

Draft Programmatic Environmental Assessment

**City of New Orleans
Sewerage and Water Board of New Orleans
Joint Infrastructure Road Recovery Project**

FEMA-1603-DR-LA

Orleans Parish, Louisiana

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FEMA

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Appendix A Agency Correspondence

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LIST OF ACRONYMS

ABFE	Advisory Base Flood Elevation
ACM	Asbestos Containing Materials
ADA	Americans with Disabilities Act
APE	Area of Potential Effect
AST	Aboveground Storage Tank
BFE	Base Flood Elevation
BMP	Best Management Practices
BO	Biological Opinion
CAA	Clean Air Act
CATEX	Categorical Exclusions
CBRA	Coastal Barrier Resource Act
CBRS	Coastal Barrier Resources System
CCTV	Closed Circuit Television Cameras
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNO	City of New Orleans
CO	Carbon Monoxide
CUP	Coastal Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZO	Comprehensive Zoning Ordinance
dba	decibels A
DFIRM	Digital Flood Insurance Rate Map
DNL	Day/Night Noise Level
DPW	Department of Public Works
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act; Environmental Site Assessment
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GNO	Greater New Orleans
GOHSEP	Louisiana Governor’s Office of Homeland Security and Emergency Preparedness
HANO	Housing Authority of New Orleans
HFC	Hydrofluorocarbons
HMGP	Hazard Mitigation Grant Program
HSDRRS	Hurricane and Storm Drainage Risk Reduction System
IER	Individual Environmental Reports
JIRR	Joint Infrastructure Recovery Request
LADOTD	Louisiana Department of Transportation and Development
LCRP	Louisiana Coastal Resources Program
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LGS	Louisiana Geological Survey
LPDES	Louisiana Pollutant Discharge Elimination System
MOA	Memorandum of Agreement
MSDS	Material Safety Data Sheets
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Pollutants
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Services
NRHP	National Register of Historic Places
NWA	Northwest Atlantic

NWI	National Wetlands Inventory
OCM	Office of Coastal Management
OPA	Otherwise Protected Area
OSHA	Occupational Safety and Health Administration
PA	Public Assistance
PACM	Possible Asbestos Containing Materials
PCBs	Polychlorinated Biphenyls
PEA	Programmatic Environmental Assessment
PFC	Perfluorinated Compounds
PNP	Private Non-Profit
RCRA	Resource Conservation and Recovery Act
REC	Record of Environmental Consideration
RHA	Rivers and Harbors Act
SCM	Stormwater Control Measures
SDWA	Safe Drinking Water Act
SEA	Site-Specific Environmental Assessment
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office/Officer
SPERP	Spill Prevention and Emergency Response Plan
SRIA	Sandy Recovery Improvement Act
SWBNO	Sewerage and Water Board of New Orleans
SWPPP	Stormwater Pollution Prevention Plan
TMDLs	Total Maximum Daily Loads
TSCA	Toxic Substance Control Act
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

1.1 Project Authority

Hurricane Katrina, a Category 3 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 125 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 406 of the Stafford Act authorizes FEMA's Public Assistance (PA) Program to repair, restore, and replace state and local government and certain private nonprofit facilities damaged as a result of the declared event.

1.2 Project Background

FEMA has determined that the City of New Orleans (CNO) and the Sewerage and Water Board of New Orleans (SWBNO) are eligible to receive FEMA Public Assistance (PA) funding to repair, improve, and replace damage to roads, drainage and subsurface utilities resulting from Hurricane Katrina. CNO and SWBNO have submitted a combined request for FEMA funding, referred to as the Joint Infrastructure Recovery Request (JIRR), which would allow the flexibility to execute eligible repair work without the requirement to manage approximately 100 individual grants. FEMA will administer the JIRR in accordance with the Sandy Recovery Improvement Act (SRIA) of 2013 (Public Law 113-2). As part of the JIRR, CNO and SWBNO have proposed a phased approach to damage repair, replacement, or improvements that can be systematically reviewed by FEMA in accordance with this document and the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq., (NEPA) as plans and specifications for individual repair projects are developed.

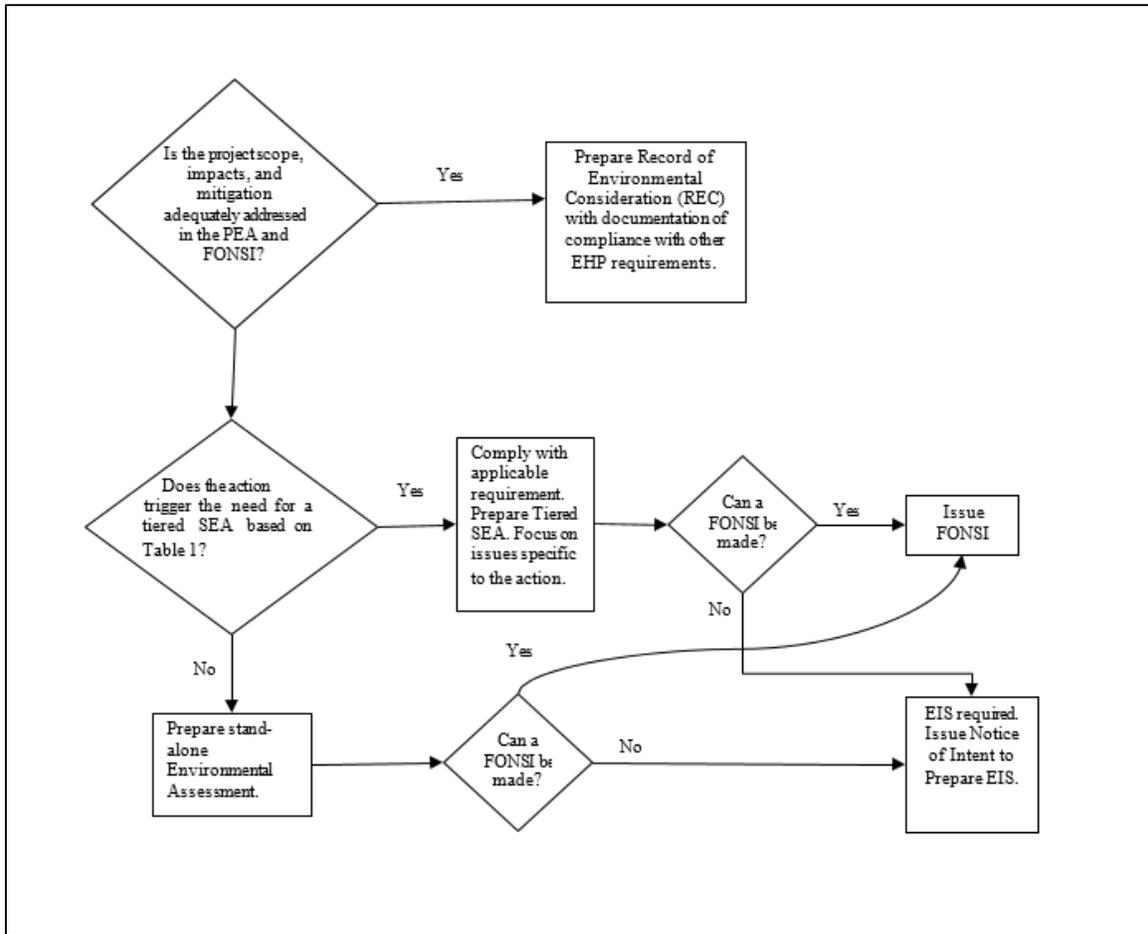


Figure 1. Use of PEA in FEMA's Review.

1.3 Use of This Programmatic Environmental Assessment

NEPA mandates that federal agencies take into account the impacts of their actions, including programs, regulations, policies, and grant-funded projects, on the quality of the human and natural environment. The Council on Environmental Quality (CEQ) has established NEPA Implementing Regulations at 40 Code of Federal Regulations (CFR) 1500 et seq. for meeting these requirements, and each federal agency has developed its own implementing procedures specific to its mission. FEMA's procedures are codified at 44 CFR Part 10. They contain a list of actions, referred to as Categorical Exclusions (CATEX), that typically do not individually or cumulatively have significant impacts on the human environment. An action that would normally qualify for a CATEX may have extraordinary circumstances that disqualify it from the CATEX's applicability. FEMA's list of extraordinary circumstances can be found at 44 CFR 10.8(d)(3). Actions that are not covered by a CATEX or actions covered by a CATEX that have unresolved extraordinary circumstances require the preparation of an Environmental Assessment (EA) under NEPA to determine the nature and extent of impacts of the action and determine whether the action has significant impacts on the quality of the human or natural environment. An Environmental Impact Statement (EIS) is required when an action will have a significant impact on the quality of the human or natural environment.

The CEQ regulations at 40 CFR §§ 1500.4(i), 1502.4 and 1502.20 encourage the development of program-level NEPA environmental documents and tiering for eliminating repetitive discussions and to focus on the issues specific to the subsequent action. CEQ issued “Final Guidance for Effective Use of Programmatic NEPA Reviews” On December 18, 2014. This document outlines and clarifies when and how Federal agencies can use programmatic NEPA reviews in accordance with the National Environmental Policy Act and the CEQ NEPA Regulations. Programmatic NEPA reviews add value and efficiency to the decision-making process when they inform the scope of decisions and subsequent tiered NEPA reviews. According to this (2014) CEQ guidance, a programmatic NEPA review may be appropriate when the action being considered is subject to NEPA requirements and the agency is approving multiple actions or projects that are temporally or spatially connected and that will have a series of associated concurrent or subsequent decisions. This would be the case for the implementation of the JIRR PA grant within Orleans Parish. FEMA has developed this Programmatic Environmental Assessment (PEA) under this CEQ authority.

FEMA’s experience conducting environmental planning and historic preservation reviews for road repairs, improvements, or replacements has provided the agency’s officials and reviewers with sufficient information to determine the likely impacts of this type of action on the human and natural environment. This Programmatic Environmental Assessment (PEA) captures and builds upon this knowledge and experience and furthers the goals of the National Environmental Policy Act.

This PEA will also facilitate FEMA’s compliance with other environmental and historic preservation requirements by providing a framework to address the impacts of the proposed repair work construction actions under FEMA’s Public Assistance program. FEMA coordinates and integrates to the maximum extent possible the review and compliance process required under similar requirements such as the Section 106 of the National Historic Preservation Act (NHPA), Section 7 of the Endangered Species Act (ESA), the eight-step process of Executive Order 11988 and 11990, and others. This PEA provides a framework on how FEMA integrates these requirements with NEPA.

Finally, the PEA provides the public and decision-makers with the information required to understand and evaluate the potential environmental consequences of these actions. This PEA meets the NEPA goals of impact identification and disclosure and addresses the need to streamline the NEPA review process.

As plans and specifications for individual roads and associated infrastructure repair, replacement and improvement projects are developed, FEMA will conduct individual project reviews through a FEMA PA grant amendment process. If the individual project meets the scope, impacts, and mitigation covered in this PEA, then only a Record of Environmental Considerations (REC) would be required. If the scope is covered but the action triggers the need for additional analysis based on the thresholds established in

Table 1, FEMA will engage in the appropriate analysis or consultation requirement, prepare a tiered Site-Specific EA (SEA) under this PEA with the additional information, and provide a 15-30 day comment period to determine whether a Finding of No Significant Impact (FONSI) can be issued or whether an EIS is required. If the scope is not covered in this PEA, a separate stand-alone EA will be required.

2.0 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 169 square miles (approximately 48.3 percent) is land, the remainder, 181 square miles, 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 344,000 residents according to 2010 census figures. Major transportation routes within Orleans Parish include Interstate Highways 10, and 59; and U.S. Highways 90, 61, and 11.

The largest industry in Orleans Parish is comprised of educational services, health care, and social assistance. Other important contributors to the Parish economy are arts, entertainment, and recreation. The Parish is also home to the Port of New Orleans, which is the 5th-largest port in the United States based on volume of cargo handled, and the 12th-largest in the U.S. based on value of cargo.

New Orleans is located approximately 70 miles southeast of Baton Rouge, the state capital of Louisiana, and approximately 105 miles north-northwest from the Gulf of Mexico.

