(DRAFT) ENVIRONMENTAL ASSESSMENT

HURRICANE IDA UNWATERING of

JEFFERSON, LAFOURCHE, PLAQUEMINES, & ST. BERNARD PARISHES, LOUISIANA
EA 592

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

Table of contents

FIGURES

TABLES

APPENDICES

Appendix H: September 15, 2021, National Marine Fisheries Service (NMFS)- Protected Species Division- Hurricane Ida Emergency Notification Letter

Appendix I: September 15, 2021, National Marine Fisheries Service (NMFS)-Habitat Conservation Division- Hurricane Ida Emergency Notification Letter

Appendix J: September 15, 2021, Louisiana Department of Environmental Quality (LDEQ)- Hurricane Ida Emergency Notification Letter

Appendix K: September 15, 2021, State Conservationist- Natural Resources Conservation Service (NRCS)- Hurricane Ida Emergency Notification Letter

Appendix L: September 15, 2021, United States Fish and Wildlife Service (USFWS)- Hurricane Ida Emergency Notification Letter

Appendix M: February 7, 2023, Office of Coastal Management, C20210135 Coastal Zone Consistency Approval Letter

DRAFT ENVIRONMENTAL ASSESSMENT

HURRICANE IDA UNWATERING of JEFFERSON, LAFOURCHE, PLAQUEMINES, & ST. BERNARD PARISHES, LOUISIANA
EA 592

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) to evaluate impacts relating to the emergency actions that occurred for the unwatering of flooded areas within South Louisiana following Hurricane Ida. With the guidance and funding from the Federal Emergency Management Agency (FEMA), the USACE was able to document the conditions of Southeast Louisiana after Hurricane Ida made landfall as well as the impacts relating to the emergency actions to respond to the disaster. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This EA provides sufficient information on the adverse and beneficial environmental effects to allow the District Commander, U.S. Army Corps of Engineers, New Orleans District (MVN), to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

This EA is being prepared as an After-The-Fact document intended to assess the impacts that occurred as a result of the emergency unwatering of various locations within Southeast Louisiana.

1.1 Action Taken

The action consisted of emergency response in the form of unwatering of certain portions of Southeast Louisiana due to flooding caused by Hurricane Ida. Flooding of certain areas within Louisiana resulted from storm surge, rapid rainfall accumulation, and failing permanent pump stations. Failing permanent pump stations can be defined as state or local owned permanent pump stations that were made temporarily unavailable due to either lack of electricity or other failing components. The coverage area of the unwatering mission put forth by FEMA included Jefferson Parish, Lafourche Parish, St. Bernard Parish, St. John the Baptist Parish, and Plaquemines Parish. USACE did not participate in the St. John the Baptist Parish unwatering because the hydraulic information collected from gauge data and visual inspections, indicated that the impounded storm water would recede in the same timeframe as if temporary unwatering pumps were deployed. Though no unwatering was done by USACE, USACE remained on standby for this area and monitored the situation closely until all water was gone.

USACE, in a Mission Assignment from FEMA, only used temporary unwatering pumps and engineered levee cuts to accomplish the unwatering mission set forth from FEMA in Jefferson Parish, Lafourche Parish, St. Bernard Parish, and Plaquemines Parish. Nineteen temporary unwatering pumps were used within four parishes, Jefferson Parish, Lafourche Parish, Plaquemines Parish, and St. Bernard Parish between September 2, 2021, to December 24, 2021. Twenty-one engineered levee cuts and eleven armoring projects were executed within

Plaquemines Parish between September 1, 2021, to September 7, 2021. Below are two figures showing the placement of temporary unwatering pumps within Louisiana (Figure 1) and the engineered levee cuts/ armoring. (Figure 2).

Figure 1: Placement of temporary unwatering pumps within Louisiana

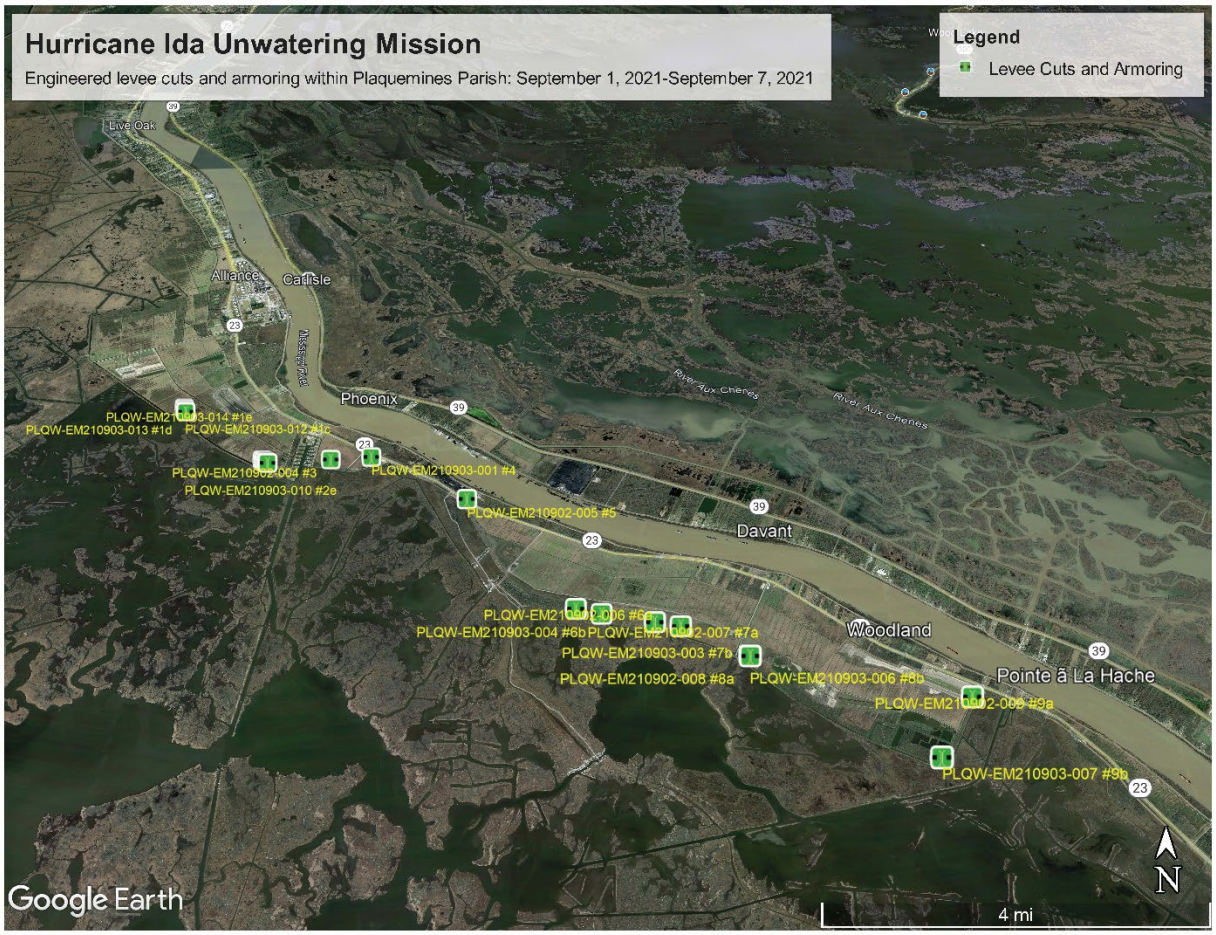

Figure 2: Engineered levee cuts and armoring within Plaquemines Parish, LA

1.2 Authority

Emergency actions, including Flood Control and Coastal Emergencies Activities, are authorized by Public Law 84-99, as amended, 33 U.S.C. 701n and Stafford Act, Public Law 93-288, 42 U.S.C. 5121, et seq. In responding to emergency situations to prevent or reduce imminent risk of life, health, property, or severe economic losses, district commanders may proceed without the specific documentation and procedural requirements if there is imminent risk to life, health, property, or severe economic losses. In accordance with relevant guidance, including ER 500-1-1, the District commander shall consider the probable environmental consequences in determining appropriate emergency actions and when requesting approval to proceed on emergency actions, will describe selected NEPA documentation or reasons for exclusion from documentation. NEPA documentation should be accomplished prior to initiation of emergency work if time constraints render this practicable. Such documentation may also be accomplished after the completion of emergency work, if appropriate.

1.3 Purpose and Need for the Selected Action

The purpose of the actions that were taken by USACE after Hurricane Ida made landfall on August 29, 2021, was to ensure that human health and property were protected from floodwaters and other hazards that were present.

The need for the action was to help state and local agencies return to normal operations after Hurricane Ida. In order to return to normal operations, USACE Unwatering Project Delivery Team coordinated and executed all necessary actions associated with the removal of water from flooded community(s) and their associated infrastructure systems as directed by FEMA. Temporary unwatering pump stations and engineered levee cuts were used to achieve this goal.

The unwatering mission was considered complete when inundation water had been removed to the extent that clean up and recovery operations could be reasonably undertaken through the affected areas and interim levee and pump station repairs were either complete or transferred to others under a different mission assignment of authority.

1.4 Data Gaps and Uncertainties

The action addressed in this assessment is an after-the-fact evaluation of an emergency action. Emergency actions are very fluid and evolving in nature; the information contained herein is the best information available, but may not be complete. In the event of future needs for unwatering actions, more attention will be given to monitoring the quality and quantity of water being pumped from flooded areas, given that no specific sample data was collected during pumping.

1.5 Public Concerns

Following Hurricane Ida's landfall on August 29, 2021, there was an immediate concern at all levels of government and the public for the general safety of the people trapped in the impacted areas due to high water. In addition to the concern for protecting citizen's lives, the public was also concerned about the loss of property that resulted from flooding due to Hurricane Ida. No specific concerns were raised at the time or have surfaced since that time regarding the activities being evaluated in this document.

1.6 Event Timeline

Below is a timeline outlying the events and actions that occurred from FEMA, USACE, and other Government Agencies before, during, and after Hurricane Ida made landfall within Louisiana. These events and actions were necessary to ensure that the unwatering mission was successful.

- August 26, 2021… FEMA announced that federal aid and emergency efforts will be deployed to areas affected by the incoming storm to the gulf coast.
- August 27, 2021… President Joe Biden declared that an emergency exists in the state of Louisiana in preparation of Tropical Storm Ida (Appendix A).
- August 29, 2021… Hurricane Ida, a category 4 hurricane, made landfall in Port Fourchon, Louisiana.
- August 29, 2021… FEMA declared a federal emergency, DR-4611-LA, for areas affected by Hurricane Ida within Louisiana (Appendix B).
- August 31, 2021… Verbal funding authority was given to FEMA's Region VI in Denton, TX for USACE Unwatering Project.

