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

REPLY TO
ATTENTION OF:

Regional Planning and
Environment Division South
Environmental Compliance Branch

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

MISSISSIPPI RIVER AND TRIBUTARIES, ST. ALICE AND LULING STONE HARDPOINTS MISSISSIPPI RIVER MILES 169.5 AND 113.2 ASCENSION AND JEFFERSON PARISHES, LOUISIANA

ENVIRONMENTAL ASSESSMENT #531

Description of the Proposed Action

The US Army Corps of Engineers, New Orleans District, proposes to construct a series of stone hardpoints and an associated lateral stone dike and stone blanket at two locations along the right-descending bank of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling) in Ascension and Jefferson Parishes, Louisiana. The proposed St. Alice stone hardpoint construction will consist of twenty-one stone hardpoints and an associated lateral stone dike extending a total of 3,200-linear feet along the river bank. The stone hardpoints would be constructed perpendicular to the existing bank line, and would vary in length from 210 to 220 feet. Each stone hardpoint would have a crown width of 10 feet, and side slopes of 1 foot vertical on 1.50 feet horizontal. The associated lateral stone dike would also have a 10 foot crown width and side slopes of 1 foot vertical on 1.50 feet horizontal. Construction of the lateral dike would serve to bridge the gaps between each stone hardpoint and would be seated at the low water reference plane. Approximately 80,000 tons of stone will be placed on the bank and river bottom starting from the top of the bank and extending channelward to construct the project.

The proposed Luling stone hardpoint construction will consist of eleven stone hardpoints and a 3-foot thick stone blanket extending a total of 1,830-linear feet along the river bank. The stone hardpoints would be constructed perpendicular to the existing bank line, and would vary in length from 210 to 220 feet. Each stone hardpoint would consist of a crown width of 10 feet, and side slopes of 1 foot vertical on 2.50 feet horizontal. The 3 foot thick stone blanket would be placed along the river's edge and extend the entire length of the project area. Construction of the stone blanket would provide additional stabilization of the eroded bank line and would be seated at the low

water reference plane. Approximately 86,000 tons of stone will be placed on the bank and river bottom starting from the top of the bank and extending channelward to construct the project. Construction of all thirty-two stone hardpoints and the associated lateral stone dike and stone blanket would impact a combined total of approximately 4.6 acres of existing bank and river bottom.

Factors Considered in Determination

This office has assessed the impacts of the Federal action on important resources including: wetlands; aquatic resources/fisheries; wildlife; threatened and endangered species; cultural resources; air quality; and water quality. The no action alternative was also assessed. The New Orleans District concluded that construction of a series of stone hardpoints and an associated lateral stone dike and stone blanket at two locations along the right-descending bank of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling) would not result in any significant adverse impacts to the previously listed resources. While vegetation will be cleared along the sections of river proposed for stone hardpoint construction, stabilization of the bank is essential to insure that bank failure and land loss do not occur within these areas. Bank failure could result in permanent loss of habitat and flooding of residential areas in Jefferson and Ascension Parishes. The hardpoints are designed to prevent bank erosion and promote sedimentation. Additionally, the risk of encountering hazardous, toxic and radioactive waste is considered low.

Environmental compliance for the Federal action would be achieved upon: coordination of the draft Environmental Assessment and draft Finding of No Significant Impact with appropriate agencies, organizations, tribal representatives and individuals for their review and comments; U.S. Fish and Wildlife Service confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; Louisiana Department of Natural Resources concurrence with the Louisiana Coastal Resources Program; receipt of a Water Quality Certificate from the State of Louisiana Department of Environmental Quality; public review of the Section 404(b)(1) Public Notice; signature of the Section 404(b)(1) Evaluation; receipt of the Louisiana State Historic Preservation Office determination of No Affect on cultural resources; receipt and acceptance or resolution of all U.S. Fish and Wildlife Service Coordination Act recommendations; and receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the Environmental Assessment. The draft Finding of No Significant Impact will not be signed until the Federal action achieves environmental compliance with applicable laws and regulations, as described above.

Environmental Design Commitments

The following commitments are an integral part of the proposed action:

1 Trees, shrubs, and other vegetation removed during clearing and grubbing would be windrowed within the limits of work for the project. All locations, once the project is completed, will be left in a condition comparable to its current state. Vegetation will reclaim the cleared land and forested habitat is expected to return within a short period of time.

2 If the proposed action is changed significantly or is not implemented within one year, the New Orleans District will reinitiate consultation with the US Fish and Wildlife Service to ensure that the proposed action would not adversely affect any Federally-listed threatened or endangered species, critical habitat or USFWS trust resources.

3 If any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work will proceed in the area containing these cultural resources until a New Orleans District staff archeologist has been notified and final coordination with the State Historic Preservation Officer and Tribal Historic Preservation Officer has been completed.

Conclusion

This office has evaluated the potential environmental impacts of the proposed action in Environmental Assessment #531 (incorporated herein by reference). Based on this assessment, a review of the comments made on draft Environmental Assessment #531, 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.

Draft

_____ _____

Date

Richard L. Hansen
Colonel, US Army
District Commander

DRAFT ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER AND TRIBUTARIES

ST. ALICE AND LULING STONE HARDPOINTS

MISSISSIPPI RIVER MILES 169.5 AND 113.2

ASCENSION AND JEFFERSON PARISHES, LOUISIANA

EA #531

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

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EA #531

1. INTRODUCTION

1.0. The U.S. Army Corps of Engineers, Mississippi Valley Division, Regional Planning and Environmental Division South, has prepared this draft Environmental Assessment for the New Orleans District to evaluate the potential impacts of constructing a series of stone hardpoints and an associated lateral stone dike and stone blanket at two locations along the right-descending bank of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling) in Ascension and Jefferson Parishes, Louisiana. This draft Environmental Assessment has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the U.S. Army Corps of Engineers Engineering Regulation ER 200-2-2. This draft Environmental Assessment provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, New Orleans District, to make an informed decision on the appropriateness of an Environmental Impact Statement or a Finding of No Significant Impact.

1.1. PROPOSED ACTION

1.1.1. The proposed action consists of constructing a series of stone hardpoints and an associated lateral stone dike and stone blanket at two locations along the right-descending bank of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling) in Ascension and Jefferson Parishes, Louisiana (Figure 1).

1.1.2. *St. Alice Stone Hardpoint.* The proposed St. Alice stone hardpoint construction will consist of twenty-one stone hardpoints and an associated lateral stone dike located along the right-descending bank of the Mississippi River near river mile 169.5 (center of project) in Ascension Parish (Figure 2). The proposed construction reach would extend a total of 3,200-linear feet along the river bank. The stone hardpoints would be constructed perpendicular to the existing bank line, and would vary in length from 210 to 220 feet. Each stone hardpoint would have a crown width of 10 feet, and side slopes of 1 foot vertical on 1.50 feet horizontal. The maximum elevation of each stone hardpoint would be no higher than the top of the existing bank elevation. The associated lateral stone dike would also have a 10 foot crown width and side