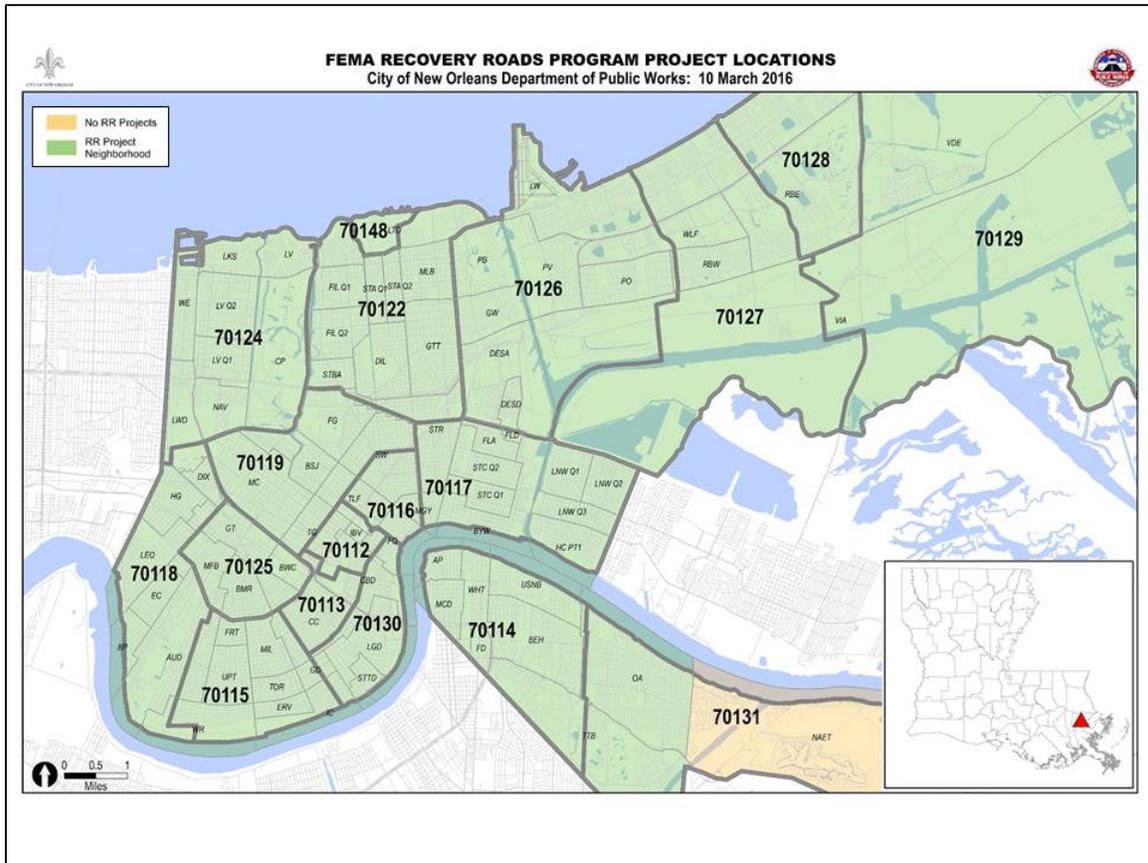


Figure 2. Project Location Map

3.0 PURPOSE AND NEED

The purpose of this project is to restore damage sustained as a result of Hurricane Katrina to roads, drainage lines, water lines, and sewer lines within Orleans Parish and restore this infrastructure to its pre-storm condition and functionality in order to provide safe and adequate transportation facilities that promote future community growth and economic development, more efficiently provide safe drinking water to support fire protection and the public health of all residents, improve sewerage collection services to support public safety and sanitation, and more effectively collect and convey stormwater out of the City to reduce the risk from future flooding events. Storm-related damage is negatively impacting the ability of these critical infrastructure systems to function as intended, inhibiting growth and economic development, accelerating further degradation due to normal usage, and exposing the public to undo hardship and health risks.

The objective of FEMA’s PA Grant Program is to provide assistance to State, Tribal and local governments, and certain types of Private Not-for-Profit (PNP) organizations, so that communities can quickly respond to, recover from, and mitigate major disasters and emergencies. Thus, an objective of the JIRR is for FEMA PA funding to be utilized to restore Hurricane Katrina damaged roads and public utilities.

4.0 ALTERNATIVES

NEPA requires Federal agencies to consider the effects of a proposed action and any reasonable alternatives on the human and natural environment. Therefore, a key step in the environmental assessment process is to identify a range of reasonable alternatives to be studied in detail in the PEA. This step is commonly referred to as an alternatives development and screening process. Its purpose is to identify reasonable alternatives to the proposed action to allow for meaningful subsequent comparison of how these alternatives may affect the human and natural environment. This section describes alternatives proposed and considered in addressing the purpose and need. The following categories reflect the criteria established for the screening process: ability to satisfy purpose and need, ability to minimize impacts on the human and natural environments, ability to repair and restore the damaged New Orleans transportation system, and consideration of overall conceptual cost estimates.

This PEA presents an analysis of three alternatives: **Alternative 1 (No Action Alternative)**, **Alternative 2 (Preferred Action Alternative – Comprehensive Infrastructure Repair and Restoration Program)**, and **Alternative 3 (Complete Repairs on a System Basis)**. **Alternatives 4 (Strategic Infrastructure Restoration)** and **5 (Full Reconstruction)** were eliminated from further consideration in this PEA because they do not meet the project’s screening criteria.

4.1 Alternative 1 – No Action Alternative.

Under the No Action Alternative, CNO and SWBNO would not receive FEMA funding to repair any damaged roads, drain lines, water lines, and sewer lines. Storm-related damage would continue to negatively impact the ability of these roads, drain lines, water lines, and sewer lines to function as intended. Consequently, the community would be deprived of critical infrastructure which would inhibit the City’s future growth and economic development, accelerating further degradation of the City’s transportation network, drainage system, water distribution system, and sewerage collection system, and exposing the public to undo hardship and health risks. This alternative does not meet the purpose and need, but will continue to be evaluated throughout this PEA and serve as a baseline comparison of impacts from other action alternatives.

4.2 Alternative 2 (Preferred Alternative) – Comprehensive Infrastructure Repair and Restoration Program.

The preferred action alternative would utilize FEMA-provided PA funding to repair, replace, or improve storm-damage roads and underground utility lines to pre-storm condition and functionality. Comprehensive infrastructure repair and restoration projects will consist of one or more of the following project elements: drainage system damage assessment, underground utility line point repair or replacement, incidental repairs, minor rehabilitation, and major rehabilitation and full roadway reconstruction (see Construction Details below for additional details). Equipment utilized to perform this work may include, but is not limited to, dump trucks, powered hand equipment to saw cut pavement and break-up damaged pavement, front end loader, backhoe, boring machine, excavator, pipe puller, pipe lining machine, concrete truck, compactor, bulldozer, grader, milling machine, asphalt paver, roadway striping machine, and asphalt roller.

4.3 Alternative 3 – Complete Repairs on a System Basis.

This alternative consists of the completion of repairs to roads and drain lines by the City's Department of Public Works (DPW) separate and independent of repairs to water and sewer lines by the Sewerage and Water Board of New Orleans (SWBNO), allowing each sub-grantee to complete repairs according to their own priorities. This alternative would likely result in newly paved roads being torn up to enable the completion of water and/or sewer line repairs, increasing construction-related impacts to residents and increasing the risk for a duplication of PA program benefits. Recent governance reforms have been instituted by the City to consolidate management oversight of road and utility-related infrastructure and increase coordination amongst agencies working in the public right of way to improve efficiency and mitigate construction-related impacts. This alternative is a less desirable alternative, however, it does not necessarily render this action alternative unreasonable. Although the conflicts inherent in this alternative must be considered, the alternative nevertheless meets the purpose and need of the action. This action alternative, therefore, will continue to be evaluated throughout this PEA.

4.4 Alternative 4 – Strategic Infrastructure Restoration.

This alternative involved the relocation of residents from neighborhoods and other areas within the City where severe infrastructure damage occurred and/or with a high degree of risk in future flood events to alternative neighborhood locations within the City, reconstruction or major rehabilitation of streets in these neighborhoods, and converting heavily damaged and high risk areas to green space. This alternative would have required extensive real estate acquisition and population displacement and re-settlement, and resulted in substantial impacts to cultural and environmental resources. Based on how the City's transportation network, drainage system, water distribution system, and sewer collection system are currently designed to operate and are laid out, this alternative would also have required a comprehensive re-engineering of these infrastructure systems to adjust operations and compensate for any portions of the current systems that would have been removed from service. This alternative was eliminated from further consideration as impractical, inconsistent with the project purpose and need, and not suitable for FEMA funding under its PA program.

4.5 Alternative 5 – Full Reconstruction.

This alternative involved the complete reconstruction of all streets within Orleans Parish, to include roadway pavement, drain lines, water lines, sewer lines, and other associated infrastructure such as sidewalks, gutters, curbs, street furniture, signalization, street lighting, and signage located within the public right of way. This alternative would cost approximately \$10 billion dollars and take approximately 30 years to complete. This alternative was eliminated from further consideration as impractical.

5.0 CONSTRUCTION DETAILS

Construction activities would have a temporary moderate impact on businesses and residences in the study area. During construction, motorists and other people living and working in the surrounding area could experience temporary inconveniences associated with traffic delay, detours and construction dust and noise.

This section provides a more detailed description of the construction methods that would be utilized under each of the action alternatives considered in the impact analysis.

5.1 Drainage System Damage Assessment

The proposed work will consist of the inspection of underground drainage lines that are less than 36 inches in diameter. This may include the visual inspection of any drain line, manhole and drainage inlet structure (catch basin, culvert, surface inlet) and their connection to the drain line, the flushing and cleaning of the drainage inlet structure and drain line to allow for further non-evasive inspection, the inspection of the underground drain line and its connections to inlet structures, other drain lines, and manholes by closed circuit television cameras (CCTV) and laser and other inspection equipment, and an analysis of the results of these inspections.

In general, a visual inspection of the manhole or inlet structure at the beginning of the segment of drain line to be inspected will occur first. If the inlet structure or manhole is clogged such that inspection equipment is not able to be lowered into the drain line, the inlet structure and/or drain line will be cleaned to allow access by inspection equipment. Any soil and/or vegetative debris removed will be disposed of at an approved disposal facility. Then the inspection equipment will be placed into the drain line and moved through the drain line segment, collecting data on the condition of the drain line via video, laser and other sensors. At the end of the segment, the inspection equipment will be removed and the process will begin again at the beginning of the next drain line segment. If necessary, heavy cleaning and by-pass pumping operations may be employed to facilitate the flushing and inspection of heavily clogged / blocked line segments.

5.2 Underground Utility Line Point Repair or Replacement

The proposed work will consist of the demolition, removal, reconstruction and/or repair of damaged City-owned underground utility (water, sewer or drainage) lines and associated utility structures and/or roadway structures, full-depth pavement restoration of damaged and/or excavated sections of pavement. This may include patching the roadway surface and repair work on roadway pavement, subbase and/or base courses, placement of engineering fabrics, ditches/swales, sidewalks, ADA-compliant handicapped ramps, curbs and gutters, driveway aprons, drainage inlet structures, manholes, connections, valves, fittings, meters, and/or hydrants, restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right-of-way or existing servitudes/easements.

In cases where an underground drainage line, water line, and/or sewer line buried underneath the roadway or within the public right of way is identified as damaged and eligible for repair or replacement, a 4-6 foot wide trench will be excavated along the length of pipe needing to be replaced to the depth of the existing pipe, plus required trench foundation materials, and the damaged section of pipe removed. The trench width may vary depending on the type and depth of the utility to be repaired and bracing/shoring methods required due to site conditions and/or soil mechanics. Existing drainage lines are typically buried between 3-6 feet beneath the roadway surface; water main lines are typically buried 4-10 feet beneath the roadway surface; and sewer lines are typically buried 6-15 feet beneath the roadway surface. Service lateral depths vary from the point of origin at the main to the connection point. Utility main and service lateral depths may vary, or be temporarily offset, as required to obtain necessary clearance from other existing

infrastructure features. Once the damaged section of pipe is removed, a new section of pipe will be installed and connected to the existing pipe, the trench will be backfilled with acceptable material, and any paving or other existing features impacted within the removal limits repaired as needed.

New drainage lines will be sized to the 10-year storm event (or per the current master drainage plan) and meet minimum size (15 inches in diameter) requirements. New drainage lines will typically be installed using concrete pipe. Any drain line sections to be repaired will be accomplished with concrete pipe from joint to joint (or structure), or by using an approved plastic (PVC) pipe connected to existing pipe to remain. Pipe repairs will typically be at least 10 feet in length.

The size of water and sewer lines that are installed may be increased based on needed system capacity. Any subbase or base material that was removed will be replaced with acceptable material. Then any pavement removed will be reinstalled and joined to the existing pavement structure, and any other impacted existing features repaired as needed. In some cases, where damage is not as severe and sufficient hydraulic capacity can be maintained, a thin lining may be inserted into the existing sewer line instead of removing the damaged section. In this case, excavation of the damaged utility line will not be required. In some cases, due to existing conflicts underground, a new underground water line may be installed by boring underneath the ground in lieu of trenching and excavation. The pipe type used in water and sewer repairs or replacements will be in accordance with the latest SWBNO standards. Pipe replacements will typically span from node to node.