- August 31, 2021… Louisiana Department of Health and Hospital's Sam Martin created and submitted a Resource Request Form to Department of Homeland Security: FEMA to activate and deploy USACE's Unwatering Project team to coordinate and execute all necessary actions associated with Hurricane Ida.
- September 1, 2021...USACE and Plaquemines Parish Government began executing 21 engineered levee cuts within Plaquemines Parish. The engineered levee cuts occurred between 29°38'25.10"N; 89°58'57.83"W to 29°37'26.61"N 89°57'34.10"W and 29°35'14.36"N, 89°53'19.93"W to 29°34'6.53"N 89°48'43.30"W.
- September 2, 2021…USACE deployed one of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Goose Bayou Permanent Pump Station, Lafitte, LA.
- September 3, 2021… USACE and Plaquemines Parish Government completed engineered levee cuts within Plaquemines Parish.
- September 3, 2021… USACE deployed one of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Larousse 19 Permanent Pump Station, Kramer, LA. Two of nineteen temporary unwatering pumps were placed roughly .35 miles northeast of the Larousse 19 Permanent Pump Station, Kramer, LA.
- September 5, 2021… USACE deployed two of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Goose Bayou Permanent Pump Station, Lafitte, LA.
- September 6, 2021… Plaquemines Parish Government filled in thirteen engineered levee cuts within Plaquemines Parish with level 1 armoring: small sandbags.
- September 7, 2021…Plaquemines Parish Government filled in four levee cuts within Plaquemines Parish with Level 2 armoring, large sandbags and Level 2 armoring with supersacks, larger sandbags then Level 2 armoring.
- September 7, 2021… USACE filled in the final four levee cuts within Plaquemines Parish with Level 2 armoring, large sandbags, and Level 2 armoring with supersacks, larger sandbags then Level 2 armoring.
- September 7, 2021… USACE deployed two of nineteen temporary unwatering pumps to damaged permanent pump stations located within South Louisiana: Delacroix Permanent Pump Station and Florissant Permanent Pump Station, St. Bernard Parish, LA.
- September 11, 2021… USACE deployed four of nineteen temporary unwatering pumps to damaged permanent pump stations located within South Louisiana: one temporary pump went to Paillet Permanent pump station located within Lafitte, LA and three temporary pumps went to Point Celeste Permanent Pump Station located in Plaquemines Parish.
- September 12, 2021… USACE deployed one of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Point Celeste Permanent Pump Station located in Plaquemines Parish.
- September 13, 2021… Three temporary unwatering pumps were removed from "Larousse 19 Permanent Pump Station," and .35 miles northwest of the Larousse 19 Permanent Pump Station, Kramer, LA.
- September 14, 2021… USACE deployed two of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Plaquemines Parish West Bank Permanent Pump Station.
- September 15, 2021…USACE Colonel Stephen F. Murphy signed a memorandum titled, "Unwatering of various areas throughout Southeast Louisiana due to flooding resulting from Hurricane Ida (Environmental Compliance) (Appendix C)

- September 15, 2021….USACE notified federal, state, and local agencies regarding Hurricane Ida, the extensive damages caused by Hurricane Ida, and the potential actions taken by USACE. (Appendix F-L)
- September 29, 2021… One temporary unwatering pump was removed from Paillet Permanent Pump Station, Lafitte, LA.
- September 30, 2021… USACE deployed one of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: Bellevue Permanent Pump Stations located within Plaquemines Parish.
- October 4, 2021… USACE deployed three of nineteen temporary unwatering pumps to damaged permanent pump station located within South Louisiana: East Point a La Hache Permanent Pump station located within Plaquemines Parish.
- October 6, 2021… One temporary unwatering pump station was removed from Delacroix Permanent Pump Station, St. Bernard Parish, LA.
- October 7, 2021… One temporary unwatering pump station was removed from Florissant Permanent Pump Station, St. Bernard Parish, LA.
- October 18, 2021…Two temporary unwatering pump stations were removed from Plaquemines Parish West Bank Permanent Pump Station, Plaquemines Parish, LA.
- October 20, 2021…Four temporary unwatering pump stations were removed from Point Celeste Permanent Pump Station, Plaquemines Parish, LA.
- December 24, 2021…The final seven temporary unwatering pumps were removed from Goose Bayou Permanent Pump Station, Jefferson Parish, LA; East Point a La Hache Permanent Pump Station, and Bellevue Permanent Pump Station, Plaquemines Parish, LA.

The levee cuts and installation of temporary unwatering pump stations were the only viable solutions that were identified as efficient and feasible.

1.7 Planning Goals, Objectives and Constraints

Extensive damage to critical infrastructure occurred on August 29, 2021, because of extreme flooding associated with Hurricane Ida. It was imperative that flood waters be abated as soon as possible to restore functionality to prevent further damage or loss of life. Failure to accomplish this mission would likely have adverse effects upon resident's health, property, and the local economy. The intent of the action was to activate and deploy of the USACE Unwatering Project Delivery Team to execute all necessary actions associated with the removal of water from flooded community(s) and their associated infrastructure systems as directed by FEMA. To that end, MVN performed intentional breaches of non-federal levees and installed temporary pumps at various locations within South Louisiana to remove impounded floodwater.

1.8 Selected Action

As mentioned previously, the USACE, as directed by the FEMA, used temporary unwatering pumps and engineered levee cuts to accomplish the unwatering mission. Nineteen temporary unwatering pumps were used within four parishes, Jefferson Parish, Lafourche Parish, Plaquemines Parish, and St. Bernard Parish between September 2, 2021, to December 24, 2021. Twenty-one engineered levee cuts and eleven armorings were executed within Plaquemines Parish between September 1, 2021, to September 7, 2021. Details of these actions are found in Section 1.6 above.

1.9 No-Action Alternative (Future without Project (FWOP))

NEPA requires that in analyzing alternatives to a selected action, a federal agency must consider an alternative of "No Action." The No Action alternative evaluates the impacts associated with not implementing the selected 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 future without project condition (a.k.a. no-action), the selected action would not occur**.** In this situation, that would mean that USACE would have left entire neighborhoods and towns flooded for an extended period of time. This was not a practicable alternative as all significant natural resources and the human environment would have seen significant adverse effects if the actions described in Section 1 above were not conducted as soon as practicable following Hurricane Ida.

2 Affected Environment

2.1 Description of the Project Area

The Project Area is located in multiple Parishes (Jefferson, Lafourche, Plaquemines, and St. Bernard Parishes) within in southeastern Louisiana. Parish lands occupy part of the active delta of the Mississippi River, in a dynamic area dependent upon the disbursement and settlement of river sediments to maintain land elevations above water outside of protected areas. Jefferson and St. Bernard are the more developed of the Parishes affected. Much of the surface area effected by the storm inundation are developed areas consisting of residential and commercial activities found within a typical urban area. These areas are protected by a combination of Federal and non-federal levees where stormwater is removed from the protected areas by a series of drainage ditches/canals and mechanical pumps. To clarify, there is no natural drainage within these areas. If the water is not pumped out of these basins, it will remain within the basin which would have resulted in significant impacts to life, property and infrastructure.

2.1.1 Description of the Watershed

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

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

The Mississippi River is the mainstem of the world's most highly developed waterway system, about 12,350 miles in length. The Mississippi River discharges the headwater flows from about 41 percent of the contiguous 48 states. Discharge at Baton Rouge ranges from 1,500,000 cubic feet per second (cfs) once every 16 years, on average, to a low of 75,000 cfs recorded once

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

Several subbasins of the Mississippi River were involved in the Hurricane Ida unwatering. These included waterways in the Bayou Lafourche vicinity. These subbasins are typically characterized as developed commercial and residential areas with natural aquatic habitats comprising most of the undeveloped areas. In addition to bayous, canals and lakes, wetlands comprise significant areas in the basins. The wetlands include swamp and multiple types of natural and impounded marsh.

Marshes are the predominant natural habitat in the project areas and range from saline to fresh. The species of each type vary considerably. This is because the distribution is not only affected by the tolerance levels of plants to saltwater, but also by elevation, drainage patterns, and various edaphic and biotic factors. Frequently, a difference in elevation of several inches can be reflected by a change in plant cover. Historically, the project areas were typified by vast expanses of marsh interspersed with long strands of uplands along the old natural ridges.

2.1.2 Sea-level Rise

ER 1100-2-8162 states potential relative sea level change must be considered in every USACE coastal activity as far inland as the extent of estimated tidal influence. However, this was a temporary emergency action which only occurred for a short period of time. Therefore, sea-level rise had no effect on this emergency response action. The overall effect of sea level rise on tropical storm impacts to southeastern Louisiana is outside the scope of this evaluation.

2.1.3 Climate and Climate Change

The climate in the Project Area is humid, subtropical with a strong maritime character. Warm, moist southeasterly winds from the Gulf of Mexico prevail throughout most of the year, with occasional cool, dry fronts dominated by northeast high pressure systems. The influx of cold air occurs less frequently in autumn and only rarely in summer. Tropical storms and hurricanes are likely to affect the area 3 out of every 10 years, with severe storm damage approximately once every 2 or 3 decades. The majority of these occur between early June and November. The largest recent hurricanes were Katrina and Rita in 2005 which caused damage in the project area. Hurricanes Gustav and Ike in 2008, and more recently, Isaac in 2012, caused additional damage in the project area. Summer thunderstorms are common, and tornadoes strike occasionally. Average annual temperature in the area is 67°F, with mean monthly temperatures ranging from 82°F in August to 52°F in January. Average annual precipitation is 57.0 inches, varying from a monthly average of 7.5 inches in July, to an average of 3.5 inches in October.

The 2014 USACE Climate and Resiliency Policy Statement states the "USACE shall continue to consider potential climate change impacts when undertaking long-term planning, setting priorities, and making decisions affecting its resources, programs, policies, and operations." The most significant adverse potential impact on a coastal wetland as a product of climate change is sea-

level change (rise). The impact of sea-level change is addressed in section 3.1.2 Sea Level Rise. While it is plausible that climate change has and will continue to have effects upon tropical storms (including Hurricane Ida), those potential effects are outside the scope of this evaluation. This EA will only evaluate the emergency unwatering associated with Hurricane Ida. Larger issues surrounding climate change will be addressed at a higher programmatic level.

2.1.4 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 project area as typically peat, mucks, and clays mixed with organic matter, and silts derived from river deposits. The soil composition is subject to change as floodwaters and storm surges deposit new sediments. They are composed predominantly by Balize and Larose soil types. These soils are classified as continuously flooded deep, poorly drained and permeable mineral clays and mucky clays. Marsh and swamp deposits are found in the vicinity of the river from New Orleans to the Heads of Passes at the Gulf of Mexico. Marsh deposits are primarily organic, consisting of 60 percent or more by volume of peat and other organic material with the remainder being a composition of various types of clays. Total organic thickness is normally 10 feet, with variances less than one foot. Inland swamp deposits are composed of approximately 70 percent clay and 30 percent peat and organic materials. The percentage of sand and sandy silts increases with proximity to the open waters of the Gulf of Mexico (USACE 1974). Geology had no appreciable connection with the actions evaluated in this EA and will not be further evaluated.

2.2 Relevant Resources

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

Soils and water bottoms were not appreciably affected by the action and are not further evaluated. The objectives of Executive Order 11988 (Floodplain Management) were considered; however, CEMVN has determined that floodplain impacts, if any, from the action were positive (i.e., removing water from the flood plain and associated habitats, and thus, maintaining their natural and beneficial values). Additionally, there is no practicable alternative for project outside the 100-year floodplain. Hurricane Ida placed the water. We removed it from the floodplain. No portion of the project area has been designated a Louisiana Natural and Scenic River; therefore, a Scenic Rivers permit is not warranted. An extensive socioeconomic evaluation was not conducted, as removal of water from residential and commercial areas was found to have a huge positive economic effect. Environmental Justice was evaluated to ensure no disproportional effects to minority or low income communities occurred.

The following relevant resources are discussed in this report: navigation, wetlands, scrub-shrub, wildlife, aquatic resources/fisheries, essential fish habitat (EFH), threatened and endangered species, water and sediment quality, air quality, cultural resources, recreational resources, and visual resources (aesthetics).

Table 1: 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).	The Corps 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.
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.
Uplands	Food Security Act of 1985, as amended; the Farmland Protection Policy Act of 1981; and the Fish and Wildlife Coordination Act of 1958, as amended.	They provide habitat for both open and forest-dwelling wildlife, and the provision or potential for provision of forest products and human and livestock food products.	The high value the public places on their present value or potential for future economic value.
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 esthetic, recreational, and commercial value.
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 esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, USFWS, NMFS, NRCS, EPA, LDWF, and LDNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values; and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of the local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
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.