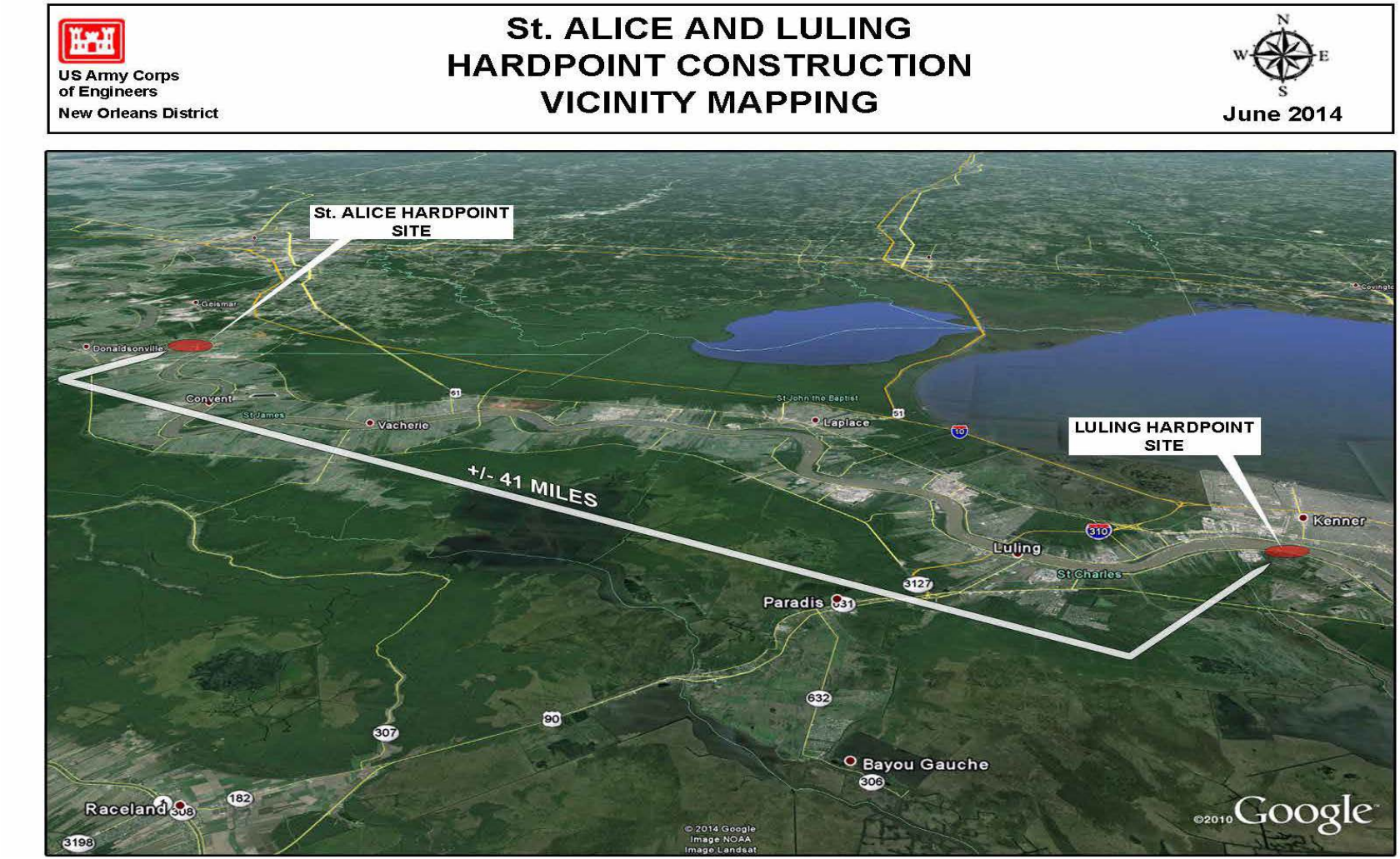

Figure 1. St. Alice and Luling Stone Hardpoints Project Vicinity Map.

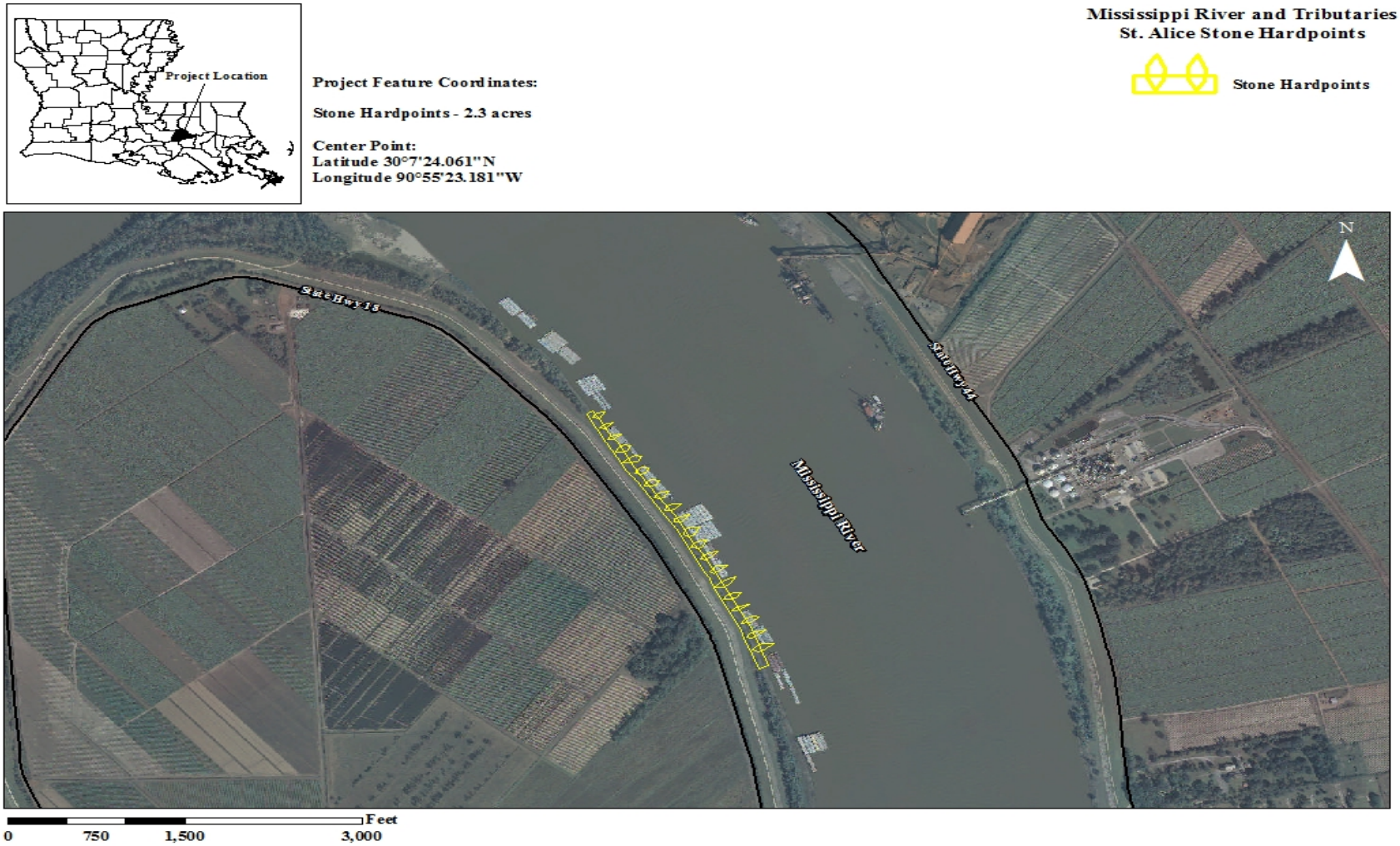

Figure 2. St. Alice Stone Hardpoint Project Site Map.

slopes of 1 foot vertical on 1.50 feet horizontal. Construction of the lateral dike would serve to bridge the gaps between each stone hardpoint and would be seated at the low water reference plane. Approximately 80,000 tons of stone will be placed on the bank and river bottom starting from the top of the bank and extending channelward to construct the project. Construction of the twenty-one stone hardpoints and associated lateral stone dike would impact a total of approximately 2.3 acres of existing bank and river bottom.

1.1.3. *Luling Stone Hardpoint.* The proposed Luling stone hardpoint construction will consist of eleven stone hardpoints and a 3-foot thick stone blanket located along the right-descending bank of the Mississippi River near river mile 113.2 (center of project) in Jefferson Parish (Figure 4). The proposed construction reach would extend a total of 1,830-linear feet along the river bank. The stone hardpoints would be constructed perpendicular to the existing bank line, and would vary in length from 210 to 220 feet. Each stone hardpoint would consist of a crown width of 10 feet, and side slopes of 1 foot vertical on 2.50 feet horizontal. The maximum elevation of each stone hardpoint would be no higher than the top of the existing bank elevation. The 3 foot thick stone blanket would be placed along the river's edge and extend the entire length of the project area. Construction of the stone blanket would provide additional stabilization of the eroded bank line and would be seated at the low water reference plane. Approximately 86,000 tons of stone will be placed on the bank and river bottom starting from the top of the bank and extending channelward to construct the project. Construction of the eleven stone hardpoints and associated stone blanket would impact a total of approximately 2.3 acres of existing bank and river bottom.