If warranted, due to existing conditions or design requirements, the location of the water main and/or sewer line may be relocated to avoid conflicts and ensure installation in accordance with design standards and any applicable code requirements. Any connections and fittings within replaced or repaired utility pipe sections will be reestablished, repaired, or replaced as needed. Abandoned lines will be removed or filled and capped depending on the pipe type, pipe and existing surrounding conditions, and other planned scopes of work.

5.3 Incidental Roadway Repairs

The proposed work will consist of the demolition, removal, reconstruction and/or repair of damaged associated pavement structures and/or roadway structures such as sidewalks, ADA-compliant handicapped ramps, gutters, curb, driveways, driveway aprons, sidewalk foot laps, swales, bus pads, drainage inlet structures, utility manholes, connections, covers, and valves, and fire hydrants within the public right-of-way.

In general, any incidental roadway structures identified as damaged and eligible for repair or replacement will be removed. The material removed may include the structure itself, base and/or subbase material underneath or surrounding the structure up to 24 inches from the structure to a depth of up to 24 inches beneath the structure, depending on the extent of damage, and/or any removed utility pipes and structures. Once the damaged structure or portion of the structure is removed, any subbase or base material that was removed will be replaced with acceptable material. Then a new structure will be installed and joined to the existing pavement structure. Pavement removed will be replaced with in kind or similar acceptable material.

5.4 Minor Pavement Rehabilitation

The proposed work will consist of the demolition, removal and up to full-depth pavement restoration of damaged and/or excavated sections of concrete, asphalt or composite pavement on a given street block. This may include patching the roadway surface and repair work on roadway pavement, subbase and/or base courses, placement of engineering fabrics, re-establishment of positive drainage to prevent pooling, and repairs to sidewalks, ADA-compliant handicapped ramps, curbs and gutters, driveway aprons, drainage inlet structures, manholes, connections, valves, and/or hydrants, and the restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right of way.

In general, the pavement identified as damaged and eligible for repair or replacement will be saw cut and removed. The material removed may include the pavement itself, base material underneath the pavement, subbase material beneath the base material to a depth of up to 24 inches, depending on the extent of damage, and/or any removed utility pipes and structures. Any construction debris removed will be disposed of at an approved disposal facility. Any subbase or base material that was removed will be replaced with acceptable fill material. Then, any damaged pavement removed will be replaced with new pavement and joined to the existing pavement structure. Pavement removed will be replaced with in kind or similar acceptable material.

5.5 Major Pavement Rehabilitation

The proposed work will consist of the demolition, removal, full-depth pavement restoration of damaged and/or excavated sections of pavement, and resurfacing of the entire street block. Scope may include the cold planing and/or milling of the existing asphalt roadway surface and repaving the roadway, the replacement of concrete panels, and work on asphalt or composite roadway pavement, subbase and/or base courses, placement of engineering fabrics, ditches, sidewalks, ADA-compliant handicapped ramps, curbs and gutters, foot laps, driveway aprons, drainage catch basins and/or inlet structures, utility manholes, connections, valves, and/or hydrants, restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right of way.

In general, the pavement identified by FEMA as damaged and eligible for PA funded repair or replacement will be saw cut and removed. The material removed may include the pavement itself, base material underneath the pavement, subbase material beneath the base material to a depth of up to 24 inches, depending on the extent of damage, and/or any removed utility pipes and structures. Any subbase or base material that was removed will be replaced with acceptable material. Any damaged pavement removed will be replaced with new pavement and joined to the existing pavement structure. Pavement removed will be replaced with in-kind or similar acceptable material. Then, if the roadway is an asphalt-paved or asphalt-topped concrete roadway, the top 1.5-3.5 inches of asphalt (wearing surface) will be milled and removed.

5.6 Full Roadway Reconstruction

The proposed work will consist of the demolition, removal and reconstruction of the roadway pavement structure, associated pavement structures, and all city-owned underground utility lines and roadway-associated structures. Scope may include work on roadway pavement (concrete,

asphalt or composite), subbase and/or base courses, ditches/swales, sidewalks, ADA-compliant handicapped ramps, gutters, curbs, roadway striping, driveway aprons, drainage catch basins and/or inlet structures, utility manholes, placement of geotextile or geogrid, connections, valves, and/or hydrants, bio swales and other green infrastructure/storm water management features, parking and bicycle lanes, relocation of underground streetlight and/or traffic signal conduit, restoration of medians and/or other incidental paved area within the public right-of-way. The City may repave a roadway with a different pavement type than what was in place prior to the start of work based on engineering considerations and a life-cycle cost analysis (i.e., reconstruct an existing asphalt or composite pavement street with concrete or a combination of concrete and pervious concrete). Materials used for road work pavement may include asphaltic concrete, Portland cement concrete, brick pavers, porous asphalt pavement, pervious Portland cement concrete, permeable interlocking pavers, and/or asphaltic prime, binder, and/or tack coat treatments. Underground pipes may be made of ductile iron, plastic (PVC), or reinforced concrete.

In general, the roadway pavement, base material underneath the pavement, and subbase material beneath the base material, will be removed. A 4-6 foot wide trench along the length of the roadway will be excavated to the depth of the designed new sewer lines plus required trench foundation materials, a new section of pipe will be installed and connected to the existing sewer line, and the old sewer lines will be removed or filled in. The trench will then be backfilled with acceptable material. A 4-6 foot wide trench along the length of the roadway will then be excavated to the depth of the designed new water line plus required trench foundation materials, a new section of pipe will be installed, chlorinated and tested, and then connected to the existing water line. The existing water line will then be removed or filled in. A 4-6 foot wide trench along the length of the roadway will then be excavated to the depth of the designed new drainage line plus required trench foundation materials; a new section of pipe will be installed and connected to the existing drainage line. The existing drainage line will then be removed or filled in. The trench will then be backfilled with acceptable material. Existing drainage lines are typically buried between 3-6 feet beneath the roadway surface; water main lines are typically buried 4-10 feet beneath the roadway surface; and sewer lines are typically buried 6-15 feet beneath the roadway surface. The trench width may vary depending on the type and depth of the utility to be repaired and bracing / shoring methods required due to site conditions and/or soil mechanics. Service lateral depths vary from the point of origin at the main to the connection point. Utility main and service lateral depths may vary, or be temporarily offset, as required to obtain necessary clearance from other existing infrastructure features. Any subbase or base material that was removed will be replaced with acceptable material. Then the subbase and base will be placed and compacted and any paving or other existing features impacted within the removal limits repaired as needed. The roadway traffic lane configuration may be adjusted to accommodate a bicycle lane, bus stop, and/or parking lane, but the overall width of the roadway will remain the same and within the public right-of-way.

The type of pipe used for water and sewer repairs or replacements will be in accordance with the latest SWB standards. Pipe replacements will typically span from node to node. New drainage lines will be sized to the 10-year storm event (or per the current master drainage plan) and meet minimum size (15 inches in diameter) requirements. New drainage lines will typically be installed using concrete pipe. Any drain line sections to be repaired will be accomplished with concrete pipe from joint to joint (or structure), or by using an approved plastic pipe connected to existing pipe to remain. Pipe repairs will typically be at least 10 feet in length.

If warranted, due to existing conditions or design requirements, the location of the water main and/or sewer line may be relocated to avoid conflicts with other underground utilities and ensure installation in accordance with design standards and any applicable code requirements. Any connections and fittings within replaced or repaired utility pipe sections will be re-established, repaired, or replaced as needed. Abandoned lines will be removed or filled and capped depending on the pipe type, pipe and existing surrounding conditions, and other planned scope of work.

In addition to the general scope of work entailed with the major scope categories referenced above, the planned projects may also include other incidental repair scope as direct pay items in the construction contracts or as incidental work to the primary repair scope at no direct payment. Potential incidental repair scope may include, but are not limited to, mobilization; project signage; pre-construction videos/photographs; construction layout; clearing and grubbing; temporary fencing; removal of structures and obstructions; general excavation; saw cutting pavement, sidewalk, drive aprons, curbs/gutters, and ADA ramps; preparation of roadway pavement subgrade; scarifying and compacting existing base materials; removal and replacement of unsuitable subgrade (with granular material); repair or replacement of parking and bike lanes; traffic control and temporary signs & barricades; hazard mitigation and erosion control measures; traffic maintenance aggregate; temporary pavement over utility trenches or future pavement tie-in locations; temporary regulatory signage; resetting or replacement of street name tiles and paving inlaid emblems; relaying, restoring or replacing sub-lying cobblestone, brick, and other atypical subbase materials in-kind or with suitable materials; brick and paver sidewalks, drive aprons, footlaps, or incidental surfaces within public right-of-way; railroad and trolley track crossing devices and specialty work adjacent or parallel to railroad and trolley track crossings; bus pads or bus stops; bus stop shelters and benches; dead end installations; temporary and permanent pavement striping and markers and symbols; raised pavement markers and object markers; loop detectors for traffic signals; conduit for traffic devices, school beacons, and street lights; root pruning and trenching; tree trimming; seeding and fertilization; joint and crack cleaning and sealant; trench drains; drain line outfall pipes; repair, replacement and/or adjustment of manholes and catch basins/inlets; utility conflict or junction boxes; replacement or adjustment of utility meter and valve boxes; utility cleanouts; curbs & gutters of various types, including timber and granite curbs; gravel alleyways; utility service curb markings and symbols; and specialty work with pavement edge or shoulder treatments.

6.0 AFFECTED ENVIRONMENT AND IMPACTS

This section discusses the baseline conditions and environmental impacts of the various alternatives. Due to the parish-wide programmatic approach of this analysis, FEMA is providing a regulatory background and description of the current conditions of the environmental resources. In the impacts analysis for the alternatives, FEMA provides a description of the impacts of the action based on the following scale:

- **No effect** – no discernible effect is expected.
- **Negligible effect** – the effect is so small that it cannot be measured in meaningful way.
- **Minor effect** – the effect is measurable but would be minor.
- **Moderate effect** – the effect is measurable and may require mitigation to be adequately addressed.

- **Significant impact** – the effects meets the criteria for significance as defined in the Council on Environmental Quality’s NEPA implementation regulations in 40 CFR 1508.27.

establishes the criteria for determining if a proposed action is covered under the Finding of No Significant Impact (FONSI) for this PEA, or if a tiered Site-Specific Environmental Assessment (SEA) and an additional 15-30 day public comment period are needed. If the project meets the scope, impacts, and mitigation covered in this PEA, then no further NEPA documentation will be required.

Table 1. Thresholds for Preparing Tiered Site-Specific Environmental Assessments for JIRR Project

Area of Evaluation	Action Covered by this PEA	Tiered Site-Specific Environmental Assessment Required
Land Use	No impacts to land use. or The proposed action would have negligible or minor impacts to land use and would be consistent with surrounding or planned land uses. The proposed action would be consistent with respective state Coastal Zone Management plans, CBRA and FPPA. or Mitigation measures are used to reduce the level of impacts below the level of significance.	The proposed action will significantly change the surrounding land uses in the short- and long-term. or The proposed action disturbs more than 5 acres of land. or The proposed action would not be consistent with the surrounding land use and the local land use agency requires a special land use permit or waiver. or The proposed action would not be consistent with state Coastal Zone Management plans or CBRA. or The proposed action may cause significant impacts to prime and unique farmland (project scores more than 160 on Farmland Impact Conversion Rating Form AD-1006).
Geology, Soils, and Seismicity	The proposed action would have no, negligible, or minor impacts to geology, soils, and seismicity. or Mitigation measures are used to reduce the level of impacts below the level of significance.	Impacts on geology, soils, and seismicity as a result of the proposed action may be significant. or The proposed action would disturb more than 5 acres of land.

