DRAFT ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER AND TRIBUTARIES, MISSISSIPPI RIVER LEVEES

Point Pleasant Relief Wells

Iberville Parish, Louisiana

EA #568

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

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1. Introduction

The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Division, Regional Planning and Environment Division South, has prepared this Environmental Assessment (EA) for the New Orleans District (CEMVN) to evaluate potential impacts of installing relief wells to collect seepage during high water stages on the Mississippi River and pumps to return the seepage water collected from the wells back to the River. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's (CEQ) Regulations (40 Code of Federal Regulations (CFR) 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, USACE, CEMVN, to make an informed decision on the appropriateness of an Environmental Impact Statement or a Finding of No Significant Impact (FONSI).

1.1 Proposed Action

The proposed action consists of construction of approximately 50 passive relief wells placed approximately 150 feet apart near the toe of the existing levee (Figures 1 and 2). The relief wells would have concrete pads approximately 20 feet in width that direct water from the wells to the collection ditch. A roadside ditch between the levee and the road would be designed and reconfigured to collect well outflow. A combination of permanently installed pump enclosures, on the river side of Hwy LA 405, and discharge lines with removable pumping systems would convey the water discharged from the relief wells back over the levee and into the river. The pumps at Reaches 1 and 2 would be placed underground. A guardrail would be installed along Reaches 3 and 5 for protection of the pumps which will be placed up to 4 feet above ground elevation. The reaches including the number of proposed relief wells is found in Table 1 below.

The 12-inch discharge lines that would be placed over the levee section would be covered with 12 inches of fill sloping back to the levee with concrete slope paving at the discharge transitions. Pump control stations would be mounted up the levee slope on concrete pads, across from the pump locations. Utility power and control wiring would be routed over the road to the pumps and utility service connections. The pumps would be utilized as necessary during high river stages, typically when the river elevation reaches +11 feet at Carrollton gauge. In addition, a staging area is being proposed within the existing maintained area near the toe of the Mississippi River Levee (MRL) shown in Figure 3.

Table 1: Reaches

Reach #	Stationing	Length of Reach (Feet)	Total Project Reach Flow (cubic feet per second)	Approximate Number of Relief Wells	Approximate Number of Pumps
1	4715+00-4730+00	1500	7.2	8	2
2	4730+00-4755+00	2500	16.3	18	3
3	4755+00-4785+00	3000	12.7	10	4
5	4810+00-4850+00	4000	17.74	14	4

