

Environmental Assessment

**Sewerage & Water Board of New Orleans
Reconstruction/Elevation and Hardening of
Nine (9) Sewage Pump Stations,
New Orleans, LA**

Orleans Parish, Louisiana
HMGP 1603-0104

FEMA-1603-DR-LA

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LIST OF ACRONYMS

ABFE	Advisory Base Flood Elevation
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
BFE	Base Flood Elevation
BMP	Best Management Practices
CBRA	Coastal Barrier Resources Act of 1982
CBRS	Coastal Barrier Resources System
C-CAP	Coastal Change Analysis Program
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
C.I.	Cast Iron
CMU	Concrete Masonry Unit
CUP	Coastal Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972, as Amended
DFE	Design Flood Elevation
DFIRM	Digital Flood Insurance Rate Map
D.I.	Ductile Iron
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farm Protection Policy Act
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
LA	Louisiana
LADOTD	Louisiana Department of Transportation and Development
LDEQ	Louisiana Department of Environmental Quality
LDEQ EDMS	LDEQ Electronic Document Management System
LDEQ LUST	LDEQ Leaking Underground Storage Tank Database
LDEQ VRP	LDEQ Voluntary Remediation Program Database
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LPDES	Louisiana Pollutant Discharge Elimination System
MPH	Miles per Hour
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966, as Amended
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OLD	Orleans Levee District

OSHA	Occupational Safety and Health Administration
PA	Public Assistance
PVC	Polymerized Vinyl Chloride
R.S.	(Louisiana) Revised Statutes
SFM	Sewer Force Main
SHPO	State Historic Preservation Office/Officer
SONRIS	Strategic Online Natural Resources Information System
SPS	Sewage Pump Station
STP	Sewer Treatment Plant
S&WB	Sewerage and Water Board of New Orleans
USACE	United States Army Corps of Engineers
USC	United States Code
UST	Underground Storage Tank
USFWS	United States Fish and Wildlife Service
WSS	Web Soil Survey

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 if the proposed reconstruction/elevation and hardening of nine (9) Sewerage & Water Board of New Orleans (S&WB) sewage pump stations (SPSs) in Orleans Parish, Louisiana will have the potential for significant adverse effects on the quality of the human and natural environment. The results of this EA will 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).

1.2 Project Location

Orleans Parish, which is comprised of the city of New Orleans, is located in southeast Louisiana. It is approximately 350 square miles, of which approximately 180 square miles (approximately 51.5 percent) is land, the remainder is open water. Orleans Parish is bordered to the east by Lake Borgne, St. Bernard Parish, and Plaquemines Parish, to the south by the Mississippi River, Plaquemines Parish, and Jefferson Parish, to the west by Jefferson Parish, and to the north by Lake Pontchartrain and St. Tammany Parish. Orleans Parish has approximately 343,829 residents according to 2010 census figures. New Orleans is located approximately 70 miles from Baton Rouge, the state capitol of Louisiana, and approximately 105 miles upriver from the Gulf of Mexico. The specific locations of the nine (9) S&WB sites are provided in Table 1 and are depicted in Figures 1 and 2.

Table 1: Proposed Project Site Locations

Site #	SPS	Address	City	Latitude	Longitude
1A	SPS 8 (Existing Location)	Corner of North Broad Avenue and Toulouse Street	New Orleans	29.969461	-90.083806
1B	SPS 8 (Proposed New Location)	Corner of Lafitte Street and North Dorgenois Street	New Orleans	29.968132	-90.082654
2	Bullard	5501 Bullard Avenue	New Orleans	30.037200	-89.953100
3	Dotd	8118 Chef Menteur Highway	New Orleans	30.013180	-89.991230
4	SPS 6	242 South Solomon Street	New Orleans	29.973865	-90.103649
5	Lake Forest	10451 Lake Forest Boulevard	New Orleans	30.033570	-89.971160
6	Lawrence	7900 Morrison Road	New Orleans	30.034180	-90.001190
7	Plum Orchard	7300 Chef Menteur Highway	New Orleans	30.011420	-90.002840
8	Victoria	3620 Victoria Street	New Orleans	30.007062	-90.020032
9	Burke	9001 Morrison Rd	New Orleans	30.03879	-89.98974

Figure 1: Proposed Project Locations West of the Industrial Canal, Orleans Parish, Louisiana

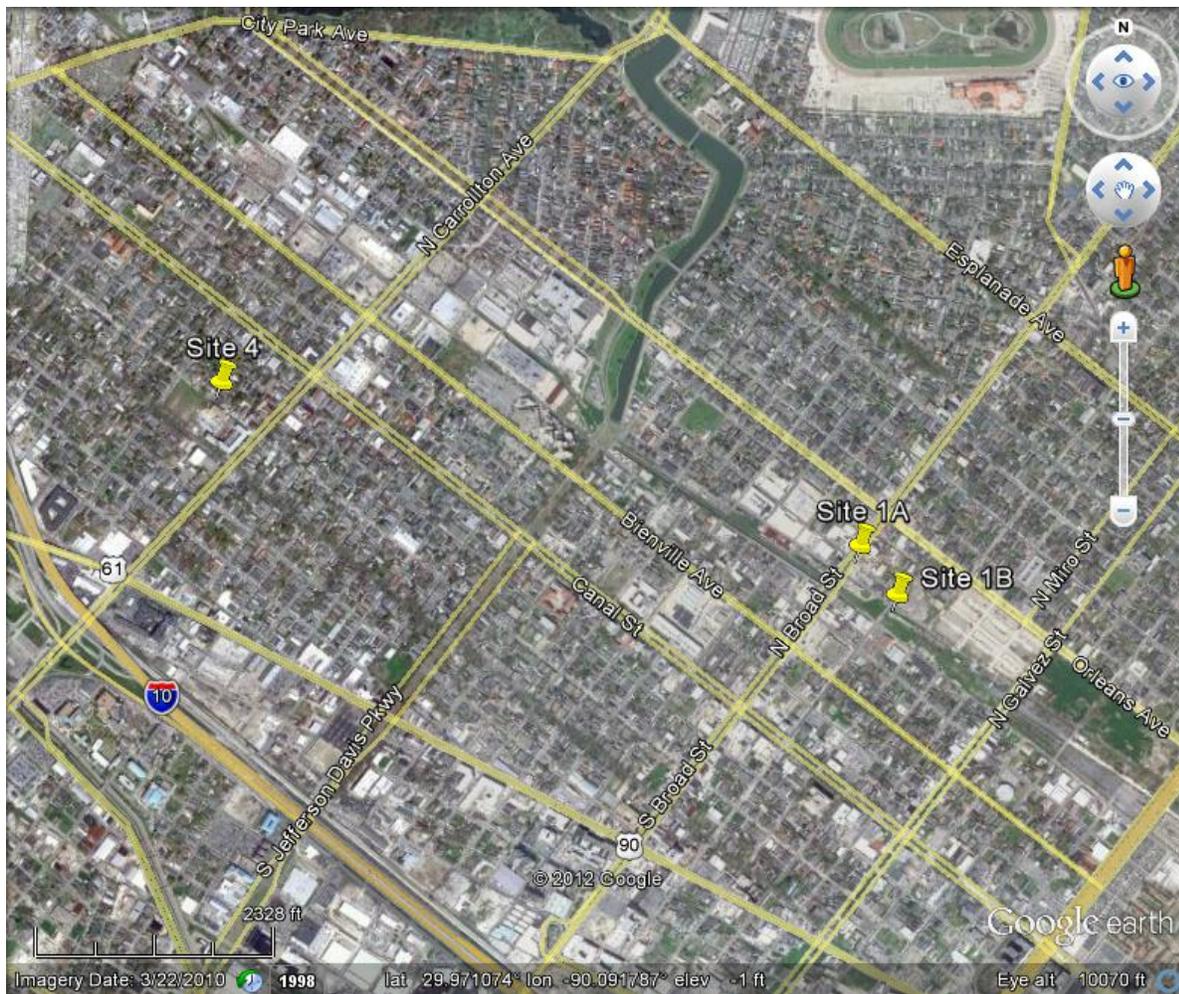
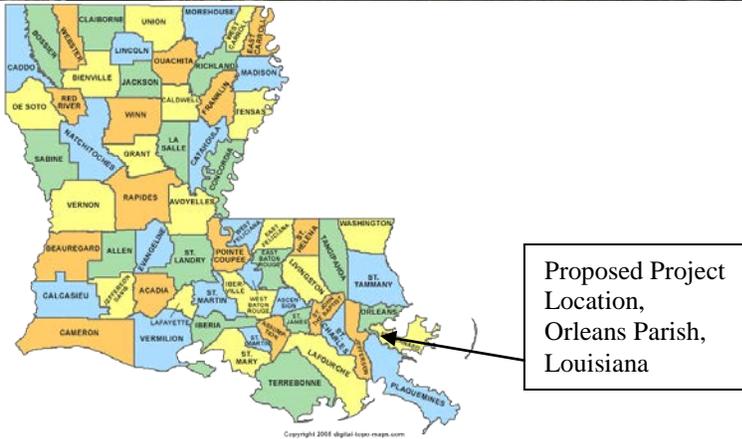


Figure 2: Proposed Project Locations East of the Industrial Canal, Orleans Parish, Louisiana



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. The S&WB was established in 1899 to combat disease by providing safe drinking water and eliminating the health hazards of open sewer ditches in the City of New Orleans (CNO). Today, the S&WB provides water and sewer services to the city of New Orleans as mandated by state law in accordance with Louisiana Revised Statutes (R.S.) 33:4096 and R.S. 33:4121, respectively. The S&WB operating units consist of four departments: 1) water purification, 2) sewage treatment, 3) water pumping and power, and 4) drainage and sewage pumping. The purpose of the proposed project is to protect the health and safety of the residents of New Orleans during the next 100-year flood event.

There is a need to mitigate damage to the SPSs caused by flooding during and after Hurricane Katrina and prevent potential flood and wind damage from future hurricanes and other severe weather events. According to applicant, the SPSs in the proposed project were flooded to some degree for 51 days, and the SPSs were inoperable for 27 months after Hurricane Katrina. During this time, a total of 23,411 people (based on 2000 census figures) were without service.

3.0 ALTERNATIVES

3.1 Alternative 1 - No Action

Under this alternative, the Orleans Parish S&WB would not engage in flood protection activities at the SPS sites. Consequently, the SPSs, which were built completely below ground, would continue to be susceptible to flooding from heavy rains as well as the overtopping of levees. The inability of the SPS to supply demand operation would cause a health and safety crisis to the city's population and environment as raw, untreated sewage backs up would occur throughout the network. Sewage pump stations that are out of service, even for a short period of time, would shut down processing of the entire network.

3.2 Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action)

The sanitary sewer system of CNO is a gravity collection system consisting of 1,600 miles of lateral and trunk sewer lines, ranging in size from eight (8) inches to seven (7) feet in diameter. Lifting and conveying the raw sewage by trunk sewers and sewer force mains requires a total of 82 electrically operated interconnected sewage treatment facilities, including two (2) Sewer Treatment Plants (STP), and 80 SPS and lift stations, 79 of which are operated automatically, with no man power required other than periodic maintenance. There is an STP which serves the East Bank of New Orleans and a separate facility which serves the West Bank. All of the proposed project sites are located on the East Bank of New Orleans. The East Bank STP is located at 6501 Florida Avenue, New Orleans, LA.

The scope of work for the proposed action would consist of the reconstruction/elevation of nine (9) of the existing 80 SPSs. The structures would be elevated to meet the minimal Advisory Base Flood Elevations (ABFEs), which were developed by FEMA for the Louisiana coastal parishes after Hurricanes Katrina and Rita to provide homeowners and public officials with assistance in elevating, reconstructing, retrofitting, or repairing their structures after these events, or the Base Flood Elevation (BFE) requirements as provided on preliminary Digital Flood Insurance Rate Maps (DFIRMs) for Orleans Parish, dated November 13, 2008, whichever is higher. Where possible, the structures would be elevated to the 500-year flood level to reduce the infiltration of floodwaters and the possibility of submergence of electrical components, pumps and motors during flood and surge events. In addition, mitigation measures include reinforcing the SPSs by “hardening” structures around electrical components to protect the contents that could damage vital equipment in such events.

The term “hardening” is defined as project-specific specialized design and construction methods which are applied to one or more rooms within a building and/or to an entire building envelope to allow portions of and/or the entire structure to resist wind pressures and windborne debris impacts during an extreme wind event and are capable of providing life-safety protection to the room or structure occupants.

