



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

REPLY TO
ATTENTION OF

Regional Planning and Environment
Division South
Environmental Planning Branch

**DRAFT FINDING OF NO SIGNIFICANT IMPACT
(FONSI)**

**MISSISSIPPI RIVER OUTLETS, VICINITY OF VENICE, LOUISIANA,
EXTENSION OF JETTIES FOR BAPTISTE COLLETTE BAYOU
PLAQUEMINES PARISH, LOUISIANA**

Description of the Proposed Action (Recommended Plan): The proposed action consists of extending rock jetties in Baptiste Collette Bayou. The current rock jetties begin near approximate Mile 6.1 and extend northward to approximate Mile 7.5. The current parallel mound jetties were built at the entrance to Baptiste Collette Bayou in 1978 to reduce the amount of maintenance dredging required for safe navigation. The jetties were part of navigation improvements to the Mississippi River Outlets, Vicinity of Venice, Louisiana project which included similar jetties at the entrance to Tiger Pass. Rock and/or concrete would be placed in shallow open water along both sides of the Baptiste Collette Bayou navigation channel approximately 400 feet from the channel centerline to extend the existing rock jetties northward from approximate Mile 7.5 to approximate Mile 9.0. The jetty extensions would be constructed to match the design of the existing Baptiste Collette jetties.

Factors Considered in Determination: This U.S. Army Corps of Engineers, New Orleans District (CEMVN) has assessed the impacts of the "no action" and the recommended plan on important resources including: wetlands; wildlife; threatened and endangered species; essential fish habitat; cultural resources; recreational resources; aesthetics (visual resources); socio-economics; air quality; and noise. On [REDACTED], draft EA #564 and the associated draft Finding of No Significant Impact were mailed out for a 30-day public review and comment period. Environmental compliance for the Federal action was achieved based upon the following actions.

Clean Air Act of 1972: In a letter dated [REDACTED], the LDEQ stated that Plaquemines

Parish is currently in attainment of National Ambient Air Quality Standards.

Clean Water Act Section 404(b)(1): A Clean Water Act Section 404(b)(1) evaluation and public notice were signed and mailed out for public and agency review and comment on 12 October 2018. The 404(b)(1) public notice is in Appendix A of EA #564.

Clean Water Act Section 401: The CEMVN received the State Water Quality Certification for the proposed action in EA #564 on _____ (WQC _____).

Coastal Zone Consistency: The Louisiana Department of Natural Resources (LADNR) determined that the project as proposed is consistent with the Louisiana Coastal Resources Plan and issued CZD _____.

Endangered Species Act: The FWS concurred with the “not likely to adversely affect” determination on _____.

Fish and Wildlife Coordination Act: This office has concurred with, or resolved, all recommendations contained in the final FWCAR, and project-specific recommendations have been addressed in EA #564 and are incorporated into this FONSI.

Magnuson-Stevens Fisheries Conservation and Management Act: Comments and EFH conservation recommendations were received from the NMFS in their letter dated _____.

National Historic Preservation Act: The SHPO concurred with the determination of *no adverse effect to historic properties* on _____.

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

1. The USACE currently holds a Federal Fish and Wildlife Permit for eagle take associated with, but not the purpose of, the activities discussed in the EA #564. The permit includes avoidance, minimization, and mitigation measures that the Corps must comply with.

Public Involvement: The recommended plan has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of EA #564 for a 30-day public review and comment period. Comments on the EA #564 and FONSI were received from the National Marine Fisheries Service, the Federal Emergency Management Agency, the Louisiana Department of Wildlife and Fisheries, and the Louisiana Department of Environmental Quality. All comments received have been addressed and responses have been provided (Appendix _____ of EA #564).

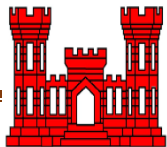
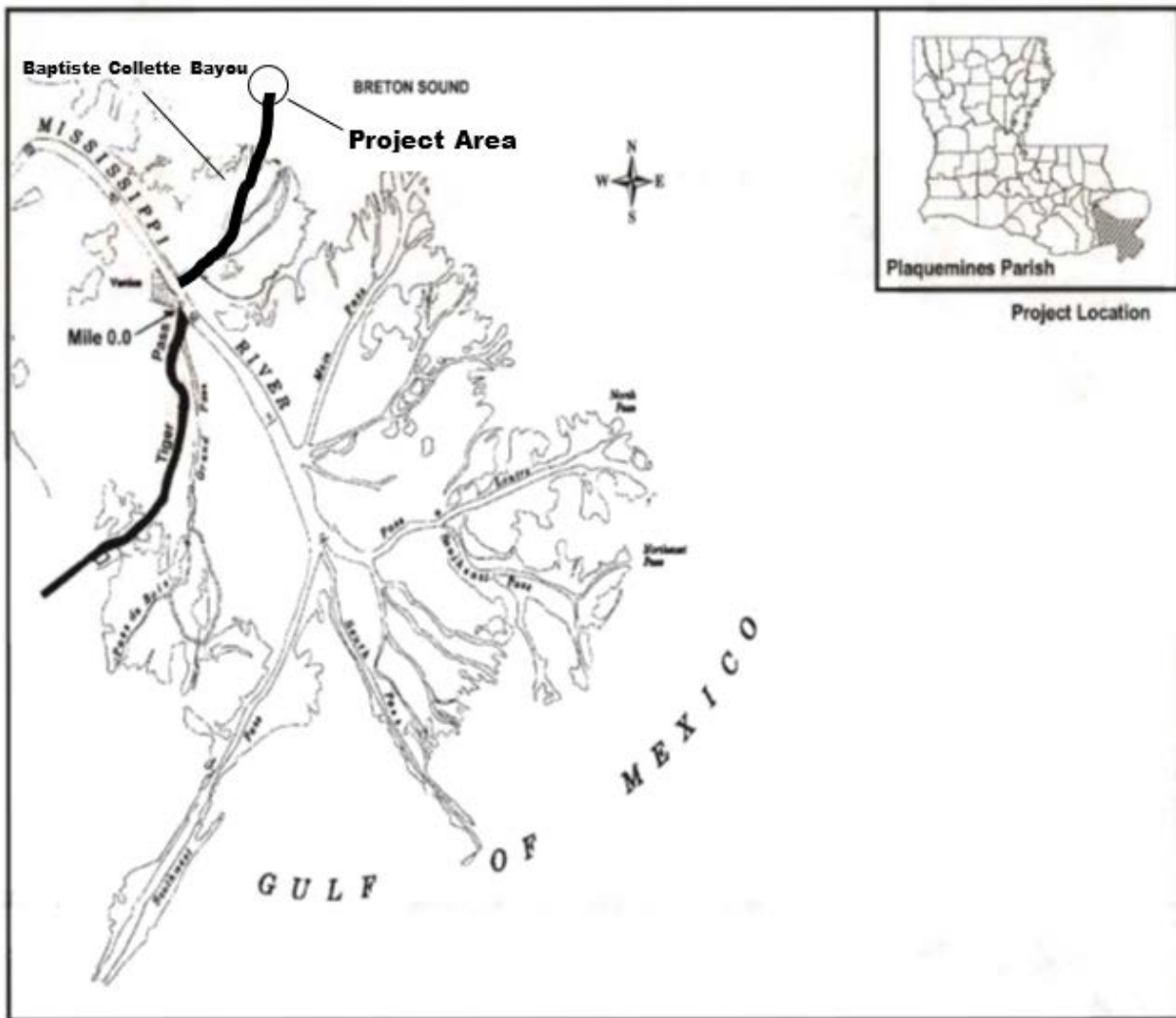
Decision: CEMVN has assessed the environmental impacts of the recommended plan on relevant resources in EA #564. The recommended plan would have only temporary short term impacts on air quality from heavy equipment operations during construction; short term temporary impacts to adjacent areas from construction noise. An assessment of the potential environmental impacts to important resources found that the proposed project would have only minimal and insignificant impacts to important resources in the project area. I have reviewed the EA #564 and have considered public and agency comments and recommendations. Based on the assessment conducted in EA #564 which is attached hereto and made a part hereof, and the implementation of the environmental design commitments listed above, I have determined that the recommended plan would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

Date

Michael Clancy
Colonel, U.S. Army
District Commander

DRAFT ENVIRONMENTAL ASSESSMENT
MISSISSIPPI RIVER OUTLETS, VICINITY OF VENICE, LOUISIANA,
EXTENSION OF JETTIES FOR BAPTISTE COLLETTE BAYOU
PLAQUEMINES PARISH, LOUISIANA

EA #564



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

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MISSISSIPPI RIVER OUTLETS, VICINITY OF VENICE, LOUISIANA,
EXTENSION OF JETTIES FOR BAPTISTE COLLETTE BAYOU
PLAQUEMINES PARISH, LOUISIANA

EA #564

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 the proposed jetty extensions in Baptiste Collette Bayou, Plaquemines Parish, Louisiana (Figure 1). This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's Regulations (40 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 (EIS) or a Finding of No Significant Impact (FONSI).

1.1 Proposed Action

The proposed action consists of extending rock jetties in Baptiste Collette Bayou. The current rock jetties begin near approximate Mile 6.1 and extend northward to approximate Mile 7.5 (Figure 1). The current parallel mound jetties were built at the entrance to Baptiste Collette Bayou in 1978 to reduce the amount of maintenance dredging required for safe navigation. The jetties were part of navigation improvements to the Mississippi River Outlets, Vicinity of Venice, Louisiana project which included similar jetties at the entrance to Tiger Pass.

Rock and/or concrete would be placed in shallow open water along both sides of the Baptiste Collette Bayou navigation channel approximately 400 feet from the channel centerline to extend the existing rock jetties northward from approximate Mile 7.5 to approximate Mile 9.0 (Figure 2). The jetty extensions would be constructed to match the design of the existing Baptiste Collette jetties. The west jetty extension would be constructed to a maximum, approximate height of about +5.5 feet North American Vertical Datum 1988 (NAVD88), with a crown width of about 14 feet and a side slope of about 1V on 3H. The east jetty extension would be constructed to a maximum, approximate height of about +5.5 feet NAVD88, with a crown width of about 4 feet and a side slope of about 1V on 2H (Figure 3). The west and east jetties would be extended by approximately 6,860 and 7,920 feet, respectively. A maximum of approximately 18 acres of shallow open water bottom would be impacted by construction of the jetty extensions; approximately 410,000 cubic yards (CY) of rock would be used to build both the jetty extensions.

Flotation access channels would be excavated, as necessary, by a barge-mounted bucket dredge along the channel side of the jetty extensions to permit rock/concrete carrying barges access to the work sites (Figure 3). Approximate maximum dimensions of flotation channels would be a depth of -11.5 feet Mean Lower Low Water (MLLW), a width of 80 feet, and a total length of approximately 6,860 linear feet on the west side of the channel and approximately 7,920 linear feet on the east side of the channel. Through the beneficial placement of dredged material, a maximum of approximately 27 acres of Baptiste Collette shallow open water bottom habitat would be converted to coastal marsh by placement of approximately 350,000 CY of dredged material removed during the flotation channel excavation. Dredged material from flotation channel construction would be placed behind the jetties to a maximum elevation not to exceed a height of +3.5 feet NAVD88 (Figure 4). Although dredged, it is anticipated that the flotation channels would refill naturally through siltation from wave action in the Baptiste Collette Bayou channel. No dredged material from flotation channel construction would be placed upon existing vegetated wetlands.

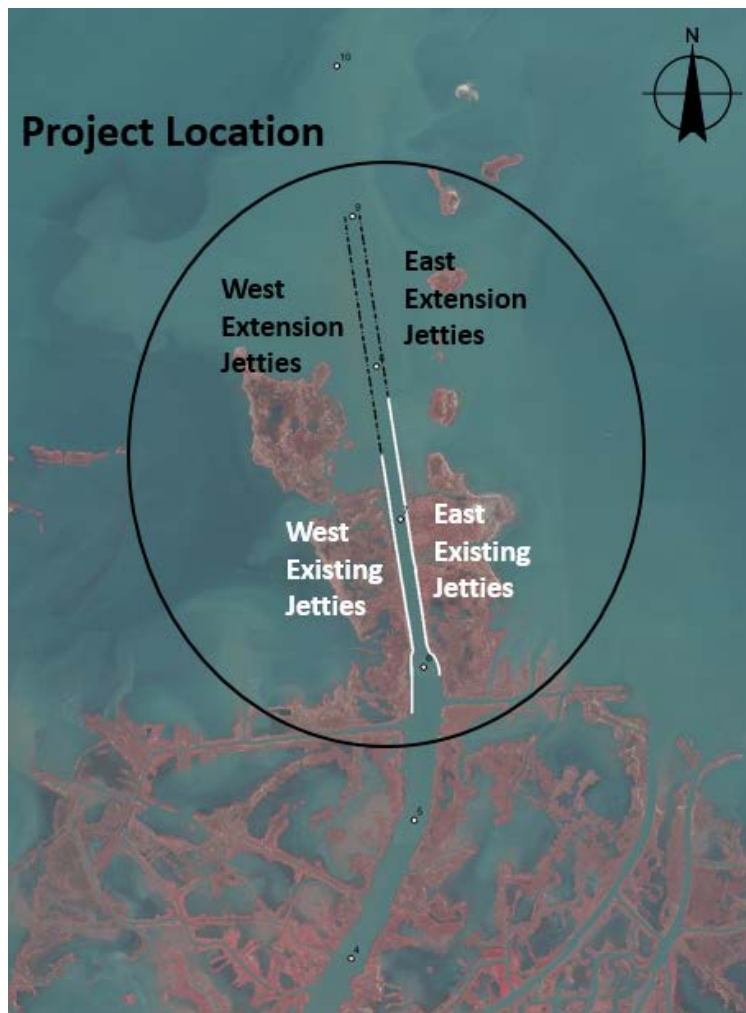


Figure 1: Project location of proposed jetty extensions in Baptiste Collette Bayou, Plaquemines Parish, Louisiana.