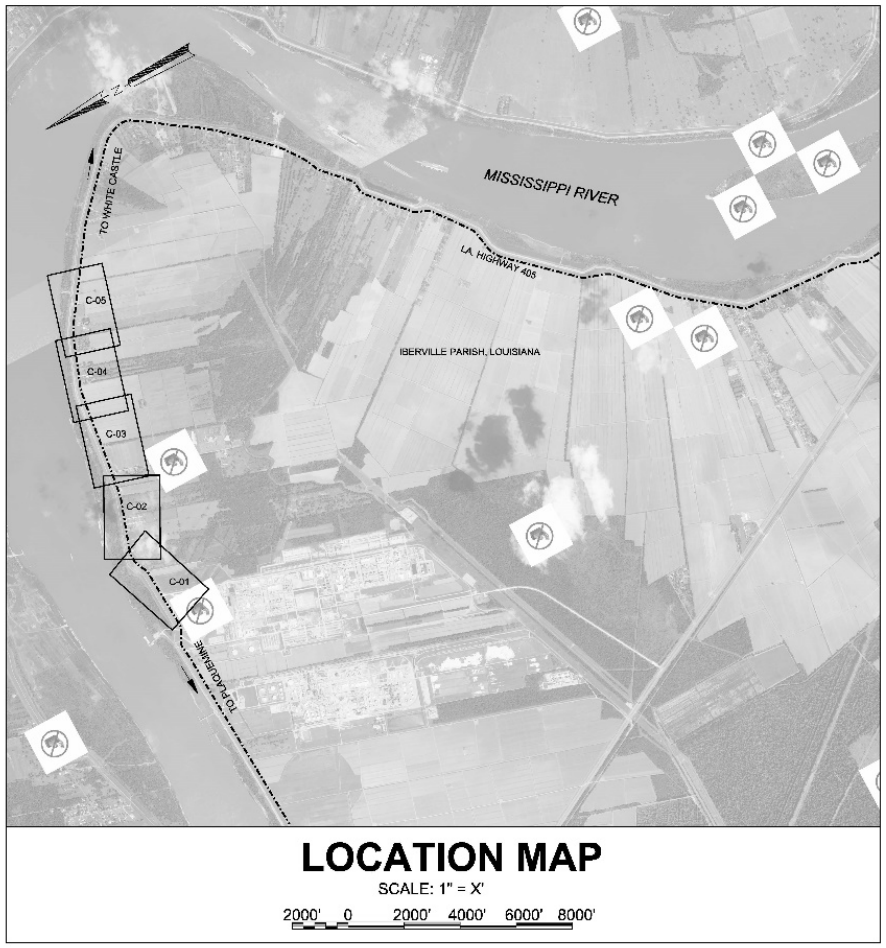

Figure 1: Project Location

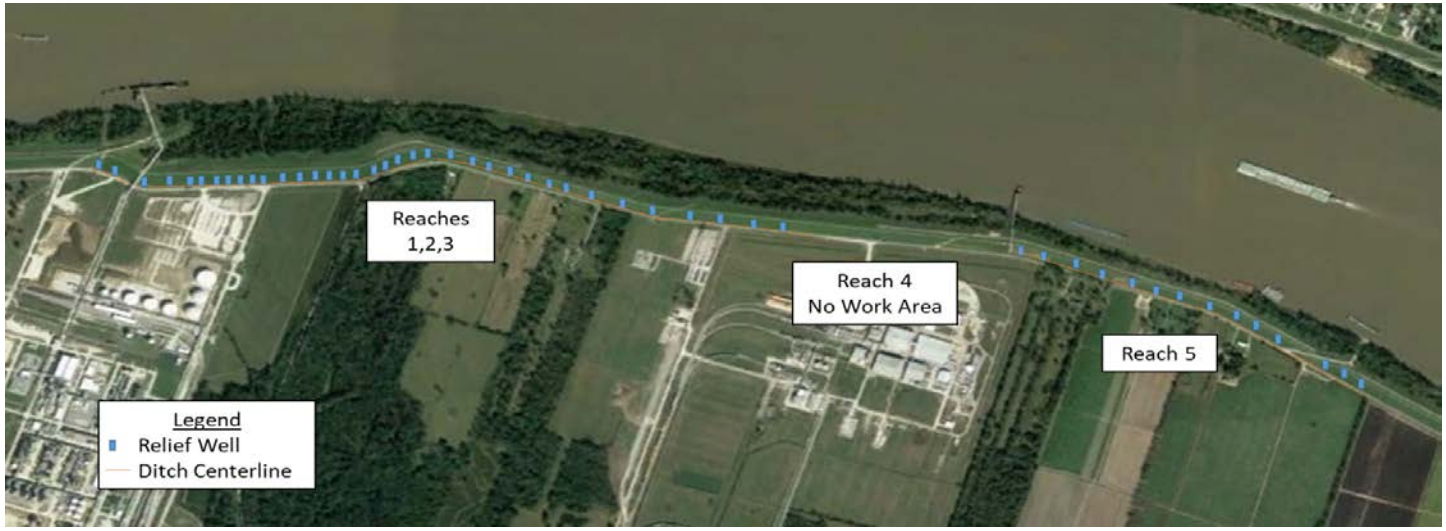

Figure 2: Proposed Action

1.2 Authority

The Congressional authority for the construction of the "Mississippi River and Tributaries (MR&T)" project is contained in the Flood Control Acts of 1928, as amended, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965 and 1968 and the Water Resources Development Act of 1986. The Flood Control Act of 1928 committed the Federal government to a definite program of flood control and authorized general and progressive channel stabilization and river regulation from Cairo, Illinois to Head of Passes, Louisiana.

1.3 Purpose and Need for the Proposed Action

The purpose of the proposed action is to continue providing flood risk reduction resulting from Mississippi River high water events to valuable urban land uses including, but not limited to, residential, commercial, and agricultural resources located on the right descending bank of the Mississippi River near River Mile 224 in Iberville Parish between White Castle and Plaquemine, Louisiana. The proposed project would manage seepage flow to improve levee stability by designing seepage control measures for three project reaches between Stations 4715+00 and 4850+00. The MRL continues to serve as an integral part of reducing the risk to communities from not only Mississippi River high water events but also any potential hurricane driven storm surge propagating upstream from the mouth of the Mississippi River.

1.4 Prior NEPA Documents

1.4.1 Operation and maintenance of the Mississippi River levees, including repairs, is covered by the "Mississippi River and Tributaries (MR&T), Mississippi River Levees and Channel Improvement" Final Environmental Impact Statement (FEIS) 1976. The Statement of Findings was signed on 04 April 1976.

1.4.2 Mississippi River and Tributaries, Mississippi River Levees, Point Pleasant Relief Wells EA #521 was prepared in 2013 to evaluate the impacts of relief wells in the vicinity of the Proposed Action. A FONSI was signed on 13 July 2013 by the CEMVN District Commander.

1.5 Public Concerns

1.5.1 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 channel training devices such as levees. The flood control plan of the MR&T project is designed to control the Mississippi River "Project Design Flood (PDF)," which is a theoretical flood greater than the great flood of 1927. The comprehensive flood control plan includes several features that protect a large part of the alluvial valley from the PDF, with a major element of this plan being levees for the containment of flood flows.

1.5.2 The comprehensive MR&T 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 MR&T project in the alluvial valley between Cape Girardeau, Missouri, and Head of Passes, Louisiana, provides protection from floods by means of levees, floodwalls, flood ways, 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.

1.5.3 Historically, the Mississippi River Levees feature has been under construction since 1928 and the engineering and construction capability exists to complete the project in the year 2020. When completed, approximately 35,000 square miles will be protected from the Mississippi River PDF. The Mississippi River mainline levees were first constructed by settlers at New Orleans in the early 1700s. Federal construction of the Mississippi River mainline levees began shortly after the passage of the Flood Control Act of 1928 and has continued ever since. The Mississippi River mainline levees protect the lower Mississippi River valley against the PDF by confining flow to the leveed channel, except where it enters backwater areas, allowing the overflow of several levees designed to overtop and fill tributary basins, or diverting flow into four project floodway areas. The mainline levee system, comprised of levees, floodwalls, and various control structures, is approximately 1,610 miles long.

2. Alternatives Including the Proposed Action

2.1 Proposed Action

The proposed action consists of construction of 50 relief wells placed near the toe of the existing levee. The location of the relief wells will be adjusted to avoid utilities and ramps. A pumping system will convey the water, discharged from the relief wells, back over the levee and into the River. The roadside ditch between the levee and the road will be designed and reconfigured to collect well outflow. A series of pumps will be installed to route the well outflow back over the levee and into the River.

