DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS, LOUISIANA 70118

Regional Planning and Environment
Division South
Environmental Planning Branch

DRAFT - FINDING OF NO SIGNIFICANT IMPACT (FONSI)

CONTINUING AUTHORITY PROGRAM, SECTION 14 EMERGENCY STREAMBANK PROTECTION LOUISIANA HIGHWAY 77 AT BAYOU PLAQUEMINE IBERVILLE PARISH, LOUISIANA

EA #587

Description of the Action. The New Orleans District, U.S. Army Corps of Engineers proposes to restore and protect a severely eroded segment of streambank along Bayou Plaquemine to prevent the undermining of Louisiana Highway 77 due to continuing erosion. Approximately 3,000 feet of the left descending streambank of Bayou Plaquemine, and the associated roadbed, would be protected from further erosion.

The project design includes construction of a stone toe dike with a 5-foot crown width and 1:2 side slopes to an elevation of approximately +3.0 feet North America Vertical Datum 1988 (NAVD88). This would be above normal low water elevations and should allow for backfilling with earthen material. The resultant bottom width of the stone toe dike would be approximately 27 feet. The placement of geotextile separator fabric would require 3 feet of extension beyond the stone toe dike resulting in a fabric width of approximately 33 feet. The inside face of the stone toe dike would be blanketed by geotextile fabric and pinned to the stone toe dike crown. A 9-foot width of fabric should cover the entire face and provide adequate laps. The sand backfill would initiate at approximately 1 foot below the stone toe dike crown elevation and proceed landward on an approximate 1:4 slope. This would achieve an inshore elevation of approximately +8.5 feet to +10.0 feet NAVD88, such that the stone armor is in the general range of normal high-water elevation. The final layer of stone armor would be placed on the earthen fill 12 to 18 inches thick dependent upon required hydraulic gradation. The stone armor would also be underlain with geotextile fabric, eliminating shoreline erosion caused by stage differentials or localized wave wash. High-performance turf reinforcement mat (HPTRM) or articulated concrete block bank paving for 200 feet on both sides of the pipeline, for a total of 400 feet of HPTRM or articulated concrete block. The remainder of the repair would utilize the stone toe dike and backfill as indicated. No docks would be reconstructed after the construction of this Project.

All fill material would be obtained from a location, excavated and transported in a manner that complies with all applicable laws and regulations. Fill material would be placed in a manner that would reduce impact to existing stands of bottomland hardwoods. Based on surveys completed in 2017, approximately 22,815 tons of stone, 6,500 cubic yards of earthen fill, and 19,070 square yards of geotextile separator fabric, and 4,000 square yards of HPTRM would be placed. There would be permanent impacts to 1.48 Average Annual Habitat Units (AAHU) of bottomland hardwoods (BLH) as per the Wetland Value Assessment (Appendix C).

Factors Considered in Determination. This office has assessed the potential impacts of implementing the recommended plan on relevant resources including, Bayou Plaquemine; wetlands; aquatic resources/fisheries; wildlife; bottomland hardwood habitat; threatened, endangered and protected species; socioeconomics; transportation; noise; recreation, aesthetics; air quality; cultural resources; water quality; hazardous toxic and radioactive waste (HTRW); and hydraulics and hydrology.

No significant adverse impacts were identified for the following resources (Table 2): wetlands, aquatic resources/fisheries, threatened, endangered and protected species, socioeconomics, noise, aesthetics, cultural resources, and hydraulics and hydrology. An HTRW Land Use History and a Phase I HTRW Initial Site Assessment (ISA) has been completed and is located in Appendix C. The survey discovered a barge, metal support pieces, and 55-gallon drums which are considered potential Recognized Environmental Conditions (RECs) given their age and degraded condition and should be addressed further and removed prior to construction.

Clean Water Act (CWA) section 401 is currently in review by Louisiana Department of Natural Resources. CWA section 404(b)(1) is in public review with this document. Louisiana Department of Natural Resources (LADNR) indicated that this project is outside of the coastal zone in a letter dated July 24, 2020, resolving the Coastal Zone Management Act coordination. A ‘No Affect’ determination was made for the Endangered Species Act through the Information for Planning and Consultation (IPaC) website on August 17, 2020, which expired; and again on November 17, 2021. No consultation under the ESA would be required for the recommended plan. Coordination with the USFWS is ongoing regarding mitigation, the FONSI would not be signed until the coordination is complete. Louisiana State Historic Preservation Officer (SHPO) concurred with a determination of No Potential to Affect Historic Properties in a letter received December 11, 2020. No comments were received from consulting Tribes within the regulatory consultation timeframe.

Environmental Design Commitments. The following commitments are an integral part of the recommended plan:

1) If the recommended plan changes significantly or is not implemented within one year, CEMVN will reinitiate consultation with the USFWS to ensure that the recommended

plan would not affect any federally listed threatened or endangered species, or their critical habitat

2) Adverse impacts to 1.48 AAHU of BLH would require compensatory mitigation. Compensatory mitigation would be achieved by the purchase of mitigation bank credits from a mitigation bank within the watershed.

3) Surveys will be conducted for migratory birds and bald and golden eagles prior to construction to confirm there is no nesting occurring in the project area. Migratory bird, and eagle nests will be coordinated with USFWS for avoidance and minimization of disturbance.

4) Inadvertent Discovery and Unexpected Effects: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered or unexpected effects to historic properties, including architecture, architectural elements, and/or archaeology, are identified, the contractor shall stop work in the general vicinity of the discovery or unexpected effect and take all reasonable measures to avoid or minimize harm to the artifacts(s) or affected property. The contractor will ensure that the discovery is secured and stabilized, as necessary, and access to the area is restricted. The contractor will inform CEMVN. Furthermore, if during the course of work, Native American artifacts or human remains are encountered CEMVN will immediately contact Tribes. The contractor would not proceed with work until CEMVN completes consultation with the Louisiana SHPO, Tribes, and others, as appropriate.

5) Louisiana Unmarked Human Burial Sites Preservation Act: If human bone or unmarked grave(s) are present within the Work area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The contractor shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The contractor shall also notify USACE and the Louisiana Division of Archaeology within seventy-two hours of the discovery. Discoveries of unmarked graves, burials, human remains, or items of cultural patrimony on Federal or Tribal lands shall be subject to the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. §3001-3013, 18 U.S.C. § 1170) and the Archaeological Resources Protection Act of 1979 (ARPA)(16 U.S.C. §470aa – 470mm). Tribes will be contacted as soon as possible in the event Native American artifacts or human remains are encountered.

Public Involvement. The recommended plan has been coordinated with appropriate federal, state, and local agencies and businesses, and organizations through distribution of the draft EA #587 for a 30-day public review and comment period ending on January 8, 2022.

Decision. CEMVN Environmental Planning Branch has assessed the potential environmental impacts of implementing the recommended plan. Based on this

assessment, a review of the comments made on EA #587, and the implementation of the environmental design commitments listed above, a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared. The EA is attached hereto and incorporated herein by reference and made a part of this FONSI.

I have reviewed the EA #587 and have considered public and agency comments and recommendations. I find that the public interest would be best served by implementation of the recommended plan to repair and protect approximately 3,000 feet of streambank along Louisiana Highway 77.

_____ _____

Date

Stephen Murphy
Colonel, U.S. Army
District Engineer

DRAFT ENVIRONMENTAL ASSESSMENT

CONTINUING AUTHORITY PROGRAM, SECTION 14
EMERGENCY STREAMBANK PROTECTION
LOUISIANA HIGHWAY 77 AT BAYOU PLAQUEMINE
IBERVILLE PARISH, LOUISIANA

EA #587

December 2021

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

LEAD AGENCY

United States Army Corps of Engineers
Mississippi Valley Division
New Orleans District
Regional Planning and Environmental Division, South

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PUBLIC COMMENT PERIOD

The 30-day public comment period begins December 9, 2021 and ends January 8, 2022. Written comments can be submitted through the project website https://www.mvn.usace.army.mil/Missions/Environmental/NEPA-Compliance-Documents/Civil-Works-Projects/2021-Civil-Works/, or by mail, email, or phone to the following addressee:

Eric Tomasovic
United States Army Corps of Engineers
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1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division (MVD), New Orleans District (CEMVN), prepared this Draft Environmental Assessment #587 (EA #587) to evaluate the potential impacts associated with the Continuing Authorities Program (CAP), Section 14, Emergency Streambank and Shoreline Erosion Feasibility Study for Louisiana Highway 77 at Bayou Plaquemine in Iberville Parish, Louisiana (LA).