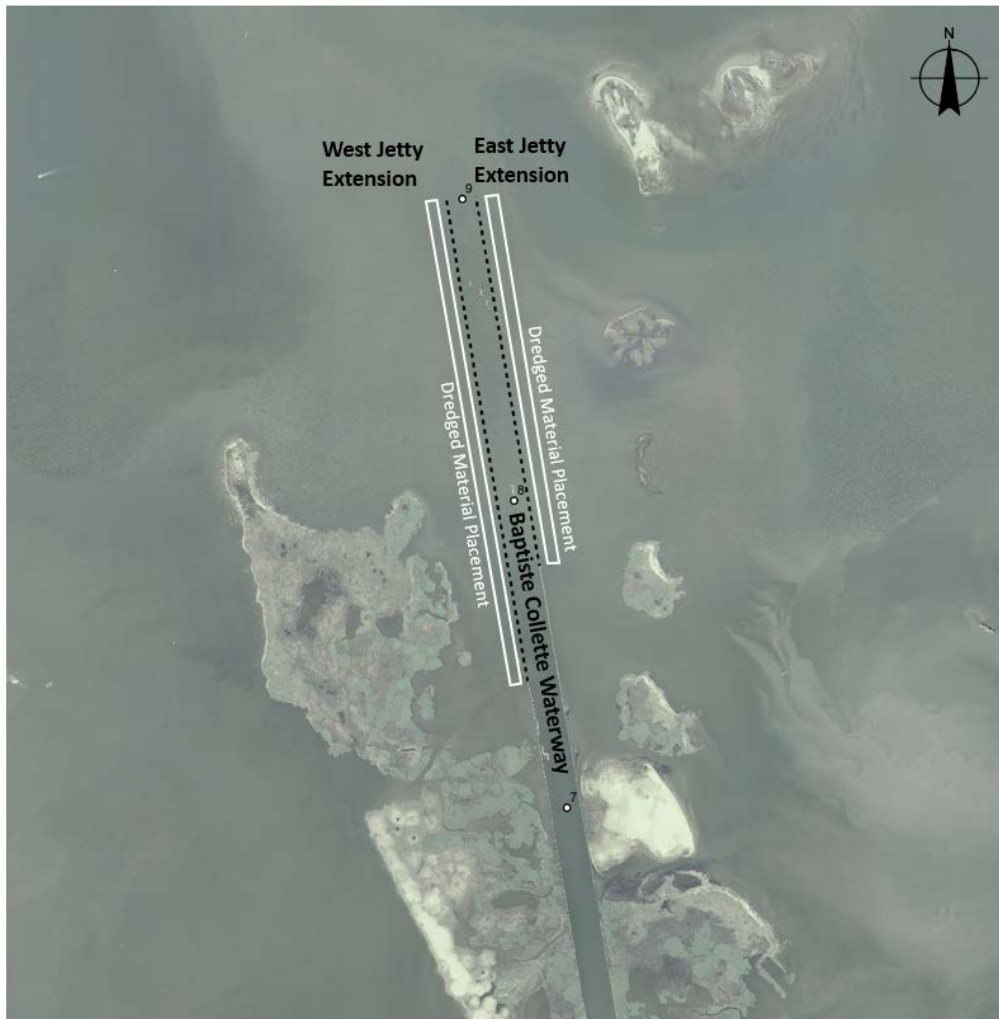


Figure 2: Proposed project location with jetty extensions and dredged material placement areas, Baptiste Collette Bayou, Plaquemines Parish, Louisiana.

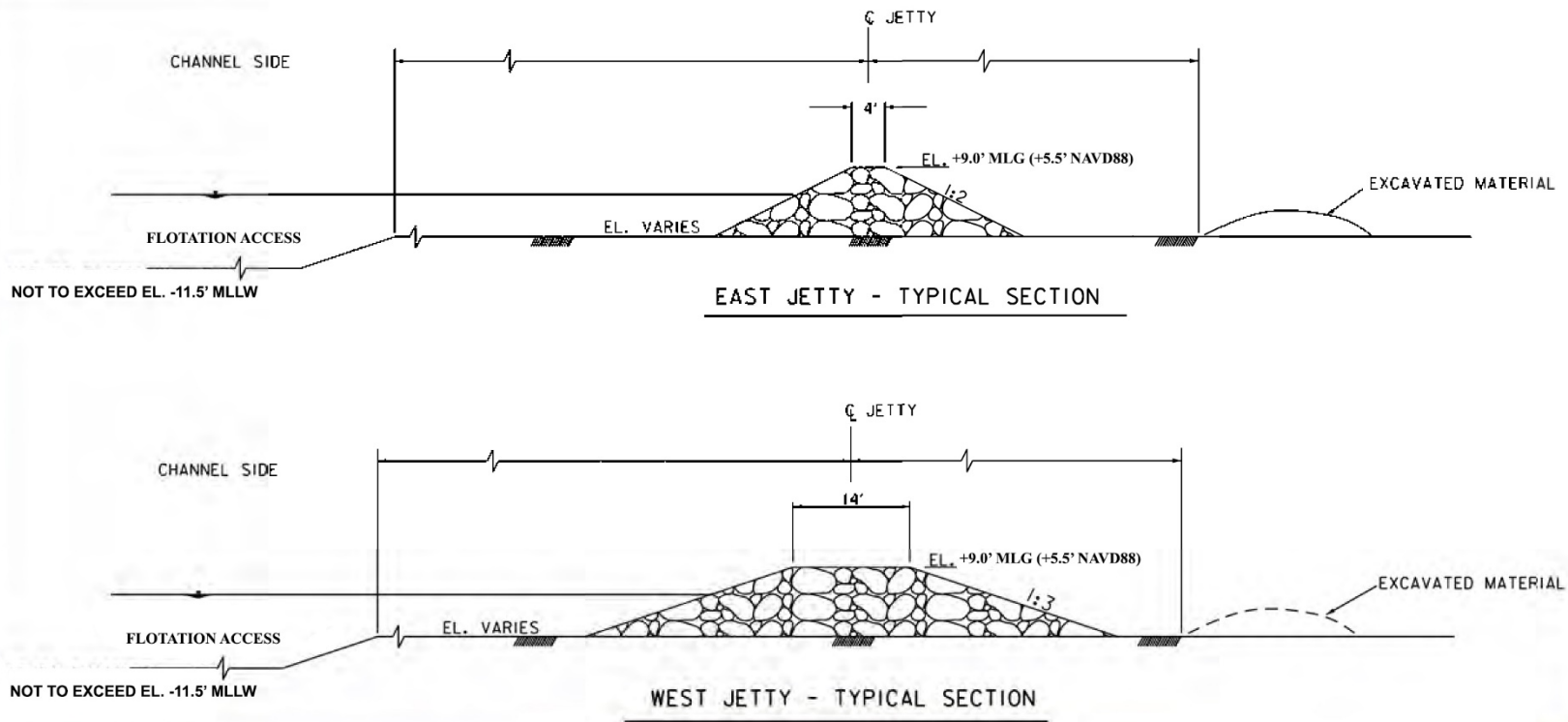


Figure 3: Proposed design for east and west jetties, Baptiste Collette Bayou, Plaquemines Parish, Louisiana.

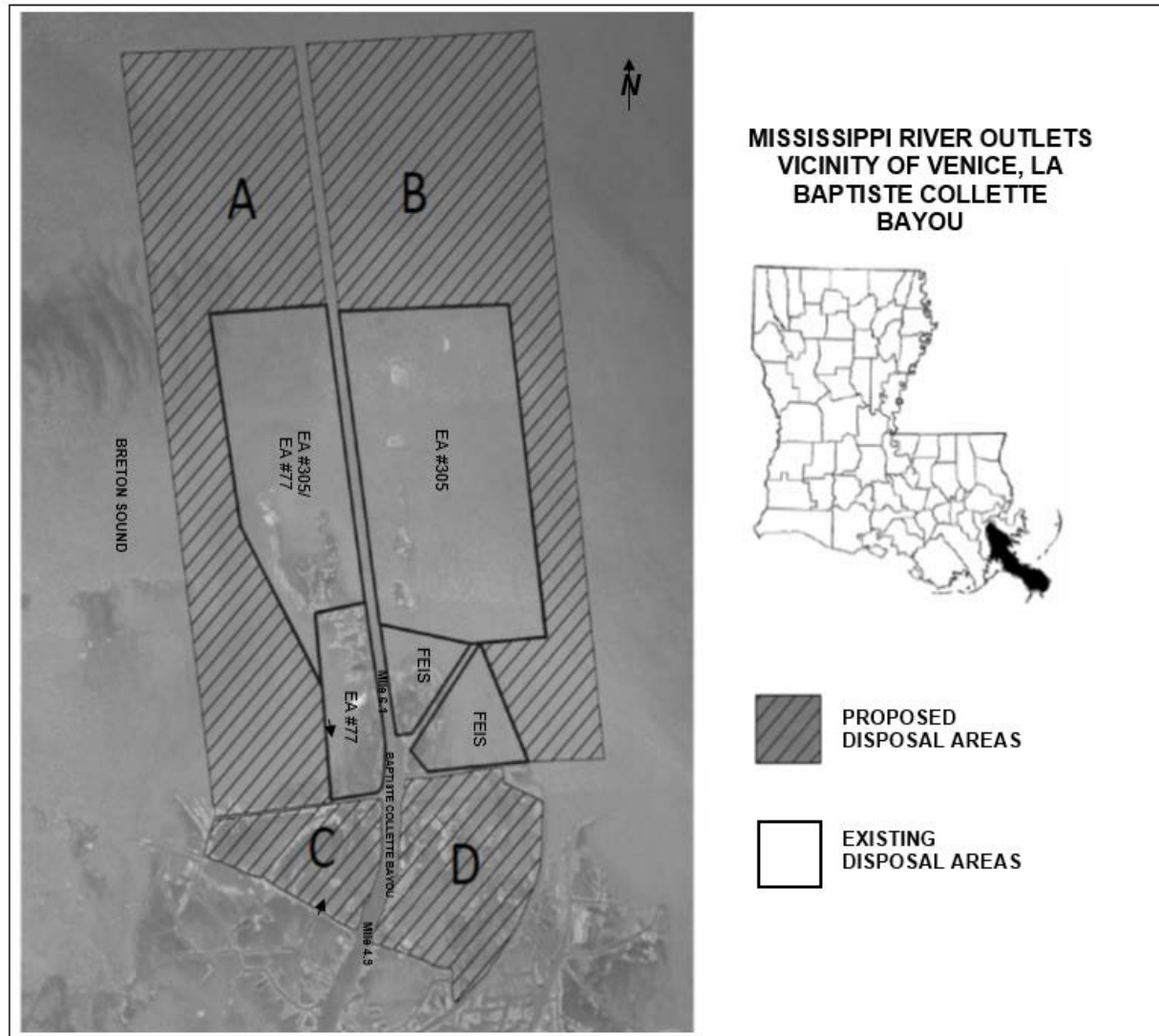


Figure 4: Previously cleared beneficial use areas, Baptiste Collette Bayou, Plaquemines Parish, Louisiana.

1.2 Authority

The Mississippi River Outlets, Vicinity of Venice, Louisiana project was authorized by the River and Harbor Act of 1968 (Public law 90-483), which provided for additional navigational outlets from the Mississippi River in the vicinity of Venice, Louisiana to the Gulf of Mexico. The authorization resulted in the enlargement of the existing channels of Baptiste Collette Bayou and Grand-Tiger Passes to provide channels 14 feet deep Mean Low Gulf (MLG) over a bottom width of 150 feet, with entrance channels in open water 16 feet deep over a bottom width of 250 feet. The Act also provided for protective jetties from the channels' entrance to the -6-foot MLG contour of the Gulf of Mexico. The channels are maintained by periodic hydraulic dredging, with shoal material removed approximately every one to two years.

1.3 Purpose and Need for the Proposed Action

The proposed northward extension of the Baptiste Collette Bayou jetties would reduce shoreline erosion and channel shoaling in the vicinity of the Mile 7.5 to Mile 9.0 channel segment. A reduction in the shoaling rate would result in a decrease in the maintenance dredging frequency, which has historically occurred every one to two years, for the Baptiste Collette Bayou navigation channel. Approximately 400,000 to 1.2 million cubic yards of dredged material are removed from the channel every one to two years during routine maintenance dredging at a cost of between \$5,000,000 and \$10,000,000 per dredging event as discussed in EA #505.

1.4 Prior NEPA Documents

A Final Environmental Impact Statement (FEIS), "Mississippi River Outlets, Vicinity of Venice, Louisiana," was filed with the President's Council on Environmental Quality (CEQ) on 10 September 1976. The FEIS evaluated the environmental impacts of dredging and the beneficial use of dredged material in areas along Baptiste Collette Bayou and Grand-Tiger Passes. Additional reports include:

- December 1975, "Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum";
- March 1978, "Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum, Supplement No. 1, Jetties Design";
- EA #77, "Mississippi River Outlets, Louisiana – Marsh Creation," with the Finding of No Significant Impact (FONSI) signed on 12 September 1988;
- EA #305, "Mississippi River Outlets, Vicinity of Venice, Louisiana, Baptiste Collette Maintenance Dredging, Beneficial Use of Dredged Material, Plaquemines Parish, Louisiana," with the FONSI signed on 25 January 2000;
- EA #505, "Mississippi River Outlets, Vicinity of Venice, Louisiana, Extension of Jetties and Designation of Additional Disposal Areas for Baptiste Collette Bayou, Plaquemines Parish, Louisiana," with the FONSI signed on 14 October 2011; and,
- EA #554, "Integrated Feasibility Study and Draft Environmental Assessment, Baptiste Collette Bayou Navigation Channel Deepening Section 203 Study, Appendix B – Environmental," with an unsigned FONSI as this Study/EA is still ongoing.

1.5 Public Concerns

The public is concerned with maintaining safe navigation access between Venice and the adjacent waters of the Gulf of Mexico, and between the east and west Gulf waters. Commercial navigation relies on the consistent depth authorized for Baptiste Collette Bayou and other passes of the Mississippi River. A depth-deficient navigation channel forces river pilots to place safety restrictions on large vessels (e.g., one-way traffic or light-loading of vessels), causing delays and increasing costs at nearby ports. In addition, widespread public support exists to avert further loss of coastal habitats and associated fish and wildlife resources in Louisiana; analyses show that coastal Louisiana has experienced a net change in land area of approximately -4,833 square kilometers (-1,866 square miles) from 1932 to 2016 (Couvillion et al. 2017).

