

ENVIRONMENTAL ASSESSMENT
**ST. BERNARD PARISH PUMP STATION 2 & 3
SEEPAGE REPAIRS**

EA # 526





**U.S. Army Corps of Engineers
Mississippi Valley Division
Regional Planning and Environment Division
South**

Contents

INTRODUCTION	4
PURPOSE AND NEED FOR THE PROPOSED ACTION	4
AUTHORITY FOR THE PROPOSED ACTION	4
PRIOR REPORTS	5
PUBLIC CONCERNS	5
DESCRIPTION OF THE PROPOSED ACTION	5
ALTERNATIVES TO THE PROPOSED ACTION	7
ENVIRONMENTAL SETTING	7
GENERAL	7
CLIMATE	7
WATERSHED	8
GEOLOGY	8
HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE	9
RELEVANT RESOURCES	9
WETLANDS	13
AQUATIC RESOURCES / FISHERIES	16
ESSENTIAL FISH HABITAT	17
WILDLIFE	20
ENDANGERED OR THREATENED SPECIES	22
NOISE AND VIBRATION	24
SOCIOECONOMIC RESOURCES	27
WATER QUALITY	28
CULTURAL RESOURCES	30
RECREATIONAL RESOURCES	31
VISUAL RESOURCES	32
AIR QUALITY	33
CUMULATIVE IMPACTS.....	35
COORDINATION.....	35
MITIGATION	36
COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS	36
CONCLUSION.....	37
PREPARED BY	37

LITERATURE CITED	38
------------------------	----

LIST OF TABLES

Table 1: Proposed Action Data.....	7
Table 2: Relevant Resources	10
Table 3: Salinity Zones and Abundance for Federally Managed Species in the Mississippi River.....	18
Table 4: Essential Fish Habitat for Life Stages	18
Table 5: Common Sounds and Their Levels	25
Table 6: A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances.....	25

PHOTOGRAPHS

Figure 1: PS #3 Bayou Villere flood side, discharge basis covered with Salvinia sp. & Lemna sp.....	13
Figure 2: St. Bernard PS #2 discharge basin, shallow water with remnant cypress, surrounded by fresh marsh wetland edge.....	14
Figure 3: St. Bernard PS #2 flood side wetland edge vegetation	14

APPENDICES

Figures	A1
Coordination Letters	A2
Best Management Practices (BMP) for Air Quality.....	A3
BMP for Noise.....	A4
Air Quality Emissions Data.....	A5

INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), has prepared this Environmental Assessment #526 (EA #526) to evaluate the potential impacts associated with the proposed repair of St. Bernard Pump Stations 2 & 3. The proposed action is located in St. Bernard Parish, Louisiana (Figure 1. All figures cited herein are contained in Appendix 1, unless otherwise indicated.) EA #526 has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to repair seepage problems at two pump stations located within St. Bernard Parish, Louisiana. The two pump stations are located northeast of Chalmette, LA near Jupiter Drive and Jacob Drive. The pump stations have been out of service for approximately 14 months as a result of the seepage problem (discharge pipes causing seepage through holes in the pipes.) Drainage pumping has been handled by adjacent pump stations; however, it takes longer to drain the parish watershed. Repair of the seepage problems would allow these two pump stations to be operated.

The repair work would consist of a new concrete T-wall system and replacement of discharge pipes on the flood side of the levee. Pump station (PS) 2 (Guichard) and PS 3 (Bayou Villere) are part of the local (non-federal) levee/drainage system which includes eight pump stations (Figure 2). PS 2 & 3 benefit the communities of St. Bernard Parish by pumping water to central wetlands during rain events. The pump stations are operated based on rainfall amounts prior to and during storm events.

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), has prepared this Environmental Assessment #526 (EA #526) to evaluate the potential impacts associated with the proposed repair of St. Bernard Pump Station 2 & 3. The proposed action is located in St. Bernard Parish, Louisiana (Figure 1. All figures cited herein are contained in Appendix 1, unless otherwise indicated.) EA #526 has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2.

AUTHORITY FOR THE PROPOSED ACTION

The authority for the proposed action was provided by Congress following Hurricanes Katrina and Rita through the Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act of 2006 (3rd Supplemental - P.L. 109-148, Chapter 3, Flood Control and Coastal Emergencies). This Act authorized the restoration of flood damage reduction projects to provide the level of protection for which they were designed.

PRIOR REPORTS

U.S. Army Corps of Engineers Response to Hurricanes Katrina and Rita in Louisiana Environmental Assessment (EA) #433This EA was prepared to address “after the fact” emergency actions taken by the USACE as a result of Hurricanes Katrina and Rita including actions to un-water the New Orleans metropolitan area, rehabilitate Federally authorized levees, and restore non-Federal levees and pump stations in Orleans, St. Bernard, Jefferson and Plaquemines Parishes and flood fight operations in St. Mary's, Terrebonne, and Lafourche Parishes. The Finding of No Significant Impact (FONSI) was signed on July 24, 2006. This EA and FONSI are incorporated herein by reference (USACE, 2006).

Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana: Individual Environmental Report #10

This Individual Environmental Report (IER) was prepared to evaluate the actions required to provide improvement of the existing flood protection system of earthen levees and flood control structures commonly referred to as the “Chalmette Loop” in the Lake Pontchartrain and Vicinity (LPV) Hurricane and Storm Damage Risk Reduction System (HSDRRS) in St. Bernard Parish, Louisiana. The Record of Decision (ROD) was signed on May 26, 2009. This IER and ROD are incorporated herein by reference (USACE, 2009).

PUBLIC CONCERNS

Reduction of flood risk from rain events is of significant concern to residents and businesses in the St. Bernard Parish. Repair of the seepage problem at PS 2 and PS 3 would reduce flood risk by pumping water from the 40 Arpent Canal to the central wetlands area (CWA) during rain events.

DESCRIPTION OF THE PROPOSED ACTION

The proposed construction would consist of the following work on the non-federal levee and T-walls also referenced as the “Non-Federal Back Levee” in St. Bernard Parish: installation of a concrete T-wall to replace existing I-walls, replacement of discharge pipes on the flood side of the levee, and the tie-in of access roadways along the levee reach within the construction limits (See Figure 3, Figure 4, Figure 5, and Figure 6.)

The T-wall system would be constructed to provide fronting protection, and stabilize the earthen section at the pump stations. The surrounding levee reaches adjacent to the scope features would not be impacted aside from use as access with the exception of structural T-wall and access road tie-in areas. All elevations herein are based on North Atlantic Vertical Datum 88 (NAVD 88).

The new constructed top of T-wall shall be El. 10.0 feet (ft). Reference Table 1 for specific information related to each pump station. The T-wall shall be located in the existing levee alignment and embedded within the levee. It would consist of a sheet-pile cutoff wall below the

base foundation, steel H-pilings (54,000 ft) for support and approximately 3,000 cubic yards (cy) of concrete would be used to form the T-wall structure.

The proposed work includes replacing four discharge pipes. A temporary retaining structure (TRS) would be built to allow workers to access the pipes and perform the work for approximately 4 months. The TRS, also referred to as a cofferdam, would involve installing approximately 9,600 ft of steel sheet-pile surrounding the construction area. A work barge (small boat approximately 10 ft wide by 15 ft long) would allow access to the area to bring in equipment and provide a work platform. At PS #3, remnants of a former coffer dam would be removed prior to installing the TRS. Once the TRS is in place, approximately 100,000 gallons of discharge basin water would be pumped via a temporary pump to the CWA. After the new discharge pipes are installed, the TRS would be removed, and the levee/T-wall interface would be re-vegetated with grass.

Road work includes re-grading the existing pump station access roads following construction and replacing bridges located over the discharge pipes with pre-fabricated waskey bridges (15 ft width x 60 ft length). Existing trench drains on bridges would be removed and the bridge would be designed to allow subsurface drainage. Entrance to the road is restricted and not accessible to the public.

Excavated material from the construction site would be used as backfill. Off site borrow material will not be needed. Approximately 450 cy of sediment material would be excavated during construction and re-used onsite as part of levee toe and re-grading access road at each pump station. Any excess excavation material and construction debris shall become the property of the contractor and legally disposed of off-site at a landfill permitted to accept the waste and construction debris material.

A temporary office (one trailer) and storage area (equipment and materials) would be established within the existing levee right-of-way adjacent to either PS #2 or PS #3. The area may be temporarily covered with gravel for parking and ease of construction. The contractor would be required to return the area to its existing conditions when construction is complete. Equipment to be used includes a bulldozer, concrete trucks, concrete pump trucks, backhoe, crane, pile driver, sheepsfoot roller, and flat roller. The contractor would take reasonable measures to avoid unnecessary noise appropriate for the ambient sound levels in the area during working hours (6 am to 9 pm). All construction machinery and vehicles shall be equipped with practical sound muffling devices, and operated in a manner to cause the least noise, consistent with efficient performance of the work. The contractor shall comply with local noise ordinances.

The contractor would take reasonable measures to prevent unnecessary dust. Surfaces subject to creating dust would be kept moist with water. Dusty material piles on site or in transit shall be covered to prevent blowing. Silt fencing /erosion control would be installed and maintained throughout project area consistent with the Storm Water Pollution Prevention Plan.

It is estimated that the total duration of project construction activities would be approximately 15 months. Both PS projects would be constructed concurrently. While a majority of the proposed work for both projects is within the existing right of way a minor portion is not and requires additional right of way as detailed in Table 1.

Table 1: Proposed Action Data

	PS 2	PS 3
T-wall	490 ft length	390 ft length
Rip rap	2100 square (sq) ft	954 sq ft
discharge pipes (4)	330 ft length	260 ft length
TRS (cofferdam)	78 ft by 70 ft	85 ft by 53 ft
Access Route	Jean Lafitte Parkway and Paris Road	Bartolo Street
New ROW	.12 acres	.08 acres
Total Project Area	3.1 acres	2.2 acres

ALTERNATIVES TO THE PROPOSED ACTION

No Action Alternative

One alternative to the proposed action was considered. This alternative was: the No-Action. In the no action alternative, the proposed action would not be constructed. At the time the pump stations became inoperable, there was an increase in flood risk. Without repair, that risk remains to the communities of St. Bernard Parish.

ENVIRONMENTAL SETTING

GENERAL

The study area is within the Lake Ponchartrain Basin which encompasses lakes Maurepas, Pontchartrain, and Borgne. Boundaries are clearly defined to the west by levees and floodwalls along the Mississippi River, and to the east by eroding land brides of these lakes. The project area is located in St. Bernard Parish near Jupiter Drive and Jacob Drive

Nearby towns to the project area on the grassed non Federal St. Bernard Parish back levee include Arabi, Chalmette, Meraux, and Violet (See Figure 1.) The non Federal back levee is surrounded by 22 miles of the HSDRRS Federal Lake Pontchartrain and Vicinity Chalmette Loop levee/T-wall which protects 75 square miles of urban and industrial land in St. Bernard Parish and a small section of Orleans Parish known as the Lower Ninth Ward.

CLIMATE

The region is part of the southeastern United States that has a humid subtropical climate. The parish is dominated by warm, moist, maritime tropical air from the adjacent Gulf of Mexico. Tropical storms and hurricanes affect the parish 3 out of every 10 years, on average, with the probability of a severe hurricane causing widespread damage to the area approximately once every 2 or 3 decades. The majority of these occurrences are between June and November. Summer thunderstorms are common and tornadoes strike occasionally. These storms are of short duration and the amount and location of damage incurred varies. The

average annual temperature in the project area is 67° F, with monthly average temperatures ranging from 81° F in July to 51° F in January. Average annual precipitation over the area is 62.0 inches, varying in monthly averages from 7.5 inches in July to 3.5 inches in October. Prevailing winds are from the southeast. The highest average wind speed is 10 miles per hour.

WATERSHED

St. Bernard Parish is within the Lake Ponchartrain Basin. This watershed is estuarine because of tidal connection to the Gulf of Mexico. St. Bernard Parish is located in the southeast corner of this watershed and because the majority of the parish is below sea level it requires a pumped drainage network. St. Bernard Parish has eight drainage pump stations located on the St. Bernard non Federal back levee. All suffered damage as result of Hurricane Katrina and repairs have been completed. Pump Station (PS) #2 (Guichard) and Pump Station #3 (Bayou Villere) were originally constructed at the ground level on the protected side of the levee and were completely inundated and destroyed by Katrina floodwaters (Figure 2). Prior to Hurricane Katrina, these stations provided approximately 10 percent of the system's drainage capacity for the St. Bernard area. The Guichard and Bayou Villere PSs were then rebuilt in 2006. Repairs included replacement of the buildings, repairs to the building such as siding and roof; mechanical and electrical equipment, such as pumps, motors, gear boxes, trash rack systems, and lighting systems. Approximately 16.9 miles of the non Federal back levee was damaged as result of Hurricane Katrina and rehabilitated to the design standard elevation of ten feet NAVD (Figure 9). Prior to Hurricane Katrina, the elevation of this levee was approximately six feet NAVD. Repair work included clearing and grubbing the levee, re-sloping the sides, and raising the elevation to meet the design standards. Please reference "Environmental Assessment #433 Response to Hurricanes Katrina and Rita" for specific details and impacts of this construction.

Storm water and flood control in St. Bernard Parish is provided by a system of levees, floodwalls, canals and drainage pump stations. All rainfall runoff is conveyed by gravity through a system of subsurface drainage lines into a grid of lateral canals that connect to major outfall canals. Water flow in the lateral canals can move in different directions depending upon the rainfall patterns and available pump station capacities. Water collects in the suction bays of various pump stations and then diesel powered and hydraulic pumps transport the water into the Central Wetlands Area (CWA). The lands of the two pump stations and the levee where new modifications are proposed is considered uplands developed with structures, gravel roads, and mowed grass; however, adjacent to this land are waters of the United States (US) and wetlands of the CWA.

GEOLOGY

Soils of coastal southeastern Louisiana are typically peat, composed of mucks and clays mixed with organic matter. Marsh and swamp deposits are found in the vicinity from New Orleans to Breton Sound and are primarily organic. The volume of these deposits is composed of approximately 60% or more of peat and other organic material. The remainder of this composition is predominately clay. Total organic thickness is normally 10 feet. Inland swamp deposits consist of approximately 70% clay, 30% peat, and organic materials. Logs, stumps, and root systems are often included in the peat and clays.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

A Phase I Environmental Site Assessment (ESA) for St. Bernard Parish Pumping Stations #2 and #3 was completed and filed on 11 February 2013. The ESA found that there was a likelihood of contamination in sediments near the outfall area of the pumping stations. A Phase II sampling and analysis of the sediments was done by Materials Management Group. The Phase II analysis did not find any substances of concern in levels high enough to trigger a regulatory action. The sediments from the outfall basins are clean enough to be re-used on site and do not require any special disposal arrangements.

RELEVANT RESOURCES

This section contains a description of relevant resources that could be impacted by implementation of the proposed project. The resources (Table 1) described in this section are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to not be affected by any alternative under consideration when comparing the future without the project conditions (no action alternative) to the future with the project conditions (action alternatives): commercial fisheries, community cohesion, tax and property values, economic impacts to business or farms, safety impacts, cypress swamp; cypress/tupelo swamp; freshwater lakes; bottomland hardwood forests; coastal wooded ridges; barrier islands; state-designated scenic streams; and municipal utilities. These resources will not be discussed further.

Table 2: Relevant Resources

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended.	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, USEPA, LDWF, and LADNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Gulf Water Bottoms	Fish and Wildlife Coordination Act, Marine Protection, Research, and Sanctuaries Act of 1990	State and Federal agencies recognize the value of Gulf water bottoms for the production of benthic organisms.	Environmental organizations and the public support the preservation of water quality and fishery resources.

Resource	Institutionally Important	Technically Important	Publicly Important
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, as well as federal implementing regulations; additional statutory and regulatory requirements; other applicable cultural resource-related laws; and USACE policies and procedures.	Cultural resources are finite and non-renewable resources that include, but are not limited to both prehistoric and historic archaeological sites, historic standing structures, landscapes, and other culturally valued aspects of the environment, as well as sociocultural attributes, such as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions. Historic properties include districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places, and federal agencies are required to consider the effects of their actions on such properties.	Humans relate to their environment through their culture, and historic and cultural resources provide insights into ways of life, both past and present. The protection and enhancement of historic and cultural resources is in the best interest of the public, and federal agencies also have trust and treaty responsibilities to Tribes, which are partially fulfilled through the preservation and protection of trust resources and the consideration of potential effects on natural and cultural 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 to 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 River's 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.
Socio-Economic Resources	River and Harbor Flood Control Act of 1970 (PL 91-611).	N/A	Social concerns and items affecting area economy are of significant interest to community.
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995,	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the tentatively selected plans.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.