Figure 3. Existing stone hardpoint on Mississippi River in Louisiana (2006).

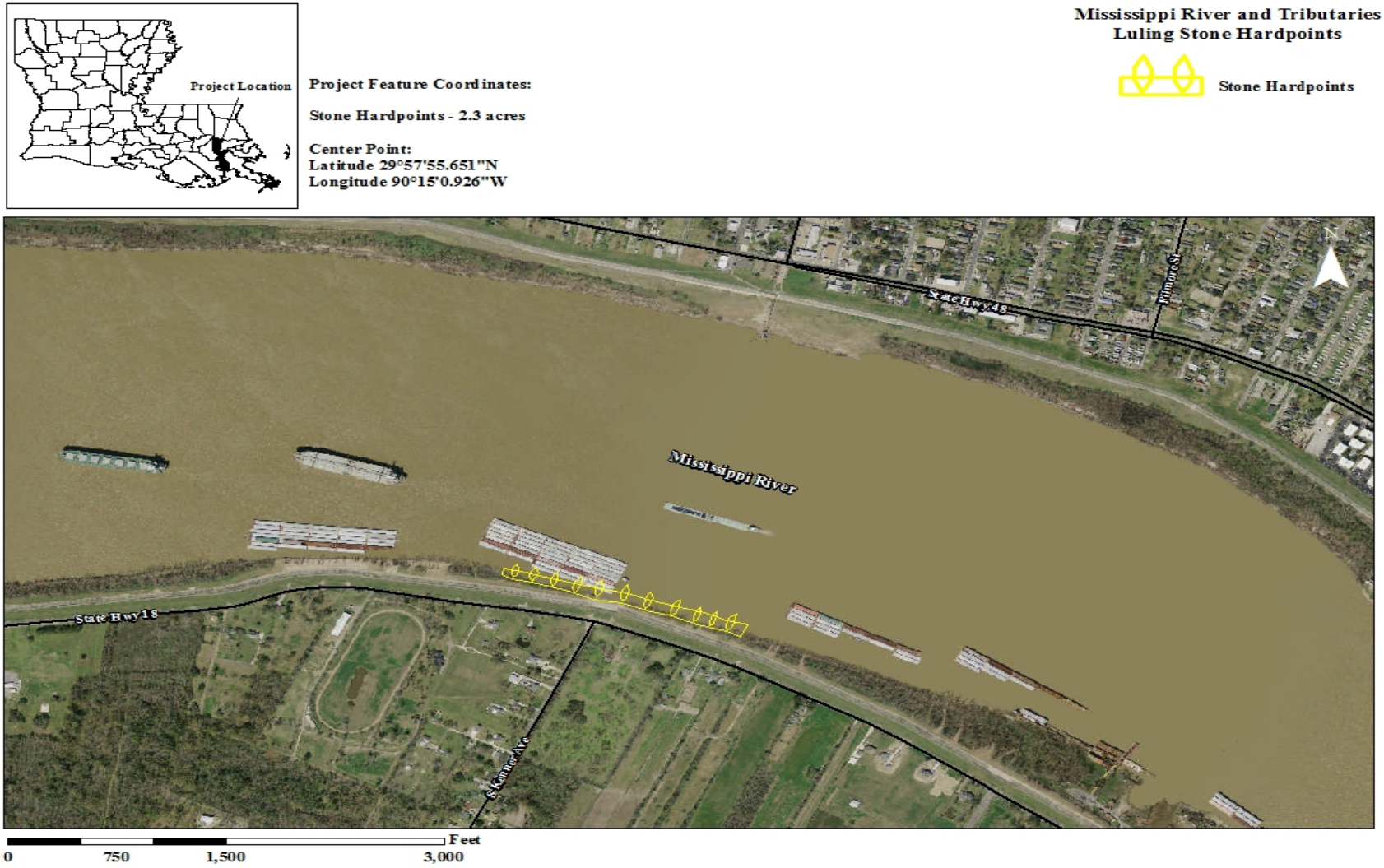

Figure 4. Luling Stone Hardpoint Project Site Map.

1.1.4. Clearing and grubbing operations at both the St. Alice and Luling stone hardpoint sites would be conducted as part of site preparation for the proposed construction of the stone hardpoints and the placement of either a lateral stone dike or stone blanket. If access for project equipment is from the levee, then an access road would be constructed approximately 25 feet wide along the length of the project area. Clearing and grubbing would extend from a point approximately 75 feet landward of the top of bank and extend down to the river, which includes the area for the access road. Trees, shrubs, and other vegetation removed during clearing and grubbing would be windrowed within the limits of work for the project. The riverbank would then be graded at a uniform slope of approximately 1 foot vertical on 5 feet horizontal. The grading width may vary in areas where pocket caves and bank chipping have occurred. The graded material will either be pulled riverward or deposited in the area.

1.1.5. For each stone hardpoint, a trench would be excavated, extending from the top of bank to a point landward within the maximum cleared and grubbed portion of the project area. Stone would be placed into the trench to form the hardpoint "key". Each "key" would be backfilled with approximately 1 foot of earth originally removed from the trench. Stone would then be placed from the "key" into the river to form the dike extension. Depending on the site, either a lateral stone dike or stone blanket would be constructed along the low water reference plane. V-notches would be constructed in the lateral dikes downstream of each associated hardpoint to allow fish to access the flooded riverbank between the shoreline and dike during high water, and prevent fish from becoming trapped as water levels recede. All of the above mentioned work, including clearing and grading, would be performed by conventional construction equipment (i.e., bulldozers, drag-line excavators, etc.).

1.1.6. While vegetation will be cleared along the sections of river proposed for stone hardpoint construction, stabilization of the bank is essential to insure that bank failure and land loss do not occur within these areas which could result in permanent loss of habit. The hardpoints are designed to prevent bank erosion and promote sedimentation. All locations, once the project is completed, will be left in a condition comparable to its current state. Vegetation will reclaim the cleared land and forested habitat is expected to return within a short period of time.

1.2. PURPOSE AND NEED FOR THE PROPOSED ACTION

1.2.1. The purpose of the proposed action is to provide bank stabilization by preventing further erosion of the riverbank and promote accretion of sediments along the bank line. Strong currents in the Mississippi River have eroded the unprotected riverbank in the vicinities of Miles 169.5 and 113.2. Continued erosion would eventually reach the adjacent levee or cause the levee to become unstable, potentially resulting in a levee failure that would endanger the lives and property of residents within Ascension and Jefferson Parishes. Additionally, the Mississippi River is the primary route for commercial shipping to major ports along the river. There is a national interest in providing progressive channel stabilization in order to prevent any alteration of the river flow that could potentially pose a navigation threat for large vessels transiting these sections of the river.

1.2.2. Widespread public support exists for the protection of environmental resources and for flood control along the Mississippi River. Throughout history, special emphasis has been placed on the construction and maintenance of the river channel for commercial navigation and protecting the adjacent Mississippi River mainline levees. Continued erosion of the riverbank in the vicinity of river miles 169.5 and 113.2 threatens the river channel, the commercial trade that is vital to the economy, and the adjacent river levee which provides essential flood protection to residents within the lower Mississippi River Valley.

1.3. AUTHORITY

1.3.1. The Congressional authority for the construction of the "Mississippi River and Tributaries" project is contained in the Flood Control Acts of 1928, as amended. The Flood Control Act of 1928 committed the Federal government to a program of flood risk reduction and authorized general and progressive channel stabilization and river regulation from Cairo, Illinois to the Head of Passes, Louisiana.

