freshwater pond wetlands that may be enlarged to improve bird habitat. Hiking trails through forested slopes areas are also envisioned (West Feliciana Parish Geoportal; CPEX).

The ground surface of the RRP parcel slopes to the southwest. Ferdinand Street is at a 50-foot elevation, and would prevents drainage from this parcel from reaching the STP and Bayou Sara. The RRP would not affect wetlands, surface water, water quality or cultural resources within the ROIs for these resources.

The old St. Francisville High School property covers 21 acres and sits on top of a ridge. The West Feliciana Parish School Board (WFPSB) hired Urban Design Associates (UDA), Pittsburgh to craft a master plan to guide the redevelopment of this property. UDA recommends residential development of 50 unit grouped into three (3) clusters along with a small public park. The master plan is scheduled to be finalized in the fall of 2017 prior to the WFPSB marketing the property for sale and issuing a formal request for proposal for detailed site plan (The Advocate, 8/2/17). This redevelopment project would not be expected to affect wetlands, vegetation, wildlife, surface water, water quality or cultural resources within the ROIs for these resources.

FEMA EHP also assessed potential impacts from the following activities near the project corridor and found they would not have effects within the stated ROIs for the resources undergoing CEA:

- USACE's annual maintenance dredging of the LMR from RM 320 to RM 233.8, which begins upstream of Bayou Sara and the Old River Control Structure and ends at Wilkerson Point, and
- Landing and embarkation activities at the end of Ferdinand Street conducted by the American Queen Steamboat Company (AQSC) riverboat cruises

FEMA EHP also assessed the potential for the following previously funded FEMA projects in West Feliciana Parish to effect resources and determined that they would not have effects within the stated ROIs for the resources undergoing CEA:

- Elevation of two (2) residential structures in the11000 block of Ferdinand Street.
- Safe rooms and wind retrofits at four West Feliciana Parish buildings.

An earlier proposal by Entergy to construct and operate an additional nuclear reactor at the RBS site was also withdrawn in December, 2015.

FEMA EHP is not aware of any other proposed projects near St. Francsiville that have the potential to effect environmental resources of the project corridor and result in potential significant cumulative impacts when combined with the impacts from the BSBSP.

6.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

Public notices of the availability of the draft EA are published in the The Advocate for five (5) days beginning Monday, August 20, 2018 and ending on Friday, August 24, 2018. This public notice will also be published in the St. Francisville Democrat (journal of record), the Clinton Watchman, and The Zachary Advocate & Plainsman on consecutive Thursdays - August 23, 2018 and August 30, 2018. There is a 30 day comment period, beginning on Monday, August 20, 2018 and concluding on Wednesday, September 19, 2018 at 4 p.m. Once the public comment period for the Draft EA is completed, comments will be addressed and incorporated into the EA as appropriate. A copy of the Public Notice is attached in Appendix G.

The draft EA is also published at FEMA's website at http://www.fema.gov/resource-document-library.

The state and federal agencies consulted were:

- U.S. Army Corps of Engineers (USACE)
- Louisiana Department of Environmental Quality (LDEQ)
- Louisiana Department of Natural Resources (LDNR)
- Louisiana Department of Wildlife and Fisheries (LDWF)
- U.S. Environmental Protection Agency (USEPA)
- Louisiana State Historic Preservation Officer (SHPO)
- U.S. Fish and Wildlife Service (USFWS)

Tribal organizations consulted are listed in Section 4.4.

7.0 CONDITIONS AND MITIGATION MEASURES

Based upon the studies and consultations undertaken for this EA, the following conditions and mitigation measures must be taken by the applicant prior to and during project implementation. The following conditions must be met as part of the implementation of the project. Failure to comply with these conditions may jeopardize federal funds:

The following conditions must be met as part of the implementation of the project. Failure to comply with these conditions may jeopardize federal funds:

- The Applicant must follow all applicable local, state, and federal laws, regulations, and requirements and obtain and comply with all required permits and approvals prior to initiating work.
- Applicant must follow all conditions listed in U.S. Army Corps of Engineers MVN-2017-0368-CQ Nationwide Permit-13
- Applicant must, install and monitor appropriate erosion and sediment controls, and stabilization practices.
- Applicant must obtain and/or update all necessary approvals and environmental permits regarding this proposed project.
- If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- All precautions should be observed to protect the groundwater of the region.
- All precautions should be observed to control nonpoint source pollution from construction activities. Louisiana Department of Environment Quality (LDEQ) has stormwater general permits for construction areas equal to or greater than one (1) acre. It is recommended that you contact the LDEQ Water Permits Division at (225) 219-9371 to determine if your proposed project requires a permit.
- If your project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit is required. An application or Notice of Intent will be required if the sludge management practice includes preparing biosolids for land application or preparing sewage sludge to be hauled to a landfill.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore, if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- Any renovation or remodeling must comply with Louisiana Administrative Code (LAC) 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.
- Vehicle operation times should be kept to a minimum. Area soils must be covered and/or wetted, if necessary, during construction to minimize dust
- After construction of revetments, restore existing access roads to pre-project conditions.
- Use all practicable measures to minimize hazards to wetlands.