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.
Hydrology and Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and La State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, USEPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality. the national and state standards established to assess water quality	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

WETLANDS

Existing Conditions

The proposed project is located within the Mississippi River alluvial delta and sits at or below sea level. The area of St. Bernard Parish between the Federal Chalmette Loop HSDRRS and non-Federal St. Bernard Parish back levee systems, known as the Central Wetland Area, consists of an old cypress swamp that has almost completely converted into brackish marsh and open water due to cypress logging in the early 1900s, hydrologic alterations such as canal dredging, saltwater intrusion, and subsidence. There are a few small pockets of living cypress trees along the non-Federal levee back levee. The majority of the habitat adjacent to the project area is wetlands. The major wetland types found adjacent and surrounding the pump stations and the non Federal back levee include remnant cypress swamp, shrub/scrub, fresh/intermediate and brackish marsh. Along with these wetland types, there is also a large amount of open water ponds and canals interspersed. These tidally influenced open water ponds and canals within the CWA are connected to the MRGO and Lake Borgne openings in the Federal levee/T-wall Chalmette Loop via Bayou Bayou Bienvenue and Bayou Dupre gates (figure 9).

In the immediate vicinity of both PS #2 and #3 wetland vegetation is present on the toe of the existing levee. This area is within the non Federal back levee ROW, but is not maintained or mowed regularly so wetland grass and shrub species have colonized. This acreage includes approximately 0.03 acres at PS #2 (See Figure 7) and 0.02 acres of wetland edge vegetation at PS #3 comprised of mixed grasses (*Cyperus* sp. and *Carex* sp.) and shrubs (*Myrica* sp. and *Baccharis* sp.) On a site visit September 24, 2013, both PSs had floating *Salvinia* sp. and *Lemna* sp. present, PS #3 was 90% covered, but no submerged aquatic vegetation (SAV) was present (photographs 1, 2 and 3).



Figure 1: PS #3 Bayou Villere flood side, discharge basis covered with *Salvinia* sp. & *Lemna* sp.



Figure 2: St. Bernard PS #2 discharge basin, shallow water with remnant cypress, surrounded by fresh marsh wetland edge



Figure 3: St. Bernard PS #2 flood side wetland edge vegetation

Future Conditions with No Action

Under the no action alternative, no construction work would occur and the existing PS #2 and #3 would continue to not operate. Therefore, no additional fresh storm water would be pumped in this area and the CWA. The discharge basin would remain tidally influenced shallow open water and the 0.05 acres of surrounding wetland grass edge vegetation would remain fresh/intermediate marsh and shrub habitat. The wetlands in this area will continue to erode and subside without new sources of freshwater and sediment.

Future Conditions with the Proposed Action

All of the construction activities associated with the proposed action would occur within the existing ROW or adjacent to the discharge basin. The T-wall structure would be constructed on the existing earthen levee and 0.05 acres of fringe fresh/intermediate marsh and shrub habitat located on the levee toe within the existing ROW would be temporarily impacted through the placement of fill and the shallow discharge basin would have rock riprap material and pipes replaced under the proposed action. If the area is not regularly mowed/maintained after construction it is anticipated that similar species would likely revegetate; therefore no permanent impacts to this 0.05 acres of wetland edge vegetation are anticipated and the levee toe would return to pre-existing conditions once construction is complete. No submerged aquatic vegetation was present, so it would not be impacted. Floating vegetation would likely be dispersed and colonize surrounding ponds outside the temporary cofferdam. Once the seepage repairs are completed, PS #2 and PS #3, should operate for storm and rain events and pump fresh stormwater into the discharge basin and the CWA.

Potential indirect impacts on wetlands from the proposed action would consist mainly of effects from increased turbidity on the wetland areas adjacent to the non Federal back levee within the CWA from construction related runoff. These impacts would be minimized with BMPs and compliance with regulations governing stormwater runoff at construction sites. These wetland areas are part of the larger CWA and are hydrologically connected to the larger Lake Borgne watershed. The potential indirect, adverse impacts to the wetlands from the proposed action would be minimized by the small area affected relative to the size of the wetland areas associated with the CWA and Lake Borgne and the temporary nature of these impacts.

Potential cumulative impacts on the wetlands in the CWA from the proposed action could involve the combined effects from the completion of the HSDRRS specifically the Chalmette Loop work ongoing in the Federal levee/T-wall surrounding the project area. Projects such as the Violet freshwater diversion project; MRGO deep-draft deauthorization; MRGO Ecosystem Restoration; as well as other wetland restoration projects completed by community groups could positively impact the habitat within the CWA and Lake Borgne. The unavoidable impacts 0.05 acres of low quality fresh/intermediate marsh and shrub edge habitat associated with proposed action project activities could temporarily impact wetlands within the project area, however, the vegetation is expected to recover once construction is complete.

AQUATIC RESOURCES / FISHERIES

Existing Conditions

Fish species associated with fresh to slightly brackish waters include black crappie (*Pomoxis nigromaculatus*), white crappie (*Pomoxis annularis*), bluegill (*Lepomis macrochirus*), redbreast sunfish (*Lepomis microlophus*), largemouth bass (*Micropterus salmoides*), spotted sunfish (*Lepomis punctatus*), yellow bass (*Morone mississippiensis*), catfish (*Ictalurus punctatus*), and menhaden (*Brevoortia patronus*). Fish species associated with brackish and estuarine habitats include red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*), speckled trout (*Cynoscion nebulosus*), Atlantic croaker (*Micropogonias undulatus*), sand seatrout (*Cynoscion arenarius*). The waters of Lake Borgne and brackish portions of the CWA support commercial and recreational fisheries of southern flounder (*Paralichthys lethostigma*), sheepshead (*Archosargus probatocephalus*), sea catfish (*Arius felis*), sand seatrout, speckled seatrout, Atlantic croaker, red drum, and black drum. Economically important commercial fisheries also occur for brown shrimp (*Farfantepenaeus aztecus*), white shrimp (*Litopenaeus setiferus*), blue crab (*Callinectes sapidus*), and oysters (*Crassostrea virginica*) in the Lake Borgne Basin.

The immediate area of the discharge basin of PS #2 and #3 is not considered ideal habitat for fishery species. The area is shallow and likely suffers from poor water quality created by high summer water temperatures, low circulation, and surface cover by the invasive duckweed; these conditions would continue to make this a stressful low oxygen environment for most fish species. Wetland edge does provide cover for prey species, but the shallow low oxygen environment encourages most likely transient species or those adapted to low oxygen environments.

Future Conditions with No Action

Under the no action alternative, no construction work would occur and the existing PS #2 and #3 would continue to not operate. No additional fresh stormwater would be pumped in this area and the CWA. The discharge basin would remain tidally influenced shallow open water and poor water quality created by high summer water temperatures, low circulation, and surface cover by the invasive duckweed would continue to make this a stressful low oxygen environment for most fish species. Therefore, no direct, indirect, or cumulative impacts would occur if the no action alternative were implemented.

Future Conditions with the Proposed Action

Implementation of the proposed action would temporarily impact open water fish habitat during the construction period (approximately 12 months). Up to 0.2 acres of estuarine aquatic habitat in the discharge basins of PS #2 and #3 could be disrupted during the construction period. Direct impacts to fishery resources from this localized disruption and the temporary removal of 0.2 acres of estuarine habitat within the footprint of the cofferdams in the discharge basins would be negligible. The amount and quality of fish habitat within the discharge basins that may be temporarily disturbed due to the seepage repair would represent a negligible amount of the total fishery habitat available within the CWA. The reduction in access to this shallow open water habitat is temporary and not considered high quality habitat considering the poor water quality.

Incidental mortality of some individual fish, mostly sessile benthic organisms such as clams or oysters may occur during construction of the cofferdam and the replacement of the discharge pipes and rock riprap material. Although some individual aquatic organisms may be destroyed during construction activities for the proposed action, the number of organisms affected would not be expected to impact populations of commercial or recreationally important fishes because most species would be expected to move away from the area to similar nearby habitat.

Construction-related runoff into the waterways of the CWA would be managed through BMPs and adherence to the Storm Water Pollution Prevention Plan (SWPPP), which would minimize the potential indirect impacts such as turbidity. Turbidity impacts would be short-term, up to 12 months in duration. Utilizing cofferdams for construction in the “dry” minimizes impacts to fish and surrounding fishery habitat within the CWA. Once the seepage repairs are complete, PS #2 and PS #3, should operate for storm and rain events and circulate fresh stormwater into the discharge basin and the CWA. The proposed action would be unlikely to have adverse impacts on fishery resources past the overall construction period of 12 months; therefore, it is unlikely to contribute to cumulative impacts on fishery resources beyond that time. Potential cumulative impacts on fishery resources within the project area from the proposed action would involve the combined effects from the HSDRRS throughout the New Orleans area and specifically the Chalmette Loop levee/T-wall project. Along with other wetland restoration projects in the area, the proposed action would reduce potential adverse cumulative impacts by positively affecting the fishery habitat by enabling increased circulation of fresh pumped stormwater within the CWA.

ESSENTIAL FISH HABITAT

Existing Conditions

Specific categories of EFH include 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 Gulf of Mexico Fishery Management Council, through the generic amendment of the Fishery Management Plans for the Gulf of Mexico, lists the following Federally managed species or species groups as being potentially found in coastal Louisiana: brown shrimp, white shrimp, red drum, gray snapper, and Spanish mackerel. Table 2 lists the expected salinity zones in the CWA and the project area and the abundance of the managed species expected. In addition, coastal wetlands provide nursery and foraging habitat that supports economically important marine fishery species such as spotted seatrout, southern flounder, Atlantic croaker, gulf menhaden, striped mullet, and blue crab. These species serve as prey for Federally-managed fish species such as mackerels, snappers, groupers, billfishes and sharks. Table 3 shows the EFH for the managed species expected in the project area.

Table 3: Salinity Zones and Abundance for Federally Managed Species in the Mississippi River

Salinity Zone	Life Stage	Brown Shrimp	White Shrimp	Red Drum	Spanish Mackerel
0 - 0.5 ppt.	Adults			R	
	Juveniles	C	R	R	
	Larvae				
	Spawners				
0.5 - 5 ppt.	Adults	R	R	R to C	
	Eggs				
	Juveniles	C to HA	C	C	R
	Larvae				
	Spawners				
5 – 15 ppt.	Adults	R	C	R to C	
	Eggs				
	Juveniles	C to HA	C to A	C	R
	Larvae				
	Spawners				
Relative Abundance: Blank (NP) - Not Present R - Rare - Common A – Abundant HA - Highly Abundant (Variation in abundance due to seasonality)					

Table 4: Essential Fish Habitat for Life Stages

Species	Life Stage	Essential Fish Habitat
Brown shrimp	Adults	Gulf of Mexico <110 m, Silt sand, muddy sand
	Juvenile	Marsh edge, SAV, tidal creeks, inner marsh
White shrimp	Adults	Gulf of Mexico <33 m, Silt, soft mud
	Juvenile	Marsh edge, SAV, marsh ponds, inner marsh, oyster reefs
Red Drum	Adults	Gulf of Mexico & estuarine mud bottoms, oyster reef
	Juvenile	SAV, estuarine mud bottoms, marsh/water interface
Spanish Mackerel	Juvenile	Offshore, beach, estuarine

Future Conditions with No Action

Under the no action alternative, no construction would occur to repair the seepage issue at PS #2 and PS #3 and therefore there would be no direct or temporary impacts to EFH. PS #2 and PS #3 would continue to not operate as part of the St. Bernard Parish drainage system. The intertidal marsh areas of the CWA that contain the EFH would remain as described for existing conditions. No additional storm water would be pumped into the drainage basins of PS #2 and #3 and the water quality in these areas would remain poor due to low dissolved oxygen. The existing water quality within the CWA and the project area as a whole, is greatly affected by nonpoint source pollution due in large part to the fact that after any rain event, storm water from St. Bernard parish is pumped into the area. Given the lack of direct and indirect impacts from the no action alternative, it would not contribute to adverse cumulative impacts in conjunction with other projects in the region.

Future Conditions with the Proposed Action

Construction of the proposed action would have direct impacts on 0.2 acres of EFH, which would be enclosed within cofferdams during the 12-month construction period; EFH surrounding the project areas would experience temporary, localized and minor impacts during the construction period. The proposed action would occur within the existing ROW of the non-Federal back levee or adjacent to the pump station discharge basin and would require the excavation and re-filling of approximately 0.2 acres of shallow (< 2 ft) open water habitat for replacement of existing discharge pipes and rock riprap located within PS #2 and PS #3 ROW. There would be permanent impacts on 0.2 acres EFH and EFH species as the result of project construction. The cofferdams would block hydrological exchange and access of EFH species to these areas of the PS #2 and PS #3 discharge basins. In addition, approximately 0.05 acres of fringe fresh/intermediate marsh and shrub habitat located at the shoreline and unmaintained levee toe would be temporarily impacted by the seepage repair. No submerged aquatic vegetation is present in the project area and therefore would not be impacted. Floating vegetation would be temporarily dispersed and colonize surrounding ponds outside the cofferdam during construction. The amount and quality of EFH within the discharge basins that may be temporarily impacted represents a negligible amount of the extensive, similar or higher-quality estuarine habitat in the CWA.

In total, the proposed seepage repair impacts approximately 0.25 acres of EFH. The area of the replacement levee toe is not regularly mowed/maintained, therefore, after construction it is anticipated that similar species would likely re-vegetate. Therefore no permanent impacts to this 0.05 acres of fringe wetland vegetation on the levee toe are anticipated and the habitat would return to pre-existing wetland conditions once construction is complete. The re-establishment of this vegetated edge provides for replacement of the EFH lost and should help to protect the flood side levee toe and discharge pipes from future erosion. Once the seepage repairs are completed, PS #2 and PS #3, should operate for storm and rain events and pump fresh storm water into the discharge basin and the CWA.

Construction within the pump station discharge basins, as well as in adjacent levee/upland areas, could cause indirect impacts such as increases in nutrient loads, turbidity and sedimentation within the EFH of the CWA if storm water runoff is not controlled. Significant concentrations of nutrients or sediments would cause decreases in survival, growth and reproduction of aquatic organisms receiving sufficient exposure. Re-suspension of soil particles would increase turbidity, resulting in impacts to both sessile and mobile aquatic species such as delayed larval and embryonic development, reduced bivalve pumping rates, or interference with respiratory functions, interference with feeding for sight-foraging fish and reduced visibility of predatory fish. Settling of soil particles over existing bottom sediments (if significant) would result in loss of habitat for sessile species of invertebrates and plants and would also disrupt oxygen transport mechanisms for many species. However, construction-related runoff and erosion of soil into the discharge basins would be prevented or minimized through implementation of BMPs and a SWPPP, which in turn would minimize the potential for indirect impacts from the proposed action on EFH. The area of impaired habitat would be negligible when compared to the remaining similar habitat in the CWA and these indirect impacts would be

temporary or short-term. Most organisms would be expected to relocate from areas with unfavorable conditions until construction activities are complete.

Potential cumulative impacts on EFH and EFH species within the CWA from the proposed action would involve the combined effects from the HSDRRS specifically the Chalmette Loop levee/T-wall. CWPPRA projects, wetland restoration and shoreline protection; the Violet freshwater diversion project; MRGO deep-draft deauthorization; and local community wetland restoration projects would reduce potential adverse cumulative impacts by positively affecting the EFH within and around CWA. While restoration projects would help to offset habitat loss, the combined effects of other projects; specifically the closure of the MRGO at Bayou La Loutre, and the Violet Diversion would result in altered hydrology and freshening water characteristics of the CWA and lead to substantial long term cumulative impacts to EFH and EFH species throughout the area. Once PS #2 and PS #3 are operational and come online with the other PS in St. Bernard Parish, EFH would continue to be impacted by the infrequent, relatively short-term pumping during storm and rain events as the PSs function as designed. Species utilizing the EFH in the project area would be unlikely to be directly impacted by the pumping because mobile species would most likely vacate the area, sessile species if present, may be more directly affected, but should be adapted to these conditions given the area is the discharge basin of a pump station.

WILDLIFE

Existing Conditions

Terrestrial wildlife habitat along the non Federal back levee consists principally of upland shrub/scrub and herbaceous communities on higher ground created by construction of the levees. The vegetation communities in the areas along the levee and PS #2 and PS #3 consist mainly of planted grasses with herbs and scattered shrubs and small trees. The grass habitats along the levees are subject to periodic mowing and provide limited cover or other habitat components supportive of wildlife. Thus, habitats for terrestrial wildlife are present within the project area predominantly in shrub/scrub communities adjacent to the levee. The protected side of the levee includes a network of drainage canals, but the majority of the area is developed St. Bernard communities such as Arabi, Meraux, Chalmette, and Violet. There remain several tracts of undeveloped land composed of bottom land hardwood (BLH) forest and upland shrub/scrub habitat with a few stands of remnant cypress trees. The majority of the project area is covered predominantly by fresh/intermediate and brackish marsh and open water, which provides habitat for aquatic and semi-aquatic wildlife, especially wading birds, water birds, and waterfowl.