Area of Evaluation	Action Covered by this PEA	Tiered Site-Specific Environmental Assessment Required
Water Quality and Resources	<p>The proposed action would have no, negligible or minor impacts to water quality and would be at or below water quality standards or criteria. Localized and short-term alterations in water quality and hydrologic conditions relative to historical baseline may occur.</p> <p>or</p> <p>Mitigation measures are used to reduce the level of impacts below the level of significance.</p>	<p>The proposed action would cause or contribute to existing exceedances of water quality standards on either a short-term or prolonged basis.</p> <p>or</p> <p>The proposed action would disturb more than 5 acres of land.</p>
Floodplains	<p>Individual roads covered by the class review under this PEA.</p> <p>or</p> <p>Roads within the 500 year floodplain</p>	<p>Individual road repairs, replacements, and improvements not covered by the class review under this PEA Programmatic 8-step/Final Floodplain Notice</p> <p>or</p> <p>Roads within the 100-year floodplain not covered by the 2010 Programmatic 8-step/Final Floodplain Notice.</p>
Wetlands	<p>Proposed action is not located in and does not adversely affect wetlands.</p>	<p>Proposed action is located in or would adversely affect wetlands.</p>
Biological Resources	<p>The proposed action would have no, negligible, minor, or moderate impacts to native species, their habitats, or the natural processes sustaining them. Population levels of native species would not be affected. Sufficient habitat would remain functional to maintain viability of all species.</p> <p>and</p> <p>In regard to federally listed species and critical habitat, FEMA can make a “No Effect” determination.</p> <p>or</p> <p>FEMA can make a “Not Likely to Adversely Affect” determination along with concurrence from USFWS or NMFS.</p> <p>or</p> <p>Mitigation measures are used to reduce the level of impacts below the level of significance.</p>	<p>The proposed action may have significant impact on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, with long-term population numbers significantly depressed. Loss of habitat would affect the long-term viability of native species.</p> <p>or</p> <p>FEMA determines that the proposed action is likely to adversely affect a listed species or will adversely modify critical habitat.</p> <p>or</p> <p>The proposed action would disturb more than 5 acres of land.</p>

Area of Evaluation	Action Covered by this PEA	Tiered Site-Specific Environmental Assessment Required
Human Health and Safety	<p>Hazardous or toxic materials and/or wastes resulting from the proposed action would be safely and adequately managed in accordance with all applicable regulations and policies, with limited exposures or risks. There would be no short- or long-term adverse impacts to public safety.</p> <p>or</p> <p>Mitigation measures are used to reduce the level of impacts below the level of significance.</p>	<p>The proposed action would result in a net increase in the amount of hazardous or toxic materials and/or wastes to be handled, stored, used, or disposed of, resulting in unacceptable risk, exceedance of available waste disposal capacity, or probable regulatory violation(s). Public safety would be compromised and vulnerabilities would increase.</p> <p>or</p> <p>A Phase I or II environmental site assessment indicates that contamination exceeding reporting levels are present and further action is warranted.</p>
Minority and Low-Income Populations	<p>There would be no disproportionately high and adverse environmental or health effects to low-income and/or minority populations.</p> <p>or</p> <p>Mitigation measures are used to reduce the level of impacts below the level of significance.</p>	<p>There would be unmitigated disproportionately high and adverse environmental and health impacts to low-income or minority populations.</p>
Historic Properties	<p>No historic properties affected determination</p> <p>or</p> <p>FEMA makes a “No Adverse Effect” determination with concurrence from SHPO/THPO.</p>	<p>FEMA makes an “Adverse Effect” determination with concurrence from SHPO/THPO.</p>
Air Quality	<p>Emissions from the proposed action for NAAQS in nonattainment and maintenance areas would be less than exceedance levels. Emissions in attainment areas would not cause air quality to go out of attainment for any NAAQS.</p> <p>or</p> <p>Mitigation measures are used to reduce the level of impacts below the level of significance.</p>	<p>Emissions from the proposed action for NAAQS would be greater than the exceedance levels for nonattainment and maintenance areas. Emissions in attainment areas would cause an area to be out of attainment for any NAAQS.</p>

Area of Evaluation	Action Covered by this PEA	Tiered Site-Specific Environmental Assessment Required
Noise	Noise levels resulting from the proposed action would not exceed typical noise levels expected from construction equipment or generators. Noise generated by construction and operation of the facility would be temporary or short-term in nature. or Mitigation measures are used to reduce the level of impacts below the level of significance.	Noise levels would exceed typical noise levels expected from construction equipment and generators on a permanent basis or for a prolonged period of time.

6.1 Geology, Soils, and Seismicity

6.1.1 Regulatory Setting

The Farmland Protection Policy Act (FPPA) (P.L. 97-98, §§ 1539-1549; 7 U.S. Code [U.S.C.] § 4201 et seq.) was enacted in 1981 and is intended to minimize the impact federal actions have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. This law assures that, to the extent possible, federal programs and policies are administered in a way that is compatible with state and local farmland protection policies and programs. The FPPA does not authorize the federal government to regulate the use of private or non-federal land or, in any way, affect the property rights of owners.

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service is responsible for protecting significant agricultural lands from irreversible conversions that result in the loss of essential food or environmental resources. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Prime farmland is characterized as land with the best physical and chemical characteristics for production of food, feed, forage, fiber, and oilseed crops (USDA 2016a). Farmland subject to FPPA requirements does not currently have to be used for cropland; it also can be forest land, pastureland, or other land, but not water or built-up land.

6.1.2 Existing Conditions

Within Orleans Parish, approximate surface elevations range from 12 feet above sea level on Mississippi River berms to 5 feet below sea level within the drained wetlands inside city levees. Undrained marshes and swamps typically range from sea level to about one (1) foot above in elevation (Trahan 1989). According to the Louisiana Geological Survey, the geology in the vicinity of the project site is predominantly Holocene Alluvium, which also covers about 55% of the state (Figure 3). The Holocene Epoch began approximately 11,700 years ago and continues to the present day. These alluvial soils consist of sandy and gravelly river channel material overlain by sandy to muddy natural levee deposits, often with an organic-rich muddy back swamp layer in between (Louisiana Geological Survey 2010). During the Holocene Epoch, there has been no

known active faulting in the New Orleans area. The city is “seismically quiescent” (Seed et al. 2006).

The soils of Orleans Parish vary in their potential for land use and urban development. According to the *Soil Survey of Orleans Parish, Louisiana* (Trahan 1989) and the Web Soil Survey (USDA 2016b), there are 18 different soil mapping units within the parish. Rather than describing each of the mapping units in detail, for the purposes of this project evaluation, FEMA has examined broader soil groups, of which there are five (5) in Orleans Parish (Figure 4).

Soils found on natural levees typically protected from flooding are placed within the Schriever-Cancienne (formerly Sharkey-Commerce) general map unit. Both Schriever and Cancienne soils are classified as prime farmland. This general map unit is composed of level, poorly or somewhat poorly drained, mineral soils on the natural levees of the Mississippi River and its distributaries, or branches of a river that flow away from the main stem, as in a delta. A seasonally high water table is present during winter and spring. Although most of these soils are found in urban areas, they are poorly suited for urban uses such as building site development and sanitary facilities. Wetness, slow permeability, and high shrink-swell potential are the main limiting factors (Trahan 1989).

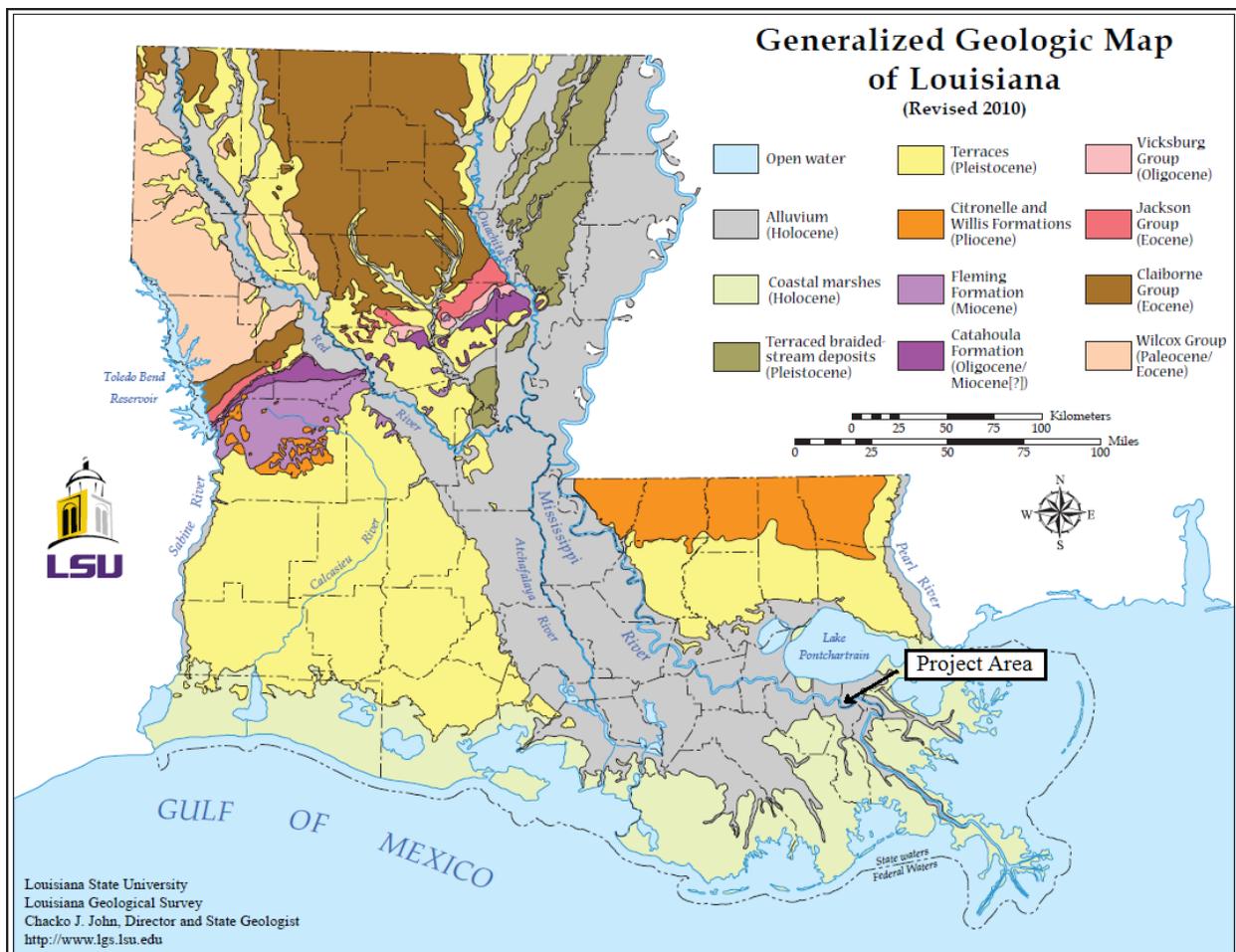


Figure 3. Generalized Geologic Map of Louisiana indicating project area (Louisiana Geological Survey 2010)

The Clovelly-Lafitte-Gentilly general map unit consists of level, very poorly drained soils with a mucky surface layer. These soils are found in wetlands that are frequently flooded or ponded and are not suited to urban uses. Two (2) general map units are present within former wetlands that have been drained and are currently protected from flooding, namely, Harahan-Westwego and Allemands, Drained-Kenner, Drained. Harahan soils are classified as prime farmland. Harahan and Westwego soils are clayey throughout, while Allemands and Kenner soils have a mucky surface layer, with muck and clay beneath. Both of these soil groups have a year-round water table ranging from 0.5 to 4.0 feet below the soil surface. They are poorly suited to urban uses, but are located primarily within developed urban areas. Limitations consist primarily of wetness, low strength, and either high shrink-swell potential (Harahan-Westwego) or subsidence risk (Allemands, Drained-Kenner, Drained) (Trahan 1989).

Finally, the Aquentes general map unit consists of poorly drained, hydraulically-placed dredged material removed from nearby marshes and swamps during the construction and maintenance of waterways. Aquentes are slightly saline to saline and are stratified throughout with layers of muck, clay, loam, and sand. These soils have severe limitations for most urban uses due to wetness, low strength, salinity, high shrink-swell potential, and risk of subsidence (Trahan 1989).