2.2 Alternative 1 – No-Action Alternative (Future without Project [FWOP])

In the future without project condition (no-action), the proposed action would not be constructed. Without the proposed improvements to the designated levee reaches there exists an increased risk of damage to the west bank Mississippi River mainline levees during high river periods typically ranging from early March to June as well as during hurricane season beginning in June and lasting until mid-November.

2.3 Alternative 2 – Relief Wells with Local Drainage Improvements

This alternative would utilize the existing watershed to drain the water that comes out of the passive relief wells into the existing roadside ditch between the road and the levee, then flow through existing and proposed culverts under the road, and eventually flow into the existing northeast section canals and flow away from the project site. The existing drainage would require improvements to handle the increased water flow. This alternative involves impacts to private property as well as Waters of the U.S. (including wetlands). The wetlands that would be impacted are typically high quality bottomland hardwoods (BLH). This alternative would result in considerable environmental impacts. Therefore, this alternative was removed from further consideration.

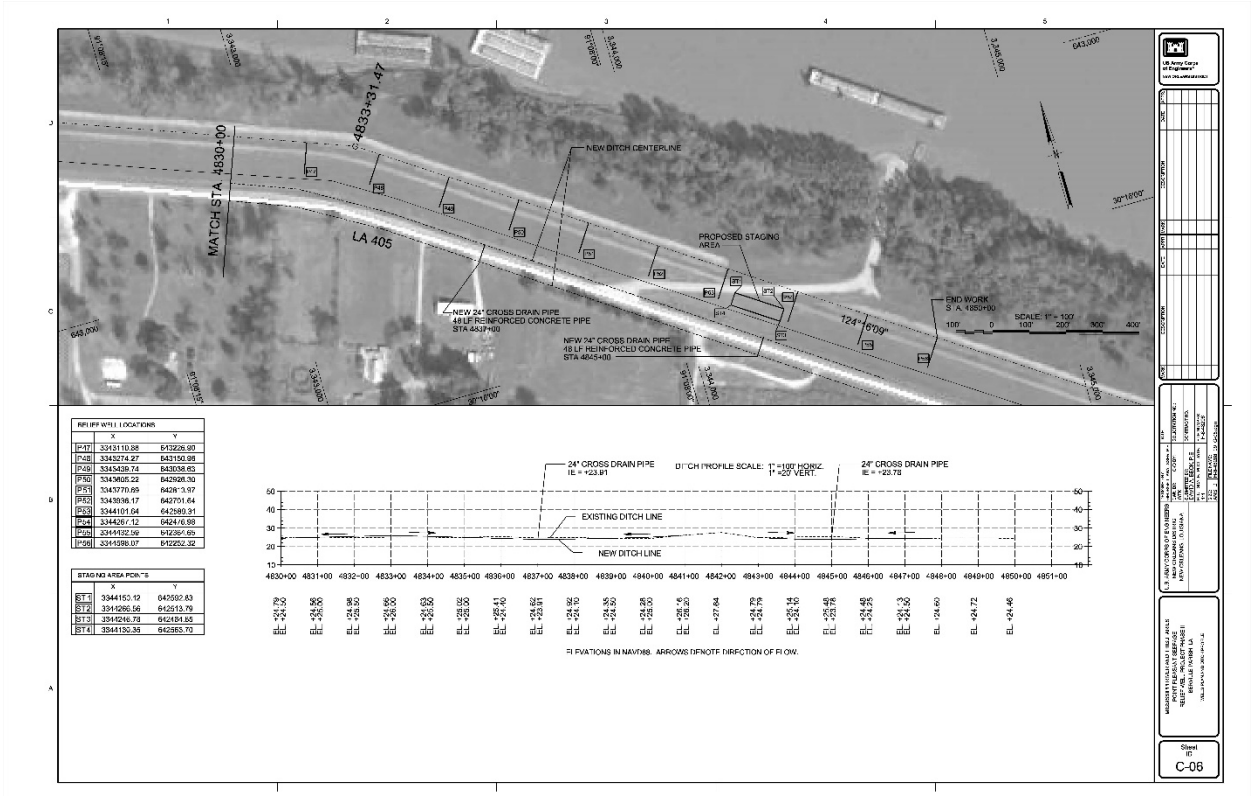

Figure 3: Staging Area

3. Affected Environment

3.1 Description of the Project Area

The project area is 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 levees are designed to protect the alluvial valley against the project flood by confining flow between the levees with the exception of areas where it enters the natural backwater areas and is diverted purposely into floodway areas. The Mississippi River Mainline Levee System consists of levees and floodwalls along the River, floodways and control structures. The levee line on the west bank begins just south of Cape Girardeau, Missouri, and extends to Venice, Louisiana. On the east bank of the River, levees alternate with high bluffs to give protection from floods. Specifically, the proposed project area consists of an existing maintained levee with a small BLH fringe between the levee and the Mississippi River. A state highway traverses the project area bordered by chemical plants, agricultural fields and sparse residences.

3.1.1 Description of the Watershed

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. It drains 41 percent of the 48 contiguous states of the United States. The basin covers more than 1,245,000 square miles, includes all or parts of 31 states and two Canadian provinces, and roughly resembles a funnel which has its spout at the Gulf of Mexico. Waters from as far east as New York and as far west as Montana contribute to flows in the lower river.

The lower alluvial valley of the Mississippi River is a relatively flat plain of about 35,000 square miles bordering on the River which would be overflowed during time of high water if it were not for man-made protective works. This valley begins just below Cape Girardeau, Missouri, is roughly 600 miles in length, varies in width from 25 to 125 miles, and includes parts of seven states—Missouri, Illinois, Tennessee, Kentucky, Arkansas, Mississippi, and Louisiana.