Wildlife that typically inhabits terrestrial or brackish aquatic habitats such as those in the CWA includes a diverse assemblage of amphibians, reptiles, birds, and mammals. An amphibian that may occur in these habitats is the Gulf Coast toad (*Bufo valliceps*). Reptiles that may utilize project area habitats include the American alligator (*Alligator mississippiensis*), Mississippi diamondback terrapin (*Malaclemys terrapin pileata*), common snapping turtle (*Chelydra serpentina*), red eared slider (*Trachemys scripta elegans*), green anole (*Anolis carolinensis*), marsh brown snake (*Storeria dekayi limnetes*), and rough green snake (*Opheodrys aestivus*) (Dundee and Rossman 1996). On the September 14, 2013 site visit a speckled king snake (*Lampropeltis getula*) was seen in the grass adjacent to PS #2 and an alligator was heard in the discharge basin of PS #3. Mammals that may occur in the project area include the nutria

(*Myocastor coypus*), muskrat (*Ondatra zibethicus*), swamp rabbit (*Sylvilagus aquaticus*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*).

Birds that may inhabit the project area include both nonmigratory residents of the region and migratory species that are present only part of the year. Nonmigratory species that may use these habitats include the anhinga (*Anhinga anhinga*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea Herodias*), great egret (*Ardea alba*), tricolored heron (*Egretta tricolor*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), green heron (*Butorides virescens*). Birds seen on the September 14, 2013 site visit include the white ibis (*Eudocimus albus*), common crow (*Corvus brachyrhychos*), red-winged blackbird (*Agelaius phoeniceus*), and the snowy egret. Migrant birds that may occur in the area include the Acadian flycatcher (*Empidonax virescens*), barn swallow (*Hirundo rustica*), swamp sparrow (*Melospiza georgiana*), song sparrow (*Melospiza melodia*), mallard (*Anas valisineria*), blue-winged teal (*Anas discors*), and diving ducks in the open waters of the marsh, such as lesser scaup (*Aythya affinis*), greater scaup (*Aythya marila*), and canvasback (*Aythya valisineria*).

Two other important species found within the CWA are the bald eagle (*Haliaeetus leucocephalus*) and the brown pelican, both of which have been delisted by the USFWS as protected species. The bald eagle is protected under the Bald and Golden Eagle Protection Act. The bald eagle generally nests at the top of large trees, especially cypress snags in swamps, near open water bodies which are used for foraging. This habitat is found in the CWA. The LDWF records search indicated that there is one bald eagle nest located in the CWA but not near the immediate project area. All bald eagle nests (active, inactive, or seemingly abandoned) are subject to protection and no major activities should occur within a 660-foot radius of a nest tree at any time. The brown pelican is a year-round resident of Louisiana that typically forages on fish in shallow estuarine waters. Food consists mainly of species of forage fish such as menhaden, mullet, sardines, pinfish, and anchovies.

Future Conditions with No Action

Under the no action alternative, no construction work would occur that would impact any wildlife in the project area, and the existing PS #2 and #3 would continue to not operate. Regular pumping of storm water from all other operating pump stations for the developed areas of St. Bernard Parish into the surrounding water bodies in response to rainfall events would continue. Therefore, no direct, indirect, or cumulative impacts would occur to wildlife if the no action alternative were implemented.

Future Conditions with the Proposed Action

The footprint of the proposed seepage repair includes 3.17 acres at PS #2 and 3.04 acres of existing levee and pump station ROW for a total of approximately 6.21 acres. This area is not considered prime wildlife habitat but wildlife species do inhabit the surrounding CWA and the fringe fresh/intermediate marsh on the unmaintained toe of the levee. Wildlife present in the footprint as well as in the vicinity would be temporarily impacted during construction. Increases in noise, traffic, and lighting levels would also temporarily affect wildlife species in the area potentially increasing stress to these species. Some smaller, less mobile wildlife, such as small

mammals, amphibians and reptiles, would experience direct mortality during clearing and grading activities. Other wildlife, such as birds and larger mammals, would likely leave the immediate construction area and relocate to the nearby shrub or marsh areas, which would provide suitable temporary habitat during construction.

The T-wall structure is not anticipated to pose an impenetrable barrier to wildlife movement in the project area because it would be at the same elevation (+10 ft NAVD 88) as the existing non Federal back levee. The existing I-wall which is at approximately +16 ft NAVD 88 would be removed, so this seepage repair would enable terrestrial wildlife to cross and access habitat on either side of the levee/T-wall.

Potential indirect impacts on wildlife from the proposed action would involve the displacement of wildlife populations, predominantly birds or small mammals, which utilize the expanses of turf grass that comprise the levee in the immediate project area. Movement of the limited numbers of wildlife that currently inhabit the existing levee into nearby habitats, including the CWA and shrub habitat of the levee toe, would not be expected to put added pressure on these large terrestrial and aquatic habitats. Therefore, the small populations and actual habitat impacted as well as the amount of adjacent, extensive surrounding habitat would minimize the potential indirect impacts associated with the proposed action.

Potential cumulative impacts on wildlife within the project area from the proposed action would involve the combined effects from the HSDRRS specifically the Chalmette Loop levee/T-wall. CWPPRA projects, wetland restoration and shoreline protection; the Violet freshwater diversion project; MRGO deep-draft deauthorization; and local community wetland restoration projects would reduce potential adverse cumulative impacts by positively affecting wildlife within and around CWA. The displacement of the majority of terrestrial wildlife would be temporary during construction activities and most displaced wildlife would return following project completion. Most of the upland habitat impacted is frequently mowed turf grass of the ROWs along the non Federal back levee. No permanent obstacles to the movement of terrestrial wildlife are proposed and by removing the existing 16 ft I-wall and replacing with a 10 ft T-wall, access will be created.

No permanent impacts, only the temporary displacement of terrestrial wildlife during construction activities would be anticipated. Wildlife would return to the area following project completion. No permanent obstacles to the movement of terrestrial wildlife are proposed; by removing the existing 16 ft I-wall and replacing it with a 10 ft T-wall, access will be created.

ENDANGERED OR THREATENED SPECIES

Existing Conditions

The only threatened and endangered (T&E) species potentially found in the project area would be the West Indian Manatee (*Trichechus manatus*). West Indian manatees occasionally enter Lakes Pontchartrain and Lake Borgne and associated coastal waters and streams during the summer months (June through September). Manatees have been reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers and in canals within the adjacent coastal marshes of Louisiana. Collisions with powerboats or outboard propellers pose a significant threat to manatees. Watercraft collisions account for approximately 25 percent of all manatee deaths. Manatees

can also be injured or entangled in locks, flood control structures, and fishing nets.

There have been no sightings of manatees in the immediate vicinity of the PS discharge basins; however, most recently two manatees were sighted crossing through the Borgne Barrier sector gate on the Gulf Intracoastal Waterway on August 20, 2012. Therefore, it is possible they could enter the CWA and forage for food in the surrounding bayous and waterways.

Future Conditions with No Action

Under the no action alternative, there would be no direct or indirect impacts adverse effects to T&E species or their critical habitat. There would be no construction to repair the PS #2 Guichard and PS #3 Bayou Villere seepage issue and they would continue to not operate to discharge stormwater. Regular pumping of storm water from all other pump stations for the developed areas of St. Bernard Parish into the surrounding water bodies of the CWA in response to rainfall events would continue. Pumping storm water increases turbidity in the project area, which impacts manatee habitat and food sources by decreasing the quality and presence of submerged aquatic vegetation.

Future Conditions with the Proposed Action

CEMVN initiated coordination with the USFWS of the proposed action by letter dated October 11, 2013 and requested concurrence with our determination of “not likely to adversely affect”. The USFWS responded by letter/facsimile dated October 18, 2013 that the proposed action would have no effect on the West Indian manatee (Appendix 2). Standard manatee protection measures would be followed in order to minimize the potential for construction activities to impact the manatee. These procedures have been recommended by the USFWS for use in situations where in-water construction activities potentially could occur where manatees may be present (Appendix 2).

By employing these procedures for preventing disturbance or injury to manatees, the potential for direct impacts during the period of construction would be greatly reduced. Construction activities may have a temporary impact on foraging habitat adjacent to the project area; however there is no submerged aquatic vegetation present in the project area.

Potential indirect impacts on manatee from the proposed action would mainly consist of temporary effects from siltation and suspended sediment in adjacent water bodies of the CWA and increased noise levels from construction activities. Effects from construction activities would be minimized by BMPs to control sediment transport and adherence to regulations governing storm water runoff at construction sites. Given that the proposed action repairs existing pump stations that operate for rain and storm events, indirect impacts on manatees from the proposed action would be minimal and temporary.

Potential cumulative impacts on federally or state listed T&E within the project area from the proposed action would involve the combined effects from the HSDRRS specifically the Chalmette Loop levee/T-wall. CWPPRA projects, wetland restoration and shoreline protection; the Violet freshwater diversion project; MRGO deep-draft deauthorization; and local community wetland restoration projects would reduce potential adverse cumulative impacts by positively

affecting suitable habitat within and around CWA. Manatees are mobile and would avoid project areas during the construction period. The impacted 0.2 acres of aquatic and 0.05 acres of fringe fresh/intermediate marsh would be negligible. Extensive more suitable aquatic and benthic habitat exists elsewhere in the Pontchartrain basin where the manatee could forage or swim. Thus, cumulative impacts on federally or state listed threatened and endangered species from the proposed action would be unlikely.

NOISE AND VIBRATION

Existing Conditions

In 1974, the U.S. Environmental Protection Agency (USEPA) provided information suggesting that continuous and long-term noise levels in excess of Day-night sound level (DNL) 65 weighted decibels (dBA) are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities of everyday life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. *A-weighting*, described in a-weighted decibels, approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate level in dBA is provided in table 1.

The dBA noise metric describes steady noise levels. Very few noises are, in fact, constant; therefore, a noise metric, Day-night Sound Level has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 P.M. to 7 A.M.). DNL is a useful descriptor for noise because (1) it averages ongoing, yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, Equivalent Sound Level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

Table 5: Common Sounds and Their Levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringling telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

Existing sources of noise near the project area include boating activity in the adjacent CWA, local road traffic, high-altitude aircraft over flights, and natural noises such as water, leaves rustling, and bird vocalizations. The noise environment is a mixture of quiet residential and light commercial.

Future Conditions with No Action

Under the no action alternative, additional noise associated with construction activities would not occur. Existing sources of noise as described above would continue to contribute to the noise environment. The pumps have been inoperable for approximately 14 months and have generated no sound. If the pumps are repaired through other means the pumps would have noise associated with them when they are operated during rain events and testing of the pumps.

Future development may occur and provide additional sources of noise.

Future Conditions with the Proposed Action

Short-term increases in noise due to construction activities would occur. Equipment would include a bulldozer, concrete trucks, concrete pump trucks, backhoe, crane, pile driver, sheepsfoot roller, and flat roller. Permissible hours of work would be consistent with local noise ordinances.

Table 6 presents noise emission levels for construction equipment expected to be used during the proposed construction activities. Anticipated sound levels at 200 feet range from 68 dBA to 79 dBA based on data from the Federal Highway Administration (FHWA; 2007)

Table 6: A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances

Noise Source	200 feet	500 feet	1000 feet
Backhoe	68	58	52
Crane	69	61	55
Bull Dozer	70	62	56
Pile Driver	79	71	65

The specific impact of construction activities on the nearby receptors would vary depending on the type, number, and loudness of equipment in use. Individual pieces of heavy equipment typically generate noise levels of 80 dBA to 90 dBA at a distance of 50 feet. With multiple items

of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high noise levels typically extends to distances of 400 feet to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience substantial levels (greater than 62 dBA) of noise.

PS #2 is located near the Guichard Canal. Nearby streets include Jupiter Dr., Amour Dr., and Atreus St. There are approximately 67 houses and two apartment buildings within 1000 feet from PS #2. PS #3 is located near Florida Ave., Jacob Dr. and Despaux Dr. There are 35 houses within 1000 feet from PS #3. The nearest house is approximately 300 feet from the project site at PS #2 and 500 feet from the project site at PS #3. Distance influences noise attenuation due to the energy being dissipated in the air. Noise will also be dissipated by objects, walls, hills, buildings, etc. There is also an impact from temperature and wind but the attenuation due to distance is the primary estimator of the drop in noise level in an outdoor setting. (<http://members.ozemail.com.au/~eclaus/NoiseEquations.htm>.)

Pile driving would generate the highest level of noise at the construction site and would be expected to drop to approximately 75.5 dBA and 71 dBA at the exterior of the nearest residences from PS#2 and PS#3 respectively, which would be roughly equivalent to a ringing telephone or ambient downtown noise for a large city. This calculation is based on the dissipation by air only. Noise levels would likely be further dissipated or blocked by the pump station buildings, the levee, and the walls/windows of the residences. The dBA that penetrates the nearest homes would be expected to be below the 65 dBA threshold. Best management practices would be employed by the Contractor.

Vibrations associated with pile driving (sheet pile floodwall installation) and all other construction operations likely to cause high vibration levels (ex. hauling and placement of construction materials, movement of heavy equipment) would be carefully monitored daily during the course of project construction. Vibrations would be limited to a peak particle velocity of 0.25 inches per second at the nearest residential structures. Should vibrations exceed these specified limits, the operations causing the excessive vibrations would immediately be halted and actions would be taken to reduce the vibrations to acceptable limits.

Construction noise would be expected to dominate the sound scape for all on-site personnel. Construction personnel, and particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Construction noise would end when the project is completed (approximately fifteen months). However, noise due to pile driving is expected to cease within two months of project initiation.

The pumps have been inoperable for approximately 14 months and have generated no sound. Once repaired the pumps would have noise associated with them when they are operated during rain events and testing of the pumps.

SOCIOECONOMIC RESOURCES

Existing Conditions

This project is located in St. Bernard Parish, Louisiana. PS #2 is located near the Guichard Canal. Nearby streets include Jupiter Dr., Amour Dr., and Atreus St. PS #3 is located near Florida Ave., Jacob Dr. and Despaux Dr. There are residents and housing units located near the boundaries of both project areas. There are houses within 300 feet of the project area at PS #2 and within 500 feet at PS #3. The nearest major thoroughfare to St. Bernard Pump Station #2 is Jean Lafitte Parkway. The nearest major thoroughfare to St. Bernard Pump Station #3 is Forty Arpent Canal Road. PS #2 is located on the Florida Walk Canal, which is a navigable waterway. PS #3 is located on the Forty Arpent Canal, which is a navigable waterway.

Future Conditions with No Action

Transportation Impacts

There would be no direct, indirect, or cumulative transportation impacts around St. Bernard Pump Station 2 & 3 Seepage Repairs project alternative if the proposed action was not implemented.

Navigation Impacts

There would be no direct, indirect, or cumulative navigation impacts around St. Bernard Pump Station 2 & 3 Seepage Repairs project alternative if the proposed action was not implemented.

Future Conditions with the Proposed Action

Transportation Impacts

There would be temporary direct, indirect, and cumulative transportation impacts along Jean Lafitte Parkway as a result of an increase in heavy vehicle traffic during the period of action affecting residents near St. Bernard Pump Station #2. These impacts include possible transportation delays while construction material, equipment or personnel are transported to the construction site.

There would be temporary direct, indirect, and cumulative transportation impacts along Bartolo Street as a result of an increase in heavy vehicle traffic during the period of action affecting residents near St. Bernard Pump Station #3. These impacts include possible transportation delays while construction material, equipment or personnel are transported to the construction site.

Navigation Impacts

There would be no direct, indirect, and cumulative navigation impacts around the St. Bernard Pump Stations 2 & 3 Seepage Repairs project as a result of the proposed action; the canals adjacent to the pump stations are not considered primary navigational waterways and they will continue to be open during the period of construction.

WATER QUALITY

Existing Conditions

The water features in the study area consist of tidally influenced numerous interconnected water bodies of varying type and quality. There are numerous bayous within the study area hydrologically linking the CWA to Lake Borgne and the two major man-made channels, the MRGO and the Gulf Intracoastal Waterway (GIWW). The major source of freshwater into the area is from stormwater runoff pumped out of the developed areas into the adjacent wetland areas. The major source of saltwater is the Gulf of Mexico through Lake Borgne. Due to the influx of stormwater, salinity levels in the area can fluctuate substantially, but for the most part the area is fresh/intermediate to brackish habitat. The numerous bayous and canals make the area an important recreational area in terms of fishing and other water related activities. The CWA also supports commercial fishing and shrimping activities, but not in the immediate vicinity of the discharge basins of PS #2 and #3. The water depths in the discharge basins of PS #2 and #3 are approximately 2 ft deep. The PS #2 and PS #3 do not currently operate because of an existing seepage issue, and upon inspection of the site by CEMVN biologist much of the basin was covered with *Salvinia* sp. and duckweed (*Lemna* sp.) and green algae (Photograph 1). Given the shallow depth, limited light penetration, and high water temperatures, it is likely that the immediate area of the discharge basins under certain conditions could be anoxic or have low dissolved oxygen and poor water quality.