1.6 Prior Beneficial Use Studies and Reports

Additional information on other activities in the vicinity of this project is available online as New Orleans District Environmental Dredging Conference materials and beneficial use reports: <http://www.mvn.usace.army.mil/About/Offices/Operations/BeneficialUseofDredgedMaterial.aspx>. A number of studies, reports, and environmental documents on water resources development in the project area have been prepared by USACE, other Federal, state, and local agencies, research institutes, and individuals. The more relevant prior studies, reports, and projects are described in Table 1.

Table 1: Prior studies and reports in the Baptiste Collette Bayou project area, Plaquemines Parish, Louisiana.

| Project Year | Study/Report/Environmental Document Title | Document Type |
|--------------|--|------------------------------------|
| 1975 | Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum | General Design Memorandum |
| 1978 | Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum, Supplement No. 1, Jetties Design | General Design Memorandum |
| 1988 | Mississippi River Outlets, Louisiana – Marsh Creation | Environmental Assessment (EA) #77 |
| 2000 | Mississippi River Outlets, Vicinity of Venice, Louisiana, Baptiste Collette Maintenance Dredging, Beneficial Use of Dredged Material, Plaquemines Parish, Louisiana | Environmental Assessment (EA) #305 |
| 2011 | Mississippi River Outlets, Vicinity of Venice, Louisiana, Extension of Jetties and Designation of Additional Disposal Areas for Baptiste Collette Bayou, Plaquemines Parish, Louisiana | Environmental Assessment (EA) #505 |
| 2016 | Integrated Feasibility Study and Draft Environmental Assessment, Baptiste Collette Bayou Navigation Channel Deepening Section 203 Study, Appendix B – Environmental (this Study/EA is still ongoing) | Environmental Assessment (EA) #554 |

2. Alternatives Including the Proposed Action

No Action Alternative. This alternative was screened out given shoaling from wave induced shoreline erosion would continue to reduce navigation access and create hazardous conditions in the project area.

Proposed Action Alternative. This alternative was carried forward given it would: 1) reduce shoaling from wave induced shoreline erosion; 2) continue to allow navigation access and reduce hazardous conditions in the project area; and 3) contribute to the enhancement of aquatic habitat as the new jetties would provide both intertidal and subtidal hard substrates for oysters, offer diversity to the aquatic habitat, and create approximately 27 acres of coastal marsh habitat and 14,780 linear feet of new fisheries habitat for spawning, nursery, shelter, and foraging.

2.1 No Action Alternative – [Future Without Project (FWOP)]

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

In the No Action Alternative, the proposed action would not be constructed. Under this alternative, shoaling from wave induced shoreline erosion would continue to reduce navigation access and create hazardous navigation conditions in the project area.

2.2 Proposed Action - (Extend Rock Jetties)

The proposed action consists of extending rock jetties in Baptiste Collette Bayou. The current rock jetties begin near approximate Mile 6.1 and extend northward to approximate Mile 7.5. The current parallel mound jetties were built at the entrance to Baptiste Collette Bayou in 1978 to reduce the amount of maintenance dredging required for safe navigation. The jetties were part of navigation improvements to the Mississippi River Outlets, Vicinity of Venice, Louisiana project which included similar jetties at the entrance to Tiger Pass. Rock and/or concrete would be placed in shallow open water along both sides of the Baptiste Collette Bayou navigation channel at a distance of approximately 400 feet from the channel centerline to extend the existing rock jetties northward from approximate Mile 7.5 to approximate Mile 9.0. The jetty extensions would be constructed to match the design of the existing Baptiste Collette jetties. The west jetty would be constructed to a maximum, approximate height of about +5.5 feet NAVD88, with a crown width of about 14 feet, and a side slope of about 1V on 3H. The east jetty would be constructed to a maximum, approximate height of about +5.5 feet NAVD88, with a crown width of about 4 feet, and a side slope of about 1V on 2H. The east jetty would be extended by approximately 6,860 feet, and the west jetty would be extended by approximately 7,920 feet. A maximum of approximately 18 acres of shallow open water bottom would be impacted by construction of the jetty extensions; approximately 410,000 CY of rock would be used to build both the jetty extensions (Figures 1-3).

Flotation access channels would be excavated, as necessary, along the channel side of the jetty extensions to permit rock/concrete carrying barges access to the work sites. Approximate maximum dimensions of flotation channels would be a depth of -11.5 feet MLLW, a width of 80 feet, and a total length of approximately 6,860 linear feet on the west side of the channel and approximately 7,920 linear feet on the east side of the channel. Flotation channel excavation would be performed by a barge-mounted bucket dredge. A maximum of approximately 27 acres of Baptiste Collette shallow open water bottom habitat would be impacted by flotation channel excavation and approximately 350,000 CY of material would be removed during the dredging. Flotation channels would be allowed to fill naturally by siltation from wave action in the Baptiste Collette Bayou channel.

A maximum of approximately 27 acres of shallow open water bottom would be impacted by the beneficial placement of dredged material to marsh platform heights. Dredged material from flotation channel construction would be placed in shallow open water behind the jetties to a maximum elevation not to exceed a height of +3.5 feet NAVD88. No flotation material would be placed upon existing vegetated wetlands.

3. Affected Environment

3.1 Description of the Project Area

Plaquemines Parish is located within the Central Gulf Coastal Plain in coastal southeastern Louisiana. The parish encompasses the current delta of the Mississippi River, which was built up from alluvial silt deposited over centuries when the river was levee-free and overflowed its banks. Elevations range from sea level along the Gulf coast, to approximately 5 feet above sea level along natural levee ridges.

Baptiste Collette Bayou is an approximately 100-year-old east bank distributary channel of the Mississippi River, just upstream from Venice. It extends about 8 miles in a northeasterly direction from the river to Breton Sound. The Baptiste Collette Bayou is very large at its confluence with the Mississippi River and reduces width and depth at each of its major distributaries, Emeline Pass and Kimball Pass. Baptiste Collette Bayou captures about 8 percent of the Mississippi River flows, with an average discharge of approximately 40,000 cubic feet per second. River sediments contribute to rapid bar formation near the mouth of Baptiste Collette Bayou (*i.e.*, the Bar Channel). Jetties constructed from approximate Mile 6.1 to Mile 7.5 help reduce shoaling of the navigation channel by carrying suspended sediments out into deeper water and preventing littoral drift deposits within the jetty reach; nevertheless, maintenance dredging of the Bar Channel is required on almost an annual basis. The proposed project area is located near the mouth of Baptiste Collette Bayou, within the modern subdelta of the Mississippi Deltaic Plain. The area is characterized by low elevations ranging from sea level to 5 feet above sea level. Physiographic features in the area include active and abandoned river channels and distributaries, tidal streams, levee ridges, shallow open water areas, marshes, and a few sandy beaches.

Baptiste Collette Bayou provides navigation access for commercial and recreational vessels between Venice, Louisiana and the adjacent areas of the Gulf of Mexico, and provides a shorter navigational route between east and west Gulf waters when used in conjunction with the Grand and Tiger Pass features of the Mississippi River Outlets, Vicinity of Venice, Louisiana project.

Baptiste Collette Bayou is heavily used by vessels supporting the offshore oil and gas industry, and commercial and sport fishing vessels based in Venice, located on the right-descending bank of the Mississippi River about 10.8 miles above the Head of Passes and approximately 70 airline miles southeast of New Orleans. At the terminus of Louisiana Highway 23, Venice is the most southerly point in the general area accessible by land transportation. When Venice landings are combined with nearby port of Empire landings, their combined value of fishery products consistently ranks among the nation's top five fishing ports (NMFS 2018). Venice-based marine sport fishing represents an additional regional industry of importance, rivaled in Louisiana only by Grand Isle. The sport fishing industry in Venice provides an important source of jobs and earnings for area residents. Venice is a major launching site for recreational crafts using the Mississippi Delta and coastal waters south of Venice. Hunting and fishing are the primary recreational activities within the region due to the varied and unique fish and wildlife and natural resources of the delta. The estuarine waters of the project area are some of the most heavily utilized for recreation on the entire Louisiana coast. Venice is also an important service, supply, and transport hub for off-shore petroleum platforms in the Gulf of Mexico.

Within the project area, predominant habitat types include emergent marsh (mainly intermediate, brackish, and saline—much of it remnant/eroding) and shallow open water. Slightly elevated areas of shrub/scrub habitat may occur as well. Vegetated wetland development areas, created from the beneficial use of material excavated during CEMVN maintenance dredging of the Baptiste Collette Bayou Bar Channel, currently exist in shallow open water and remnant marsh areas along both sides of the channel from approximately Mile 6.0 to Mile 8.5. In addition to newly created emergent marsh habitat, the beneficial use of dredged material has resulted in the creation of numerous small bird islands along the east side of the channel which extend in a northeasterly direction from approximately Mile 7.0 to Mile 9.0. These bird islands were specifically created to provide nesting habitat for colonial nesting seabirds/waterbirds in areas that have become increasingly susceptible to shoreline erosion, subsidence, and sea level rise. In total, approximately 1,923 acres of emergent marsh, sand berms/spit, and bird island habitat have been successfully created from the beneficial use of dredged material removed during maintenance dredging activities in the Baptiste Collette Bayou Bar Channel. The marshes and shallow bays in the area function as nursery grounds for valuable stocks of shrimp, oysters, crabs, and finfishes, in addition to providing refugia and habitat for foraging, nesting, and loafing of terrestrial wildlife, migratory waterfowl, and other avian species.

3.1.1 Climate

The project area climate 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 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 project area is 67 degrees Fahrenheit (°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.

3.1.2 Geology

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 sediment. Soil types in the project area are predominantly Balize and Larose. 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 (USACE 1974).

3.2 Relevant Resources

This section contains a description of important resources that could be impacted by the proposed action. Important resources identified include navigation, wetlands, fisheries, soils and water bottoms, essential fish habitat (EFH), wildlife, threatened and endangered species, cultural resources, recreational resources, aesthetics, air quality, and water quality (Table 2). Resources described in this section are those recognized by laws, executive order, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. This EA has considered the objectives of Executive Order 11988 (Floodplain Management); however, it was determined that floodplain impacts, if any, from the proposed action would be mainly positive (*i.e.*, preventing further erosion of the adjacent flood plain and associated habitats, and thus, maintaining their natural and beneficial values). Additionally, there is no practicable alternative for project construction outside the 100-year floodplain.

Table 2: Relevant Resources and their Institutional, technical, and public importance.

| Resource | Institutionally Important | Technically Important | Publicly Important |
|------------|--|---|---|
| Navigation | Rivers and Harbors Act of 1899 and River and Harbor Flood Control Act of 1970 (PL 91-611). | USACE provides safe, reliable, efficient, and environmentally sustainable waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation. | Navigation concerns affect area economy and are of significant interest to community. |

| Resource | Institutionally Important | Technically Important | Publicly Important |
|--|---|---|---|
| Wetlands | Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act. | They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities. | The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes. |
| Aquatic Resources/ Fisheries | Fish and Wildlife Coordination Act of 1958, as amended; Clean Water Act of 1977, as amended; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968. | They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources. | The high priority that the public places on their aesthetic, recreational, and commercial value. |
| Soils and Water Bottoms | Fish and Wildlife Coordination Act, Marine Protection, Research, and Sanctuaries Act of 1990 | State and Federal agencies recognize the value of water bottoms for the production of benthic organisms. | Environmental organizations and the public support the preservation of water quality and fishery resources. |
| Essential Fish Habitat (EFH) | Magnuson-Stevens Fishery Conservation and Management Act of 1996, Public Law 104-297 | Federal and state agencies recognize the value of EFH. The Act states, EFH is "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." | Public places a high value on seafood and the recreational and commercial opportunities EFH provides. |
| 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 aesthetic, 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. |

| Resource | Institutionally Important | Technically Important | Publicly Important |
|----------------------|---|--|---|
| 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 Navigation

Existing Conditions

Baptiste Collette Bayou provides navigation access for shallow draft commercial and recreational vessels between Venice, Louisiana and the adjacent areas of the Gulf of Mexico. The channel also provides a shorter navigational route between east and west Gulf waters when used in conjunction with the Grand-Tiger Pass features of the Mississippi River Outlets, Vicinity of Venice, Louisiana project. In addition, Baptiste Collette Bayou is used as an access route to the Gulf of Mexico for shallow draft vessels servicing offshore oil and gas facilities in the area.

The Baptiste Collette Bayou navigation channel consists of a 14-foot-deep by 150-foot-wide channel through the inland reach, and a 16-foot-deep by 250-foot-wide entrance channel. Despite the 1978 addition of parallel rubble-mound east and west jetties constructed at the channel's entrance to the -9.5 foot MLLW gulf contour, shoal material originating from upstream sediment sources and from erosion of the adjacent bankline/shoreline continues to enter portions of the channel and create a hazard to navigation.

3.2.2 Wetlands

Existing Conditions

According to USACE (1987) wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Additionally, USACE uses three criteria to determine if an area is a jurisdictional wetland: the area must have the appropriate hydrology, contain hydric soils, and support hydrophytic vegetation (USACE 1987). Wetlands are technically important because: 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. Wetlands are publicly important because of the high value the public places on the functions and values that wetlands provide.

Wetlands in the project area consist of emergent marshes, composed primarily of vegetation that is rooted in seasonally or permanently flooded soils with most of the vegetative portion of the plant above water. Marshes of Louisiana have been divided into four types (fresh, intermediate, brackish, saline) by Chabreck (1970) based on an earlier classification scheme. The emergent marshes in the project area are primarily intermediate; however, because of the fluctuating nature of salinities due to varying and substantial channel discharges, the marsh has characteristics of both fresh and saline marshes. In general, Baptiste Collette Bayou flows through mostly fresh and intermediate marsh, with fresh marsh just south and west of the bayou, intermediate marsh to the east of the bayou, and a fringe of saline marsh is present to the east of the eastern jetty, where the bayou enters the tidal waters of Breton Sound (Sasser et al. 2014). A brief description of the marsh types in or near the project area follows.