Elevation of SPSs would fulfill Goal 1 and Goal 3 of the city of New Orleans Hazard Mitigation Plan by reducing losses to existing and future properties due to flood hazards and by ensuring the ability of emergency services, including critical facilities, to continue operating during hazard events. The proposed project falls under Property Protection Measures – Building Elevation in Section 5 of the Mitigation Plan. The anticipated useful life of the proposed project is 50 years.

Table 2 provides service area land use, population data, and average daily flow rates for each of the proposed SPSs, as provided by the applicant.

Table 2: Service Area Land Use, Population Data, and Average Daily Flow Rates for the Proposed SPSs

Site #	SPS	Address	Population Served (2000 Census Figures)	Residential Properties	Industrial Business, Commercial, Public Buildings, and School Properties	Average Daily Flow Rates (Millions of Gallons per Day)
1A	SPS 8 (Existing Location)	Corner of North Broad Avenue and Toulouse Street	7,658	2,069	218	2.56
1B	SPS 8 (Proposed New Location)	Corner of Lafitte Street and North Dorgenois Street	N/A	N/A	N/A	N/A
2	Bullard	5501 Bullard Avenue	1,395	338	49	0.37
3	Dotd	8118 Chef Mentour Highway	337	1	4	0.54
4	SPS 6	242 South Solomon Street	6,666	1,994	183	2.08
5	Lake Forest	10451 Lake Forest Boulevard	1,331	263	76	1.56
6	Lawrence	7900 Morrison Road	4,887	1,696	52	0.72
7	Plum Orchard	7300 Chef Mentour Highway	690	18	60	0.11
8	Victoria	3620 Victoria Street	447	0	8	0.60
9	Bruke	9001 Morrison Rd	10,604	2,328	9	14.6

According to the applicant, there would not be an increase in sewage effluent produced as result of the proposed SPS reconstruction/elevation work, although sewage effluent volume would increase as a result of population increases in a given area. According to a letter from the S&WB to Casey Levy, dated July 31, 2008, S&WB of New Orleans would own, operate, and maintain all the SPSs in the proposed project. The S&WB has provided a maintenance schedule for operations (Departmental Policy 1, Section B), along with a copy of the letter referenced above. See Appendix A.

Specific scopes of work for each SPS listed in the proposed project are provided below. Construction plans for each SPS site are presented in Appendix B. Photographs of each site discussed in this EA are presented in Appendix C.

3.2.1 Scope of Work of For Sites 1A and 1B - SPS 8 Existing and New Locations

The scope of work for this SPS would consist of removal of a portion of the existing 8-inch sewer line and portions of the existing small lift station and access structure located at the intersection of Toulouse Street and North Broad Avenue. The existing SPS would be demolished. The existing 24-inch gravity sewer would be would be abandoned and backfilled, and portions of the existing 30-inch sewer force main (sfm) would also be abandoned and backfilled. This work would require the existing street pavement and curbs to be removed and

replaced. A trenchless installation of new gravity sewer line, the limits of which would be determined in the field, would be completed.

According to construction drawings, provided by the applicant, the proposed site of the new SPS, located at the intersection of North Dorgenois Street and Lafitte Street, was once filled with construction debris. When FEMA staff visited the site on February 7, 2012 the debris had been cleared from the site. The site contained a concrete pad and the driveway entrance was covered with stone. It appears that historically, fill had been placed on the site, as there is an unnatural appearing elevated grade with a slope toward North Dorgenois Street.

For the proposed work, the contractor would grub to undisturbed soil. This work would require the existing street pavement and curbs to be removed and replaced at this location as well. The new SPS would be constructed in the center of the lot. The SPS construction would involve the construction of a new wet well, which would be connected to the subterranean main sewer line under Lafitte Street. A duct bank for new underground sheet would also be required. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, polymerized vinyl chloride (PVC) sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the wet well would also be required. The new SPS would be constructed of concrete masonry unit (CMU) shell walls and the accessible floor would be elevated 3.5 feet above the ground surface. All equipment required to be elevated would be installed on this floor. The structure would be accessible from the northwest elevation. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 9.38 feet above mean sea level (msl). The grade at the site varies from 20.47 to 20.73 feet above msl. The elevated floor would be elevated to 24.00 feet above msl. The structure would be 20 feet, 8 inches by 19 feet, 4 inches, not including the access stairs and the concrete access platform. The top of the structure truss would be at 40.11 feet above msl. Figure 3 depicts the existing SPS 8 and the proposed location of the new SPS 8.

Figure 3: Sites 1A and 1B - SPS 8 Existing (1A) and Proposed New Location (1B)



When an applicant proposes to relocate or expand the footprint of a project beyond the existing applicant-owned parcel or onto a non-adjacent parcel, FEMA requires that the new land be either owned by the applicant or that the current owner is a willing seller of the parcel to the applicant. According to Orleans Parish Assessor's Office records, the city of New Orleans is the current owner of the parcel where the proposed new SPS 8 structure would be constructed. Figure 4 presents the parcel information from the Assessor's Office website. According to the Assessor's web site, the city of New Orleans purchased the parcel in 2010.

Figure 5: Proposed Lafitte Greenway Maps



3.2.2 Scope of Work for Site 2 – Bullard SPS

Under the FEMA Public Assistance (PA) Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS involves the demolition and removal of the existing SPS dry well, access structure, top slab, one wall, portion of two walls, and portion of the bottom slab. The excavated site would be backfilled with sand. The existing driveway apron would be removed and replaced. The existing emergency discharge connection would be removed and relocated. The existing elevated electrical platform, existing chain link fence, electrical conduit, discharge piping, and water service line would all be removed. The existing SPS foundation and wet well would remain. The existing wet well would be rehabilitated. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be constructed northeast of the existing location on the same lot. The SPS wet well would be connected to the subterranean main sewer line beneath Bullard Avenue. Existing underground transformers along Bullard Avenue would remain in place. The new SPS would be accessible from the east elevation. The grade at the site is 14.00 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 10 feet above the ground surface to an elevation of 24.00 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 6.33 feet above msl. The structure would be 21 feet, 4 inches by 18 feet, 8 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 40.11 feet above msl. Figure 6 depicts the location of the Bullard SPS.

Figure 6: Site 2 – Bullard SPS



3.2.3 Scope of Work for Site 3 – Dotted SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS would involve the removal of the existing water service line, existing wooden fencing, existing overhead power line (by Entergy), the existing SPS dry well access structure, top slab, and portions of the walls, the existing elevated electrical platform, the existing emergency discharge connection, a portion of the existing discharge piping, and the existing chain link fencing. Underground telephone lines would be relocated. The excavated portions of the existing SPS would be backfilled with sand. The new SPS would be constructed south of the existing SPS. The new SPS would be connected to the subterranean main sewer line located beneath Chef Menteur Highway. The existing wet well would remain in place and would be rehabilitated. Required sheet piling would be tied into the existing dry well walls. The exterior of the east wall of the new SPS would be formed against the sheet piling retaining wall. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the west elevation. The grade at the site is 21.50 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 3.5 feet above the ground surface to an elevation of approximately 25.00 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump

equipment would be installed beneath the elevated floor and would be submerged to a total depth of 11.00 feet above msl. The structure would be 23 feet, 8 inches by 19 feet, 8 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 41.00 feet above msl. Figure 7 depicts the location of the Dotd SPS.

Figure 7: Site 3- Dotd SPS



3.2.4 Scope of Work for Site 4 - SPS 6

The scope of work for this SPS involves the demolition of the existing small lift station, the removal of a portion of the existing 24-inch sewer line, a portion of the existing 4-inch water line, the existing wet well, the existing overhead electrical service (by Entergy), the existing discharge chamber, a portion of the existing 30-inch sewer line, the existing chain link fence, the existing electrical equipment and platform, the existing underground electrical duct bank, the existing service pole, and the existing electrical conduits from the platform to the existing station. This work would require that the existing street pavement, sidewalk, and curb be removed and replaced. The existing drain line would remain in service and would be protected during construction. The construction of the new SPS would require the construction of a new wet well which would be located under Palmyra Street along the existing subterranean main sewer line. An 8-inch thick driveway would be constructed east of the new SPS. A new sewer manhole would be required adjacent to the new driveway. The use of sheet piling would be required for the retaining wall as exterior framework for the wall of the pump pit and the new wet well. An electrical access platform would be required, as well a 1-inch copper water line from the new water meter to the new pump SPS. Required sheeting piling for a retaining wall on the west side of the SPS and new wet well would remain in place. An access structure for a

future “channel monster” grinder would be constructed at the west corner of the new wet well. An additional access structure to the new wet well would be constructed at the south corner of the wet well. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the south elevation. The grade at the site is 17.25 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 6.5 feet above the ground surface to an elevation of approximately 24.00 feet above msl. All equipment that is required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 7.13 feet above msl. The structure would be 23 feet, 8 inches by 20 feet, 8 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 40.30 feet above msl. Figure 8 depicts the location of the SPS 6 SPS.

FEMA Historic Preservation staff visited this site on January 26, 2012 and determined that some excavation work had already begun. The proposed lot had already been cleared, and protective palletes had been laid down leading up to the new SPS foundation and framing. The steel framework for a new SPS structure had been erected and the electrical lines were in the process of being installed. A tower assembly was also on site in front of the steel framework. Trenches had been dug around the new SPS as well as around the existing SPS entry building. The perimeter of the property was barricaded by plastic fencing in order to discourage access to the construction site as well as to keep individuals away from the large, mobile pumping equipment which was stationed on Palmyra Street.

The ongoing work described above is the construction of an elevated metal platform, similar to that described above in the discussions of the Bullard and Dotd SPSs, which was confirmed through the site photographs of the work in progress. As with the Bullard, Dotd, Lake Forest, Lawrence, Plum Orchard, and Victoria SPSs, this work is being funded by the FEMA PA Program. The PA Program has provided funding for the installation of these elevated metal platforms for new electrical equipment at the majority of the S&WB SPS as an interim measure to elevate the electrical components and provide temporary protection from flood waters. The proposed mitigation action discussed in this EA for the SPS 6 site would replace the metal platform once it is completed.

Figure 8: Site 4 - SPS 6



3.2.5 Scope of Work for Site 5 - Lake Forest SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS involves the removal of the existing elevated electrical platform, the existing discharge piping, and the existing SPS dry well access structure, top slab, three (3) walls (except the common wall to the existing wet well), and a portion of the bottom slab. After demolition, the site would be backfilled with sand. The existing 18-inch sewer main to the subterranean main sewer line under Lake Forest Boulevard would remain in place. The existing 24-inch cast iron (C.I.) Class 25 gravity pipe and existing suction piping would remain in place. The existing electrical conduit and the 0.75-inch copper water service 18 inches below grade would be abandoned in place. The new SPS would be constructed at the north corner of the property. The existing station isolation valve sewer manhole, the existing emergency discharge connection, and the existing wet well access would be adjusted to the required grade. The existing SPS foundation would remain in place. A sheet piling retaining wall would be required around the SPS. The existing wet well would be rehabilitated. A new 1-inch copper line from the existing water meter to the SPS would be required. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the west elevation. The grade at the site is 13.5 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 10.5 feet above the ground surface to an elevation of approximately 24 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 4.43 feet above msl. The structure would be 24 feet, 4 inches by 21 feet, 0 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 40.11 feet above msl. Figure 9 depicts the location of the Lake Forest SPS.

Figure 9: Site 5 - Lake Forest SPS



3.2.6 Scope of Work for Site 6 – Lawrence SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS involves the removal of the existing above ground SPS access structure, the existing electrical equipment and platform, the existing curb and chain link fencing, the existing gate, and a portion of the existing 18-inch C.I. discharge pipe. The existing SPS dry well would be abandoned and filled with sand. The existing water line would also be abandoned in place. The existing 8-inch emergency discharge connection would be relocated. The wood fencing at the north end of the property would remain. The new SPS structure would be constructed north-northwest of the existing platform. The portion of the 18-inch C.I. discharge piping from the existing wet well to Morrison Road would remain in place. The existing wet well would remain in place and would be rehabilitated. A new 1-inch copper line from the existing water meter to

the SPS would be required. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the east elevation. The grade at the site is 13.5 feet above msl. The new pump SPS would be constructed of CMU walls and accessible floor would be elevated 10 feet, 8 inches above the ground surface to an elevation of approximately 24 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 3.00 feet above msl. The structure would be 24 feet, 4 inches by 21 feet, 0 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 40.11 feet above msl. Figure 10 depicts the location of the Lawrence SPS.