The Mississippi River is the mainstem of the world's most highly developed waterway system, about 12,350 miles in length. The Mississippi River discharges the headwater flows from about 41 percent of the contiguous 48 states. Discharge at Baton Rouge ranges from 1,500,000 cubic

feet per second (cfs) once every 16 years, on average, to a low of 75,000 cfs recorded once during the period 1930 to the present, and average annual discharge is 450,000 cfs. Southwest Pass of the Mississippi River discharges roughly one-third of the river's total flow, with an average discharge of about 145,000 cfs. South Pass of the Mississippi River discharges roughly one-sixth of the River's total flow, with an average discharge of about 78,000 cfs. Pass a Loutre of the Mississippi River discharges almost one-third of the River's total flow or slightly less than the Southwest Pass flow. The average discharge through Pass a Loutre is just under 145,000 cfs. The combined discharge of Southwest Pass, South Pass, and Pass a Loutre is approximately 80 percent of the total river flow into the Gulf of Mexico. The remaining flow is distributed through minor passes upstream of Head of Passes.

Deep-draft navigation is a major component of waterborne traffic on the river. Currently, the river is maintained to a depth of -45 feet for deep-draft access from mile marker -22.0 in the bar channel reach up to river mile 232.4 at Baton Rouge, Louisiana. There is extensive urban and industrial development near the Baton Rouge and New Orleans metropolitan areas. The remaining areas adjacent to the river are developed primarily for agriculture; however, industrial and urban development in these areas does occur. The Mississippi River is a source for drinking water, recreation, and commerce.

3.1.2 Climate and Climate Change

The climate in the project area is humid, subtropical with a strong maritime character. 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 area 3 out of every 10 years, with severe storm damage approximately once every 2 or 3 decades. The majority of these occur between early June and November. The largest recent hurricanes were Katrina and Rita in 2005 which caused damage in the project area. Hurricanes Gustav and Ike in 2008, and more recently, Isaac in 2012, caused additional damage in the project area. Summer thunderstorms are common, and tornadoes strike occasionally. Average annual temperature in the area is 67°F, with mean monthly temperatures ranging from 82°F in August to 52°F in January. 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. (http://www.srcc.lsu.edu/).

The 2014 USACE Climate and Resiliency Policy Statement states the "USACE shall continue to consider potential climate change impacts when undertaking long-term planning, setting priorities, and making decisions affecting its resources, programs, policies, and operations." The Louisiana Coastal Area Beneficial Use of Dredged Material Program is not intended to construct ecosystem restoration projects that last in perpetuity. A healthy and resilient coastal complex is dynamic, not static, and is subject to the ebb and flow of the various effects, adverse or beneficial, that impact conditions at any given point in time. The most significant adverse potential impact on a coastal wetland as a product of climate change is sea-level change (rise).

3.1.3 Geology

The project area lies on the flood and protected side of the modern Mississippi River 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.

The Mississippi River Delta complex was formed by river deposits between 700 and 7,400 years ago. The Natural Resources Conservation Service (NRCS) classifies soils within the proposed project area as typically peat, mucks, and clays mixed with organic matter, and silts derived from river deposits. The soil composition is subject to change as floodwaters and storm surges deposit new sediments. They are composed predominantly by Balize and Larose soil types. These soils are classified as continuously flooded deep, poorly drained and permeable mineral clays and mucky clays. Marsh and swamp deposits are found in the vicinity of the river from New Orleans to the Heads of Passes at the Gulf of Mexico. Marsh deposits are primarily organic, consisting of 60 percent or more by volume of peat and other organic material with the remainder being a composition of various types of clays. Total organic thickness is normally 10 feet, with variances less than one foot. Inland swamp deposits are composed of approximately 70 percent clay and 30 percent peat and organic materials. The percentage of sand and sandy silts increases with proximity to the open waters of the Gulf of Mexico (Saucier 1974).

3.2 Relevant Resources

This section contains a description of relevant resources that could be impacted by the proposed project. 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. Table 1 provides summary information of the institutional, technical, and public importance of these resources.

The following resources have been considered and found to not be affected by the proposed action: wetlands, soils and water bottoms, estuarine water bodies, estuarine or marine fisheries resources, including essential fish habitat, terrestrial resources, including prime and/or unique farmlands, and socioeconomic resources including land use, environmental justice, population, transportation, oil and gas, environmental health and safety, community cohesion, desirable community growth, tax revenues, property values, public facilities and services, business activity and employment, and displacement of people. The objectives of Executive Order 11988 (Floodplain Management) were considered; however, CEMVN has determined that floodplain impacts, if any, from the proposed action would be positive. Additionally, there is no practicable alternative for project construction outside the 100-year floodplain. No portion of the project area has been designated a Louisiana Natural and Scenic River; therefore, a Scenic Rivers permit is not warranted. Environmental Justice was considered because of Executive Order 12898 of 1994 and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. However, no significant populations or residential areas will be effected by the proposed action. No appreciable terrestrial resources are found within the proposed project area as it is a maintained (mowed) levee and ditch. No Jurisdictional Waters of the U.S. (including wetlands) are found within the proposed project area. No Prime or unique farmlands would be adversely effected by the proposed action. Further, the proposed action is located outside the Louisiana Coastal Zone.

The following relevant resources are discussed in this EA: aquatic resources/fisheries, wildlife, threatened and endangered species, cultural resources, recreational resources, visual resources (aesthetics), air quality, and water quality.

