

Draft Environmental Assessment

**Mitigation Proposals for Violet, DRAVO
Sewer Pump Stations, and Munster
Wastewater Treatment Plant in St. Bernard
Parish, Louisiana**

St. Bernard, Louisiana
HMGP 1603-087-0012
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ACRONYMS AND ABBREVIATIONS

ABFE	Advisory Base Flood Elevation
ACHP	Advisory Council on Historic Preservation
BFE	Base Flood Elevation
BMP	Best Management Practices
CAA	Clean Air Act
CBRS	Coastal Barrier Resource System
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CUP	Coastal Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibels
DFIRM	Digital Flood Insurance Rate Map
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FPPA	Farm Protection Policy Act
GCR	General Conformity Rule
GNO	Greater New Orleans
gpm	Gallons per Minute
HMGP	Hazard Mitigation Grant Program
HSDRRS	Hurricane Storm Damage Risk Reduction System
LA	Louisiana
LAC	Louisiana Administrative Code
LADOTD	Louisiana Department of Transportation and Development
LBBLD	Lake Borgne Basin Levee District
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LPDES	Louisiana Pollutant Discharge Elimination System
MBTA	Migratory Bird Treaty Act
MGD	Million Gallons per Day
mph	Miles per Hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act

NOD-22	New Orleans District General Permit 22
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
PS	Pump Station
RAS	Return Activated Sludge
RHA	River and Harbors Act
R.S.	Louisiana Revised Statutes
RCRA	Resource Conservation and Recovery Act
SBPG	St. Bernard Parish Government
SHPO	State Historic Preservation Office/Officer
SO ₂	Sulfur Dioxide
SONRIS	Strategic Online Natural Resources Information System
THPO	Tribal Historic Preservation Office
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WWTP	Waste Water Treatment Plant

1.0 INTRODUCTION

1.1 Project Authority

Hurricane Katrina, a Category 4 hurricane with a storm surge above normal high tide levels, moved across the Louisiana, Mississippi, and Alabama gulf coasts on August 29, 2005. Maximum sustained winds at landfall were estimated at 140 miles per hour (mph). President George W. Bush signed a disaster declaration (FEMA-1603-DR-LA) for the state of Louisiana on August 29, 2005, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of Louisiana. FEMA is administering this disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. Section 404 of the Stafford Act authorizes FEMA's Hazard Mitigation Program (HMGP) to provide funds to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

In accordance with the 44 Code of Federal Regulation (CFR) for FEMA, Subpart B – Agency Implementing Procedures, Section 10.9, an environmental assessment (EA) was prepared pursuant to Section 102 of the National Environmental Policy Act of 1969 (NEPA), as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508). This EA evaluates St. Bernard Parish's, the applicant, proposal to design and construct the Retrofit of the Violet and DRAVO Sewer Pump Stations and upgrade the Munster Waste Water Treatment Plant in St. Bernard Parish, Louisiana to determine if the project would have the potential for significant adverse effects on the quality of the human and natural environment. The results of this EA would be used to make a decision whether to initiate preparation of an Environmental Impact Statement (EIS) or to prepare a Finding of No Significant Impact (FONSI).

In accordance with 40 CFR 1506.5 (a & b), FEMA permitted St. Bernard Parish to prepare an environmental assessment for the Mitigation Proposal for the Violet and DRAVO Sewer Pump Stations and the Munster Waste Water Treatment Plant in St. Bernard Parish. FEMA assisted the applicant by outlining the types of information required. FEMA has made its own evaluation of the environmental issues associated with this mitigation proposal and take responsibility for the scope and content of this environmental assessment.

1.2 Project Location

St. Bernard Parish is part of the New Orleans-Metairie, LA metropolitan area. The city of Chalmette serves as the Parish seat. The Parish is approximately 2,158 square miles, of which 378 square miles (approximately 12%) is land and the remainder is open water 1,781 square miles (83%). St. Bernard Parish is bordered to the east by Gulf of Mexico, to the north by Lake Borgne, and southwest by Mississippi River. St. Bernard Parish has approximately 35,897 residents according to 2010 census figures. St. Bernard is located southeast of New Orleans, and approximately 105 miles upriver from the Gulf of Mexico.

Location of each of the three (3) major pump stations and sewer plants affected by ancillary flooding are as follows:

<u>Site</u>	<u>Latitude</u>	<u>Longitude</u>
Munster Plant	29.945257	-89.928696
DRAVO Pump Station	29.964653	-89.975302
Violet Pump Station	29.916373	-89.891371

The Violet sewer system lies within the boundary defined by the area between E. St. Bernard Hwy., E. Judge Perez Dr., Maureen Lane, and C Street. This area is served by a system of gravity sewers and pump stations that collect sewage and transport it to the existing Pump Station V1-05 (PS V1-05) located on Highland Dr. near E. St. Bernard Hwy.

The north section of the project area is served by various pump stations and gravity sewers which all direct flow to Pump Station V1-06 (PS V1-06), which pumps sewage to an existing 8-inch gravity sewer in E. St. Bernard Hwy. The gravity sewer transports the sewage to PS V1-05.

PS V1-05 is the main pump station for the area and transports sewage through a force main that terminates at the Violet WWTP pump station located at the former Violet WWTP site situated east of Mel Drive, south of Guerra Drive and west of the Forty Arpent Canal. The DRAVO Pump Station is bounded by Jean Lafitte Parkway, Benjamin Street and the Florida Walk Canal. The Munster Waste Water Treatment Plant (WWTP) is bounded by Munster Boulevard, Florida Avenue, Bartolo Street and East Genie Street.

2.0 PURPOSE AND NEED

The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

In the aftermath of major hurricanes and storms, the St. Bernard Parish sewer disposal system often suffers from ancillary flooding. Sewer system disruptions caused by major weather events can potentially lead to sewage to back-up into streets and neighborhoods, which significantly increase the health and safety risks to the parish's population.

St. Bernard Parish needs to develop a solution that would minimize ancillary flooding and decrease the frequency of disruptions to the sewage disposal system during and after storm events. There is a need to mitigate the risks associated with sewage surcharge and protect the public health and safety of parish residents during and after a natural disaster.

3.0 ALTERNATIVES

3.1 Alternative 1 – No Action

Under this alternative, St. Bernard Parish Government (SBPG) would not improve pump stations at the Violet, DRAVO and Munster sites. Consequently, sewer services provided via the Violet, DRAVO and Munster sites would continue to be disrupted by ancillary flooding during major weather events. These disruptions would continue to threaten the health and safety of parish residents as sewerage and waste water would be more likely to back up into streets and neighborhoods.

3.2 Alternative 2 – Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP (Proposed Action)

This alternative would design and construct the SBPG Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP. The structures would provide good protection and operational capability for the essential sewer facilities required to conduct the critical operations of Violet and DRAVO Sewer Pump Stations and the Munster WWTP during and after a hurricane or other extreme wind event.

Table 1: Project Site Locations

<u>Site</u>	<u>Latitude</u>	<u>Longitude</u>
Violet Pump Station	29.916373	-89.891371
DRAVO Pump Station	29.964653	-89.975302
Munster Plant	29.945257	-89.928696

This proposed project would alleviate surcharge conditions in several areas of the Violet sewer system within the boundary defined by the area between E. St. Bernard Hwy., E. Judge Perez Dr., Maureen Lane, and C Street. This area is served by a system of gravity sewers and pump stations that collect sewage and transport it to the existing Pump Station V1-05 (PS V1-05) located on Highland Dr. near E. St. Bernard Hwy.

The north section of the project area is served by various pump stations and gravity sewers which all direct flow to Pump Station V1-06 (PS V1-06). PS V1-06 pumps sewage to an existing eight (8) inch gravity sewer in E. St. Bernard Hwy. The gravity sewer transports the sewage to PS V1-05. The south section of the project area is served by various pump stations and gravity sewers which direct flow to Pump Station V1-17 (PS V1-17). PS V1-17 pumps sewage to a gravity sewer that flows north toward PS V1-05. This gravity sewer has a section of pipe that is smaller than the upstream sections and serves as a bottleneck for flow to reach PS V1-05.

PS V1-05 is the main pump station for the area and transports sewage through a force main that terminates at the Violet WWTP pump station located at the former Violet WWTP site on west of the Forty Arpent Canal.

A hydraulic model was prepared to analyze the existing sewer system within the project area to determine the dry and wet weather performance of the system. It was determined through the model that the upgrades would be needed to Pump Station V1-05, V1-06, and V1-17. It was also

determined that a new regional Pump Station V1-20 would be required to transport flow from the project area to the Violet WWTP pump station.

For the DRAVO collection system area, the proposed improvements would consist of increasing the capacity of the DRAVO Pump Station sufficient to eliminate sewage backups during wet weather events. The improvements would consist of increasing the capacity of the DRAVO Pump Station by 5 MGD from 15 MGD to 20 MGD. With the increase in capacity, it would also be necessary to add a secondary clarifier at the Munster WWTP to treat additional peak flows conveyed.

3.2.1 Hydraulic Model

The hydraulic model for the sewer system is based on the actual layout of the sewer system in the project area. It also includes the area between E. Judge Perez Drive and the Forty Arpent Canal. This other area was included in the model because it has an effect on the overall operation of the Violet WWTP pump station which is within the scope of the project.

The model includes the existing nineteen (19) pump stations within the study area and the gravity sewers that connect them. The geometric configuration of the model was constructed utilizing GIS data provided by St. Bernard Parish. This data was utilized to create the sewer manhole, gravity main, pump station and force main network within the model software.