Figure 10: Site 6 – Lawrence SPS



3.2.7 Scope of Work for Site 7 - Plum Orchard SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS includes the removal of the existing service pole, the existing elevated electrical platform and duct bank, a portion of the existing discharge piping, and the existing SPS dry well access structure, operating level floor, top slab and beams. A portion of the dry well would be demolished. The demolition pits would be backfilled with sand. The existing wet well would remain and would be rehabilitated, which would include the plugging with brick and

mortar of the void created in the wet well. The construction of the new SPS would require installation of 1-inch copper water line from the existing water meter to the new SPS, installation of chain link fencing, installation of concrete paving, and adjustment of the wet well access to the required grade. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the north elevation. The grade at the site is 21 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 7 feet above the ground surface to an elevation of approximately 28 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 12.83 feet above msl. The structure would be 16 feet, 4 inches by 20 feet, 4 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 43.80 feet above msl. Figure 11 depicts the location of the Plum Orchard SPS.

Figure 11: Site 7 - Plum Orchard SPS



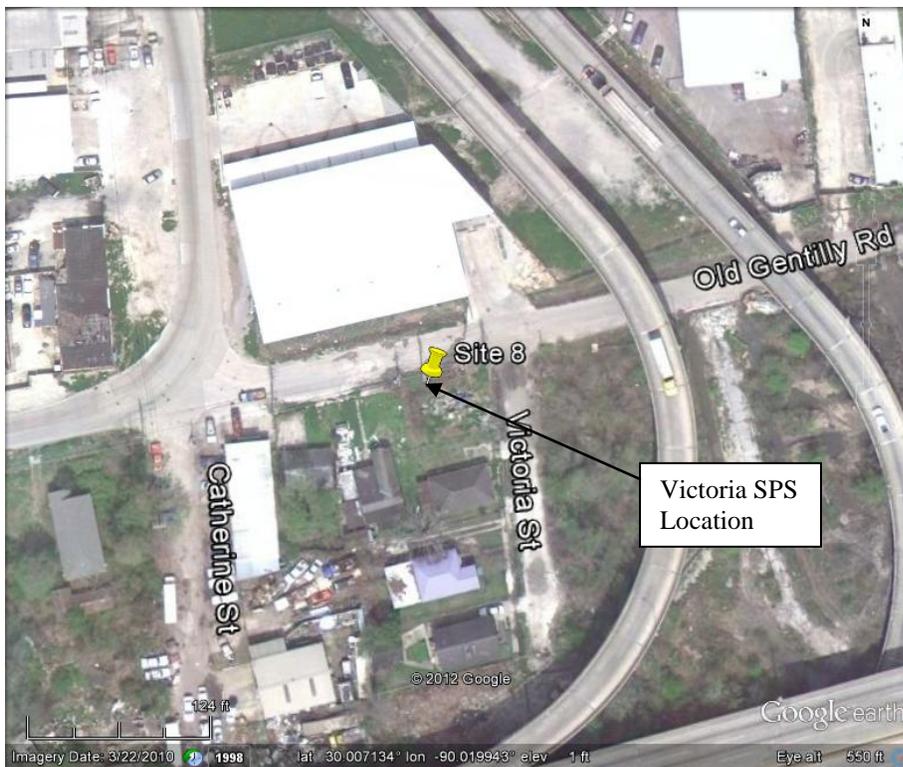
3.2.8 Scope of Work for Site 8 – Victoria SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS involves the removal of a portion of the existing 12-inch discharge line, the existing sewer manhole and wet well, the existing suction pipes, and the existing electrical

equipment and platform. The existing dry well would be rehabilitated as the required wet well. The existing water service line would be abandoned in place and the existing 8-inch sewer line would be relocated. The new SPS would be constructed on the southwest corner of the existing property. The required 16-inch ductile iron (D.I.) pipe sewer line would extend from the rehabilitated wet well to the subterranean main sewer beneath Old Gentilly Road. The exterior south and west walls would be formed against a sheet piling retaining wall. The sheet piling would be tied into the existing dry well walls. The construction of the new SPS would require installation of 1-inch copper water line from the existing water meter to the new SPS, installation of chain link fencing, installation of concrete paving, and adjustment of the wet well access to the required grade. New 0.25-inch polyflow bubbler tube with a 2-inch rigid galvanized steel conduit, PVC sump pump discharge lines, and two (2) 1-inch diameter steel threaded air lines from the new SPS to the existing wet well would also be required.

The new SPS would be accessible from the north elevation. The grade at the site is 22 feet above msl. The new SPS would be constructed of CMU walls and accessible floor would be elevated 6 feet above the ground surface to an elevation of approximately 28 feet above msl. All equipment required to be elevated would be installed on this floor. Submersible pump equipment would be installed beneath the elevated floor and would be submerged to a total depth of 12 feet above msl. The structure would be 21 feet, 0 inches by 18 feet, 4 inches, not including the stairs and the concrete access platform. The top of the structure truss would be at 43.94 feet above msl. Figure 12 depicts the location of the Victoria SPS.

Figure 12: Site 8 – Victoria SPS



3.2.9 Scope of Work for Site 9 – Burke SPS

Under the FEMA PA Program, new electrical equipment was installed on a raised metal platform approximately 3.5 to four (4) feet above grade as an interim measure to protect the critical electrical equipment at the site. All original electrical equipment was removed. The scope of work for this SPS includes the removal of the existing elevated electrical platform, existing bubbler system piping within station, complete removal of all existing electrical equipment, devices, components, etc and complete removal of all existing underground electrical conduit, conductors, and duct banks. A completely new electrical system inside the station's dry well was installed along with a completely new electrical service installation, including electrical power service conductors and conduit, concrete encased duct bank, temporary electrical power installation during construction, etc. Two (2) sump pumps and two (2) sewage pumps were replaced. Two (2) 60HP, 60Hz, 880 RPM motors were installed. A 30 feet section of six (6) feet high wooden fence was replaced along the property line. During the entire duration of the project, a temporary by-pass pumping was installed and utilized.

Under HMGP, the existing drywell for Burke SPS would be demolished. The contractor would install a new 400 square feet reinforced concrete and CMU pump station in its place and tie into the existing wet well with two (2) 10-inch suction lines. The pump discharge would tie into the existing force main on site to minimize existing force main demolition. The new pump station would have two (2) levels with self-priming pumps in the lower floor and electrical controls on the upper floor. The entryway for the pump station would be into the upper floor above the FEMA 500 year base flood elevation (See Section 4.2.1 for further discussion on floodplain requirements). The structure of the pump station would be designed to meet current building codes. The pump station would be operated automatically and monitored by the S&WB remotely with a Supervisory Control and Data Acquisition system. The site fencing will be upgraded with wood and metal picket fencing to conform to the New Orleans Planning commission.

Figure 13: Site 9 – Burke SPS



According to the S&WB and the engineering design firm for the proposed project, Burk-Kleinpeter, Inc., all of the new SPSs would resemble the recently reconstructed Lamb and Michoud SPSs, both of which are located in New Orleans East. Figure 13 presents a visual of the general appearance of how the completed project would appear at each proposed SPS location. This photograph is of the Lamb SPS, located at 6450 Morrison Road, New Orleans, LA.

Figure 14: Appearance of a Completed SPS for Visual Effect (Lamb SPS)



3.3 Alternatives Eliminated From Further Consideration

The following alternatives was also considered as a possible way to address the purpose and need of the applicant but was eliminated from further consideration.

3.3.1 Elevation of Critical Electrical Components on a Metal Platform

Another alternative considered by the applicant is to elevate the electrical equipment three (3) to four (4) feet above ground level on a metal platform without any protective enclosure. As discussed in Section 3.2, the applicant has completed, or is in the process of completing, this mitigation action at the majority of SPSs evaluated in this EA as an interim measure to protect the critical electrical equipment at each site. Although this mitigation action would elevate the electrical equipment, in some cases the level of elevation that would be achieved would be insufficient to provide protection of the electrical equipment to or above the 500-year flood elevation (See Section 4.2.1 for further discussion on floodplain requirements). In addition, the electrical equipment would be unprotected from the elements and would continue to be vulnerable to failure from water intrusion during rain events. This alternative, while relatively inexpensive, is only considered to be suitable as an interim mitigation measure. This alternative

is not considered to be a viable long-term solution to providing adequate flood and severe weather protection to the critical SPSs, and has therefore been dismissed.

3.3.2 Alternative Location for the Relocation of SPS 8

As discussed in Section 3.2.1, the proposed new SPS 8 location is within the proposed Lafitte Greenway corridor. In an effort to keep the parcel undeveloped and park-like, the S&WB considered an alternative site for the reconstructed SPS 8 structure that would be located outside the proposed Lafitte Greenway corridor. The proposed alternative site is the Fact-O-Bake site, located at 600 North Broad Avenue, near the existing SPS 8 structure; see Figure 3. The Fact-O-Bake facility is an existing automobile repair shop which also provides automobile painting services. Although this site is located closer to the existing structure and would therefore require less disruption of public streets to complete the required underground construction, this parcel is not currently owned by the city of New Orleans, and would therefore need to be purchased by the city.

In November 2010, the Louisiana Department of Environmental Quality (LDEQ) responded to a complaint that waste tires were being stored on or adjacent to this parcel without LDEQ authorization. See Appendix D for documentation of this incident. In addition, because of the historic and current use of the parcel as an automobile repair facility, the city of New Orleans would need to perform a Phase I/Phase II Environmental Site Assessment (ESA) to determine whether the soil and/or groundwater on and under the parcel are contaminated with constituents associated with such activities. If, based on the results of the ESA, the parcel is determined to be contaminated; the city of New Orleans would be required to remediate the site prior to developing it with the new SPS 8 structure and associated ground disturbance. FEMA does not provide HMGP funding for mitigation actions on sites that contain hazardous materials or contamination over regulatory limits, nor can FEMA funding be used to remediate contaminated sites. In addition, the city of New Orleans would potentially be liable for off-site contamination that has migrated off-site or may migrate off-site at any time in the future. For these reasons, this alternative has been dismissed.

4.0 AFFECTED ENVIRONMENT AND IMPACTS

4.1 Impact Summary

The following matrix summarizes the results of the environmental review process (Table 3). Potential environmental impacts that were found to be negligible are not evaluated further. Resource areas that have the potential for impacts of minor, moderate, or major intensity are further developed in the following sections. Definitions of the impact intensity are described below:

Negligible: The resource area (e.g., geology) would not be affected, or changes would be either non-detectable or if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.

Minor: Changes to the resource would be measurable, although the changes would be small and localized. Impacts would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.

Moderate: Changes to the resource would be measurable and have both localized and regional scale impacts. Impacts would be within or below regulatory standards, but historical conditions are being altered on a short-term basis. Mitigation measures would be necessary and the measures would reduce any potential adverse effects.