Surface Water

The CWA is located within 17 Louisiana Department of Environmental Quality (LDEQ) sub segments of the overall Lake Pontchartrain Basin. All of the sub segments found within the study area are listed in the Louisiana Department of Environmental Quality (LDEQ) 2006 Water Quality Assessment 305(b) Report as fully supporting both Primary and Secondary Contact Recreation. This means that the water quality of the CWA is deemed safe for recreational activity including swimming, boating, fishing and other water-related activities. While all of the sub segments fully support both Primary and Secondary Contact Recreation, several water bodies are limited for Fish and Wildlife Propagation.

Fish and Wildlife Propagation includes the use of water for preservation and reproduction of aquatic biota such as indigenous species of fish and invertebrates, as well as reptiles, amphibians, and other wildlife associated with the aquatic environment. The water bodies that these sub segments encompass are: Bayou Chaperon, Bashman Bayou, Bayou Dupre, Violet Canal, Pirogue Bayou, Terre Beau Bayou, and the New Canal as shown on figure 4. The LDEQ suspects that the cause of impairment to the Fish and Wildlife Propagation designated use is dissolved oxygen levels due to natural conditions for all water bodies except the Violet Canal. The LDEQ suspects the cause of impairment to the Violet Canal to be both natural conditions and package treatment plants or other permitted small flow discharges. The sub segments sampled do not include either PS #2 or #3 discharge basin, but they likely regularly have low dissolved oxygen levels.

Ground Water

The primary source of potable water in the study area is the St. Bernard Parish Water Treatment Plant located in Chalmette, Louisiana. The facility treats water drawn from the Mississippi River. Coordination with the Louisiana Water Supply Availability and Use Program confirmed that there are no known groundwater sources of potable water in St. Bernard Parish. The few alluvial aquifers that underlie the project area are hydrologically connected to Lake Borgne and other water features in the study area. Due to these connections, the water in the aquifers is brackish in nature and not used as a water supply.

Future Conditions with No Action

Under the no action alternative, the PS #2 Guichard and PS #3 Bayou Villere would not be repaired and would continue to not operate to discharge storm water. High water temperature in summer months, low water circulation, and persistent cover by floating vegetation contribute to low oxygen and anoxic events in the vicinity of these PS discharge basins. Regular pumping of storm water from all other operating pump stations for the developed areas of St. Bernard Parish into the surrounding water bodies in response to rainfall events would continue. The pumping of storm water into the adjacent water bodies would continue to have a temporary impact on water quality and recreational use. Groundwater within and adjacent to the project study area would not be expected to have any adverse impacts associated with the no action.

Future Conditions with the Proposed Action

To replace the discharge pipes and construct a T-wall at the PS #2 and PS #3 there would be temporary impacts such as turbidity and low dissolved oxygen in the immediate vicinity of the pump station's discharge basin. These impacts would be associated with construction of the cofferdam, unwatering the cofferdam, and placement of rock riprap material within the footprint of the discharge basin. Once the cofferdams (78 ft X 70 ft for PS #2 and 85 ft X 53 ft for PS #3) are in place and unwatered, impacts to water quality would be negligible or minor in nature. The footprint of the two cofferdams is approximately .1 acre each. Once construction is complete, the area would be returned pre-construction conditions with the removal of the cofferdam and the placement of new rock and new discharge pipes. Temporary impacts to water quality in the form of storm water runoff could occur along the non Federal back levee associated with the rehabilitation of the road and construction of the T-wall tie-in; however, best management practices (BMPs) would be followed in accordance with a storm water pollution protection plan. Once construction in the area is completed, circulation, turbidity and dissolved oxygen levels should return to normal levels associated with the discharge basin of an operating pump station. This would directly increase the storm water pumping capacity in St. Bernard Parish by 10%, returning it to pre-Katrina conditions, thus adding additional freshwater and circulation to the CWA during storm events.

T-wall construction on the levee crown and road improvement activities, associated with the proposed action, would disturb soils, which in turn, would increase the probability of sediment migration into adjacent waterways. Some temporary water quality impairments may occur if there is a major rain event during the construction efforts. However, construction would require the issuance of a General Storm Water Permit. The issuance of a storm water permit for the

proposed action is contingent on the development and approval of a Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI). SWPPP requirements include an outline of the storm water drainage system for each discharge point, actual and potential pollutant contact, and surface water locations. The SWPPP would also incorporate storm water management controls. Compliance with the General Storm Water Permit and the SWPPP would minimize potential impacts from construction activities to surface water quality. Construction equipment and operations may create miscellaneous operational pollution such as oil leaks, mud spatters, and discards from human activities. BMPs for construction site soil erosion would be implemented to prevent the migration of soils, oil and grease, and construction debris into the local stream networks.

There are no known groundwater sources of potable water in St. Bernard Parish; therefore, the proposed action would not be expected to have any adverse effect on groundwater. There are no designated scenic streams within 100 feet of the proposed action (Figure 10). BMPs would be put in place during construction to prevent soil runoff and turbidity; therefore, no impacts to scenic streams would be anticipated from the proposed action.

Potential indirect impacts from the proposed action would primarily consist of effects from increased turbidity to the CWA from construction related runoff. However, these impacts would be minimized with BMPs and adherence to regulations governing storm water runoff at construction sites. The CWA is part of the larger Lake Borgne watershed. The potential indirect adverse impacts to the wetlands from the proposed action would be minimized by the small area affected relative to the size of the CWA and Lake Borgne and the temporary nature of these impacts.

Potential cumulative impacts on the water bodies within the project area from the proposed action would involve the combined effects from the HSDRRS specifically the Chalmette Loop Levee/Floodwall as well as restoration efforts such as CWPPRA wetland restoration projects, the Violet freshwater diversion project, and the MRGO deep-draft deauthorization; which would positively impact the habitat within the CWA and Lake Borgne. The actions associated with the proposed action would be temporary during the construction period and permanently restore 10% of the pumping capacity for St. Bernard storm water drainage system adding freshwater and circulation to the CWA during storm events returning the area to pre-Katrina conditions.

The proposed action would temporarily impact water quality during the construction period but it would permanently restore 10% of the pumping capacity for the St. Bernard storm water drainage system, which adds freshwater and circulation to the CWA during storm events.

CULTURAL RESOURCES

Existing Conditions

Pumping station 2 was constructed in the early 1950s. The hydrologically driven pumps are standard pumps of the time. The building is of standard industrial construction. Pumping station 3 was constructed in the late 1950s. The pumps are standard horizontal axial flow pumps. The building is of standard industrial design. The buildings have no characteristics that would make them eligible for listing on the National Register of Historic Places. The pumps are standard

pumps with no characteristics that would make them eligible for listing on the National Register of Historic Places.

There are no recorded cultural resources in proximity to the current project area. The natural environment surrounding these pump stations is marsh and wetland soils. Pump Stations 2 and 3 were both examined by a cultural resources survey of the St. Bernard Parish hurricane protection levees (Handly, Coyle, Athens 2006). Pump Station 2 is contained within an area that received cultural resources survey related to a proposed Florida Avenue Bridge over the Inner Harbor Navigation Canal (Hahn and Hahn 2005). Both of these cultural resources surveys found the areas of the pump stations to contain a low potential for undiscovered cultural resources.

Future Conditions with No Action

Without implementation of the proposed action, conditions for cultural resources would continue as they currently exist. If ability of pump stations to perform is diminished by no action, it is possible that potential cultural resources could be damaged during a flooding event.

Future Conditions with the Proposed Action

With implementation of the proposed action, it is unlikely that cultural resources exist to be affected within the seepage repair area. If ability of pump stations to perform is increased by the proposed action, it is possible that potential damages to any existing cultural resources from a flood event would be reduced or avoided.

RECREATIONAL RESOURCES

Existing Conditions

Recreational use of the project area is minimal and includes fishing in the surrounding marsh areas and limited active recreation on the levee, such as walking or running. Two nearby parks are in the general vicinity of the two pump stations. The Sydney D. Torres Memorial Park is about 1 mile from Pump Station #2 and offers a library and walking trails around a man-made lagoon. The Val Reiss Park is located about 1.3 miles from Pump Station #3. This park is a 33-acre recreational complex offering eight baseball fields, two large concession stands and a 47,000-square foot massive multi-purpose building.

Future Conditions with No Action

Under the no action alternative, the proposed action would not be constructed—the pump stations would not be repaired. At the time the pump stations became inoperable, there was an increased flood risk to recreational resources, as well as to the communities of St. Bernard Parish.

Future Conditions with the Proposed Action

The proposed action would not have direct impacts on recreational resources with the exception of some construction related activities along the proposed right of way that could lead

to temporary restrictions on bird-watching, fishing, and wildlife viewing near the project areas. The impacts of any dredging, material delivery, and construction would occur primarily during the construction period.

Potential indirect impacts from the proposed action would primarily consist of effects on recreational fishing from increased turbidity to the water bodies surrounding the construction area. These impacts would be reduced because construction-related runoff would be managed through BMPs. Once the proposed action is complete, the adjacent wetlands would stabilize allowing for recreational fishing.

Additionally, recreational use of the levee in the project areas would be temporarily prohibited while construction activities take place.

Potential cumulative impacts to recreation from the proposed action would involve the combined effects to recreational resources from the multiple flood control projects in the New Orleans area, which could temporarily affect recreational fishing. Several proposed or recently approved wetland restoration projects would positively impact the aquatic habitat within the area and improve opportunities for recreational fishing and wildlife viewing.

VISUAL RESOURCES

Existing Conditions

The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. “Louisiana Speaks”) is “Holocene Meander Belts” which is part of the Mississippi Alluvial Plain. The immediate study area is characteristic of the Holocene Meander Belts with relatively flat terrain mixed with some small natural ridges and levees and a variety of water resources. Vegetation in the project area is a mixture of native, water tolerant plant materials, stands of hardwood forest (though somewhat limited) and the typical neighborhood streetscape. Land use in the area is extremely urban with a plethora of developed lands boasting a large residential population in northern Chalmette and commercial and industrial uses in the south along the Mississippi River. Overall access to the immediate project site is somewhat limited due to the borrow canals located adjacent to the levee reach. However, these sites can be seen from the residential side of the project area in Chalmette. User activity is relatively high in this region with high volumes of residential, commercial and industrial traffic. There is recreational traffic in the area as well, due to the large athletic and recreation complex (Val Riess Park) located adjacent to the borrow canal and levee reach approximately one half mile southeast of Paris Avenue (Interstate 510). This recreational complex does not have state or federal designation and therefore cannot be considered institutionally significant. There are no other features in the project area that could be considered institutionally significant.

There are no State or Federally designated Scenic Byways or scenic streams located in or in the vicinity of the project area. Other major water resources include the Bienvenue Triangle (a.k.a. Central Wetlands), which is located directly north of the project area stretching northwest to the Lower Ninth Ward. There is a variety of other open water areas and channels that dot and crisscross the landscape of the region. The most obvious of these water features, especially in

terms of location adjacent to residential uses, are the canals that run perpendicular to W Judge Perez Drive (a.k.a. State Highway 39) and the large borrow canal that runs parallel to the existing levee reach in the study area.

Future Conditions with No Action

Under the no action alternative, there would no direct or indirect impacts to visual resources within the project area. Visual resources would evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices and policies.

There are no foreseen cumulative impacts to visual resources in the study area. Cumulative impacts would be the incremental direct and indirect impacts of not implementing the proposed action and the continued loss of wetland and habitats due to human development and conversion of marsh and open water. Any future changes or alterations to the study area would evolve in a natural process over the course of time, or by local land use patterns and maintenance practices. These incremental direct and indirect impacts would be in addition to the direct and indirect impacts of visual resources in the region, Louisiana and the Nation.

Future Conditions with the Proposed Action

Under the future with project conditions, direct impacts to visual resources would be minimal. Temporary indirect impacts could potentially occur due to construction efforts in the area. Increased traffic due to construction vehicles, dust, debris and increased noise volumes could affect the residential areas located south of the project sites. Construction equipment would likely be located at the project sites throughout the construction period. These temporary impacts should return to normal upon completion of the project.

There are no foreseen cumulative impacts to visual resources in the study area. Cumulative impacts would be the incremental direct and indirect impacts of implementing the proposed action combined with the continued activities of growth and development in the area. These incremental direct and indirect impacts would be in addition to the direct and indirect impacts of visual resources in the region, Louisiana and the Nation.

AIR QUALITY

Existing Conditions

The U.S. Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called “criteria” pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (PM-10 and PM-2.5), and sulfur dioxide (SO₂). Ozone is the only parameter not directly emitted into the air but forms in the atmosphere when three atoms of oxygen (O₃) are combined by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air. The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of

General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS. A conformity assessment would require quantifying the direct and indirect emissions of criteria pollutants caused by the Federal action to determine whether the proposed action conforms to Clean Air Act requirements and any State Implementation Plan (SIP).

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

St. Bernard Parish was designated by the Environmental Protection Agency as SO₂ non-attainment area under the 1-hour standard effective October 4, 2013. This classification is the result of area-wide air quality modeling studies, and the information is readily available from Louisiana Department of Environmental Quality, Office of Environmental Assessment and Environmental Services.

Federal activities proposed in St. Bernard Parish may be subject to the State’s general conformity regulations as promulgated under LAC 33:III.14.A, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A general conformity applicability determination is made by estimating the total of direct and indirect SO₂ emissions caused by the construction of the project. Prescribed *de minimis* levels of 100 tons per year per pollutant are applicable in St. Bernard Parish. Projects that would result in discharges below the *de minimis* level are exempt from further consultation and development of mitigation plans for reducing emissions." The proposed action would produce emissions below the *de minimus* threshold. (Emission calculations are contained in Appendix 5.) Accordingly, a conformity review is not required.

Future Conditions with No Action

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

Future Conditions with the Proposed Action

With implementation of the proposed action, on-site construction activities are expected to produce less than 22 tons per year of SO₂ emissions, which is markedly less than the *de minimis* level of 100 tons per year per pollutant. Thus, the ambient air quality in St. Bernard Parish would not noticeably change from current conditions, and the status of attainment for the parish would not be altered.

Nearby residents may experience impacts from dust caused by excavation and construction. However, best management practices will be utilized to minimize such impacts (Appendix 3.) Any dust impacts would be temporary and would cease when construction is complete.

CUMULATIVE IMPACTS

Section 1508.8 of Title 40 CFR defines cumulative impacts as:

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

Hurricane protection projects include the West Bank and Vicinity Hurricane Protection Project; the New Orleans to Venice, LA Hurricane Protection Project; the Plaquemines Non-Federal Levee [please check name]; the Lake Pontchartrain and Vicinity Hurricane Protection Project; and the South East Urban Flood Control Project. It is foreseeable that further levee upgrades to Louisiana's Federal and non-Federal levees will continue for a number of years. Changes will be made to the existing pump station network, including the possibility of new permanent pump stations and closure structures at the lakeside ends of the three Orleans parish drainage canals (17th Street, Orleans, and London Avenue) and closure structures on the GIWW/MRGO and the IHNC. It is foreseeable that as levees are repaired, more people will return to the area, but it is likely that the population of the metropolitan area will take decades to return to pre-storm levels. It is also possible that an event similar to Hurricane Katrina could occur again in the future.

The cumulative impacts from the proposed action could involve the combined effects from the completion of non-federal and federal flood risk reduction projects such as the HSDRRS (including specifically the Chalmette Loop work ongoing in the Federal levee/T-wall surrounding the project area). Projects in and around the CWA such as the Violet freshwater diversion project; MRGO deep-draft deauthorization; MRGO Ecosystem Restoration; as well as other wetland restoration projects undertaken by State and federal agencies and community groups could positively impact the habitat within the Pontchartrain basin, specifically the CWA and Lake Borgne. The unavoidable impacts to 0.05 acres of low quality fresh/intermediate marsh and shrub edge habitat associated with proposed action project activities could temporarily impact wetlands within the project area, however, the vegetation is expected to recover once construction is complete.

The proposed action would reduce potential adverse cumulative impacts by positively affecting the fishery habitat by enabling increased circulation of fresh pumped storm water within the CWA. However, freshening water characteristics by having PS #2 and PS #3 come online in addition to other freshwater diversion projects in the CWA could lead to long term cumulative impacts to EFH and EFH species throughout the area. EFH would continue to be impacted by the infrequent, relatively short-term pumping during storm and rain events of the various existing PSs in St. Bernard Parish that function as designed.