Review of the model connectivity enabled the engineers to determine the general flow pattern of the gravity main network by inspection based on the review of the elevations of manhole inverts throughout the system. Once the general flow patterns of the gravity main network had been determined, engineers were able to eliminate all of the unnecessary nodes and gravity mains from the model, which in turn reduced the potential error in the model's final calculations. The areas of the system that were identified as problem areas by St. Bernard Parish staff were not removed from the model network.

After the base network connectivity was completed, engineers input the data for the various pumps stations including the number of pumps and pump curve data to enable the model to react as the existing system would during simulations.

Following the creation of the model, engineers completed several model runs to determine the operating characteristics of the sewer system. These runs included the following:

- 24-hour steady state simulations of the system, with an inflow at each station equal to the station's design capacity.
- 24-hour steady state stimulation of the system, where the inflow rates at each station were equal to the inflow rates determined by service area population estimation with a peaking factor to simulate operation during wet weather.

These model runs were used to simulate the normal dry weather and worst case wet weather operational results from the existing system.

The results of the model showed that PS V1-05 and PS V1-06 were operating under surcharged conditions, which caused manholes along E. St. Bernard Highway to overflow. The model also showed that the manholes downstream of PS V1-07 also overflowed. This result corresponded with the actual results witnessed by St. Bernard personnel during rain events.

The existing pumping capacities of PS V1-05, PS V1-06, and PS V1-17 are shown below:

Table 2: Pumping Capacity

Pump Station	Pumping Capacity
V1-05	1,800 gpm
V1-06	530 gpm
V1-17	850 gpm

The model results showed that the flow capacities for PS V1-05 and PS V1-06 need to be increased. The design flow for PS V1-05 needs to be increased to 2,605 gpm and the design flow for PS V1-06 needs to be increased to 1,740 gpm.

The pumping capacity of PS V1-17 does not need to be increased, however the pump station is too shallow to accommodate the flow from upstream and the discharge from this pump station causes surcharging problems downstream. A new deeper pump station with a force main to the new PS V1-20 would solve the problems in the southern part of the project area.

3.2.2 Proposed General Scope of Work

The proposed scope of work would be as follows:

- 1) Construction of a new force main from PS V1-06 to PS V1-05 directly connecting the two stations to reduce hydraulic loading on the gravity sewer in E. St. Bernard Hwy.
- 2) Increase the pumping and storage capacity at lift station V1-06 to reduce surcharging of the gravity sewer upstream and allow for wet weather flow to be pumped to PS V1-05.
- 3) Construct a new regional PS V1-20 central to the project area to collect flow from PS V1-05, PS V1-17 and the gravity system to the south. Utilize the existing Violet WWTP outfall piping as a force main to transfer sewage to the Violet WWTP pump station and then to the Munster WWTP.
- 4) Construct a new force main from PS V1-05 to PS V1-20.
- 5) Increase the pumping and storage capacity at lift station V1-05 to reduce surcharging of the gravity sewer upstream and allow for wet weather flow to be pumped to PS V1-20.

- 6) Construction of a new force main from PS V1-17 to the new regional lift station V1-20 directing connecting the two (2) stations and reducing hydraulic loads on the gravity sewer system serving the southern part of the project area.
- 7) Reconstruction of PS V1-17 to deepen the wet well and allow the pump station to adequately cycle and alleviated the surcharged conditions of the gravity system upstream of PS V1-17.
- 8) Modify the existing 18 inch force main from the Violet WWTP to the river to connect the new PS V1-20 and the Violet WWTP pump station. If this existing force main is not usable, a new liner would be installed on the interior and the existing routing used.
- 9) Minor modifications at the Violet WWTP to help facilitate operations.
- 10) Install additional pump at the DRAVO Pump Station to increase pumping capacity.
- 11) Install additional clarifier and equipment at the Munster WWTP.

3.2.3 – Pump Station V1-06

The proposed solution at PS V1-06, (29.917213, -89.913201) would be to upgrade the station from 530 gallons per minute (gpm) to 1,740 gpm. This is an increase in pumping of approximately 1,210 gpm or 228% from the existing capacity. This would require the installation of larger pumps, modification to the electrical supply, and installation of additional wet well capacity. The current design utilizes the existing wet well and adds a new wet well to increase the storage capacity of the pump station. For any pump station, the start per hour for the pump motors would need to be limited.

This limiting is accomplished by having sufficient storage in the wet well to set the cycle time. The cycle time starts when the pump stops and the wet well is at its lowest level. Since sewage flows into the wet well continuously once the pump stops (the beginning of the cycle) the level in the wet well rises. Once the level rises to a set point, the pump turns on the pumps down the wet well. The cycle is defined as the water rising from the lowest point in the wet well to the point when the pump is activated and pumps the wet well down to the pump off elevation. The cycle consists of the time it takes the wet well to rise plus the time it takes the pump to lower the water elevation to the point where the pump shuts off. As a general rule, the types of pumps in this project would be limited to six (6) starts per hour, making the minimum design cycle time equal to or greater than ten (10) minutes. The new pumps that would be installed in PS V1-06 would be much larger than the existing pumps. They would pump the wet well down too rapidly and as a result make the motors on the pumps start too often. This would damage the motors and require repeated replacement.

The volume of the proposed wet well and the joining pipe would be added to the volume of the existing wet well to provide the necessary volume to meet the required minimum cycle time. PS V1-06 would be a duplex (2 pump) station.

A new 10-inch force main would be installed from PS V1-06 to PS V1-05. The new force main would cross from the west to east side of E. St. Bernard Hwy. and travel south along the edge of

the roadway right-of-way to near the location of the new PS V1-05 where it would cross over E. St. Bernard Hwy to the new location of PS V1-05. The new force main would be installed by directional drilling.

3.2.4 – Pump Station V1-05

The proposed solution at PS V1-05, (29.908785, -89.904527), would be to increase the pumping capacity to reduce surcharging of the gravity sewers upstream. Also the increased capacity from PS V1-06 adds more flow to PS V1-05. This increased pumping capacity was greater than the existing force main from PS V1-05 can accommodate. A new sewer force main would be installed from PS V1-05 to the new regional PS V1-20 which would become the new regional pump station for the study area. The new force main would be installed by directional drilling.

The increased pumping capacity at PS V1-05 would require increased wet well volume. The current location of PS V1-05 is limited. Space for expansion is not readily available. St. Bernard Parish has acquired a property on E. St. Bernard Hwy. that was previously the site of a residence, but is now vacant land. The new site would be only 200 feet from the present location and would allow for the expansion with minimal effect to the connecting gravity system.

PS V1-05 pumping capacity would be increased from 1,800 gpm to 2,605 gpm to allow for the increase from PS V1-06 and the wet weather flow from the gravity systems directly tributary to PS V1-06. The new pump station would be sized to accommodate the new larger pumps and the needed storage volume to meet the required minimum cycle time. PS V1-05 would be triplex (3 pump) station.

A new force main would be installed from PS V1-05 to PS V1-20 at the end of Allo Mumphrey Dr. along E. St. Bernard Hwy. The new force main would be installed by directional drilling. The force main route would be from the new PS V1-05 location along the east side of E. St. Bernard Hwy. to Allo Mumphrey Dr. At Allo Mumphrey Drive, a section of an existing 18 inch force main would be used to transport flow to the new pump station. Using the existing pipe would save the cost of installing new piping on Allo Mumphrey Dr. to PS V1-20.

3.2.5 – Pump Station V1-17

The existing PS V1-17, (29.906947, -89.901273), is too shallow as it now exists. This causes surcharging problems upstream of the pump station in the gravity system in the southern part of the project area. A new pump station would be constructed that is of sufficient depth to allow for proper operation of the pump station.

The flow from PS V1-17 now empties into a gravity sewer in 3rd St. This gravity sewer makes its way to PS V1-05 and is overloaded during wet weather. The gravity sewer has a constriction where an 18 inch pipe connects to a 12 inch pipe causing surcharging of the gravity system to the south of Jamie Ct. The new eight (8) inch sewage force main would be installed from PS V1-17 directly to the new PS V1-20. The new force main would be installed by directional drilling. This would take the sewage from the area south of Repose St. and direct it away from the affected

gravity sewer greatly reducing the load during wet weather and thereby the surcharging in the system.

The capacity of PS V1-17 would remain the same, but the pump station would be relocated and made deeper to improve the function and relieve surcharging upstream of the pump station. The existing pump station would be addressed according to the demolition plans explained on sheet number 17-02 of the construction plans in Appendix C. The new PS V1-17 would be constructed as a duplex (2 pumps) station located at Third Street and Repose Street. A new 8 inch sewer would be installed from the relocated PS V1-17 north along 3rd St. to Allo Mumphrey Dr. and then to the new PS V1-20.

3.2.6 – Pump Station V1-20

PS V1-20 would be the new regional sewage pump station for the project area. The location of PS V1-20 would take advantage of an existing 18 inch concrete pressure pipe that was once used to transport treated wastewater from the Violet WWTP to the Mississippi River. The pipe is located in the right of way of Allo Mumphrey drive and extends to the Violet WWTP. PS V1-20 would be located within the existing right of way at the east end of Allow Mumphrey Dr. beyond the location of the last residence on that street. The proposed location is an undeveloped site, in between Highway 46 and Highway 39, which is located within a residential area. PS V1-20 would have a capacity of 4,500 gpm and would be able to transport the excess wet weather flow to the existing Violet WWTP pump station. PS1-20 would be connected to the existing eighteen (18) inch force main. The east end of this existing force main would be connected to the wet well of the Violet WWTP pump station.