Major: Changes would be readily measurable and would have substantial consequences on a local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

Table 3: Affected Environment and Environmental Consequences Matrix

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Geology, Soils, and Seismic Hazards	X				<p>There is potential for short-term localized increase in soil erosion during construction.</p> <p>NRCS policy clarifies several activities that are not subject to the rules and regulations of the Farmland Protection Policy Act (FPPA)-Subtitle I of Title XV, Section 1539-1549 of Public Law 97-98, which was published in the Federal Register on June 17, 1994. The third exception item is "Projects on land already in urban development or used for water storage." The NRCS Alexandria, LA office has determined that the proposed project construction areas are located within urban areas. The proposed project is therefore exempt from the rules and regulations of the FPPA. The NRCS has no objections to the proposed project.</p> <p>Louisiana lies in an area of low seismic risk. There is one known subsurface fault in Orleans Parish and one recorded historical earthquake in Orleans Parish, which occurred on November 6, 1958. See Appendix D for maps of Louisiana geologic faults and historical earthquakes. The potential for seismic effects on the proposed project sites would be taken into account during the soil stability analysis and in construction planning, which would be conducted by a State-licensed engineer.</p>	<p>NRCS correspondence letter from W. Britt Paul of the Alexandria, LA office, dated 01/26/12. (See Appendix D)</p> <p>LDEQ email dated 1/26/12. (See Appendix D)</p> <p>Internet Resources: NCRS WSS Site Earthquakes in Louisiana</p>	<p>Implement construction Best Management Practices (BMPs); install silt fences/straw bales to reduce sedimentation. Area soils would be covered and/or wetted during construction. If fill is 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 a Louisiana Pollutant Discharge Elimination System (LPDES) permit, if applicable, and implement stormwater pollution prevention plan.</p> <p>The LDEQ has stormwater general permits for construction areas equal to or greater than one (1) acre. It is recommended that the LDEQ Water Permit Division be contacted at (225) 219-3181 to determine whether the proposed improvements require one of these permits.</p> <p>All precaution should be observed to control nonpoint source pollution from construction activities. See also Section 6.0.</p>
Hydrology and Floodplains (Executive Order 11988)		X			<p>Preliminary DFIRMs for Orleans Parish were reviewed on FEMA's web site. The proposed project sites are located within the 100-year (or 1.0 percent chance of flood in any given year) and the 500-year (or the 0.2 percent annual chance flood).</p> <p>The proposed project may require a construction permit from the Orleans Levee District (OLD) for Site 8 – Victoria SPS. See also Section 4.2.1 and Table 4.</p>	<p>Correspondence letters from the LDNR, Coastal Zone Management Program, dated 01/26/12 and 01/30/12. (See Appendix D)</p> <p>Preliminary DFIRM Panels 22071C 0230F, 22071C 0140F, and 22071C 0120F, all dated 11/13/08.</p>	<p>The project area must be kept cleared so as not to interfere with floodplain functions.</p> <p>Coordination with the local levee district for construction permit requirements may be required for Site 8 – Victoria SPS. The applicant must coordinate with the OLD at (504) 286-3100 Ext 1007 or by email to ggillen@orleanslevee.com or pjohnson@orleanslevee.com to determine if a construction permit would be required. See also Sections 4.2.1 and 6.0.</p>

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Wetlands (Executive Order 11990)	X				No USFWS-mapped wetlands are present within the proposed project areas. No apparent wetlands were observed during the FEMA site visit to the proposed project sites. The United State Army Corps of Engineers (USACE) indicated that a Department of the Army permit under Section 404 of the CWA will not be required for the proposed project.	Correspondence letter from the USACE, dated 03/05/2012. (See Appendix D) Internet Resource: U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Wetlands Mapper.	Any changes or modifications to the proposed project will require a revised determination. Off-site locations of activities such as borrow, disposals, haul- and detour roads, and work mobilization site developments may be subject to USACE regulatory requirements. See also Section 6.0.
Surface Water and Water Quality		X			There is potential for short-term localized increase in sedimentation during construction. See also Section 4.2.2.	LDEQ email dated 1/26/12. (See Appendix D)	Contractor to contact the LDEQ to determine if a LPDES permit is required. If required, the contractor must follow all requirements of the LPDES permit. Implement construction BMPs; install silt fences/straw bales to reduce sedimentation. See also Sections 4.2.2 and 6.0.
Groundwater	X				Orleans Parish does not overlie a Sole Source Aquifer. According to the 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.	LDEQ email dated 1/26/12. (See Appendix D) Internet Resources: EPA Region VI Sole Source Aquifer Web Site LDNR SONRIS Database	The contractor should observe all precautions to protect the groundwater of the region. The LDNR Office of Conservation should be contacted at 225-342-5540 if any unregistered drinking water wells are encountered during construction work. See also Section 6.0.
Coastal Resources		X			Orleans Parish lies entirely within the Louisiana Coastal Zone and the proposed project will be subject to the rules and regulations of the Coastal Zone Management Act (CZMA). In addition, the proposed activity is a use of state concern in accordance with Louisiana R.S. 49:214.5. See also Section 4.3.	Correspondence letters from the LDNR, Coastal Zone Management Program, dated 01/26/12 and 01/30/12. (See Appendix D) Preliminary DFIRM Panels 22071C 0230F, 22071C 0140F, and 22071C 0120F (for CBRS)	The proposed project may require a Coastal Use Permit (CUP) from the LDNR. The applicant is required to complete a CUP Application and submit the packet to LDNR in order to make this determination. The submission should include locality maps, construction plats and plans with cross section views, etc., along with the appropriate application fee. Refer to CUP # P20120106. The application packet may be obtained by calling (225) 342-7591 or (800) 267-4019, or by visiting the LDNR website at http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=93&pnid=189&nid=191 . See also Sections 4.3 and 6.0.

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Air Quality	X				During construction, there is a potential for short-term localized increase in vehicle emissions and dust particles. The Orleans Parish airshed is currently in attainment for all criteria pollutants per the Clean Air Act.	LDEQ email dated 1/26/12. (See Appendix D)	Vehicle operation times would be kept to a minimum. Area soils would be covered and/or wetted during construction to minimize dust. See also Section 6.0.
Vegetation and Wildlife	X				The proposed project areas are developed areas. The developed areas consist of maintained grassland or paved roadways and driveways. No long-term impacts to existing vegetation and wildlife are anticipated.	USFWS determination of no effect, dated 02/03/12. (See Appendix D) Louisiana Department of Wildlife and Fisheries (LDWF) correspondence letter dated 01/31/12. (See Appendix D)	
Threatened and Endangered Species (Endangered Species Act Section 7)	X				No impact to federally listed threatened or endangered species is anticipated. No impacts to critical habitats are anticipated. No impacts to state listed rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specific site.	USFWS determination of no effect on Federal trust resources, dated 02/03/12. (See Appendix D) LDWF correspondence letter dated 01/31/12. (See Appendix D)	The applicant would be responsible for contacting the USFWS if there is a change in the scope of work, the project necessitates removal of mature pine trees or if construction activities have not been initiated within one (1) year. See also Section 6.0.
Bald and Golden Eagle Protection Act of 1940 (Title 16 United States Code [USC] §§668-668c)	X				The bald eagle is protected under the Bald and Golden Eagle Protection Act, which prohibits anyone, without permission from the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Bald eagles are known to occur in Orleans Parish.	Internet Resource: USFWS Bald Eagle Management Guidelines and Conservation Measures – The Bald and Golden Eagle Protection Act	If a bald eagle or its nest is spotted within 1,500 feet of the project site during the months of October through mid-May, the applicant must cease construction activities and contact LDWF and USFWS immediately. All correspondence must be documented and remain in the project permanent files. See also Section 6.0.

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Cultural Resources (National Historic Preservation Act of 1966, as Amended [NHPA] Section 106)		X			<p>FEMA has reviewed this project in accordance with the <i>Louisiana State-Specific Programmatic Agreement among FEMA, the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), the Louisiana State Historic Preservation Officer of the Department of Culture Recreation and Tourism (SHPO), the Alabama-Coushatta Tribe of Texas (ACTT), the Chitimacha Tribe of Louisiana (CTL), the Choctaw Nation of Oklahoma (CNO), the Jena Band of Choctaw Indians (JBCI), the Mississippi Band of Choctaw Indians (MBCI), the Seminole Tribe of Florida (STF), and the Advisory Council on Historic Preservation (ACHP) regarding FEMA's Hazard Mitigation Grant Program (2011 LA HMGP PA) dated January 31st, 2011. The 2011 LA HMGP PA was created to streamline the Section 106 review process.</i></p> <p>FEMA does not anticipate any effects to cultural resources at seven (7) of the nine (9) SPSs: Burke, Bullard, DODT, Lake Forest, Lawrence, Plum Orchard, and Victoria. FEMA determined that the scope of work for the Burke SPS met the criteria in the 2011 LA HMGP PA, Appendix C: Programmatic Allowances, Item I, Sections C and H, and Item V, Section D and G. In accordance with Stipulation VI.A of the 2011 LA HMGP PA, FEMA may document this determination in the project file and authorize funding for the undertaking without further Section 106 review. For the scope of work at Bullard, DODT, Lake Forest, Lawrence, Plum Orchard, and Victoria SPSs, FEMA determined a finding of No Historic Properties Affected. SHPO concurrence with these determinations was dated August 8, 2012.</p> <p>However, for SPS 6, the Mid-City NRHD and the New Orleans Sewerage System will be directly affected. FEMA has determined to resolve the Adverse Effects to Historic Properties through the implementation of a Standard Treatment Measure, digital recordation, as outlined in Stipulation X.E(1) of the 2011 LA HMGP PA. SHPO concurrence with FEMA's determination was received, dated August 8, 2012. The Tribes did not object to FEMA's determination within the regulatory timeframes.</p> <p>See also Section 4.4</p>	<p>SHPO concurrence letter dated 8/8/12. (See Appendix D)</p> <p>Internet Resource: FEMA HMGP Programmatic Agreement dated January 31, 2011.</p>	<p>If human bone or unmarked grave(s) are present with 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.</p> <p>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.</p> <p>FEMA will digitally photograph the interior and exterior of SPS 6 and SPS 8 prior to demolition and within two (2) months of SHPO concurrence of this determination. FEMA will also prepare a narrative history of the New Orleans Drainage, Sewerage, and Water System. The first draft will be completed within six (6) months of SHPO concurrence of this determination.</p> <p>See also Sections 4.4 and 6.0.</p>

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Environmental Justice (Executive Order 12898)/Socioeconomics	X				<p>According to the U.S. Census Bureau State and Parish Quick Facts data for 2005-2009, the percentage of families in Orleans Parish below the poverty level is 23.4%. This figure for the State of Louisiana, as a whole is 18.4%. The median household income for Orleans Parish is \$36,258. This figure for Louisiana as a whole is \$42,167. The per capita money income for Orleans Parish was \$23,559. This figure for Louisiana as a whole was \$22,535.</p> <p>The 2010 demographic census data for Orleans Parish are as follows: Caucasian: 33.0%, African American: 60.2%, and Hispanic: 5.2%. The comparable demographic census data for the State of Louisiana as a whole are: Caucasian: 62.6%, African American: 32.0%, Hispanic: 4.2%.</p> <p>The proposed work has no potential to adversely impact any population as the facilities to be reconstructed/elevated would serve the same populations they did prior to the storm.</p>	Internet Resource: U.S. Census Bureau, State and County QuickFacts, Data for Orleans Parish and the State of Louisiana	
Noise		X			<p>During the construction period there would be a short-term increase in noise levels. See also Section 4.5.</p>	Internet Resource: City of New Orleans Noise Ordinance 66-136 (See Appendix D)	City of New Orleans Noise Ordinance limits noise levels by receiving land use. In residential, public, commercial, and industrial areas to varying decibel levels during the "daytime" hours of 7 AM to 10 PM. Construction activities should be limited to this schedule on weekdays See also Sections 4.5 and 6.0.
Public Safety	X				<p>No impacts to public safety and security are anticipated.</p>		<p>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 Occupational Safety and Health Administration (OSHA) regulations and the USACE safety manual.</p> <p>The contractor would post appropriate signage and fencing to minimize potential adverse public safety concerns. See also Section 6.0.</p>

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Traffic and Transportation		X			Traffic volumes along the respective work areas would increase temporarily during work activities. Surface traffic on the affected areas of access roads to sites would be impacted during culvert replacement work on the street. See also Section 4.6 and Table 5.		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. See also Sections 4.6 and 6.0.

Resource Area	Impact Intensity				Impact Summary	Agency Coordination / Permits	Mitigation
	Negligible	Minor	Moderate	Major			
Hazardous Materials and Toxic Wastes	X				<p>Environmental Protection Agency (EPA) 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.</p> <p>The parcel located at St. Louis Street and North Dorgenois Street, which is the same parcel as the proposed new SPS 8 (Site 1B), LDEQ AI # 133182, was used as construction debris, vegetative debris, and staging site after Hurricane Katrina. The LDEQ was notified of this activity and the site was monitored periodically by the LDEQ. All Hurricane Katrina debris was removed and the site was closed as a debris site on 1/23/07. See Appendix D.</p> <p>The parcel where the new SPS 8 (Site 1B) would be constructed is listed in LDEQ EDMS at Richard's Disposal. LDEQ AI # 24564. This property reported hazardous waste generation to the EPA from 1994 to 1997. In 1997, the facility was reported to be out of service. There was no indication of any spills, leaks, or other types of releases from this site in the LDEQ files. See Appendix D.</p> <p>According the LDEQ EDMS records site, the property located at 7300 Chef Menteur Highway (Site 7 Plum Orchard SPS), LDEQ AI #98257 appears as the former Discount Auto Parts – Promiscuous Dump. The site appears to have been cleaned up to the LDEQ's satisfaction. See Appendix D.</p> <p>Adjacent to, and east of, Plum Orchard site there was a concrete slab, the apparent remnants of a former residence. Near the slab, there was an abandoned metal pipe. It is unknown if this pipe is associated with an underground storage tank (UST). The LDEQ does not any records for this property; however, the LDEQ does require registration of smaller (less than 1,000 gallon capacity), USTs that hold heating oil or other substances.</p> <p>No environmental conditions of concern observed during field reconnaissance within the proposed project work areas.</p> <p>The LDNR SONRIS database was queried for the project work areas. According to the LDNR, there are no recorded oil/gas wells located in the proposed project areas.</p>	<p>Internet Resources: EPA Envirofacts Database EPA EnviroMapper EPA Brownfields Database LDEQ Electronic Document Management System (EDMS) LDEQ Voluntary Remediation Program (VRP) Database LDEQ Louisiana State Brownfields Database LDNR SONRIS Database LDEQ Leaking Underground Storage Tank (LUST) Database LDEQ Authorized Debris Sites Database</p> <p>Email from the LDEQ dated 1/26/12 (See Appendix D)</p>	<p>If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable federal, state, and local regulations. The contractor would be required to take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area.</p> <p>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.</p> <p>The LDNR Office of Conservation should be contacted at (225) 342-5540 if any unregistered wells of any type are encountered during construction work. For pipelines and other underground hazards, Louisiana One Call should be contacted at 800-272-3020 prior to commencing operations. See also Section 6.0.</p>

4.2 Water Resources

4.2.1 Hydrology and Floodplains

Executive Order 11988 (Floodplain Management) requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Orleans Parish enrolled in the National Flood Insurance Program (NFIP) on August 3, 1970. Preliminary DFIRMs were produced for Orleans Parish, dated November 13, 2008. The parish has not yet adopted these DFIRMs; however, FEMA will use this data as it is best data currently available. The proposed project locations are located within either the base floodplain (the 100-year or 1.0 percent chance of flooding in a given year) or within the 500-year (0.2 percent annual chance of flooding in a given year). Table 4 summarizes the flood zone for each of the SPS sites. Figures 14, 15 and 16 depict the preliminary DFIRMs and flood zone for each of the SPS sites assessed in this EA. The extent and depth of floodwater after Hurricane Katrina (August 31, 2005) are depicted in Figure 17.