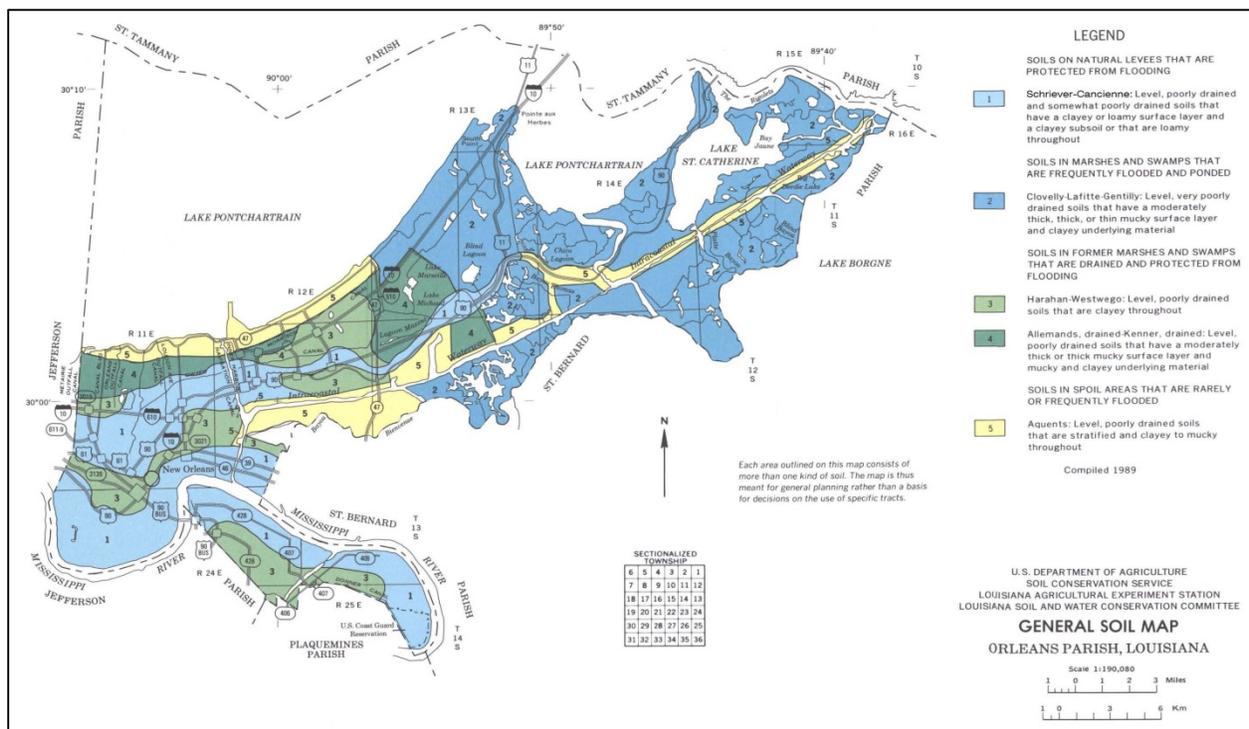


Figure 4. General Soil Map of Orleans Parish, Louisiana, revised and updated based on latest soil series nomenclature (adapted from Trahan 1989)

6.1.3 Environmental Consequences

Alternative 1 – No Action. The “No Action” alternative would have no effect on prime farmland, unique farmland, farmland of statewide or local importance, or other important geologic resources.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). The locations proposed for infrastructure repair and restoration are fully developed, with no natural soil surface remaining. Although approximately 36% of the soil mapped within Orleans Parish is considered to be prime farmland (Trahan 1989, USDA 2016b), the FPPA addresses the conversion of farmland to non-farmland uses only. Because the various proposed project locations would already be developed, urbanized areas, the FPPA is precluded. The preferred alternative would have no effect to geologic resources.

Alternative 3 – Complete Repairs on a System Basis. As with the Preferred Alternative, the proposed repairs under this option would be located within fully developed areas. As such, the FPPA would be precluded. This action alternative would have no effect to geologic resources.

6.2 Waters of the United States and Wetlands

6.2.1 Regulatory Setting

Wetlands have important ecological functions and are biologically diverse. They assimilate nutrients in surrounding surface waters, remove suspended solids and pollutants from stormwater, and protect shorelines from wind and wave action and storm-generated forces. Actions that would impact wetlands would require review under several regulatory programs.

The United States Army Corps Engineers (USACE) regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to Sections 401 and 404 of the Clean Water Act (CWA). Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, or that under normal hydrologic conditions do or would support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The USACE also regulates the building of structures in waters of the U.S. pursuant to Section 10 of the Rivers and Harbors Act (RHA). Executive Order (EO) 11990, Protection of Wetlands, directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands for federally funded projects. FEMA regulations for complying with EO 11990 are codified at 44 CFR Part 9, Floodplain Management and Protection of Wetlands.

The U.S. Environmental Protection Agency (USEPA) regulates discharges to waters of the United States through permits issued under Section 402 of the CWA, entitled the National Pollutant Discharge Elimination System (NPDES), which authorizes and sets forth standards for state administered permitting programs regulating the discharge of pollutants into navigable waters within each state's jurisdiction. On August 27, 1996, USEPA Region VI delegated the authority to administer the NPDES program for matters within the jurisdiction of the State of Louisiana. Having assumed NPDES responsibilities, Louisiana directly issues NPDES permits and has primary enforcement responsibility for facilities located within the State, with certain exceptions such as Indian Country Lands. Louisiana administers the NPDES Program and surface water discharge permitting system under the Louisiana Pollutant Discharge Elimination System (LPDES) program.

The LPDES requires permits for the discharge of pollutants/wastewater from any point source into waters of the State. Per the CWA, the term "point source" is defined as "any discernible, confined, and discrete conveyance such as a pipe or a ditch." Prior to assumption of the program, permittees were required to hold both a valid state and federal permit. Today, all point source discharges of

pollutants to waters in the state of Louisiana are subject to a LPDES permit issued by the Louisiana Department of Environmental Quality (LDEQ). Additionally, the LDEQ requires a Stormwater Pollution Prevention Plan (SWPPP) for land disturbing activities greater than 1 acre. For land disturbing activities greater than 5 acres the LDEQ requires: 1) a SWPPP 2) a Notice of Intent and 3) a Notice of Completion.

Section 303(d) of the CWA requires states to develop a list of impaired waters. Water is considered impaired if the current quality does not meet the numeric or narrative criteria in a water quality standard, or the designated use described by that state is not achieved. Section 303(d)(2) requires that states submit and USEPA approve or disapprove lists of waters for which existing technology-based pollution controls are not stringent enough to attain or maintain state water quality standards, and for which total maximum daily loads (TMDLs) must be prepared (40 CFR §130.7). Total maximum daily loads are pollution budgets designed to identify necessary reductions of pollutant loads to the impaired waters so that the appropriate water quality standards are met, including designated uses like fishing or swimming and water quality criteria for parameters such as dissolved oxygen and water clarity. The regulations require states to identify water quality limited waters still requiring TMDLs every two years. The lists of waters still needing TMDLs must also include priority rankings and must identify the waters targeted for TMDL development during the next two years (40 CFR § 130.7). Types of impairments may include, for example, impaired primary contact use (e.g., swimming, water skiing), mercury and polychlorinated biphenyls (PCBs) in fish tissue, impaired fish consumption use, low dissolved oxygen, copper, phosphorus, manganese, excessive siltation, physical-habitat alterations, and total suspended solids which impair aquatic life use.

FEMA's implementation of EO 11990 is described in 44 CFR Part 9. Under this regulation, FEMA is required to engage in the 8-step decision-making process to ensure that proposed activities are consistent with EO 11990 and to evaluate the potential effects of an action on wetlands. The 8-step process includes using minimization measures when a project affecting a wetland is the only practicable alternative. Minimization measures include avoidance techniques such as establishing wetland buffer zones to avoid converting or filling wetlands and obtaining and complying with NPDES permits. Grantees and sub-grantees are responsible for obtaining any applicable NPDES permits and meeting permit conditions. In addition to complying with 44 CFR Part 9, the grantee or sub-grantee must obtain the applicable CWA Section 404 permit prior to the initiation of the project if it will affect jurisdictional wetlands. The grantee or sub-grantee must coordinate with USACE to determine whether any of the NWPs or a Regional General Permit apply or whether an Individual Permit is required. Proposed projects that require an Individual Permit will require close coordination between the grantee or sub-grantee, FEMA and USACE. The grantee or sub-grantee is required to comply with all conditions of the 404 general or individual permit, which may include compensation measures, such as wetlands banking, for any loss of wetlands.

6.2.2 Existing Conditions

Wetlands are areas which are inundated or saturated by surface or ground water with a frequency sufficient to support, or that under normal hydrological conditions does or would support, a prevalence of vegetation or aquatic life typically adapted for these soil conditions. Examples of wetlands include swamps, marshes, estuaries, bogs, beaches, wet meadows, sloughs, mud flats, among others.

Orleans Parish contains approximately 181 square miles of surface water (U.S. Census Bureau, 2014). Within the Parish, the main sources of surface water are Lake Pontchartrain and the Mississippi River. However, since Lake Pontchartrain is heavily influenced by the saline waters of the Gulf of Mexico, the primary source of fresh water for the parish is the Mississippi River.

These watershed areas fully support the designated use of secondary contact recreation (boating), but do not fully support the designated uses of primary contact recreation (swimming) and fish and wildlife propagation. Low dissolved oxygen and fecal coliform due to sanitary sewer overflows and runoff from urbanized high density areas are the suspected causes of impairment.

According to the U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) map, most of the work at proposed project sites would be located outside designated wetlands (USFWS 2016). Activities located in or adversely affecting wetlands will require a tiered SEA focused on the 8-step decision-making process. Site-specific impacts to wetlands, permit requirements, and mitigation measures will be determined through that process.

6.2.3 Environmental Consequences

Alternative 1 – No Action. Implementation of this alternative would have moderate effects on wetlands or other waters of the U.S. Damaged sewer and stormwater drainage infrastructure would remain in a state of disrepair. Leaking sewage could directly pollute stormwater runoff and impact nearby waters. Sewage discharges from leaks may contain significant loads of a wide variety of pollutants, including bacteria and viruses, oxygen demanding and toxic pollutants, as well as persistent materials such as heavy metals, polycyclic aromatic hydrocarbons (i.e., PAHs), etc. Sewage can infiltrate into stormwater drains through cracks in pipes or faulty joints and have long-term environmental impacts on rivers and streams.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). This alternative would not have significant impacts to wetlands or other waters of the United States. Work would be conducted within urban, previously disturbed rights-of-way. Actions that would impact wetlands would require review under several regulatory programs. Repair of damaged sewage and stormwater pipes would reduce releases of sewage. Stormwater drainage would be improved, which would contribute to reduced sediment transport and flooding.

During reconstruction there would be the potential to impact surface waters through minor erosion and runoff, and or through accidental spills of fluids used in construction equipment. Storm water runoff could carry sediment offsite into the receiving ditches/culverts, and adjacent drainage canals.

Formal legal protection of jurisdictional wetlands is promulgated through Section 404 of the CWA. A dredge and fill permit for activities in waters of the United States including wetlands from the USACE is required if an action has the potential to adversely affect jurisdictional wetlands. There are several Nationwide Permits (NWP) for activities in waters of the United States that may cover specific aspects of the development of the proposed activities. For example, NWP 3 (Maintenance) may apply to activities related to the repair, rehabilitation, or replacement of an existing structure; NWP 12 (Utility Line Activities) or NWP 14 (Linear Transportation Projects) may apply to the construction of utility lines and access roads for new facilities; NWP 18 (Minor Discharges) or NWP 19 (Minor Dredging) may apply to many sites where water impacts are minimal; NWP 28 (Modifications of Existing Marinas) may apply to activities near tidal waters; and NWP 39

(Commercial and Institutional Developments) may apply to actions involving the expansion or construction of infrastructure facilities.

The NWP program has numerous guidelines and conditions that must be met for an activity to qualify for a permit. NWPs are subject to review by the States under Section 401 of the CWA, as are all aspects of the USACE permitting program. Various USACE Districts also have Regional General Permits that function similarly to NWPs; however, Regional General Permits are typically more specific in the types of actions that they cover and typically necessitate more stringent conditions and reporting requirements. If none of the NWPs apply to the proposed activity and no applicable Regional General Permit exists, then the grantee or subgrantee must acquire an Individual Permit from the USACE. Under section 401 of the CWA, each State has an opportunity to establish specific criteria for water quality protection under this section of this Act. These provisions must be satisfied prior to issuance of permits under Sections 402 and 404 of the CWA.

The Preferred alternative would occur in previously developed or disturbed areas would not have significant impacts on wetlands. However, areas that have been disturbed by the removal of the existing vegetation are much more susceptible to water erosion during major precipitation events and to wind erosion during dry and windy weather conditions. Both types of erosion can cause adverse impacts on wetlands located down gradient or down wind. Grantees and subgrantees are responsible for securing any applicable LPDES permits and meeting permit conditions, which may include developing a SWPPP for the construction activity. The SWPPP would include practices to control soil erosion, sedimentation and water pollution that may affect wetlands. Projects that obtain and comply with the required NPDES permits and SWPPP will not result in significant impacts to wetlands.

Construction activities located in or near a water body may require a RHA Section 10 or a CWA Section 404 permit from the USACE. The permits would identify measures that must be implemented to minimize erosion and runoff, such as the use of silt fencing, rip-rap, and other erosion-prevention methods. The grantee or subgrantee is responsible for acquiring all necessary permits and complying with all mitigation measures identified to ensure no significant impacts.