Resource	Institutionally Important	Technically Important	Publicly Important
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.

Table 2: Relevant Resources in and Near the Project Area

Relevant Resource	Impacted	Not Impacted (adversely)
Navigation		X
Wetlands		X
Scrub-Shrub		X
Environmental Justice		X
Aquatic		X
Wildlife		X
Essential Fish Habitat		X
Threatened and Endangered Species		X
Water Quality		X
Air Quality		X
Cultural[1]		X
Recreational		X
Visual		X
HTRW[2]		X
Noise		X

This table is required in our environmental evaluations, but in this case all impacts identified were positive. Removal of floodwater from all resources evaluated was positive and benefited those resources. [1]Although not impacted, cultural resources are addressed to comply with the National Historic Preservation Act. [2]Hazardous, Toxic, and Radioactive Waste. Although the area has been determined to have a low probability of containing HTRW, it is assessed in this document to comply with USACE policy.

2.2.1 Navigation

Existing Conditions

Generally speaking, there were not supposed to be navigable waters in the areas unwatered. While they were flooded, navigation by airboat and john boats was possible, but the objective of the action was essentially to eliminate the water in the areas where water was wasn't supposed to be located. Traditionally navigable waterways were not found in areas to be unwatered.

2.2.2 Wetlands

Existing Conditions

The project area was very large and covered numerous habitat types. Generally speaking wetlands in the vicinity outside of the protected area inside the levee system are tidally influenced and classified as mainly fresh marsh, with areas of intermediate marsh near the gulf. Water levels fluctuate from 6 to 12-inches or more in the vegetated areas. The wetlands are strongly influenced by freshwater discharges from the Mississippi River and associated distributary outlets. Salinity rarely increases above 2.0 parts per thousand (ppt), with a year-round average of 0.5-1.0 ppt

(Chabreck 1970). 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). Common reed *(Phragmites australis),* also known as Roseau cane, occurs in expansive monotypic clumps (monoculture) in shallow open water areas and has displaced a variety of freshwater vascular plant species that have historically occupied the area. This could have been caused by periodic storms generating extremely high saltwater tides killing off a majority of the sensitive freshwater vegetation (Hauber et. al. 1991). Rattlebox *(Crotalaria sp.)* and black willow *(Salix nigra)* occur along the banks of channels and on the higher crowns of areas previously used for disposal of dredged material.

Cattail *(Typha sp.),* bulltongue arrowhead *(Sagittaria lancifolia),* maidencane *(Panicum hemitomon),* common threesquare bulrush *(Scirpus americanus)* and various sedges are common throughout the wetlands of East Bay located within Plaquemines Parish. Other common species in the East Bay area include numerous non-native species, such as common reed, alligator weed *(Alternanthera philoxeroides),* elephant ear *(Colocasia sp.),* giant cutgrass *(Zizaniopsis miliacea),* California bulrush *(Scirpus californicus),* and delta duck potato *(Sagittaria platyphylla*). Submerged aquatic vegetation (SAV) found in the shallow water areas includes various pondweeds *(Potamogeton spp.),* coontail *(Ceratophyllum sp.),* and parrotfeather *(Myriophyllum aquaticum).*

The wetlands in the project vicinity 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 area.

Wetlands within Plaquemines Parish have undergone substantial loss due to subsidence, sea-level rise, and salt-water intrusion. The current trend of wetlands loss was and is still compounded by hurricanes. Various restoration activities are underway to restore wetlands in these areas.

2.2.3 Scrub-Shrub

Existing Conditions

Scrub-shrub habitat occupies a small portion of the area. Scrub-shrub vegetation occurs along natural and man-made ridges where remnant maritime shrub communities persist. Wax myrtle (*Myrica cerifera*), black willow, eastern baccharis, rattlebox, and Roseau cane are the dominant plants comprising the scrub-shrub habitat in the area. The soils in this habitat are typically composed of compacted silt, clay, sand, and organic materials. This area remains dry most of the year except during conditions of extremely high water from periodic high tides and high river stages.

Scrub-shrub habitat is utilized by most species of marsh mammals including nutria (*Myocaster coypus*), raccoon (*Procyon lotor*), muskrat (*Ondatra zibethicus*), swamp rabbit (*Sylviagus aquaticus),* and white-tailed deer (*Odocoileus virginianus*). Scrub-shrub habitat provide essential habitat for wintering waterfowl, nesting mottled ducks, wading birds, marsh birds, and shorebirds. Shrub-dominated ridges and willow-covered areas provide important stopover habitat for many Neotropical migrants. Birds such as egrets (*Ardea alba; Egretta thula*), herons (*Ardea herodias; Egretta spp.; Nycticorax spp.),* rails, gallinules, and mottled ducks (*Anas fulvigula*) use scrub-shrub vegetation for nesting because nests would not be affected by occasional high water.

Scrub-shrub habitat provides essential refuge for marsh animals during high water events. During hurricanes and tropical storms animals seek the highest land masses in the area and are often forced to climb into branches of scrub-shrub vegetation to escape rising waters. Scrub-shrub vegetation may provide a limited source of hard and soft mast for wildlife species utilizing the area.

2.2.4 Aquatic Resources/Fisheries

Existing Conditions

The actual area unwatered is predominantly land area with small drainage ditches/canals and an occasional small impoundment. These areas contain typical freshwater fish such as 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*) and sunfish (*Lepomis spp.*). The area adjacent to the area unwatered is primarily shallow open water and fresh/intermediate marsh. The water bottom is composed of firm silty, sandy clay mainly deposited by the river over time. These submerged lands are typically soft and almost fluid, but some areas are firm where heavier silts and sands have deposited. Water depths measure approximately 1 to 5 feet with SAV occurring in some portions of the shallow open-water areas, with the most common species including pondweed, coontail, and water millfoil (*Myriophyllum spp.*). These submerged plants provide a source of food for the large numbers of waterfowl frequently during winter. Shellfish species including oysters, shrimp, and crabs are found in the brackish marshes near the project area. Many juveniles of these species use fringe marsh, interspersed shallow ponds, and SAV for grazing.

Fishing is a major recreational and commercial activity. The estuarine nature of the area provides a dynamic aquatic environment where freshwater and saltwater meet, providing a transitional zone between the two aquatic ecosystems. The marshes and waterways provide important spawning and nursery habitat and a food source for a wide variety of fresh and saltwater fish species. Vegetation and marsh loss degrades the utility of the area as a nursery habitat and food source.

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. Potential species that could occur during high water/low salinity periods 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 the Gulf 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 maculates*), southern kingfish (*Menticirrhus americanus*), and spot (*Leiostomus xanthurus*).

Commercially important shellfish found 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*).

The area also supports populations of phytoplankton and zooplankton (e.g., copepods, rotifers, fish larvae, and molluscan and crustacean larvae). Benthic invertebrate populations are comprised of both epifaunal and infaunal species (e.g., polychaete and oligochaete worms, crustaceans, bivalves and gastropod mollusks). These organisms constitute vital components of the aquatic food chain and may comprise the diets of numerous finfish and shellfish species.

2.2.5 Wildlife

Existing Conditions

The 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 spp.*), sandpipers (*Calidris spp*.), pelicans (*Pelecanus spp*.), osprey (Pandion haliaetus), 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 (*Agelais 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. Numerous other shorebirds use the area as a resting and staging area during migration. The Selected Action was located in an area where colonial nesting waterbirds may be present. Colonies may be present that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries. That database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a new, comprehensive coast-wide survey is conducted to determine the location of newly-established nesting colonies, USFWS recommends that a qualified biologist inspect the work site for the presence of undocumented nesting colonies during the nesting season.

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 delisting, brown pelicans, and other colonial nesting wading birds and seabirds, remain protected under the Migratory Bird

Treaty Act. Portions of the project area may contain habitats commonly inhabited by colonial nesting wading birds and seabirds.

Of the federally listed and protected species within the project vicinity only the protected species are known to inhabit the immediate project area. Ibis, herons, egrets, hawks, owls, anhinga and bald eagles have been observed in the area. No known colonial nesting water/wading bird rookeries exist within the project area.

Mammals using the marshes and scrub-shrub habitat include numerous furbearers, such as nutria, muskrat, swamp rabbit, mink (*Mustela vison*), river otter (*Lontra canadensis*), raccoons, and white-tailed deer. Scrub-shrub 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 project 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, which carry the West Nile virus, which has recently caused illness and death of both animals and humans in Louisiana.

2.2.6 Essential Fish Habitat

Existing Conditions

No Essential Fish Habitat (EFH) is found within the unwatering areas subject to this evaluation. However, water from the project areas was discharged into EFH adjacent to the unwatering area(s). All of the marine and estuarine waters of the northern Gulf of Mexico have been designated as 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 adjacent to the project area(s) include EFH for several Federally-managed species (Table 3). These species use the adjacent area for foraging and nursery habitat, as well

as a migration route to other areas considered to be EFH. 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 project area follows:

Red drum 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 and the white shrimp . 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.

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

2.2.7 Threatened, Endangered and Protected Species

Existing Conditions

Protected species that may occur in the project vicinity include the West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), pallid sturgeon (*Scaphirhynchus albus*), and sea turtles. No critical habitat for any threatened or endangered species has been designated within the project area.

West Indian Manatee

The endangered West Indian manatee *(Trichechus manatus)* is known to regularly occur in Lakes Pontchartrain and Maurepas and their associated coastal waters and streams. It also can be

found less regularly in other Louisiana coastal areas, most likely while the average water temperature is warm. Based on data maintained by the Louisiana Natural Heritage Program (LNHP), over 80 percent of reported manatee sightings (1999-2011) in Louisiana have occurred from the months of June through December. Manatee occurrences in Louisiana appear to be increasing and they have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of southeastern Louisiana. Manatees may also infrequently be observed in the Mississippi River and coastal areas of southwestern Louisiana. Cold weather and outbreaks of red tide may adversely affect these animals. However, human activity is the primary cause for declines in species number due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution.

Piping Plover

The piping plover *(Charadrius melodus),* federally listed as a threatened species, is a small (7 inches long), pale, sand-colored shorebird that winters in coastal Louisiana and may be present for 8 to 10 months annually. Piping plovers arrive from their northern breeding grounds as early as late July and remain until late March or April. They feed on polychaete marine worms, various crustaceans, insects and their larvae, and bivalve mollusks that they peck from the top of or just beneath the sand. Piping plovers forage on intertidal beaches, mudflats, sand flats, algal flats, and wash-over passes with no or very sparse emergent vegetation. They roost in unvegetated or sparsely vegetated areas, which may have debris, detritus, or micro-topographic relief offering refuge to plovers from high winds and cold weather. They also forage and roost in wrack (i.e., seaweed or other marine vegetation) deposited on beaches. In most areas, wintering piping plovers are dependent on a mosaic of sites distributed throughout the landscape, because the suitability of a particular site for foraging or roosting is dependent on local weather and tidal conditions. Plovers move among sites as environmental conditions change, and studies have indicated that they generally remain within a 2-mile area. Major threats to this species include the loss and degradation of habitat due to development, disturbance by humans and pets, and predation.