Table 2: Relevant Resources

Resource	Institutionally Important	Technically Important	Publicly Important
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended; Clean Water Act of 1977, as amended; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968. *(* None of these Acts are applicable to the proposed action)*	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 *(* The Fish and Wildlife Coordination Act is not applicable to the proposed action)*	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, EPA, LDWF, and LDNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
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.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of the local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Visual Resources (Aesthetics)	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, the Coastal Barrier Resources Act of 1990, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.
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 Louisiana State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, EPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality and the national and state standards established to assess water quality.	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

3.2.1 Aquatic Resources/Fisheries

Existing Conditions

The proposed action is located on the levee adjacent to the Mississippi River. No aquatic resources are found within the project area. Aquatic habitat in the vicinity of the project area is provided by the Mississippi River, adjacent borrow areas, and associated wetlands. The largest aquatic resource in proximity to project area is that portion of the main stem of 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. The deep main river channel is the habitat of large predaceous fishes, some plankton feeders, and a group of omnivorous species.

Previously excavated borrow pits on the flood side of the existing Mississippi River levees provide additional complexity of aquatic habitat for various species of wildlife, finfish, and shellfish. On the flood side, the higher plants around these water bodies are important primary producers in that a significant amount of leaf litter, branches, and other organic matter may wash into these lakes and borrow pits during high water conditions becoming a source of detritus. During annual high River season, typically from March - May, riverine aquatic resources (fish, shellfish, etc.) move onto the flooded River bank to forage on detritus, insects, insect larvae, worms, and various other food items. Some species use this high water period to spawn in the flooding areas. These are reasons why overbank areas are so important to riverine fisheries resources.

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 fishes that may be found in the vicinity of the project area. Clams, dipterans, and mayflies are some of the area's representative invertebrates.

Several man-made, roadside ditches are found within the project area. These ditches do not seasonally hold water and would therefore not be considered aquatic resources. These ditches do drain into larger man-made ditches traversing Louisiana Highway 327. Eventually, the man-made ditches reach an unnamed natural stream which has been channelized as a local drainage feature. No Essential Fish Habitat, as defined by the Magnuson Stevens Act, is present within or near the proposed project area.

3.2.2 Wildlife

Existing Conditions

Developed habitats in the vicinity of the project area include residential and commercial areas, as well as roads and existing levees. Those habitats do not support significant wildlife use. Agricultural lands occur on the protected side of the levee; agriculture includes sugarcane farming, cattle production, and haying.

Woodlots in the batture land adjacent to the project area provide habitat for many wildlife species including raccoons, opossum, fox, mink, and rabbits, and bats. Many species of neotropical migratory and resident birds use the nesting and rearing habitat provided by the batture land. In addition, many species of reptiles and amphibians can be found in this area. The landward toe of the levee provides limited wildlife habitat and no aquatic habitat. The levee is frequently mowed. Some resident animals likely traverse the levee while foraging at night.

Mammals that adapt in varying degrees to periodically wet riparian or early successional hardwood habitat are likely to inhabit or frequent land adjacent to the project area. Beaver, swamp rabbit, nutria, muskrat, gray squirrel, fox squirrel, and white-tailed deer are likely present in the project vicinity. Woodlots in the batture also provide habitat for many resident passerine birds and essential resting areas for many migratory songbirds including warblers, orioles, thrushes, vireos, tanagers, grosbeaks, buntings, flycatchers, and cuckoos. Many of these and other passerine birds have undergone a decline in population primarily due to habitat loss. The area also supports resident hawks and owls including the red-shouldered hawk, barn owl, common screech owl, great horned owl, and barred owl. The red-tailed hawk, marsh hawk, and American kestrel are seasonal residents which utilize habitats within the vicinity of the project area. Amphibians such as the pig frog, bullfrog, leopard frog, cricket frog, and Gulf coast toad are expected to occur in the fresh and low salinity wetlands adjacent to the project area. Reptiles

such as the snapping turtle, softshell turtle, and red-eared turtle are also expected to occur in the wetlands and waterbodies adjacent to the project area.

3.2.3 Threatened, Endangered or Candidate Species

Existing Conditions

The U.S. Fish and Wildlife Service (USFWS) lists two threatened or endangered species that may occur in Iberville Parish: pallid sturgeon *(Scaphirhynchus albus)*, and Gulf sturgeon (*Acipenser oxyrinchus desotoi*) (USFWS April, 2018).

Pallid Sturgeon
The pallid sturgeon *(Scaphirhynchus albus)* is an endangered, bottom-oriented, fish that inhabits large riverine systems from Montana to Louisiana. Within this range, pallid sturgeon tend to select main channel habitats in the Mississippi River and main channel areas with islands or sand bars in the upper Missouri River. In Louisiana it occurs in the Atchafalaya and Mississippi Rivers, and below Lock and Dam Number 3 on the Red River (with known concentrations in the vicinity of the Old River Control Structure Complex). The pallid sturgeon is adapted to large, freeflowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant state of change. Many life history details and subsequent habitat requirements of this fish are not known. However, the pallid sturgeon is believed to utilize Louisiana riverine habitat during reproductive stages of its life cycle. Habitat loss through river channelization and dams has adversely affected this species throughout its range. The proposed action is located entirely with upland habitat. The proposed discharge lines would return clean water to the flooded bature where pallid sturgeon could be located.

Gulf Sturgeon
The Gulf sturgeon is a sub-species of the Atlantic sturgeon. It is an anadromous fish inhabiting coastal rivers from Louisiana to Florida during the warmer months and overwintering in estuaries, bays, and the Gulf of Mexico (NOAA 2018). Historically, Gulf sturgeon occurred from the Mississippi River east to Tampa Bay. Its present range extends from Lake Pontchartrain and the Pearl River system in Louisiana and Mississippi east to the Suwannee River in Florida; however, sporadic occurrences have been recorded as far west as the Rio Grande between Texas and Mexico, and as far east and south as Florida Bay. The only documented catches of Gulf sturgeon in the Mississippi River have reportedly taken place near its mouth; however, these are considered incidental occurrences since no resident (i.e., reproducing) population for the Mississippi River is believed to exist. The proposed project area is not located within any designated critical habitat in Louisiana. There is a very low potential that the Gulf sturgeon can be found in the Mississippi River adjacent to the levee where the work will occur. There is a low likelihood of the species being present Mississippi River in the general vicinity. Further, the project is located inland well outside suitable habitat (i.e. Mississippi River).