1.3.2. The comprehensive Mississippi River and Tributaries Project has four major elements: levees and floodwalls to contain flood flows; floodways to pass excess flows past critical Mississippi River reaches; channel improvement and stabilization to provide efficient navigation alignment, increased flood-carrying capacity and protection of the levee system; and tributary basin improvements. The Mississippi River and Tributaries Project in the alluvial valley between Cape Girardeau, Missouri, and Head of Passes, Louisiana, provides risk reduction from floods by means of levees, floodwalls, floodways, reservoirs (in Yazoo and St. Francis Basins), bank stabilization and channel improvements in and along the river and its tributaries and outlets insofar as affected by backwater of the Mississippi River.

1.4. PRIOR REPORTS

1.4.1. The proposed project lies within the study area assessed in the 1976 "*Mississippi River and Tributaries, Mississippi River Levees and Channel Improvement*" final Environmental Impact Statement. The Statement of Findings was signed on April 4, 1976. Channel improvements included the placement of Articulated Concrete Mattress (ACM) and the construction of stone bank paving (revetment) and dikes to protect the adjacent river levees. The proposed action includes the construction of an alternative method to the typical revetment and dike construction, in the form of stone hardpoints. Typical revetment construction, including use of ACM and stone bank paving, serves to stabilize a particular segment of riverbank that is currently experiencing ongoing erosion that if left unmanaged could affect the stability of the adjacent river levees. When erosion of the riverbank is already so severe at a particular site, stone hardpoints are generally utilized as a means of trapping river sediments, thus allowing for rebuilding of the bank line.

2. ALTERNATIVES TO THE PROPOSED ACTION

2.1. ALTERNATIVE 1 – NO ACTION

2.1.1. One alternative to the proposed action was considered. This alternative was: No-action. In the future without project condition (a.k.a no-action), the proposed action would not be constructed, and currents within the Mississippi River would continue to erode unprotected riverbank in the vicinities of Miles 169.5 and 113.2. Due to the severe erosion of the riverbank at each site, typical revetment construction methods (i.e., ACM and stone bank paving) would not provide the necessary stability needed to prevent a potential bank failure. De-stabilization of the riverbank would alter the river flow and navigation channel, and would eventually reach the adjacent flood risk reduction levees. The result would be a potential threat to commercial navigation for large vessels and failure of the flood risk reduction levees. Depending upon the extent of the levee failure at each site, flooding could result in catastrophic loss of lives and property within Ascension and Jefferson Parishes.

3. AFFECTED ENVIRONMENT

3.1. GENERAL DESCRIPTION

3.1.1. ENVIRONMENTAL SETTING

3.1.1.1. Jefferson Parish is located within the Central Gulf Coastal Plain in coastal southeastern Louisiana. The parish is bordered by Lake Pontchartrain on the north, the Gulf of Mexico to the south, Orleans and Plaquemines Parishes to the east, and St. Charles and Lafourche Parishes to the west. The northeastern portion of the parish is within the New Orleans metropolitan area and is urban. The rest of the parish is primarily rural, particularly toward the Gulf of Mexico. A large portion of Jefferson Parish (279 square miles) consists of water areas such as lakes, streams and bays along the Gulf of Mexico. Elevations within the parish range from 12 feet above sea level on the crest of the natural levee to 5 feet below sea level in areas of former marsh and swamp. According to U.S. Census data, the parish had a population of 432,552 in 2010, making it the second most populous parish in Louisiana behind East Baton Rouge Parish.

3.1.1.2. Ascension Parish is located in the southeastern part of Louisiana, approximately 15 miles southeast of Baton Rouge. The parish has a total area of 303 square miles, with approximately 292 square miles comprised of land and the remaining 11 square miles consisting of water. The parish is primarily rural, with three incorporated areas, including the parish seat, located in the central and southern part of the parish (Donaldsonville (parish seat), Gonzales and Sorrento). The Mississippi River meanders across the southwestern part of the parish and flows from northwest to southeast. Elevations within the parish range from about 30 feet above sea level in the northwestern part to less than 1 foot above sea level in the low, back swamp areas in the southeastern part. According to U.S. Census data, the parish had a population of 107,215 in 2010, and it is considered to be one of the fastest growing parishes in the state.

3.1.1.3. The project areas are located within the Mississippi River deltaic plain, with the Mississippi River acting as the primary influence on geomorphic processes in the delta region. The Mississippi River channel improvement features such as the placement of articulated concrete mattress, construction of stone bank paving (revetment) and dikes serve to ensure proper alignment and depth of the navigation channel and to protect the integrity of flood risk reduction measures.

3.1.1.4. Floral communities in the project areas consist primarily of scrub-shrub vegetation with interspersed hardwoods. Large portions of both project areas have been impacted by previous placement of stone revetment, and vegetation observed at the sites has since reclaimed the remaining portions of the bank line over multiple growing seasons. Scrub-shrub vegetation observed at the site includes blackberry, trumpet creeper, canary grass, torpedo grass, and poison ivy. The dominant tree species, ranging from saplings to fully mature, located along the project area bank lines are black willow, red maple and Chinese tallow.

3.1.2. DESCRIPTION OF THE WATERSHED

3.1.2.1. A watershed is an area of land drained by a particular set of streams and rivers. Of the twelve major watersheds within Louisiana, the St. Alice and Luling Stone Hardpoints are located within the Mississippi River watershed along the west Mississippi River bank line in Ascension and Jefferson Parishes, Louisiana (Figure 5). The Mississippi River has the third largest drainage basin in the world, exceeded in size only by the watersheds of the Amazon and Congo Rivers. The entire Mississippi River basin covers more than 1,245,000 square miles and includes all or parts of 31 states and two Canadian provinces.

3.1.2.2. The Lower Mississippi River is the portion of the Mississippi River downstream of Cairo, Illinois. From the confluence of the Ohio River and Upper Mississippi River at Cairo, the Lower flows just under 1,000 miles to the Gulf of Mexico. The Lower Mississippi River alluvial valley is generally bounded by bluffs on the eastern side of the river and the valleys of merging tributaries to the west. The Mississippi River Mainline Levee System within the New Orleans District boundaries in Louisiana extend along the Mississippi River west bank from the vicinity of Black Hawk, Louisiana, generally southward to the vicinity of Venice, Louisiana, and on the east bank from Baton Rouge, Louisiana to Bohemia, Louisiana encompassing over 500 miles of levee and associated infrastructure.

Figure 5. Louisiana River Basins (LDEQ, 2007). The Mississippi River Basin Watershed is shown in green. The location of the St. Alice and Luling Stone Hardpoints are is represented by the red star(s).

3.1.3. CLIMATE

3.1.3.1. The climate of southeastern Louisiana, including both Ascension and Jefferson Parishes, is humid subtropical. Warm, moist southeasterly winds from the Gulf of Mexico prevail throughout most of the year, with occasional cool, dry fronts dominated by northeast high pressure systems. The influx of cold air occurs less frequently in autumn and only rarely in summer. Tropical storms and hurricanes are likely to affect the southeastern part of the state three out of every ten years, with severe storm damage approximately once every two or three decades. The majority of these occur between early June and November. Summer thunderstorms are common, and tornadoes strike occasionally. Average annual temperature in the area is 67° (F), with monthly temperatures varying from the mid-90°'s (F) in July and August, to the mid-30°'s (F) in January and February. Average annual precipitation is 57.0 inches, varying from a monthly average of 7.5 inches in July, to an average of 3.5 inches in October.

3.1.4. GEOLOGY

3.1.4.1. The project areas lie on the riverside of the modern Mississippi River levee, which is the land between the river and the levee. Fluvial activity in the project area includes lateral migration and overbank deposition during flood stages. This activity is the dominant geologic process operating on the landscape in this region. The formation of natural levees, point bar deposits, and other geomorphic features such as crevasse channels and abandoned river courses has been documented.