Table 4: Flood Zone and Preliminary DFIRM Panel Data for the Proposed Project Sites

Site #	SPS Name	Address	City	Flood Zone	Preliminary DFIRM Panel
1A	SPS 8 (Existing Location)	Corner of North Broad Avenue and Toulouse Street	New Orleans	AE (EL 0)	22071C 0230F
1B	SPS 8 (Proposed New Location)	Corner of Lafitte Street and North Dorgenois Street	New Orleans	AE (EL 0)	22071C 0230F
2	Bullard	5501 Bullard Avenue	New Orleans	AE (EL -2)	22071C 0140F
3	Dotd	8118 Chef Menteur Highway	New Orleans	X-500 Year	22071C 0140F
4	SPS 6	242 South Solomon Street	New Orleans	AE (EL 0)	22071C 0230F
5	Lake Forest	10451 Lake Forest Boulevard	New Orleans	AE (EL -2)	22071C 0140F
6	Lawrence	7900 Morrison Road	New Orleans	AE (EL -2)	22071C 0120F
7	Plum Orchard	7300 Chef Menteur Highway	New Orleans	X-500 Year	22071C 0120F
8	Victoria	3620 Victoria Street	New Orleans	X-500 Year	22071C 0120F
9	Burke	9001 Morrison Rd	New Orleans	AE (EL-2)	22071C0140F

The proposed project site area is being protected from the 100-year flood hazard by a man-made levee system. Overtopping or failure of any levee system is possible. Coordination with the Orleans Levee District (OLD) for construction permit requirements may be required for Site 8 – Victoria SPS. The OLD is part of a Louisiana State agency which was created under R.S. 38:291 to contain and manage the floodwaters along the major waterways in Louisiana.