- Conduct revetment construction activities during low-flow periods to the maximum extent possible.
- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.
- If any species that are tracked by the Louisiana Natural Heritage Program (LNHP) are encountered, contacting the LNHP Data Manager at 225-765-2643 is required.
- Use existing access roads to the maximum extent possible.
- Execute the Phase III Archaeological Research Design and Data Recovery Plan in accordance with the FEMA's consultation with SHPO and Tribes, letter dated April 10, 2016 (Appendix E).
- Develop and implement Public Interpretation in accordance with the FEMA's consultation with SHPO and Tribes, letter dated April 10, 2016 (Appendix E).
- Louisiana Unmarked Human Burial Sites Preservation Act: If human bone or unmarked grave(s) are present within the project area, notify the West Feliciana Parish Sheriff's Office within 24 hours of discovery. The Applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within 72 hours of discovery.
- Construction activities must comply with Occupational Safety and Healthy Act (OSHA) Construction Industry Standards.
- Implementation of a "no wake" zone on Bayou Sara during construction near the revetments is recommended.
- Installation of temporary fencing between the Oyster Bar parking lot and the Reach 2 revetment is also recommended.
- The following steps should be taken to comply with West Feliciana Parish Code Chapter 115: Install, if necessary, a screen or a buffer between uses in order to minimize the harmful impact of noise, dust and other debris, motor vehicle headlight glare or other artificial light intrusion, and other objectionable activities or impacts conducted on or created by an adjoining or nearby use. Install silt fences, if necessary, to prevent storm and run-off erosion, particularly along embankments on water ways and road ways.
- The applicant shall handle, manage, and dispose of petroleum products, hazardous materials and/or toxic waste in accordance with all local, state and Federal agency requirements. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- The applicant shall handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance with all local, state and Federal requirements.
- If spills of fuels, oils or hydraulic fluids from vehicles and equipment occur, use sorbent pads or other spill control supplies to stop the release of these materials and promptly containerize any contaminated materials and/or sediment/soil. Leaky vehicles and

equipment must be taken out of service for repair before returning them to service. If any hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required.

- Notification to the National Response Center at 800-424-8802 if an oil discharge to water occurs.
- The construction contractor shall comply with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance release reporting requirement, if an applicable release occurs.
- If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable federal, state, and local regulations.
- Failure to comply with these conditions may make part of all of the project ineligible for FEMA funding.
- During the project impact analysis process developers should identify project-related impacts to migratory birds and the conservation measures that will be used to mitigate them. For additional Migratory Bird Conservation recommendations, guidance and tools to help reduce impacts to birds and their habitats please visit the LESO webpage: https://www.fws.gov/lafayette/Migratory _Birds/MigBird. html and the Service's Migratory Bird Program Webpage (https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds/collisions/communication-towers. php).
- The applicant must review the National Bald Eagle Management (NBEM) Guidelines is available at: http://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the Bald and Golden Eagle Protection Act (BGEPA).
- If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then USFWS requires an evaluation to be performed to determine whether the project is likely to disturb nesting bald eagles. The applicant is required to conduct the evaluation on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files
- U.S. Fish and Wildlife Service (USFWS) recommends that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season because some waterbird colonies may change locations year-to-year. To minimize disturbance to colonial nesting birds please refer to the colonial nesting waterbird guidance on the Louisiana Ecological Services Office (LESO) Web page https://www.fws.gov/lafayette/Migratory _Birds/MigBird. html.

The following conservation measures for Pallid sturgeon must be employed by construction personnel as a requirement of FEMA funding:

- All personnel related to the construction project will receive worker awareness training on the Pallid sturgeon. This training will include at a minimum: the laws protecting the sturgeon (Endangered Species Act of 1973) as a federally threatened species, a definition of "*take*" as it applies to the Endangered Species Act § 3.19, the fines and possible imprisonment for *take* of a sturgeon, and images of the sturgeon as it is likely to be seen in Bayou Sara and the Mississippi River. All personnel must sign a worker awareness training *sign-in sheet* as a record of their attendance and training received. Any new workers that did not receive the initial training will need to be trained before working in or near construction areas.
- Informational signs will be posted at visible locations in any construction area where in-water work occurs, including all project-related vessels. The signs will have an image of a sturgeon as it is likely to be seen in Bayou Sara, the federal listing status of the sturgeon, possible punishment for *take* of a sturgeon, and phone numbers to immediately call in the event a sturgeon is seen: USFWS's Lafayette Field Office, (337) 291-3100, and the LNHP, (225) 765-2800.
- These informational signs will be weather-proofed (laminated) and large enough so that they can be read from a distance of 20 feet. Signs will be posted prior to and for the duration of the construction project.
- One (1) person per construction site will be made responsible by their crew lead (if not the lead personally) to call the phone numbers stated above in the event a sturgeon is sighted.
- All construction personnel will be responsible for monitoring water-related activities for the presence of sturgeons as part of their regular duties.
- The following are special conditions that will be followed in the event a sturgeon is sighted within 100 yards of the project area:
    i. All construction personnel will have "*Stop Work"* authority if they see a sturgeon within 50 feet of a construction activity, including moving vessels.
    ii. All vessels will operate at no-wake/idle speeds within 100 yards of the work area.
    iii. In-water sediment barriers or siltation barriers will need to be re-secured and monitored.
    iv. Work will only resume without restriction when a previously sighted sturgeon is greater than 100 yards away from the project area.
- Construction work shall only be done during fall low water, outside the spawning season of Pallid sturgeon.