On July 10, 2001, the Service designated critical habitat for wintering piping plovers (66 FR 132); a map of the seven critical habitat units in Louisiana can be found at http://criticalhabitat.fws.gov/crithab. Their designated critical habitat identifies specific areas that are essential to the conservation of the species. The primary constituent elements for piping plover wintering habitat are those habitat components that support foraging, roosting, and sheltering and the physical features necessary for maintaining the natural processes that support those habitat components. Constituent elements are found in geologically dynamic coastal areas that contain intertidal beaches and flats (between annual low tide and annual high tide), and associated dune systems and flats above annual high tide. Important components (or primary constituent elements) of intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting plovers

Red Knot

The red knot *(Calidris canutus rufa),* federally listed as a threatened species, and is a medium-sized shorebird about 9 to 11 inches (23 to 28 centimeters) in length with a proportionately small head, small eyes, short neck, and short legs. The black bill tapers steadily from a relatively thick base to a relatively fine tip; bill length is not much longer than head length. Legs are typically dark gray to black, but sometimes greenish in juveniles or older birds in non-breeding plumage. Nonbreeding plumage is dusky gray above and whitish below. The red knot breeds in the central

Canadian arctic but is found in Louisiana during spring and fall migrations and the winter months (generally September through May).

During migration and on their wintering grounds, red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks. Observations along the Texas coast indicate that red knots forage on beaches, oyster reefs, and exposed bay bottoms, and they roost on high sand flats, reefs, and other sites protected from high tides. In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Coquina clams *(Donax variabilis),* a frequent and often important food resource for red knots, are common along many gulf beaches. Major threats to this species along the Gulf of Mexico include the loss and degradation of habitat due to erosion, shoreline stabilization, and development; disturbance by humans and pets; and predation.

Black Rail

The eastern black rail was listed as threatened on October 8, 2020, with an effective date of November 9, 2020 (85 FR 63764). Eastern black rails occur in fresh, brackish, and saltwater marshes with clumping grass, rushes, or sedges. The dense vegetation creates an over-arching canopy that is somewhat open at the base of the clumps where eastern black rails can move around under the overhead cover. Eastern black rails require dense vegetative cover that allows movement underneath the canopy, and, because birds are found in a variety of salt, brackish, and freshwater marsh habitats that can be tidally or non-tidally influenced, plant structure is considered more important than plant species composition in predicting habitat suitability.

Eastern black rails tolerate a few shrubs but are absent from woody or shrub dominated areas. Eastern black rails often occur in the ecotone between deeper marsh and higher ground or in a matrix of wetlands across the broader landscape. They occur in areas with sheet flow or moving water and avoid stagnant water. Eastern black rails prefer areas with micro topographical variation, and adults prefer moist soil to 6 cm deep, whereas chicks use areas with moist soil to 2 cm deep. Eastern black rails also require adjacent areas of higher elevation (i.e., the wetland-upland transition zone) with dense cover to survive high water events due to the propensity of juvenile and adults to walk and run rather than fly. Flooding is a frequent cause of nest failure.

For nests to be successful, water levels must be below the nests during egg laying and incubation, which occurs from approximately May through the end of August. After hatching, the chick stage lasts approximately 42 days, after which eastern black rails have obtained juvenile plumage and are capable of flight. In addition to natural changes, direct human modifications to the environment have led to significant changes in natural marsh vegetation communities. Human modifications include construction of levees, drainage canals, dams, and water withdrawals. These hydrologic changes can have cascading effects leading to changes in the native vegetation community, including the introduction of invasive plant species and changes to the ecosystem as a whole (e.g., conversion from emergent to scrub-shrub wetlands, wetlands to uplands, or vice-versa).

Pallid Sturgeon

The pallid sturgeon *(Scaphirhynchus albus)* is an endangered, bottom-oriented, fish that inhabits large river systems from Montana to Louisiana. Within this range, pallid sturgeon tends to select main channel habitats in the Mississippi River and main channel areas with islands or sand bars in the upper Missouri River. In Louisiana it occurs in the Atchafalaya and Mississippi Rivers, and below Lock and Dam Number 3 on the Red River (with known concentrations in the vicinity of the Old River Control Structure Complex). The pallid sturgeon is adapted to large, freeflowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant state of change.

Many life history details and subsequent habitat requirements of this fish are not known. However, the pallid sturgeon is believed to utilize Louisiana riverine habitat during reproductive stages of its life cycle. Habitat loss through river channelization and dams has adversely affected this species throughout its range.

Gulf Sturgeon

The Gulf sturgeon (*Acipenser oxyrinchus desotoi*) 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. 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 (68 FR 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 project area is outside those portions of Louisiana designated as critical habitat.

Sea Turtles

High levels of sediment in the water column and low prey availability probably preclude any high use of sea turtles in the lower Mississippi River Delta. The National Marine Fisheries Service (NMFS) is responsible for aquatic marine endangered and threatened sea turtles. As a result of consultation under Section 7 of the Endangered Species Act of 1973, as amended, the USACE has agreed to report any sea turtle activity (sightings, collisions with, injuries or killings) to the NMFS.

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. In Louisiana, loggerhead sea turtles are known to nest on the Chandeleur Island. 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. 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 typically restricted to Florida where nesting is sporadic at best. 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. 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 from Louisiana (Gunter 1981).

NMFS is responsible for aquatic marine endangered and threatened sea turtles. High levels of sediment in the water column and low prey availability probably preclude any high use by sea turtles in the lower Mississippi River Delta.

2.2.8 Water and Sediment Quality

Existing Conditions

In general, the locations of the temporary unwatering pumps and levee cuts occurred in areas that were either used for stormwater discharge or containment. Storm water discharges often result in greater magnitudes and frequencies of peak flows on impacted water bodies due to an increase in the coefficient of runoff and a decrease in concentration time. During rain events, like Hurricane Ida, storm water can increase the chance of flooding and sediment loading within surrounding waterbodies. Storm water discharge often contains contaminants, which could further impact water quality. During a hurricane, debris and other anthropogenic material could be released into water ways affecting the water quality within the surrounding areas.

2.2.9 Air Quality

Existing Conditions

The U.S. Environmental Protection Agency (USEPA), under the requirements of the Clean Air Act (CAA), has established National Ambient Air Quality Standards (NAAQS) for six contaminants, referred to as “criteria” pollutants (40 CFR 50). These are 1) carbon monoxide (CO), 2) nitrogen dioxide (NO_2), 3) ozone (O_3), 4a) particulate matter less than 10 microns in diameter (PM10), 4b) particulate matter less than 2.5 microns in diameter (PM2.5), 5) lead (Pb), and 6) sulfur dioxide (SO_2). 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 Six Contaminants Established by EPA

National Ambient Air Quality Standards [3][4]				
	Primary Standard		Secondary Standard	
Criteria Pollutant	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/m^3.
(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/m^3.

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 Jefferson Parish, Lafourche Parish, and Plaquemines Parish were in attainment for all Federal NAAQS pollutants, including the 8-hour ozone standard during Hurricane Ida, August 28, 2021 (USEPA 2022). 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 Hurricane Ida Unwatering Mission.

Review of the Green Book indicates that St. Bernard Parish was in non-attainment for SO2 during Hurricane Ida, but in attainment for all other Federal NAAQS pollutants, including the 8-hour ozone standard (USEPA 2022). Though St. Bernard Parish is in non-attainment for SO2 and the use of electric power generators would have to be justified under normal circumstances within non-attainment areas, a declaration was passed by Louisiana Department of Environmental Quality addressing the usage of set generators and equipment during an event. According to "First Amended, Declaration of Emergency and Administrative Order- Hurricane Ida August 28, 2021", Air Pollution Sources Other than Open Burning section, paragraph F, owners/ operators may bring on site and utilize nonroad engines. Paragraph G of the same section, states that, "the Department suspends any limitations on operating time imposed by the applicable permit until such time as normal operations are restored or until the expiration of this Order, whichever is earlier." This order expired on September 26, 2021. Within St. Bernard Parish, two temporary electrical power generators were used between September 7, 2021 to September 13, 2021. Since the two generators were used before the declaration expired, the usage of the two generators does not require additional information and/or justification for usage within non-attainment areas.

2.2.10 Cultural Resources

Existing Conditions

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended and codified in Title 54 U.S.C. § 306108; and its implementing regulations "Protection of Historic Properties" (36 CFR Part 800), and NEPA of 1969 (Public Law 91-190), as amended; and other applicable laws and regulations require Federal agencies to take into account the effects of their undertaking on the environment and any significant cultural resources within the project area of the undertaking, as well as its area of potential effect (APE). Typically, these studies require archival searches and field surveys to identify any cultural resources. However, if an agency conducts an "emergency undertaking" in response to a disaster or emergency declared by the President, a tribal government, or the governor of a state, that poses an immediate threat to life or property, it may follow procedures laid out in 36 CFR § 800.12, exempting the emergency undertaking from the provisions of Section 106 of the NHPA.

In accordance with 36 CFR § 800.12 (b), on September 14, 2021, CEMVN notified the State Historic Preservation Officer (SHPO), Federally-recognized Tribes, and the Advisory Council on Historic Preservation (ACHP) (e.g., Consulting Parties) it was tasked by the Federal Emergency Management Agency (FEMA) to assist the State of Louisiana and local municipalities in the unwatering of critical infrastructure across Southeast Louisiana caused by extreme flooding associated with Hurricane Ida (**Appendix D**). Per 36 CFR § 800.12 (d), CEMVN determined and notified the Consulting Parties that unwatering operations qualified as an "emergency undertaking" due to the "immediate threat to life or property" posed by trapped floodwaters within the existing levee infrastructure systems. This notification afforded Consulting Parties an

opportunity to comment within seven days of notification. On September 17, 2021, the ACHP responded and concurred with CEMVN's emergency undertaking determination. No other responses were received from Consulting Parties. In accordance with 36 CFR 800.12 (b) (2), CEMVN concluded initial consultation under the NHPA (**Appendix D**). The notification also informed the Consulting Parties that CEMVN would conduct an after-event site visit to areas that had undergone unwatering operations located near recorded historic properties to provide a status update to the Consultation Parties to better inform each of them for future consultations and to be used in understanding impacts to the human environment.

The emergency undertaking efforts were located in areas of Jefferson Parish (Lafitte), St. Bernard Parish (Delacroix), Lafourche Parish (Kraemer and Larose), and both banks of Plaquemines Parish (Woodland, West and East Point a La Hache, and Bellevue). Efforts included the installation and operation of temporary portable pumping stations, executing engineering levee cuts and installing armoring, and the staging of personnel and equipment to support both actions. At the conclusion of the emergency undertaking, CEMVN conducted a site visit in Plaquemines Parish where the major unwatering operations occurred with the potential to impact historic properties. CEMVN provided the site visit summary report to the Consulting Parties on December 13, 2021 (**Appendix E**). The report clarified the location of unwatering operations and provided a summary of the observed impacts to the surrounding historic properties.

According to the Louisiana Division of Archaeology's Cultural Resource Management Database, there have been over 216 cultural resource surveys completed in Plaquemines Parish (Woodland, West and East Point a La Hache, and Bellevue). A total of 21 surveys have been conducted within a mile of the emergency undertaking area, with most of these conducted in support of the Mississippi River levee construction and improvement projects or refinery expansions. A total of five archaeological sites and one historic cemetery have been recorded within a mile of the Emergency Undertaking area (Table 5). Most of these archaeological sites are related to the proliferation of sugarcane and rice plantations located along the Mississippi River during the ninetieth and early twentieth century, such as the Woodland Plantation site (16PL157).