PS V1-20 is sized to accommodate the flow from PS V1-05, PS V1-17 and all other tributary gravity sewers that previously flowed to PS V1-05. PS V1-20 would be a triplex (3 pump) station.

3.2.7 Site 1 – Violet WWTP Pump Station

The existing Violet WWTP pump station, (29.916373, -89.891371), has sufficient capacity to accommodate the flow from the new PS V1-20 and the existing sewer system to the east of E. Judge Perez Dr. The only modification to this pump station would be the replacement of existing knife gate valves.

3.2.8 Site 2 – DRAVO Pump Station

The DRAVO transfer pump station was originally designed for four pumps to process 20 million gallons per day. Due to Parish funding constraints, DRAVO only has a capacity of three pumps that process 15 million gallons per day. In order to increase the capacity of the DRAVO Pump Station, (29.965095, -89.975960), one (1) additional 250 HP pump and Variable Frequency Drive would be provided to increase the peak flow capacity from 15 million gallons per day to 20 million gallons per day. The existing force main would be used to convey the flow to the Munster WWTP.

3.2.9 Site 3 – Munster WWTP

In order to handle additional flows to the Munster WWTP, (29.945257, -89.928696), it would be necessary to add a secondary clarifier to the north of existing secondary clarifier No.4 . This would consist of adding an additional Return Activated Sludge (RAS) pump, additional effluent pump and associated improvements. The location of Secondary Clarifier No. 5 would be centered at 29.9470667, -89.9278278 and have a diameter of approximately 100 feet. The addition of the clarifier is required to handle the additional flows pumped to Munster and the benefits associated with pumping this additional flow.

The secondary clarifier will be located in an area that has been extensively and comprehensively disturbed by past activities. The original plant construction likely involved excavation in the area of the proposed clarifier. The expansion of the plant in the 1980's involved construction of 120 foot diameter trickling filters in the current location of the proposed clarifier. This required extensive excavation of the entire location and the placement of several hundred piles to approximate depths of 75 feet. In 2000, the areas adjacent to the trickling filters were excavated to depths of up to 20 feet to facilitate construction of a solids contact chamber. In 2008, the trickling filters were demolished to facilitate the clarifier construction, again requiring extensive excavation at the proposed location to identify the location of the existing piles. In 2012, a major expansion was completed which again disturbed the proposed location.

4.0 AFFECTED ENVIRONMENT AND IMPACTS

This section analyzes the surrounding environment for potential impacts of the Proposed Action Alternative and the No-Action Alternative. Where potential impacts exist, conditions or mitigation measures are used to avoid, minimize, or offset these impacts.

4.1 PHYSICAL RESOURCES

4.1.1 Geology, Soils, and Seismicity

The Farmland Protection Policy Act (FPPA: P.L. 97-98, Sections 1539-1549; 7 U.S.C. 4201, *et seq.*) was enacted in 1981 and is intended to minimize the impact federal actions may have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that, to the extent possible, federal programs and policies are administered to be compatible with state and local farmland protection policies and programs. To implement the FPPA, federal agencies are required to develop and review their policies and procedures every two (2) years. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

The Natural Resources Conservation Service (NRCS) is responsible for protecting significant agricultural lands from irreversible conversions that result in the loss of essential food or environment sources. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Prime farmland is characterized as land with the best physical and chemical characteristics for production of food, feed, forage, fiber and oilseed crops (United States Department of Agriculture, USDA 2013). Farmland subject to

FPPA requirements does not have to be currently used for cropland; it can be forest land, pastureland, cropland, or other land, but not water or built-up land.

The Louisiana gulf coastal region is located along the Gulf-margin Normal Faults, a fault belt with very low historical seismicity; the stress field and seismogenic potential of the underlying crust are unknown; and, therefore, the ability of the fault belt to generate significant seismic ruptures that could cause damaging ground motion is unclear. According to the United States Geological Survey (USGS) National Seismic Hazard Maps, the Louisiana Gulf Coast, including the proposed project area, is located in the lowest hazard probability area for seismicity (USGS, 2012).

Alternative 1- No Action: The No Action Alternative would involve no undertaking; therefore, no additional impacts would be expected.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: The Proposed Action is located on the geologic formation identified as Alluvium that originated from the Mississippi River. The alluvium consists of sandy and gravelly channel deposits mantled by sandy to muddy natural levee deposits, with organic-rich muddy back swamp deposits in between; coastal marsh deposits are chiefly mud and organic matter (Louisiana Geological Survey, 2008).

According to documentation from the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Survey, this area is composed of 6.5% Canebrake Silty Clay Loam, and 93.5% Canebrake and Schriever soils, frequently flooded. Only the Canebrake soil series is classified as prime farmland soils (USDA/NRCS, 2012). The NRCS has determined in a consultation letter dated December 20, 2014 that the proposed project construction areas are located within urban areas and therefore, is exempt from the rules and regulations of the Farm Protection Policy Act (FPPA) (See Appendix B).

4.1.2 Air Quality

The Clean Air Act (CAA) of 1963, as amended, provides for federal protection of air quality by regulating air pollutant sources and setting emissions standards for certain air pollutants. Under CAA, states adopt ambient air quality standards in order to protect the public from potentially harmful amounts of pollutants. The United States Environmental Protection Agency (USEPA) establishes primary and secondary air quality standards. Primary air quality standards protect the public health, including the health of “sensitive populations, such as people with asthma, children, and older adults.” Secondary air quality standards protect the public welfare by promoting ecosystems health, and preventing decreased visibility and damage to crops and buildings. The USEPA has set National Ambient Air Quality Standards (NAAQS) for the following six criteria pollutants: ozone (O₃), particulate matter (PM_{2.5}, PM₁₀), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and lead (Pb).

The USEPA has designated specific areas as NAAQS attainment or non-attainment areas. Non-attainment areas are any areas that do not meet the quality standard for a pollutant, while

attainment areas do meet ambient air quality standards. St. Bernard Parish is a non-attainment parish with the NAAQS for SO₂ (EPA, 2014). The General Conformity Rule (GCR) currently applies to all Federal actions that are taken in designated non-attainment or maintenance areas, with the following exceptions: (1) actions covered by the transportation conformity rule; (2) actions with associated emissions clearly at or below specified *de minimis* levels; (3) actions listed as exempt in the rule; or, (4) actions covered by a Presumed-to-Conform approved list (40 CFR § 93.153(c)). When the total direct and indirect emissions from the project or action are clearly below the *de minimis* levels, the project or action would not be subject to a conformity determination, and may proceed [40 CFR §93.153(b) and (c)]. If, on the other hand, emissions are equal to or exceed 40 CFR. §93.153 or Louisiana Administrative Code (LAC) 33:III.1405.B *de minimis* levels, a general conformity determination must be made by the Federal agency involved. LDEQ requests a “general conformity applicability determination” in order to demonstrate that a formal general conformity determination is not required. Project-associated emissions are quantified using (1) direct emissions, and (2) indirect emissions within the scope of the Federal agency’s authority. *See* 40 CFR § 93.158(a).

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no long or short term impacts to air quality would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: Minor impacts to air quality would be anticipated from movement of heavy equipment during construction activities. The effects would be localized and of short duration. The applicant initiated consultation with LDEQ on December 3, 2013; LEDQ responded to the applicant on March 3, 2014. Per LDEQ the applicant must submit a conformity determination for emissions of SO₂. FEMA-EHP conducted the required calculations and initiated consultation with LDEQ on May 9, 2015, to date no comments has been received; once comments are received FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency. Compliance with the CAA NAAQS has been fully coordinated with the Air Quality Section of the LDEQ. An air quality determination for emissions from the proposed Federal action was made using methods described in Louisiana Administrative Code (LAC) 33:III.1411. Therefore, the analysis was based upon direct emissions for estimated construction hours. FEMA’s air quality analysis for the proposed project resulted in a finding of anticipated SO₂ emissions of no more than 0.0104321 tons, while the *de minimis* threshold is 100 tons/yr. (See Appendix B). This project meets exception two (2) above and therefore no further action is required. The contractor would be responsible for keeping all excavated areas periodically sprayed with water, all equipment maintained in good working order, and all construction vehicles would be limited to 15 mph to minimize pollution/fugitive dust.

4.2 WATER RESOURCES

4.2.1 Wetlands

The United States Army Corps Engineers (USACE) regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to Section 404 of the Clean Water

Act (CWA). Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The USACE also regulates the building of structures in waters of the U.S. pursuant to the Rivers and Harbors Act (RHA).

Executive Order (EO) 11990, Protection of Wetlands, directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands for federally funded projects. FEMA regulations for complying with EO 11990 are found at 44 CFR Part 9, Floodplain Management and Protection of Wetlands.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and therefore, no long or short term impacts to wetlands would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: The U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) map did not identify wetlands within the proposed project area that could be adversely affected by the project. For the construction of the SBPG Retrofit of Violet and DRAVO Sewer Pump Stations, the USACE correspondence dated January 31, 2014, stated "...we have determined that this property is possibly in a wetland subject to Corps' Jurisdiction. A Department of the Army permit under Section 404 of the Clean Water Act may be required for the deposition or redistribution of dredged or fill material on this site." A wetland delineation/determination would be required (See Appendix B). SBPG submitted a request to the USACE on April 24, 2015 to provide a wetland determination for this project (See Appendix B). FEMA-EHP initiated consultation with USACE on May 30, 2015, the response period ends on June 30, 2015 at which time FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency. A permit is pending the USACE's completion of the requested determination. All applicable USACE permits and authorizations must be obtained prior to the start of construction. Failure to do so will jeopardize federal funding.