In order to minimize indirect impacts (erosion, sedimentation, dust and other construction-related disturbances) to the nearby waters of the United States and well defined drainage areas surrounding the site, the contractor should implement Best Management Practices (BMPs) that meet the LDEQ's permitting specifications for storm water discharge regulated under §§ 401 and 402 of the CWA, and include the following into the daily operations of the construction activities: silt screens, barriers (e.g., hay bales), berms/dikes, and/or fences to be placed where and as needed. Fencing will be placed for marking staging areas to store construction equipment and supplies as well as conduct maintenance/repair operations.

Activities located in or adversely affecting wetlands will require a tiered SEA focused on the 8-step decision-making process. Site-specific impacts to wetlands, permit requirements, and mitigation measures will be determined through that process.

Alternative 3 – Complete Repairs on a System Basis. Impacts to wetlands from complete repairs on a system basis are expected to be similar to those of alternative 2. This alternative would not have a significant effect on wetlands or other waters of the United States. Work would be conducted within urban, previously disturbed rights-of-way. Actions that would impact wetlands would require review under several regulatory programs. Repair of damaged sewage and

stormwater pipes would reduce releases of sewage. Stormwater drainage would be improved, which would contribute to reduced sediment transport and flooding.

During reconstruction there would be the potential to impact surface waters through minor erosion and runoff, and or through accidental spills of fluids used in construction equipment. Storm water runoff could carry sediment offsite into the receiving ditches/culverts, and adjacent drainage canals.

Formal legal protection of jurisdictional wetlands is promulgated through Section 404 of the CWA. A dredge and fill permit for activities in waters of the United States including wetlands from the USACE is required if an action has the potential to adversely affect jurisdictional wetlands. There are several Nationwide Permits (NWP) for activities in waters of the United States that may cover specific aspects of the development of the proposed activities. For example, NWP 3 (Maintenance) may apply to activities related to the repair, rehabilitation, or replacement of an existing structure; NWP 12 (Utility Line Activities) or NWP 14 (Linear Transportation Projects) may apply to the construction of utility lines and access roads for new facilities; NWP 18 (Minor Discharges) or NWP 19 (Minor Dredging) may apply to many sites where water impacts are minimal; NWP 28 (Modifications of Existing Marinas) may apply to activities near tidal waters; and NWP 39 (Commercial and Institutional Developments) may apply to actions involving the expansion or construction of security facilities.

The NWP program has numerous guidelines and conditions that must be met for an activity to qualify for a permit. NWPs are subject to review by the States under Section 401 of the CWA, as are all aspects of the USACE permitting program. Various USACE Districts also have Regional General Permits that function similarly to NWPs; however, Regional General Permits are typically more specific in the types of actions that they cover and typically necessitate more stringent conditions and reporting requirements. If none of the NWPs apply to the proposed activity and no applicable Regional General Permit exists, then the grantee or subgrantee must acquire an Individual Permit from the USACE. Under section 401 of the CWA, each State has an opportunity to establish specific criteria for water quality protection under this section of this Act. These provisions must be satisfied prior to issuance of permits under Sections 402 and 404 of the CWA.

However, areas that have been disturbed by the removal of the existing vegetation are much more susceptible to water erosion during major precipitation events and to wind erosion during dry and windy weather conditions. Both types of erosion can cause adverse impacts on wetlands located down gradient or down wind. Grantees and subgrantees are responsible for securing any applicable NPDES permits and meeting permit conditions, which may include developing a SWPPP for the construction activity. The SWPPP would include practices to control soil erosion, sedimentation and water pollution that may affect wetlands. Projects that obtain and comply with the required NPDES permits and SWPPP will not result in significant impacts to wetlands.

Construction activities located in or near a water body may require a RHA Section 10 or a CWA Section 404 permit from the USACE. The permits would identify measures that must be implemented to minimize erosion and runoff, such as the use of silt fencing, rip-rap, and other erosion-prevention methods. The grantee or subgrantee is responsible for acquiring all necessary permits and complying with all mitigation measures identified to ensure no significant impacts.

In order to minimize indirect impacts (erosion, sedimentation, dust and other construction-related disturbances) to the nearby waters of the United States and well defined drainage areas surrounding the site, the contractor should implement Best Management Practices (BMPs) that meet the

LDEQ's permitting specifications for storm water discharge regulated under §§ 401 and 402 of the CWA, and include the following into the daily operations of the construction activities: silt screens, barriers (e.g., hay bales), berms/dikes, and/or fences to be placed where and as needed. Fencing will be placed for marking staging areas to store construction equipment and supplies as well as conduct maintenance/repair operations.

Activities located in or adversely affecting wetlands will require a tiered SEA focused on the 8-step decision-making process. Site-specific impacts to wetlands, permit requirements, and mitigation measures will be determined through that process.

6.3 Hydrology and Floodplains

6.3.1 Regulatory Setting

Executive Order 11988, Floodplain Management, requires federal agencies to avoid direct or indirect support or development within or affecting the 1% annual-chance special flood hazard area (SFHA) (i.e., 100-year floodplain) whenever there is a practicable alternative (for "Critical Actions", within the 0.2% annual chance SFHA, i.e., the 500-year floodplain). FEMA uses the National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM) to determine the flood hazard zone for the proposed project location. FEMA's regulations for complying with EO 11988 are codified in 44 CFR Part 9, Floodplain Management and Protection of Wetlands.

Section 9.6, 44 CFR, details an eight-step process that decision-makers must use when considering projects either located within the floodplain or with the potential to affect the floodplain. The 8-step process: assesses the action with regard to human susceptibility to flood harm and impacts to wetlands; analyzes principle flood problems, risks from flooding, history of flood loss, and existing flood protection measures; and includes public notice and opportunity for the public to have early and meaningful participation in decision-making and alternative selection. If impacts cannot be avoided, the 8-step process includes requirements to incorporate measures to minimize and mitigate potential risks from flooding and impacts to wetlands as appropriate.

Under 44 CFR Part 9, FEMA is required to avoid activities in a floodplain unless it is the only practicable alternative. If undertaking a proposed project in the floodplain is the only practicable alternative, then FEMA must minimize the impacts to the floodplain and the impacts from floods to the facility or structure. Minimization techniques apply to the location of structures, equipment and building contents in floodplain areas. This could include elevating facilities or structures above the base flood elevation. Minimization techniques may include flood-proofing structures or facilities. Some of these facilities may be considered "critical actions" under this analysis because the risk of flooding might be too great. In such cases, the base flood elevation or standard for flood-proofing is the 500-year flood event.

6.3.2 Existing Conditions

Orleans Parish is comprised of the City of New Orleans and is located in southeast Louisiana at the head of the Mississippi River Delta. It is approximately 350 square miles, of which approximately 169 square miles (approximately 48.3 percent) is land, the remainder, 181 square miles, is open water and marsh. Only 51% of New Orleans is at or above sea level, with the more densely populated areas generally on higher ground along the natural levee adjacent to the

Mississippi and other waterways. The average elevation of the city is currently between one and two feet below sea level, with some portions of the city as high as 20 feet at the base of the river levee in Uptown and others as low as 7 feet below sea level in the farthest reaches of Eastern New Orleans.

There are approximately 1,547 miles of City-owned streets within Orleans Parish, of which approximately 60% are asphalt-topped and 40% are concrete-topped. The City's drainage system is divided into 10 drainage basins and consists of 1,287 miles of small drain lines (pipes less than 36 inches in diameter) and 65,000 drainage catch basins and inlets. The City's water distribution system consists of over 2,000 miles of water lines and distributes approximately 144 million gallons of water each day. It also includes over 17,000 hydrants for fire protection. The City is divided into 10 sewerage service basins, with over 1,300 miles of sewer collection lines and 120 miles of sewer force mains.

New Orleans' drainage infrastructure is owned and operated by SWBNO and includes 23 drainage pump stations, 13 underpass pumping stations, 260 miles of open and covered canals, and 1,515 miles of subsurface pipes, both gravity and pressurized. With a pumping capacity of over 30 billion gallons—more than the flow rate of the Ohio River—this is the biggest stormwater removal system in the country. All rainwater is pumped to Lake Pontchartrain, the Industrial Canal, the Intracoastal Waterway and Bayou Bienvenue. Dry weather flow goes to the River, the Lake and the Intracoastal Waterway. The system also serves about 2,250 acres in Jefferson Parish.

Urban flooding occurs when rain overwhelms drainage systems and waterways and makes its way into the basements, backyards, and streets of homes, businesses, and other properties. There are several ways in which stormwater can cause the flooding of a property: overflow from rivers and streams, ponding within levee polder areas, sewage pipe backup into buildings, seepage through building walls and floors, and the accumulation of stormwater on property and in public rights-of-way. As New Orleans has developed to accommodate increasing population, more impermeable surfaces (roads, roofs, parking lots, driveways, alleys, sidewalks, and patios) have led to reduced infiltration and increased stormwater runoff. Natural drainage systems have been replaced with man-made sewer and stormwater infrastructure. This infrastructure has fallen into disrepair in many places, and increasingly heavy rainfall events are putting additional strain on the deteriorated drainage systems.

New Orleans has always faced the risk of flooding from three sources: the Mississippi River, heavy rains, and hurricane storm surge through Lake Pontchartrain and Lake Borgne. Hurricane storm surge poses the greatest threat of catastrophic flooding in New Orleans. Risk of flood damage has been modulated by several factors: increased structural flood protection in the form of flood gates and levees; increased development in low-lying, vulnerable areas; soil subsidence; and coastal erosion. Global sea level rise and the risk of stronger, more frequent hurricanes as a result of global warming may also be contributing to increased risk.

Drainage of flood waters in Orleans Parish is accomplished by a system of structures and canals which flow to pumping stations. Orleans Parish is protected from the Mississippi River by man-made levees. On the east bank of Orleans Parish, the Lake Pontchartrain and Vicinity Hurricane Protection Levee was designed to prevent flooding from hurricane storm surges from Lake Pontchartrain and Lake Borgne. Post-Hurricane Katrina, the levees in Orleans Parish, with the

exception of the Mississippi River levees, although physically still in place, were compromised to the point that they were not considered sound enough to adequately protect against the 1-percent annual chance storm event.

In July 2005, FEMA began to collect data using state-of-the-art technology to increase the quality, reliability, and availability of flood hazard maps for many of the Louisiana coastal parishes. This was a part of the Flood Map Modernization effort through FEMA's NFIP. These efforts were necessary because the flood hazard and risk information shown on many FIRMs was developed during the 1970s, and the physical terrain had changed significantly since that time, to include significant land subsidence and major wetland loss in some areas. After Hurricanes Katrina and Rita, FEMA expanded the scope of this work to include all of coastal Louisiana. The magnitude of the impacts of Hurricanes Katrina reinforced the urgency to obtain additional flood recovery data for the coastal zones of Louisiana. More detailed analysis was possible because new data obtained after the hurricanes included information on levees and levee systems, new high-water marks, and new hurricane parameters.

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

Following this intensive five-year mapping initiative, FEMA provided updated preliminary flood hazard maps, known as Preliminary Digital Flood Insurance Rate Maps (DFIRMs), to Louisiana's coastal parish communities. First released in 2008, these maps were based on the most technically advanced studies ever and were subjected to multiple levels of review. The DFIRMs provided communities with a more scientific approach to economic development, hazard mitigation planning, emergency response, and post-flood recovery.

Thereafter, the USACE completed upgrades of the Hurricane and Storm Damage Risk Reduction System (HSDRRS) for the Greater New Orleans (GNO) area. This 350-mile system of levees, floodwalls, surge barriers, and pump stations reduces the flood risk associated with a storm event. A perimeter levee system protects the area from the coastal surge and the Mississippi River flooding. Pump stations are located along the perimeter levee to discharge polder runoff into the exterior lakes or the Mississippi River. Local pump stations perform the same function along interior levees and discharge to marshy areas designated to collect flood water from developed areas. Two major closure complexes, the West Closure Structure Complex and the Inner Harbor Navigation Canal Complex keep storm surge from entering the major canals and navigation channels within the New Orleans area. The HSDRRS is designed and accredited to protect the GNO area from the 1-percent-annual-chance flood.

FEMA specifies that all levees must have a minimum freeboard of three (3) feet against 1-percent-annual-chance flooding to be considered a safe flood protection structure. The HSDRRS meets

the FEMA freeboard requirement. In September of 2011, the USACE provided FEMA with assurances that the HSDRRS is capable of defending against a storm surge with a 1-percent-annual-chance of occurring in any given year.