Table 5: Inventoried Cultural Resources within One Mile of the Emergency Undertaking

Site #	Site Name	Site Components	Site Characteristics	Cultural Affiliation	Site Function	NRHP Eligibility
16PL157	Woodland Plantation	Historic	Artifact Scatter	Antebellum through Industrial & Modern	Plantation	Ineligible (destroyed)
16PL153	Citrus Lands (associated with 16PL157)	Historic	Historic Ruins/Features	Antebellum through Industrial & Modern	Plantation/Industrial (Pump Foundation)	Eligible
16PL125	Junior, JR-1	Historic	Historic Ruins/Features	Unknown Historic	Residential	Undetermined
16PL258	8305-01	Historic	Artifact Scatter	Unknown Historic	Unknown	Undetermined
16PL266	New Orleans and Lower Coastal Railroad	Historic	Artifact Scatter	War and Aftermath through Industrial & Modern	Historic Transportation/Commercial	Ineligible (partially determined)
N/A	Ballowe Cemetery	Historic	Cemetery	Antebellum through Industrial & Modern	Cemetery	N/A

In addition, nine Federally-recognized Tribes have an aboriginal/historic interest in Plaquemines Parish. The Tribes are: 1) the Alabama Coushatta Tribe of Texas, 2) the Chitimacha Tribe of Louisiana, 3) the Choctaw Nation of Oklahoma, 4) the Coushatta Tribe of Louisiana, 5) the Jena Band of Choctaw Indians, 6) the Mississippi Band of Choctaw Indians, 7) the Seminole Nation of Oklahoma, 8) the Seminole Tribe of Florida, and 9) the Tunica-Biloxi Tribe of Louisiana. There are no tribal lands, nor are there specific tribal treaty rights related to access or traditional use of the natural resources in Plaquemines Parish.

2.2.11 Recreational Resources

Existing Conditions

This resource is institutionally important because of the Federal Water Project Recreation Act of 1965, as amended, and the Land and Water Conservation Fund Act of 1965, as amended. Recreational resources are technically important because of the high economic value of these recreational activities and their contribution to local, state, and national economies. Recreational resources are publicly important because of the high value that the public places on fishing, hunting, camping, hiking, boating, and other outdoor recreation activities as measured by the large economic contributions to local and state economies and support of sustainable resource or tourism-based jobs.

The emergency undertaking efforts were in areas of Jefferson Parish (Lafitte), St. Bernard Parish (Delacroix), Lafourche Parish (Kraemer and Larose), and both banks of Plaquemines Parish (Woodland, West and East Point a La Hache, and Bellevue). Efforts included the installation and operation of temporary portable pumping stations, executing engineering levee cuts and installing armoring, and the staging of personnel and equipment to support both actions.

Recreational facilities include camps, marinas, boat launch ramps and small neighborhood parks. The communities within the study area are very much connected to the water evidenced by the way many waterfront residents extend personal property into the waterways in the forms of docks, piers, camps, and homes. The most prominent recreational activities within the study area are freshwater-based consumptive uses include freshwater fishing, crawfishing, hunting for waterfowl, as well as hunting for deer or small game along natural ridges and in wooded swamp lands. Non-consumptive recreational activities attract far fewer participants and include hiking, wildlife observation, boating, camping and photography.

Factors contributing to the high proportion of boating activity for fishing include the high quality of the recreational fishery, especially an abundance of fish habitat within Jefferson, Lafourche, Plaquemines, and St. Bernard Parishes. Pleasure boating occurs to a lesser degree than boat fishing. According to data compiled by the Louisiana Oil Spill Coordinator's Office (LOSCO), there were approximately 85 boat launches catalogued within the four Parishes as of 2004. One indicator of the amount of recreational fishing that occurs in the area is the number of recreational boats registered within the same parishes. In 2019, approximately 11% of the boats registered with the State of Louisiana were registered within the same parishes. In 2019, approximately 12% of the resident basic fishing licenses, 19% of the resident saltwater fishing licenses, and 6% of the resident basic hunting licenses issued by the State of Louisiana were issued within the same parishes.

The table below illustrates the number of 2019 fishing licenses, hunting licenses, and boat registrations in the 4-parish area. The 2019 fishing and hunting license and boat registration data are provided by the Louisiana Department of Wildlife and Fisheries (LDWF) https://www.wlf.louisiana.gov/resources/category/licenses-and-permits/recreational-fishing-and-hunting.

Table 6: LDWF 2019 data of Fishing, Hunting, and Boat Registration

Parish	2019 Resident Basic Fishing	2019 Resident Saltwater	2019 Resident Basic Hunt	2019 Boat Registration
Jefferson	22,422	21,224	3,163	16,529
Lafourche	12,071	11,085	2,821	12,010
Plaquemines	2,656	2,561	748	3,420
St. Bernard	2,890	2,790	588	2,602
4 Parish Total	40,039	37,660	7,320	34,561
State Total	324,581	198,877	131,061	314,532
% of State Total	12%	19%	6%	11%

2.2.12 Visual Resources (Aesthetics)

Existing Conditions

This resource is institutionally important because of the laws and policies that affect visual resources, most notably the 1969 National Environmental Policy Act (NEPA), USACE ER 1105-2-100, and the National and Local Scenic Byway Program. Visual resources are technically important because of the high value placed on the preservation of unique geological, botanical, and cultural features that may be an asset to a study area. Aesthetic resources are publicly important in that environmental organizations and the public support the preservation of natural pleasing vistas.

The emergency undertaking efforts were in areas of Jefferson Parish (Lafitte), St. Bernard Parish (Delacroix), Lafourche Parish (Kraemer and Larose), and both banks of Plaquemines Parish (Woodland, West and East Point a La Hache, and Bellevue). Efforts included the installation and operation of temporary portable pumping stations, executing engineering levee cuts and installing armoring, and the staging of personnel and equipment to support both actions. The communities above offer resources and viewsheds that are unique to both the Barataria Basin and Breton Sound Basin. These basins consist of the Southern Holocene Meander Belts and the Deltaic Coastal Marshes and Barrier Islands ecoregions. The Southern Holocene Meander Belts ecoregion stretches from just north of Natchez, Mississippi south to New Orleans, Louisiana and can be characterized by point bars, oxbows, natural levees, and abandoned channels. Common species include live oak, laurel oak, and Spanish moss. The bottomland forests have been cleared and the region has been extensively modified for agriculture, flood control, and navigation. The levee system is extensive throughout the region. The Deltaic Coastal Marshes and Barrier Islands ecoregion is dominated by brackish and saline marshes. The region supports vegetation tolerant of brackish or saline water including saltmarsh cordgrass, marsh hay cordgrass, black needlerush, and coastal saltgrass. The wetlands and marshes act as a buffer to help moderate flooding and tidal inundation during storm events.

Portions of the 282 mile-long Wetlands Cultural Trail along LA 1 through Larose and LA 307 through Kraemer are part of the Louisiana Scenic Byways Program and recognized by the National Scenic Byways Program. “The landscape of the roadway is mainly prairie and wetland.

With natural bayous and tree-lined swamps, fresh, brackish, and saltwater marshes surrounding much of the environment, water dictates the byway's twists and turns…" (https://byways.louisianatravel.com/sites/default/files/resources/Wetlands%20Trail.pdf)

Additionally, the 773 mile-long Louisiana Great River Road runs through West and East Point a La Hache. This is but one segment to an overall scenic byway that stretches on multiple thoroughfares from Canada to the Gulf of Mexico. It is state and federally designated and has an "All American Road" status, making it significant in culture, history, recreation, archeology, aesthetics and tourism. (https://byways.louisianatravel.com/byway/louisiana-great-river-road)

Along the Mississippi River and Bayou Lafourche, land use consists of cultivated crops and hay/pasture. It is along the Louisiana Great River Road, and State Highway 308 following Bayou Lafouche, that agricultural communities have prospered. The drive along these thoroughfares is scenic and visually interesting. Woody wetlands transitioning to emergent herbaceous wetlands dot the area blending and growing denser as you look away from the water channels and into the backdrop of these thoroughfares. The landscape here is pastoral and serene, tremendously adding to the visual quality of the area. The communities of Lafitte, Kraemer, Larose, Woodland, West and East Point a La Hache, and Bellevue are very much connected to the water as land use has advanced along these waterways and property lines protract perpendicular to the waterfront.

2.2.13 Environmental Justice

Existing conditions

Demographic data was collected from the 2020 United States Census' American Community Survey (ACS) for Plaquemines Parish, Jefferson Parish, St. Bernard Parish, and Lafourche Parish in Louisiana.

Table 7 demonstrates the racial and ethnic characteristics of the population living in Plaquemines Parish, where levee cuts were made as a part of the Hurricane Ida Unwatering Operation. In 2020 the total population of the parish was 23,305. The largest racial group were those who identified as non-Hispanic white, 'white alone' at 63.5%. Non-Hispanic Blacks or African Americans represented the second largest population at 18.7%. The third largest population were those that identified as Hispanic/Latino at 7.6%.

Table 7: Plaquemines Parish, Population by Race and Ethic Origin, 2020

Total Population (%)	White alone (%)	Black or African American alone (%)	American Indian and Alaskan Native alone (%)	Asian alone (%)	Native Hawaiian and other Pacific Islander alone (%)	Some other race (%)	Two or more races (%)	Hispanic/ Latino (%)
	Not Hispanic nor Latino							
23,305 (100%)	14,795 (63.5%)	4,359 (18.7%)	294 (1.3%)	967 (4.1%)	17 (0.1%)	13 (0.1%)	1,080 (4.6%)	1,780 (7.6%)

Source: U.S Bureau's American Community Survey, Demographic and Housing Estimates, 5-Year Estimates Data Profiles

Table 8 demonstrates a racial/ethnic breakdown of the population in Plaquemines Parish that was below the poverty threshold in 2020. Of the total population, 17.8% of households were below the poverty level. Those households that identified as 'some other race' represented the racial group most disproportionately impacted by poverty. Of those that identified as 'some other race', 32.7% of households were below poverty level, the largest percentage compared to other ethic/racial groups. American Indians and Alaskan Natives represented the second largest racial/ethnic group impacted by poverty, 30.1% of these households were below the poverty level. Blacks or African Americans represented the third largest group impacted by poverty, with 29.5% of these households below the poverty line.

Table 8: Plaquemines Parish, Population below Poverty Level, 2020

	Total Population	White alone	Black or African American alone	American Indian and Alaskan Native alone	Asian alone	Native Hawaiian and other Pacific Islander alone	Some other race	Two or more races	Hispanic/ Latino
		Not Hispanic nor Latino							
Population	22,950	14,660	4,434	302	963	17	297	1,386	1,725
Population below Poverty Level	4,096	2,136	1,306	91	211	0	97	233	120
Percent below Poverty Level	17.8%	14.6%	29.5%	30.1%	21.9%	0%	32.7%	16.87%	7.0%

Source: U.S Bureau's American Community Survey. [Note] Poverty status is calculated using income earned in the previous year. Additionally, total population represents the population for whom poverty status is determined.

Table 9 demonstrates the racial and ethnic characteristics of the population living in Jefferson Parish, where temporary pumps were deployed. In 2020 the total population of the parish was 434,903. The largest racial group were those who identified as non-Hispanic white, 'white alone' at 52%. Non-Hispanic Blacks or African Americans represented the second largest population at 26.6%. The third largest population were those that identified as Hispanic/Latino at 14.6%.

Table 9: Jefferson Parish, Population by Race and Ethic Origin, 2020

Total Population (%)	White alone (%)	Black or African American alone (%)	American Indian and Alaskan Native alone (%)	Asian alone (%)	Native Hawaiian and other Pacific Islander alone (%)	Some other race (%)	Two or more races (%)	Hispanic/ Latino (%)
	Not Hispanic nor Latino							
434,903 (100%)	226, 094 (52%)	115,719 (26.6%)	1,204 (0.3%)	18,224 (4.2%)	40 (0.0%)	1,746 (0.4%)	8,164 (1.9%)	63,712 (14.6%)

Source: U.S Bureau's American Community Survey, Demographic and Housing Estimates, 5-Year Estimates Data Profiles

Table 10 demonstrates a racial/ethnic breakdown of the population in Jefferson Parish that was below the poverty threshold in 2020. Of the total population, 15.2% of households were below the poverty level. Those households that identified as 'some other race' represented the racial group most disproportionately impacted by poverty. Of those that identified as 'some other race', 30.7% of households were below poverty level, the largest percentage compared to other ethic/racial groups. Native Hawaiian and other Pacific Islander represented the second largest racial/ethnic group impacted by poverty, 25% of these households were below the poverty level. Blacks or African Americans represented the third largest group impacted by poverty, with 23.8% of these households below the poverty line.