3.1.4.2. Soils in the project vicinity typically vary from brown to grayish brown in color with textures ranging from sandy loam to silt loam. Soils on the natural levee in the vicinity of the project areas consist of sediments belonging to a soil series that usually consists of dark brown to grayish brown silty loam. Sediments on the natural levee typically vary in texture between silt loams to silty clay loams and normally exhibit a dark grayish brown color.

3.1.4.3. Natural levee deposits are highest near the river channel, and they gradually diminish away from the channel levee toe. These natural levee deposits consist of medium to stiff clays, silts and fine sands with low water and organic content; these deposits commonly are oxidized. Construction of artificial levees has altered the pattern of deposition and accretion. Fluvial activity now is concentrated within the riverside of the Mississippi River levee. Soils along the Mississippi River bank in the project areas are frequently flooded, and are somewhat poorly drained silty loams and sandy loams that have developed on narrow floodplain ridges. The soils along the landside of the levee are silt/loams, silty clay loams and clays.

3.2. RELEVANT RESOURCES

3.2.1. This section contains a description of relevant resources that could be impacted by the project. The relevant resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public.
Table 1 provides summary information of the institutional, technical, and public relevance of these resources.

Table 1: Relevant Resources			
Resource	**Institutionally Relevant**	**Technically Relevant**	**Publicly Relevant**
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended.	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, USFWS, NMFS, NRCS, USEPA, LDWF, and LADNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values; and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Air Quality	Clean Air Act of 1963, Louisiana Environmental Quality Act of 1983.	State and Federal agencies recognize the status of ambient air quality in relation to the NAAQS.	Virtually all citizens express a desire for clean air.
Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and La State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, USEPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality. the national and state standards established to assess water quality	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

3.2.2. The following resources have been considered and found to not be affected by the alternative under consideration: estuarine water bodies; Gulf water bottoms; beaches; estuarine or marine fisheries resources, including essential fish habitat; terrestrial resources, including prime and/or unique farmlands; recreation; aesthetics; socio-economic resources; and environmental justice.

3.2.3. WETLANDS

3.2.3.1. General Existing Conditions. Wetlands occurring within the Mississippi River Basin are typically confined to the riverside of the existing Mississippi River levee, specifically between the riverside toe of the levee and bank line of the river. The proposed stone hardpoint sites are located specifically within wetland habitat typically classified as bottomland hardwood forest. Floral communities that currently exist within the project areas consist primarily of scrub-shrub vegetation along with several remaining mature hardwood trees interspersed along each site (Figure 6). Scrub-shrub vegetation observed at the site includes blackberry, trumpet creeper, canary grass, torpedo grass, and poison ivy. The relatively few remaining mature tree species scattered along the bank lines consist of those faster growing species such as black willow, red maple and Chinese tallow (Figure 7). Existing conditions at both sites are such that the severe erosion of the river bank has all but eliminated a large majority of the mature bottomland hardwood forest that typically subsists within these areas.

Figure 6. St. Alice stone hardpoint site existing vegetation conditions.

Figure 7. Luling stone hardpoint site existing vegetation conditions.

3.2.4. AQUATIC RESOURCES/FISHERIES

3.2.4.1. General Existing Conditions. Aquatic habitat in the project vicinity is provided by the Mississippi River. This vast area is inherently low in primary productivity on a per acre basis because of high turbidity and has relatively poor benthic productivity because of shifting substrates and high current velocities in the area.

3.2.4.2. The aquatic habitat averaging less than five feet in depth paralleling the bank line of the river within both Ascension and Jefferson Parishes represents a limited percentage of the river's total aquatic habitat but is importantly productive for all trophic levels. Factors that serve to increase the productivity include reduced current velocity, increased availability of cover, and shallow substrates allowing photosynthesis to support communities of submerged aquatic vegetation and algae growth. During annual high river season, typically from March – May, riverine aquatic resources (fish, shellfish, etc) move onto the flooded river bank to take forage on detritus (rotting vegetation), insects, insect larvae, worms and various other food items. Some species use this high water period to spawn in the flooding areas.

3.2.4.3. Large predaceous fishes, plankton feeders and a group of omnivorous species inhabit the deep main river channel. Minnow, catfishes, carp, carpsuckers and sunfishes are some of the various types of fishes that may be found during the annual high river season in the project area. Clams, dipterans and mayflies are some of the area's representative invertebrates.

3.2.5. WILDLIFE

3.2.5.1. General Existing Conditions. Mammals adapted to periodically wet riparian or early successional hardwood habitat are likely to inhabit or frequent the project area. Beaver, raccoon, swamp rabbit, nutria, muskrat, gray squirrel, fox squirrel and opossum have been observed in the project vicinity (USACE, 2010). Birds observed in the project areas include cattle egret, great egret, great blue heron, little blue heron and various species of waterfowl and songbirds.

3.2.5.2. Various species of reptiles and amphibians that are known to occur within the project areas include cottonmouth, rat snake, western and southern water snake, snapping turtle, eastern box turtle, eastern mud turtle, green frog, squirrel tree frog, and Gulf coast toad (USACE, 2010).

3.2.6. THREATENED AND ENDANGERED SPECIES

3.2.6.1. General Existing Conditions. Five federally threatened or endangered species are either known to or may possibly occur in Ascension and Jefferson Parishes, Louisiana: West Indian manatee (*Trichechus manatus*) (endangered); piping plover (*Charadrius melodus*) (threatened); Gulf sturgeon (*Acipenser oxyrhynchus desotoi*) (threatened); pallid sturgeon (*Scaphirhynchus albus*) (endangered); and Alabama heelsplitter mussel (*Potamilus inflatus*) (endangered).

3.2.6.2. West Indian manatees can be found in shallow, slow-moving rivers, estuaries, salt-water bays, canals, and coastal areas (LDWF, 2012a). West Indian manatees are typically found in waters with dense submerged aquatic beds or floating vegetation where the species grazes on a variety of aquatic plants. This species has been known to occasionally enter Lake Pontchartrain and associated coastal waters from June through September. Manatees have been reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana. They have also been occasionally observed elsewhere along the Louisiana Gulf coast. The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution.

3.2.6.3. The piping plover is listed as a Federally threatened species and generally occurs along the Louisiana coast. This species winters in Louisiana and can remain for approximately 8 to 10 months annually. For the commencement of breeding season, the piping plover may appear as early as late July and remain until March or April. Piping plovers tend to feed on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes, and generally roost in areas with little vegetation. The species has been known to move to different suitable habitats within a two-mile radius as a result of changes in the environment. On July 10, 2001, the U.S. Fish and Wildlife Service designated various Critical Habitat areas for wintering plovers along the Gulf Coast (Federal Register Volume 66, No. 132). The essential elements required for wintering habitats are: intertidal beaches and flats (between annual low tide and annual high tide); dune systems and flats above annual high tide; and sand and/or mud flats with little emergent vegetation (USFWS, 2001).

3.2.6.4. The Gulf sturgeon is an anadromous fish that occurs in many rivers, streams, and estuarine waters along the northern Gulf coast between the Mississippi River and the Suwanee River, Florida (USFWS, 2003). In Louisiana, the Gulf sturgeon has been reported at Rigolets Pass, rivers and lakes of the Pontchartrain Basin, and adjacent estuarine areas, including the Mississippi River Gulf Outlet inland reach. Spawning occurs in coastal rivers between late winter and early spring (*i.e.*, March to May). Gulf sturgeon are more likely to be in the inland reach of the Mississippi River Gulf Outlet during the winter months, (i.e., November 1 through March 31). Gulf sturgeon less than 2 years old appears to remain in riverine habitats and estuarine areas throughout the year, rather than migrate to marine waters. Habitat alterations, such as those caused by water control structures that limit and prevent spawning, poor water quality, and over-fishing, have negatively affected this species.