Figure 15: Preliminary DFIRM Panel 22071C 0230F

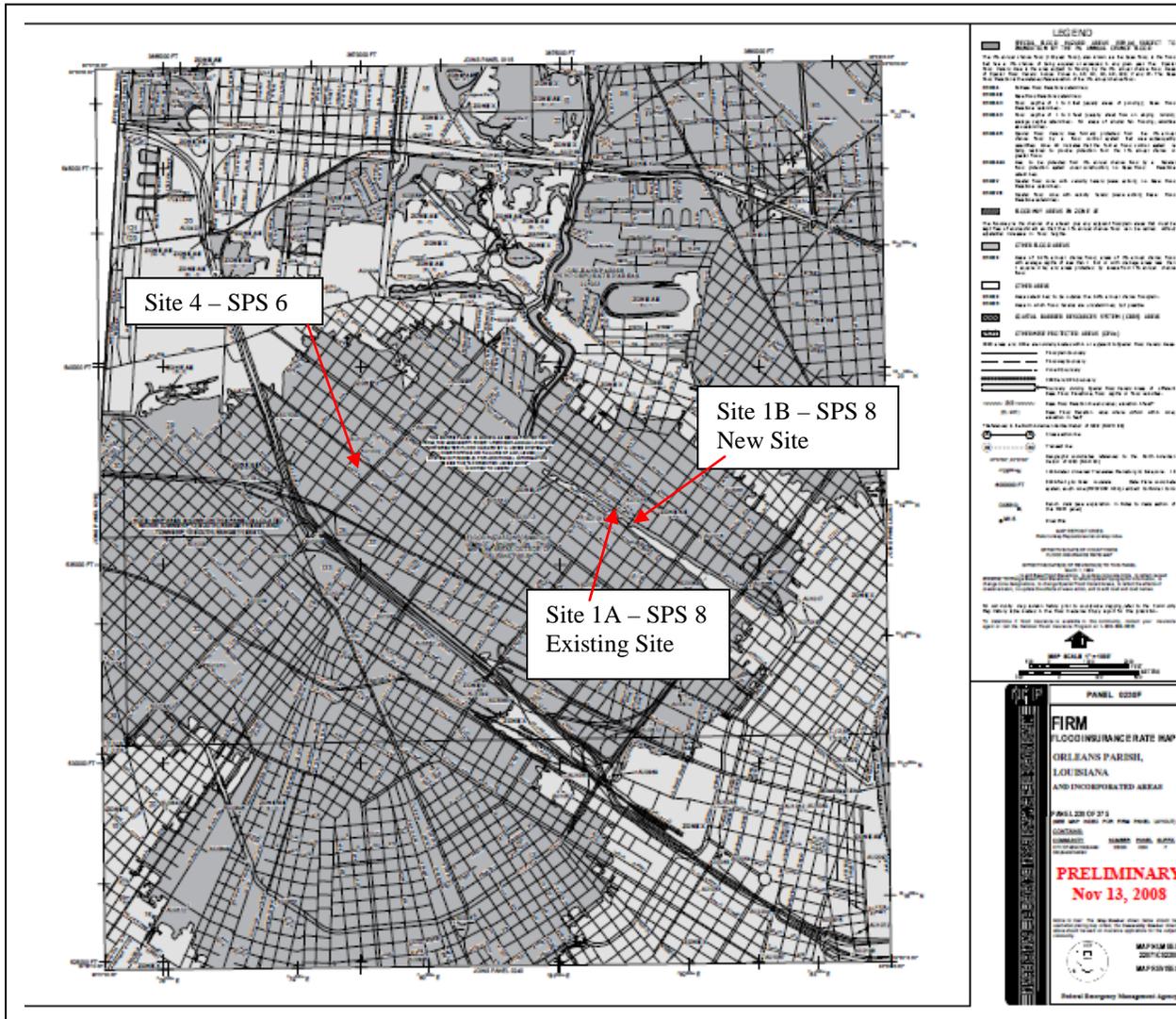


Figure 16: Preliminary DFIRM Panel 22071C 0140F

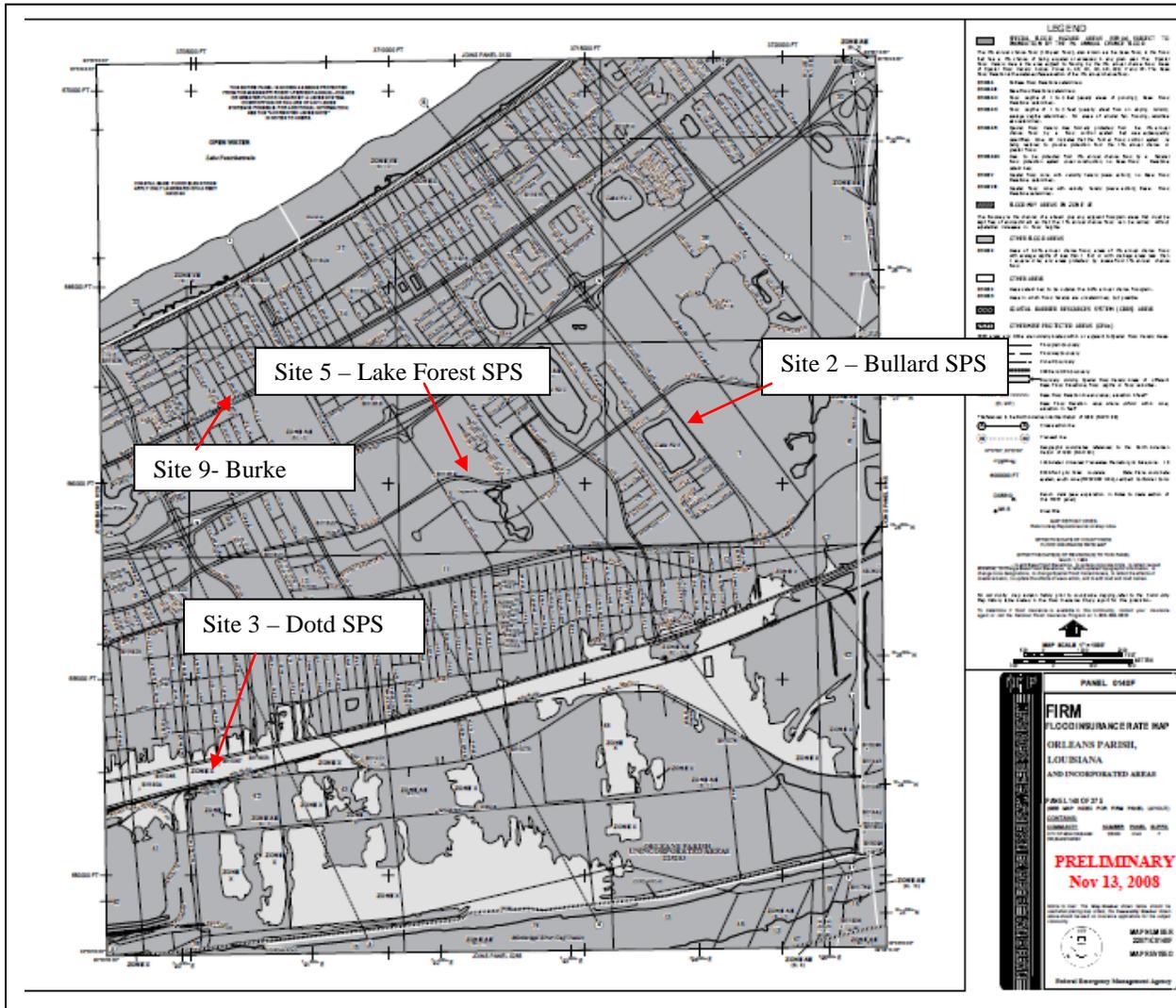


Figure 17: Preliminary DFIRM Panel 22071C 0120F

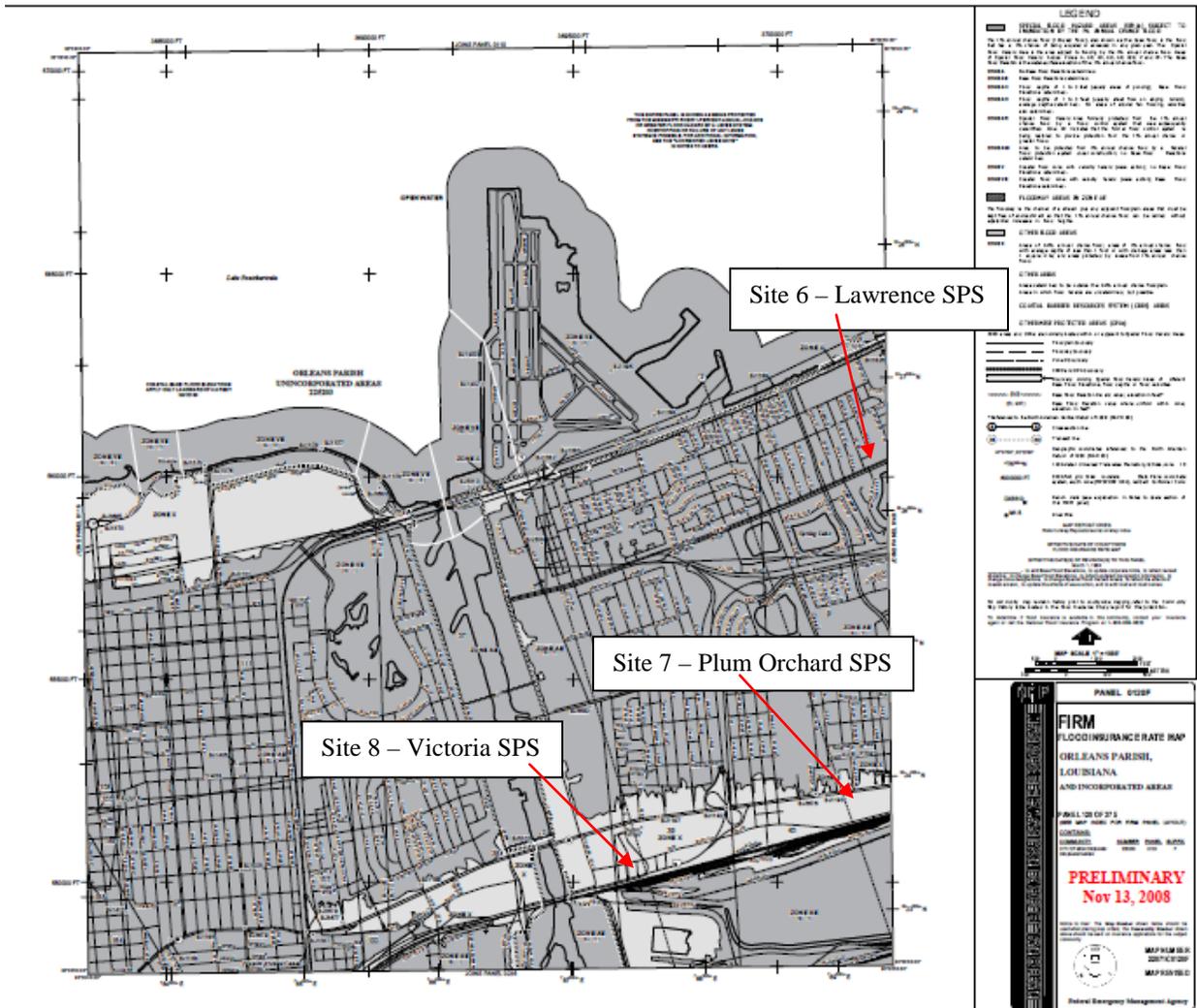
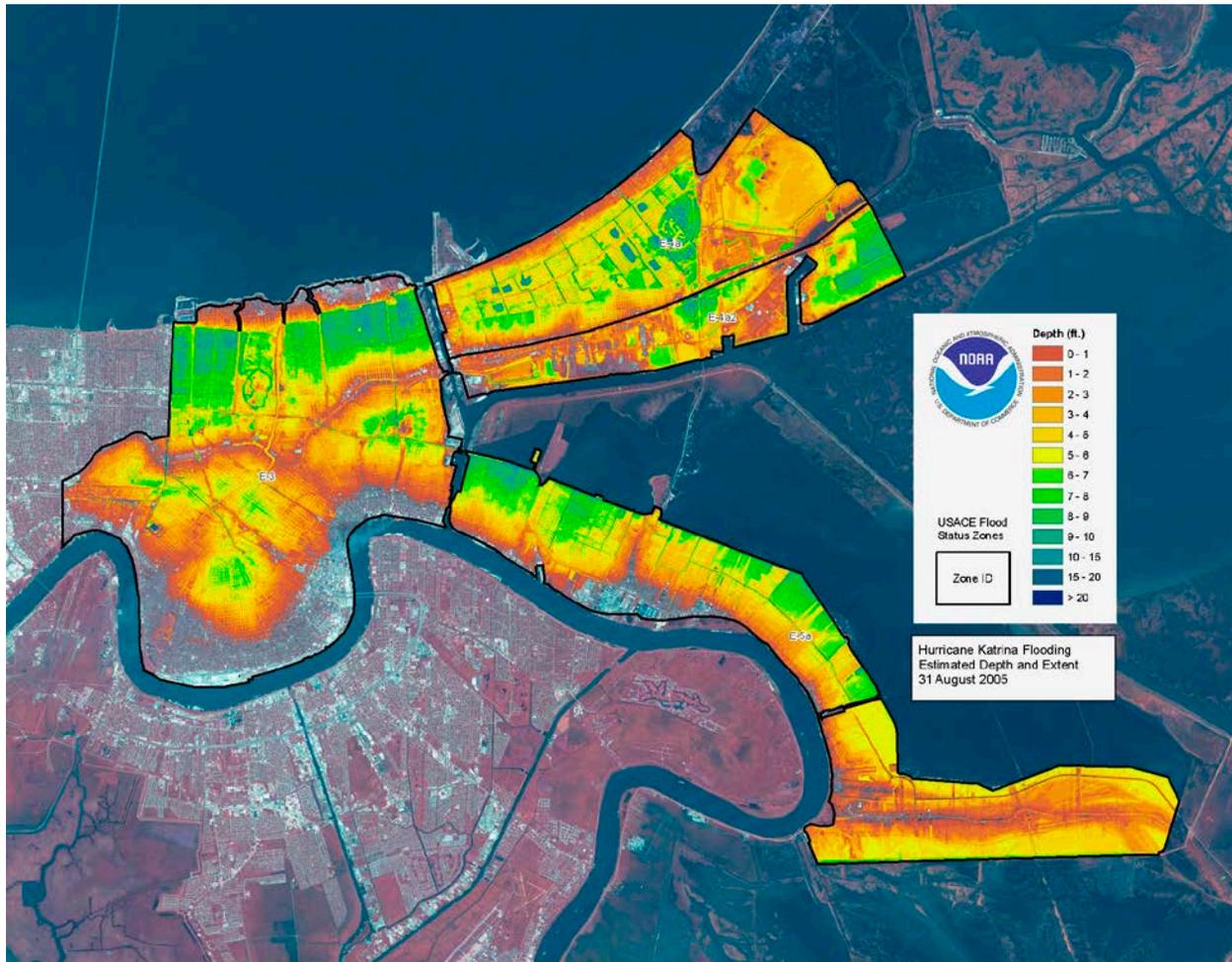


Figure 18: Hurricane Katrina Flooding Depth and Extent in Orleans Parish, August 31, 2005



Alternative 1- No Action: The No Action Alternative would have no effect on floodplains.

Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action): The proposed project sites lie within either the base floodplain (the 100-year or 1.0 percent chance of flooding in a given year) or within the 500-year (0.2 percent annual chance of flooding in a given year). To comply with Executive Order 11988, Floodplain Management, FEMA is required to follow the procedure outlined in 44 CFR Part 9 to assure that alternatives to the proposed action have been considered. This process is known as the "Eight-Step Planning Process". A copy of the Eight-Step document is presented in Appendix E.

These SPSs are defined as facilities in 44 CFR § 206.226(c)(1), as “providing critical service which includes, power, water, sewer services, wastewater treatment, communications, emergency medical care, fire department services, emergency rescue, and nursing homes.” According to 44 CFR § 9.5(a) FEMA shall use the 500-year floodplain for critical actions when determining whether a proposed action is located within the floodplain. After evaluating alternatives, including impacts to the floodplain, Orleans Parish determined that the proposed

project is the most practical alternative. Using the Eight-Step Process, FEMA has determined that there is no practicable alternative to reconstructing/elevating and hardening the proposed SPSs within the 100- year or the 500-year floodplain because:

1. The entire proposed project area and surrounding community lies within the 100-year or the 500-year floodplain. There are no practical locations outside of the 100-year or 500-year floodplain that Orleans Parish could utilize for the proposed SPSs. Review of the Orleans Parish preliminary DFIRMs indicates that there are no suitable FEMA-mapped X zones (areas outside the 100- or 500-year floodplain) in Orleans Parish.
2. A “no action” plan would not provide a feasible solution to the needs and requirements of the parish toward providing for the health and safety of residents that is required during a natural disaster.

According to FEMA NFIP regulations, the lowest floor used for occupied space areas should be elevated to the higher of the following elevations, which should be used as the design flood elevation (DFE), which is, at a minimum, the BFE, and may include a factor of safety known as freeboard of 1 foot or more, as adopted by the community or parish for flood load calculations:

1. Two feet above the BFE, i.e., 2 feet above the flood elevation having a 1.0 percent annual chance of being equaled or exceeded in any given year (100-year event); or
2. The stillwater flood elevation associated with the 0.2 percent annual chance of being equaled or exceed in any given year (500-year event); or
3. The lowest floor elevation required by the community’s floodplain ordinance, if such ordinance exists.

There no alternative locations that the CNO could identify that would be outside of the floodplain because there is no low risk to flooding or unshaded zone X areas in these neighborhoods. Each neighborhood must have one or more SPSs, regardless of whether or not the neighborhood is located within the 100-year or 500-year floodplain, because the SPSs must be located throughout the East Bank of the city to transport raw sewage from residential, commercial, and industrial structures to the New Orleans East Bank STP.

Alternatives consisting of locating the proposed project outside the floodplain or taking “no action” are not practicable.

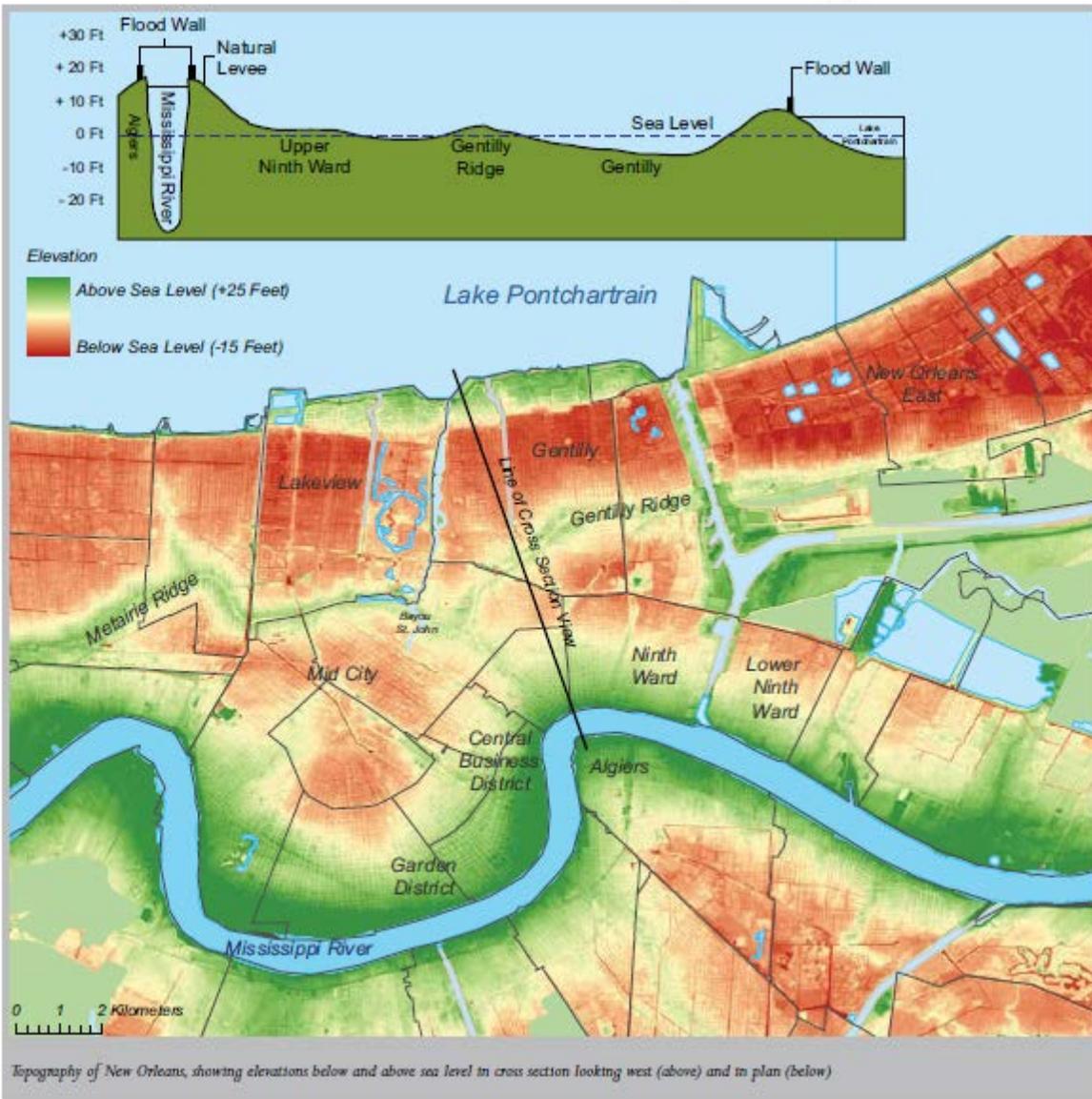
4.2.2 Surface Water and Water Quality

There are man-made levees along the Mississippi River, Lake Pontchartrain, and along the major channels, canals, and bayous within Orleans Parish. In addition, natural levees, which are the result of many decades of sediment deposition from historic Mississippi River annual spring flooding, are located along both sides of the Mississippi River and are approximately one (1) to two (2) miles in width. The sediment deposition process no longer occurs on a regular basis due to construction of the man-made levee system for flood control along the Mississippi River. The elevations of the natural grade in Orleans Parish range from approximately ten (10) to fifteen (15) feet above msl along the Mississippi River to as much as fifteen (15) feet below sea level in

the lowland marshes of New Orleans East and other low-lying areas within the parish as depicted in Figure 18. Approximately 25 percent of the parish is marshland. As a result of the topography of New Orleans, all rainwater that falls within the parish must be pumped out of the city by the city’s extensive network of pumps. This activity also falls under the jurisdiction of the S&WB.