4.2.2 Water Quality

The Clean Water Act (CWA), as amended, is the primary federal law in the United States regulating water pollution (P.L. 92-500, 33 U.S.C. §1251). The CWA regulates water quality of all discharges into "waters of the United States." Both wetlands and "dry washes" (channels that carry intermittent or seasonal flow) are considered "waters of the United States." Administered by EPA, the CWA protects and restores water quality using both water quality standards and technology-based effluent limitations. The EPA publishes surface water quality standards and toxic pollutant criteria in 40 CFR, Part 131.

The CWA also established the National Pollution Discharge Elimination System (NPDES) permitting program (Section 402) to regulate and enforce discharges into waters of the U.S. The NPDES permit program focuses on point-source outfalls associated with industrial wastewater and municipal sewage discharges. Congress has delegated to many states the responsibility to protect and manage water quality within their legal boundaries by establishing water quality

standards and identifying waters not meeting these standards. States are also responsible for managing the NPDES system.

Under the Louisiana Water Control Law, Louisiana controls and regulates the discharged waste materials, pollutants, and other substances into Louisiana waters in order to properly protect and maintain the state's waters. The LDEQ is the state agency responsible for administering the NPDES Program known as Louisiana Pollutant Discharge Elimination System (LPDES).

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no long or short term impacts water quality would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: In a letter dated August 13, 2009, the LDEQ has indicated that a Louisiana Water Quality Certification would not be required because this project has been issued a NOD-22 (See Appendix B). The applicant submitted a permit application to USACE. The application was submitted on April 24, 2015. FEMA-EHP initiated consultation with USACE on May 30, 2015, the response period ends on June 30, 2015 at which time FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency.

However, to minimize indirect impacts (soil erosion, sedimentation, dust and other construction-related disturbances) to the areas surrounding the proposed action, the following best management practices (BMP's) should be included into the daily operations of construction activities: silt screens, barriers (e.g., hay bales), berms/dikes, and/or fences to be placed where and as needed. Fencing should be placed for marking staging areas to store construction equipment and supplies as well as conduct maintenance/repair operations. All precautions should be observed to control nonpoint source pollution from construction activities. All conditions and best management practices must be followed.

The applicant is required to obtain a permit from USACE and comply with all conditions of the permit.

The EPA stated in their response letter dated December 20, 2013 that “the project does not lie within the boundaries of a designated sole source aquifer and is thus not eligible for review under the Sole Source Aquifer program” (See Appendix B). FEMA-EHP initiated consultation with EPA on May 30, 2015, the response period ends on June 30, 2015 at which time FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency. According to the Louisiana Department of Natural Resources (LDNR) Strategic Online Natural Resources Information System (SONRIS) database, there are no groundwater areas of concern in the project vicinity. According to the Louisiana Department of Transportation and Development (LADOTD) database, accessed via SONRIS, no recorded drinking water wells are located within the project vicinity; however, there may be unrecorded drinking wells near the project work areas (SONRIS, 2013).

FEMA-EHP initiated coordination with LDEQ on May 30, 2015. LDEQ The response period

ends on June 30, 2015 at which time FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency (See Appendix B). However, to minimize indirect impacts (soil erosion, sedimentation, dust and other construction-related disturbances) to the areas surrounding the proposed action, the following best management practices should be included into the daily operations of construction activities: silt screens, barriers (e.g., hay bales), berms/dikes, and/or fences to be placed where and as needed. Fencing should be placed for marking staging areas to store construction equipment and supplies as well as conduct maintenance/repair operations. All precautions should be observed to control nonpoint source pollution from construction activities. Fencing should be placed for marking staging areas to store construction equipment and supplies as well as conduct maintenance/repair operations. Hazardous materials associated with construction equipment must be handled according to local, state, and federal regulations in order to minimize the risk of spills and leaks and subsequent impacts to surface and groundwater resources.

The LDEQ may require stormwater general permits for construction areas equal to or greater than one (1) acre. It is required that the LDEQ Water Permit Division be contacted to determine whether the proposed improvements require one (1) of these permits. All precaution will be observed to control nonpoint source pollution from construction activities. The contractor must observe all precautions to protect the groundwater of the region. The LDNR Office of Conservation should be contacted if any unregistered drinking water wells are encountered during construction work.

All work associated with project that is conducted on potable water systems must comply with applicable sections of the federal Safe Drinking Water Act and state regulations under Louisiana Title 51 Part XII (otherwise known as the Louisiana Public Health-Sanitary code and related State Plumbing code).

4.2.3 Hydrology & Floodplains

Per the H&H study, the SBPG Department of Water and Sewer operate an extensive sewer system which serves the industrial, commercial, and residential concerns throughout the parish. The current system consists of aging gravity and force main systems, including 92 lift stations. In addition to deterioration due to the age of the system, heavy damage was sustained during Hurricane Katrina in 2005 and the system has since been the subject of extensive repairs in an attempt to restore it to its pre-storm conditions.

The parish-operated sewerage system in the town of Violet, LA contains a combination of gravity sewer mains, sewer force mains, and nineteen(19) sewerage “lift” stations in order to transport sewage from the community to the old Violet WWTP, which ultimately transfers sewage to the Munster WWTP as part of a regional system. This existing sewerage system during wet weather events, for all the reasons mentioned above, is operating under surcharged conditions.

During dry weather events, i.e. normal/average flow conditions, the current system performs without any surcharge or sewerage discharge. However, during wet weather events, i.e. peak

flow conditions, problems arise within the existing system. The present problems reported during wet weather events generally include the following:

- Surcharging of and sewer discharge in the gravity sewer along E. St. Bernard Highway That conveys flow from lift station V1-06 to lift station V1-05 [two (2) of the major collection and transmission stations];
- Surcharging of and sewer discharge at the wet well in lift station V1-05;
- Surcharging of and sewer discharge in the gravity sewer downstream of lift station V1-17 in Sewer Sub-Basin 3 along 3rd Street;
- Surcharging of and sewer discharge at the wet well of lift station V1-17 and its respective upstream gravity mains.

See Appendix D for the entire H&H study.

Executive Order 11988 (Floodplain Management) requires federal agencies to avoid direct or indirect support or development within the 100-year floodplain whenever there is a practicable alternative. FEMA's regulations for complying with EO 11988 are found at 44 CFR Part 9, Floodplain Management and Protection of Wetlands. FEMA uses Flood Insurance Rate Maps (FIRMs) to identify the regulatory 100-year floodplain for the National Flood Insurance Program (NFIP). St. Bernard Parish enrolled in the NFIP on March 13, 1970.

In July 2005, FEMA initiated a series of flood insurance studies for many of the Louisiana coastal parishes as part of the Flood Map Modernization effort through FEMA's National Flood Insurance Program (NFIP). These studies were necessary because the flood hazard and risk information shown on many FIRMs was developed during the 1970s, and the physical terrain had changed significantly, such as major loss of wetland areas. After hurricanes Katrina and Rita, FEMA expanded the scope of work to include all of coastal Louisiana. The magnitude of the impacts of hurricanes Katrina and Rita reinforced the urgency to obtain additional flood recovery data for the coastal zones of Louisiana. More detailed analysis was possible because new data obtained after the hurricanes included information on levees and levee systems, new high-water marks, and new hurricane parameters (FEMA RiskMap6.com, 2013).

During an initial post-hurricane analysis, FEMA determined that the "100-Year" or 1-percent chance storm flood elevations on FIRMs for many Louisiana communities, referred to as Base Flood Elevations (BFEs), were too low. FEMA created recovery maps showing the extent and magnitude of storm surge damage after hurricanes Katrina and Rita, as well as information on other storms over the past 25 years (FEMA RiskMap6.com, 2013). The 2006 advisory flood data shown on the recovery maps for the Louisiana-declared disaster areas show high-water marks surveyed after the storm; flood limits developed from these surveyed points; and Advisory Base Flood Elevations, or Advisory Base Flood Elevation (ABFEs). The recovery maps and other advisory data were developed to assist parish officials, homeowners, business owners, and other affected citizens with their recovery and rebuilding efforts (FEMA RiskMap6.com, 2013).

Updated preliminary flood hazard maps from an intensive five-year mapping project guided by FEMA are now provided to all Louisiana coastal parishes. The maps released in early 2008, known as Preliminary Digital Flood Insurance Rate Maps (DFIRMs), are based on the most

technically advanced flood insurance studies ever performed for Louisiana, followed by multiple levels of review. The DFIRMs provide communities with a more scientific approach to economic development, hazard mitigation planning, emergency response and post-flood recovery (FEMA RiskMap6.com, 2013).

The USACE recently completed the Hurricane and Storm Damage Risk Reduction System (HSDRRS) for the Greater New Orleans (GNO) area (Miller, 2011). This 350-mile system of levees, floodwalls, surge barriers, and pump stations would reduce the flood risk associated with a storm event. In September of 2011, the USACE provided FEMA with assurances that the HSDRRS is capable of defending against a storm surge with a one percent (1%) annual chance event of occurring in any given year (Miller, 2011). The areas protected include portions of St. Bernard, St. Charles, Jefferson, Orleans, and Plaquemines parishes. FEMA has now revised the preliminary DFIRMs within the HSDRRS to incorporate the reduced flood risk associated with the system improvements.