3.2.6.5. The pallid sturgeon only occurs in large rivers within the Mississippi and Missouri River Basins from Montana to Louisiana. This includes the Mississippi River and Atchafalaya River in south Louisiana. Pallid sturgeon tend to select main channel habitats in the Mississippi River. Additional habitat descriptions state that the pallid sturgeon generally inhabits large, turbid, free-flowing riverine type environments with swift moving waters and rocky or sandy substrates (USFWS, 1990). The species is long-lived and spawning is believed to occur between June and August. Larval fish drift downstream from the hatching site and settle in the lower portion of the water column 11 to 17 days after hatching. Anthropogenic alterations to the Mississippi River such as bendway cutoffs, tributary impoundments and channel erosion have led to changes in deposition and erosion patterns potentially affecting pallid sturgeon populations. Pallid sturgeon are more frequently encountered in the Missouri and Atchafalaya Rivers than in the Mississippi River, but are “nowhere common” (USACE, 1998). Habitat decline for this species has been attributed to channelization of rivers and construction of reservoirs that ultimately reduce the amount of turbidity in the water, which is vital for the pallid sturgeon for not only feeding areas but also spawning habitat (LDWF, 2012b). Pallid sturgeon are generally thought to avoid shallow water and inhabit thalwegs with hard-packed, sandy substrate, and channels of relatively low slope. In the spring of 2008, during extreme high water on the Mississippi River, pallid sturgeon were captured in the flooded bank of the Mississippi River upstream from the project area near river mile 128. Prior to this time, it was not well documented that pallid sturgeon utilized flooded riverbank areas. Whether the sturgeon were feeding, spawning or both in this flooded river bank was not determined. In 2007, researchers from the U.S. Army Corps of Engineers, Engineer Research and Development Center captured pallid sturgeon in the Mississippi River as far downstream as the Gramercy Bridge at river mile 145. In December 2008, the same researchers captured a single pallid sturgeon next to the Mississippi River Bridge in New Orleans. Prior efforts to collect pallid sturgeon below New Orleans were unsuccessful, but the possibility exists that pallid sturgeon occur in the Mississippi River adjacent to the proposed sites.

3.2.6.6. The Alabama heelsplitter, which is referred to as the inflated heelsplitter in the species recovery plan (Hartfield 1988), is a large (sometimes reaching over 140 mm in length) freshwater mussel with a brown to black shell with green rays in young individuals (Hartfield 1988). Like other freshwater mussels, the Alabama heelsplitter feeds by filtering food particles from the water column. In Louisiana, the Alabama heelsplitter has been reported in the

Amite and Tangipahoa Rivers. This species prefers soft, stable substrata in slow to moderate currents. It has been found in sand, mud, silt and sandy-gravel, but not in large or armored gravel (Hartfield 1988).

3.2.7. CULTURAL RESOURCES

3.2.7.1. General Existing Conditions. All project areas discussed for the Mississippi River Hardpoints have been previously surveyed for cultural resources. The New Orleans District sent a letter of coordination, dated July 11, 2014, to the Louisiana State Historic Preservation Office (SHPO) concluding "no historic properties affected" for the Hardpoints project. A response has not yet been received from SHPO. Project area specifics for cultural resources are presented below.

3.2.7.2. The St. Alice Hardpoints project area was previously surveyed for cultural resources by R. Christopher Goodwin and Associates (1994; State Report 22-1632). This survey located no cultural resources within the project area.

3.2.7.3. The Luling Hardpoints project area has been previously surveyed for cultural resources by R. Christopher Goodwin and Associates, Inc. (1996; State Report 22-1219). No cultural resources were located within the Luling Hardpoints project area. Furthermore, this area was more recently reviewed for potential of both terrestrial and underwater cultural resources, as a designated Channel Improvements area for 2014. No cultural resources were located, and the Louisiana SHPO agreed with the Corps conclusion of "no historic properties affected" for the 2014 Channel Improvements project in a letter dated May 22, 2014.

3.2.8. AIR QUALITY

3.2.8.1. General Existing Conditions. The U.S. Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called "criteria" pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (PM-10 and PM-2.5), and sulfur dioxide. Ozone is the only parameter not directly emitted into the air but forms in the atmosphere when three atoms of oxygen (03) are combined by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air. The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS. A conformity assessment would require quantifying the direct and indirect emissions of criteria pollutants caused by the Federal action to determine whether the proposed action conforms to Clean Air Act requirements and any State Implementation Plan (SIP).

3.2.8.2. The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions "conform with" (i.e., do not undermine) the approved State Implementation Plan (SIP) for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS.

3.2.8.3. Jefferson Parish is currently in attainment of all National Ambient Air Quality Standards, and operating under attainment status. This classification is the result of area-wide air quality modeling studies.

3.8.2.4. Ascension Parish is one of five Baton Rouge area parishes that were designated by the Environmental Protection Agency as ozone non-attainment areas under the 8-hour standard effective June 15, 2004. Currently none of the five parishes are in attainment of National Ambient Air Quality Standards for ozone. The five parish area has been classified as marginal, which is the least severe classification. This classification is the result of area-wide air quality modeling studies, and the information is readily available from Louisiana Department of Environmental Quality, Office of Environmental Assessment and Environmental Services.

3.8.2.5. Federal activities proposed in Ascension Parish may be subject to the State's general conformity regulations as promulgated under LAC 33:III.14.A, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A general conformity applicability determination is made by estimating the total of direct and indirect volatile organic compound (VOC) and nitrogen oxide (NO_X) emissions caused by the construction of the project. Prescribed *de minimis* levels of 100 tons per year per pollutant are applicable in Ascension Parish. Projects that would result in discharges below the *de minimis* level are exempt from further consultation and development of mitigation plans for reducing emissions."

3.2.9. WATER QUALITY

3.2.9.1. General Existing Conditions. Water quality in the project area is affected by both point source and non-point source discharges. Point sources include mainly industrial, municipal, and sewer discharges. Non-point sources include storm water runoff, industrial discharges, landscape maintenance activities, forestry, agriculture, and natural sources.

3.2.9.2. Section 303(d) of the Clean Water Act requires states to identify waterbodies that are not meeting water quality standards and to develop total maximum daily loads for those pollutants suspected of preventing the waterbodies from meeting their standards. Total maximum daily loads are the maximum amount of a given pollutant that can be discharged into a water body from all natural and anthropogenic sources including both point and non-point source discharges. In Louisiana, the Department of Environmental Quality oversees the program.

3.2.9.3. The Louisiana Department of Environmental Quality surface water monitoring program is designed to measure progress towards achieving water quality goals at state and national levels, to gather baseline data used in establishing and reviewing the state water quality standards, and to provide a data base for use in determining the assimilative capacity of the waters of the state. Information is also used to establish permit limits for wastewater discharges. The program provides baseline data on a water body to monitor long-term trends in water quality.

3.2.9.4. The Louisiana Department of Environmental Quality (LDEQ) Section 305(b) and 303(d) Reports for 2012, included in the Water Quality Inventory Integrated Report, lists one water body that is located adjacent to the project areas, the Mississippi River. The assigned sub-segment code for the Mississippi River is LA070301. Sub-segment Code LA070301 boundaries are described as Mississippi River – from Monte Sano Bayou to Head of Passes. Available LDEQ records indicate that prior to the 2004 Water Quality Inventory (WQI) Report, suspected causes of impairment for the Mississippi River are listed as mercury, nitrate/nitrite (nitrite + nitrate as N), pesticides, phosphorous, priority organics (including dioxin) and total fecal coliforms (LDEQ 2012).

3.2.9.5. Utilizing the 2012 U.S. Environmental Protection Agency Integrated Report methodology guidance categories, which categorize water body/pollutant combinations, the LDEQ 2012 report no longer assigns the LA070301 (Mississippi River) segment an Integrated Report Category number since they are fulfilling all standards (LDEQ 2012).

4. ENVIRONMENTAL CONSEQUENCES

4.1. WETLANDS

4.1.1. Future Conditions with No Action Alternative. With the no action alternative, continued erosion of the river bank at the site would cause further loss of hardwood forested habitat both within and adjacent to the project area as well as any potential habitat opportunities.