Table 10: Jefferson Parish, Population below Poverty Level, 2020

	Total Population	White alone	Black or African American alone	American Indian and Alaskan Native alone	Asian alone	Native Hawaiian and other Pacific Islander alone	Some other race	Two or more races	Hispanic /Latino
		Not Hispanic nor Latino							
Population	431,099	224,314	116,547	1,591	18,297	40	19,437	14,901	63,293
Population below Poverty Level	65,360	19,553	27,780	225	1,643	10	5,964	3,421	14,523
Percent below Poverty Level	15.2%	8.7%	23.8%	14.1%	9%	25%	30.7%	23%	22.9%

Source: U.S Bureau's American Community Survey. [Note] Poverty status is calculated using income earned in the previous year. Additionally, total population represents the population for whom poverty status is determined.

Table 11 demonstrates the racial and ethnic characteristics of the population living in St. Bernard Parish, where temporary pumps were deployed. In 2020 the total population of the parish was 46,694. The largest racial group were those who identified as non-Hispanic white, 'white alone' at 61.8%. Non-Hispanic Blacks or African Americans represented the second largest population at 23.1%. The third largest population were those that identified as Hispanic/Latino at 10.1%.

Table 11: St. Bernard Parish, Population by Race and Ethic Origin, 2020

Total Population (%)	White alone (%)	Black or African American alone (%)	American Indian and Alaskan Native alone (%)	Asian alone (%)	Native Hawaiian and other Pacific Islander alone (%)	Some other race (%)	Two or more races (%)	Hispanic/Latino (%)
	Not Hispanic nor Latino							
46,694 (100%)	28,851 (61.8%)	10,807 (23.1%)	72 (0.2%)	1,191 (2.6%)	16 (0.0%)	152 (0.3%)	876 (1.9%)	4,729 (10.1%)

Source: U.S Bureau's American Community Survey, Demographic and Housing Estimates, 5-Year Estimates Data Profiles

Table 12 demonstrates a racial/ethnic breakdown of the population in St. Bernard Parish that was below the poverty threshold in 2020. Of the total population, 23.2% of households were below the poverty level. Those households that identified as Black or African American represented the racial group most disproportionately impacted by poverty. Of those that identified as Black or African American, 34.5% of households were below poverty level, the largest percentage compared to other ethnic/racial groups. Those that identified as 'two or more races' represented the second largest racial/ethnic group impacted by poverty, 31.1% of these households were below the poverty level. Asians represented the third largest group impacted by poverty, with 22.2% of these households below the poverty line.

Table 12: St. Bernard Parish, Population below Poverty Level, 2020

	Total Population	White alone	Black or African American alone	American Indian and Alaskan Native alone	Asian alone	Native Hawaiian and other Pacific Islander alone	Some other race	Two or more races	Hispanic/Latino
		Not Hispanic nor Latino							
Population	46,330	28,654	10,842	186	1,213	26	778	1,480	4,692
Population below Poverty Level	10,735	5,569	3,745	16	269	4	71	461	1,024
Percent below Poverty Level	23.2%	19.4%	34.5%	8.6%	22.2%	15.4%	9.1%	31.1%	21.8%

Source: U.S Bureau's American Community Survey. [Note] Poverty status is calculated using income earned in the previous year. Additionally, total population represents the population for whom poverty status is determined.

Table 13 demonstrates the racial and ethnic characteristics of the population living in Lafourche Parish, where temporary pumps were deployed. In 2020 the total population of the parish was 97,980. The largest racial group were those who identified as non-Hispanic white, 'white alone' at 76.7%. Non-Hispanic Blacks or African Americans represented the second largest population at 13.4%. The third largest population were those that identified as Hispanic/Latino at 4.4%.

Table 13: Lafourche Parish, Population by Race and Ethic Origin, 2020

Total Population (%)	White alone (%)	Black or African American alone (%)	American Indian and Alaskan Native alone (%)	Asian alone (%)	Native Hawaiian and other Pacific Islander alone (%)	Some other race (%)	Two or more races (%)	Hispanic/Latino (%)
	Not Hispanic nor Latino							
97,980 (100%)	75,119 (76.7%)	13,146 (13.4%)	2,157 (2.2%)	495 (0.5%)	47 (0.0%)	150 (0.2%)	2,593 (2.6%)	4,273 (4.4%)

Source: U.S Bureau's American Community Survey, Demographic and Housing Estimates, 5-Year Estimates Data Profiles

Table 14 demonstrates a racial/ethnic breakdown of the population in Lafourche Parish that was below the poverty threshold in 2020. Of the total population, 17.4% of households were below the poverty level. Those households that identified as 'some other race' represented the racial group most disproportionately impacted by poverty. Of those that identified as 'some other race', 38.5% of households were below poverty level, the largest percentage compared to other ethic/racial groups. Black or African American represented the second largest racial/ethnic group impacted by poverty, 37% of these households were below the poverty level. Asians represented the third largest group impacted by poverty, with 27.2% of these households below the poverty line.

Table 14: Lafourche Parish, Population below Poverty Level, 2020

	Total Population	White alone	Black or African American alone	American Indian and Alaskan Native alone	Asian alone	Native Hawaiian and other Pacific Islander alone	Some other race	Two or more races	Hispanic/ Latino
		Not Hispanic nor Latino							
Population	95,651	73,736	12,473	2,250	474	47	2,005	2,835	4,119
Population below Poverty Level	16,652	9,774	4,620	556	129	0	771	540	1,076
Percent below Poverty Level	17.4%	13.3%	37%	24.7%	27.2%	0%	38.5%	19%	26.1%

Source: U.S Bureau's American Community Survey. [Note] Poverty status is calculated using income earned in the previous year. Additionally, total population represents the population for whom poverty status is determined.

3 ENVIRONMENTAL CONSEQUENCES

3.1 Navigation

Future Conditions with No-Action

Without implementation of the action, navigation would not have been directly affected. However, many industries that support navigation would likely to have been adversely affected by the flood waters. Eliminating navigation in the flooded areas could not really be considered an adverse effect as it was supposed to be dry land, houses, businesses, and city streets.

Future Conditions with the Selected Action

There were no direct impacts to navigation associated with the unwatering action. Restoration of access to businesses and residences within the flooded area likely aided navigation in the nearby navigable waters.

3.2 Wetlands

Future Conditions with No-Action

The wetlands within the flooded areas are not adapted for long-term inundation. Leaving the floodwater in place would have adversely impacted all wetlands within the flooded area. An exact acreage of potential impact was not calculated as a comprehensive wetland delineation is not available for the large geographic area and wasn't relative to the decision or essential to the evaluation.

Future Conditions with the Selected Action

No appreciable fill material was deposited into waters of the U.S. as a result of the unwatering action. In one location in Lafourche Parish an unwatering pump was discharged into a bottomland hardwood wetland. A subsequent site inspection was made on 26 August 2022. No evidence of fill material or effects to wetlands was found. Any fill that may have entered wetlands was de minimis in nature. No Section 404(b)(1) evaluation was found to be required.

3.3 Scrub-Shrub

Future Conditions with No-Action

Inundation of scrub-shrub habitats would have remained unchanged. This would have resulted in adverse impacts to these habitats as they are not adapted for prolonged inundation.

Future Conditions with the Selected Action

No direct impacts to scrub-shrub habitats occurred as a result of the unwatering action. Positive indirect benefits occurred when flood water was removed from the habitats in the action area.

3.4 Aquatic Resources/Fisheries

Future Conditions with No-Action

Without implementation of the action, the action area would have remained flooded. It is speculated that freshwater aquatic organisms washed into the action area during the storm would have likely survived. Saltwater species washed into the flooded area would have perished over time.

Future Conditions with the Selected Action

Direct and indirect impacts to aquatic/fisheries resources likely occurred when the floodwater was removed from the previous uplands within the action area. These species would have become trapped in isolated water pockets, ponds and drainage canals. All species trapped in areas eventually drained would have been lost. Freshwater species trapped in ponds and drainage canals likely survived and integrated into those ecosystems. All saltwater dependent species within the action area were essentially lost when the storm surge left them in the basins. In the area where the levees were cut, it is likely some saltwater species exited through the cuts. There is no way to evaluate or quantify that number. No impacts to aquatic species were noted from the input of the floodwater into the adjacent ecosystems outside the flood protection system (where the water was pumped to). These areas are accustomed to episodic input from permanent pump stations. All our temporary pumps were placed at permanent pump station sites with one exception. In this case, the temporary pump was discharging into the same bayou as the permanent pump station just up from the permanent location.

3.5 Essential Fish Habitat

Future Conditions with No-Action

Without implementation of the action, no direct impacts to EFH would have likely occurred.

Future Conditions with the Selected Action

With implementation of the action, there were no direct impacts to EFH. Water quality is addressed in Section 4.8 below. Essentially, the impacts from the unwatering mission were no worse than those from Hurricane Ida within the affected regions or typical flood control from the permanent pump stations during rain events.

3.6 Wildlife

Future Conditions with No-Action

Without implementation of the action, significant habitat within the mission area would have been adversely impacted from inundation. This would have resulted in a reduction of habitat diversity and availability for resident terrestrial wildlife such as nutria, muskrat, mink and river otter; migratory waterfowl such as snow geese, gadwalls, pintails, mallard, teal, coot redheads, lesser scaup, mergansers, wigeons, canvasbacks and black ducks; and other avian species such as ibis, egrets, cormorants, terns, gulls, skimmer, pelicans, and various raptors.

Future Conditions with the Selected Action

Minimal and temporary adverse direct and indirect impacts to wildlife likely occurred as a result of the unwatering mission. Construction activities and pumps generated noise which may have

displaced terrestrial wildlife in the area. However, this was a temporary disturbance, with wildlife (including colonial shorebirds) likely to return following the completion of activities if they survived the hurricane.

3.7 Threatened and Endangered Species

Future Conditions with No-Action

Under the no action alternative, habitat potentially suitable for listed avian species could have remained flooded for an extended period of time. Impact to aquatic species including marine turtles was unlikely as the flooded areas were in effect inaccessible to those species. Still the potential for presence of threatened and endangered species in the Project Area was *possible* and therefore the no action alternative *"may have adversely affected"* threatened and endangered species by leaving suitable habitat inundated for an extended period of time.

Future Conditions with the SelectedAction

Although threatened or endangered species may occur within the general Project vicinity, their presence within the active construction/operations area was *highly unlikely*. The Action Area d*oes not* contain critical habitat for Federally listed species, and the presence of listed species in the active areas are highly unlikely. Even though no listed species were observed within the construction or operations areas of the unwatering mission, it is possible that some species could have been indirectly affected by the unwatering. Therefore, the Selected Action *would* result in adverse indirect impacts to Manatee, Piping plovers, rufa red knots and Black rails (i.e., *"not likely to adversely affect"*) which are Federally listed threatened or endangered species under the jurisdiction of USFWS. Pallid and Gulf sturgeon are *unlikely* to occur in the Action Area and "No effect" to those listed species were identified. Further, sea turtles and other listed species managed by the NMFS were highly unlikely to be in the area of potential effects from the unwatering mission. Therefore, "no effect" to those listed species were identified.