The 2008 Preliminary DFIRMs do not consider the completion of the HSDRRS. In many areas, the flood risk has been significantly reduced due to heightened protection. To ensure that the best available data was used when reviewing and approving grant applications within the HSDRRS, FEMA would re-examine individual grant reconstruction projects using sound engineering data and judgment. The case-by-case review may indicate that the source of best available flood risk data for a reconstruction project is preliminary DFIRMs, ABFEs, or other relevant sound engineering data. No project should be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the National Flood Insurance Program (Miller, 2011).

On November 9, 2012, revised Preliminary DFIRMS were made available to the Proposed Project area in St. Bernard Parish and are now considered best available data for purposes of required elevations for reconstruction projects.

In compliance with FEMA policy implementing EO 11988, Floodplain Management, the proposed project was reviewed for possible impacts associated with occupancy or modification to a floodplain. To comply with EO 11988, Floodplain Management, FEMA is required to follow the procedure outlined in 44 CFR Part 9 to assure that alternatives to the action have been considered. This procedure is known as the EO 11988 - Floodplain Management Eight-Step Decision Making Process. In accordance with EO 11988, FEMA's Eight-Step Planning Process for Floodplains was completed to identify, minimize, and mitigate floodplain impacts (Appendix E).

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no long or short term impacts to the floodplain would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: Following the creation of the hydraulic model, engineers completed several model runs to determine the operating characteristics of the sewer system. These runs included the following:

- 24-hour steady state simulations of the system, with an inflow at each station equal to the stations design capacity.
- 24-hour steady state stimulation of the system, where the inflow rates at each station were equal to the inflow rates determined by service area population estimation with a peaking factor to simulate operation during wet weather.

These model runs were used to simulate the normal dry weather and worst case wet weather operational results from the existing system. The results of the model showed that PS V1-05 and PS V1-06 were operating under surcharged conditions, which caused manholes along E. St. Bernard Highway to overflow. The model also showed that the manholes downstream of PS V1-07 also overflowed. This result corresponded with the actual results witnessed by St. Bernard personnel during rain events.

The model results showed that the flow capacities for PS V1-05 and PS V1-06 need to be increased. The design flow for PS V1-05 needs to be increased to 2,605 gpm and the design flow for PS V1-06 needs to be increased to 1,740 gpm. By increasing the capacities of PS V1-05 and PS V1-06, surcharging of the wet well and gravity sewer mail collection system upstream of the respective stations will be reduced. The pumping capacity of PS V1-17 does not need to be increased, however the pump station is too shallow to accommodate the flow from upstream and the discharge from this pump station causes surcharging problems downstream. A new deeper pump station with a force main to the new PS V1-20 would solve the problems in the southern part of the project area.

As per the Preliminary DFIRM 22087C0492D dated November 9, 2012 for the Violet Station; DFIRM 22087C0478D dated November 9, 2012 for the DRAVO Station; and, DFIRM 22087C0483D dated November 9, 2012 for the Munster Plant, the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations are located in the X Zone (500-year floodplain or 0.2% annual chance flood hazard) and are also located in an AE Zone (100-year floodplain or 1% annual chance flood hazard). In compliance with E.O. 11988, an 8-Step process has been completed and is attached (see appendix E). Per 44 CFR 9.11(d)(9), the replacement of building contents, materials, and equipment, where possible, disaster proofing of the building and/or elimination of the such future losses by relocation of those building contents, materials, and equipment to or above the Base Flood Elevation (BFE). The applicant is required to coordinate and comply with the local Floodplain Administrator regarding floodplain permits or authorizations prior to the start of any activities. All coordination pertaining to these permit(s) should be documented to the local Floodplain Administrator and copies provided to LA GOHSEP and FEMA as part of the permanent project files.

4.2.4 Climate Change

According to the *GNO Urban Water Plan – Implementation* document, sea level rise is “most simply defined as an increase in the mean sea level, caused by changes in air temperatures that are linked to global climate change. Sea level rise poses a growing risk to low-lying coastal communities. With land subsiding at high rates as well, coastal Louisiana is experiencing some of the highest rates of sea level rise in the world.” According to the National Oceanic and

Atmospheric Administration, 35.75% of the land in St. Bernard Parish will be below sea level by the year 2050. By the year 2100, as much as 53.2% of parish land could be below sea level.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, would not impact climate change or sea level rise.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: Construction of the St. Bernard Parish Government retrofit of Violet and DRAVO Sewer Pump Stations would have no impact on climate change or sea level rise. However, by decreasing the amount of time that sewer systems become inoperable during or after a weather event, the proposed project would lessen the increased storm-related impacts felt by parish residents that are a result of climate change and sea level rise.

4.3 COASTAL MANAGEMENT

The Coastal Zone Management Act of 1972 (CZMA) encourages the management of coastal zone areas and provides grants to be used in maintaining coastal zone areas. It requires that federal agencies be consistent in enforcing the policies of state coastal zone management programs when conducting or supporting activities that affect a coastal zone. It is intended to ensure that federal activities are consistent with state programs for the protection and, where, possible, enhancement of the nation's coastal zones.

The CZMA's definition of a coastal zone includes coastal waters extending to the outer limit of state submerged land title and ownership, adjacent shorelines, and land extending inward to the extent necessary to control shorelines. A coastal zone includes islands, beaches, transitional and intertidal areas, and salt marshes. The CZMA requires that states develop a State Coastal Zone Management Plan or program and that any federal agency conducting or supporting activities affecting the coastal zone conduct or support those activities in a manner consistent with the approved state plan or program. The LDNR regulates development in Louisiana's designated coastal zone through the Coastal Use Permit (CUP) Program.

The USFWS regulates federal funding in Coastal Barrier Resource System (CBRS) units under the Coastal Barrier Resources Act (CBRA). This Act protects undeveloped coastal barriers and related areas (i.e., Otherwise Protected Areas [OPAs]) by prohibiting direct or indirect Federal funding of projects that support development in these areas. The Act promotes appropriate use and conservation of coastal barriers along the Gulf of Mexico.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no impacts to coastal resources would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP The LDNR – Louisiana Office of Coastal Management has indicated that the project is consistent with the Louisiana Coastal Resource Program. However, the project may require a Coastal Use Permit (CUP) (See Appendix B). The LDNR – Louisiana Office of Coastal Management issued a

statewide letter dated September 28, 2012 indicating that the Louisiana Office of Coastal Management determined that the granting of financial assistance is fully consistent with the Louisiana Coastal Resources Program. However, the Applicant is responsible for coordinating with and obtaining any required CUP or other authorizations from the LDNR Office of Coastal Management's Permits and Mitigation Division prior to initiating work. The Applicant must comply with all conditions of the required permits. All coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA (See Appendix B).

4.4 BIOLOGICAL RESOURCES

4.4.1 Threatened and Endangered Species and Critical Habitat

The Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884)(ESA) prohibits the taking of listed, threatened, and endangered species unless specifically authorized by permit from the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). "Take" is defined in 16 U.S.C. 1532 (19) as "*to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.*" Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR 17.3).

Section 7(a)(2) of the ESA requires the lead federal government agency to consult with either the USFWS or the NMFS, depending which agency has jurisdiction over the federally listed species in question, when a federally funded project may have the potential to adversely affect a federally listed species or a federal action occurs within or may have the potential to impact designated critical habitat. The ESA defines critical habitat as "the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed that are determined by the Secretary to be essential for the conservation of the species."

The lists the following federally threatened and endangered species for St. Bernard Parish:

Common Name Scientific Name Status

Piping Plover *Charadrius melodus* T
Gulf sturgeon *Acipenser oxyrinchus desotoi* T
Pallid sturgeon *Scaphirhynchus albus* E
West Indian Manatee *Trichechus manatus* E
Louisiana black bear *Ursus americanus luteolus* T
Hawksbill sea turtle *Eretmochelys imbricata* E
Leatherback sea turtle *Dermochelys coriacea* E
Kemp's ridley sea turtle *Lepidochelys kempii* E
Green sea turtle *Chelonia mydas* T

Source: USFWS, 2012; T = Threatened, E = Endangered

It should be noted that inclusion in the USFWS federally threatened and endangered species list does not necessarily imply occurrence of a species in the study area, but simply acknowledges the potential of occurrence.

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to pursue, hunt, take, capture, kill, or sell birds listed in the statute as “migratory birds”. It does not discriminate between live or dead birds, and also grants full protection to any bird parts including feathers, eggs, and nests. The MBTA is the primary law that affirms or implements the nation’s commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource.

EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) strengthens the protection of migratory birds and their habitats by directing federal agencies to take certain actions that implement the MBTA.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no impacts to biological resources would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: In correspondence dated January 30, 2014, USFWS stated, “The project, as proposed, would have no effect on those resources” (See Appendix B).” In addition, correspondence dated February 6, 2014, from the Louisiana Department of Wildlife and Fisheries (LDWF) stated “...no impacts to rare, threatened, or endanger species or critical habitats are anticipated for the proposed project” (See Appendix B). FEMA-EHP initiated consultation with LDWF on May 30, 2015, the response period ends on June 30, 2015 at which time FEMA-EHP will update this EA to reflect comments and conditions received by the regulatory agency. The Applicant is responsible for contacting FEMA, USFWS, and LDWF if there is a change in the scope of work.

4.5 CULTURAL RESOURCES

The consideration of impacts to historic and cultural resources is mandated under Section 101(b) 4 of the NEPA as implemented by 40 CFR Part 1501-1508. Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account their effects on historic properties (i.e. historic and cultural resources) and allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. FEMA has chosen to address potential impacts to historic properties through the “Section 106 consultation process” of NHPA as implemented through 36 CFR Part 800.