Accordingly, FEMA subsequently revised the preliminary DFIRMS for areas within the HSDRRS to incorporate the reduced flood risk associated with the system improvements. These Revised Preliminary DFIRMS are currently viewed as the best available flood risk data for Orleans Parish. In many areas, the flood risk has been significantly reduced due to heightened protection. Areas protected by the HSDRRS includes much of the area of the proposed action but some work may occur outside levee-protected areas and within SFHAs.

6.3.3 Environmental Consequences

Alternative 1 – No Action. Under the No Action Alternative, damage sustained as a result of Hurricane Katrina to roads, drainage lines, water lines, and sewer lines within Orleans Parish would not be repaired, replaced, or improved. Storm-related damage would continue to adversely effect the ability of these roads, drain lines, water lines, and sewer lines to function as intended, inhibiting the City’s future growth and economic development, accelerating further degradation of the City’s transportation network, drainage system, water distribution system, and sewerage collection system, and exposing the public to undo hardship and health risks.

Implementation of this alternative would have adverse effects on floodplains. Damaged sewer and stormwater drainage infrastructure would remain in a state of disrepair. Leaking sewage could directly pollute stormwater runoff and impact nearby waters. Sewage discharges from leaks may contain significant loads of a wide variety of pollutants, including bacteria and viruses, oxygen demanding and toxic pollutants, as well as persistent materials such as heavy metals, polycyclic aromatic hydrocarbons (i.e., PAHs), etc. Sewage can infiltrate into stormwater drains through cracks in pipes or faulty joints and have long-term environmental impacts on rivers and streams.

Stormwater entering the sewage treatment system can cause the sewage system to have too much water and discharge through designed overflow points into waterways and stormwater drains. Sewage overflows can be a major source of pollution, especially within estuarine and enclosed waterways. Unrepaired drainage appurtenances such as culverts and catch basins would continue to operate at reduced capacity and efficiency, which may increase sediment and debris transported in stormwater. Reduced drainage capacity would contribute to increased flooding risk, frequency, and severity.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). Sewer overflows from flooding can overwhelm the capacity of drainage systems, roads, culverts, channels, and detention structures. The comprehensive infrastructure repair and restoration program would restore the roads and utility infrastructure, which will increase the capacity for draining and conveying high stormwater flows and reduce flooding. The repaired, improved, or replaced infrastructure will reduce spills and leakage from the sewer system and reduce human health and ecological impacts.

The infrastructure repair would encourage redevelopment in the base floodplain and stimulate future growth subject to damage in future flooding. Repairs and reconstruction will also increase

the useful life of the facilities. The program would maintain and likely expand significant investment in the base floodplain and expose facilities to moderate residual flood hazards, which may increase the need for future disaster assistance. The project would accommodate the existing uses of the floodplain and reinforce existing land use patterns that have developed without reflection on flood hazard and risk minimization. Compliance with floodplain codes and standards and other required treatment measures would increase development costs.

Adverse effects to floodplains during construction could result from temporary service disruptions that would render portions of the system inoperable and contribute to an increase in localized flooding. Poorly maintained construction sites can lead to the release of pollutants to stormwater runoff and increased sedimentation, which would reduce water quality.

Adverse effects would be minimized in accordance with FEMA's minimization standards in 44 CFR 9.11. Treatment measures would be required to reduce adverse impacts below the level of significance. New construction must be compliant with current codes and standards. Per 44 C.F.R. § 9.11(d)(6), no project should be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the NFIP. The Applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. Coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA for inclusion in the permanent project files

FEMA has completed an 8-Step Analysis for this alternative, and finds that the preferred alternative project locations are mostly located within the HSDRRS. All locations located within the HSDRRS are not within B or shaded X zones. Therefore, FEMA will require individual project analysis and 8-Steps for any amendments proposed in SFHAs. This may result in the need to prepare a Tiered Site Specific EA. The preferred alternative as proposed will have negligible effects on the floodplain.

Alternative 3 – Complete Repairs on a System Basis. Sewer overflows from flooding can overwhelm the capacity of drainage systems, roads, culverts, channels, and detention structures. The comprehensive infrastructure repair and restoration program would restore the roads and utility infrastructure, which will increase the capacity for draining and conveying high stormwater flows and reduce flooding. The repaired infrastructure will reduce spills and leakage from the sewer system and reduce human health and ecological impacts.

The infrastructure repair would encourage redevelopment in the base floodplain and stimulate future growth subject to damage in future flooding. Repairs and reconstruction will also increase the useful life of the facilities. The program would maintain and likely expand significant investment in the base floodplain and expose facilities to moderate residual flood hazards, which may increase the need for future disaster assistance. The project would accommodate the existing uses of the floodplain and reinforce existing land use patterns that have developed without reflection on flood hazard and risk minimization. Floodplain development requiring mitigation and minimization treatment measures and compliance with floodplain codes and standards would increase costs.

Adverse effects to floodplains during construction could result from temporary service disruptions that would render portions of the system inoperable and contribute to an increase in localized flooding. Poorly maintained construction sites can lead to the release of pollutants to stormwater runoff and increased sedimentation, which would reduce water quality.

Alternative 3, project locations are mostly located within the HSDRRS. All locations located within the HSDRRS are not within B or shaded X zones. Therefore, FEMA will require individual project analysis and 8-Steps for any amendments proposed in SFHAs. This may result in the need to prepare a Tiered Site Specific EA. This alternative as proposed will have negligible effects on the floodplain.

6.4 Water Quality and Resources

6.4.1 Regulatory Setting

Section 401 of the Clean Water Act

Section 401 of the Clean Water Act (CWA) requires state certification of all federal licenses and permits in which there is a “discharge of fill material into navigable waters.” The certification process is used to determine whether an activity, as described in the federal license or permit, would impact established site-specific water quality standards. A water quality certification from the issuing state, LDEQ in this case, is required prior to the issuance of the relevant federal license or permit. The most common federal license or permit requiring certification is the U.S. Army Corps of Engineers (USACE) CWA § 404 permit.

Section 402 of the Clean Water Act

The National Pollutant Discharge Elimination System (NPDES) program was created by § 402 of the CWA. This program authorizes the USEPA to issue permits for the point source discharge of pollutants into waters of the U.S. Through a 2004 Memorandum of Agreement, the USEPA delegated its permit program for the state of Louisiana to LDEQ. The ensuing Louisiana Pollutant Discharge Elimination System (LPDES) program authorizes individual permits, general permits, stormwater permits, and pretreatment activities that result in discharges to jurisdictional waters of the state.

With respect to stormwater, large municipalities such as New Orleans are able to obtain municipal separate storm sewer system (or MS4) permits for their stormwater discharges. According to 40 C.F.R. § 122.26(b)(8), a municipal separate storm sewer is “a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains)” that is owned or operated by a public body and is “[d]esigned or used for collecting or conveying storm water.” Pursuant to Title 33.IX § 2511 of the Louisiana Environmental Regulatory Code, individual construction projects may require stormwater pollution prevention plans consistent with the MS4 permit.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was first passed in 1974 and has been amended twice, the latest instance in 1996. This Act focuses on both above- and below-ground waters designated for

public drinking use, both actual and potential, including rivers, reservoirs, lakes, springs, and groundwater wells. It also establishes health-based national standards and testing regimes in order to protect the public from naturally-occurring and human-generated contaminants of drinking water (40 C.F.R. Parts 141-143). Although the SDWA originally focused on treatment as the primary method for providing safe drinking water, the 1996 amendments recognized that other factors are also important, such as protecting water sources, providing funds for water system improvements, and disseminating information to the general public.

Oversight of SDWA rules is usually conducted by states under their own drinking water programs, if a state's standards are at least as stringent as those of the USEPA. The Louisiana Department of Health and Hospitals received primacy to administer the SDWA in Louisiana in 1977, with the exception of the Ground Water Rule and the Revised Total Coliform Rule, which are still overseen by the USEPA (Louisiana Department of Health and Hospitals 2013, USEPA 2004).

Local Regulatory Framework

Article 23 of the Comprehensive Zoning Ordinance (CZO) establishes requirements for stormwater management plans in New Orleans “[i]n order to comply with federal, state, and local regulations for urban stormwater management.” According to the ordinance, these plans are required for development or redevelopment of sites with 5,000 square feet or more of impervious surface or any site greater than one (1) acre in size. Section 23.12A specifies on-site stormwater management measures to be taken and § 23.12B provides guidance on stormwater best management practices.

6.4.2 Existing Conditions

In Orleans Parish, all of the water used for public consumption and certain industrial applications is taken from the Mississippi River. Even though the quality of the water varies somewhat with the volume of flow in the river, it is considered suitable for public use (Trahan 1989). Groundwater in Orleans Parish is located in four (4) major aquifers. In order of increasing depth, these aquifers consist of point-bar deposits/shallow aquifers (up to 200 feet below the soil surface), the Gramercy aquifer (up to 400 feet deep), the Gonzales-New Orleans aquifer (up to 900 feet deep), and the “1,200-foot” Sand. These aquifers do not underlay Orleans Parish at all locations, but instead are discontinuous in certain areas.

Point-bar deposits are located on inside bends of the Mississippi River and contain freshwater, while the “shallow aquifers” are associated with remnant distributary channel deposits and are saline. No water withdrawals are made from either of these deposits. The Gramercy and Norco aquifers are not used for municipal or industrial purposes due to their high salt content. The portion of the Gonzales-New Orleans aquifer north of the Mississippi River is freshwater; however, high levels of chloride make it unsuitable for public consumption. It is used, instead, for industrial purposes such as cooling. The “1,200 foot” Sand aquifer contains too much salt for most uses (Prakken 2009). None of these aquifers is classified as a “sole source” according to the USEPA (2009).

According to the Applicant, the city's minor drainage system is divided into ten (10) drainage basins and consists of 1,287 miles of small drain lines (pipes less than 36 inches in diameter) and 65,000 drainage catch basins and inlets. The city's water distribution system consists of over 2,000

miles of water lines and distributes approximately 144 million gallons of water each day. It also includes over 17,000 hydrants for fire protection. Drinking water testing and treatment is performed in accordance with the provisions of the SDWA. The city also is divided into ten (10) sewerage service basins, with over 1,300 miles of sewer collection lines and 120 miles of sewer force mains. Drainage, water, and sewerage infrastructure is under the purview of the Sewerage and Water Board of New Orleans, which was founded in 1899 (SWBNO 2016b).

Due to the current state of disrepair of the city's drainage, water, and sewerage systems, some of which are over 100 years old, considerable leakage and inefficiencies are occurring. The exact extent of the damage and the remedial measures needed are currently not fully known. One of the requirements of the 2014 Third Modified Consent Decree (Consent Decree) is to conduct a thorough inspection of the affected infrastructure, determine the nature of necessary repairs, and implement the repair work. According to Guillot (2015), the city loses up to 40% of its drinking water through leakage and broken pipes. Damaged sewer lines also are allowing wastewater to enter the groundwater table. In addition, blocked storm drainage inlets, catch basins, and storm sewer pipes/culverts are causing manhole overflows and street flooding in some places.

According to a SWBNO representative, the Board follows current best practices for water/sewer infrastructure, including conformance with the "10 States Standards" (Great Lakes - Upper Mississippi River Board 2014). The elimination of potential cross contamination between leaking sewer and water lines is accomplished in two ways: 1) water lines always are kept under pressure, which prevents the infiltration of outside contaminants and 2) both vertical and horizontal separation between the two (2) systems is mandated during initial installation. Sewer lines are installed at least three (3) to five (5) feet below water lines and are separated horizontally by at least six (6) feet of distance. Due to the high groundwater table in New Orleans, the positive effect of line separation would be reduced since liquid leakage from pipes would be able to spread within the zone of saturation. Keeping water lines under pressure is regarded as highly effective in preventing cross contamination, however. During periods when there is a drop in water pressure, either unintentional or during testing events, safety procedures such as "boil water advisories" are implemented.

Like many locations within the U.S., New Orleans still has a number of water lines made of lead. For homes and businesses constructed before 1987, lead plumbing or solder also may exist either within the building itself or in the service connection between the water meter and the structure. As a result, in addition to mandated testing under the provisions of the SDWA, as part of its purification process SWBNO treats drinking water with a National Sanitation Foundation-certified additive that helps prevent lead contamination via leaching (SWBNO 2016a).