EA #587 has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's (CEQ) Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2.

The proposed action and project location is along LA Highway 77 east of Jase Street within Bayou Plaquemines, approximately 4.5 miles southwest of the intersection of LA Highway 77 and LA Highway 1 south of the city of Plaquemines in Iberville Parish, LA. The streambank failure location is north east of the Bayou Sorrel Lock and southwest of the Port Allen Lock along Bayou Plaquemine which parallels LA Highway 77 (Figure 1).

The following sections include a discussion of the purpose and need, the authority, alternatives to the proposed action, relevant resources affected, and the potential impacts of implementing the proposed action to those resources.

1.1 PROPOSED ACTION

The proposed action is the stabilization of approximately 3,000 feet of streambank along Bayou Plaquemine adjacent to LA Highway 77. The proposed solution is to construct a minimal (less than 4 feet high) stone toe dike at the water's edge, backfill behind the stone toe dike with earthen material, and cap the earthen fill with a minimal layer of stone scour protection. A standard placement of geotextile separator fabric would be placed under the stone toe dike section. An additional layer of geotextile separator fabric would be placed between the earthen fill and the stone armor to prevent material from leaching. This bank protection technique (Figure 3) has been successfully used on other reaches in the vicinity. This proposed construction area is approximately 5.35 acres. A natural gas pipeline crosses the project footprint.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Bayou Plaquemine banks are eroding causing steep banks resulting in undermining of the shoulders of LA Highway 77 and threatening the integrity of the highway. LA Highway 77 is an important thruway as it is used by approximately 1,610 vehicles daily, as of 2018 and serves as a collector road to access the evacuation route LA Highway 1.

Bank erosion is occurring along a portion of the federally authorized navigation channel known as Bayou Plaquemine and this erosion is threatening the structural integrity of a section of Louisiana Highway 77 which runs parallel to the Bayou. The Highway is used by motorists traveling between Iberville Parish and the cities of Baton Rouge and Plaquemine, LA. The Highway is the most direct route between the city of

Plaquemine and the villages of Rosedale and Grosse Tete, LA and is also the primary route from the city of Plaquemine to agricultural areas along the Gulf Intracoastal Waterway (GIWW) Port Allen to Morgan City Alternate Route. The Non-Federal Sponsor (NFS), Louisiana Department of Transportation and Development (LaDOTD), has attempted to protect and repair the Highway, but the repairs have been temporary and have only lasted approximately 4 years.

This watershed is a complex hydraulic system. Various data sets such as, existing gage data, permits, surveys, Atchafalaya River basin models, and effective floodplain maps were examined to determine if fluctuations in water surface elevations along Bayou Plaquemine caused the bank failure. Based on the Hydrologic and Hydraulic assessment (Appendix C), it was determined that stream flow fluctuations in Bayou Plaquemine are caused by rainfall and that these fluctuations are the cause of the channel erosion. The Feasibility Report for Louisiana Highway 77 at Bayou Plaquemine, Iberville Parish, Louisiana, Engineering Appendix – Appendix B provides more detail on how H&H reviewed existing gage data in the basin to determine if a correlation between stages at the lock and stages in the Bayou existed. The Bayou Sorrel lock gates (south of the problem area) are closed the majority of the time acting as a dam and are only opened after a tropical storm or hurricane to drain the interior area or to control the flood pool under certain conditions. It does not appear that Bayou Sorrel or Port Allen lock operations are impacting the bank line erosion along Bayou Plaquemine.

1.3 PROJECT AUTHORITY

The proposed action is authorized under the Continuing Authority Program, Section 14 of the Flood Control Act of 1946 (PL 79-526) as amended. Section 14, as amended, authorizes the USACE to study, adopt, and construct emergency streambank and shoreline protection works to protect public highways and bridges, and other public works, and nonprofit public services such as churches, hospitals, and schools. Section 14 of the Flood Control Act approved July 24, 1946, as amended by Section 1030 of the Water Resources Reform and Development Act of 2014, as amended, 33 U.S.C. 701r, states:

> "*The Secretary of the Army is authorized to allot from any appropriations heretofore or hereinafter made for flood control, not to exceed $25,000,000 per year, for the construction, repair, restoration, and modification of emergency streambank and shoreline protection works to prevent damage to highways, bridge approaches, public works, churches, hospitals, schools, and other nonprofit public services, when in the opinion of the Chief of Engineers such work is advisable: Provided, That not more than $5,000,000 shall be allotted for this purpose at any single locality from the appropriations for any one fiscal year.*"

1.4 PRIOR REPORTS

EA #250, Plaquemine Lock, Section 1135, Bayou Plaquemine, Iberville Parish, Louisiana, assessed impacts associated with the construction of a small scale water diversion facility along the west bank of the Mississippi River intended to enhance

environmental attributes for fisheries resources in Bayou Plaquemine and to alleviate water quality problems. The FONSI was signed on September 25, 1997.

EA #329, Emergency Streambank Protection Project, Louisiana State Highway 77, Iberville Parish, Louisiana, evaluated the potential impacts associated with the proposed streambank protection measures to be taken along a 500 foot segment, approximately 300 feet upstream of this requested repair on Bayou Plaquemine as a CAP, Section 14 project. The FONSI was signed on October 3, 2001.

Figure 1: Proposed repair reach and Alternative Design Options 1.1 and 1.2

1.5 PUBLIC CONCERNS

Concern for this project centers on the availability of LA Highway 77 for public use within and adjacent to Iberville Parish, LA. LA Highway 77 is an important thruway as it is used by approximately 1,610 vehicles daily, as of 2018 and serves as a collector road to access the evacuation route LA Highway 1. Bank failure could jeopardize the stability of the road and force the relocation of the road unless action is taken to alleviate the problem.

2.0 ALTERNATIVE FORMULATION

2.1 Initial Array of Alternatives

Three primary design measures were considered as repair options to stabilize Bayou Plaquemines. The study considered the option of a highway relocation/bypass around the problem area or taking no action at all to resolve the problem. The following alternatives were considered:

Alternative 1: Proposed Action. Streambank Stabilization

Design Option 1.1: Relocate Pipeline. The pipeline would be relocated at the pipeline owners' expense and 3,000 feet of bank line would be reinforced using the typical repair (Section 2.3, Figure 3).

Design Option 1.2: Alternate Design at the Pipeline Crossing. A High-performance turf reinforcement mat (HPTRM) would be used for approximately 400 feet of the repair, centered on the buried pipeline to avoid accidental damage to the pipeline. The remaining 2,600 feet would be constructed using the typical repair as described in Section 2.3 and illustrated in Figure 3.

Design Option 1.3: Stone with Gap. 3,000 feet of bank line will be reinforced using the typical repair (Section 2.3, Figure 3) except a gap of 200 feet centered on the buried pipeline would not have stone placed, to avoid damage to the pipeline.

Alternative 2: Relocation of Highway. This alternative consists of the relocation of the endangered 3,000 feet of LA Highway 77, which would be moved further inland. This alternative would be designed and constructed by LaDOTD. This alternative was incorporated as a cost comparison

Alternative 3: No Action. The alternative of taking no action would mean the streambank would continue to erode, which would likely lead to the failure of a portion of the highway. LA Highway 77 would be impassable, and traffic would need to be diverted either to LA Highway 3066 or another option to be decided by LaDOTD.

Evaluation of Alternatives

Two alternatives to the proposed action as described in Section 1.1 were removed from consideration. Alternatives/design options were screened based on their ability to

meet the project purpose and need, planning constraints, technical feasibility, and likelihood for implementation.

The planning constraints that were considered include: 1) To minimize impacts to threatened and endangered species, 2) To minimize impacts to established recreation areas, and 3) To minimize impacts to LA Highway 77. A major impediment to implementation of streambank protection is the perpendicular crossing of a 14 inch natural gas pipeline installed in 1958 that is physically located within the construction footprint.