In consideration of potential effects, it is important to keep in mind that the unwatering mission was intended to return the action area to "normal" as soon as possible. It was in the best interest of all listed species for that action to occur as quickly as possible. No direct effects to any listed species were identified during or after completion of the unwatering mission.

3.8 Water and Sediment Quality

Future Conditions with No-Action

With no action, there would be no changes to hydrology or water quality as no unwatering activities would occur.

Future Conditions with the Selected Action

With the Emergency Action Alternative, there were no significant impacts to the water quality or hydrology within the areas from the temporary unwatering pump stations or levee cuts. Impacts would be temporary in nature. The surrounding bayous, streams, canals, and lakes in the immediate area of the temporary unwatering pumps and levee cuts, would be primary recipients of the floodwaters for the unwatering mission. Under normal operations of the permanent pump stations and surrounding areas, the bayous, streams, canals, and lakes would be the recipient for discharge.

Seventeen temporary unwatering pumps were placed at permanent pump stations. This placement determined a decision that sampling would not be conducted, nor a permit filed with Louisiana Department of Environmental Quality (LDEQ) because the temporary pumps would only be used to mimic the permanent pumps. The seventeen temporary pumps only mimicked half of the production of the permanent pumps because the temporary pumps were used for only 12 hours a day. If the permanent pumps were in operations, the pumps would be used more than 12 hours a day. The usage of unwatering pumps compared to the permanent pumps resulted in a favorable water condition because the draw and discharge was significantly lower with the temporary unwatering pumps than the permanent pump station.

For the two temporary unwatering pumps placed north of the Larousse 19 permanent pump station, it was found that though these pumps were not placed at a permanent pump station, the canal that these temporary unwatering pumps were used in connects to the same water source as Larousse 19 Permanent Pump Station. The water that would have been in this canal would have been the same stormwater discharge that was being discharged from the temporary unwatering pump station placed at the Larousse 19 Permanent Pump station. Due to the connection of both water bodies and the usage of the temporary unwatering pumps, sampling would not be conducted, nor a permit filed with LDEQ. The area where the two temporary unwatering pumps were placed was evaluated on August 26, 2022, and it was found that the vegetation within the general area of both the inlet and discharge of the unwatering pumps do not show signs of stress or lack of growth.

For levee cuts, the impacts would only be temporary to the surrounding bayous, streams, canals, and lakes due to the introduction of freshwater into a brackish ecosystem. The levee cuts would be in the general vicinity of the permanent pump stations so the impacts would mimic as if the permanent pump stations were operable. The levee cuts would not result in a Water Quality Certification (WQC) from LDEQ.

3.9 Hazardous, Toxic, Radioactive Waste (HTRW)

Future Conditions with No-Action

Under the No-Action Alternative, there would likely be no potential for direct or indirect effects to HTRW because implementation of the action would not occur.

Future Conditions with the Selected Action

Under the Emergency Action Alternative, no direct or indirect effects from HTRW were reported during the unwatering process. Proper protocols for the usage of gas, diesel, and other flammable and hazardous material were followed. The placement of each temporary pump had a low probability of encountering HTRW because the pumps were placed at manned permanent pump stations or surrounding areas. An American Society for Testing Materials (ASTM) Phase I Environmental Site Assessment (ESA) was completed on June 30, 2022 and updated August 26, 2022. Site conditions were documented prior to the placement of unwatering pumps. It was found that no incidents were reported during the unwatering process. On August 26, 2022, it was found that two temporary unwatering pumps were placed northeast of Larousse 19 permanent pump station. A site visit was conducted on August 26, 2022 of the placement of the two unwatering pumps. Household trash and storm debris was found less than 91 meters of the placement of the two unwatering pumps. The findings of this material should be labeled as de minimis because the contents are mostly household products.

It was found that seven levee cuts were less than 500 meters from reported Oil & Gas wells. Upon further review, it was found that the Oil and Gas wells near the levee cuts were reported as either inactive, dry and plugged, or dry and abandoned. Each oil and gas well, within 500 meters, was reported by Louisiana Department of Natural Resources (LADNR) Strategic Online Natural Resources Information System (SONRIS) Data to be in compliance with no reported spill or incidents.

3.10 Air Quality

Future Conditions with No-Action

Under the No Action alternative, there would likely be no potential for direct or indirect effects to air quality because implementation of the selected action would not occur, and the status of attainment of air quality for Jefferson Parish, Plaquemines Parish, Lafourche Parish, and St. Bernard Parish would not change from current conditions.

Future Conditions with the Selected Action

This Emergency Action Alternative included short-term impacts to air quality resulting from the unwatering events due to Hurricane Ida. Particulate emissions from the usage of water discharge pumps during the unwatering increased temporarily in the immediate project vicinity. Other emission sources on site could include internal combustion engines from work vehicles, air compressors, or other types of construction equipment. These effects would be localized within the project area and would cease after construction.

Jefferson Parish, Lafourche Parish, and Plaquemines Parish were in attainment under the Clean Air Act (CAA) during the unwatering events and had no General Conformity obligations. Best management practices were used to ensure that short term effects to air quality were kept to a minimum. Emissions from the burning of fuel by internal combustion engines, diesel emissions and other emission sources, would temporarily increase the levels of some of the criteria pollutants, including CO2, NOx, O3, SO2, and PM10, and non-criteria pollutants such as VOCs. To reduce these emissions, running times for fuel-burning equipment was limited to only a maximum 12 hours a day and the engines were properly maintained. However, the short-term usage of said equipment within these parishes should not have change the status of attainment of air quality for Jefferson Parish, Lafourche Parish, and Plaquemines Parish.

St. Bernard Parish was in non-attainment status under the CAA for SO2 during the unwatering events. Though St. Bernard Parish was in non-attainment during the unwatering event, Louisiana Department of Environmental Quality issued a declaration stating that the department suspends any limitation on operating electrical power generators and other power generating equipment within affected areas due to Hurricane Ida. Best management practices were used to ensure that short term effects to air quality were kept to a minimum within St. Bernard Parish. Emissions from the burning of fuel by internal combustion engines, diesel emissions and other emission sources, would temporarily increase the levels of some of the criteria pollutants, including CO2, NOx, O3, SO2, and PM10, and non-criteria pollutants such as VOCs. To reduce these emissions, running times for fuel-burning equipment were limited to only a maximum 12 hours a day and the engines were properly maintained. However, the short-term usage of said equipment within St. Bernard Parish should not have worsened the non-attainment status for SO2 for St. Bernard Parish.

3.11 Cultural Resources

Future Conditions with No Action

The No-Action Alternative would not result in any impacts to historic properties. However, without unwatering operations, historic properties inundated by trapped floodwaters within the levees would be at greater risk of damage from erosion and scour caused by floodwaters.

Future Conditions with the Selected Action

During emergency undertaking operations, CEMVN cultural staff worked with CEMVN's Unwatering Project Delivery Team to review the placement of activity locations and to recommend avoidance if operations were selected near recorded historic properties. Historic properties were identified based on a review of the National Register of Historic Places (NRHP) database, the Louisiana Division of Archaeology (LDOA), *Louisiana Cultural Resources Map* (LDOA Website), historic aerial photography, historic map research, and a review of cultural resources survey reports. Though emergency undertaking efforts occurred in portions of Jefferson Parish (Lafitte), St. Bernard Parish (Delacroix), Lafourche Parish (Kraemer and Larose), and both banks of Plaquemines Parish (Woodland, West and East Point a La Hache, and Bellevue), no temporary pumping stations or their associated staging areas were located on or near recorded historic properties. In general, temporary pumping station operations consisted of staging equipment (e.g., pumps and generators) in existing parking lots or equipment yards and pumping floodwaters into existing canals and culverts; no canals or culverts were excavated to facilitate the intake or disposal of pumped floodwaters. In addition, temporary pumping station installation and operations caused no ground disturbance and the equipment was removed upon unwatering completion. Therefore, due to the temporary and minimal impact of temporary pumping station operations, CEMVN staff did not visit these locations as part of the post-event site survey.

CEMVN performed a total of 21 engineered cuts on the non-Federal levee system on the West Bank of Plaquemines Parish to drain over-topping floodwaters brought in during Hurricane Ida. Levee cut operations included excavating the levee cuts, repairing the cut sections after unwatering was completed, and then armoring the repaired levee cuts. Some levee areas were armored but not cut. Levee cuts were performed by pontoon-equipped hydraulic excavators traversing atop the levee crown. Armoring included the placement of Visqueen plastic sheeting over the levee cut topped with bulk- and small-sized sandbags; sandbags and equipment were transported along the levee crown. Generally, the levee cuts were 30 meters wide in size, but the overall area of disturbance measured 100 meters in length at each cut location. The area of disturbance was generally restricted to levee crown and slopes, though some ground disturbance occurred outside the levee footprint.

On November 15 and 22, 2021, CEMVN cultural staff visually inspected the levee cuts. A site visit summary report was transmitted to the Consulting Parties on December 13, 2021 (**Appendix E** CEVMN visited levee cuts near recorded cultural resources, notably the Woodland Plantation (16PL157) archaeological site and Ballowe Cemetery, and surrounding areas that had not undergone previous cultural resources investigations. There was no evidence (e.g., signs of erosion, scour, and/or ground disturbance) that levee cut operations impacted the Woodland Plantation archaeological site or the Ballowe Cemetery. Also, no cultural materials were observed within the disturbed soils along the levees or in the surrounding areas that had not been previously surveyed. CEMVN received a response from the Seminole Nation of Oklahoma on October 19, 2021 that the emergency action caused No Adverse Effects to historic properties (**Appendix D**).

No other responses were received from Consulting Parties. CEMVN has determined that there were no impacts to the human environment as a result of the emergency operation activities.

3.12 Recreational Resources

Future Conditions with No Action

The No-Action Alternative would not result in any impacts to recreation resources. However, without unwatering operations, recreation resources (such as hunting, camping, and wildlife observation) inundated by trapped floodwaters within the levees would be at greater risk of damage from erosion and scour caused by floodwaters. Floodwaters left in-place for extended periods may alter the recreational attributes of existing wildlife habitat. Floodwaters left in-place for extended periods may also limit access to areas known for their recreational attributes.

Future Conditions with the Selected Action

With the Selected Action, there were no significant or adverse impacts to recreation resources. The unwatering of vegetated areas would benefit existing wildlife habitat and limit habitat transition due to standing floodwater. Access to areas known for their recreational attributes would be restored.

3.13 Visual Resources (Aesthetics)

Future Conditions with No Action

The No-Action Alternative would not result in any impacts to aesthetic resources. However, without unwatering operations, aesthetic resources inundated by trapped floodwaters within the levees would be at greater risk of damage from erosion and scour caused by floodwaters. Floodwaters left in-place for extended periods may alter the aesthetic properties of existing vegetation causing plant die-back and plant community transition. Floodwaters left in-place for extended periods may also limit access to areas known for their aesthetic attributes.

Future Conditions with the Selected Action

With the Selected Plan there were no significant or adverse impacts to aesthetic resources. The unwatering of vegetated areas would benefit existing plant communities and limit plant dieback due to standing floodwater. Access to areas known for their aesthetic attributes would be restored.

3.14 Environmental Justice

Future Condition with No Action

The No-Action Alternative would have resulted in standing floodwater, which would have increased recovery time from Hurricane Ida's impacts in Plaquemines, Jefferson, St. Bernard, and Lafourche parishes resulting in direct adverse impacts to environmental justice communities.

Future Condition with the Selected Action

The Emergency Action Alternative did not result in any adverse impacts to environmental justice communities in Plaquemines, Jefferson, St. Bernard, or Lafourche parishes. This is because no

homes were located within 1000 feet of where engineering cuts were made to the levee in Plaquemines Parish unwatering operations instead benefitted communities impacted by floodwater inundation from Hurricane Ida. Additionally, unwatering operations decreased clean up and recovery time of local infrastructure in the forementioned parishes.