COORDINATION

Preparation of this Draft EA and a Finding of No Significant Impact (FONSI) has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as

federally recognized Tribes, environmental groups and other interested parties. The following agencies, as well as other interested parties, received copies of this Draft EA and FONSI:

- Department of the Interior, Fish and Wildlife Service
- National Marine Fisheries Service
- Environmental Protection Agency, Region VI
- Natural Resources Conservation Service
- State Conservationist 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 (LDEQ)
- Louisiana Department of Environmental Quality
- Louisiana State Historic Preservation Officer

Comments received from agencies in preparation of the draft are included in the following Compliance Section. Comments received from the above agencies as well as the general public will be considered in preparation of the final EA and FONSI.

MITIGATION

Mitigation is an integral part of project planning and if implemented properly is incorporated into the planning process prior to, during and following project construction. Properly implemented mitigation first incorporates design that avoids impacts, then minimizes adverse impacts to the greatest extent possible during design implementation and lastly compensates for the unavoidable impacts. To the maximum extent practicable wetlands were avoided and best management practices would be utilized to minimize and complete the proposed seepage repair. The impact to sparse remnant shoreline shrub and wetland grass vegetation (less than 0.05 acres) would be temporary and negligible, and is anticipated to return to pre-existing conditions following completion of construction. As such, no mitigation is required as coordinated with Mr. Dave Walther US Fish and Wildlife Service on September 13, 2013 and discussion with Mr. Michael Farabee CEMVN Regulatory September 13, 2013 and Mr. Jeff Harris Louisiana Department of Natural Resources on October 1, 2013.

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved with the coordination and review of this Draft EA and FONSI with appropriate agencies, organizations, and individuals.

A Coastal Zone Consistency Determination was prepared and forwarded to LADNR for their concurrence on October 1, 2013. A letter dated October 31, 2013 was received stating that

the proposed modification (C20060155 mod 01) is consistent with the Louisiana Coastal Resources Program.

Coordination with the USFWS under the Fish and Wildlife Coordination Act and Section 7 of the Threatened and Endangered Species Act was initiated on October 15, 2013. USFWS concurred on October 18, 2013 by facsimile letter with a finding of “no effect” to the West Indian manatee. Coordination with USFWS is ongoing and will be completed prior to finalization of EA #526. Coordination with National Marine Fisheries Service was initiated by phone call May 7, 2013 with Richard Hartman and is ongoing and will be completed prior to finalization of EA #526.

Section 106 coordination will be completed prior to a final determination on the proposed action. Past cultural resources Final Reports (22-2638 and 22-2832) are available at the Louisiana Division of Archaeology in Baton Rouge.

Water Quality Certification has been applied for with the Louisiana Department of Environmental Quality on 15 October 13. A letter dated November 6, 2013 was received stating that a water quality certificate has been issued for the proposed project.

Public Review of the draft EA will be completed prior to a signing of the FONSI. Public review of the 404b1 Public Notice began on November 27, 2013 and was completed on December 27, 2013.

CONCLUSION

The proposed repair of St. Bernard Pump stations #2 and #3 would repair seepage problems and allow the pump stations to operate during rain events, reducing the risk of flooding to St. Bernard Parish. This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would likely have no impacts upon cultural resources, threatened and endangered species, environmental justice, and recreation. Minimal and only temporary impacts would be expected to air quality, water quality, socioeconomics, wildlife and fisheries, aesthetics, and wetlands. Impacts from noise and vibration are anticipated to be temporary. Minimal permanent impacts to EFH would be likely. Signature of the FONSI is dependent upon the findings of this draft EA as well as public and agency comments received during the 30-day public review period.

PREPARED BY

Draft EA # 526 and FONSI were prepared by Debra Wright, Outdoor Recreation Planner, with relevant sections prepared by: Laura Wilkinson –Water Quality and Biology; Christopher Brown - HTRW, Paul Hughbanks – Cultural Resources; Andrew Perez – Recreational Resources; Kelly McCaffrey – Aesthetics; Joe Mann – Socioeconomics & Environmental Justice; Tim Jarquin – Project Manager, and Christopher Gilmore – Senior Project Manager. Technical review was conducted by Sandra Stiles, Supervisory Biologist. Agency technical review was conducted by Elliot Stefanik, Biologist. The address of the preparers is: U.S. Army

Corps of Engineers, New Orleans District; Regional Planning and Environment Division, South, CEMVN-PDR-RS; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

LITERATURE CITED

- Federal Highway Administration. 2007. Special Report: Highway Construction Noise: Measurement, Prediction, and Mitigation. Appendix A Highway Construction Equipment Noise Levels and Ranges. InternetURL: <http://www.fhwa.dot.gov/environment/noise/hcn06.htm>.
- Hahn, Sara A. and Thurston H.G. Hahn III. 2005. Phase I Cultural Resources Survey of the Proposed New Florida Avenue Bridge of the Inner Harbor Navigation Canal (IHNC) Project (State Project number 700-19-0108) in Orleans and St. Bernard Parishes, Louisiana. Coastal Environments, Inc. Baton Rouge, Louisiana.
- Handly, Martin, Katy Coyle, and William P. Athens. 2006. Preliminary Archeological Field Reconnaissance of a 35.2 km (22mi) Long Section of the St. Bernard Hurricane Protection Levees, Orleans and St. Bernard Parishes, Louisiana. R. Christopher Goodwin and Associates, Inc. New Orleans, Louisiana.
- Harris, Cyril, M. 1998. Handbook of Acoustical Measurement and Noise Control. McGraw-Hill, Dallas, TX.
- USACE. 2006. U.S. Army Corps of Engineers Response to Hurricanes Katrina and Rita in Louisiana Environmental Assessment. USACE, Mississippi Valley Division, New Orleans District.
- USACE. 2009. Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana: Individual Environmental Report. USACE, Mississippi Valley Division, New Orleans District.

APPENDIX 1

FIGURES

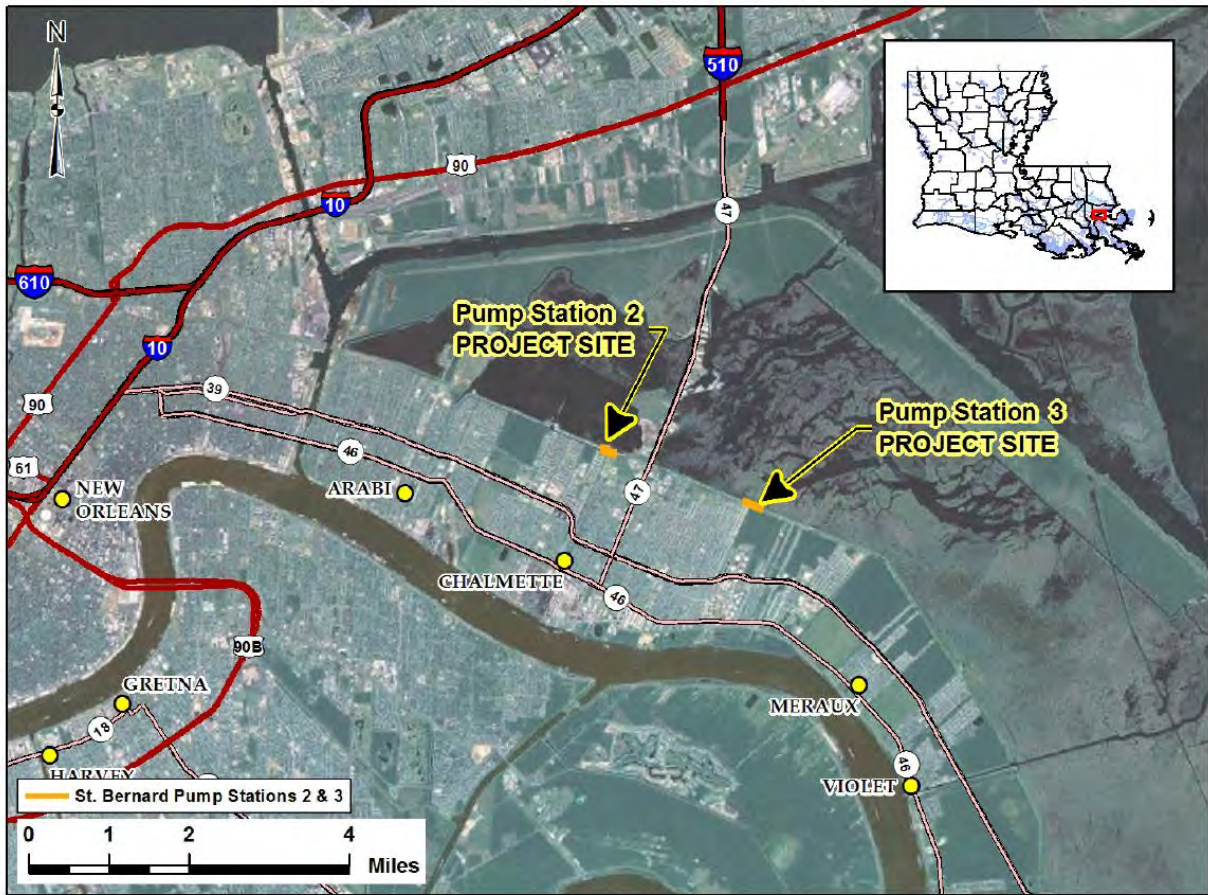


Figure 1: Project Location

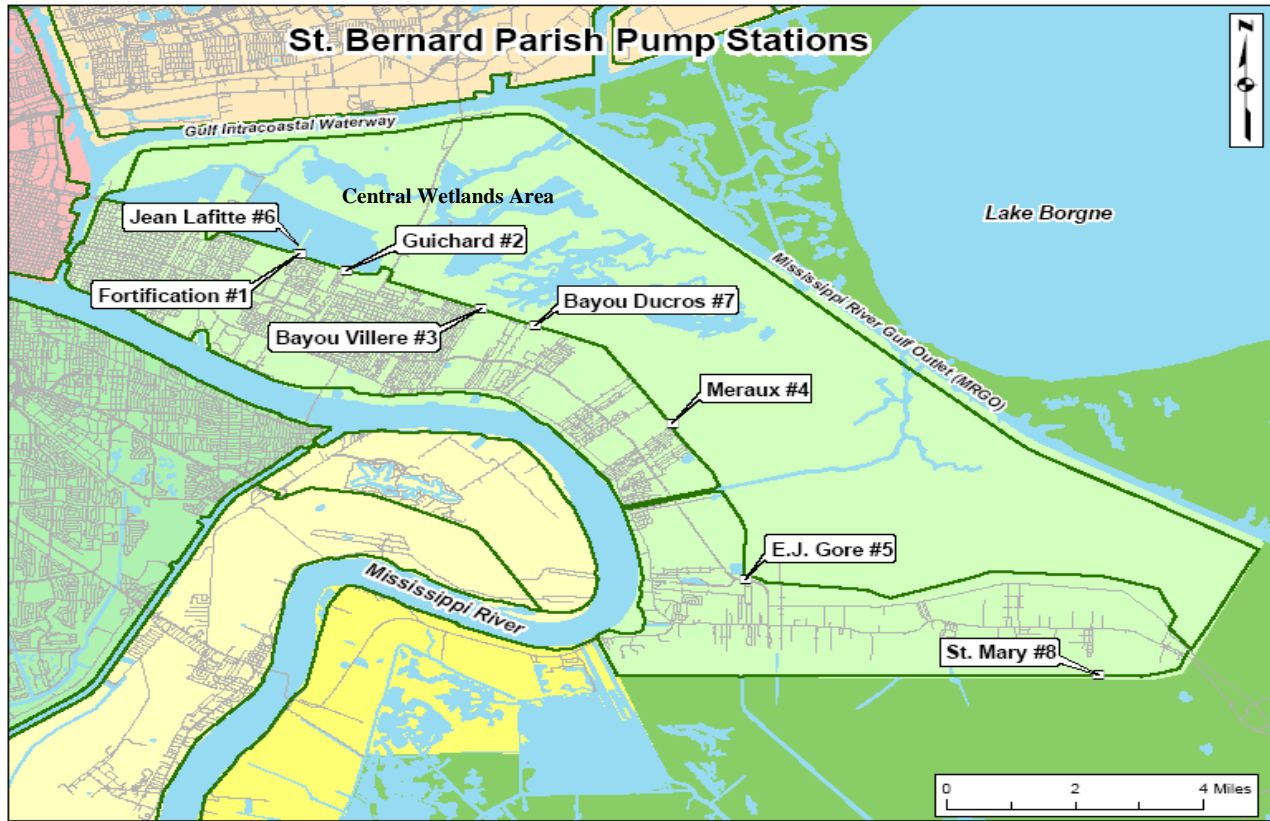
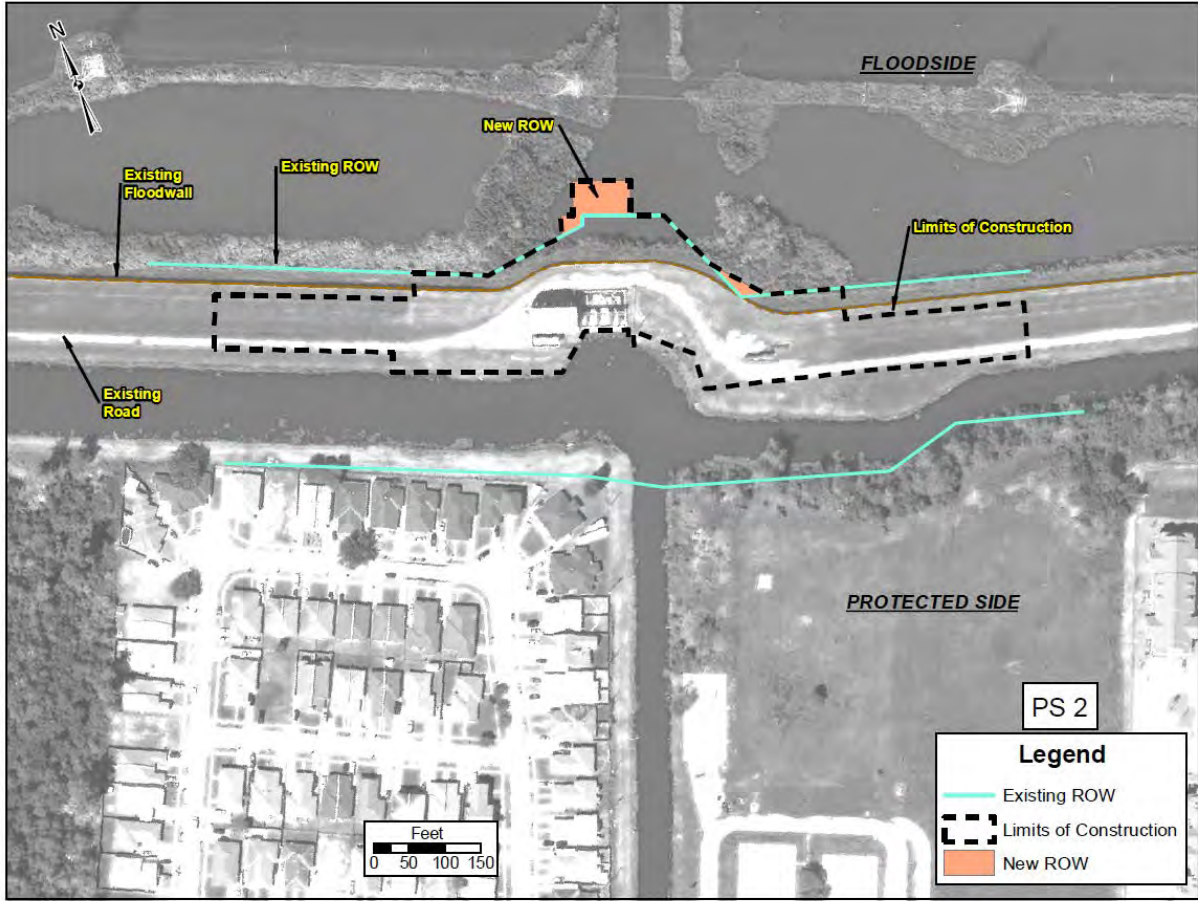
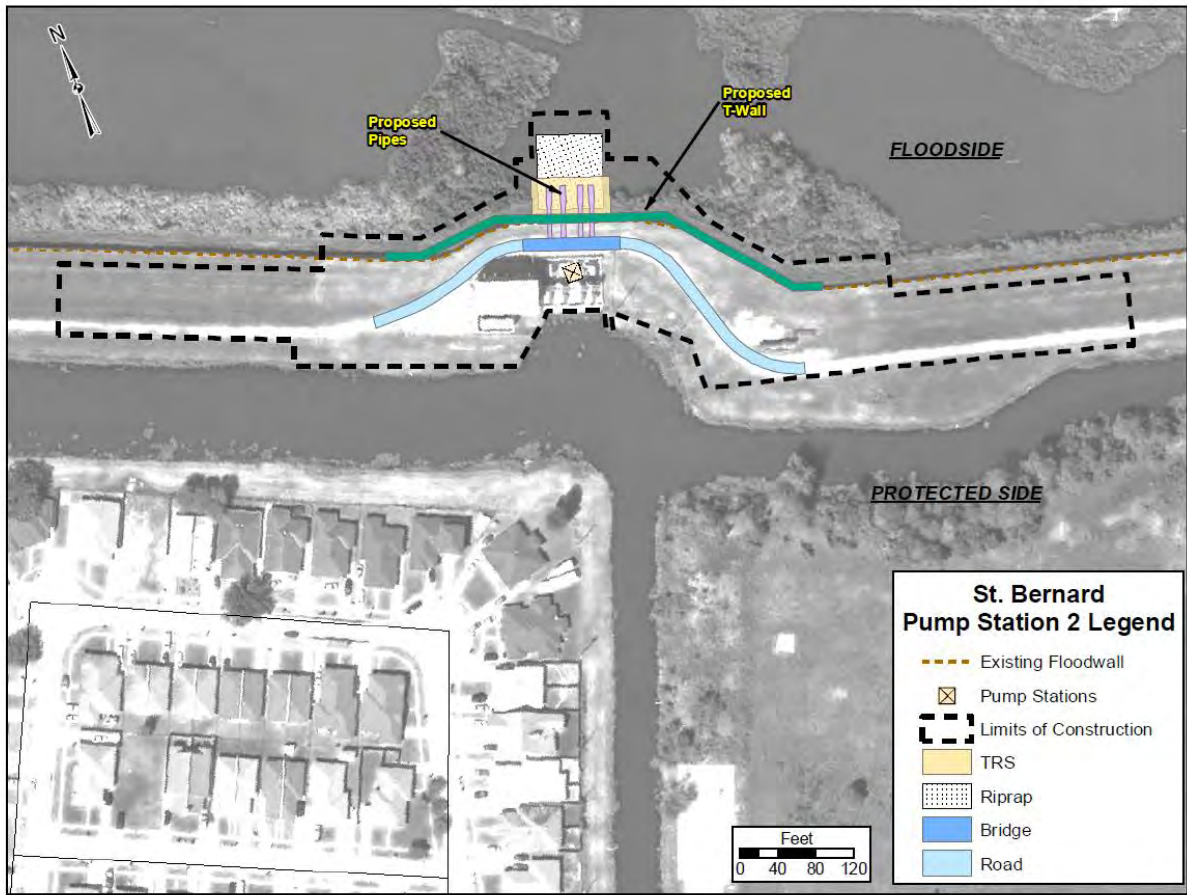