The alternatives/design options considered but eliminated from further consideration include:

Alternative 1: Design Option 1.3 (Stone with Gap):

The project would be constructed using the typical repair section (Section 2.3, Figure 3), except stone protection would not be placed on the area above the gas pipeline. Utilizing this method would leave a gap in the shoreline protection. This alternative design option was eliminated since it would not achieve the purpose of the action, i.e., protection of the roadway from erosion.

Alternative 2: Relocation of the highway.

NEPA requires the consideration of other alternatives to the proposed action. Since this alternative would be designed and constructed by Louisiana Department of Transportation and Development (LaDOTD), the location and design for this alternative is unknown.

This alternative was developed as per CAP Section 14 requirements to validate that the total cost of the proposed alternative (Alternative 1) is less than the cost to relocate the threatened facility EP 1105-2-58 Ch3§29d states:

"The least-cost alternative plan is considered to be justified if the total cost of the proposed alternative is less than the costs to relocate the threatened facility."

Therefore, a general design of a connection between two existing roads was utilized by CEMVN Engineering to develop general costs for this alternative. The relocation spanned from Kirtley Road to Jase Street, avoiding the eroding streambank (Figure 2).

This alternative has been eliminated from consideration since it would cost significantly more than the streambank protection.

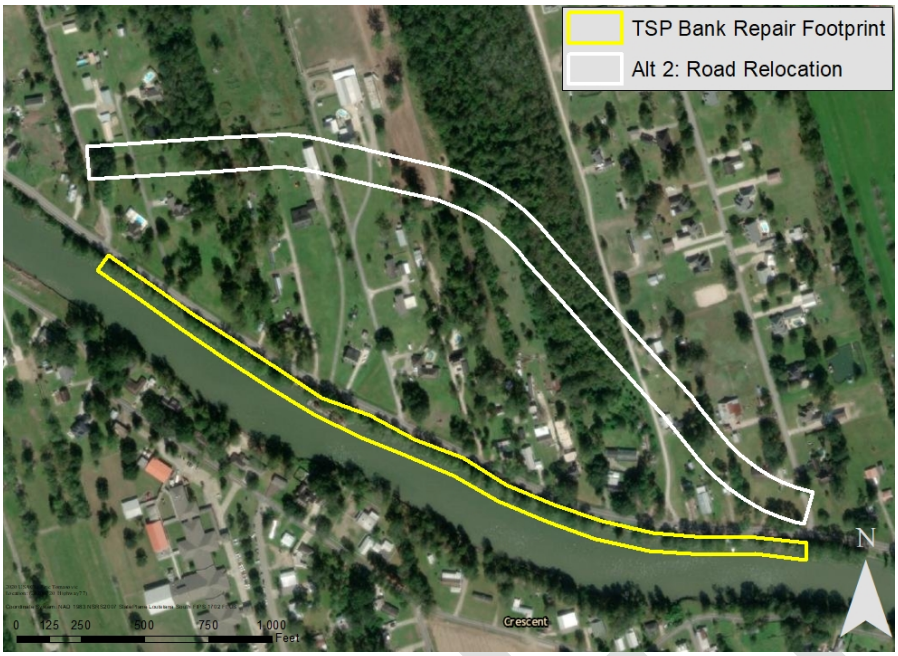

Figure 2: Alternative 2: Relocation of LA Highway 77 between Kirtley Road and Jase Street

2.2 Final Array of Alternatives

Alternatives remaining following the initial screening include the two design options of Alternative 1. The design options vary only in a 400 feet section that covers a natural gas pipeline; either the Typical Repair across the project with Design Option 1.1, or HTPRM for the 400 feet centered across the pipeline and the remainder using the typical repair, for Design Option 1.2. Both design options would have nearly identical environmental impacts.

The Final array of Alternatives include: Alternative 1: stabilization of the eroding streambank using one of two design options and Alternative 3: No Action.

Alternative 1 Design Option 1.1 remains an option, should the pipeline owner decide that they would relocate the pipeline. The repair would consist of 3,000 feet of the typical repair section indicated in Figure 3.

Alternative 1 Design Option 1.2 has been identified as the Tentatively Selected Plan (TSP). This alternative would require less coordination regarding the pipeline relocation, reduces risk of a spill since there would be no pipeline relocation, reduces environmental impacts from the equipment necessary to relocate the pipeline, and provides additional protection to the pipeline via the HPTRM. This option provides similar protection as design option 1.1 which includes relocating the pipeline. CEMVN has not yet received a response from the pipeline company on the pipeline's precise location and condition, or their willingness to relocate the pipeline.

Alternative 3: No Action. NEPA requires agencies to consider taking “no action”. The consideration and analysis of taking “no action” provides a benchmark to allow decision makers and the public to compare the environmental effects of the alternatives.

2.3 Alternative 1 Proposed Action

A segment of the Bayou Plaquemine streambank is experiencing erosion which, if it continues, it will undermine the base of LA Highway 77, and compromise the integrity of the highway. As a solution to this problem, Alternative 1 proposes stabilization of the streambank.

Because of uncertainties surrounding how a gas pipeline in the project area would be accommodated, two design options (Alternative Design Options 1.1 and 1.2) for addressing bank stabilization techniques were considered. The design options are described in detail below. The environmental impacts of Alternatives 1.1 and 1.2 are nearly identical and as such they will be evaluated in this EA together as Alternative 1, unless otherwise stated.

General Construction Plan

The typical repair section is proposed to reduce the existing bank slope and eliminate future streambank erosion at the water line. The design options under this alternative address uncertainties on how the bank stabilization would accommodate the natural gas pipeline. Design Options must be approved by the owner of the pipeline to ensure stability and safety of the pipeline. If the pipeline was to be relocated, the relocation would be the responsibility of the pipeline owner.

Typical Design Plan

The proposed streambank stabilization area is approximately 3,000 feet. In general, construction would include the placement of a minimal stone toe dike at the water's edge, the use of earthen material to backfill behind the stone toe dike, and the capping of the earthen fill with a minimal layer of stone scour protection. Geotextile separator fabric would be placed under the stone toe dike section and an additional layer of geotextile separator fabric would be placed between the earthen fill and the stone armor to prevent the stone from sinking. This typical repair type has been successfully used on other reaches in the vicinity of this project. The construction right of way necessary for the proposed repair is approximately 5.35 acres.

The existing bank line slope below the ordinary high-water stage is near vertical. Therefore, construction access for the repair would have to be from Bayou Plaquemine. It is envisioned that all stone and fill material would be barged to the site from the GIWW Alternate Route, via the Port Allen Lock canal. In order to avoid excavation for floatation, barges would be light loaded when delivering the repair materials and equipment. Staging areas would be located on barges along Bayou Plaquemine, within or adjacent to the construction footprint. Based on 2017 surveys, no excavation or flotation dredging would be required for the bank stabilization.

Clearing of the water's edge, if performed, would be minimal. Most existing trees are located on the upper bank along the road and above the proposed repair. If tree removal is required, trees would be cut, and the stumps left in place. Trees and debris would be hauled off-site and disposed of at an approved land fill site.

Detailed Design Plan

The detailed design proposes construction of a stone toe dike with a 5 foot crown width and 1:2 side slopes to an elevation of approximately +3.0 feet North American Vertical Datum of 1988 (NAVD88). This would be above normal low water elevations and should allow for backfilling with earthen material. The resultant bottom width of the stone toe dike would be approximately 27 feet. The placement of geotextile separator fabric would require 3 feet of extension beyond the stone toe dike resulting in a fabric width of approximately 33 feet. The inside face of the stone toe dike would be blanketed by geotextile fabric, and pinned to the stone toe dike crown. A 9 foot width of fabric should cover the entire face and provide adequate laps. The earthen backfill would require some sandy content (silty sand) to allow for sufficient compaction. The sand backfill would initiate at approximately 1 foot below the stone toe dike crown elevation and proceed landward on an approximate 1:4 slope. This would achieve an inshore elevation of approximately +8.5 feet to +10.0 feet NAVD88, such that the stone armor is in the general range of normal high-water elevation. The final layer of stone armor would be placed on the earthen fill 12 inches to 18 inches thick dependent upon required hydraulic gradation. The stone armor would also be underlain with geotextile fabric, eliminating shoreline erosion caused by stage differentials or localized wave wash. No docks would be reconstructed after the construction of this Project.