Freshwater marsh near the project area is strongly influenced by freshwater discharges from the Mississippi River and associated distributary outlets. Salinity in areas of freshwater marsh rarely increases above 2.0 parts per thousand (ppt), with a year-round average of 0.5-1.0 ppt (Chabreck 1970). Freshwater marsh contains a high diversity of plant species, and is typically dominated by maidencane (*Panicum hemitomon*), bulltongue (*Sagittaria lancifolia*), Baldwin's spikerush (*Eleocharis baldwinii*), or sawgrass (*Cladium jamaicense*). Other than these dominant plants, the following species primarily occur in fresh marsh: false nettle (*Boehmeria cylindrical*), button brush (*Cephalanthus occidentalis*), taro (*Colocasia esculenta*), swamp loosestrife (*Decodon verticillatus*), American white waterlily (*Nymphaea odorata*), broadleaf arrowhead (*Sagittaria latifolia*), delta arrowhead (*Sagittaria platyphylla*), Delta bulrush (*Schoenoplectus deltarum*), and marsh St. Johnswort (*Triadenum virginicum*) (Sasser et al. 2014). Over the past few decades, freshwater marshes have undergone the largest rate of reduction in acreage of any marsh type in Louisiana (The Nature Conservancy 2011).

Intermediate marsh in the project area is subjected to an irregular tidal regime and oligohaline conditions, with salinities generally ranging from 1.0-8.0 ppt (Chabreck 1970). This marsh type is characterized by near total ground cover of emergent wetland plants with small pools or ponds scattered throughout. Intermediate marsh contains a higher diversity of species than saline or brackish marsh, many of which are found in freshwater marsh and some of which are found in brackish marsh. Typical vegetation is frequently dominated by Malabar sprangletop (*Leptochloa fusca*), switchgrass (*Panicum virgatum*), seashore paspalum (*Paspalum vaginatum*), common reed (*Phragmites australis*), or chairmaker's bulrush (*Schoenoplectus americanus*). Both intermediate and brackish marshes can be dominated by saltmeadow cordgrass (*Spartina patens*), but intermediate marshes dominated by *Spartina patens* have a higher species richness often including bulltongue arrowhead (*Sagittaria lancifolia*), *Schoenoplectus americanus*, spikerush (*Eleocharis* spp.), and (or) flatsedge (*Cyperus* spp.) (Sasser et al. 2014). Although still a common natural community type in Louisiana, intermediate marshes are declining in extent due to shifts toward brackish marsh caused by increased salinity levels (The Nature Conservancy 2011).

Brackish marsh in the project area is subjected to reduced tidal influence, with salinities averaging between 8.0 and 18.0 ppt (Chabreck 1970). This marsh type is very susceptible to saltwater intrusion and conversion to open water (The Nature Conservancy 2011). Typical vegetation is often dominated by *Spartina patens* but is occasionally dominated by big cordgrass (*Spartina cynosuroides*), gulf cordgrass (*Spartina spartinae*), or sturdy bulrush (*Bolboschoenus robustus*). Both intermediate and brackish marshes can be dominated by *Spartina patens*, but brackish marshes dominated by *Spartina patens* typically have a small number of other species such as smooth cordgrass (*Spartina alterniflora*), saltgrass (*Distichlis spicata*), needlegrass rush (*Juncus roemerianus*), or *Bolboschoenus robustus* (Sasser et al. 2014).

Saline marsh (*i.e.*, salt marsh) generally parallels the shoreline of the Gulf, and is subjected to regular tidal inundation in the project area and an average salinity of approximately 18.0 ppt (Chabreck 1970). Vegetation is typically dominated by smooth cordgrass (*Spartina alterniflora*), *Distichlis spicata*, or black mangrove (*Avicennia germinans*) (Sasser et al. 2014).

The emergent marshes in the project area provide nursery habitat for estuarine larval and juvenile fish, crab, and shrimp species. Additionally, numerous estuarine-dependent fish and shellfish, migratory waterfowl, furbearers and other wildlife, and several species of wading, diving, and shore birds may be found in the marsh areas of the project setting.

Various natural and anthropogenic factors have resulted in a wetland loss of 4,833 square kilometers (1,866 square miles) from 1932 to 2016 in coastal Louisiana (Couvillion et al. 2017). Wetlands within Plaquemines Parish have undergone substantial loss due to subsidence, sea-level rise, and salt-water intrusion. In the Breton Sound Basin, over 105,266 acres of marsh, were lost during the period from 1932 to 2016 (Couvillion et al. 2017). The current trend of wetlands loss was compounded by hurricanes in 2005—a U.S. Geological Survey (USGS) summary of wetland changes, released in February 2006, estimated that 98 square miles of wetlands were converted to open water in southeastern Louisiana (USGS 2006). Far greater loss resulted from Katrina than from Rita, and it was concentrated south and east of New Orleans, with almost half the total loss occurring in Plaquemines Parish (Zinn 2006). Overall marsh loss (*i.e.*, conversion to open water) resulting from Katrina and Rita throughout the entire Mississippi Deltaic Plain of southeastern Louisiana was as follows: fresh marsh—22 square miles; intermediate marsh—49 square miles; brackish marsh—18 square miles; salt marsh—27 square miles (USGS 2006).

3.2.3 Aquatic Resources/Fisheries

Existing Conditions

Fisheries resources are technically important because: they are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of various freshwater and marine habitats; and many species are important commercial resources. Fisheries resources are publicly important because of the high priority that the public places on their aesthetic, recreational, and commercial value.

The proposed project area is a soft-bottom distributary channel (Baptiste Collette Bayou) with water depths of approximately 14-16 feet, and the adjacent shallow (<3 feet) nearshore waters, mud flats, and marshes of Breton Sound. Aquatic habitat is dominated by open water, much of it

generated at the expense of converted emergent marsh. The estuarine nature of the project area provides a dynamic aquatic environment where freshwater and saltwater meet, providing a transitional zone between the two aquatic ecosystems and an important nursery area for a variety of finfish and shellfish from the Gulf of Mexico. Emergent marsh areas in the project area provide especially productive foraging and nursery habitat for finfish and shellfish, including commercially and recreationally important species.

The influx of freshwater from the Mississippi River, particularly during floods and other high water flow periods, potentially allows for riverine fisheries species to migrate downriver to the delta region. The U.S. Fish and Wildlife Service (USFWS) published Habitat Suitability Index (HSI) Models in 1982 and 1983, which included salinity tolerances for a variety of freshwater fisheries (for citations to all reports from the HSI Models published by USFWS, refer to USGS 2009). Potential species that could occur during high water/low salinity periods within the project area include channel catfish (*Ictalurus punctatus*), blue catfish (*Ictalurus furcatus*), flathead catfish (*Pylodictis olivaris*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), white crappie (*Pomoxis annularis*), sunfish (*Lepomis* spp.), gizzard shad (*Dorosoma cepedianum*), and buffalo (*Ictiobus bubalus*), among others.

During low water periods, storm surges, and seasonally strong tidal influences, the increased saltwater intrusion from Breton Sound restricts the abundance and diversity of freshwater fisheries, and provides opportunities for estuarine (brackish) species. Many of these species are economically and recreationally important, including red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*), spotted sea trout (*Cynoscion nebulosus*), sand seatrout (*Cynoscion arenarius*), striped mullet (*Mugil cephalus*), Gulf menhaden (*Brevoortia patronus*), Atlantic croaker (*Micropogonias undulatus*), sheepshead (*Archosargus probatocephalus*), southern flounder (*Paralichthys lethostigma*), Spanish mackerel (*Scomberomorus maculatus*), southern kingfish (*Menticirrhus americanus*), and spot (*Leiostomus xanthurus*).

Commercially important shellfish found in the area are also mainly estuarine and marine, and include blue crab (*Callinectes sapidus*), brown shrimp (*Farfantepenaeus aztecus*), pink shrimp (*Farfantepenaeus duorarum*), white shrimp (*Litopenaeus setiferus*), Gulf stone crab (*Menippe adina*), and oysters (*Crassostrea virginica*). Other commercially less important species include grass shrimp (*Palaemonetes pugio*), mysid shrimp (*Mysidopsis bahia*), roughneck shrimp (*Trachypenaeus constrictis*), and mud crab (*Eurypanopeus depressus*).

Oysters are an important resource in the Breton Sound estuary, and have been harvested for commercial sale for at least 150 years. Breton Sound contains Public Oyster Areas within Coastal Study Area 2 (CSA2), as designated by the Louisiana Division of Wildlife and Fisheries (LDWF). Portions of the project area occupy mainly Unproductive Public Oyster Seed Grounds (LDNR 2011a) (Figure 5). In addition, there are eight active Oyster Leasing Areas (lease numbers 2745414, 3373709, 2722614, 2745214, 2722514, 2650512, 2922007 and 3440110) totaling 462 acres that are 1.4 miles or more to the west southwest of the west jetty's current terminus at approximate Mile 7.5.

According to 2015 landings data reported for the largest commercial fishing ports in the U.S., Empire-Venice, Louisiana offloaded 379 million pounds of seafood with a dockside value of over 111 million dollars (NMFS 2018). Empire-Venice consistently ranks among the nation's top five fishing ports in terms of total landing and dockside value according to annual landings reports released by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS).

The proposed project area also supports populations of phytoplankton and zooplankton (e.g., copepods, rotifers, fish larvae, and molluscan and crustacean larvae). Benthic invertebrate populations, though limited in the project area due to sedimentation, fluctuating salinities, and channel and wind-driven currents, are comprised of both epifaunal and infaunal species (e.g., polychaete worms, crustaceans, bivalves and gastropod mollusks). These organisms constitute vital components of the aquatic food chain and may comprise the diets of numerous fish, birds, and invertebrates in the area.

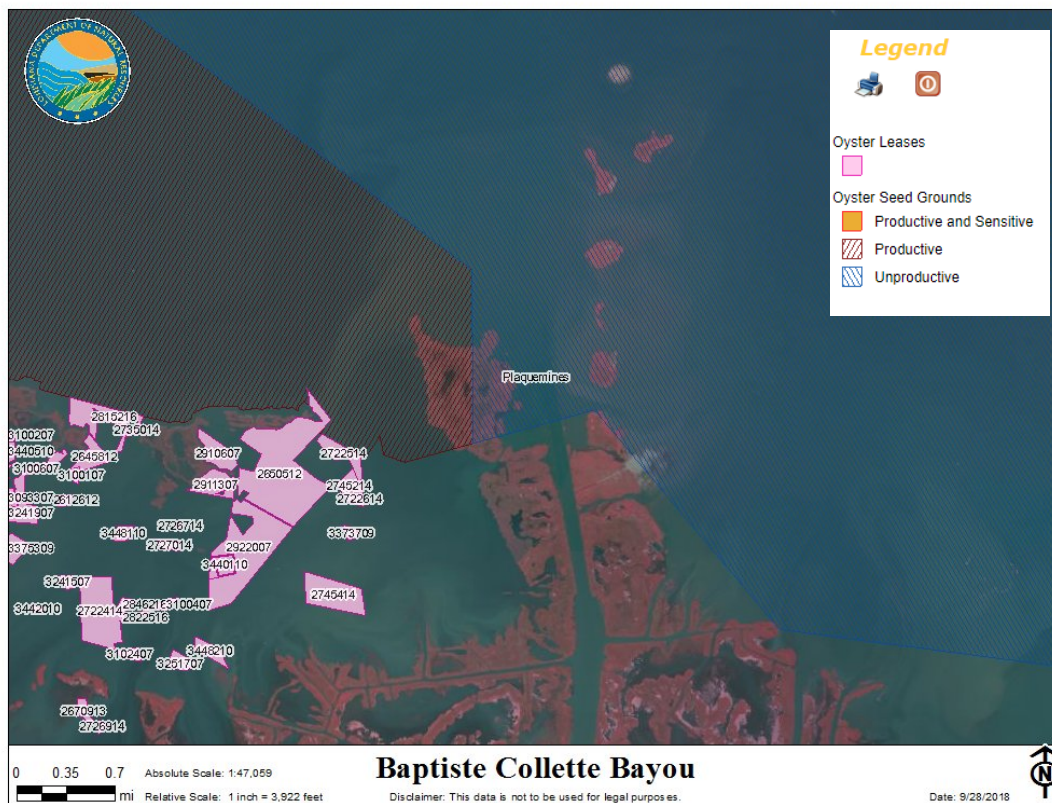


Figure 5. LDWF-designated Public Oyster Seed Grounds and oyster leases in the project vicinity.

3.2.4 Wildlife

Existing Conditions

Wildlife resources are technically important because: 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 and recreational resources. Wildlife resources are publicly important because of the high priority that the public places on their aesthetic, recreational, and commercial value.

The proposed project area contains a variety of birds, mammals, and other wildlife. Both migratory and resident birds occur in or near the project area. Common birds include ibis (*Plegadis* spp.; *Eudocimus albus*), egrets (*Ardea alba*; *Egretta thula*), cormorants (*Phalacrocorax* spp.), terns (*Sterna* spp.), gulls (*Larus* spp.), skimmers (*Rynchops niger*), sandpipers (*Calidris* spp.), pelicans (*Pelecanus* spp.), herons (*Ardea herodias*; *Egretta* spp.; *Nycticorax* spp.), hawks (*Accipiter* spp.; *Buteo* spp.), kestrels (*Falco sparverius*), vultures (*Coragyps atratus*; *Cathartes aura*), frigatebirds (*Fregata magnificens*), grackles (*Quiscalus* spp.), blackbirds (*Agelaius phoeniceus*), and several species of swallows, flycatchers, wrens, warblers, and sparrows. Wintering migratory waterfowl using the surrounding marshes include snow geese (*Chen caerulescens*), gadwalls (*Anas strepera*), pintails (*Anas acuta*), mallards (*Anas platyrhynchos*), blue-winged teal (*Anas discors*), green-winged teal (*Anas crecca*), shovelers (*Anas clypeata*), coot (*Fulica americana*), redheads (*Aythya americana*), lesser scaup (*Aythya affinis*), mergansers (*Mergus* spp.; *Lophodytes cucullatus*), wigeons (*Anas americana*), canvasbacks (*Aythya valisineria*), and some black ducks (*Anas rubripes*). The mottled duck (*Anas fulvigula*), highly sought by sportsmen, is the only species of waterfowl nesting and wintering in the area. Grebes (*Podilymbus podiceps*; *Podiceps* spp.) and loons (*Gavia immer*) are nongame migratory waterfowl wintering in the area, and the common snipe (*Gallinago gallinago*) is the only game species of shorebird wintering in the area.