3.2.4 Cultural Resources

Existing Conditions

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended and codified in Title 54 of the United States Code; NEPA of 1969 (Public Law 91-190), as amended; and other applicable laws and regulations require Federal agencies to take into account the effects of their undertaking on the environment and any significant cultural resources within the project area of the proposed undertaking, as well as its area of potential effect (APE). Typically, these studies

require archival searches and field surveys to identify any cultural resources. When significant sites are recorded, efforts are made to minimize adverse effects and preserve the site(s) in place. If any significant sites cannot be avoided and would be adversely impacted, an appropriate mitigation plan would be implemented to recover data that would be otherwise lost due to the undertaking.

A large portion of the potential APE for the proposed project, has received Phase 1 cultural resources surveys related to the growth of the Shintech Chemical Plant. All cultural resources surveys have been conducted by Coastal Environments, Inc. Beginning at the western end of the currently proposed project, State Report 22-3472 (Hunter and Ryan 2010) recorded sites 16IV178 and 16IV179 in relatively close proximity to the proposed project. However, it is important to note that these cultural resources sites still are approximately 100 feet away from any projected impacts from the proposed project. Both of these sites were determined by the survey report, and are recorded by the database of the Louisiana State Historic Preservation Office (SHPO), as ineligible for the National Register of Historic Places (NRHP).

Adjacent to survey 22-3472 and to the east of it, survey report 22-2725 had been completed in 2005 (Ryan et al. 2005). Although this survey recorded several cultural properties related to the Planation, only 16IV91 is in proximity to the currently proposed project. This site was determined ineligible for the NRHP and is listed as such on the SHPO database. A survey for a utility corridor (22-3750; Griggs 2011) also partially overlaps Site 16IV91, but its data did not cause any change to the finding of ineligible for NRHP.

Still farther to the east within the currently proposed project area, Survey 22-3434 was completed for the Flopam Chemical Plant Site in 2010 (Ryan and Hahn 2010). The currently proposed project area is within the area determined as high probability to contain cultural resources, in the archival research portion of report 22-3434. Phase I survey conducted by Ryan and Hahn (2010) identified sites 16IV166 – 16IV170, 16IV173, and 16IV174 in close proximity to the currently proposed project area. According to current project proposed plans, these sites would have been avoided by the proposed project. Regardless, each of these sites was sufficiently tested for NRHP eligibility by Ryan and Hahn (2010), and have been listed on the SHPO database as ineligible for the NRHP.

Not covered by these Phase I cultural resources surveys, a length of approximately 450 meters (0.27 miles) of proposed project areas exists between Survey 22-2725 and Survey 22-3434. Another approximately 480 meters (0.3 miles) of unsurveyed land extends eastward from the end of Survey 22-3434 to the end of proposed project.

This land was examined on foot by USACE archaeologist Dr. Paul Hughbanks. A probe was also utilized to randomly test for remains below surface, and existing drainage ditches were used as an aid to determine if any physical remains of structures may be within this area. No remains were seen in the drainage ditches, and the random probings did not encounter anything that was interpreted as possible historic remains. In this circumstance, it is important to consider the potential impact footprint of the proposed project. Existing ditches will be used to transport water. Very little, if any, further excavation or impact is expected to occur on the protected interior side of the existing roadway and drainage ditch. It is also important to consider the existing background history and findings given by cultural resources surveys that occurred adjacent to the proposed project. Although this entire project area was historically occupied, no NRHP eligible remains of that occupation have been located adjacent to the existing highway or ditches.

Collectively, USACE uses the existing evidence to conclude that no historic properties will be affected by this proposed project. This conclusion has been presented to SHPO and to federally-recognized Tribe, for their comment, in a letter dated December 19, 2018.

3.2.5 Recreational Resources

Existing Conditions

Recreational use of the project area is light and likely includes recreation on the levee, such as biking, walking or running, and horseback riding. The Mississippi River is adjacent to the project area. People may bank fish along the river edge. No developed or designated recreation sites or facilities are within the project area.

3.2.6 Visual Resources (Aesthetics)

Existing Conditions

Existing Structures: The proposed site currently features the existing east bank Mississippi River Levee as a primary structure in the area. The levee is a typical earthen berm, covered in turf on both the protected and River sides.

Water: The Louisiana Scenic Rivers Act of 1988 was established to preserve, protect, and enhance the wilderness qualities, scenic beauties, and ecological regimes of rivers and streams in the state. However, there are no known, state designated scenic rivers or streams near the project area. The only major water resources is the main River channel of the Mississippi River.

Land Use: The dominant Eco-Region (Daigle et al. 2006): Reston, Virginia, U.S. Geological Survey (map scale 1:1,000,000) is Southern Holocene Meander Belts, which essentially follows the Mississippi River. Other, nearby Eco-Regions include Inland Swamps, Baton Rouge Terrace, and Southern Back Swamps. All of these Eco-Regions are a part of the Mississippi Alluvial Plain.

The vicinity of the project area is characteristic of Southern Holocene Meander Belts, with a variety of vegetation present, flat terrain lifting into a natural levee system near the banks of the Mississippi River, and open fields for agriculture.