In order to fulfill its Section 106 responsibilities, FEMA has initiated consultation on this project in accordance with the Statewide Secondary Programmatic Agreement (LA HMGP PA) dated December 31, 2011, between the Louisiana State Historic Preservation Officer (SHPO), the Louisiana Governor’s Office of Homeland Security and Emergency Preparedness (LA GOHSEP), the Alabama-Coushatta Tribe of Texas, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, the Jena Band of Choctaw Indians, the Mississippi Band of

Choctaw Indians, the Seminole Tribe of Florida, and the Advisory Council on Historic Preservation (http://www.fema.gov/pdf/hazard/hurricane/2005katrina/LA_HMGP%20PA.pdf). The PA was created to streamline the Section 106 review process.

The “Section 106 process” outlined in the LA HMGP PA requires the identification of historic properties that may be affected by the proposed action or alternatives within the project’s area of potential effects (APE). Historic properties, defined in Section 101(a)(1)(A) of NHPA, include districts, sites (archaeological and religious/cultural), buildings, structures, and objects that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). Historic properties are identified by qualified agency representatives in consultation with interested parties. Below is a consideration of various alternatives and their effects on historic properties.

The St. Bernard Parish Waste Water Improvement System is located in St. Bernard Parish, throughout the cities of Mearux, Chalmette, and Violet. The date of the initial construction of the entire sewerage system unknown, but the portion associated with this undertaking was constructed between 1984 and 1989. FEMA Historic Preservation Staff consulted the National Register of Historic Places (National Register) database, the Louisiana Cultural Resources Map, and data collected on a site visit on March 31, 2015 and determined that the project locations for the Palmisano Drainage Improvement Projects are not located within a listed or eligible National Register Historic District (NRHD) nor are they located within the view-shed of a property individually listed in the National Register.

Alternative 1 – No Action

This alternative does not include any FEMA undertaking; therefore, FEMA has no further responsibilities under Section 106 of the NHPA.

Alternative 2 – Upgrade Plaza Drive Lift Pump Station, Improve channel capacity Palmasino Blvd and construct bridge crossing – Preferred Alternative

The Area of Potential Effects (APEs) for both standing structures and archaeology incorporates both direct and indirect effects. There are three (3) APEs for this undertaking:

1. The first is the APE for the alterations to the Dravo WWTP. This APE is limited to the footprint of the pump station platform and is .04 acres (.017 hectares) in size.
2. The second APE is for the Munster WWTP, and includes an APE for both standing structures and archaeology. The APE for archaeology is limited to the area of direct effects and an area for lay-down and is .43 acres (.17 hectares) in size. The APE for standing structures includes an area for visual effects.
3. The third includes the entire footprint of the improvements to the Violet area. APE for archaeology is limited to the immediate area of ground disturbing activities and space for laydown and is 6.1 acres (2.46 hectares) in size. The APE for standing structures includes then entirety of the archaeological APE as well as an additional area for visual effects associated with the relocation/construction of V1-05. The scope of the project limits the area potential effects, as the work occurs almost completely below grade. For the portion of the

work along East St. Bernard Highway, Allo Mumphrey Drive., 3rd Sreet., Daniel Drive, Stacie Drive, and Mel Drive, the APE is limited to the ROW in which the work will be completed. The applicant does not have right of access to any other areas and as such will be restricted to the ROW. The only above grade work will be the replacement of the construction of the additional pump vault at V1-06 and V1-17, and the construction of the new pump stations at V1-05 and V1-20. For these areas the APE consists of the area of direct effects and space for laydown, the entirety of the tax parcel for 5609 East St. Bernard Hwy and the adjacent lot, 2140 Beachhead Lane, are included within this area.

Historic Properties within the APEs were identified based on FEMA's review of the National Register of Historic Places (NRHP) database, the Louisiana Cultural Resources Map, historic map research, and a site visit conducted on March 31, 2015 by FEMA Historic Preservation staff. This data was evaluated by FEMA using the National Register (NR) Criteria.

1. Dravo WWTP Area

Standing Structures:

There is only one (1) standing structure within the APE, the pump station platform. The existing platform was constructed in 2010. Therefore, it is ineligible for listing on the NRHP because it is less than fifty years old.

Archaeology:

There are no ground disturbing activities within this APE. All work would take place on the existing platform.

2. Munster WWTP Area

Standing Structures:

There are five (5) standing structures within the APE, the existing clarifier, two purification vats, a drying vat and a storage building. The Munster WWTP was constructed from 1972 to 1974, was later expanded in the late 1980s and nearly complete re-built in 2011. None of the buildings within the APE are 50 years or older; therefore, all five (5) building are ineligible for listing on the NRHP.

Archaeology:

FEMA consulted the US Department of Agriculture's interactive SoilWeb to determine the soil types for the APE. The soils within the undertaking APE are Harahan Clay, poorly drained soils typically found in back swamps. Additionally, FEMA consulted the SHPO's Cultural Resources map and determined that there are no archaeological sites within 1 mile of the APE.

FEMA HP staff reviewed the early Orleans and St. Bernard parish map archives to obtain information about the APE. While the area appears on several early maps of the city, none show the project location in any detail. The 1723 Newberry Library Map, the LaTourrette map of 1848 and the Bayley Map of 1853, all show plantations within the vicinity of the project area, but do not indicate individual the presence of any associated structures as the project APE is

located at the far rear of the plantation. The project area is also included on the Mississippi River Commission Maps but the area is not shown as having any development.

The site of the proposed clarifier was previously used for another settlement basin prior to the renovation of the plant in 2011, and is very disturbed. There is little to no potential for intact archaeological resources within the APE.

3. Violet WWTP Area

Standing Structures

There are four (4) standing structure within the APE, the existing pump stations at V1-06 and V1-17; 2140 Beachhead Lane (adjacent to 5609 East St. Bernard Hwy); and a pump building at Violet WWTP. Based on historic aerials and information provided by the applicant, the Violet WWTP and its associated pump stations, V1-06 and V1-17, were all constructed between 1984 and 1989. The residential structure at 2140 Beachhead Lane was constructed c. 1970. None of the buildings within the APE are 50 years or older; therefore, all five (5) building are ineligible for listing on the NRHP.

Archaeology

FEMA consulted the US Department of Agriculture’s interactive SoilWeb to determine the soil types for each of the APEs. The findings are summarized in Table 1 (Primary soil type is in bold).

Table 3: Summary of Soil Types

Location	Soil Type	Drainage
St. Bernard Highway	Cancienne /Carville/Thibaut/Gramercy	Natural Levees
Proposed Location of V1-05	Cancienne /Gramercy/Thibaut	Natural Levees and Toe Slope
Pump Station V1-17	Cancienne /Carville/Thibaut/Gramercy	Natural Levees
Proposed Location of V1-20	Schriever Clay	Backswamps
Violet WWTP	Schriever Clay	Backswamps

FEMA consulted the SHPO’s Cultural Resources map and determined that there are 7 known archaeological sites within 1 mile of any of the project areas. None of the seven have been determined eligible for the NRHP, but none will be affected by the undertaking.

Table 4: Summary of Known Sites with 1 mile of APE

Site #	Name	NHPA status
16SB102	Merits Plantation	Not Assessed
16SB104	Brick Scatter	Not Assessed
16SB105	Lake Borgne Canal Lock	Still standing, Not Assessed
16SB123	Guichard Plantation Sugar Mill	Not Assessed*
16SB124	Jumonville Plantation	Not Assessed*
16SB170	MrGO-1	Not Assessed*
16SB179	Saxholm Plantation	Not Assessed

*Based on subsequent site visits, the site is believed to have been destroyed by housing construction/ the construction of the Violet Diversion Channel

FEMA HP staff reviewed the early Orleans and St. Bernard parish map archives to obtain information about the APE. While the area appears on several early maps of the city, none show the project location in any detail. On the 1723 Newberry Library Map, the LaTourrette map of 1848 and the Bayley Map of 1853, no development is shown within the project area, nor has it been subdivided into plantations. An orchard is visible in the 1935 Mississippi River Commission Map but otherwise there has been little development in the area. Residential construction begins c.1950 and continues to expand into the 1970s.

Almost all work in this APE takes place within previously disturbed soils and existing ROW. Two (2) parts of the undertaking would affect previously undisturbed, or minimally disturbed, areas: the construction of V1-20 and part of the new force main from V1-17 to V1-20. FEMA has carefully evaluated these areas to determine whether there is any potential to effect historic properties. Based on the US Department of Agriculture's interactive SoilWeb work in this area will take place in very wet soils, Schriever Clay, which is typically found in backswamps, making it unlikely that any prehistoric resources would be present within the APE. None of the historic maps of the APE indicate any development in the vicinity, making it unlikely that any historic resources are located within the project area. Therefore, the potential for archaeological resources within the undisturbed areas of the APE is very minimal.

The rest of the undertaking takes place within existing ROW and utility corridors, areas that have previously and repeatedly been disturbed as a result of the installation of utilities and the construction and maintenance of the existing road bed. It is unlikely that there are any intact archaeological deposits within the Violet WWTP APE and FEMA has determined that no further identification efforts are necessary for the undertaking.