Environmental Compliance

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

All federal undertakings or projects require an assessment of Environmental Justice as per Executive Order #12898: Environmental Justice (1994) and Executive Order #14008: Tackling the Climate Crisis at Home and Abroad (2021).

Executive Order #12898, 1994

Executive Order #12898 directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, some other race, or a combination of two or more races. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than the general population. Low-income populations as of 2020 are those whose annual income are $27,131 for a family of two adults and two children under the age of 18 (a family of four), identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a census tract or block group with 20 percent or more of its residents below the poverty threshold.

Executive Order #14008, 2021

Executive Order #14008 directs federal agencies to make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts. Furthermore, EO 14008 aims to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care.

3.15 Cumulative Impacts Analysis

The Council on Environmental Quality (CEQ) Regulations define cumulative impacts (CI) as "effects on the environment that result from the incremental effects 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" (40 CFR 1508.1.g, (3)). CI "can result from individually minor but collectively significant actions taking place over a period of time."

Coastal Louisiana, including the Project Area, has been greatly impacted by natural subsidence, levees, hurricanes and oil and gas infrastructure. Recent events, such as hurricanes and oil spills,

contribute to the loss of habitat but are largely indiscernible from other impacts. Direct and indirect impacts of past, present and reasonably foreseeable future events were considered in the analysis of the selected Project consequences. These impacts include historical and predicted future land loss rates for the area and other restoration projects in the vicinity. The action, potentially minor, had temporary adverse impacts to some environmental resources, but overall cumulative significant benefits to environmental resources and the human environment. Allowing the floodwaters to remain in place for a longer period of time would have had a significant effect to the human environment. Therefore the "No Action" plan was not a viable alternative. No significant cumulative impacts were identified from the unwatering mission. The temporary pumps actually returned the floodwater to the surrounding habitat at a slower rate than that of the traditionally used permanent pump stations.

4 Mitigation

An assessment of the environmental effects to important resources found that the unwatering mission had only minimal and insignificant impacts to resources in the action area. Further, the restoration of inundated areas to pre-storm conditions as soon as possible resulted in benefits to the local ecosystem and human environment. Therefore, no mitigation is proposed.

5 Compliance with Environmental Laws and Regulations

There are many Federal and state laws pertaining to the enhancement, management and protection of the environment. Federal projects must comply with environmental laws, regulations, policies, rules and guidance. Compliance with laws will be accomplished upon 30-day public and agency review of this Draft EA 592 and associated Finding of No Significant Impact.

Clean Air Act of 1972

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

Clean Water Act of 1972 – Section 401 and Section 404

The Clean Water Act (CWA) sets and maintains goals and standards for water quality and purity. Because temporary pumps and levee cuts were placed at or in the vicinity of permanent pump stations, no new Water Quality Certification was needed. No appreciable fill material was deposited into waters of the U.S. as a result of the Selected Action. Therefore, no evaluation was required by Section 404(b)(1).

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) requires that "each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs." In accordance with Section 307, a Consistency Determination was prepared for the selected Project and was coordinated with the Louisiana Department of Natural Resources (LADNR). (Appendix F)

Endangered Species Act of 1973

The Endangered Species Act (ESA) is designed to protect and recover threatened and endangered (T&E) species of fish, wildlife and plants. Coordination of this Draft EA will occur with the USFWS as required by the ESA.

Magnuson-Stevens Fisheries Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, as amended, Public Law 104-208, addresses the authorized responsibilities for the protection of Essential Fish Habitat (EFH) by NMFS in association with regional fishery management councils. The NMFS has a "findings" with the CEMVN on the fulfillment of coordination requirements under provisions of the Magnuson-Stevens Fishery Conservation and Management Act. In those findings, the CEMVN and NMFS have agreed to complete EFH coordination requirements for federal civil works projects through the review and comment on National Environmental Policy Act documents prepared for those projects. Draft EA 592 will be provided to the NMFS for review and comment.

National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act of 1966, as amended, requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The procedures in 36 CFR § 800 define how Federal agencies meet these statutory responsibilities. The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, including the State Historic Preservation Officer ("SHPO") or Tribal Historic Preservation Officer ("THPO") and any Tribe that attaches religious or cultural significance to historic properties that may be affected by an undertaking. In accordance with 36 CFR § 800.12 (b), on September 14th, 2021, CEMVN notified the LA SHPO, Federally-recognized Tribes, and the ACHP (e.g., Consulting Parties) it was tasked by the Federal Emergency Management Agency (FEMA) to assist the State of Louisiana and local municipalities in the unwatering of critical infrastructure across Southeast Louisiana caused by extreme flooding associated with Hurricane Ida. Per 36 CFR § 800.12 (d), CEMVN determined and notified the Consulting Parties that unwatering operations qualified as an "emergency undertaking" due to the "immediate threat to life or property" posed by trapped floodwaters within the existing levee infrastructure systems and thus were exempt from the provisions of Section 106. This notification afforded Consulting Parties an opportunity to comment within seven days of notification. On September 17th, 2021, the ACHP responded and concurred with CEMVN's emergency undertaking determination. No other responses were received from Consulting Parties. In accordance with 36 CFR 800.12 (b) (2), CEMVN concluded initial consultation under the NHPA. The notification also informed the Consulting Parties that CEMVN would conduct an after-event site visit to areas that had undergone unwatering operations located near recorded historic properties. At the conclusion of the emergency undertaking, CEMVN conducted several site visits and provided a summary report to the Consulting Parties on December 13th, 2021. CEMVN determined that there were no impacts to historic properties as a result of the emergency operation activities. Prior to the site visit summary report, CEMVN received a response from the Seminole Nation of Oklahoma on October 19th, 2021, that the emergency action caused No Adverse Effects to historic properties. No other responses were received from Consulting Parties.

Tribal Consultation

NEPA, Section 106 of the National Historic Preservation Act, EO 13175 (Consultation and Coordination with Indian Tribal Governments), the American Indian Religious Freedom Act, and related statutes and policies have a consultation component. In accordance with CEMVN's responsibilities under NEPA, Section 106, and EO 13175, CEMVN will offer the following federally-recognized Indian Tribes the opportunity to review and comment on the potential of the selected action to significantly affect protected tribal resources, tribal rights, or Indian lands: Alabama-Coushatta Tribe of Texas, Caddo Nation of Oklahoma, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and Tunica-Biloxi Tribe of Louisiana. At this time CEMVN has determined there are no effects to protected resources, rights or land. Additionally, in accordance with 36 CFR § 800.12 (b), on September 14th, 2021, CEMVN notified Federally recognized Tribes it was tasked by the Federal Emergency Management Agency (FEMA) to assist the State of Louisiana and local municipalities in the unwatering of critical infrastructure across Southeast Louisiana caused by extreme flooding associated with Hurricane Ida. Per 36 CFR § 800.12 (d), CEMVN determined and notified Federally recognized Tribes that unwatering operations qualified as an "emergency undertaking" due to the "immediate threat to life or property" posed by trapped floodwaters within the existing levee infrastructure systems and thus were exempt from the provisions of Section 106. At the conclusion of the emergency undertaking, CEMVN provided a site visit summary report to Federally recognized Tribes on December 13, 2021. Prior to the site visit summary, however, CEMVN received a response from the Seminole Nation of Oklahoma on October 19, 2021, that the emergency action caused No Adverse Effects to historic properties. No other responses were received from Federally recognized Tribes.

Coordination and Public Involvement

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

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service, State Conservationist
U.S. Coast Guard Sector New Orleans
U.S. Coast Guard Marine Safety Unit Baton Rouge
Maritime Navigation Safety Association
The Associated Branch (Bar) Pilots
Crescent River Port Pilots Association
New Orleans Baton Rouge Steamship Pilot Association
Associated Federal Pilots
Big River Coalition
Lower Mississippi River Committee (LOMRC)
Coastal Protection and Restoration Authority Board of Louisiana
Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality

Louisiana State Historic Preservation Office
Plaquemines Parish Government
Alabama-Coushatta Tribe of Texas
Caddo Nation of Oklahoma
Chitimacha Tribe of Louisiana
Choctaw Nation of Oklahoma
Coushatta Tribe of Louisiana
Mississippi Band of Choctaw Indians
Jena Band of Choctaw Indians
Seminole Tribe of Florida
Seminole Nation of Oklahoma
Tunica-Biloxi Tribe of Louisiana

6 Conclusion

The evaluated action was the unwatering of flooded areas following Hurricane Ida. This action was undertaken as an emergency action to reduce the loss of life and property. This office has assessed the environmental impacts of the unwatering action and has determined after-the-fact that the action had no significant adverse impact on the human and natural environment.

7 Prepared By

EA 592 and the associated FONSI were prepared by Howard Ladner, U.S. Army Corps of Engineers, New Orleans District; Regional Planning and Environment Division South, CEMVN-PDC-C; 7400 Leake Avenue; New Orleans, Louisiana 70118.

Title/Topic	**Team Member**
Senior Environmental Manager Team Lead	Michael Brown
Environmental Manager, Lead	Howard Ladner
Environmental Manager	David Day
Senior Project Manager	Herbert Wagner
Project Manager	Joshua Abadie
Cultural Resources	Brian Ostahowski
Aesthetics	Jack Milazzo
Recreation	Jack Milazzo
Environmental Justice	Quanita Kendrick
HTRW	David Day

8 References

- Census data tables. United States Bureau. (2022, September 2). Retrieved from https://www.census.gov/data/tables.html
- Great River Road Louisiana. (2023). Louisiana River Road-all-American road/ Louisiana byways. Trails & Byways. Retrieved from https://byways.louisianatravel.com/byway/louisiana-great-river-road
- Gunter, G. 1981. Status of turtles on Mississippi coast. Gulf Research Report 7(1):89-92
- United States Environmental Protection Agency . (2022, April 5). *Nonattainment areas for criteria pollutants (Green book) | US EPA*. NAAQS Table. Retrieved from https://www.epa.gov/green-book

APPENDIX A

August 27, 2021, President Biden, Approves Louisiana Emergency Declaration

APPENDIX B

August 29, 2021, FEMA 4611-DR-LA Initial Notice

APPENDIX C

September 15, 2021, Colonel Murphy Signed Memorandum

APPENDIX D

Cultural -Section 106 Emergency Notification

APPENDIX E

Cultural -Section 106 Post-Event Site Visit Report

APPENDIX F

September 15, 2021, Louisiana Department of Natural Resources (LADNR) Hurricane Ida Emergency Notification Letter

APPENDIX G

September 15, 2021, Environmental Protection Agency (EPA), Region VI-Office of Planning and Coordination- Hurricane Ida Emergency Notification Letter

APPENDIX H

September 15, 2021, National Marine Fisheries Service (NMFS)- Protected Species Division-Hurricane Ida Emergency Notification Letter

APPENDIX I

September 15, 2021, National Marine Fisheries Service (NMFS)-Habitat Conservation Division- Hurricane Ida Emergency Notification Letter

APPENDIX J

September 15, 2021, Louisiana Department of Environmental Quality (LDEQ)-
Hurricane Ida Emergency Notification Letter

APPENDIX K

September 15, 2021, State Conservationist- Natural Resources Conservation Service (NRCS)- Hurricane Ida Emergency Notification Letter

APPENDIX L

September 15, 2021, United States Fish and Wildlife Service (USFWS)- Hurricane Ida Emergency Notification Letter

Appendix M

February 7, 2023, Office of Coastal Management, C20210135 Coastal Zone Consistency Approval Letter