Equipment required for construction of either design option would include approximately; five 350 horsepower trucks operated for 720 total hours or 140 hours each, two 400 horsepower cranes operated for 920 total hours or 460 hours each, one 275 horsepower excavator operated for 520 hours, one 900 horsepower tugboat operated for 260 hours, and one 60 horsepower rotary cutter operated for 60 hours. Standard safety requirements for floating plants would be required from the Contractor.

Relocation of a gas pipeline may be required for Alternative Design Option 1.1, but not for Alternative Design Option 1.2. The pipeline runs perpendicular to the repair section and would either be relocated via horizontal directional drill or relocated to an alignment outside of the construction footprint. Information on the current depth or cover of the pipeline is unknown at this time. Additionally, overhead powerlines located along LA Highway 77 would not require relocation under this alternative.

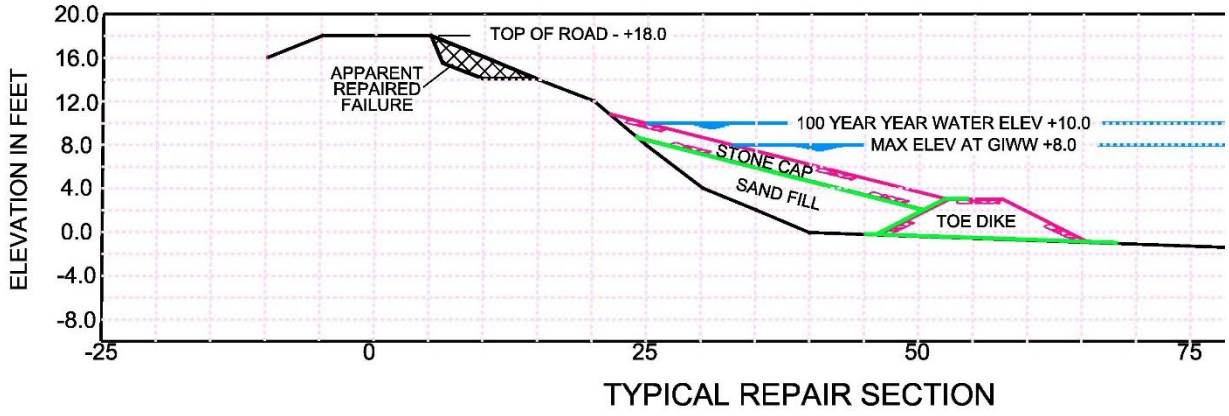

Figure 3: Typical Repair Section

Alternative Design Option 1.1: Relocate Pipeline

The relocation of the pipeline on its existing alignment or on a new alignment would occur. Relocation on its existing alignment would lower the pipeline to a depth which is safe for the proposed repair such that the repair would not impact the pipeline. Relocation of the pipeline on a new alignment would remove the active pipeline from the construction footprint. The 3,000 foot repair would utilize the stone toe dike and backfill as indicated in the Alternative 1: General Construction Plan (Figure 3). Based on surveys completed in 2017, approximately 29,500 tons of stone, 8,200 cubic yards of earthen fill, and 22,000 square yards of geotextile separator fabric would be placed using this design option. The relocation of pipeline would be the responsibility of the pipeline owner.

Alternative Design Option 1.2 (TSP): Alternate Design at the Pipeline Crossing

Under this Design Option, the pipeline would not be relocated. This alternate design would include a different type of bank protection such as HPTRM or articulated concrete block bank paving for 200 feet on both sides of the pipeline, for a total of 400 feet of HPTRM or articulated concrete block. The remainder of the repair would utilize the stone toe dike and backfill as indicated in the Typical Repair Section above (Figure 3). Based on surveys completed in 2017, approximately 22,815 tons of stone, 6,500 cubic yards of earthen fill, and 19,070 square yards of geotextile separator fabric, and 4,000 square yards of HPTRM would be placed.

2.4 Alternative 3: No Action

Under the no-action alternative, the proposed action would not be constructed. Erosion of the streambank would continue, and the integrity of LA Highway 77 would be undermined. The No Action Alternative would, over time, result in restricted access for the approximately 20 houses on dead-end streets within the location of the anticipated future road compromise, which consists of approximately 3,000 feet of LA Highway 77

(Figure 1). This segment of LA Highway 77 currently allows relatively high speeds for through-traffic vehicles including large vehicles (e.g., tractor trailers). As this portion of LA Highway 77 degrades and the roadbed becomes unsupported, through-traffic would be re-routed to LA Highway 3066 to reach the evacuation route at LA Highway 1. It is anticipated that local traffic would be allowed low speed access. The local traffic access could consist of the remaining structurally sound roadway and the road's shoulder.

3.0 AFFECTED ENVIRONMENT

3.1 Environmental Setting

The climate of the area is humid subtropical. Annual average temperature in the area is 68°F, with monthly normal temperatures varying from 82°F in July to 53°F in January. Average annual precipitation over the area is 63 inches, varying from a monthly average of 7.7 inches in July to an average of 4.2 inches in November. Summer tropical storms are common, and hurricanes infrequently occur. (U.S. Climate Data 2020)

Soils consist of a substratum of sand and gravelly sand overlain by a top stratum that consists of meander belts of silty sands, silts, and loam clays and back swamp deposits of clay and organic material between meander belts. Major forest types in the area include early successional bottomland hardwood (BLH) forest, late successional bottomland hardwood forest, and cypress-tupelo swamp. Common tree species in the area include sweetgum, sycamore, cottonwood, as well as several oak species. Agricultural lands are used to grow soybeans, corn, rice, and pasture grasses.

3.1.1 Bayou Plaquemine

Bayou Plaquemine is what remains of the Morgan City to Plaquemine Alternate Route of the Gulf Intracoastal Waterway (GIWW). The channel consists of a 9 foot by 100 foot limit in Bayou Plaquemine from Indian Village to the Mississippi River at Plaquemine, Louisiana. As a result of the Plaquemine lock closure in 1961, water in Bayou Plaquemine is currently supplied by rainfall and drainage from the neighborhood, by inflows from Bayou Grosse Tete and Choctaw Bayou, and by the Port Allen Lock, which also provides limited flows from the Mississippi River into the GIWW.

This is a complex hydraulic system and various data sets such as, existing gage data, permits, surveys, Atchafalaya River basin models, and effective floodplain maps were examined to determine if fluctuations in water surface elevations along Bayou Plaquemine caused the bank failure. Based on the Hydrologic and Hydraulic assessment (Appendix C), it was determined that stream flow fluctuations in Bayou Plaquemine are caused by rainfall and that these fluctuations are the cause of the channel erosion. The Bayou Sorrel lock gates (south of the problem area) are closed the majority of the time acting as a dam and are only opened after a tropical storm or hurricane to drain the interior area or to control the flood pool under certain conditions. It does not appear that Bayou Sorrel or Port Allen lock operations are impacting the bank line erosion along Bayou Plaquemine.

Surveys were collected in 2017 along the failure reach (16 cross sections) and it was determined from the survey that the proposed repair reach should be the entire 3,000 feet along Bayou Plaquemine, paralleling LA Highway 77. The project reach has a fairly narrow width of existing bank line between the road and the waterway, ranging from approximately 40 feet to less than 20 feet. The embankment slope varies slightly, and ranges from 1:1 to 1:2. The water's edge in most areas is characterized by a near vertical bluff (generally 5 foot to 10 foot face).

3.2 RELEVANT RESOURCES

This section contains a description of relevant resources that could be impacted by implementation of the TSP. The important resources described are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Appendix A provides summary information of the institutional, technical, and public importance of these resources.

3.2.1 Wetlands

The wetland area associated with the bayou consists of a narrow, near vertical fringe running parallel to Bayou Plaquemine. Wetland value in the proposed project limits is minimal because the wetland fringe is impacted by erosion and is maintained along some segments by local residents and parish maintenance crews using recycled pavement, sheet-piles, wood revetment, and yard debris.