The proposed project would utilize FEMA funding to improve the St. Bernard Waste Water Treatment System. The project would replace/supplement the existing gravity feed system by installing a system of force mains. In order to facilitate this improved system, new force mains will be installed along E. St Bernard Highway and 3rd St. in Violet, LA, existing lines will also be retrofitted, a new pump station installed and existing pump stations expanded. Based on research using the NRHP database, the Louisiana Cultural Resources Map on the Louisiana Division of Historic Preservation's website, and agency files, FEMA has determined that the project area is not located within a listed National Register Historic District nor is it located within the view-shed of a property individually listed in the NRHP. The structures located within the project area were found to be less than 50 years of age and do not exhibit the significance to qualify for listing under Criterion Consideration G.

FEMA completed a site visit to the project area on March 31, 2015 and determined all work for this undertaking will take place in previously disturbed areas, within existing ROWs, and created drainage ditches, or within areas of low archaeological potential. It is unlikely that any intact archaeological deposits will be affected by the undertaking. Therefore, FEMA determined that the undertaking would "Not Effect" any Historic Properties.

FEMA anticipates that SHPO concurrence with this determination will be received by June 17, 2015. Consultation with affected tribes (Alabama-Coushatta Tribe of Texas, Caddo Nation, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee Creek Nation, Quapaw Tribe of Oklahoma, Seminole Nation of Oklahoma, and Tunica-Biloxi Tribe of Louisiana) was conducted per the LA HMGP PA and 36 CFR part 800.2(c)(2)(i)(B). FEMA does not anticipate any objections from the affected Tribes within the regulatory timeframes. Once the timeframes are complete, in accordance with Stipulation VIII.D of the PA and 36 CFR part 800.5(c)1, FEMA will proceed with funding the undertaking assuming concurrence. The applicant must comply with the NHPA conditions set forth in this EA (Louisiana Unmarked Human Burial Sites Preservation Act and Inadvertent Discovery Clause).

Louisiana Unmarked Human Burial Sites Preservation Act: If human bone or unmarked grave(s) are present within the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery.

Inadvertent Discovery Clause: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The applicant will not proceed with work until FEMA HP completes consultation with the SHPO, and others as appropriate.

4.6 SOCIOECONOMIC RESOURCES

4.6.1 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was signed on February 11, 1994. The EO directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic, and social effects of its programs, policies and activities on minority or low-income populations.

According to the U.S. Census Bureau State and Parish Quick Facts data for 2007-2011, the percentage of families in St. Bernard Parish below the poverty level is 14.6% and the State of Louisiana 18.4%. The median household income for St. Bernard Parish is \$40,450 and for Louisiana is \$44,086. The per capita income for St. Bernard Parish was \$20,003 for Louisiana was \$23,853. The 2011 demographic census data for St. Bernard Parish are as follows: Caucasian: 75%, African American: 19%, and Hispanic: 9%. The comparable demographic census data for the State of Louisiana are: Caucasian: 64%, African American: 32%, Hispanic: 4% (USCB, 2013).

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no impacts to socioeconomic resources would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: The proposed action would minimize the interruption of potable water in St. Bernard Parish during natural disasters or other unforeseen events. All populations would benefit from the Proposed Action.

4.6.2 Noise

Noise is generally defined as unwanted sound. Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses. EPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dB DNL are “normally unacceptable” for noise-sensitive land uses such as residences, schools, or hospitals.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking and, therefore, no impacts from noise would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: The proposed project site is in the immediate vicinity of heavy industrial, commercial, and municipal facilities. Sensitive noise receptors such as residential homes are located adjacent to the DRAVO Station project area, along Jean Lafitte Parkway, Benjamin Street, and Hermitage Drive. In addition, sensitive noise receptors such as residential homes are located adjacent to the Violet Station project area, along Guerra Drive, Daniel Drive, and Stacie Drive. Also, sensitive noise receptors such as residential homes are located adjacent to the Munster Plan project area, along Bartolo Street, Munster Drive and E. Genier Street.

Noise impacts would be temporary due to construction but would comply with Parish Ordinance. St. Bernard Parish Code of Ordinance Sec. 11- 133. - Construction, power equipment. (a) Except as otherwise provided in this chapter, no person shall engage in, cause or permit any person to be engaged in construction activities in any residential or commercial district between the hours of 9:00 p.m. of one day and 7:00 a.m. of the following day. Construction projects shall be subject to the maximum permissible noise level specified for industrial districts for the periods within which construction is to be completed pursuant to any applicable building permit. (b) Construction activities directly connected with the abatement of an emergency are excluded from the provisions of this section. (c) No person shall operate on any property within a residential or commercial district or on any public way within a residential or commercial district, any power equipment, such as, but not limited to, chain saws, pavement breakers, log chippers, riding tractors, powered hand tools, between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day or within residential, commercial or industrial noise districts between the hours of 7:00 a.m. and 10:00 p.m. which emits a noise level in excess of the levels set in Section 11-132 (Municode.com, 2013).

4.6.3 Traffic and Transportation

The LADOTD is responsible for maintaining public transportation state highways, interstate highways under state jurisdiction, and bridges located within the State of Louisiana. These duties include the planning, design, and building of new highways in addition to the maintenance and upgrading of current highways. Roads not part of any highway system usually fall under the jurisdiction of and are maintained by applicable, local government entities. However, the LADOTD is responsible for assuring all local agencies Federal-aid projects comply with all applicable federal and state requirements.

Alternative 1 – No Action: The No Action Alternative would involve no undertaking; therefore no impact to traffic would occur.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: Traffic volumes along the respective work area would increase temporarily during work activities. Construction-related activities, heavy equipment and materials that may be needed for site access and site preparation would not pose a significant impact to the transportation network or cause a significant increase in traffic for the area. Construction of the proposed project may require numerous truck trips to haul materials to the project site. However, this would be temporary, because it would only occur during site construction. Upon completion of the proposed action, there would be minimal long-term effects on the current traffic patterns.

During construction the contractor would take all reasonable precautions to control site access. All activities would be conducted in a safe manner in accordance with Occupational Safety and Health Administration (OSHA) work zone traffic safety requirements. The contractor would post appropriate signage and fencing to minimize foreseeable potential public safety concerns. Appropriate signage and barriers would be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes (detours/lanes dedicated for construction equipment egress).

Appropriate signage and barriers should be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes.

The contractor would implement traffic control measures, as necessary.

4.6.4 Public Safety – Hazardous Materials

Executive Order 13045 (Protection of Children) requires Federal agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. Safety and security issues considered in this EA include the health and safety of area residents, the public-at-large, and the protection of personnel involved in the activities related to the construction of the proposed project.

The management of hazardous materials is regulated under various federal and state

environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act (RCRA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Toxic Substances Control Act of 1976 (TSCA); the Emergency Planning and Community Right-to-Know Act; the Hazardous Materials Transportation Act; and the Louisiana Voluntary Investigation and Remedial Action statute. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites already contaminated by releases of hazardous materials, wastes, or substances.

The TSCA (codified at 15 U.S.C., Ch. 53), authorizes the USEPA to protect the public from “unreasonable risk of injury to health or the environment” by regulating the introduction, manufacture, importation, sale, use and disposal of specific new or already existing chemicals. “New Chemicals” are defined as “any chemical substance which is not included in the chemical substance list compiled and published under [TSCA] Section 8(b).” Existing chemicals include any chemical currently listed under Section 8(b), including polychlorinated biphenyls (PCBs), asbestos, radon, lead-based paint, chlorofluorocarbons, dioxin and hexavalent chromium.

TSCA Subchapter I, “Control of Toxic Substances” (Sections 2601-2629), regulates the disposal of PCB products, sets limits for PCB contamination of the environment, and authorizes the remediation of sites contaminated with PCB. Subchapter II, “Asbestos Hazard Emergency Response” (Sections 2641-2656), authorizes the USEPA to impose requirements for asbestos abatement in schools, and requires accreditation of those who inspect asbestos-containing materials. Subchapter IV, “Lead Exposure Reduction” (Sections 2681-2692), requires the USEPA to identify sources of lead contamination in the environment, to regulate the amounts of lead allowed in products, and to establish state programs that monitor and reduce lead exposure.

The EPA (EPA – EnviroFacts, 2013) and LDEQ hazardous materials database searches were queried for the proposed project work areas. No sites of concern were identified by the database search within the proposed project work areas. No environmental conditions of concern observed during field reconnaissance within the proposed project work areas. The LDNR Strategic Online Natural Resources Information System (SONRIS) database was queried for the project work areas. According to the LDNR, there are not any recorded oil or gas wells located in the proposed project areas (SONRIS, 2013).

Alternative 1 – No Action: The No Action Alternative would involve no undertaking; therefore, no additional impacts to public safety and hazardous materials would be expected.

Alternative 2 - Proposed Action - Design and Construct the St. Bernard Parish Government (SBPG) Retrofit of Violet and DRAVO Sewer Pump Stations and Munster WWTP: No impacts to public safety and security are anticipated. The contractor would place fencing around the work area perimeters to protect nearby residents from vehicular traffic. To minimize worker and public health and safety risks from project construction and closure, all construction and closure work would be done using qualified personnel trained in the proper use of construction

equipment, including all appropriate safety precautions. Additionally, all activities would be conducted in a safe manner in accordance with the standards specified in the Occupational Safety and Health Administration (OSHA) regulations. The contractor would post appropriate signage and fencing to minimize potential adverse public safety concerns.

Under the Proposed Action Alternative, the improvements at the proposed project site would not increase potential hazards to human health. The site is not adjacent to hazardous or solid waste facilities.

If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.