4.1.2. Future Conditions with the Proposed Action. With the proposed action, existing scrub-shrub habitat along with the relatively few remaining hardwood trees scattered along the riverbank would be directly impacted, as clearing and grubbing operations would temporarily clear a combined total of approximately 4-acres of this habitat. The temporary loss is considered minimal, as similar habitat is readily available within the vicinity of the proposed project area. Additionally, what remaining habitat is available at each site has been greatly diminished due to severe erosion of the river bank and would ultimately be completely lost if the proposed action is not constructed.

4.1.3. The proposed action would have indirect benefits, as the bank stabilization features would provide protection to the riverbank, as well for any remaining hardwood trees within the project area not removed during clearing and grubbing operations. In addition, the trees removed and windrowed along the top of the bank would indirectly benefit wildlife species by providing cover habitat. As sediments accrete along the lateral dike, new riverbank habitat would be created.

This new habitat and temporarily cleared 4-acres of hardwood habitat would be re-vegetated by adjacent plant species, including the seeds of hardwood trees. Over time, the rebuilding of the riverbank would afford increased hardwood habitat opportunities to wildlife present throughout the areas.

4.2. AQUATIC RESOURCES /FISHERIES

4.2.1. Future Conditions with No Action Alternative. With no action, continued erosion of the river bank could potentially result in a levee failure, and redirect part of the river flow through a breach. Fisheries resources caught in the flow would be transported to adjacent areas and other water bodies within the flood area. Those species that survive would have new habitat opportunities in the other water bodies.

4.2.2. Future Conditions with Proposed Action. With the proposed action, it is possible that some adjacent existing fisheries resources could be indirectly impacted from the bank grading activities along the river bank. It is expected that there would be a temporary increase in turbidity within the river directly surrounding the bank grading and placement of stone material at each hardpoint. The initial increases in turbidity would likely be diminished by the swift moving currents of the river, and any free floating sediment would likely settle downstream. Direct impacts to aquatic resources would include the permanent loss of available water habitat along the bank line as a result the stone hardpoints construction. Direct impacts to benthic (bottom dwelling) species such as mussels, mayfly larvae, and various worms, would also occur from being covered by the stone. These negative impacts would be offset by the beneficial habitat opportunities directly and indirectly created by the proposed action.

4.2.3. The underwater surfaces of submerged structures such as hard points, lateral dike and tie-backs directly and indirectly benefit a variety of fisheries. Crevasses in-between the individual stones provide cover habitat, thus directly benefiting baitfish, juvenile fish, and benthic species seeking cover from predators. The predator species then indirectly benefit by the forage opportunities provided. The V -notches in the lateral dike have direct impacts on fisheries resources, as these openings would allow fish access to potential habitat between the dike and shoreline and prevent fish from becoming trapped as water levels recede. The submerged stone structures would provide indirect benefits by creating areas of calmer water on the downriver side of the structures, which would then attract various fish species to these areas as a means of relief from the strong river currents. For USACE projects that include ACMs, the concrete surfaces are designed with a rough texture incorporated with long, shallow grooves. Studies of the benefits provided by various surface texture designs of ACMs have shown that rough and grooved surfaces provides velocity shelters for a variety of aquatic invertebrates, which provide an important food source for various fish and wading bird species (Way et. al. 1992).

4.3. WILDLIFE

4.3.1. Future Conditions with No Action Alternative. With no action, wildlife that presently exists within the Mississippi River levee riverside forest would continue to inhabit the area. However, continued erosion of the river bank at each site would ultimately lead to a reduced availability of habitat for any wildlife species. It is expected that there would continue to be direct impacts to existing wildlife resources with loss of available habitat under the no action alternative.

4.3.2. Future Conditions with the Proposed Action. With the proposed action, a combined total of approximately 4.6-acres of trees, shrubs, and other vegetation would be cleared from the riverbank, causing a direct loss of potential habitat opportunities (i.e., nesting, perching, cover, foraging) for area wildlife. The direct loss would be considered minimal, due to the similar habitat available adjacent to the proposed project areas. Additional minimal impacts would result from equipment noise and movements that would temporarily displace most wildlife species from the site.

4.3.4. The proposed action would have some indirect, beneficial impacts on wildlife species, including erosion protection for the existing habitat. The vegetation cleared from the riverbank would be windrowed at the top of the bank within the limits of work and would provide cover habitat for wildlife species. Turtles and snakes are known to sun on exposed rock outcrops along a waterway, and the stone hardpoints would serve as exposed rock outcrops along the river. Fisheries, including baitfish, would be attracted to calm waters at the site, providing potential forage opportunities for wildlife species. As sediments fill in behind the lateral dike, new riverbank habitat would be created. Over time, these areas are expected to be re-vegetated by adjacent plant species, providing additional cover and foraging habitat for wildlife species.

4.4. THREATENED AND ENDANGERED SPECIES

4.4.1. Future Conditions with No Action Alternative. With implementation of the no action alternative, threatened and endangered species and their habitats would not be affected. The proposed project would not be constructed, and impacts to threatened and endangered species in the area would not likely change from current conditions.

4.4.2. Future Conditions with the Proposed Action. With implementation of the proposed action, it is anticipated that there would be no direct or indirect impacts to threatened or endangered species. No critical habitat for any threatened, endangered, or candidate species has been designated within the project area or adjacent water body (Mississippi River), and none of these species is known to breed within the project vicinity. While Pallid Sturgeon have been previously found within the flooded bank of the Mississippi River both upstream and downstream from the project areas, it is anticipated that there would be no impact to this species as construction would only occur during periods of low water in the Mississippi River. The New Orleans District determined that the proposed action is not likely to adversely affect any threatened or endangered species or critical habitat. Coordination with the U.S. Fish and

Wildlife Service is still ongoing and will be completed prior to signing a Finding of No Significant Impact.

4.4.3. The U.S. Army Corps of Engineers, New Orleans District concluded that no threatened or endangered species or designated critical habitat under the purview of NMFS, Protected Resources Division, exist within the proposed project area and that the project would result in a no adverse effect.

4.5. CULTURAL RESOURCES

4.5.1. Future Conditions with No Action Alternative. If the repair is not undertaken, then riverbank failure could occur and chances of levee failure are increased. If levee failure would occur, then chances increase that flooding of urban land area could occur. This increases the chance that a known or undiscovered cultural resource could be damaged by flood water.

4.5.2. Future Conditions with the Proposed Action. The proposed action will decrease future potential that flooding of urban land area could occur. No impact to known or unknown cultural resources is expected to occur as a result of the proposed action. The Corps concludes that there are no historic properties affected by this project. The Louisiana State Historic Preservation Office is reviewing this conclusion.

4.6. AIR QUALITY

4.6.1. Future Conditions with No Action Alternative. With no action, the status of non-attainment and attainment of air quality for Ascension and Jefferson Parishes, respectively, would not change from current conditions.

4.6.2. Future Conditions with the Proposed Action. Under the proposed action, it is expected that there would be minimal short term direct impacts to air quality surrounding the immediate project area during construction activities. For the proposed clearing and grubbing activities, it is expected that portable and stationary equipment such as bulldozers and drag line excavators would likely be responsible for the bulk increase in air pollution temporarily directly impacting the surrounding project area.

4.6.3. With implementation of the proposed action in Ascension Parish, on-site construction activities are expected to produce less than 1 ton per year of VOC emissions and less than 20 tons per year of NO_X emissions (less than the *de minimis* level of 100 tons per year per pollutant). Thus, the ambient air quality in Ascension Parish would not noticeably change from current conditions, and the status of attainment for the parish would not be altered.