3.2.2 Aquatic Resources / Fisheries

Fishery resources are believed to fluctuate in response to the variations in Bayou Plaquemine water quality. Predominant freshwater fish expected to inhabit the project area during periods of suitable water quality include largemouth bass, white crappie, black crappie, bluegill, warmouth, yellow bass, channel catfish, blue catfish, flathead catfish, yellow bullhead, carp, gars, bowfin, freshwater drum, buffalo, and gizzard shad. Gar, carp, yellow bullhead, and bowfin are more prevalent in Bayou Plaquemine during the spring and summer months because of their tolerance to low dissolved oxygen (DO) levels. There is no Essential Fish Habitat or unique environment for fisheries in this segment of Bayou Plaquemine per coordination with Louisiana Department of Natural Resources and the National Marine Fisheries Service.

3.2.3 Wildlife

Wildlife habitat along most of the bayou is limited to a narrow, semi-contiguous riparian zone that is dominated by live and water oak, hackberry, bald cypress and sweetgum, elderberry, roughleaf dogwood, honeysuckle, trumpet creeper, greenbrier, and various grasses and sedges.

Resident and migratory waterfowl likely utilize the less developed reaches of the bayou and associated riparian zone for wintering, feeding, and/or brood rearing habitat. Other water birds, including anhinga, double-crested cormorant, great blue heron, great egret, snowy egret, and green heron may use this area for feeding and roosting.

Various raptors and songbirds also inhabit the area. The near vertical streambank is not suitable for wading birds. The narrow corridor between Bayou Plaquemine and LA Highway 77 provides little habitat for mammals, and the unstable soils of the bank is not conducive to burrows.

3.2.4 Bottomland Hardwood Forest

Mid to mature successional stage bottomland hardwood (BLH) would be the most accurate description of the current state of vegetation within the proposed project limits. Erosion and land-use alteration are two major factors contributing to the existing disturbed condition of the BLH within the proposed project limits. According to the wetland value assessment (WVA), the impacted BLH area is approximately 2.4 acres (1.5 AAHU). The canopy is dominated by live and water oak, hackberry, bald cypress, and sweetgum. Water oak makes up more than 50% of the tree canopy. Mature trees assumed to be greater than 50 years old were identified in the project area. The BLH in the project area is part of a riparian corridor between 5 to 20 acres. There is a moderate to dense understory and ground cover including, but not limited to, hardwood saplings, bermuda grass, barnyard grass, goldenrod, greater ragweed, elderberry, pepper vine, wild grape, and poison ivy.

3.2.5 Threatened and Endangered Species and Other Protected Species

Bald eagles migrate through the area and winter in wetland habitats in the area and are protected under the Bald and Golden Eagle Protection Act (BGEPA). Pallid sturgeons (E) are expected to occur in riverine habitats from the Old River Control Structure to the Gulf of Mexico Currently, the American alligator (T) is listed as Threatened under the Similarity of Appearance to a Threatened Taxon clause to the Endangered Species Act of 1973 (as amended). Based on a parish search conducted on the US Fish and Wildlife Service (USFWS) endangered species website (http://www.fws.gov/endangered) on August 17, 2020, there are five Threatened and Endangered (T&E) species listed in Iberville Parish (Table 1). There is no defined critical habitat for T&E species, or other protected species, within this segment of Bayou Plaquemine or in the surrounding area, although monitoring would occur before and during construction to protect species of concern.

Table 1: Listed species found in Iberville Parish, LA

Species	Desired Habitat Type
** Whooping crane (Grus Americana)	Shallow wetlands and prairies
Gulf sturgeon (Acipenser oxyrinchus desotoi)	Open water
Pallid sturgeon (Scaphirhynchus albus)	Open water
Louisiana Black Bear (Ursus americanus	Woodlands
Sprague's pipit (Anthus spragueii)	Short-grass prairies

**This is a non-essential population which is considered "threatened". However, the ESA's Section 7 consultation regulations do not apply.

These species are not likely to be present within the affected area of the project due to the following reasons. Whooping crane are unlikely to be present on the site due to the steep streambank and lack of wading depth in Bayou Plaquemine near the affected

area. Neither sturgeons are likely to utilize Bayou Plaquemine due to the low dissolved oxygen and turbid water. Sturgeons require good water quality to spawn. There is limited forage for Louisiana Black Bear within the affected area, but they may be drawn by improperly disposed food packaging from construction workers or local residents. Sprague's pipits require open grasslands or large areas of open ground, which are not present within the affected area. Candidate species, Monarch Butterfly (*Danaus plexippus*) are the only species to be indicated within the study area and are not likely to be affected. Therefore, the project is not likely to adversely affect Threatened and Endangered species, or other protected species.

Historically, there have been bald eagle sightings in the bayou complex surrounding the LA Highway 77 project area. The bald eagle was officially removed from the List of Endangered and Threatened Species on August 8, 2007. However, the bald eagle is protected under the Bald and Golden Eagle Protection Act (BGEPA), and the Migratory Bird Treaty Act ((MBTA) 40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). In southeastern Louisiana parishes, eagles typically nest in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water from the months of October through mid-May. The site would be surveyed prior to construction to confirm that there is no active nesting in the area. If during pre-construction surveys or observation during construction, Bald Eagles are inhabiting the area, USACE will coordinate with USFWS under the guidelines found in Appendix B.

3.2.6 Socioeconomics

United States Census Bureau data with Moody's Analytics Forecast data were used to evaluate the current social and economic conditions in Iberville Parish. The most recent data are estimates of the population as of December 2019. The estimated median household income for Iberville Parish is $61,950, while the per capita income is $50,980. There are an estimated 8,850 total households in Plaquemines Parish. The estimated total population is 23,990. The estimated total labor force is 10,470 with an unemployment rate of 6.56%.

3.2.6.1 Transportation

LA Highway 77 runs parallel to Bayou Plaquemine. LA Highway 77 is an important thruway as it is used by approximately 1,610 vehicles daily, as of 2018 and serves as a collector road to access the evacuation route LA Highway 1. There is a parallel road south of Bayou Plaquemine, LA Highway 3066, which might be used as an alternate route.

3.2.7 Recreational Resources

Freshwater fishing from boat and from the bank occur along Bayou Plaquemine. Additionally, non-consumptive recreational resources along the bayou include boating and swimming while the bank habitat provides opportunities for wildlife viewing and photography. There is an Iberville Parish public boat launch approximately 2.5 miles northeast of the project area on Bayou Plaquemine.

3.2.8 Aesthetics

Visual resources related to this project area are not significant. The project location viewshed is not significant; there are no visually significant amenities either institutional, technical, or public.

3.2.9 Air Quality

The U.S. Environmental Protection Agency (USEPA), under the requirements of the Clean Air Act (CAA), has established NAAQS for six contaminants, referred to as "criteria" pollutants (40 CFR 50). These are 1) carbon monoxide (CO), 2) nitrogen dioxide (NO2), 3) ozone (03), 4a) particulate matter less than 10 microns in diameter (PM10), 4b) particulate matter less than 2.5 microns in diameter (PM2.5), 5) lead (Pb), and 6) sulfur dioxide (SO2). The NAAQS standards include primary and secondary standards. The primary standards were established at levels sufficient to protect public health with an adequate margin of safety. The secondary standards were established to protect the public welfare from the adverse effects associated with pollutants in the ambient air. Iberville Parish is in attainment for all 6 contaminates.

3.2.10 Water Quality

Surface waters near the site consist of bayous, ponds, wetlands, and canals. Many of the inputs are sources of pollution that degrade water quality. These sources include urban, commercial, industrial, and agricultural inputs. General criteria are expressed in a narrative form, and include aesthetics, color, suspended solids, taste and odor, toxic substances (in general), oil and grease, foam, nutrients, turbidity, flow, radioactive materials, and biological and aquatic community integrity. Numeric criteria are generally expressed as concentrations or scientific units, and include pH, chloride, sulfate, total dissolved solids, dissolved oxygen, temperature, bacteria, and specific toxic substances.

Bayou Plaquemine is located within the Bayou Plaquemine waterbody subsegment, which has the designated use of primary contact recreation (PCR; swimming), secondary contact recreation (SCR; boating), and fish and wildlife propagation (FWP; fishing). The subsegment was fully supporting all three of its designated uses in the 2010, 2012, 2014, 2016, and 2018 assessments (Louisiana Department of Environmental Quality (LDEQ) 2020).