Unusable equipment, debris and material shall be disposed of in an approved manner and location. In the event significant items (or evidence thereof) are discovered during implementation of the project applicant shall handle, manage, and dispose of petroleum products, hazardous materials and/or toxic waste in accordance to the requirements and to the satisfaction of the governing local, state and federal agencies. Applicant is responsible for acquiring LDEQ permits for the temporary debris staging and reduction sites (TDSRS) associated with this project prior to project closeout. Failure to provide FEMA with LDEQ approval may jeopardize project funding eligibility.

5.0 CUMULATIVE IMPACTS

According to the Council on Environmental Quality (CEQ) regulations, cumulative impacts represent 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 effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The entire Louisiana Gulf Coast is undergoing recovery efforts after the 2005 hurricane season that include demolition, reconstruction, and new construction, within the private sector as well as federal and state government. The USACE is undertaking one of the largest projects in their history. Rebuilding the Greater New Orleans Hurricane and Storm Damage Risk Reduction System would improve approximately 350 miles of levees, concrete floodwalls, and other structures to meet the 100-year level of risk reduction. St. Bernard Parish Government, St. Bernard Parish School Board, St. Bernard Parish Sheriff's Office, and the Louisiana Department of Facility Planning and Control (FP&C) have numerous recovery and other construction projects planned or ongoing throughout the parish. Although these projects can be expected to have cumulative effects to the built and natural environment of the parish, the subject proposed project is not anticipated to contribute to any adverse effects.

6.0 CONDITIONS

Based upon the studies and consultations undertaken in this EA, several conditions must be met and mitigation measures must be taken by St. Bernard Parish Government (Applicant) prior to and during project implementation.

- The Applicant is required to obtain and comply with all local, state and federal permits, approvals and requirements prior to initiating work on this project. All coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.
- The applicant is responsible for coordinating with and obtaining any required Section 401 and Section 404 Permit(s) from USACE prior to initiating work. All coordination pertaining to these activities must be documented and copies forwarded to the State and FEMA as part of the permanent project files.
- Implement of BMPs that include; install silt fences/straw bales to reduce sedimentation. Area soils would be covered and/or wetted during construction. If fill were stored on site as part of unit installation or removal, the contractor would be required to appropriately cover it. Construction contractor would be required to obtain LPDES permit, if applicable, and implement stormwater pollution prevention plan.
- The LDEQ may require stormwater general permits for construction areas equal to or greater than one (1) acre. It is required that the LDEQ Water Permit Division be contacted to determine whether the proposed improvements require one of these permits.
- All precaution would be observed to control nonpoint source pollution from construction activities.
- Vehicle operation times would be kept to a minimum. Area soils would be covered and/or wetted during construction to minimize dust.
- Applicant must contact the LDEQ to determine if a LPDES permit is required. If required, the contractor must follow all requirements of the LPDES permit including all applicable BMPs.
- The contractor should observe all precautions to protect the groundwater of the region.
- The LDNR Office of Conservation must be contacted if any unregistered drinking water wells are encountered during construction work.
- All work associated with project that is conducted on potable water systems must comply with applicable sections of the federal Safe Drinking Water Act and state regulations under Louisiana Title 51 Part XII (otherwise known as the Louisiana Public Health Sanitary code and related State Plumbing code). In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the Applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings would be secured

and access to the sensitive area restricted. The Applicant would inform FEMA immediately and FEMA would consult with the SHPO or THPO and Tribes and work in sensitive areas cannot resume until consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the NHPA.

- New construction must be compliant with current codes and standards. St. Bernard Parish is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these activities and Applicant compliance with any conditions must be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.
- Applicant must comply with all applicable permit conditions that may be required by the CUP. All coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.
- The Applicant would be responsible for contacting FEMA if there is a change in the scope of work.
- If human bone or unmarked grave(s) are present within the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery.
- If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their HMGP contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The applicant will not proceed with work until FEMA HP completes consultation with the State Historic Preservation Officer (SHPO), and others as appropriate.
- St. Bernard Parish Code of Ordinance Sec. 11-133. - Construction, power equipment.
 - (a) Except as otherwise provided in this chapter, no person shall engage in, cause or permit any person to be engaged in construction activities in any residential or commercial district between the hours of 9:00 p.m. of one day and 7:00 a.m. of the following day. Construction projects shall be subject to the maximum permissible noise level specified for industrial districts for the periods within which construction is to be completed pursuant to any applicable building permit.
 - (b) Construction activities directly connected with the abatement of an emergency are excluded from the provisions of this section.
 - (c) No person shall operate on any property within a residential or commercial district or on any public way within a residential or commercial district, any power equipment, such as, but not limited to, chain saws, pavement breakers, log chippers, riding tractors, powered hand tools, between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day or within residential, commercial or industrial noise districts between

the hours of 7:00 a.m. and 10:00 p.m. which emits a noise level in excess of the levels set in Section 11-132.

- Appropriate signage and barriers should be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes.
- The contractor would implement traffic control measures, as necessary.
- Changes, additions, and/or supplements to the approved scope of work which alter the existing use and function of the structure, including additional work not funded by FEMA but performed substantially at the same time, would require resubmission of the application prior to construction to FEMA for re-evaluation under the National Environmental Policy Act.

7.0 PUBLIC INVOLVEMENT

The Early Public Notice concerning FEMA actions located in or that may affect wetland areas or the 100-year floodplain, and critical actions within the 500-year floodplain was published in the St. Bernard Voice newspaper in St. Bernard Parish on August 22, 2014. The Floodplain and Wetlands Explanation Public Notice concerning FEMA actions located in or that may affect wetland areas or the 100-year floodplain, and critical actions within the 500-year floodplain was published in the St. Bernard Voice newspaper in St. Bernard Parish on October 3, 2014.

The draft EA and draft FONSI can be viewed at the St. Bernard Parish Library located at 2600 Palmisano Blvd, Chalmette, LA 70043 Mondays – Thursdays 9 am – 7pm, Fridays – Saturdays 9 am-5pm, closed Sundays and Holidays. This public notice will run in the local newspaper, The St. Bernard Voice, Friday June 12, 2015; and Sunday, June 19, 2015. This public notice will also run in the Times Picayune on June 10, 2015; June 12, 2015; and June 14, 2015. An electronic version of the draft EA can be viewed at FEMA's website at <http://www.fema.gov/resource-document-library>. There was a fifteen (15) day comment period, beginning on June 10, 2015 and concluding on July 25, 2015 at 4 p.m.

8.0 AGENCY COORDINATION

As part of the development of the EA, Federal and State resource protection agencies were contacted. Responses received to date are included in Appendix B.

- Lake Borgne Basin Levee District
- Louisiana Department of Environmental Quality, Community and Industry Relations, Business and Community Outreach Division
- Louisiana Department of Environmental Quality, Environmental Services, Water Permits Division
- Louisiana Department of Natural Resources, Office of Coastal Management
- Louisiana Department Of Transportation and Development, District Design, Water Resources and Development Section

- Louisiana Department of Wildlife and Fisheries, Office of Wildlife, Natural Heritage Program
- Louisiana State Historic Preservation Office
- Choctaw Nation of Oklahoma
- Natural Resources Conservation Service, New Orleans Field Office
- United States Army Corps Of Engineers, New Orleans District
- United States Environmental Protection Agency, Sole Source Aquifer Program, Ground Water/UIC Section
- United States Fish and Wildlife, Louisiana Field Office

9.0 LIST OF PREPARERS

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10.0 REFERENCES

H. Davis Cole & Associates, LLC. 2014. Draft Hydraulics and Hyrdologic (H&H) Study and Preliminary Design Memorandum for Violet Area Sewer Improvements

Environmental Protection Agency (EPA).2013.Green Book. Available online at <http://www.epa.gov/oaqps001/greenbk/o8index.html>. Access February 2013. EPA. 2013. EnviroFacts. Available online at <http://www.epa.gov/emefdata/em4ef.home>. Access January 2014.

Federal Emergency Management Agency (FEMA). 2011. David Miller. Guidance for Use of Best Available Data in Complying with 44CFRPart 9 and EO 11988 for Certain Areas of Greater New Orleans.

FEMA RiskMap6.com, 2013. Available online at <http://www.riskmap6.com/Home.aspx>. Accessed January 2014.

Louisiana Geological Survey, 2008. Available online at <http://www.lgs.lsu.edu/>. Accessed January 2014.

Marshall, Bob. 2013. New research: Louisiana coast faces highest rate of sea-level rise worldwide. Available online at <http://thelensnola.org/2013/02/21/new-research-louisiana-coast-faces-highest-rate-of-sea-level-rise-on-the-planet/>. Accessed May 2015.

Municode.com. 2013. Chapter 11, Article VI – Noise Provisions and Prohibitions. Available online at <http://library.municode.com/index.aspx?clientId=11497>. Accessed January 2014.

Strategic Online Natural Resources Information System (SONRIS). 2013. Available online at <http://sonris.com/>. Accessed January 2014.

U.S. Census Bureau (USCB). 2013. American FactFinder. 2007-2011 Census Demographic Profiles Data. Available online at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed January 2014

U.S. Geological Survey (USGS). 2012. USGS National Seismic Hazard Map. Available online at <http://earthquake.usgs.gov/hazards/qfaults/eusa/gulf.php>. Accessed January 2014.

USDA/NRCS, 2012. Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed January 2014.

U.S. Fish and Wildlife (USFWS). 2012. Species Reports, Environmental Conservation Online System. Available online at http://ecos.fws.gov/tess_public/. Accessed January 2014.

Waggoner & Ball Architects. 2013. Greater New Orleans Urban Water Plan – Implementation. Available online at http://livingwithwater.com/blog/urban_water_plan/reports/. Accessed May 2015.