Land use in the area is primarily agricultural and industrial, although there are scattered single-family residences located to the west of the project site. Several large chemical plants are found in the immediate project vicinity.

Landform and Vegetation: The surrounding habitat is composed of a broad mixture of open fields fronting the major thoroughfares of the region, surrounded by a backdrop of deep, wooded areas and the Mississippi River Levee, which acts as the dominant landform feature in the area.

Access: Public visual access to the project site can be taken from the nearby Louisiana Highway 405. The project site is also accessible via a gravel path on top of the levee. This non-motorized path could be used by bicyclists, walkers, and joggers.

3.2.7 Air Quality

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).

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 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.

Iberville Parish is one of five Baton Rouge area parishes that were designated by the USEPA as ozone non-attainment areas under the 8-hour standard effective June 15, 2004. Currently none of the five parishes are in attainment of NAAQS. 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 (LDEQ), Office of Environmental Assessment and Environmental Services.

Federal activities proposed in Iberville 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 VOC and NOX emissions caused by the construction of the project. Prescribed de minimis levels of 100 tons per year per pollutant are applicable in Iberville 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."

3.2.8 Water Quality

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.

Section 303(d) of the Clean Water Act (CWA) requires states to identify waterbodies that are not meeting water quality standards and to develop total maximum daily loads (TMDLs) for those pollutants suspected of preventing the waterbodies from meeting their standards. TMDLs 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 (LDEQ) oversees the program.

The LDEQ 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.

The LDEQ Section 305(b) and 303(d) Reports for 2010, included in the Water Quality Inventory Integrated Report, lists one waterbody adjacent to the project area. The waterbody is in Sub-segment Code LA070301 and is described as Mississippi River – from Monte Sano Bayou to Head of Passes. Available LDEQ records indicate that prior to the 2004 Water Quality Inventory Report, suspected causes of impairment to the listed waterbody consisted of: mercury; nitrate/nitrite (nitrite + nitrate as N); pesticides; phosphorous; priority organics (including dioxin); and total fecal coliform.

In the 2004 report, testing of the aforementioned impairments indicated a status of attainment had been achieved for the listed waterbody. The status of attainment for the subject waterbody was reported to be the same following the completion of the 2010 report. The current water quality concerns associated with Sub segment Code LA070301 is “fully supporting all standards”. The 2006 US Environmental Protection Agency integrated report methodology guidance categories--which are used to categorize a water body / pollutant combinations--listed the LA070301 segment as an Integrated Report Category (IRC) 1. The IRC 1 description is listed as any water body impairment that was cited on a previous §303(d) list that is now in attainment of all uses and standards and fully support all designated uses.

4. Environmental Consequences

4.1 Aquatic Resources/Fisheries

Future Conditions with No-Action

Without implementation of the proposed action, no change to the aquatic resources in the project vicinity is expected to occur.

Future Conditions with the Proposed Action

With implementation of the proposed action, no significant effects to aquatic or fishery resources are anticipated because no important fishery resources are present within the project area. Even during high water events, when River water would be returned from the land side of the levee to the flood side of the levee through the relief well and pump system, the impacts to any of the species discussed in Section 3.2.2 would have no effect.

4.2 Wildlife

Future Conditions with No-Action

Without implementation of the proposed action, no change to the wildlife resources in the project vicinity is expected to occur.

Future Conditions with the Proposed Action

With implementation of the proposed action, no significant direct or indirect effects to wildlife would occur as the project is located in a previously developed right-of-way (ROW) and will be designed and constructed to avoid impacts to wildlife. Any wildlife that may be present in the maintained levee ROW is highly mobile and would simply utilize an adjacent stretch of levee during construction activities. The installation of the relief wells and associated pumps would have no long term effect to the utilization of the levee by the limited wildlife present within the existing ROW. The Fish and Wildlife Coordination Act is not applicable to the proposed activity.

4.3 Threatened or Endangered Species

Future Conditions with No-Action

Without implementation of the proposed action, no direct, indirect, and cumulative impacts to threatened or endangered species, or their critical habitat would occur.

Future Conditions with the Proposed Action

With implementation of the proposed action, the USACE has determined that the proposed action would have no effect to listed threatened or endangered species or their critical habitat as the project area does not contain suitable habitat for listed species.

4.4 Cultural Resources

Future Conditions with No Action

With no action, conditions would remain largely the same as present. No historic properties are within the project area, and there would be no direct effect on historic properties. If seepage causes difficulty to modern industry or residential activities, these activities may engage actions that carry peripheral effects to more distant historic properties.

Future Conditions with the Proposed Action

Cultural resources surveys have been completed for a large portion of the proposed action area. These surveys did not find resources that are eligible for the NRHP. The remainder of proposed project has been examined by USACE archaeologist Dr. Paul Hughbanks, who found no visible remains of historic properties. The potential impacts of the proposed project were considered to form a conclusion that no historic properties would be affected by the proposed action. This conclusion is being coordinated with SHPO and federal-recognized Tribes.

4.5 Recreational Resources

Future Conditions with No-Action

Without implementation of the proposed action, the conditions within the recreational environment would continue as they have in the past and would be dictated by the natural land use patterns and processes that have dominated the area in the past.

Future Conditions with the Proposed Action

Traffic along the adjacent Louisiana Highway 405, including cycling traffic, may be interrupted occasionally during construction. Recreation users on the crown of the levee such as bikers, walkers, horseback riders, bird watchers, and photographers will be temporarily displaced during construction activities. Additionally, recreational use of the levee could be prohibited for up to a year while construction activities take place. Positive, long-term impacts to recreational resources include a reduced risk for seepage and associated flooding.