Figure 2: St. Bernard Parish Pump Stations



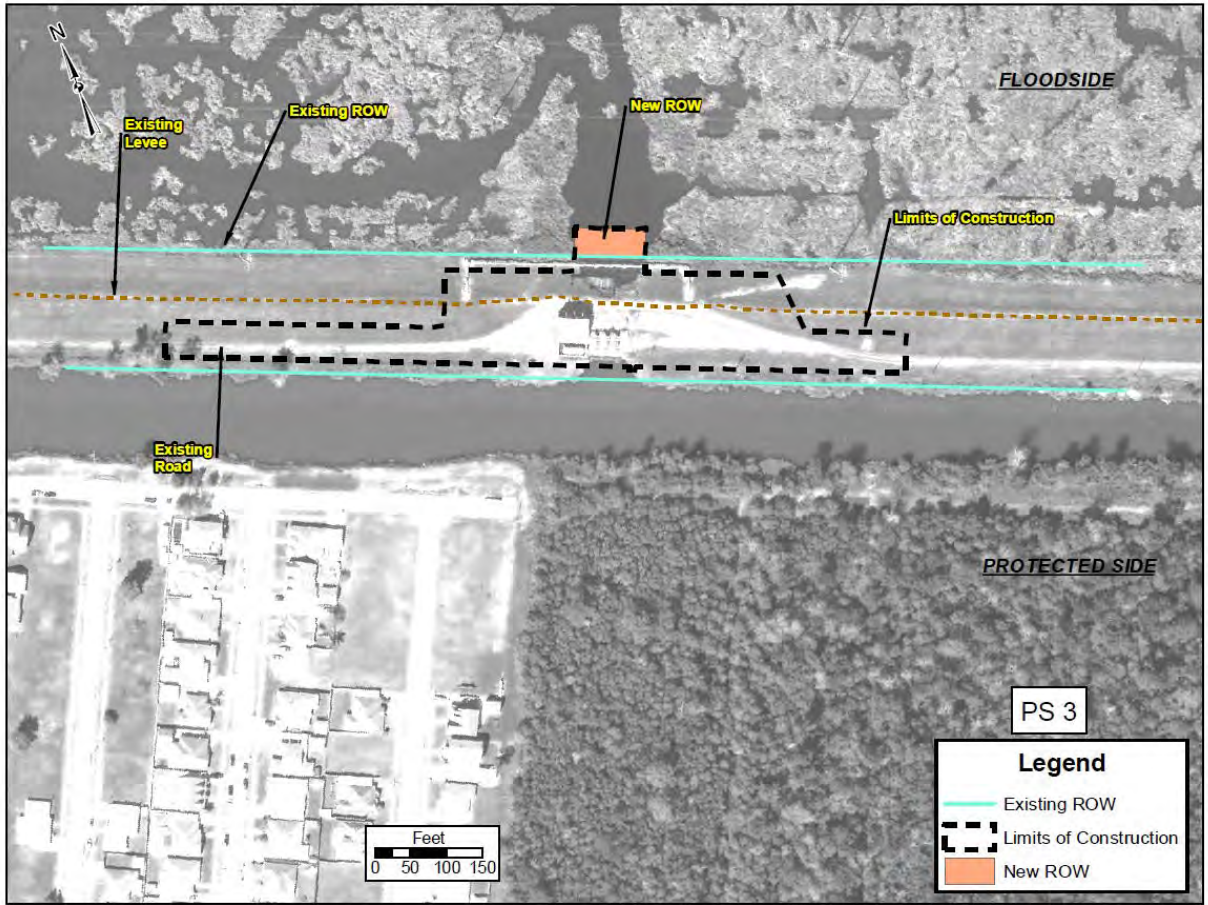
EGIS Map ID No. 2013-049

Figure 3: Pump Station 2 Existing Conditions



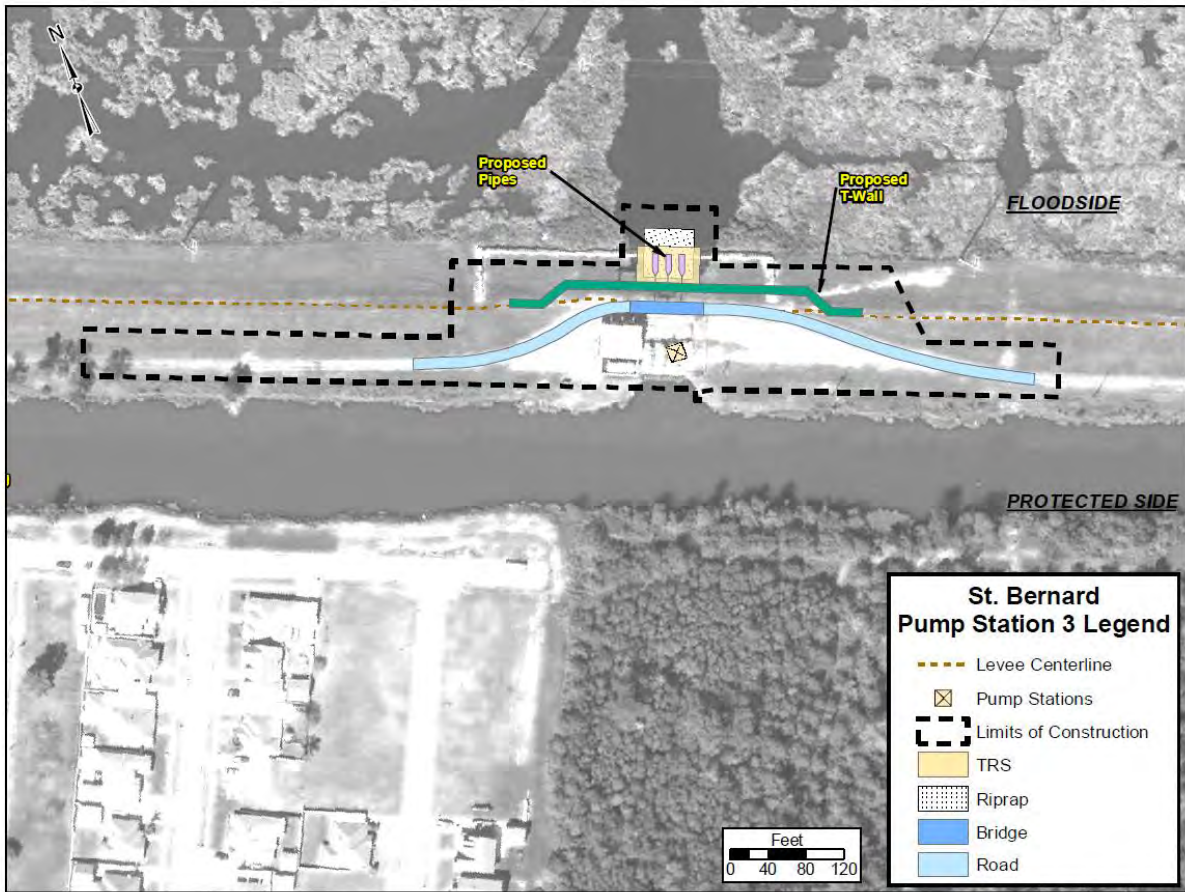
EGIS Map ID No. 2013-049

Figure 4: Pump Station 2 Proposed Action



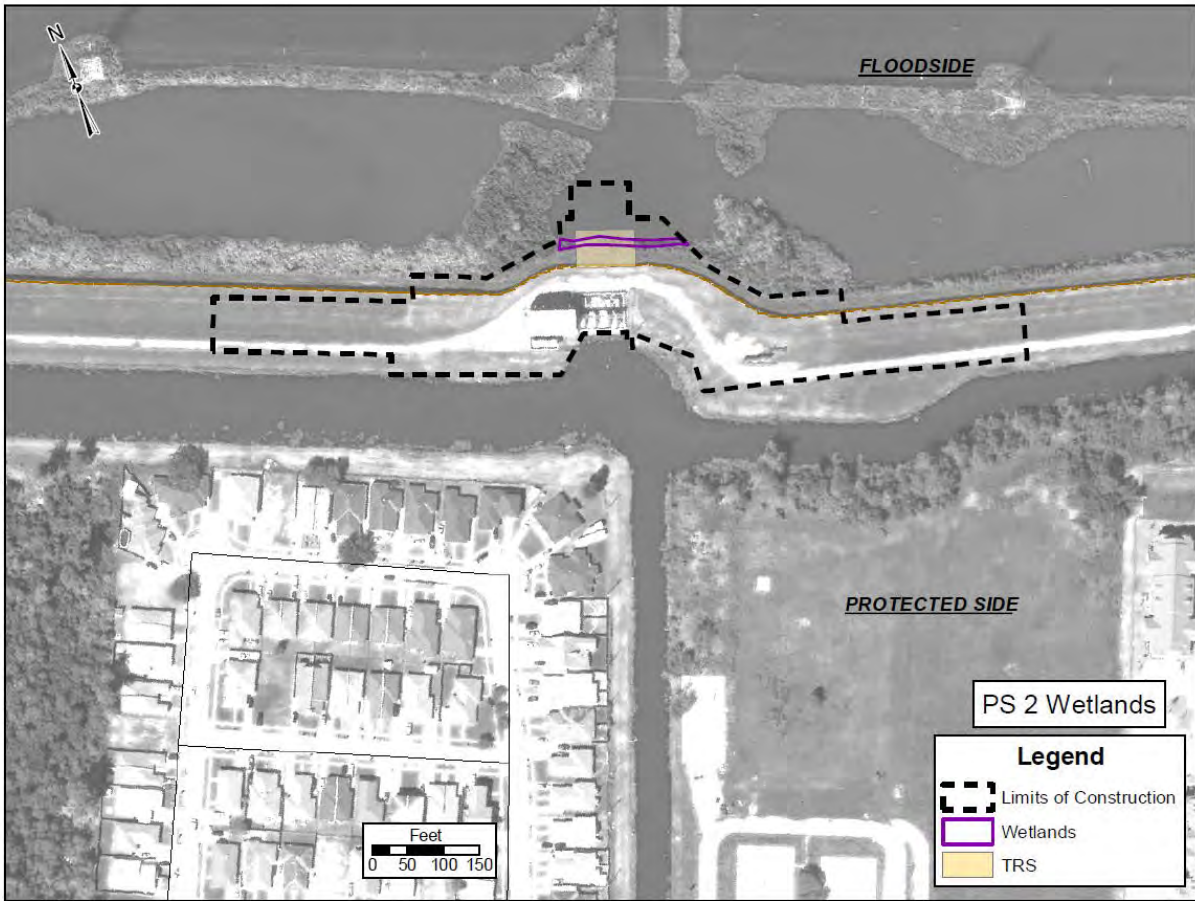
EGIS Map ID No. 2013-049

Figure 5: Pump Station 3 Existing Conditions



EGIS Map ID No. 2013-049

Figure 6: Pump Station 3 Proposed Action



EGIS Map ID No. 2013-049

Figure 7: Pump station 2 Wetlands



EGIS Map ID No. 2013-049

Figure 8: Pump station 3 Wetlands

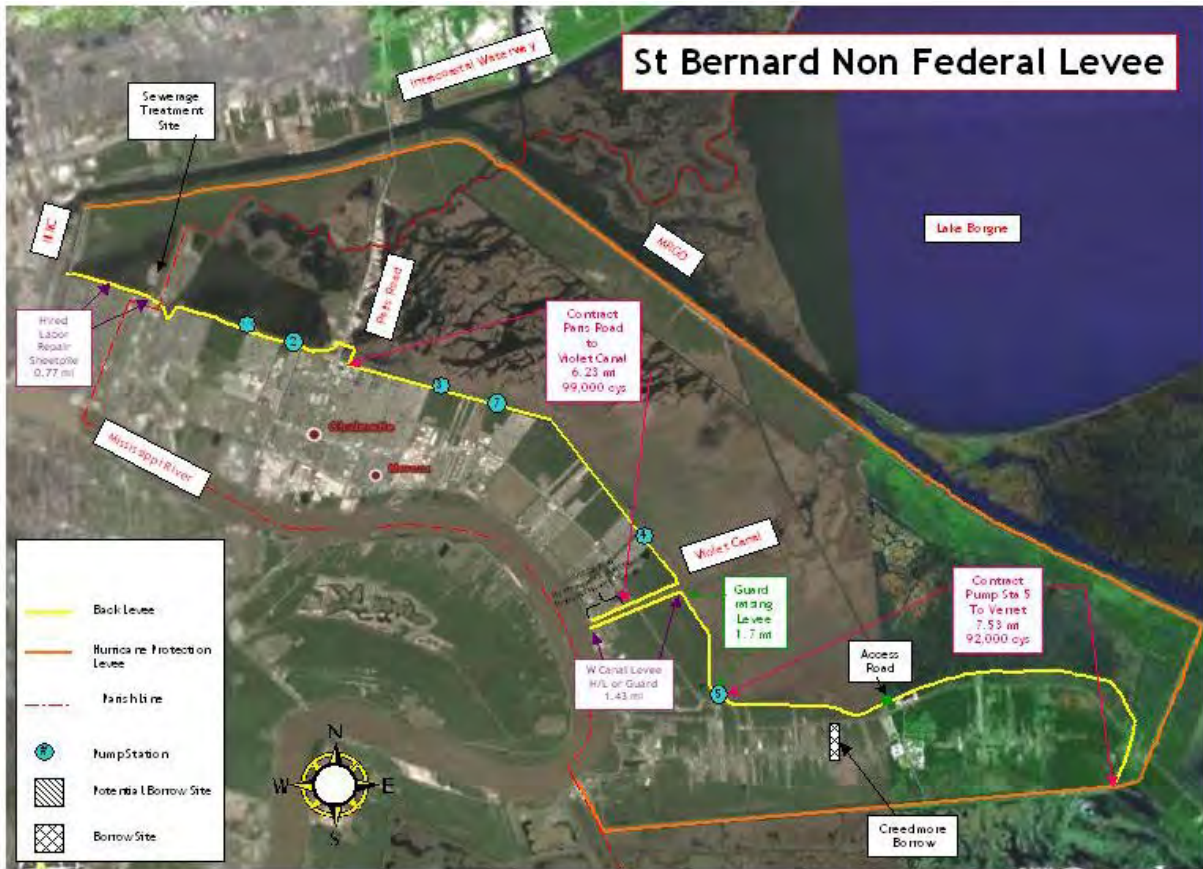


Figure 9: Non Federal St. Bernard Parish Back Levee Repairs after Hurricane Katrina



Figure 10: Coastal Wetlands and Scenic Streams in St. Bernard Parish

APPENDIX 2

Coordination Letters



REPLY TO
ATTENTION OF

Regional Planning and
Environment Division South
New Orleans Environmental Branch

DEPARTMENT OF THE ARMY
HURRICANE PROTECTION OFFICE, CORPS OF ENGINEERS
P. O. BOX 80267
NEW ORLEANS, LOUISIANA 70180-0267

October 11, 2013



Jeff Weller
Field Supervisor
U.S. Fish and Wildlife Service
646 Cajundome Blvd - Suite 400
Lafayette, LA 70506

This project has been reviewed for effects to Federal trust resources under the Antiquities Act and currently protected by the Endangered Species Act of 1973 (ESA). This project, as proposed, will have no effect on these resources. It is not likely to adversely affect these resources. No finding under the requirements of Section 7(a)(2) of the Act.