Since the Plaquemine Lock was closed, Bayou Plaquemine has exhibited stagnation due to the lack of riverine inflow and associated flushing. Water quality monitoring studies indicate that high water temperatures and low dissolved oxygen (DO) levels occur in various sections of the bayou during the late spring and summer months.

Ambient water quality monitoring data was collected by LDEQ for Bayou Plaquemines (site 972 in Figure 4) in the years 2000, 2004, 2007, 2008, 2011, 2012, 2015, 2016, 2019, and 2020. Monitoring data suggests infrequent (3 of 54 samples) exceedances of fecal coliform criteria, and that water quality standards for fecal coliform are being attained (no more than one in four samples can exceed 400 COL/100 mL

between the months of May and October, and 2,000 COL/100 mL between November and April). Total nitrogen consistently exceeds EPA criteria (0.57 mg/L), often by at least two times the criteria threshold (1.14 mg/L and higher concentrations). No other criteria exceedances have been observed for parameters included in field measurement and laboratory analysis. The full report can be found in Appendix D.

Figure 4: Water Quality monitoring sites near the requested repair. Repair location marked "Washout"

3.2.11 Cultural Resources

A background and literature review that included a review of the Louisiana Cultural Resources Map (on-line) indicates that there have been no previous cultural resources surveys and no known previously recorded cultural resources located in the immediate vicinity of the project area. There are six (6) mid-19th through mid-20th century historic scatters located within a one mile-wide search radius of the project area (16IV37,16IV41, 16IV164, 16IV175, 16IV184, and 16IV186). Five (5) of these sites are not eligible for the National Register of Historic Places (NRHP); the NRHP eligibility of 16IV41 is currently listed as Unknown. There seven (7) previously recorded cultural resources surveys located within the search radius (22-2266, 22-3453, 22-3559, 22-4006, 22-4041, 22-6231, and 22-6411). There are no standing structures recorded within the one-mile search radius.

Much of the riverbank in the Area of Potential Effect (APE) has eroded into the existing LA Highway 77 right-of-way (Figure 1). Examination of the remaining project ROW revealed previous disturbance from road construction, maintenance, and erosion-prevention measures that have been used to try and slow loss of the road. Due to the high degree of erosion and heavy disturbance, CEMVN has determined that there is no potential for the existence of intact cultural deposits, and thus, no potential effect to historic properties.

Additionally, there are no tribal lands, nor are there specific tribal treaty rights related to access or traditional use of the natural resources in Jefferson Parish. There are many protected tribal resources within the parish, but there is no evidence of them being in the study area. CEMVN offered the following federally-recognized Indian Tribes the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands: the Alabama-Coushatta Tribe of Texas, Chitimacha Tribe of Louisiana, Coushatta Tribe of Louisiana, Choctaw Nation of Oklahoma, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee Creek Nation of Oklahoma, Seminole Nation of Oklahoma, and the Tunica-Biloxi Tribe of Louisiana.

3.2.12 Hazardous, Toxic and Radioactive Waste

The CEMVN is obligated under Engineer Regulation 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous Toxic and Radioactive Waste (HTRW) contamination within the vicinity of the proposed action. The survey discovered a barge, metal support pieces, and 55-gallon drums which are considered potential Recognized Environmental Conditions (RECs) given their age and degraded condition and should be addressed further and removed prior to construction. A HTRW Land Use History and a Phase I HTRW Initial Site Assessment (ISA) has been completed for the proposed action and is located in Appendix D.

3.2.13 Hydraulics and Hydrology

Based on the Hydrologic and Hydraulic assessment (Appendix C), it was determined that stream flow fluctuations in Bayou Plaquemine are caused by rainfall and that these fluctuations are the cause of the channel erosion. It does not appear that Bayou Sorrel or Port Allen lock operations or previous repairs on Bayou Plaquemine are impacting the bank line erosion along Bayou Plaquemine. There are no impacts associated with Hydraulics and Hydrology for the streambank protection proposed as it would not change these conditions under any of the alternatives.

4.0 ENVIRONMENTAL CONSEQUENCES

Table 2 presents a summary of relevant resources in the proposed project area that would or would not be affected by the project in either a positive or negative fashion. Resources listed in Table 2 that are not impacted by the proposed action are not assessed further in this EA. The impacts for Alternative Design Option 1.1 and 1.2 are environmentally equivalent, therefore the impacts of implementing Alternative Design

Option 1.2 will only be discussed for Cultural Resources and for those resources where the impacts vary.

Table 2: Relevant Resources and their impact status, both adverse and beneficial

Important Resource	Impacted	Not Impacted
Wetlands		X
Aquatic Resources/Fisheries		X
Wildlife	X	
Bottomland Hardwoods	X	
Threatened, Endangered and Protected Species		X
Socioeconomics		X
Transportation	X	
Noise		X
Recreational Resources	X	
Aesthetics		X
Air Quality	X	
Water Quality	X	
Cultural Resources		X
Hazardous, Toxic and Radioactive Waste	X	
Hydraulics and Hydrology		X

4.1 Wildlife

Alternative 3: No Action Alternative – Direct, Indirect and Cumulative Impacts

With the No Action Alternative, the streambank would continue to erode, decreasing habitat over time. The streambank would still be usable by wildlife until the erosion reduces their habitat to unsuitable levels.

Alternative Design Option 1.2: TSP – Direct, Indirect and Cumulative Impacts

The TSP would preserve the remaining land between the streambank and the road. The remaining land would allow continued, but reduced, use by wildlife. Natural re-colonization of the area by plants and animals would be possible with the stabilization of the streambank.

4.2 Bottomland Hardwood Forest

Alternative 3: No Action Alternative – Direct, Indirect and Cumulative Impacts

Over the 50 year period of analysis (2022 to 2072) it is projected that the streambank would continue to erode toward the roadway. This ‘slumping’ of the streambank would disturb existing mature BLH and other foliage, but allow the growth of new vegetation/habitat on the newly exposed soils. The existing streambank would no longer provide lateral support for LA Hwy 77.

According to the WVA (Appendix E) approximately 1.50 Average Annual Habitat Units (AAHU) exist within the project area. The AAHU's value is derived more from the scarcity of the resource, as compared to the extensive expanses of agricultural and suburban land in the area.

Alternative Design Option 1.2: TSP – Direct, Indirect and Cumulative Impacts

The bottomland hardwoods between the road and the streambank would not be disturbed where it is appropriate and safe. The root systems would not be grubbed to preserve remaining bank structure. The streambank repair would not be replanted.

According to the WVA, approximately 1.48 AAHU would be impacted by implementation of the TSP leaving a remaining habitat value of 0.01 AAHU post project implementation. The value is derived from the reduced canopy and overhang at the streambank. Based on the WVA, compensatory mitigation is required for approximately 1.48 AAHU.

4.3 Socioeconomics

Alternative 3: No Action Alternative – Direct, Indirect and Cumulative Impacts

Under the No Action alternative, no change in socioeconomic parameters, other than Transportation which is discussed in section 4.3.1, would be anticipated.

Alternative Design Option 1.2: TSP – Direct, Indirect and Cumulative Impacts

Construction of the TSP is expected to have little effect on aesthetic values. No displacement of people or farms would occur, and no change in community cohesion is anticipated. No adverse impacts to community and regional growth, property values and tax revenues, or employment and labor force are expected to result from this action. No impacts to business and industrial development are anticipated. Noise levels would increase temporarily during construction. No long-term adverse effects would occur. Public facilities and services (i.e., road and traffic) would see a minor long-term benefit from protection from the Bayou. No impacts to life, health, and safety are expected to result from this action.

4.3.1 Transportation

Alternative 3: No Action Alternative – Direct, Indirect and Cumulative Impacts

Under the no-action alternative, the streambank reinforcement would not be constructed. Erosion of the streambank would continue, and the integrity of LA Highway 77 would be undermined. The No Action Alternative would, over time, result in restricted access for the approximately 20 houses on dead-end streets within the location of the anticipated future road compromise, which consists of approximately 3,000 feet of LA Highway 77 (Figure 1). This segment of LA Highway 77 currently allows relatively high speeds for through-traffic vehicles including large vehicles (e.g., tractor trailers). As this portion of LA Highway 77 degrades and the roadbed becomes unsupported, through-traffic would be re-routed to LA Highway 3066 to reach the evacuation route at LA Highway 1. It is anticipated that local traffic would be allowed low speed access based

on the roadbed conditions. The local traffic access could consist of the remaining structurally sound roadway and the road's shoulder.