Mammals using the marshes and scrub-shrub habitat in the project area include numerous furbearers, such as nutria, muskrat, swamp rabbit, mink (*Mustela vison*), river otter (*Lontra canadensis*), raccoons, and white-tailed deer. Scrub-shrub in the project area also provides habitat for salamanders, toads, frogs, turtles, and several species of poisonous and nonpoisonous snakes. The American alligator (*Alligator mississippiensis*) is abundant in fresh to intermediate marsh and is caught commercially for its hide and meat.

Numerous terrestrial invertebrates are found throughout the study area. The most notable are insects, which often serve as vectors, transmitting disease organisms to higher animals including man. Mosquitoes are the most important of the vectors in the area, although other groups, such as deer flies, horseflies, and biting midges are also considered vectors. The area provides suitable breeding habitat for such species as the salt marsh mosquitoes (*Aedes sollicitans* and *Culex salinarius*), and other species of mosquitoes. Mosquitoes carry the West Nile virus, which has recently caused illness and death of both animals and humans in Louisiana.

3.2.5 Essential Fish Habitat

Existing Conditions

All of the marine and estuarine waters of the northern Gulf of Mexico have been designated as Essential Fish Habitat (EFH) through regulations promulgated by the National Marine Fisheries Service (NMFS) and the Gulf of Mexico Fishery Management Council as required by the Magnuson-Stevens Fishery Conservation and Management Act. EFH is described as waters and substrates necessary for Federally-managed species to spawn, breed, feed, and grow to maturity. In the northern Gulf of Mexico, EFH has generally been defined as areas where individual life-stages of specific Federally-managed species are common, abundant or highly abundant. In estuarine areas, EFH is defined as all estuarine waters and substrates (mud, sand, shell, rock and associated biological communities), including the sub-tidal vegetation (seagrasses and algae) and adjacent inter-tidal vegetation (marshes and mangroves). The open waters, waterbottom substrates, and inter-tidal marshes of the West Bay Sediment Diversion project area are considered EFH under the estuarine component.

Specific categories of EFH include all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities), including subtidal vegetation (sea grasses and algae) and adjacent intertidal wetland vegetation (marshes and mangroves). In addition, estuarine aquatic habitats provide nursery and foraging areas that support economically important marine fishery species that may serve as prey for Federally-managed fish species such as mackerels, snappers, groupers, billfishes and sharks.

The estuarine waters in the proposed project area include EFH for several Federally-managed species (Table 3). These species use the area for foraging and nursery habitat, as well as a migration route to other EFH areas. Specific categories of EFH in the project area include estuarine emergent wetlands, mud/sand substrates, and estuarine water column. A brief description of the EFH species found in the proposed project area follows:

Table 3: EFH species in the project area.

| Common Name | Life Stage | EFH |
|--------------|--------------------|---|
| red drum | adult | Gulf of Mexico & estuarine mud bottoms, oyster reef |
| red drum | juvenile | SAV, estuarine mud bottoms, marsh/water interface |
| red drum | larvae/post larvae | all estuaries planktonic, SAV, sand/shell/soft bottom, emergent marsh |
| brown shrimp | adult | Gulf of Mexico <110 m, silt sand, muddy sand |
| brown shrimp | juvenile | marsh edge, SAV, tidal creeks, inner marsh |
| brown shrimp | larvae/post larvae | planktonic, sand/shell/soft bottom, SAV, emergent marsh, oyster reef |
| white shrimp | adult | Gulf of Mexico <33 m, silt, soft mud |
| white shrimp | juvenile | marsh edge, SAV, marsh ponds, inner marsh, oyster reef |

| | | |
|-----------------|--------------------|---|
| white shrimp | larvae/post larvae | planktonic, soft bottom, emergent marsh |
| Gulf stone crab | juvenile | sand/shell/soft bottom, oyster reef |
| Gulf stone crab | larvae/post larvae | pelagic, oyster reef, soft bottom |

Red drum (*Sciaenops ocellatus*) is an important recreational gamefish found in coastal waters throughout the Gulf of Mexico. Adults inhabit nearshore waters, particularly areas within the surf zone or in the vicinity of inlets. Spawning occurs in nearshore areas, and eggs and larvae are transported by tides and wind currents into estuaries. Larvae and juveniles occupy estuarine environments until maturation. Red drum are predatory in all stages of life; however, the type of prey consumed varies with life stage. Subadult red drum primarily consume small marine invertebrates including mysids and copepods, while adults feed on large marine invertebrates, including shrimp and crabs, and small fishes.

Shrimp species include the brown shrimp (*Farfantepenaeus aztecus*) and the white shrimp (*Litopenaeus setiferus*). Adult penaeids generally occupy offshore areas of higher salinity, where spawning occurs. After hatching, larvae enter estuaries and remain there throughout the juvenile stage. Estuarine habitat serves as a nursery area offering a suitable substrate, an abundant food supply, and protection from predators. Subadult shrimp consume organic matter, including marsh grasses and microorganisms found in estuarine sediments.

Gulf stone crabs (*Menippe adina*) occur throughout the Gulf of Mexico, although the majority of commercial crab fishing occurs along the Gulf Coast of Florida. Gulf stone crabs are benthic and can be found from the shoreline out to depths of 200 feet. Juveniles can be found on shell bottom, sponges, and *Sargassum* mats, as well as in channels and deep grass flats. Gulf stone crab larvae are planktonic and require warm water and high salinity (30.0-35.0 ppt) for most rapid growth. The Gulf stone crab is a high trophic predator and is primarily carnivorous at all life stages. Juveniles feed on small mollusks, polychaetes, and crustaceans.

3.2.6 Threatened, Endangered and Protected Species

Existing Conditions

Endangered (E) or threatened (T) species are technically important because the status of such species provides an indication of the overall health of an ecosystem. These species are publicly important because of the desire of the public to protect them and their habitats.

Federally-listed threatened or endangered species under the purview of the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) potentially occurring in the proposed project area include the piping plover (*Charadrius melodus*), West Indian manatee (*Trichechus manatus*), sea turtles, Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and pallid sturgeon (*Scaphirhynchus albus*). No critical habitat for any threatened or endangered species has been designated within the proposed project area, and none of these species are known to breed within the project vicinity.

The piping plover has been reported on Breton and Chandeleur Islands and critical habitat was designated in these areas on July 10, 2001 (LDWF 2011). Piping plovers winter in Louisiana and may be present eight to ten months of the year. They depart for the wintering grounds from mid-July through late October and remain until late March or April. Piping plovers could occur on the bird islands along Baptiste Collette Bayou during winter migration, but are not permanent residents of the area. During placement of dredged material into beneficial use disposal areas, piping plovers would be temporarily displaced to other islands for feeding and loafing; however, this is not considered to be detrimental due to an abundance of similar habitat in the vicinity of the project area.

West Indian manatees, also known as sea cows, are large aquatic mammals found in shallow, slow-moving rivers, estuaries, salt water bays, canals, and coastal areas. Range is generally restricted to the southeastern United States, although individuals may occasionally venture as far north as Massachusetts and as far west as Texas (USFWS 2011). They are rare visitors to coastal Louisiana, occasionally entering Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months. They have also been reported in the Amite, Blind, Tchefuncte, and Tickfaw rivers, and in canals within the adjacent coastal marshes of Louisiana. It is extremely unlikely that manatees would be found in the project area or elsewhere in Baptiste Collette Bayou and the surrounding shallow open waters; however, if manatees are observed within 100 yards of the “active work zone” during proposed construction/dredging activities, CEMVN would implement the appropriate special operating conditions (e.g., no operation of moving equipment within 50 feet of a manatee; all vessels should operate at no wake/idle speeds within 100 yards of work area; siltation barriers, if used, should be re-secured and monitored; report manatee sightings or collisions), as provided by the USFWS, Lafayette, Louisiana Field Office. Special operating conditions for manatees would be included in any CEMVN plans and specifications developed prior to construction/dredging activities.

Loggerhead sea turtles (*Caretta caretta*) nest within the coastal United States from Louisiana to Virginia, with major nesting concentrations occurring on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida (NMFS/USFWS 2009). In Louisiana, loggerhead sea turtles are known to nest on the Chandeleur Island (LDWF 2011). Nesting and hatching for loggerheads in the Gulf of Mexico occur from May through November.

Green sea turtles (*Chelonia mydas*) are more tropical in their distribution, and are rarely seen in Louisiana coastal waters (LDWF 2011). Nesting in the Southeastern U.S. occurs roughly from June through September. Nesting within the project area is highly unlikely, as green sea turtles prefer to nest on high-energy beaches with deep sand and little organic content. Furthermore, the Minerals Management Service (1997) indicated that reports of green sea turtle nesting in the northern Gulf are “isolated and infrequent.”

The most seriously endangered of the sea turtles, Kemp’s Ridley turtles (*Lepidochelys kempii*) occur mainly in bays and coastal waters of the Atlantic Ocean and Gulf of Mexico (NMFS/USFWS 1992a). Nesting occurs on the northeastern coast of Mexico and occasionally on Texas Gulf Coast beaches from April to July. No Kemp’s Ridley sea turtle nesting habitat occurs near the

project site, and nesting has not been known to occur in the area. Along the Louisiana coast, turtles are generally found in shallow nearshore and inshore areas, and especially in salt marsh habitats, from May through October.

The hawksbill (*Eretmochelys imbricate*) is a small sea turtle, generally spending most of its life in tropical waters such as the warmer portions of the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea (NMFS/USFWS 1993). Hawksbills frequent rocky areas, coral reefs, shallow coastal areas, lagoons, narrow creeks, and passes. Nesting may occur on almost any undisturbed deep-sand beach in the tropics—in North America, the Caribbean coast of Mexico is a major nesting area. In the continental United States, nesting sites are restricted to Florida where nesting is sporadic at best (NMFS/USFWS, 1993). Due to the lack of suitable foraging and nesting habitats, there is a low probability of this species occurring within the project area.

The leatherback sea turtle (*Dermochelys coriacea*) is the largest, deepest diving, and most migratory and wide ranging of all the sea turtles (NMFS/USFWS 1992). Leatherbacks are mainly pelagic, inhabiting the open ocean and seldom entering coastal waters except for nesting purposes. Nesting in the United States is mainly confined to the Florida coast, and no nesting has been reported in Louisiana (Gunter 1981).

The pallid sturgeon is an endangered fish found in Louisiana, in both the Mississippi and Atchafalaya Rivers (with known concentrations in the vicinity of the Old River Control Structure Complex); it is possibly found in the Red River as well. The pallid sturgeon is adapted to large, free-flowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant state of change. Detailed habitat requirements of this fish are not known, but it is believed to spawn in Louisiana. Pallid sturgeon, especially juveniles, appear to be at risk for entrainment in cutterhead dredges, because of their benthic holding behavior and their relatively low burst swimming speed (Hoover et al. 2005). The density of pallid sturgeon in the lower Mississippi River is thought to be low; however, sampling efforts in the Mississippi River Delta have not been extensive so population estimates in these areas are uncertain (USFWS 2010). Because pallid sturgeon are strictly freshwater fish, they are probably absent from the Mississippi River Delta during low river flows when salt water from the Gulf of Mexico intrudes upriver along the bottom of the channel (salt water wedge). If project construction is planned during these events, impacts to pallid sturgeon due to dredging activities are unlikely.

The Gulf sturgeon 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 (NMFS 2011). 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 USFWS and NMFS published a final rule in the Federal Register (Volume 68, No. 53) designating critical habitat for the Gulf sturgeon in Louisiana, Mississippi, Alabama, and Florida. Portions of the Pearl and

Bogue Chitto Rivers, Lake Pontchartrain east of the Lake Pontchartrain Causeway, all of Little Lake, The Rigolets, Lake St. Catherine, and Lake Borgne within Louisiana were included in that designation. The proposed project area is outside those portions of Louisiana designated as critical habitat.

The brown pelican (*Pelecanus occidentalis*), a year-round resident of coastal Louisiana that may occur in the project area, was removed from the Federal List of Endangered and Threatened Wildlife (i.e., “delisted”) by USFWS on November 17, 2009. Despite its recent delisting, brown pelicans—and other colonial nesting wading birds and seabirds—remain protected under the Migratory Bird Treaty Act of 1918. Portions of the proposed project area may contain habitats commonly inhabited by colonial nesting wading birds and seabirds. To minimize disturbance to pelicans and other colonial nesting birds and seabirds potentially occurring in the project area, CEMVN would observe restrictions on activity provided by the USFWS, Lafayette, Louisiana Field Office. Special operating conditions addressing pelicans and other colonial nesting wading birds and seabirds (reporting presence of birds and/or nests; no-work distance restrictions—2000 ft for brown pelicans; bird nesting prevention and avoidance measures; marking discovered nests) would be included in any CEMVN plans and specifications developed prior to construction activities. In addition, dredging/construction activities would be restricted to non-nesting periods for colonial nesting wading birds and seabirds (i.e., September 16 through February 14), when practicable (Maintenance dredging of Baptiste Collette Bayou has historically been performed by CEMVN during the winter).

3.2.7 Water Quality

Existing Conditions

Water quality is technically significant because it is recognized that water is a critical biological factor for plants and animals, including humans. Water quality is publically significant because the public values clean water for drinking, fishing, swimming, and other recreation and commercial uses.