Debra A Fuller Oct 18, 2013

Name of Contractor: _____
Date of Inspection: _____
By: _____

Dear Mr. Weller:

The U.S. Army Corps of Engineers, New Orleans District (CEMVN) is preparing an Environmental Assessment (EA) #526 entitled "526 St. Bernard Parish Pump Station #2 and #3 Seepage Repairs, St. Bernard Parish, Louisiana" to evaluate potential impacts associated with repair of a seepage issue at both pump stations. The proposed action described in this EA #526 pertains to replacing existing discharge pipes and I-walls with T-walls on the non-Federal St. Bernard back levee. The proposed repairs are necessary for the St. Bernard stormwater drainage system to function properly. This EA #526 is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council of Environmental Quality's (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2.

A CEMVN biologist has determined that no significant impacts to Threatened and Endangered (T&E) species or their critical habitat would occur as a result of this proposed work. CEMVN Environmental staff will continue to coordinate with the U.S. Fish and Wildlife Service (USFWS) and would like to request that USFWS review the enclosed proposed impacts description and provide concurrence with our determination of "not likely to adversely effect" the West Indian manatee. A detailed description of the proposed repairs for the Pump Stations #2 and #3 project and the T&E assessment is enclosed. If you have any questions or require additional information, please do not hesitate to contact Ms Laura Lee Wilkinson at 504-862-1212 or by email to Laura.L.Wilkinson@usace.army.mil.

Sincerely,

for Sandra Stiles
Joan M. Exnicios
Chief, New Orleans Environmental Branch



REPLY TO
ATTENTION OF

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

October 11, 2013

Regional Planning and
Environment Division South
New Orleans Environmental Branch

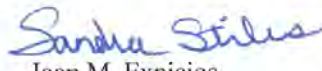
Jeff Weller
Field Supervisor
U.S. Fish and Wildlife Service
646 Cajundome Blvd - Suite 400
Lafayette, LA 70506

Dear Mr. Weller:

The U.S. Army Corps of Engineers, New Orleans District (CEMVN) is preparing an Environmental Assessment (EA) #526 entitled "526 St. Bernard Parish Pump Station #2 and #3 Seepage Repairs, St. Bernard Parish, Louisiana" to evaluate potential impacts associated with repair of a seepage issue at both pump stations. The proposed action described in this EA #526 pertains to replacing existing discharge pipes and I-walls with T-walls on the non-Federal St. Bernard back levee. The proposed repairs are necessary for the St. Bernard stormwater drainage system to function properly. This EA #526 is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council of Environmental Quality's (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2.

A CEMVN biologist has determined that no significant impacts to Threatened and Endangered (T&E) species or their critical habitat would occur as a result of this proposed work. CEMVN Environmental staff will continue to coordinate with the U.S. Fish and Wildlife Service (USFWS) and would like to request that USFWS review the enclosed proposed impacts description and provide concurrence with our determination of "not likely to adversely effect" the West Indian manatee. A detailed description of the proposed repairs for the Pump Stations #2 and #3 project and the T&E assessment is enclosed. If you have any questions or require additional information, please do not hesitate to contact Ms Laura Lee Wilkinson at 504-862-1212 or by email to Laura.L.Wilkinson@usace.army.mil.

Sincerely,


for
Joan M. Exnicios
Chief, New Orleans Environmental Branch

-1-

A2-3

ST. BERNARD PUMP STATIONS 2 & 3 SEEPAGE REPAIRS

DESCRIPTION OF THE ACTION

The St. Bernard pump stations Guichard (#2) and Bayou Villere (#3) were previously replaced as a result of repairs following Hurricane Katrina (EA #433 and Coastal Zone Consistency 20060155).

Figure 1. Location Map.

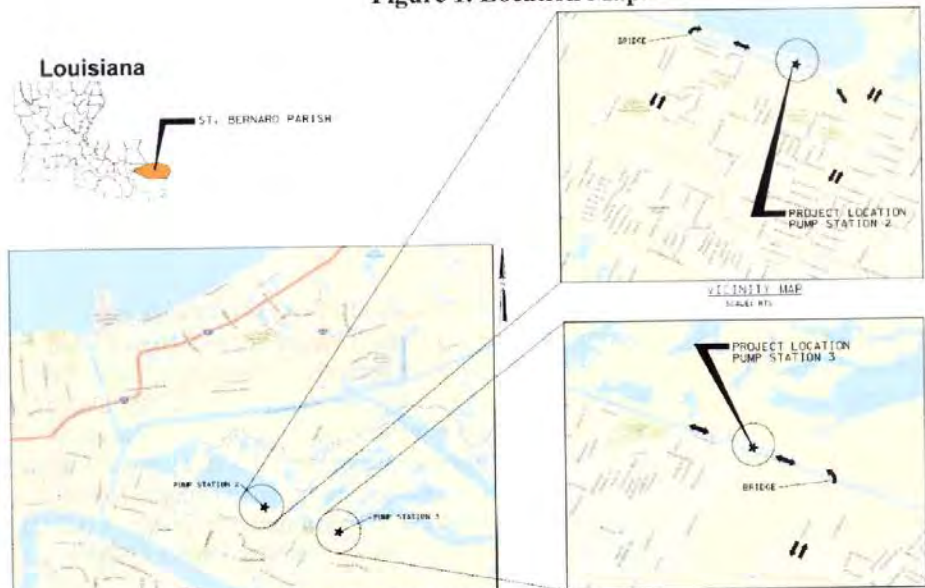
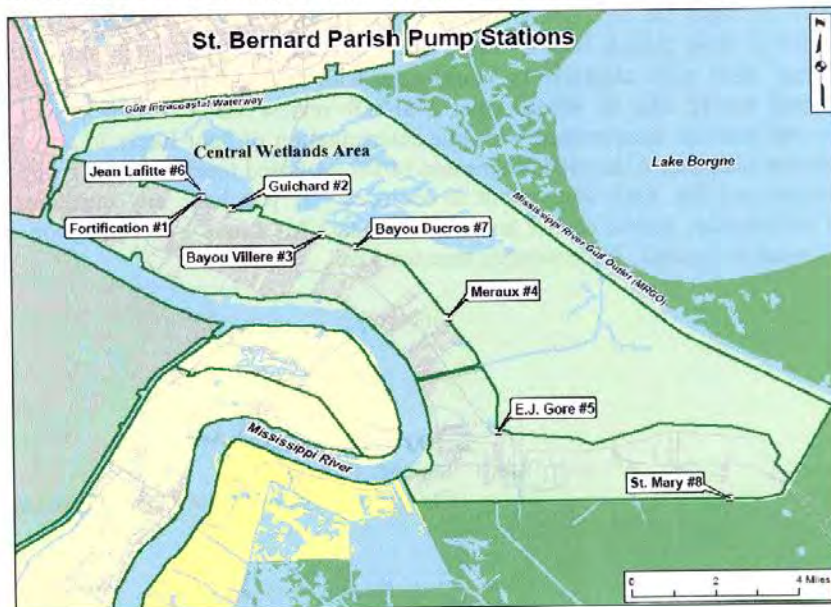


Figure 2. St. Bernard Parish Pump Stations, the pump stations discharge into the CWA.



The proposed construction would consist of installation of a concrete T-wall to replace existing I-walls, replacement of discharge pipes on the flood side of the levee, and the tie-in of access roadways along the local levee reach within the construction limits (figure 3, 4 and 5).

The T-wall system would be constructed to eliminate a seepage problem, provide fronting protection, and stabilize the earthen section at the pump stations. The surrounding levee reaches adjacent to the scope features would not be impacted aside from use as access with the exception of structural T-wall and access road tie-in areas. All elevations herein are based on NAVD 88 (2004.65).

The new constructed top of T-wall shall be approximately El. 10.0 feet (ft). The length would be approximately 490 ft for PS #2 and 390 ft for PS#3. It shall be located roughly in line with the existing levee alignment and consist of a sheet-pile cutoff wall below the base foundation, steel H-pilings (54,000 ft) for support and approximately 3,000 cubic yards (cy) of concrete would be used to form the T-wall structure. The proposed T-wall fronting protection would tie into the existing local levee system. Approximately 300 tons of riprap would be placed adjacent to the T-wall to provide stabilization on the flood side.

The proposed work includes replacing four discharge pipes (330 ft length) at PS #2 and three pipes (260 ft length) at PS #3. A temporary retaining structure (TRS) would be built to allow workers to access the pipes and perform the work for approximately 12 months. The TRS, also referred to as a cofferdam, would involve installing approximately 9,600 ft of steel sheet-pile surrounding the construction area (figures 3, 4, 5). The TRS at PS #2 would be 78 ft by 70 ft and the TRS at PS #3 would be 85 ft by 53 ft in size. A work buoy (small boat approximately 10 ft wide by 15 ft long) would allow access to the area and a vibratory hammer would be used to install the sheet pile. Once the TRS is in place, the discharge basin water would be pumped via a temporary pump to the CWA. After the new discharge pipes are installed, the TRS would be removed, and the levee/T-wall interface would be re-vegetated with grass.

Road work includes re-grading the existing pump station access roads following construction and replacing bridges located over the discharge pipes with pre-fabricated waskey bridges (15 ft width x 60 ft length). Existing trench drains on bridges would be removed and the bridge would be designed to allow subsurface drainage. Entrance to the road is restricted and not accessible to the public.

Off site borrow material will not be needed. Approximately 900 cy of sediment material would be excavated during construction and re-used onsite as part of levee toe and re-grading access road. Any excess excavation material and construction debris shall become the property of the contractor and legally disposed of off-site at a landfill permitted to accept the waste and construction debris material.

A temporary office/storage area would be established within the existing levee right-of-way adjacent to either PS #2 or PS #3. The contractor would be required to return the area to its existing conditions when construction is complete.

Transportation routes include Jean Lafitte Parkway and Paris Road for PS #2 and Bartolo Street for PS #3. Equipment to be used includes a bulldozer, concrete trucks, concrete pump trucks, backhoe, crane, pile driver, sheepsfoot roller, and flat roller. The contractor would take reasonable measures to avoid unnecessary noise appropriate for the ambient sound levels in the area during working hours (7 am to 7 pm). All construction machinery and vehicles shall be equipped with practical sound muffling devices, and operated in a manner to cause the least noise, consistent with efficient performance of the work. The contractor shall comply with local noise ordinance.

The contractor would take reasonable measures to prevent unnecessary dust. Surfaces subject to creating dust would be kept moist with water. Dusty material piles on site or in transit shall be covered to prevent blowing. Silt fencing /erosion control would be installed and maintained throughout project area consistent with the Storm Water Pollution Prevention Plan.

It is estimated that the total duration of project construction activities would be approximately 12 months. Both PS projects would be constructed concurrently. The total area encompassed within the proposed project limits of construction would be approximately 1.72 acres at PS #2 and 1.61 acres at PS #3. This acreage includes approximately 0.03 acres at PS #2 and 0.02 acres of wetland edge vegetation comprised of mixed grasses (*Cyperus* sp. and *Carex* sp.) and shrubs (*Myrica* sp.) that would be temporarily impacted (photographs 1 and 2). Both pump stations had floating invasive duck weed (*Lemna* sp.) present, PS #3 was 90% covered.

Photograph 1. St. Bernard Parish Pump Station #2 flood side wetland edge vegetation.



Photograph 2. St. Bernard Parish Pump Station #3 flood side wetland edge vegetation and existing sheetpile cofferdam. Invasive duckweed covers almost the entire discharge basin.



Figure 3. PS #2 Guichard proposed seepage repairs include the replacement of discharge pipes, the floodwall T-wall, and re-grading the gravel access road. The temporary cofferdam would be removed when construction is complete.

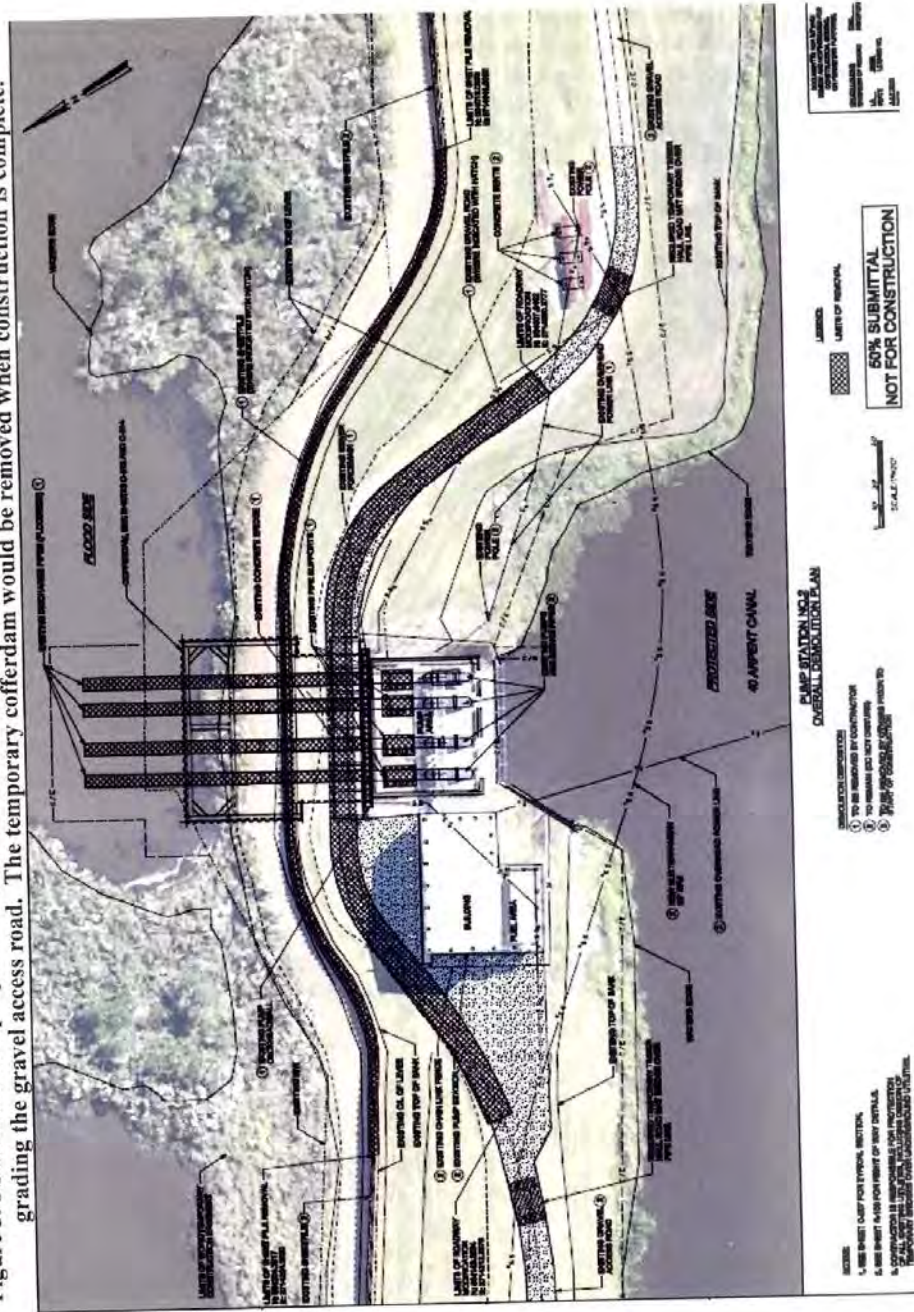
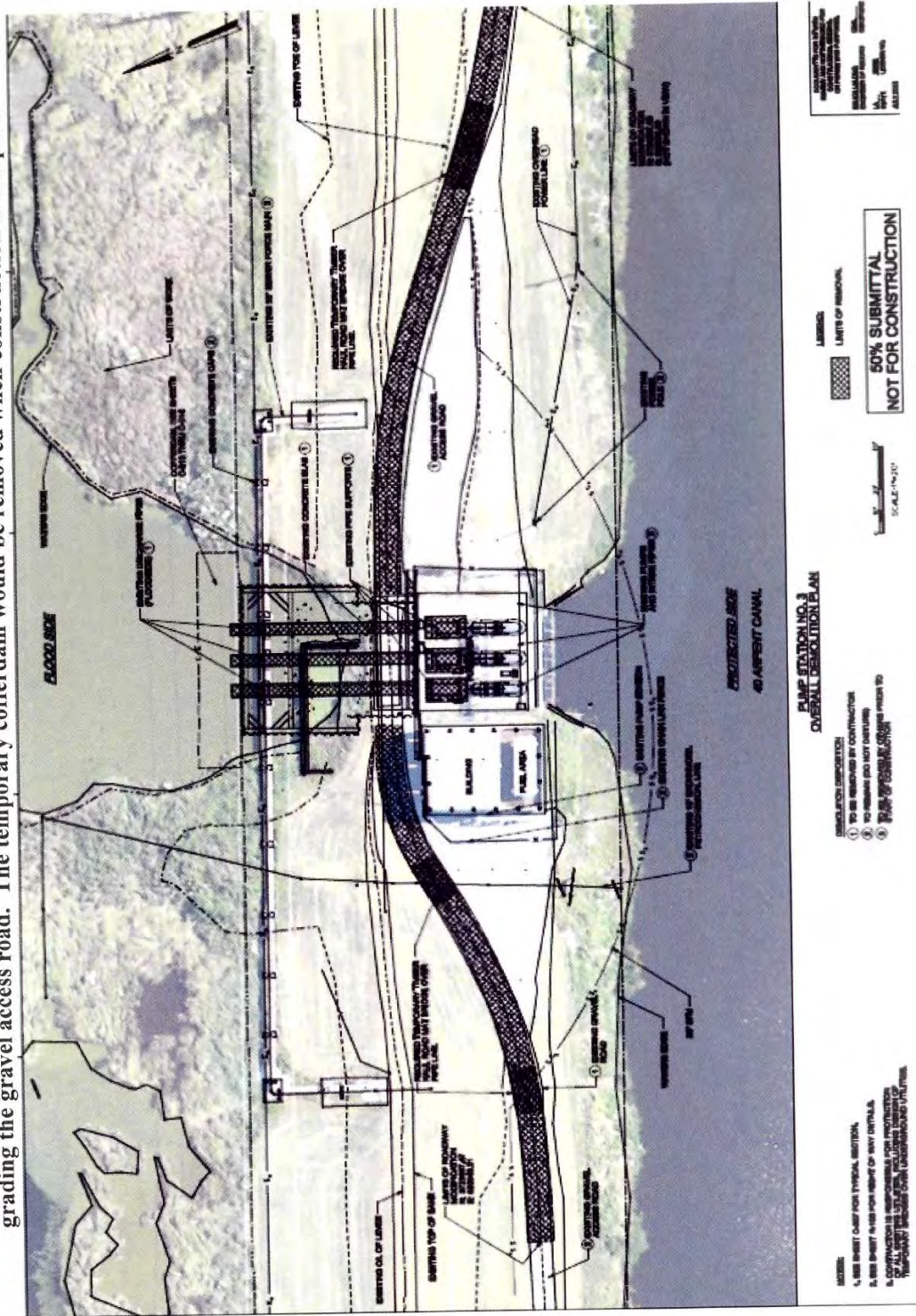