LA Highway 77 is an important thruway as it is used by approximately 1,610 vehicles daily, as of 2018 and serves as a collector road to access the evacuation route LA Highway 1. Transportation would be impacted once the roadbed deteriorates, and LA Highway 77 becomes impassible or restricted to local traffic. The No Action Alternative could endanger life, health, and safety during an evacuation as LA Highway 77 is a collector road for the evacuation route at LA Highway 1.

Alternative Design Option 1.1: Relocate Pipeline - Direct, Indirect and Cumulative Impacts

During the relocation of the pipeline road access and traffic would be under the auspices of the pipeline owner and LaDOTD, and may or may not have detours or obstructions to traffic. During the streambank repair, LA Highway 77 would have all lanes of traffic remain open during construction, as the work would be done from barges and watercraft on Bayou Plaquemine. After construction the road would continue to be used as it is currently.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

LA Highway 77 would have all lanes of traffic remain open during construction, as the work would be done from barges and watercraft on Bayou Plaquemine. After construction the road would continue to be used as it is currently.

4.4 Recreational Resources

Alternative 3: No Action Alternative — Direct, Indirect and Cumulative Impacts

Without implementation of the 3,000 foot bank repair, the recreational value of Bayou Plaquemine would persist at present use levels.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

With implementation of the 3,000-foot streambank stabilization, recreational use along the streambank of Bayou Plaquemine and adjacent to LA Highway 77 may decrease. Access to the streambank by the general public for fishing and wildlife viewing may be limited after implementation. Additionally, homeowners in the project area will have their recreational piers removed during construction. These piers will not be returned after construction is completed. There would be further short-term and temporary loss of recreational use in the project area during construction. Fishing quality may decrease due to barge traffic and equipment noise associated with construction activity. Fishing quality along the bank would likely return to the existing condition after the project area has recovered.

4.5 Air Quality

Alternative 3: No-Action Alternative — Direct, Indirect and Cumulative Impacts

With implementation of this alternative, no impacts to air quality would occur.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

With the implementation of the proposed action there would be mildly adverse, short-term direct and indirect effects to air quality. Additional effects may also arise from an increase in boat traffic required to deliver equipment, materials, and construction workers to the project area. However, due to the short duration of the proposed work and residential (non-industrial) location, any adverse effects to ambient air quality are expected to be short-term and minor and are not expected to cause or contribute to a violation of, or impacts to, Federal or state ambient air quality standards. Once all construction activities associated with the proposed work cease, air quality within the vicinity is expected to return to pre-construction conditions. Thus, the ambient air quality in Iberville Parish would not change from current conditions, and the NAAQS attainment status of for the parish would not be altered.

4.6 Water Quality

Alternative 3: No-Action Alternative — Direct, Indirect and Cumulative Impacts

The No Action Alternative would allow for the continued erosion of the existing streambank. Continued streambank erosion would introduce streambank and roadbed materials into Bayou Plaquemine during erosion events, which would cause temporary increases in suspended particulates, turbidity, and may also include the introduction of constituents associated with the roadbed such as weathered asphalt, gravel, and residual automotive oil and grease into the Bayou. The majority of water quality impacts from continued erosion are expected to be transient, and would be dispersed and diluted downstream following erosion events.

Alternative Design Option 1.1: Relocation of pipeline - Direct, Indirect and Cumulative Impacts

Oil pipeline relocation under alternative 1.1 is expected to contribute to temporary impacts to suspended particulate and turbidity levels. Although highly unlikely, it would be possible for a natural gas pipeline leak to impact Bayou Plaquemine during relocation. If this was to occur, containment and cleanup of spilled material would be required, and residual contamination of sediments and surface waters may be present over a longer time period until further cleanup and/or natural biodegradation fully remediate the area.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

Construction activities from this alternative may cause temporary water quality disturbances as described in the 404(b)(1) evaluation for this study. The placement of fill materials for streambank repair may have minor, temporary impacts to channel

suspended particulate and turbidity levels. During construction, the placement of materials is expected to generate turbidity plumes and introduce suspended particulates, as well as trace minerals from sand and limestone stone dust, creating minor, short-lived water column impacts. Depending on hydrologic conditions during construction, including whether any major rainfall events occur, the water quality impacts during construction may range from negligible to noticeable but transient. As construction materials settle and consolidate, and loose sediments and particulates are carried downstream, the direct water quality effects of project features are expected to gradually diminish. The long-term water quality impacts of Alternative 1.2 would be less than the No Action Alternative as they would prevent future streambank erosion and the resulting siltation.

4.7 Cultural Resources

Alternative 3: No Action Alternative — Direct, Indirect and Cumulative Impacts

Without implementation of the 3,000 foot bank repair, erosion of the Bayou Plaquemine bank line would continue and any previously recorded or yet unidentified cultural resources would continue to be impacted and lost to the high degree of erosion.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

Due to the high degree of erosion and heavy disturbance, it is unlikely that intact cultural deposits exist in the area of the TSP, and with implementation of the 3,000 foot bank repair there would be no direct or indirect impacts to cultural resources. CEMVN has determined that there would be no effect on cultural resources due to this project. Letters with a determination of No Potential to Affect Historic Properties for this undertaking and to request concurrence were sent to the SHPO and Federally-recognized Tribes on November 23, 2020. The SHPO concurred with the findings and effects determination on December 11, 2020. A copy of the concurrence letter is in Appendix D.

4.8 Hazardous, Toxic, and Radioactive Waste

Personnel from CEMVN-PDC-C performed a field inspection on November 17, 2020 in the proposed work areas within the Bayou Plaquemine area. Field inspection was done through permitted right-of-entry (ROE) and public access.

A dilapidated barge was located within the project area on the right descending bank of Bayou Plaquemine. The latitude and longitude of the barge is: 30.250170, -91.292008. On the barge was a crane, an industrial pump, a 55-gallon steel drum, and other small containers. In addition to the barge, large metal platforms and support pieces for the barge were located between Bayou Jacob Road and Bayou Plaquemine. A 55-gallon propylene drum was discovered near the barge as well. The contents of either drum are unknown. The discovery of the barge, the metal support pieces, and the 55-gallon drums are considered potential RECs given their age and degraded condition and should be addressed further and removed prior to construction.

A sunken structure was discovered within Bayou Plaquemine near the right descending bank. The structure can be seen from the northern bank of Bayou Plaquemine facing southeast near coordinates: 30.248445, -91.285058.

The discovery of the barge, the metal support pieces, and the 55-gallon drums are considered potential Recognized Environmental Conditions (RECs) given their age and degraded condition and should be addressed further and removed prior to construction. If the proposed project site area changes significantly, the HTRW would need to be re-investigated under a new Phase I ESA. Aside from the RECs discovered, none of the other indicators were found during the site visit.

Alternative 3: No Action Alternative — Direct, Indirect and Cumulative Impacts

Without implementation of the 3,000-foot bank repair, erosion of the Bayou Plaquemine bank line would continue and the existing REC's, unless properly disposed, would be exposed and released to the environment.

Alternative Design Option 1.2: TSP — Direct, Indirect and Cumulative Impacts

The barge, the metal support pieces, and the 55 gallon drums are considered potential RECs given their age and degraded condition and should be addressed further and removed prior to construction.

5.0 MITIGATION

Direct impacts to 2.4 acres of BLH have been identified that would require compensatory mitigation for Alternative Design Option 1.2 (TSP). There would be permanent impacts to 1.5 AAHU of BLH as per the Wetland Value Assessment (Appendix D.) There are currently [December 2020] 99.7 available BLH mitigation bank credits in the Terrebonne Basin. Since permitted banks exist as reasonably foreseeable projects, no new direct, indirect, or cumulative impacts to any of the relevant resources would be incurred from the purchase of these credits.

6.0 COORDINATION AND PUBLIC INVOLVEMENT

A Public Notice for EA#587 announcing the 30-day public comment period would be published on the CEMVN website and in social media.