As part of its surface water quality monitoring program, the Louisiana Department of Environmental Quality (LDEQ) routinely monitors 25 parameters on a monthly or bimonthly basis using a fixed station, long-term network (Monitored Assessments) (LDEQ 1996). Based upon those data and the use of less-continuous information (Evaluated Assessments), such as fish tissue contaminants data, complaint investigations, and spill reports, the LDEQ has assessed water quality fitness for the following uses: primary contact recreation (swimming), secondary contact recreation (boating, fishing), fish and wildlife propagation, drinking water supply and shellfish propagation (LDEQ 1996). Based upon existing data and more subjective information, water quality is determined to either fully, partially, or, not support those uses. A designation of “threatened” is used for waters that fully support their designated uses but that may not fully support certain uses in the future because of anticipated sources or adverse trends in pollution.

According to the Louisiana Department of Environmental Quality (LDEQ) *Final 2016 Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d))*, the entire length of Baptiste Collette Bayou “fully supports” designated uses for primary contact recreation, secondary contact

recreation, fish and wildlife propagation, and oyster propagation based on Evaluated Assessment data (LDEQ 2016). These uses are “threatened” by the following suspected sources: petroleum activities, spills, natural sources, and upstream sources. Suspected causes that threaten these uses include pathogen indicators, oil, and grease.

3.2.8 Air Quality

Existing Conditions

Air quality is technically important because of the status of regional ambient air quality in relation to the National Ambient Air Quality Standards (NAAQS). It is publicly important because of the desire for clean air expressed by virtually all citizens.

The U.S. Environmental Protection Agency (USEPA), under the requirements of the CAA, has established NAAQS for six contaminants, referred to as “criteria” pollutants (40 CFR 50). These are 1) carbon monoxide (CO), 2) nitrogen dioxide (NO₂), 3) ozone (O₃), 4a) particulate matter less than 10 microns in diameter (PM₁₀), 4b) particulate matter less than 2.5 microns in diameter (PM_{2.5}), 5) lead (Pb), and 6) sulfur dioxide (SO₂). The NAAQS standards include primary and secondary standards. The primary standards were established at levels sufficient to protect public health with an adequate margin of safety. The secondary standards were established to protect the public welfare from the adverse effects associated with pollutants in the ambient air. The primary and secondary standards are presented in Table 4.

Table 4. Primary and secondary NAAQS for the seven contaminants established by USEPA.

| National Ambient Air Quality Standards ^{[3][4]} | | | | |
|--|---------------------------------------|-----------------------------|--|-----------------------|
| Criteria Pollutant | Primary Standard | | Secondary Standard | |
| | Concentration Limit | Averaging Time | Concentration Limit | Averaging Time |
| Carbon monoxide | 9 ppmv (10 mg/m ³) | 8-hour ⁽¹⁾ | None | |
| | 35 ppmv (40 mg/m ³) | 1-hour ⁽¹⁾ | | |
| Sulfur dioxide | 0.03 ppmv (80 µg/m ³) | Annual (arithmetic mean) | 0.5 ppmv (1300 µg/m ³) | 3-hour ⁽¹⁾ |

| | | | |
|--|---|--|-----------------|
| | 0.14 ppmv (365 µg/m ³) | 24-hour ⁽¹⁾ | |
| Nitrogen dioxide | 0.053 ppmv (100 µg/m ³) | Annual (arithmetic mean) | Same as primary |
| Ozone | 0.075 ppmv (150 µg/m ³) | 8-hour ⁽²⁾ | Same as primary |
| | 0.12 ppmv (235 µg/m ³) | 1-hour ⁽³⁾ | Same as primary |
| Lead | 0.15 µg/m ³ | Rolling 3-month average | Same as primary |
| | 1.5 µg/m ³ | Quarterly average | Same as primary |
| Particulate Matter (PM ₁₀) | 150 µg/m ³ | 24-hour ⁽⁴⁾ | Same as primary |
| Particulate Matter (PM _{2.5}) | 15 µg/m ³ | Annual ⁽⁵⁾ (arithmetic mean) | Same as primary |
| | 35 µg/m ³ | 24-hour ⁽⁶⁾ | Same as primary |

(1) Not to be exceeded more than once per year.
(2) The 3-year average of the fourth-highest daily maximum 8-hour average at each monitor within the area over each year must not exceed 0.075 ppmv.
(3a) The expected number of days per calendar year with maximum hourly averages above 0.12 ppm must be equal to or less than 1.
(3b) As of June 15, 2007, the U.S. EPA revoked the 1-hour ozone standard in all areas except for certain parts of 10 states.
(4) Not to be exceeded more than once per year on average over 3 years.
(5) The 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15 µg/m³.
(6) The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within the area must not exceed 35.5 µg/m³.

The USEPA *Green Book Nonattainment Areas for Criteria Pollutants* (Green Book) maintains a list of all areas within the United States that are currently designated “nonattainment” areas with respect to one or more criteria air pollutants. Nonattainment areas are discussed by county or

metropolitan statistical area (MSA). MSAs are geographic locations, characterized by a large population nucleus, that are comprised of adjacent communities with a high degree of social and economic integration. MSAs are generally composed of multiple counties. Review of the Green Book indicates that Plaquemines Parish is currently in attainment for all Federal NAAQS pollutants, including the 8-hour ozone standard (USEPA 2011). This classification is the result of area-wide air quality modeling studies. Therefore, further analysis required by the CAA general conformity rule (Section 176(c)) would not apply for the proposed Federal action.

3.2.9 Cultural Resources

Existing Conditions

Cultural resources are technically important because of their association or linkage to past events, to historically important persons, and to design and/or construction values; and for their ability to yield important information about prehistory and history. Cultural resources are publicly important because preservation groups and private individuals support their protection, restoration, enhancement, or recovery.

Previous work in the project area was documented in the FEIS, “Mississippi River Outlets, Vicinity of Venice, Louisiana” and “Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum, Supplement No. 1, Jetties Design.” EA #305 and EA #505 also addressed nearby portions of Baptiste Collette and were coordinated for “no historic properties affected.” A cultural resources survey of the Mississippi River Outlets, Vicinity of Venice, Louisiana project area was conducted by Coastal Environments, Inc. in 1978 (Gagliano 1978). A Phase I submerged cultural resources background research and remote sensing investigation for the Baptiste Collette Bayou Navigation Deepening study was conducted in 2010 by R. Christopher Goodwin and Associates, Inc. (Nowak et al. 2010). No recorded sites or properties have been recorded within the currently proposed project area. The exact location of the currently proposed work has not been previously coordinated with the Louisiana State Historic Preservation Officer (SHPO) or Tribes. A letter concluding “no historic properties affected” has been sent to the SHPO and Tribes, dated 1 November 2018.

3.2.10 Recreational Resources

Existing Conditions

Recreational resources are publicly important because of the 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.

Nearby, Venice, Louisiana is home to a substantial marine sport fishing industry which is of regional importance, rivaled in Louisiana only by Grand Isle. The sport fishing industry in Venice provides an important source of jobs and earnings for area residents. Venice is a major launching site for recreational crafts using the Mississippi Delta and coastal waters south of Venice. Hunting and fishing are the primary recreational activities of the region due to the varied and unique fish and wildlife and natural resources of the delta. The estuarine waters of the project area are some of the most heavily utilized for recreation on the entire Louisiana coast. Additional recreational

opportunities are provided in one state-owned wildlife management area and one National wildlife refuge in the vicinity of the project area. Pass a Loutre Wildlife Management Area provides excellent hunting and fishing, and is considered one of the top migratory waterfowl hunting areas in the United States. Delta National Wildlife Refuge offers excellent fishing opportunities and other wildlife oriented recreation such as photography and bird watching.

3.2.11 Visual Resources (Aesthetics)

Existing Conditions

Visual resources are publicly and technically important because of the high value placed on the preservation of unique natural and cultural landscapes.

The principal distinguishing visual characteristics of the project area are its relatively flat topography, with most of the area covered by water and coastal marsh. Water resources include the Mississippi River funneled through various channels, canals, small ponds and coastal bays that meander through the coastal marsh eventually emptying into the Gulf of Mexico. Land use is primarily non-forested wetland habitat containing areas of petroleum and natural gas exploration.

4. ENVIRONMENTAL CONSEQUENCES

4.1. Navigation

Future Conditions with No-Action

Without implementation of the proposed action, impacts to navigation would occur if federal funding for maintenance dredging were not available. Maintenance dredging and/or emergency dredging in portions, or all, of the channel would continue to occur at a similar rate and scale to current operations.

Future Conditions with the Proposed Action

With implementation of the proposed action, navigation activities would benefit. Shoaling from wave-induced erosion of the adjacent shoreline in this segment of Baptiste Collette Bayou would be reduced, allowing continued safe navigation for shallow draft vessels, and the proposed action would reduce the frequency of maintenance dredging needed in this portion of the channel. With implementation of the proposed action, no significant adverse direct or indirect impacts to navigation in the Baptiste Collette Bayou or the surrounding waters of Breton Sound will occur. Jetty construction would cause disturbance during construction of flotation access channels, and placement of rock/concrete for construction of jetty extensions. These activities could potentially temporarily affect navigation, but will be outside the marked traffic lanes for water vessels utilizing the channel. Rock/concrete-carrying barges would access the work sites via 80-foot-wide flotation channels immediately adjacent to the jetty extension areas, providing adequate clearance for passing vessels using the channel.

4.2. Wetlands

Future Conditions with No-Action

Without implementation of the proposed action, wetlands in the project vicinity would continue to be directly and indirectly impacted by the present natural and anthropogenic factors. Salinity intrusion would continue to impact vulnerable emergent marsh habitats, causing them to either convert type or convert to open water. Subsidence and erosional land loss would continue at the present rate. The overall habitat value and acreage of the remaining wetlands would decline with the No Action alternative. Vast acreages of wetlands have been lost and would continue to be lost in this portion of the Mississippi Deltaic Plain.

Without implementation of the proposed action, shoal material removed from Baptiste Collette Bayou during annual maintenance dredging would continue to be placed in existing designated disposal areas. Eventually, dredge material would be placed in disposal areas to higher elevations no longer conducive to marsh development, which would impact/eliminate existing emergent marsh in those areas and result in the conversion of marsh habitat to less productive upland habitat.

Future Conditions with the Proposed Action

With implementation of the proposed action, it is anticipated that there would be no adverse direct or indirect impacts to existing emergent marsh in the project area. No construction equipment would be allowed to operate on existing marsh vegetation in the project area. Rock and/or concrete used for the construction of jetty extensions would not be placed on any existing wetland areas. Flotation access channels would be excavated, as necessary, along the channel side of the jetty extensions to permit rock/concrete carrying barges access to the work sites. Approximate maximum dimensions of flotation channels would be a depth of -11.5 feet MLLW, a width of 80 feet, and a total length of approximately 6,860 linear feet on the west side of the channel and approximately 7,920 linear feet on the east side of the channel. Flotation channel excavation would be performed by a barge-mounted bucket dredge. Dredged material from flotation channel construction would be placed in shallow open water behind the jetties to a maximum elevation not to exceed a height of +3.5 feet NAVD88. No flotation material would be placed upon existing vegetated wetlands. Flotation channels would be allowed to fill naturally by siltation from wave action in the Baptiste Collette Bayou channel. A maximum of approximately 18 acres of shallow open water bottom would be impacted by construction of the jetties extension. A maximum of approximately 27 acres of Baptiste Collette shallow open water bottom habitat would be impacted by flotation channel excavation and a maximum of approximately 27 acres of shallow open water bottom would be impacted by placement of dredged flotation material to marsh development elevations. Marsh should become established within one growing season in locations where sediment elevation is conducive to marsh growth. Newly created wetlands along Baptiste Collette Bayou and the surrounding waters would provide additional foraging, breeding, nesting, and nursery areas, as well as refugia for a multitude of estuarine-dependent and commercially important fish and shellfish, migratory waterfowl, wildlife, and several species of wading, diving, and shore birds, and help to offset the substantial wetlands loss currently taking place in this portion of the Mississippi Deltaic Plain. Thus, positive direct and indirect impacts to wetlands and

wetland-related resources in the project area are expected with implementation of the proposed action.

Under authority delegated from the Secretary of the Army and in accordance with Section 404 of the Clean Water Act of 1977, USACE regulates discharges of dredged or fill material into Waters of the U.S. (e.g., wetlands). Although USACE does not process and issue permits for its own activities, USACE authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public hearings and application of the section 404(b)(1) guidelines (Appendix A).

4.3. Aquatic Resources/Fisheries

Future Conditions with No-Action

Without implementation of the proposed action, fisheries may be directly or indirectly impacted by continued shoaling from approximate Mile 7.5 to approximate Mile 9.0 in the Baptiste Collette Bayou channel segment. Shoaling effects (e.g., siltation) could incidentally diminish the amount of foraging habitat available to finfish and shellfish. Mobile fishery species would most likely relocate to other areas, while some existing non-motile benthic invertebrates would be smothered by deposited sediments and eliminated, or replaced, by more tolerant species. In addition, fisheries may be indirectly impacted as adjacent wetland areas continue to erode and/or convert to open water due to natural and anthropogenic factors. Wetland vegetation loss would degrade the quality of the area for fisheries as food sources and nursery habitat decline—continued erosion could lead to increasing water depth, and the value of the area as a nursery and food source would diminish even further.

Future Conditions with the Proposed Action

Direct and indirect impacts to aquatic/fisheries resources would be in the form of physically altered open water bottom habitat, and temporary increases in turbidity during construction activities. A maximum of approximately 18 acres of shallow open water bottom habitat in Baptiste Collette Bayou would be impacted (eliminated) by placement of rock and/or concrete during construction of the east and west jetty extensions. A maximum of approximately 27 acres of Baptiste Collette Bayou shallow open water bottom would be impacted (temporarily disturbed) by flotation access channel excavation needed for jetty construction. A maximum of approximately 27 acres of Baptiste Collette Bayou shallow open water bottom would be impacted (eliminated/converted to marsh) by beneficial use placement of flotation channel dredged material behind the new jetty extensions.