The required excavation work would increase the potential for short-term localized increase in sedimentation during construction activities.

Figure 19: Topography of New Orleans, Louisiana



Alternative 1- No Action: The No Action Alternative would not change site drainage or have an effect on the surface water quality of the area.

Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action): The proposed project construction drawings indicate that excavation and trenching would be required to construct the new SPS building foundations and submerged pump pits, to install buried related pipes, manholes and other equipment as required, and install new or relocate utilities, (where required), both on the proposed SPS sites and, in some cases, the adjacent streets to access the main sewer lines.

During construction there is the potential to impact surface waters through minor erosion and sedimentation. Excavation and trenching would be required to install the pump equipment pits for each the SPSs. In order to minimize impacts to waters of the U.S., the contractor is required to implement BMPs that meet the LDEQ's permitting specifications for storm water discharge regulated under Section 402 of the CWA. This includes specific construction measures to reduce or eliminate run-off impacts. However, any adverse effects to water quality associated with the construction of the projects would be short term and minimized by the measures described above.

4.3 Coastal Resources

The LDNR regulates development in the designated coastal zone under the CZMA of 1972. A central requirement of the CZMA is that each state having a coastline develops a management program for its coastal zone. In 1978, the Louisiana Legislature passed the State and Local Coastal Resources Management Act. This act established a coastal zone boundary and a system of CUPs to regulate uses and activities in Louisiana's coastal zone. These CUPs are required for those projects that have a direct impact on coastal waters.

Federally-funded activities that affect the coastal zone are also subject to federal consistency provisions of the CZMA. Before the federal agency can grant financial assistance, the proposed project applicant must attach a consistency certification issued by the state coastal agency.

The USFWS administers the Coastal Barrier Resource Act of 1982 (CBRA). The Act designated various undeveloped coastal barrier lands and islands, depicted by specific maps and the new FEMA DFIRMs, for inclusion in the CBRS. Areas so designated were made ineligible for direct or indirect Federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities. There are designated CBRS units in Louisiana, but not near the proposed project area.

Alternative 1- No Action: The No Action Alternative would have no effect on the coastal zone or any designated CBRS unit.

Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action): The proposed project site is located in the designated Louisiana Coastal Management Zone. The LDNR regulates the Louisiana Coastal Zone Management Program. In a response letter dated January 26, 2012, the LDNR indicated that the applicant must complete a

Coastal Use Permit Application packet to the LDNR to obtain an official determination, and begin processing any CUP that may be required for the project. The applicant must coordinate with the LDNR for permits and clearances. In addition, the LDNR has determined that the proposed activity is a use of state concern in accordance with Louisiana R.S. 49:214.5. Copies of the agency correspondence are presented in Appendix D.

The proposed project site is not part of a designated CBRS unit and therefore, CBRA does not apply.

4.4 Cultural Resources

The consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA) as implemented by 36 CFR Part 800. Requirements include the identification of significant historic properties that may be impacted by the proposed action or alternatives within the project's area of potential effect. Historic properties are defined as archaeological sites, standing structures or other historic resources listed in or determined eligible for listing in the National Register of Historic Places. If adverse effects on historic, archaeological or cultural properties are identified, agencies must consider effects of their activities and attempt to avoid, minimize, or mitigate the impacts to these resources.

FEMA has reviewed this project in accordance with the *Louisiana State-Specific Programmatic Agreement* (http://www.fema.gov/txt/hazard/hurricane/2005katrnia/LA_HMGP%20PA.txt) among FEMA, the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), the Louisiana State Historic Preservation Officer of the Department of Culture Recreation and Tourism (SHPO), the Alabama-Coushatta Tribe of Texas (ACTT), the Chitimacha Tribe of Louisiana (CTL), the Choctaw Nation of Oklahoma (CNO), the Jena Band of Choctaw Indians (JBCI), the Mississippi Band of Choctaw Indians (MBCI), the Seminole Tribe of Florida (STF), and the Advisory Council on Historic Preservation (ACHP) regarding FEMA's Hazard Mitigation Grant Program (2011 LA HMGP PA) dated January 31st, 2011. The 2011 LA HMGP PA was created to streamline the Section 106 review process.

Existing Conditions

FEMA Historic Preservation Staff consulted the National Register of Historic Places (National Register) database and the Louisiana Cultural Resources Map and determined that the project locations for Burke, Bullard, Dodt, Lake Forest, Lawrence, Plum Orchard, and Victoria are not located within a listed or eligible National Register Historic District (NRHD) nor are they located within view-shed of a property individually listed in the National Register. The pump stations at Burke, Bullard, Dodt, Lake Forest, Lawrence, Plum Orchard, and Victoria are less than fifty (50) years of age and do not meet the criteria to qualify for listing in the National Register under Criterion Consideration G. Additionally, they were constructed outside of the period of significance for the National Register-eligible New Orleans Drainage System which extends from 1897 to 1948.

A review of the Louisiana Cultural Resources Database provided by the Louisiana Division of Archaeology did not indicate the presence of any previously recorded archaeological sites within the project locations for Burke, Bullard, Dodt, Lake Forest, Lawrence, Plum Orchard, and

Victoria. The SPSs are located in an industrialized and developed portion of eastern New Orleans. This area falls outside the coverage of the available archival maps of the region, but areas covered nearby by the Hardee map of 1878 depict the surrounding regions as swampland. This portion of the New Orleans region was generally unsuitable for development prior to modern drainage, as such cultural features such as privies or wells are not expected to occur. Additionally, the original construction of these pumping stations involved massive excavation and ground-disturbance, effectively precluding the possibility of encountering intact cultural deposits within the footprint of the original facilities.

SPS 6 is located within the Mid-City NRHD. The Mid-City NRHD was listed in the National Register on December 10, 1993 under Criteria C for architecture. The period of significance for the Mid-City NRHD extends from 1860-1943. SPS 6 is also associated with the City of New Orleans' extensive drainage, sewerage, and water system. As part of an extensive study conducted in 1999, the Army Corps of Engineers determined that the drainage system was eligible for listing in the National Register under Criteria A and C. Following Hurricane Katrina in a letter dated April 2, 2006, FEMA determined that the sewerage system was a connected part of the National Register-eligible drainage system, and therefore, also eligible for listing in the National Register.

A review of the Cultural Resources Database provided by the Louisiana Division of Archaeology found that SPS 6 is not located on a previously recorded archaeological site. Examination of archival maps indicates some development within the area by 1878; however, construction of the pumping stations involved massive ground disturbance for underground water lines, utilities, etc. The facility is located within a developed, residential area and all proposed work will occur in areas that have witnessed prior disturbances in the form of residential and road construction, utility and sewer line emplacement, etc.

The existing SPS 8 entrance structure is located within the Parkview NRHD which was nominated to the National Register on June 6, 1995 under Criterion Consideration C. The district's period of significance extends from 1890 to 1945. SPS 8 is also associated with the sewerage system that is eligible for listing in the National Register.

SPS 8 is proposed to be relocated to the neutral ground at the corner of Lafitte and North Dorgenois Streets, the location of the old Carondelet Canal, which was constructed ca. 1794 and backfilled in 1938. After filling of the canal, the area served as the Colored Veterans Housing projects until these facilities were demolished ca. 1960's. The area is currently built up with 4 feet or more of gravel and rubble fill and no traces of the former projects were visible. Additionally, these projects were constructed after city water and sanitation services were established in this area, therefore, archaeological features such as privies or wells are not expected to be present. Furthermore, the construction and subsequent backfilling of the Carondelet Canal effectively precludes any possibility of recovering evidence of occupations preceding the development of the Veteran's housing projects.

Alternative 1 – No Action: The No Action alternative would have no effect on cultural resources.

Alternative 2 – Reconstruction/Elevation and Hardening of Eight (8) Sewage Pump Stations (Proposed Action): FEMA has determined that Alternative 2 will have an adverse effect on cultural resources at two (2) of the nine (9) SPSs, SPS 6 and SPS 8, due to their location. FEMA does not anticipate any effects to cultural resources at seven (7) of the nine (9) SPSs: Burke, Bullard, DODT, Lake Forest, Lawrence, Plum Orchard, and Victoria. FEMA determined that the scope of work for the Burke SPS met the criteria in the 2011 LA HMGP PA, Appendix C: Programmatic Allowances, Item I, Sections C and H, and Item V, Section D and G. In accordance with Stipulation VI.A of the 2011 LA HMGP PA, FEMA may document this determination in the project file and authorize funding for the undertaking without further Section 106 review. For the scope of work at Bullard, DODT, Lake Forest, Lawrence, Plum Orchard, and Victoria SPSs, FEMA determined a finding of No Historic Properties Affected. SHPO concurrence with these determinations was dated August 8, 2012.

However, for SPS 6, the Mid-City NRHD and the New Orleans Sewerage System will be directly affected. FEMA has determined that the existing SPS 8 is a contributing element to the Parkview NRHD and the New Orleans Sewerage System, and these two historic properties will be directly affected by this alternative. FEMA has also determined that SPS 6 is a contributing element to the Mid-City NRHD and the New Orleans Sewerage System, and these two historic properties will be directly affected by Alternative 2.

FEMA has applied the Criteria of Adverse Effect as required under 36 CFR 800.5(a).1 and determined that the construction of SPS 8 on a vacant lot will not adversely affect the Parkview NRHD or the Mid-City NRHD. The new construction will be located outside both districts and the introduction of this new visual element within the viewshed of the two districts will not alter the characteristics of the districts. Additionally, those elements within the closest proximity to the proposed SPS 8 are non-contributing elements of the district.

FEMA has applied the Criteria of Adverse Effect as required under 36 CFR 800.5(a).1 and determined that the Mid-City NRHD will be adversely affected by the demolition of SPS 6 as it results in the physical destruction of a contributing element to the district. The construction of the new SPS 6 will also introduce a new building within the district. Approximately 34.5 feet in height, the stucco clad building will tower over the adjacent one-story bungalow dwellings, thus altering the district's immediate design, setting, and feeling. The Parkview NRHD will also be adversely affected by the demolition of SPS 8 as it results in the physical destruction of a contributing element to the district. The New Orleans Sewerage System will also be adversely affected by the demolition of two contributing elements to the system, SPS 6 and SPS 8.

FEMA has determined to resolve the Adverse Effects to Historic Properties through the implementation of a Standard Treatment Measure, digital recordation, as outlined in Stipulation X.E(1) of the 2011 LA HMGP PA. FEMA has submitted the results of its efforts to identify and evaluate historic properties, its assessment of effects to historic properties, and its proposal to resolve adverse effects to historic properties through digital recordation to SHPO and federally recognized tribes that have expressed an interest in this project. SHPO concurrence with FEMA's determination was received, dated August 8, 2012. The Tribes did not object to FEMA's determination within the regulatory timeframes. The Applicant must comply with the conditions set forth in the grant document.

4.5 Noise

Noise is generally described as unwanted sound. The project areas are generally heavily developed with residential and commercial structures and heavily traveled roadways are located near the proposed project sites. There are noise receptors within 500 feet of the proposed project sites. Noise levels within and adjacent to the project area would increase during construction activities as a result of construction equipment and increased vehicular activity.