4.6 Visual Resources (Aesthetics)

Future Conditions with No-Action

Without implementation of the proposed action, seepage would continue to occur under the existing levee system. Increased water volumes may prove detrimental to a landscape and vegetation naturally designed for drier conditions. Otherwise, no changes to visual resources would occur.

Future Conditions with the Proposed Action

With the implementation of the proposed action there would be minimal direct and indirect impacts to visual resources in the project area. The proposed relief well construction and subsequent pumping of seepage waters over the existing levee could create a slight change to the landscape of the area.

The repair of the existing levee system is necessary and critical in order to protect lives and property from flooding. Temporary impacts that would occur during the construction process could include a closure to the road on top of the levee during the construction process which may prohibit access for up to a year. The noise level due to construction activity may increase during construction. However, it is expected the area will return to pre-construction conditions soon after completion of the project.

Long term negative impacts to the aesthetic (visual) resources would be minimal. With implementation of the proposed action, residents and people utilizing the adjacent public road would notice a series of small pipes protruding from the base of the levee with concrete pads extending to the roadside ditch. These structures will blend with the man-made appearance of the levee. No additional impacts to aesthetic resources were identified.

4.7 Air Quality

Future Conditions with No-Action

Without implementation of the proposed project, the status of attainment of air quality for Iberville Parish would not change from current conditions.

Future Conditions with the Proposed Action

With implementation of the proposed action, on-site construction activities are expected to produce less than 2 tons per year of VOC emissions and less than 27 tons per year of NOX emissions (less than the de minimis level of 100 tons per year per pollutant). Thus, the ambient air quality in Iberville Parish would not noticeably change from current conditions, and the status of attainment for the parish would not be altered.

4.8 Water Quality

Future Conditions with No-Action

Without implementation of the proposed action, no change to water quality is anticipated.

Future Conditions with the Proposed Action

With implementation of the proposed action, impacts to water quality are expected to be minimal and limited to slight increase in turbidity during construction. A stormwater pollution prevention plan will be developed to minimize any potential effects to water quality during construction. No impacts to wetlands or other waters of the U.S. will occur from implementation of the proposed action. Therefore a CWA, Section 404 evaluation is not required.

4.9 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 18-03 dated December 17, 2018, has been completed for the project area. A copy of the Phase 1 ESA will be maintained on file at the USACE, CEMVN Headquarters. The probability of encountering HTRW for the proposed actions is low based on the initial site assessments. If a recognized environmental condition is identified in relation to the project site, the USACE, CEMVN would take the necessary measures to avoid the recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

4.10 Cumulative Impacts Analysis

The CEQ regulations (40 CFR 1500-1508) implementing the procedural provisions of the 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.”

While the proposed action would result in minor impacts as previously noted, it is expected that no significant adverse cumulative impacts would occur as a result of implementation of the project. The direct, indirect, and cumulative impacts from associated projects listed in the Prior Reports Section were previously addressed. These reports also provided an evaluation of the direct, indirect, and cumulative impacts associated with the previous installation of similar relief wells and pumps in the vicinity of the proposed action. The discussions of potential cumulative impacts contained in the cited documents address projects similar to the proposed action and are consistent with the cumulative and indirect impacts anticipated from the proposed action.

Overall, the proposed action, in comparison to past, present, and reasonably foreseeable future actions, would not incrementally contribute adversely to the general project area. This includes the previous relief wells placed in the general vicinity of the proposed action. This flood risk reduction feature is part of an overall comprehensive plan for the Mississippi River and Tributaries project. The proposed action 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. Installation of the relief wells in Iberville Parish would ensure the ability of the levee to prevent flood damage to the natural and human environment on the protected side of the levee. No wetland impacts or other significant environmental impacts were identified during this evaluation. No secondary or indirect impacts were identified in association with the proposed action. The cumulative impacts of the proposed action are not expected to result in long-term adverse impacts.

5. Coordination and Public Involvement

Preparation of this draft EA and draft FONSI is being coordinated with, the public, appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties.

6. Compliance with Environmental Laws and Regulations

Environmental compliance for the proposed action would be achieved once:

- Comments from all appropriate agencies, organizations, and individuals received in response to this draft EA and draft FONSI are adequately addressed;
- The SHPO and federally recognized Tribal consultation, as required by Section 106 of the NHPA is complete; and
- The LDEQ consultation is completed as required under the Clean Air Act.

The appropriate application of mitigation is to formulate an alternative that first avoids adverse impacts, then minimizes adverse impacts, and lastly, compensates for unavoidable impacts. The proposed project was effectively designed to avoid and minimize adverse impacts. Therefore, the proposed activity has de minimis impacts not requiring mitigation. Specifically, no waters of the U.S. (wetlands) would be impacted by the proposed action.

The draft FONSI would not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

7. Conclusion

The proposed action consists of construction of approximately 50 relief wells placed near the toe of the existing levee. The roadside ditch along the road adjacent to the wells will be designed and reconfigured to collect well outflow. A combination of permanent and portable pumping systems will convey the water back across the levee into the river. This pipe will be covered (ramped) to allow for vehicular access along the crown of the existing levee. This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no adverse or beneficial impact upon resources identified above. There are no cumulative impacts, adverse or beneficial, associated with the proposed action.

Therefore, no significant adverse impacts to the human environment were identified in this evaluation.

8. Prepared By

EA # 568 and the associated draft FONSI were prepared by Howard Ladner, biologist, with relevant sections prepared by: Joseph Musso - HTRW; Paul Hughbanks - Cultural Resources; and Andrew Perez- Recreational Resources. The address of the preparers is: USACE, Mississippi River Valley Regional Planning and Environmental Division South, 7400 Leake Ave., New Orleans LA, 70118.

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APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D