It is anticipated that mobile fishery species would avoid proposed areas of jetty construction, flotation channel excavation, and beneficial use placement activities during the project period, thereby minimizing direct and indirect impacts to those species. Fisheries access to the existing marsh areas adjacent to approximate Mile 7.5 to approximate Mile 9.0 of the Baptiste Collette Bayou channel would continue to be provided via the existing traversing pipeline (Clayton Williams Energy, Inc.) channel and associated channels which would remain open. Brown shrimp, white shrimp, and crabs may be directly impacted through the filling of shallow open water areas with dredged materials; however, these species could potentially indirectly benefit from the

abundance of introduced detritus, and subsequent food resources, from these materials. Sediment particles that become suspended due to construction activities may impact filter-feeding benthic invertebrates by fouling feeding apparatus if the concentration of such particles is excessively high. Clams and oysters, in particular, may experience a reduction in pumping rates with increased turbidity (Loosanoff 1961). Since the project area is a naturally turbid environment and the majority of resident fish species are generally adapted to, and very tolerant of, high suspended sediment concentrations, the effects of turbidity and suspended solids on fisheries in the area would likely be negligible. Some benthic invertebrate mortality due to removal may occur in areas dredged for flotation access channels; however, these species would gradually recolonize the area as channels are allowed to fill naturally by siltation from wave action and currents. The time necessary for a benthic community to recover after dredging is highly variable; however, it is assumed that repopulation of benthic organisms would begin within a month of dredging. Benthic populations in clay bottoms would likely return to pre-dredging levels within a year, while on sandy bottoms recovery would probably be faster. Sessile or slow moving benthic organisms may be smothered in areas where dredged materials from flotation channel excavation and maintenance dredging are deposited during beneficial use placement. While some existing oyster beds may be impacted by beneficial use placement of dredge material, it is unlikely that these numbers would amount to an adverse impact on the overall oyster population in this region.

LDWF requires a water bottom assessment (unless waived) for all projects occurring on oyster leases and on Public Oyster Seed Grounds (LDNR 2011b). In addition, the LDWF requires that impacts to the water bottoms of Public Oyster Areas (both Unproductive and Productive Public Oyster Seed Grounds) associated with construction activities be compensated. Compensation may be in the form of replacing impacted habitat using oyster cultch material (e.g., limestone, crushed concrete, or oyster shell) or by making payment directly to the Public Oyster Seed Ground Development Account (LDNR 2011b). It is anticipated that CEMVN would request a waiver of oyster seed ground mitigation requirements (water bottom assessment and/or compensation for impacts to the water bottoms of Public Oyster Areas) from the LDWF prior to commencing construction activities in project areas that contain Public Oyster Seed Grounds. CEMVN has historically requested, and received, waivers from LDWF for construction activities associated with the beneficial use of shoal material removed during routine maintenance dredging of the Baptiste Collette Bar Channel and placement in currently existing disposal areas (e.g., those defined in EA #505) designated for the development of emergent marsh and bird islands (Ed Creef, CEMVN-OD, personal communication). Given the closest oyster lease is 1.4 miles to the west southwest of the project area, CEMVN should not have to pursue the acquisition and termination of any active oyster leases; additionally, the proposed project area is not within the LDWF-designated 2,640-foot-radius (or 1,500-foot if dredged material is confined by an appropriate retention feature during a disposal event) notification and assessment zone (“turbidity impact zone”).

With implementation of the proposed action, some positive indirect impacts to fisheries in the project area are expected. Eventual enhancement of aquatic habitat is anticipated with the construction of the jetty extensions, as rock and/or concrete placed for new jetties would provide both intertidal and subtidal hard substrates for the attachment and colonization of oysters and

other opportunistic benthic organisms, offer some diversity to the aquatic habitat, and create 14,780 linear feet of new fisheries habitat for spawning, nursery, shelter, and foraging. Recreational fishing opportunities along both sides of the Baptiste Collette Bayou channel will improve, as submerged portions of the jetty extensions will provide additional fishing habitat for anglers to utilize. Creation of the new jetty extensions would provide highly productive fisheries habitat, increase detrital food material, and likely contribute to overall increased fisheries productivity in the project area.

4.4. Essential Fish Habitat

Future Conditions with No-Action

Without implementation of the proposed action, no direct impacts to EFH within the project area would occur. However, indirect impacts to EFH would likely occur as existing estuarine emergent marsh areas adjacent to Baptiste Collette Bayou would continue to be converted to open water due to natural and anthropogenic factors. In addition, channel sedimentation will continue at the present shoaling rate, potentially impacting EFH for brown shrimp, white shrimp, red drum, and Gulf stone crab through the deposition and degradation of shallow open water bottom and mud/sand habitat from approximate Mile 7.5 to approximate Mile 9.0 in the channel segment of Baptiste Collette Bayou.

Future Conditions with the Proposed Action

With implementation of the proposed action, initially some EFH for brown shrimp, white shrimp, red drum, and Gulf stone crab will be directly impacted in the project area through the placement of jetty construction material (*i.e.*, rock and/or concrete), excavation of flotation access channels, and beneficial use placement of dredged channel material in shallow open water areas and mud/sand bottoms along and adjacent to Baptiste Collette Bayou. The placement of jetty construction material will eliminate a maximum of approximately 9 acres of shallow open water bottom and associated habitat (*e.g.*, mud/sand substrates); however, the newly constructed jetty extensions will provide 14,780 linear feet of hard-substrate habitat for benthic organisms, which will provide a food source for EFH species in the project area. Jetty extensions may also preserve existing shallow open water bottom habitat from approximate Mile 7.5 to approximate Mile 9.0 in the Baptiste Collette Bayou navigation channel by reducing the amount of shoal material that enters the channel from the adjacent eroding shoreline that smothers or disturbs EFH. In addition, jetty extensions would provide protection of marsh-related EFH (marsh edge, emergent marsh, inner marsh, etc.) that is currently eroding from wave action from approximate Mile 7.5 to approximate Mile 9.0 in the navigation channel. Approximately 27 acres of shallow open water areas and mud/sand bottoms would be impacted by flotation channel excavation; these areas will eventually return to pre-construction conditions as flotation channels gradually fill from wave action upon completion of the project. Approximately 27 acres of shallow open water bottom and associated EFH habitat would be impacted by placement of flotation access channel material excavated during jetty construction; these areas will be converted to generally more productive categories of EFH (*e.g.*, estuarine emergent marsh, marsh edge, marsh/water interface) as they eventually become colonized by emergent vegetation. Thus, the proposed action will provide mainly positive indirect impacts to EFH in the project area, and any direct or temporary adverse

impacts would be sufficiently compensated by the net benefits from creating 14,780 linear feet of introduced hard-substrate habitat.

Additional, short term EFH impacts would include a temporary and localized increase in estuarine water column turbidity during the placement of jetty material, excavation of flotation channels, and placement of dredged material in shallow open water areas and on mud/sand bottoms; however, the project area is a naturally turbid environment and increased turbidity is not expected to significantly affect EFH needs within the project area.

4.5. Wildlife

Future Conditions with No-Action

Without implementation of the proposed action, wildlife in the project area may be indirectly impacted. Erosion of the shoreline and associated habitat along, and landward of, Baptiste Collette Bayou would continue to occur, resulting in a reduction of habitat diversity and availability for resident terrestrial wildlife, migratory waterfowl, and other avian species.

Future Conditions with the Proposed Action

With implementation of the proposed action, minimal adverse direct and indirect impacts to wildlife are anticipated. Terrestrial wildlife generally will not be impacted, as construction activities will occur entirely over open water. There is the potential for noise or wave action generated by jetty construction activities to displace terrestrial wildlife occupying nearby emergent marsh and scrub-shrub areas; however, this would be a temporary disturbance, with wildlife likely to return following the completion of jetty construction. Migratory waterfowl and other avian species, if present, will likely be only temporarily displaced from the project area. Overall populations would not likely be adversely affected because these species will move to existing adjacent habitat areas during construction activities. The placement of dredge material for beneficial use would reduce open water habitat by converting it to marsh, thereby reducing available foraging habitat for some avian species. However, the reduction in the amount of shallow open water is negligible compared to the remaining amount of open water in the project area.

Portions adjacent to the project area may contain habitats commonly inhabited by colonial nesting wading birds and seabirds. To minimize disturbance to colonial nesting wading birds and seabirds potentially occurring and/or nesting in the project area, CEMVN would observe restrictions on activity provided by the USFWS, Lafayette, Louisiana Field Office. Special operating conditions addressing colonial nesting wading birds and seabirds (reporting presence of birds and/or nests; no-work distance restrictions; bird nesting prevention and avoidance measures; marking discovered nests) would be included in any CEMVN plans and specifications developed prior to construction/dredging activities. In addition, dredging/ construction activities would be restricted to non-nesting periods for colonial nesting wading birds and seabirds (*i.e.*, September 16 through February 14), when practicable (maintenance dredging of Baptiste Collette Bayou has historically been performed by CEMVN during the winter.).

Additional positive indirect impacts to wildlife in the project area are anticipated with the proposed jetty construction activities. Jetty installation would benefit islands adjacent to the Baptiste

Collette Bayou navigation by reducing fetch and wave action in the area, and reducing rates of erosion and loss of marsh and scrub-shrub habitat used for refugia, foraging, nesting, and loafing by terrestrial wildlife, migratory waterfowl, and other avian species. Thus, it is anticipated that wildlife in the project area would ultimately benefit from the construction of jetty extensions along Baptiste Collette Bayou.

4.6. Threatened and Endangered Species

Future Conditions with No-Action

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

Future Conditions with the Proposed Action

Although threatened or endangered species may occur within the general project vicinity, their presence within the Baptiste Collette Bayou navigational channel or the adjacent shallow waters is highly unlikely. Furthermore, the proposed project area does not contain critical habitat for Federally-listed species, and the open water areas surrounding the project area would allow them to easily avoid the project activities. Therefore, the proposed action is unlikely to cause adverse direct or indirect impacts to (*i.e.*, “may effect, but not likely to adversely affect”) Federally-listed threatened or endangered species, or their critical habitat, under the jurisdiction of USFWS. CEMVN is currently in the process of coordinating with the USFWS; the final EA will include the CEMVN/USFWS coordination letter (Appendix B). Additionally, CEMVN has concluded that no critical habitat for any threatened, endangered, or candidate species under the purview of National Marine Fisheries Service, Protected Resources Division has been designated within the project area, and that there would be no adverse impacts (*i.e.*, “no effect”) to any of the NMFS Federally-listed species that could potentially occur within the project area (Appendix C).

4.7. Water Quality

Future Conditions with No-Action

Without implementation of the proposed action, no direct impacts to water quality would likely occur. Indirect impacts to water quality could occur over time, as shoaling continues in Baptiste Collette Bayou. Shoaling-induced water quality and habitat quality degradation (*e.g.*, increased turbidity and total suspended solids, sedimentation/siltation) could eventually contribute to the segment’s failure to meet designated uses (*e.g.*, fish and wildlife propagation) described in the LDEQ’s Surface Water Quality Standards (LAC 33:IX.1111.C).

Future Conditions with the Proposed Action

With implementation of the proposed action there will be some localized disturbances to ambient water quality in the project area; however, direct and indirect impacts will be short-lived. Jetty construction activities (*i.e.*, placement of rock/concrete materials and flotation access channel excavation) and placement of dredge material behind jetty extensions will likely cause temporary increases in turbidity and suspended solids concentrations, and a reduction in light penetration in the immediate vicinity; however, since the project area is a naturally turbid environment and

resident biota are generally adapted to, and very tolerant of, high suspended sediment concentrations, the effects would be negligible. A reduction in light penetration may indirectly affect phytoplankton (*i.e.*, primary) productivity in the area as the amount of photosynthesis carried out by phytoplankton is reduced. Localized temporary pH changes, as well as a reduction in dissolved oxygen levels, may also occur during construction efforts. Flotation channel excavation may also release nutrients that have been trapped in bottom sediments, which can cause an increase in phytoplankton production. This increase can be beneficial to productivity, or can be detrimental if a sudden die-off occurs and bacterial composition causes oxygen depletion. Water quality is expected to return to pre-construction conditions soon after the completion of construction activities associated with the proposed project. **CEMVN is currently in the process of applying for a Water Quality Certificate from the State of Louisiana (Appendix E).**

4.8. Air Quality

Future Conditions with No-Action

Without implementation of the proposed action, no direct or indirect impacts to ambient air quality would likely occur.

Future Conditions with the Proposed Action

With implementation of the proposed project, direct and indirect impacts to ambient air quality within the project area—and possibly farther afield—are expected to be temporary, and primarily due to the emissions of construction equipment. Due to the short duration of the proposed project, any increases or impacts to ambient air quality are expected to be short-term and minor and are not expected to cause or contribute to a violation of Federal or State ambient air quality standards. Once all construction activities associated with the proposed action cease, air quality within the vicinity is expected to return to pre-construction conditions.

4.9. Cultural Resources

Future Conditions with No Action

Without implementation of the proposed action, no direct or indirect impacts to known cultural resources would likely occur.

Future Conditions with the Proposed Action

With implementation of the proposed action no known adverse direct or indirect impacts to cultural resources are expected and no additional investigations are warranted. A review of reports and records, archaeological site distribution maps, and USGS quadrangle maps show that the proposed activities will not impact any known historic or cultural resources. Section 106 (NHPA) coordination with the Louisiana SHPO and Federally Recognized Tribes has been conducted for similar studies in nearby portions of Baptiste Collette, with conclusions agreed for “no historic properties affected.” A conclusion of no historic properties affected, for the current project, has been sent to SHPO and Tribes for their review, dated 1 November 2018 (Appendix F).

4.10. Recreational Resources

Future Conditions with No-Action

Without implementation of the proposed action, continued erosion of adjacent marshes could occur which would affect fisheries by diminishing the amount of foraging habitat available to finfish and shellfish that may relocate to other areas. Recreational fishing in the project area may be indirectly impacted as adjacent wetland areas continue to erode and/or convert to open water due to natural and anthropogenic factors. Wetland vegetation loss would degrade the quality of the area for fisheries as food sources; additionally, nursery habitat decline continued erosion could lead to increasing water depth, and the value of the area as a nursery and food source would diminish even further.