Alternative 1- No Action: The No Action Alternative would have no impact on noise in the project area.

Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action): Construction and hardening of the new SPS structures would result in an increase in noise at each site. The increase is expected to be temporary and would not affect any sensitive receptors. Orleans Parish has specific ordinances regarding construction noise, which are presented in Appendix D. To comply with the ordinance, construction activities should be limited to a 7 A.M. to 10 P.M. construction schedule on all workdays.

4.6 Traffic and Transportation

The proposed sites are located in heavily developed, high traffic volume areas.

Alternative 1- No Action: The No Action alternative would have no effect on traffic.

Alternative 2 – Reconstruction/Elevation and Hardening of Nine (9) Sewage Pump Stations (Proposed Action): Construction at the proposed project sites would have a temporary effect on traffic by increasing the number of heavy machinery vehicles within and around each proposed site. Construction traffic should be closely monitored and controlled as appropriate. All construction activities would be conducted in a safe manner in accordance with OSHA requirements.

During construction activities, the construction sites would be fenced off to discourage trespassers. The contractor would implement traffic control measures at each site as necessary, including flag men, to control traffic flow during the construction activities.

Surface traffic on the affected areas of adjacent streets would be impacted during work at the sites. Table 5 provides information on the public streets that would be affected by the proposed work, based on construction drawings. See Appendix B for the Construction Plans for each proposed site. These plans provide details of the specific street sections which would be affected by the proposed work at each site.

Table 5: Public Streets Affected by the Proposed Project Work

Site #	SPS Name	Address	Public Streets Affected by Proposed Work
1A	SPS 8 (Existing Location)	Corner of North Broad Avenue and Toulouse Street	<ul style="list-style-type: none"> • North Broad Avenue from Bienville Avenue to North of Toulouse Street • Toulouse Street from North Broad Avenue to North Dorgenois Street
1B	SPS 8 (Proposed New Location)	Corner of Lafitte Street and North Dorgenois Street	<ul style="list-style-type: none"> • Lafitte Street Northeast of the Site (Near the Intersection with North Dorgenois Street) • North Dorgenois Street Northwest of the Site (Near the Intersection with Lafitte Street) • Toulouse Street Closed at North Dorgenois Street to North Broad Avenue (Local Access Only)
2	Bullard	5501 Bullard Avenue	Bullard Avenue West of the Site
3	Dotd	8118 Chef Menteur Highway	Chef Menteur Highway North of the Site
4	SPS 6	242 South Solomon Street	<ul style="list-style-type: none"> • South Solomon Street Northwest of the Site (At the Intersection with Palmyra Street) • Palmyra Street Northwest of and Southeast of the Site (Near the Intersection with South Solomon Street) East to South Carrollton Avenue
5	Lake Forest	10451 Lake Forest Boulevard	Lake Forest Boulevard South of the Site
6	Lawrence	7900 Morrison Road	Morrison Road South of the Site
7	Plum Orchard	7300 Chef Menteur Highway	Chef Menteur Highway North of the Site
8	Victoria	3620 Victoria Street	<ul style="list-style-type: none"> • Old Gentilly Road North of the Site • Victoria Street East of the Site
9	Burke	9001 Morrison Rd	<ul style="list-style-type: none"> • Burke Ave north of the site • Morrison Rd to the east and west of the site

5.0 CUMULATIVE IMPACTS

The impact of Hurricane Katrina in Orleans Parish resulted in either wind or flood damage to many structures. There have been many projects within Orleans Parish to repair numerous residential, commercial, and public facilities and infrastructure to pre-disaster condition with upgrades to codes and standards. Based on the Orleans Parish 2010 Hazard Mitigation Plan Update, projects are in planning stages to retrofit and upgrade critical and non-critical facilities city-wide with a five (5) to ten (10) year time frame for implementation. Many residential structures within the parish have been elevated or reconstructed. Orleans Parish has, or is currently improving, the drainage infrastructure at several floodprone areas within the parish. Other similar neighborhood-wide drainage projects are in planning stages, also with a planned five (5) to ten (10) year time frame for implementation. The city is also pursuing an acquisition/buyout/relocation program, where property owners in high-risk areas could elect to move out of high risk area to a lower risk area, which could potentially alter neighborhood demographics and require changes in the city’s infrastructure and alter utility demand and distribution. The city of New Orleans, with the support of various federal and non-federal

agencies, is pursuing several wetland restoration projects within the parish over the next three (3) to 20 years.

In their September 2010 Mitigation Plan Appendix 3 (Mitigation Projects List), the S&WB identified 65 SPSs (including the nine (9) SPSs assessed in this EA), for various storm-proofing mitigation actions to be funded by FEMA and the USACE that would eliminate below-ground pumping stations, elevate pumping components, elevate electrical components, and construct new pumping stations to address flooding, storm surge risk protection, and possible levee failure. The S&WB was also planning (as of September 2010), to construct a T-wall on top of the existing berm at the East Bank STP to bring the height of the berm from 12 feet to 18 feet above the ground surface to protect the STP from future storm surges. In mid-2011, the S&WB installed a four (4) MW generator to operate the East Bank STP to reduce the risk of power loss that would result in the loss of sewage treatment capability for the East Bank of New Orleans.

According to the National Oceanic and Atmospheric Administration (NOAA) Coastal Change Analysis Program (C-CAP) Land Cover Atlas, from 1996 to 2006, the percent of developed land parish wide in Orleans Parish has increased from 21.54% to 21.69%, and the percentage of impervious surface area has increased from 9.46% to 9.65%. Within the same timeframe, the percentage of forested land parish-wide has decreased from 4.96% to 4.68%, and the percentage of Orleans that is wetland has decreased from 25.91% to 25.16%. In 1996, Orleans Parish had 2.08 square miles of agricultural land. In 2006, Orleans Parish had 2.09 square miles of agricultural land, for a net gain of 0.01 square miles of land (+0.33% change) used for agriculture.

Cumulative impacts are those effects on the environment that result from the incremental effect of the action when added to past, present and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. FEMA anticipates Cumulative Impacts within Orleans Parish; however, cumulative impacts that include the proposed project would be no greater than the sum of those potential impacts for each project component.

6.0 CONDITIONS AND MITIGATION MEASURES

Based upon the studies and consultations undertaken in this environmental assessment, several conditions and mitigation measures must be taken by the applicant prior to and during project implementation.

- The LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that the LDEQ Water Permit Division be contacted at (225) 219-3181 to determine whether the proposed improvements require one of these permits. The contractor is required to implement BMPs that meet the LDEQ permitting specifications for storm water discharge regulated under Section 402 of the CWA. All precautions should be observed to control nonpoint source pollution from construction activities.

- 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.
- This project may require a CUP from the LDNR. Determination of CUP requirements must be obtained through the submission of a completed CUP application to the LDNR. Proposed projects may be coordinated by contacting LDNR at (225) 342-7591 or 1-800-267-4019. Refer to CUP Number P20120106. The application packet may be obtained by calling (225) 342-7591 or (800) 267-4019, or by visiting the LDNR website at <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=93&pnid=189&nid=191>.
- The applicant must coordinate with the Orleans Levee District at (504) 286-3100 Ext. 1007 or by email to ggillen@orleanslevee.com or pjohnson@orleanslevee.com to determine if a construction permit would be required.
- Any changes or modifications to the proposed project would require a wetland revised determination. Off-site locations of activities such as borrow; disposals, haul-and detour-roads and work mobilization site developments may be subject to the Department of the Army regulatory requirements and may have an impact to a Department of Army project.
- 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.
- The applicant would be responsible for contacting the USFWS if there is a change in the scope of work, the project necessitates removal of mature pine trees or if construction activities have not been initiated within one year.
- 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
- If a bald eagle or its nest is spotted within 1,500 feet of the project site during the months of October through mid-May, the applicant must cease construction activities and contact LDWF and USFWS immediately. All correspondence must be documented and remain in the project permanent files.
- Construction traffic should be closely monitored and controlled as appropriate. All construction activities would be conducted in a safe manner in accordance with OSHA

requirements. To alert motorists and pedestrians of project activities, appropriate signage and barriers should be used during construction. During construction activities, the construction site(s) would be fenced off to discourage trespassers. Traffic on affected streets would be controlled, as necessary, during construction and excavation activities.

- If archaeological artifacts or features (prehistoric or historic) are discovered during the course of FEMA funded work at the project site, the applicant must ensure that their Contractor stops work in the vicinity of the discovery and takes all reasonable measures to avoid and minimize harm to the discovery. The applicant shall inform the GOHSEP and FEMA of the discovery, and FEMA would deploy an archaeologist to the location to conduct a site condition assessment. The applicant would not proceed with work until FEMA has completed consultation with the SHPO and other appropriate consulting parties on the treatment of the discovery.
- In addition, if human remains are discovered during the course of FEMA funded work, the applicant and the applicant's contractor are responsible for immediately halting work within the vicinity of the human remains finding. The applicant will immediately notify GOHSEP, FEMA, the local Police Department, and the local Coroner's Office of the discovery. The local Coroner's Office will assess the nature and age of the human skeletal remains. If the Coroner's Office determines that the human skeletal remains are older than 50 years of age, the Louisiana Division of Archaeology will take jurisdiction over the remains. Within seventy-two (72) hours, the applicant will notify FEMA and the Louisiana Division of Archaeology (225-342-8170) of the finding. FEMA will assist, as requested, the Louisiana Division of Archaeology and other interested parties, as necessary, to ensure compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 *et seq.*) and other applicable laws. In addition, the applicant must afford FEMA the opportunity to comply with the "Human Remains Policy" set forth by the ACHP.
- FEMA will digitally photograph the interior and exterior of SPS 6 and SPS 8 prior to demolition and within two (2) months of SHPO concurrence of this determination. FEMA will also prepare a narrative history of the New Orleans Drainage, Sewerage, and Water System. The first draft will be completed within six (6) months of SHPO concurrence of this determination.
- Any change to the approved scope of work will require reevaluation under Section 106.
- In accordance with applicable local, state, and federal regulations, the applicant is responsible for acquiring any necessary permits and/or clearances prior to the commencement of any construction related activities.

Failure to comply with these conditions may make part or all of these projects ineligible for FEMA funding.

7.0 PUBLIC INVOLVEMENT

The public will be invited to comment on the proposed action. A legal notice was published in the following newspaper: The Advocate New Orleans edition from November 5, 2012 to November 9, 2012. Additionally the Environmental Assessment was made available at the following Orleans Parish Libraries: Mid City Branch, 10am-7pm Mon-Thurs; 10am- 5pm Sat, and East New Orleans Branch, 10am-7pm Mon-Thurs; 10am- 5pm Sat from November 5, 2012 to November 25, 2012. The Environmental Assessment was published on FEMA's and the parish's official websites. A copy of the Public Notice is attached in Appendix F.

8.0 AGENCY COORDINATION

U.S. Army Corps of Engineers (USACE)
Louisiana Department of Environmental Quality (LDEQ)
Louisiana Department of Natural Resources (LDNR), Coastal Zone Management Program
Louisiana Department of Wildlife and Fisheries (LDWF)
Environmental Protection Agency (EPA)
U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS)
Louisiana State Historic Preservation Officer (SHPO)
U.S. Fish and Wildlife Service (USFWS)

9.0 LIST OF PREPARERS

Tiffany Spann-Winfield, Deputy Environmental Liaison Officer
Federal Emergency Management Agency, Louisiana Recovery Office

Laurel Rohrer, CFM, CHMM, REM Environmental Specialist
URS Corporation - Contractor Support to FEMA
Federal Emergency Management Agency, Louisiana Recovery Office

Melanie Pitts, Environmental Specialist
Federal Emergency Management Agency, Louisiana Recovery Office

LeSchina Holmes, Lead Environmental Protection Specialist
Federal Emergency Management Agency, Louisiana Recovery Office

Jason A. Emery, M.A. R.P.A. - Lead Historic Preservation Specialist
Federal Emergency Management Agency, Louisiana Recovery Office

Michael Wilder, Historic Specialist - Archeologist

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APPENDIX A

**SEWERAGE & WATER BOARD OF NEW ORLEANS DEPARTMENTAL POLICY
FOR SPS MAINTENANCE**

APPENDIX B

CONSTRUCTION PLANS FOR ORLEANS PARISH S&WB SPS SITES

APPENDIX C
SITE PHOTOGRAPHS

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APPENDIX D
AGENCY CORRESPONDENCE

APPENDIX E

8-STEP DECISION-MAKING PROCESS

APPENDIX F
PUBLIC NOTICE