4.6.4. Jefferson Parish is currently in attainment of all National Ambient Air Quality Standards, and is operating under attainment status. Calculations previously performed on fairly large construction projects indicate that volatile organic compound emissions from typical U.S. Army Corps of Engineers, New Orleans District construction projects would be well below the 100-ton per year *de minimis* limit; therefore, it is expected that there would be no adverse impacts to air

quality with the implementation of the project, as proposed. The status of attainment for Jefferson Parish would not be altered from current conditions, and there would be no lasting direct or indirect impacts resulting from the associated construction activities.

4.7. WATER QUALITY

4.7.1. Future Conditions with No Action Alternative. With no action, no new direct or indirect impacts to water quality would be expected to occur.

4.7.2. Future Conditions with the Proposed Action. With implementation of the proposed action, it is expected that there would be an indirect impact to water quality through a temporary increase in turbidity within the river directly surrounding any construction activity areas. Any increases in turbidity would likely be diminished by the swift moving currents of the river, and any free floating sediment would likely settle downstream.

4.7.3. Additional impacts of the stone hardpoints and tie-backs would be to redirect and/or slow the water flow past these structures, creating areas of calmer water on the downriver side. By redirecting and/or slowing the water flow, submerged structures such as the hardpoints and the tie-backs would allow for sedimentation to occur, and eventually rebuild the riverbank.

4.7.3. A draft Section 404(b)(1) has been completed for this project and will be circulated for public comment with this draft Environmental Assessment. Additionally, a Water Quality Certificate has been requested from the Louisiana Department of Environmental Quality. Coordination is currently ongoing and will be completed prior to the signing of a Finding of No Significant Impact.

4.8. HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

The USACE is obligated under Engineer Regulation (ER) 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 proposed actions. ER 1165-2-132 identifies that HTRW policy is to avoid the use of project funds for HTRW removal and remediation activities. An ASTM E 1527-05 Phase 1 Environmental Site Assessment (ESA), HTRW 14-05, dated June 17, 2014, has been completed for the Luling Stone Hardpoints project area, and an ASTM E 1527-05 Phase 1 Environmental Site Assessment (ESA), HTRW 14-06, dated June 26, 2014, has been completed for the St. Alice Stone Hardpoints project area A copy of both Phase 1 ESAs will be maintained on file at the U.S. Army Corps of Engineers, New Orleans District Headquarters. The probability of encountering HTRW for the proposed action is low based on the initial site assessments. If no recognized environmental conditions are identified in relation to the project sites, the probability of encountering HTRW for these projects will be considered low. If a recognized environmental condition is identified in relation to the project sites, the U.S. Army Corps of Engineers, New Orleans District would take the necessary measures to avoid the recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

4.9. CUMULATIVE IMPACTS

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

4.9.2. Channel stabilization and protection of the Mississippi River bank are part of an overall comprehensive plan for the Mississippi River and Tributaries project. The proposed project would accomplish these objectives by protecting the existing river bank and adjacent flood protection levee, and provide for stabilization of the navigation channel along river miles 169.5 (St. Alice) and 113.2 (Luling). The preferred alternative would accomplish flood risk reduction objectives, which are of great importance in the Lower Mississippi Valley, and provide for the preservation and enhancement of the very significant fish, wildlife, and other natural resources of the basin. Overall, the proposed action, in comparison to past, present, and reasonably foreseeable future actions, would not incrementally contribute adversely to the general project area. The cumulative impacts of the proposed action are expected to have long-term benefits by reducing the risk of flood damage to the environment on the protected side of the levee, thus protecting the lives and property of residents of Ascension and Jefferson Parishes, and reducing the threat to the commercial navigation and trade that is vital for various local and state economies.

4.9.3. The direct, indirect, and cumulative impacts from associated projects were previously addressed in the documents enumerated in the Prior Reports Section, above. These reports also provided an evaluation of the direct, indirect, and cumulative impacts associated with levee enlargements and borrow pit construction in the project area. The discussions of potential cumulative impacts contained in the cited documents are incorporated herein by reference.

5. COORDINATION

5.0. Preparation of this draft Environmental Assessment and draft Finding of No Significant Impact is being coordinated with appropriate Congressional, Federal, state, local interests, and Indian Tribes, as well as environmental groups and other interested parties. The following federal and state agencies, non-governmental organizations, as well as other interested parties will receive copies of this draft Environmental Assessment and the draft Finding of No Significant Impact:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service, State Conservationist

Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources (LADNR), Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer

6. MITIGATION

6.0. The proposed project would reduce erosion and provide bank stabilization of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling). Only minimal environmental impacts are expected, and none are expected to have any adverse impacts on the important resources described in this draft Environmental Assessment.

6.1. The relatively few remaining mature hardwood trees scattered along the riverbank would be directly impacted, as clearing and grubbing operations would temporarily clear a total of approximately 4-acres of riparian habitat. The temporary loss is considered minimal, as similar habitat is readily available within the vicinity of the proposed project area. Additionally, what remaining habitat is available at each site has been greatly diminished due to severe erosion of the river bank and would ultimately be completely lost if the proposed action is not constructed. As sediments accrete along the newly constructed stone hardpoints, new riverbank habitat would be created. This new habitat, as well as the temporarily cleared 4-acres of hardwood/scrub-shrub habitat, would be re-vegetated by adjacent plant species, including the seeds of hardwood trees. Over time, the rebuilding of the riverbank would afford increased hardwood habitat opportunities to wildlife present throughout the areas.

6.2. The project, as proposed, will ultimately benefit both fisheries and wildlife resources by creating additional habitat opportunities, as previously noted. The areas cleared are expected to quickly re-vegetate with similar species. Therefore, no impacts have been identified that would require compensatory mitigation.

7. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

7.0. Environmental compliance for the Federal action would be achieved upon: coordination of this draft Environmental Assessment and draft Finding of No Significant Impact with appropriate agencies, organizations, and individuals for their review and comments; U.S. Fish and Wildlife Service confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; Louisiana Department of Natural Resources concurrence that the project is consistent with the Louisiana Coastal Resources Program; receipt of a Water Quality Certificate from the State of Louisiana Department of Environmental Quality; public review of the Section 404(b)(1) Public Notice; signature of the Section 404(b)(1) Evaluation; receipt of the Louisiana State Historic Preservation Office determination of No Affect on cultural resources; receipt and acceptance or resolution of all U.S. Fish and Wildlife Service Coordination Act recommendations; and receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the Environmental Assessment. The Finding of No Significant Impact will not be signed until

the Federal action achieves environmental compliance with applicable laws and regulations, as described above.

8. CONCLUSION

8.0. The proposed action consists of constructing a series of stone hardpoints and an associated lateral stone dike and stone blanket at two locations along the right-descending bank of the Mississippi River in the vicinity of river miles 169.5 (St. Alice) and 113.2 (Luling) in Ascension and Jefferson Parishes, Louisiana. This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no impact upon cultural resources and no impact would occur to threatened or endangered species.

8.1. The proposed project has been found to have an overall beneficial effect on the human environment by insuring adequate flood risk reduction along the flood prone lower Mississippi River. While there would be temporary clearing of approximately 4-acres of bottomland hardwood habitat, these impacts would be considered minimal as similar habitat is readily available within the vicinity of the proposed project. Upon completion of the stone hardpoints, additional sediment will accrete along the lateral dike, and new riverbank habitat would be created. It is expected that both the newly accreted riverbank sediments and temporarily cleared 4-acres of hardwood habitat would be re-vegetated by adjacent plant species, including the seeds of hardwood trees. Over time, the rebuilding of the riverbank would afford increased hardwood habitat opportunities to wildlife existing within each site.

9. PREPARED BY

9.0. Draft Environmental Assessment #531 and the associated Finding of No Significant Impact were prepared by Mr. Mark Lahare, Environmental Protection Specialist, with relevant sections and contributions prepared by: Mr. Joseph Musso (HTRW and Air Quality); and Dr. Paul Hughbanks (Cultural Resources). The address of the preparers is: US Army Corps of Engineers, New Orleans District; Regional Planning Division South, Environmental Compliance Branch, Coastal Environmental Compliance Section, CEMVN-PDC-CEC; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

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