Figure 5. PS #3 Bayou Villere proposed seepage repairs include the replacement of discharge pipes, floodwall T-wall, and re-grading the gravel access road. The temporary cofferdam would be removed when construction is complete.



The EA #526 Threatened and Endangered Species write-up would be as follows:

3.1.5 THREATENED AND ENDANGERED SPECIES

Existing Conditions

The only threatened and endangered (T&E) species potentially found in the project area would be the West Indian Manatee (*Trichechus manatus*). West Indian manatees are large, gray aquatic mammals also known as sea cows. The average adult manatee is about 9.8 feet long and weighs between 800-1,200 pounds. Manatees can be found in shallow, slow-moving rivers, estuaries, salt-water bays, canals, and coastal areas. Manatees are completely herbivorous and feed on SAV, emergent and floating aquatic plants and can consume 10-15 percent of their body weight daily. West Indian manatees have no natural enemies, and it is believed that they can live 60 years or more. Manatees concentrate in Florida in the winter, but can be found in the summer months as far west as Texas and as far north as Virginia. West Indian manatees occasionally enter Lakes Pontchartrain and Lake Borgne and associated coastal waters and streams during the summer months (June through September). Manatees have been reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers and in canals within the adjacent coastal marshes of Louisiana. Collisions with powerboats or outboard propellers pose a significant threat to manatees. Watercraft collisions account for approximately 25 percent of all manatee deaths. Boats traveling faster than 15 mph are capable of injuring or killing a manatee. Manatees can also be injured or entangled in locks, flood control structures, and fishing nets.

There have been no sightings of manatees in the immediate vicinity of the PS discharge basins, however, most recently two manatees were sighted crossing through the Borgne Barrier sector gate on the Gulf Intracoastal Waterway on August 20, 2012. Therefore, it is possible they could enter the CWA and forage for food in the surrounding bayous and waterways. CEMVN initiated coordination of the proposed action for the seepage repair in a letter dated October 11, 2013 and requested USFWS concurrence with our determination of "not likely to adversely affect". The USFWS reviewed the proposed action to see if it would affect any threatened and endangered (T&E) species under its jurisdiction, or their critical habitat. The USFWS concurred with the CEMVN in a fax letter dated October XX, 2013 that the proposed action would not have adverse impacts on T&E species under its jurisdiction (appendix X).

4.5 THREATENED AND ENDANGERED SPECIES

Future Conditions with No Action

Under the no action alternative, alternative there would be no direct or indirect impacts hence, no adverse effects to T&E species or critical habitat would occur. There would be no construction to repair the PS #2 Guichard and PS #3 Bayou Villere seepage issue and they would continue to not operate to discharge stormwater. Regular pumping of storm water from all other pump stations for the developed areas of St. Bernard Parish into the surrounding water bodies of the CWA in response to rainfall events would continue.

Future Conditions with the Proposed Action

The construction of the proposed action would not be likely to adversely affect federally or state listed threatened and endangered species or marine mammals. The USFWS responded to the endangered species coordination in a letter/facsimile dated October XX, 2013 that the proposed action for seepage repair is not likely to adversely affect the West Indian manatee. Standard manatee protection measures would be followed in order to minimize the potential for construction activities to impact the manatee. These procedures have been recommended by the USFWS for use in situations where in-water construction activities potentially could occur where manatees may be present. These procedures include the following:

All contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel would be responsible for observing water-related activities for the presence of manatees. Temporary signs would be posted prior to and during all construction or dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., the work area), and at least one sign would be placed where it is visible to the vessel operator. Siltation barriers, if used, would be made of material in which manatees could not become entangled and would be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions would be implemented, including: moving equipment would not operate within 50 ft of a manatee; all vessels would operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, would be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area of its own accord, special operating conditions would no longer be necessary, but careful observations would be resumed. Any manatee sighting would be immediately reported to the U.S. Fish and Wildlife Service (337/291-3100) and the LaDWF, LaNHP (225/765-2821). These procedures have been recommended by the USFWS (2009) and adopted by the USACE (2005) for use in situations where in-water construction activities potentially could occur when manatees may be present.

Assuming the above procedures for preventing disturbance or injury to manatees are employed, the potential for direct impacts during the period of construction of the proposed action at PS #2 and PS #3 would be minimal and unlikely to adversely affect this species.

A no effect determination for the Gulf sturgeon and Kemp's ridley, green, and loggerhead sea turtles has been made for the proposed seepage repair. Factors evaluated for this determination include the following: the area impacted by this project is not designated critical habitat; the water bottom where the discharge pipes would be replaced consists of mud, rock, and riprap, so it doesn't contain an abundance of prey items (sturgeon prefer sandy bottom substrate, not rock and concrete); no dredging would occur as part of this project, and work would be within a 0.1 acre cofferdam in the dry, and BMPs and a SWPPP would be implemented to minimize impacts to water quality in the project area; and the seepage repair is replacing existing discharge pipes of a pump station so the site has already been impacted. Sturgeon and sea turtles could potentially be present in the area, but likely would avoid the area during construction due to noise, lack of prey items, and work occurs within discharge basin of a pump station. All other construction for the T-wall and road improvements would involve construction on land and not impact threatened

or endangered species or critical habitat. Construction activities may have a temporary impact on foraging habitat adjacent to the project area. Increases in noise, traffic, and lighting levels would also temporarily affect the manatee foraging habitat, however no submerged aquatic vegetation is present in the project area.

Potential indirect impacts on federally or state listed threatened and endangered species from the proposed action could mainly consist of temporary effects from siltation and suspended sediment in adjacent water bodies of the CWA and increased noise levels from construction activities. Effects from construction activities associated with the proposed action would be minimized by BMPs to control sediment transport, adherence to regulations governing stormwater runoff at construction sites, and the temporary nature of noise impacts. Given that the proposed action repairs existing pump stations that operate for rain and storm events, indirect impacts on endangered or threatened species from the proposed action would be minimal. Thus, indirect impacts on federally or state listed threatened and endangered species from the proposed action would be unlikely to have any additional permanent adverse effects on these species.

Potential cumulative impacts on federally or state listed T&E within the project area from the proposed action would involve the combined effects from the HSDRRS specifically the Chalmette Loop levee/T-wall, CWPPRA projects, wetland restoration and shoreline protection; the Violet freshwater diversion project; MRGO deep-draft deauthorization; and local community wetland restoration projects would reduce potential adverse cumulative impacts by positively affecting suitable habitat within and around CWA. Manatees are mobile and would avoid project areas during the construction period. The impacted 0.2 acres of aquatic and 0.05 acres of fringe fresh/intermediate marsh would be negligible. Neither manatees, Kemp's ridley, Loggerhead, or green sea turtles, nor Gulf sturgeon would be anticipated to utilize the land areas within the project ROW or the rock riprap portion of the pump station discharge basins. Extensive more suitable aquatic and benthic habitat exists elsewhere in the Pontchartrain basin where the manatee, Kemp's ridley, Loggerhead and green sea turtles, and Gulf sturgeon could forage or swim. Thus, cumulative impacts on federally or state listed threatened and endangered species from the proposed action would be unlikely to have permanent adverse effects on T&E species.

BOBBY JINDAL
GOVERNOR



STEPHEN CHUSTZ
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

October 31, 2013

Laura Lee Wilkinson
U.S. Army Corps of Engineers - New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

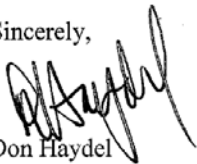
RE: **C20060155 mod 01**, Coastal Zone Consistency
New Orleans District, Corps of Engineers
Direct Federal Action
Replace discharge pipes, and replace I-wall with T-wall, at St. Bernard Pumping Stations
#2 and #3, **St. Bernard Parish, Louisiana**

Dear Ms. Wilkinson:

The above referenced project modification has been reviewed for consistency with the Louisiana Coastal Resources Program in accordance with Section 307 (c) of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in this application, is consistent with the LCRP.

If you have any questions concerning this determination please contact Jeff Harris of the Consistency Section at (225) 342-7949 or 1-800-267-4019.

Sincerely,


Don Haydel
Acting Administrator
Interagency Affairs/Field Services Division

DH/jdh

cc: Dave Butler, LDWF
Frank Cole, OCM

Post Office Box 44487 • Baton Rouge, Louisiana 70804-4487
617 North Third Street • 10th Floor • Suite 1078 • Baton Rouge, Louisiana 70802
(225) 342-7591 • Fax (225) 342-9439 • <http://www.dnr.louisiana.gov>
An Equal Opportunity Employer

BOBBY JINDAL
GOVERNOR



PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

NOV 06 2013

U.S. Army Corps of Engineers - New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

Attention: Laura Lee Wilkinson

RE: Water Quality Certification (WQC 131016-01/AI 101235/CER 20130010)
St. Bernard Parish Pump Station #2 and #3 Seepage Repairs
St. Bernard Parish

Dear Ms. Wilkinson:

The Louisiana Department of Environmental Quality (the Department) has reviewed your application to place fill material for repairs to the St. Bernard stormwater drainage system, along the back protection levee in Chalmette, Louisiana.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to U.S. Army Corps of Engineers - New Orleans District.

If you have any questions, please call Blake Perkins at 225-219-3540.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott Guilliams".

Scott Guilliams
Administrator
Water Permits Division

SG/bmp

c: Corps of Engineers- New Orleans District

APPENDIX 3

Air Emissions Control Best Management Practices

The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants; sulfur dioxide (SO₂) is one of these. St. Bernard Parish has recently been classified as in “non-attainment” for sulfur dioxide. The implementation of best management practices to control emissions during construction activities includes the following:

All motor vehicles and/or construction equipment (both on-highway and non-road) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety.

1. Use diesel engine retrofit control devices. This shall consist of oxidation catalysts, or similar retrofit equipment control technology that (1) is included on the Environmental Protection Agency (EPA) Verified Retrofit Technology List
2. The contractor shall establish staging zones for vehicles that are waiting to load or unload at the contract area. Such zones shall be located where the emissions from vehicles will have minimum impact on abutters and the general public.
3. Idling of delivery and/or dump trucks, or other equipment shall not be permitted during periods of non-active use, and it should be limited to less than 5 minutes. No mobile source engine shall be allowed to operate for more than 5 consecutive minutes when the mobile source is not in motion except as follows:
 - a. When a mobile source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control,
 - b. When it is necessary to operate defrosting, heating or cooling equipment to ensure the safety or health of the driver or passengers,
 - c. When it is necessary to operate auxiliary equipment that is located in or on the mobile source to accomplish the intended use of the mobile source,
 - d. To bring the mobile source to the manufacturer’s recommended operating temperature,
 - e. When the outdoor temperature is below twenty degrees Fahrenheit,
 - f. When the mobile source is undergoing maintenance that requires such mobile source be operated for more than three consecutive minutes, or

All work shall be conducted to ensure that no harmful effects are caused to adjacent sensitive receptors. Sensitive receptors include but are not limited to hospitals, schools, daycare facilities, elderly housing and convalescent facilities. Engine exhaust shall be located away from fresh air intakes, air conditions and windows.

4. Use ultra-low sulfur diesel fuel in off-road construction equipment with engine horsepower rating of 50 HP and above.
5. Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
6. Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

7. Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
8. Maintain all construction equipment in proper working condition according to manufacturer's specifications.

APPENDIX 4

Noise Best Management Practices

The following construction best management practices shall be implemented by contractors to reduce construction noise levels:

1. Ensure that construction equipment is properly muffled according to industry standards and be in good working conditions.
2. Work will only occur during hours allowed by the local noise ordinance.
3. Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
4. Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
5. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes.
6. Construction hours, allowable workdays, and the phone number of the Contracting Officer (CO) or delegate shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the CO or delegate. If the CO or delegate receives a complaint, the CO or delegate shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

APPENDIX 5

**St. Bernard Pump Stations
Chalmette, St. Bernard Parish, LA**

Table 1

Combustible Emissions

Assumptions for Combustible Emissions					
Type of Construction Equipment	Number of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Diesel Crane	4	300	10	225	2700000
Diesel Crane, Hydraulic	2	400	8	60	384000
Diesel Bull Dozer	4	150	8	120	576000
Diesel Excavator	6	315	8	240	3628800
Diesel Dump Truck	16	350	6	180	6048000
Diesel Road Compactor	2	340	8	120	652800
Water Truck	2	350	6	120	504000
Generator Set	2	750	10	225	3375000

Table 2

Emission Factors

Type of Construction Equipment	SO2 g/hp-hr	SO2 lbs/hp-hr
Diesel Crane	1.070	0.0024
Diesel Crane, Hydraulic	1.070	0.0024
Diesel Bull Dozer	1.070	0.0024
Diesel Excavator	1.070	0.0024
Diesel Dump Truck	1.070	0.0024
Diesel Road Compactor	1.070	0.0024
Water Truck	1.070	0.0024
Generator Set	1.070	0.0024

Convert grams to pounds: (g) x (.0022) = lbs

Emission Factors derived from the EPA's NONROAD2010 model

Table 3

Annual VOC and NOx Emissions Totals

Total Calculated Emissions	
Type of Construction Equipment	SO2 lbs/hp-hr
Diesel Crane	3.24
Diesel Crane, Hydraulic	0.46
Diesel Bull Dozer	0.69
Diesel Excavator	4.35
Diesel Dump Truck	7.26
Diesel Road Compactor	0.78
Water Truck	0.6
Generator Set	4.05
TOTALS	21.43

Emissions Formula: $(\text{lbs/hp-hr}) \times (\text{hp}) \times (\text{hr}) \times (\text{days}) \times (\# \text{ of units}) / 2000 = \text{Tons/yr}$

NOTE: The listed equipment is the type and number of equipment that may typically be used at a pump station construction project.