Without implementation of the proposed action, wildlife viewing in the project area may be indirectly impacted. Erosion of the shoreline and associated habitat both along, and landward of, Baptiste Collette Bayou would continue to occur, resulting in a reduction of habitat diversity and availability for resident terrestrial wildlife, migratory waterfowl, and other avian species.

Future Conditions with the Proposed Action

With implementation of the proposed action, recreational use of the project area will be temporarily disrupted from increases in turbidity during construction of rock jetties along Baptiste Collette Bayou and dredge material placement in nearby sites. Fishing around the bird islands would be interrupted during disposal of dredge material, but would resume upon completion of activities. Navigation of recreational vessels is not expected to be hampered during construction of project features.

With implementation of the proposed action, some positive indirect impacts to recreational fishing in the project area are expected. Eventual enhancement of aquatic habitat is anticipated with the construction of jetty extensions, as stones placed for new jetties would provide a hard substrate for the attachment and colonization of benthic organisms, offer some diversity to the aquatic habitat, and create new fisheries habitat and refugia. Recreational fishing opportunities along both sides of the Baptiste Collette Bayou channel would improve, as jetty extensions would provide additional fishing habitat for anglers. Beneficially used dredge material from flotation channel excavation and maintenance dredging operations in Baptiste Collette Bayou would potentially create up to 27 acres of wetland areas adjacent to the newly constructed jetty extensions along Baptiste Collette Bayou. This marsh would provide substantial fisheries benefits resulting from valuable foraging, breeding, and nursery habitat for finfish and shellfish, while helping to offset the substantial wetlands loss currently taking place in this portion of the Mississippi Deltaic Plain. Creation of new emergent marsh would provide highly productive fisheries habitat, increase detrital food material, and likely contribute to overall increased fisheries productivity in the project vicinity.

4.11. Visual Resources (Aesthetics)

Future Conditions with No-Action

Without implementation of the proposed action, no foreseen direct or indirect impacts to visual resources would occur at the proposed project area. The existing landscape character would change as determined by the Federal navigation project, Mississippi River Outlets, Vicinity of Venice, Louisiana operations and maintenance and other landowner's land use practices. However, the proposed project sites are remote and public access is primarily limited to boat traffic. Also, the proposed sites have no institutional or technical visual significance and public significance is undetermined.

Future Conditions with the Proposed Action

The proposed placement of dredged material removed during the Federal navigation project, Mississippi River Outlets, Vicinity of Venice, Louisiana maintenance action would have similar direct, indirect and cumulative impacts as the No Action alternative.

4.12. Cumulative Impacts Analysis

The CEQ Regulations define cumulative impacts (CI) as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. CI can result from individually minor but collectively significant actions taking place over a period of time.”

It is anticipated that through efforts taken to avoid wetlands impacts and the beneficial use of dredged material that functionally compensates unavoidable remaining impacts, the proposed project will not result in overall adverse direct, secondary, or cumulative impacts to the aquatic environment and human environment in or near the project area. Overall, the cumulative impacts of the proposed action are expected to be positive, with long-term benefits to navigation, wetlands, fisheries and wildlife resources, and recreational opportunities in the project area. The proposed action will directly impact a maximum of approximately 18 acres of shallow open water bottom by construction of the east and west jetty extensions. A maximum of approximately 27 acres of shallow open water bottom would be temporarily impacted by flotation channel excavation during jetty construction. A maximum of approximately 27 acres of shallow open water bottom would be impacted by placement of dredged material, which would be beneficially used to create emergent marsh habitat behind the east and west Baptiste Collette Bayou jetty extensions. Impacts to the environment caused by the proposed action include: removal or conversion of shallow open water fisheries habitat; removal or conversion of mud/sand substrate EFH; temporary impacts to estuarine water column EFH from turbidity; removal or displacement of some benthic organisms; temporary impacts to water quality related to turbidity, suspended solids, and potentially low dissolved oxygen levels; and temporary impacts to air quality caused by emissions from construction equipment. These impacts will be offset by the creation of 14,780 linear feet of new subtidal and intertidal habitat for fish and benthos, as well as new fishing areas for anglers. Additional positive cumulative impacts are associated with the creation of up to 27 acres of emergent marsh platform through the beneficial use of dredge material, which will ultimately provide valuable fisheries and wildlife habitat and more productive categories of EFH, and improve storm surge attenuation capacity in this portion of Plaquemines Parish. Because marsh has been shown to provide a greater reduction in hurricane storm surge than open water, creating

marsh habitat would offer an incremental benefit in minimizing hurricane damage. No impacts to existing wetlands would occur.

The Final Environmental Impact Statement (FEIS), "Mississippi River Outlets, Vicinity of Venice, Louisiana," was filed with the CEQ on September 10, 1976. The project provided for the enlargement and maintenance of the existing channels of Baptiste Collette Bayou between the Mississippi River and Breton Sound on the east side of the Mississippi River, and the Grand-Tiger Passes between the Mississippi River and the Gulf of Mexico on the west side of the river to provide channels 14 feet deep over a bottom width of 150 feet, with entrance channels in open water 16 feet deep over a bottom width of 250 feet and jetties to the -6-foot-depth contour of the Gulf of Mexico, if and when justified. Environmental impacts addressed in the FEIS were derived principally from the confined and unconfined disposal of dredged materials onto marsh and shallow water bottom habitat. The disposal of dredged materials resulted in the initial loss of 2,820 acres of marsh and 2,500 acres of shallow open water bottom. Some of this area was eventually converted to, or recolonized by, emergent marsh and scrub-shrub habitat as a result of the beneficial use placement of material removed during maintenance dredging of the navigation channels. Maintenance dredging continues to occur in Baptiste Collette Bayou approximately every one to four years as authorized by the FEIS. Dredged material from current efforts is deposited unconfined, adjacent to the navigation channels for wetlands development and restoration.

"Mississippi River Outlets, Vicinity of Venice, Louisiana: General Design Memorandum, Supplement No. 1, Jetties Design," was submitted by CEMVN on 29 March 1978. The proposed project design included the construction of the south jetty of Grand-Tiger Pass to elevation +6 MLG (+3 feet for Phase I construction), then to +6 feet for Phase II construction approximately 2 years later for a distance of 4,700 linear feet. The Grand-Tiger Pass north jetty construction was proposed to elevation +3 feet MLG for a distance of 2,700 linear feet. The Baptiste Collette Bayou east jetty construction was proposed to elevation +6 feet MLG for a distance of 9,000 feet, while the west jetty construction was proposed to elevation +3 feet MLG for a distance of 7,000 feet. The purpose of the jetties was to carry channel sediments gulfward, while preventing sediments from littoral drift to enter the channels within the jetty reach. Construction of the Baptiste Collette Bayou and Grand-Tiger Pass jetties was estimated to provide reductions of 578,000 cu yd/yr and 327,000 cu yd/yr, respectively, in the quantity of annual deposits to be dredged. Environmental impacts associated with jetty construction were mainly from displacement of shallow open water habitat by jetty construction materials (rock and shell).

EA #77, "Mississippi River Outlets, Louisiana - Marsh Creation," (FONSI signed on 12 September 1988) addressed the impacts associated with the disposal of dredged materials for marsh creation along Baptiste Collette Bayou and Tiger Pass navigation channels. Additional disposal areas were designated to facilitate the dredging program and enhance marsh creation. A 400-acre site for Tiger Pass was proposed in an unconfined disposal area north of the channel—375 acres consisted of shallow open water, with the remaining 25 acres deteriorating marsh. A 575-acre site for Baptiste Collette Bayou was proposed in an unconfined disposal area northwest of the west jetty—500 acres consisted of shallow open water, with the remaining 75 acres deteriorating marsh. The proposed placement of dredged material (400,000 cubic yards of material removed

every 2-3 years from Tiger Pass; 500,000 cubic yards of material removed from Baptiste Collette Bayou annually) was expected to produce approximately 975 acres of emergent marsh, with scattered shallow water areas interspersed.

EA #305, "Mississippi River Outlets, Vicinity of Venice, LA, Baptiste Collette Maintenance Dredging, Beneficial Use of Dredged Material, Plaquemines Parish, Louisiana," (FONSI signed on 29 November 1999) addressed the potential impacts associated with expanding existing disposal areas for the deposition of dredged material, removed from Baptiste Collette Bayou, in the shallow waters of Breton Sound within Plaquemines Parish, Louisiana. The proposed action would increase the capacity of the existing disposal areas located along the left and right descending banks of Baptiste Collette Bayou. Approximately 1,722 acres of shallow open water along the left descending bank and 2,878 acres of shallow open water along the right-descending bank would be dedicated for the beneficial use of dredged material removed from the Baptiste Collette Bayou navigation channel during routine maintenance activities. Approximately 400,000 to 1.2 million cubic yards of dredged material are removed almost annually during routine maintenance dredging of the navigation channel. The beneficial use of dredge material includes wetland development and creation/refurbishment of islands for colonial nesting seabirds. The proposed action described in EA #505 would expand these areas by an additional 11,522 acres.

EA #505, "Mississippi River Outlets, Vicinity of Venice, Louisiana, Extension of Jetties and Designation of Additional Disposal Areas for Baptiste Collette Bayou, Plaquemines Parish, Louisiana," had a FONSI signed on 14 October 2011. The proposed action would include the placement of rock and/or concrete for construction of jetty extensions; beneficial use of dredged material for the development of emergent marsh, erosion protection berms, and bird islands; and excavation of flotation access channels along the left and right descending banks of Baptiste Collette Bayou Mile 6.1 to approximate Mile 4.9. The proposed action would increase the capacity of existing beneficial use disposal areas along the left (west) and right (east) descending banks of Baptiste Collette Bayou by approximately 11,522 acres. A total of approximately 18.7 acres of shallow open water bottom habitat—much of it former marsh—along Mile 4.9 to Mile 6.1 of Baptiste Collette Bayou could potentially be converted to wetlands following the beneficial use placement of dredged flotation channel material, and eventual development of emergent marsh, behind the 13,715 linear feet of newly constructed east and west jetties.

5. Mitigation

An assessment of the potential environmental impacts to important resources found that the proposed project would have only minimal and insignificant impacts to important resources in the project area. These impacts would be mainly related to the loss of shallow open water bottom habitat and associated fisheries resources due to construction activities as part of the proposed action. The presence of comparable habitat within the project vicinity minimizes the loss of shallow open water bottom habitats due to the proposed action. Furthermore, any losses of fisheries resources related to the removal of shallow open water bottom by placement of dredged material are out-weighed by the considerable fisheries benefits anticipated from the beneficial use of material dredged from the Baptiste Collette Bayou navigation channel. No existing wetlands

would be adversely impacted by the construction activities of the proposed project; therefore, no wetlands mitigation is required.

6. Compliance with Environmental Laws and Regulations

Environmental compliance for the proposed action would be achieved upon: coordination of this draft EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; public review of the Section 404(b)(1) Public Notice; signature of the Section 404(b)(1) Evaluation (Appendix A); USFWS and NMFS confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species (Appendix B and Appendix C); LDNR concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (Appendix D); receipt of a Water Quality Certificate from the State of Louisiana (Appendix E); Louisiana SHPO concurrence with the determination that no known historic properties would be affected by the proposed action (Appendix F); receipt and acceptance or resolution of all USFWS and USEPA recommendations (Appendix G); receipt and acceptance or resolution of all LDEQ comments on the air quality impact analysis documented in the EA; and receipt and acceptance or resolution of all NMFS recommendations related to EFH. The draft FONSI will not be signed until the proposed action achieves compliance with applicable laws and regulations, as described above. The above mentioned coordination is ongoing at the time of this Draft EA.

The USACE Engineer Regulation, ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) for Civil Works Projects, states that dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the USEPA or a state for a response action (either a removal or a remedial action) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or if they are a part of a National Priority List (NPL) site under CERCLA (NPL is also known as "Superfund"). No portion of the project area proposed for dredging is included in the National Priority List.

The discharge of dredged material into waters of the United States is regulated under the Clean Water Act (CWA). In the absence of a known Hazardous, Toxic, and Radioactive Waste (HTRW) concern, the proposed action would not qualify for an HTRW investigation. Based upon a review of the NPL and CERCLA action sites, the probability of encountering HTRW in connection with this project is low. The proposed construction and beneficial use action does not qualify for an HTRW investigation and is evaluated as a water quality issue (see section on Water Quality).

7. Conclusion

The proposed northward extension of the existing Baptiste Collette Bayou jetties would reduce shoreline erosion and shoaling from approximate Mile 7.5 to approximate Mile 9.0 in the channel segment. A reduction in the shoaling rate would result in a decrease in the maintenance dredging frequency for the Baptiste Collette Bayou navigation channel—approximately 400,000 to 1.2 million CY of material are removed about every one to two years during routine maintenance dredging operations.

Eventual enhancement of aquatic habitat is anticipated with the construction of the jetty extensions, as rock and/or concrete placed for new jetties would provide both intertidal and subtidal hard substrates for the attachment and colonization of oysters and other opportunistic benthic organisms, offer some diversity to the aquatic habitat, and create 14,780 linear feet of new fisheries habitat for spawning, nursery, shelter, and foraging. Approximately 27 acres of shallow open water bottom and associated EFH habitat would be impacted by placement of flotation access channel material excavated during jetty construction; these areas will be converted to generally more productive categories of EFH (e.g., estuarine emergent marsh, marsh edge, marsh/water interface) as they eventually become colonized by emergent vegetation. Thus, the proposed action will provide mainly positive indirect impacts to EFH in the project area, and any direct or temporary adverse impacts would be sufficiently compensated by the net benefits from creating 14,780 linear feet of introduced hard-substrate habitat.

This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no significant adverse impact upon navigation, wetlands, scrub-shrub, fisheries, wildlife, essential fish habitat, threatened and endangered species, water quality, air quality, cultural resources, recreational resources, and aesthetics (visual resources).

8. Prepared By

EA #564 and the associated FONSI were prepared by biologists Steve Roberts and Landon Parr, with relevant sections prepared by: Joseph Musso - HTRW; Paul Hughbanks - Cultural Resources. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; Regional Planning Division South, CEMVN-PDC; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

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Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G