- Per 44 CFR 9.11(d)(4) "there shall be no encroachments, including fill, new construction, substantial improvements of structures or facilities, or other development within a designated regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the base floodplain unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community."
- Coordination with the West Feliciana Parish Floodplain Administrator is required.
- 44 CFR 9.11(d)(6), no project should be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the National Flood Insurance Program. The applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the LA GOHSEP and FEMA for inclusion in the permanent project files.
- Sediment control features (Best Management Procedures [BMPs]) will be implemented on land to limit sediment delivery to the Bayou Sara and Mississippi River. Sediment control features will be required around all dredged material, unclean gravel, sand, and/or soil stockpiles. These features may include, but would not be limited to: sediment (silt) fences, straw wattles (fiber rolls), straw bales, sandbag barriers, plastic sheeting, storm drain inlet protection, and street sweeping/vacuuming. As with any stormwater control methods, the implementation of the appropriate controls will be dictated by the type and amount of sediment being controlled and the forecasted environmental conditions. Monitoring of sediment control features will be required prior to and during rain events to ensure control features are installed correctly and are functioning properly.
- In-water silt barriers (turbidity curtains) will be utilized within the Bayou Sara for all aspects of the project, including bank cut and installation of geo-fabric and riprap. Silt barriers will need to be installed in a manner that contains the dislodged sediments within the immediate work area.
- The applicant agrees that if it receives any Federal aid as a result of the attached project application, it will accept responsibility, at its own expense if necessary, for the routine maintenance of any real property, structures, or facilities acquired or constructed as a result of such Federal aid. Routine maintenance shall include, but not be limited to, such responsibilities as keeping vacant land clear of debris, garbage, and vermin; keeping stream channels, culverts, and storm drains clear of obstructions and debris; and keeping detention ponds free of debris, trees, and woody growth.
- The choice of erosion control measure to be employed will be based on the type and duration of disturbance. For example, areas disturbed due to heavy equipment may receive mulch or hydroseeding to control sediment runoff, as needed.

- Any floating debris will be trapped by the silt barrier and removed from the water, and in-water work will only be conducted when waters are calm enough to allow for the efficacy of the silt barrier system. Disposal of all debris will conform to local, state, and federal laws and standards.
- In-water work and all BMPs identified above may be subject to additional stipulations based on permitting requirements by the U.S. Army Corps of Engineer under § 10 of the Rivers and Harbors Act of 1899 and § 404 of the Clean Water Act under the Nationwide Permit No. 13 (Bank Stabilization), dated March 9, 2018.

- Applicant must comply with all conditions listed in following permits: The Louisiana Department of Environmental Quality (LDEQ) issued the Water Quality Certification (WQC) 160629-02 for the USACE Reissuance of Nationwide Permits, including NWP 13, to the New Orleans District (NOD) on February 14, 2017. The WQC is subject to the State of Louisiana NWP Regional Conditions, February 2017.
- All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to GOHSEP and FEMA for inclusion in the permanent project files. New construction must also be compliant with current codes and standards.

8.0 CONCLUSIONS

Construction of the proposed project at the proposed location was analyzed based on the studies, consultations, and reviews undertaken as reported in this EA. The findings of this EA conclude that the proposed action at the proposed site would result in no significant adverse impacts to geology and soils, air quality, wetlands and waters of the U.S., hydrology and floodplains, surface water and water quality, groundwater, federally protected species, vegetation and wildlife, cultural resources, socioeconomic resources, environmental justice, public health and safety, noise, excavated and hazardous materials management, or traffic and transportation under the Proposed Action Alternative. Furthermore, this EA concludes that the proposed action at the proposed site would not result in cumulative impacts on the affected environment.

During project construction, short-term minor adverse impacts to wetlands and waters of the U.S., surface water and water quality, vegetation and wildlife are anticipated. The management of excavated material from the revetments is expected to provide a minor beneficial impact. Cultural resource impacts from excavation and development of the revetments along Bayou Sara are expected to result in a moderate adverse impact with the implementation of the planned Phase III archaeological data recovery project. Effects to other resources analyzed were rated as negligible. The conditions listed in Section 7.0 have been incorporated to mitigate and minimize these effects. Based upon the studies and consultations undertaken in this EA, no significant impacts are anticipated from the proposed project. Therefore, FEMA presently finds the proposed action meets the requirements for a FONSI under NEPA and the preparation of an EIS will not be required (see Appendix G). If new information is received that indicates there may be significant adverse effects, FEMA would then revise the findings and issue a second public notice, for additional

comments. However, if there are no significant comments, new information or design changes, this Draft EA will become the Final EA.

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