Preparation of this EA and FONSI was coordinated with appropriate Congressional, Federal, State, and local interests, as well as environmental groups and other interested parties. The following agencies, as well as other interested parties, will receive copies of this draft EA:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service, State Conservationist
Governor's Executive Assistant for Coastal Activities

Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality, PER-REGC
Louisiana Department of Environmental Quality, EP-SIP
Louisiana State Historic Preservation Officer

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

There are many Federal and state laws pertaining to the enhancement, management, and protection of the environment. Federal projects must comply with environmental laws, regulations, policies, rules, and guidance. Compliance with laws would be accomplished upon the conclusion of a 30-day public and agency review of this EA #587 and associated Finding of No Significant Impact (FONSI).

Clean Air Act of 1972

The Clean Air Act (CAA) sets goals and standards for the quality and purity of air. It requires the Environmental Protection Agency to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Project Area is in Iberville Parish, which is currently in attainment of NAAQS. The Louisiana Department of Environmental Quality is not required by the CAA and Louisiana Administrative Code, Title 33 to grant a general conformity determination.

Clean Water Act of 1972 — Section 401 and Section 404

The Clean Water Act (CWA) sets and maintains goals and standards for water quality and purity. Section 401 requires a Water Quality Certification (WQC) from the Louisiana Department of Environmental Quality (LDEQ) that a proposed project does not violate established effluent limitations and water quality standards. Clean Water Act of 1972 Water Quality Certification application will be found in Appendix D. The 401 WQC would be started for Public Review under the current LDEQ procedures concurrently with a draft of this document, EA#587.

As required by Section 404(b)(1) of the Clean Water Act (CWA), an evaluation to assess the short- and long-term impacts associated with the discharge of dredged and fill materials into waters of the United States resulting from this Project has been completed. The 404(b)(1) can be found in Appendix E. The request for 404(b)(1) Water Quality Certification is currently in coordination. The 404(b)(1) would be sent for Public Review concurrently with a draft of this document, EA#587.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) requires that "each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section

307, Louisiana Department of Natural Resources (LADNR) indicated that this project is outside of the coastal zone in a letter dated July 24, 2020. (Appendix D)

Endangered Species Act of 1973

The Endangered Species Act (ESA) is designed to protect and recover threatened and endangered (T&E) species of fish, wildlife, and plants. Based on a parish search conducted on the USFWS endangered species website (http://www.fws.gov/endangered) on August 17, 2020, there are five T&E species listed in Iberville Parish. Based on a site-specific search conducted on the USFWS website (https://ecos.fws.gov/ipac/location) on August 17, 2020, there are no T&E species or critical habitat within, or in the immediate vicinity of, the proposed project area and therefore the CEMVN has made a "no effect" determination under the Endangered Species Act (ESA). Due to the expiration of the species list, a new list was generated on November 17, 2021, resulting in Candidate species Monarch Butterfly (*Danaus plexippus*) being included in the study area. The Monarch Butterfly is not likely to be adversely affected by this project, although the repaired streambank is likely to support butterfly forage, having a potential positive affect on the population. No consultation under the ESA would be required for the proposed action.

Fish and Wildlife Coordination Act of 1934

The Fish and Wildlife Coordination Act (FWCA) provides authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It requires Federal agencies that construct, license or permit water resource development projects to first consult with the USFWS, NMFS and state resource agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. Section 2(b) requires the USFWS to produce a Coordination Act Report (FWCAR) that details existing fish and wildlife resources in a project area, potential impacts due to a proposed project and recommendations for a project. On October 21, 2020 a WVA was conducted, and the project was assessed 1.48 AAHU of mitigation (Appendix D). Coordination with the USFWS is ongoing, the FONSI would not be signed until the coordination is complete.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possessing, transporting, and importing of migratory birds, their eggs, parts, and nests. The project area is located in an area where colonial nesting waterbirds may be present, although no nesting is currently apparent so MVN finds that implementation of the proposed actions would have no effect on colonial nesting waterbirds. Colonial nesting waterbirds are generally considered all species of herons, egrets, night herons, ibis, roseate spoonbill, anhinga, and cormorants. To minimize disturbance to colonies containing nesting waterbirds (if

present) all activity occurring within 1,000 feet of a rookery would be restricted to the non-nesting period.

Bald and Golden Eagle Protection Act

The bald eagle was removed from the List of Endangered and Threatened Species in August 2007 but continues to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act of 1918, as amended (MBTA). During nesting season, construction must take place outside of USFWS/LDWF buffer zones. A Corps Biologist and USFWS Biologist would survey for nesting eagles prior to the start of construction. To minimize disturbance to nesting eagles (if present), the guidelines found in Appendix B would be followed during construction.

National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act of 1966, as amended, requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The procedures in 36 CFR Part 800 define how Federal agencies meet these statutory responsibilities. The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, including the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) and any Tribe that attaches religious or cultural significance to historic properties that may be affected by an undertaking. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

CEMVN Cultural Resources expect no effect on cultural resources due to this project. Letters with a determination of No Potential to Affect Historic Properties for this undertaking and to request concurrence were sent to the SHPO and Federally-recognized Tribes on November 23, 2020. The SHPO concurred with the findings and effects determination on December 11, 2020.

Tribal Consultation

NEPA, Section 106 of the National Historic Preservation Act, EO 13175 (Consultation and Coordination with Indian Tribal Governments), the American Indian Religious Freedom Act, and related statutes and policies have a consultation component. In accordance with CEMVN's responsibilities under NEPA, Section 106, and EO 13175, CEMVN offered the following federally-recognized Indian Tribes the opportunity to review and comment on the potential of the proposed action to significantly affect protected tribal resources, tribal rights, or Indian lands: the Alabama-Coushatta Tribe of Texas, Chitimacha Tribe of Louisiana, Coushatta Tribe of Louisiana, Choctaw Nation of Oklahoma, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee Creek Nation of Oklahoma, Seminole Nation of Oklahoma, and the Tunica-Biloxi Tribe of Louisiana. No comments were received from

consulting Tribes within the regulatory consultation timeframe as specified per 36 CFR 800.4(d)(1)(i) and 36 CFR 800.5 (c) 1.

Hazardous, Toxic, and Radioactive Waste

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

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

An ASTM E 1527-05 Phase I Hazardous, Toxic, or Radioactive Waste Environmental Site Assessment (ESA), entitled "Bayou Plaquemine - CAP Section 14 Emergency Protection of LA Highway 77, Iberville Parish, Louisiana" (HTRW-20-09) was completed on November 30, 2020. A copy of the Phase I ESA is maintained on file at MVN. RECs were identified on the site and are listed in section 4.8 of this EA #587, and a copy of the report is in Appendix D.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Alternative 1 (Streambank stabilization) is the TSP. The TSP consists of restoring a severely eroded segment of streambank along Bayou Plaquemine to prevent the undermining of LA Highway 77. This office has assessed the environmental impacts of implementing the TSP and has determined that it would have no impact upon Bayou Plaquemine, Wetlands, Aquatic Resources/Fisheries, Threatened Endangered and Protected Species, Noise, Aesthetics, Air Quality, Cultural Resources, and Hydraulics and Hydrology. Approximately 1.48 AAHU of BLH would be required as compensatory mitigation. This would be accomplished through restoration or through the purchase of mitigation bank credits for the same habitat as impacted and within the same watershed as the impacts. Preconstruction surveys would be performed to confirm the absence of Threatened Endangered and Protected species, Bald and Golden eagles, and migratory birds.

9.0 LIST OF PREPARERS

The draft EA #587 and the associated draft FONSI were prepared by Mr. Eric Tomasovic -Biologist, with relevant resource sections prepared by; Mr. Joseph Musso - HTRW; Ms. Ashley Federoff - Cultural Resources Sections and coordination; and Mr. Kyle Burleigh - Project Manager.

10.0 REFERENCES

LDEQ. 2020. Water Quality Integrated Report 305(b)/303(d). https://www.deq.louisiana.gov/page/water-quality-integrated-report-305b303d

U.S. Climate Data. 2020. “Climate New Orleans – Louisiana” https://www.usclimatedata.com/climate/new-orleans/louisiana/united-states/usla0338 Data collected November 2020.

U.S. Department of Agriculture (USDA). 2021. CropScape. https://nassgeodata.gmu.edu/CropScape/