6.4.3 Environmental Consequences

Alternative 1 – No Action. The No Action alternative would leave the water, sanitation, and drainage infrastructure in its current state of disrepair. This disrepair would result in moderate effects to water quality. As a result, water leakage, environmental contamination, and storm sewer overflows would continue. In addition, the City would be subject to substantial daily monetary penalties for non-compliance with the Consent Decree.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). Alternative 2, the Preferred Alternative, would consist of required and necessary

inspections, testing, and repairs to drainage, water, and sewerage infrastructure. During water and sewer line repairs, short-term service disruptions would occur, but could be minimized where repairs are possible via slip lining instead of excavation/removal of the affected pipe sections. Where excavation is necessary for utility and drainage repairs/improvements to be made, the potential exists for contaminated soil to be exposed or polluted water released. In the case of sewer line replacement, sewage spills could occur during removal of the affected pipe segments. Sewage contains bacteria and other organisms harmful to humans, as well as additional potential health hazards. When sewage spills occur, the contractor would be expected to clean up the spillage and disinfect the area affected by the spill. Any contaminated soil would be disposed of in an appropriate authorized waste disposal facility.

As a result of the proposed work, many beneficial impacts associated with the project would accrue. For example, water line repairs would reduce water wastage and thereby increase the City's surplus water treatment capacity. Repair/replacement of deteriorated sewer lines and closing unknown cross-connections between the sanitary and storm sewer systems would reduce sewer back-ups and result in improved overall environmental quality, including improved aesthetics and minimization of health hazards from untreated wastewater entering surface or groundwater. Clearing drainage and storm sewer obstructions that cause manhole overflows and cleaning blocked inlets that cause street flooding would improve property access and improve traffic. Upgraded infrastructure would lessen potential strain on the City's other operations and facilities by reducing the need to respond to customers with water outages resulting from pipe breaks and/or localized flooding due to drain impairment.

The Preferred Alternative would minimize the risk of loss to customers of municipal water service due to failing infrastructure and/or future storm or flood events by implementing the coordinated repair and restoration of storm damaged roads, water, and sewerage components. Consequently, Alternative 2 should have a beneficial long-term effect on water quality due to a reduction in the potential for water supply contamination and subsequent boil water advisories.

Work executed under the project would be performed in coordination with other existing capital improvement programs in such a way as to minimize work-related impacts to traffic flow and meet the requirements of Section XV - Clean Water Act Remedial Measures: Comprehensive Collection System Remedial Program of the Consent Decree between the SWBNO, the City, and the USEPA, as well as any subsequent modifications to this agreement. In its 5 April 2016 response to FEMA's SOV, LDEQ stated it did not object to the project as proposed; however, it provided a number of general comments, which have been incorporated into the Conditions Section of this EA. Should permits be required from the U.S. Army Corps of Engineers pursuant to § 404 of the Clean Water Act or § 10 of the Rivers and Harbors Act of 1899. The Applicant also will be obliged to obtain a water quality certification from LDEQ under § 401 of the Clean Water Act.

Prior to construction activities, at least 48-hours' notice would be given to residents and emergency response agencies in advance of any street closures, anticipated periods of low water pressure, or disruptions in service for other non-Applicant-controlled utilities. Coordination with other utility companies would occur at least 90 days prior to construction in order to confirm any required utility relocations. Utility line relocations would be avoided to the extent possible in the interest of reducing project costs, project duration, and service disruptions. Any repaired or replaced water main would be chlorinated and tested to ensure the potable water quality meets or exceeds all applicable local and federal drinking water standards.

Water used for cleaning line blockages and contaminated water from dewatering sewer line repair sites would be collected via vacuum truck where feasible. If necessary, heavy cleaning and bypass pumping operations might be employed to facilitate the flushing and inspection of heavily clogged/blocked line segments; however, contractors would avoid discharging or allowing the conveyance of grey water or potentially contaminated materials into natural water bodies.

Any soil and/or vegetative debris removed during the course of the work would be disposed of at an approved disposal facility. If not feasible or cost effective to load, haul, and dispose of removed debris in one operation, the City could allow a contractor to utilize an approved staging site to decant and temporarily stage solid debris. Stockpiled debris would be subsequently loaded into trucks or containers for transport to the disposal site. Any staged areas would be pre-approved by the City and any necessary permits obtained in advance. Stormwater Control Measures (SCMs) would be employed, if necessary, and could include storm drain system protection, spill prevention and clean-up, employee training, project site housekeeping, and/or temporary erosion controls.

In order to minimize indirect impacts (erosion, sedimentation, dust, and other construction-related disturbances) to waters of the state or well defined drainage areas surrounding the work site, the contractor should implement BMPs that meet LDEQ permitting specifications for stormwater and also include the following into the daily construction routine: silt screens, barriers (e.g., hay bales), berms/dikes, and or fences to be placed as and where needed. Fencing should be placed to mark staging areas for storage of construction equipment and supplies, as well as for sites where maintenance/repair operations occur.

Alternative 3 – Complete Repairs on a System Basis. The impacts from this alternative are similar to those of the Preferred Alternative; however, one (1) of the goals of the Master Plan is to coordinate improvements to drainage and stormwater management systems with road repairs in order “to increase efficiency, limit infrastructure costs, and preserve roadway quality and operations (CNO 2010). Although the scope of work in this alternative is similar to that of the Preferred Alternative, Alternative 3 would fail to meet the referenced Master Plan goal since the drainage and stormwater improvements potentially would not be made in conjunction with road repairs. Water and sewerage projects would, likewise, potentially not be coordinated.

Ultimately, the social benefits described in the Preferred Alternative would be realized, but over a longer period of time. These benefits include improved drinking water service, decreased groundwater contamination from leaking sewerage infrastructure, and reduced street flooding. Scheduling of the necessary work could possibly be delayed under Alternative 3, however, subjecting the City to the penalties described in the Consent Decree.

As with the Preferred Alternative, at least 48-hours’ notice would be given to residents and emergency response agencies in advance of any street closures, anticipated periods of low water pressure, or disruptions in service for other non-Applicant-controlled utilities. Coordination with other utility companies would occur at least 90 days prior to construction in order to confirm any required utility relocations. Utility line relocations would be avoided to the extent possible in the interest of reducing project costs, project duration, and service disruptions. Any repaired or replaced water main would be chlorinated and tested to ensure the potable water quality meets or exceeds all applicable local and federal drinking water standards.

Water used for cleaning line blockages and contaminated water from dewatering sewer line repair sites would be collected via vacuum truck where feasible. If necessary, heavy cleaning and bypass pumping operations might be employed to facilitate the flushing and inspection of heavily clogged/blocked line segments; however, contractors would avoid discharging or allowing the conveyance of grey water or potentially contaminated materials into natural water bodies.

Any soil and/or vegetative debris removed during the course of the work would be disposed of at an approved disposal facility. If not feasible or cost effective to load, haul, and dispose of removed debris in one operation, the City could allow a contractor to utilize an approved staging site to decant and temporarily stage solid debris. Stockpiled debris would be subsequently loaded into trucks or containers for transport to the disposal site. Any staged areas would be pre-approved by the City and any necessary permits obtained in advance. Stormwater Control Measures (SCMs) would be employed, if necessary, and could include storm drain system protection, spill prevention and clean-up, employee training, project site housekeeping, and/or temporary erosion controls.

In order to minimize indirect impacts (erosion, sedimentation, dust, and other construction-related disturbances) to waters of the state or well defined drainage areas surrounding the work site, the contractor should implement BMPs that meet LDEQ permitting specifications for stormwater and also include the following into the daily construction routine: silt screens, barriers (e.g., hay bales), berms/dikes, and or fences to be placed as and where needed. Fencing should be placed to mark staging areas for storage of construction equipment and supplies, as well as for sites where maintenance/repair operations occur.

6.5 Land Use and Planning

6.5.1 Regulatory Setting

Land use is the way in which, and the purposes for which, people utilize the land and its resources. Land use planning varies depending on land ownership and jurisdictional boundaries. Land use within and in the immediate vicinity of urban areas is generally guided by comprehensive plans that specify the allowable types and locations of present and future land use. In most cases, that comprehensive plan is developed through a public participation process and approved by publicly-elected officials to capture local values and attitudes toward planning and future development. Zoning ordinances and regulations vary throughout the U.S. and are primarily set at the regional, city, county, or local level.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. § 1451 et seq.) is administered by the Department of Commerce's Office of Ocean and Coastal Resource Management within the National Oceanic and Atmospheric Administration (NOAA). It applies to all coastal states and to all states that border the Great Lakes. The CZMA was established to help prevent any additional loss of living marine resources, wildlife, and nutrient-enriched areas; alterations in ecological systems; and decreases in undeveloped areas available for public use. The CZMA gives states the authority to determine whether activities of governmental agencies are consistent with federally-approved coastal zone management programs. Each state coastal zone management program must include provisions protecting coastal natural resources, fish, and wildlife; managing development

along coastal shorelines; providing public access to the coast for recreational purposes; and incorporating public and local coordination for decision-making in coastal areas. This voluntary federal-state partnership addresses coastal development, water quality, shoreline erosion, public access, protection of natural resources, energy facility siting, and coastal hazards.

The Federal Consistency provision, contained in § 307 of the CZMA, allows affected states to review federal activities to ensure that they are consistent with the state's coastal zone management program. This provision also applies to non-federal programs and activities that use federal funding and that require federal authorization. Any activities that may have an effect on any land or water use or on any natural resources in the coastal zone must conform to the enforceable policies of the approved state coastal zone management program. NOAA's regulations in 15 C.F.R. Part 930 provide the procedures for arriving at or obtaining a consistency determination.

The CZMA requires that coastal states develop a State Coastal Zone Management Plan or program and that any federal agency conducting or supporting activities affecting the coastal zone conduct or support those activities in a manner consistent with the approved state plan or program. To comply with the CZMA, a federal agency must identify activities that would affect the coastal zone, including development projects, and review the state coastal zone management plan to determine whether a proposed activity would be consistent with the plan.

Louisiana State and Local Coastal Resources Management Act of 1978

Pursuant to the CZMA, the State and Local Coastal Resources Management Act of 1978 (R.S. 49:214.21 et seq. Act 1978, No. 361) is the state of Louisiana's legislation creating the Louisiana Coastal Resources Program (LCRP). The LCRP establishes policy for activities including construction in the coastal zone, defines and updates the coastal zone boundary, and creates regulatory processes. The LCRP is under the authority of the Louisiana Department of Natural Resources' (LDNR) Office of Coastal Management (OCM). If a proposed action is within the Coastal Zone boundary, OCM will review the eligibility of the project concurrently with its review by other federal agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and National Marine Fisheries Service). The mechanism employed to review these projects is the Coastal Use Permit (CUP). Per the CZMA, all proposed federal projects within the coastal zone must undergo a Consistency Determination by OCM for that project's consistency with the state's Coastal Resources Program (i.e., LCRP) (LDNR 2016).

Coastal Barrier Resources Act

The Coastal Barrier Resources Act (CBRA) of 1982 (16 U.S.C. § 3501 et seq.), administered by the U.S. Fish and Wildlife Service (USFWS), was enacted to protect sensitive and vulnerable barrier islands found along the U.S. Atlantic, Gulf, and Great Lakes coastlines. The CBRA established the Coastal Barrier Resources System (CBRS), which is composed of undeveloped coastal barrier islands, including those in the Great Lakes. With limited exceptions, areas contained within a CBRS are ineligible for direct or indirect federal funds that might support or promote coastal development, thereby discouraging development in coastal areas.

Local Regulatory Framework

Land use within New Orleans must be consistent with the “Land Use Plan” section of the City’s Master Plan, *Plan for the 21st Century*, which “sets forth the policy framework for the physical development of the city” as adopted in the City charter. According to the Master Plan, regulated land use actions include 1) the Comprehensive Zoning Ordinance and all zoning amendments, 2) preliminary and final approval of subdivision plans and plats, 3) site plans, 4) approval of planned unit development or other site-specific development plans, and 5) variances. “‘*Consistency*’ means that the land use actions must further, or at a minimum not interfere with, the goals, policies and strategies in the Land Use Plan section of the Master Plan” (*emphasis original*). Among other guidelines, the Land Use Plan includes strategies to “identify commonalities and differences in the physical character of areas across the city, focusing on more than architectural style to include street organization and size, scale and massing, orientation to the street, and similar urban design features” (CNO 2010a, 2010b).

In Article 1 of the City of New Orleans’ new Comprehensive Zoning Ordinance (CZO) (2015), the ordinance’s stated purpose has multiple components, one of which is to “ensure that the policies set forth in City’s Master Plan are implemented by the land use regulations and are consistent with the goals set forth in the Master Plan.” Another is to “provide for functional public utilities and facilities, and for the convenience of traffic and circulation of people and goods.” A further purpose is to “provide for preservation, protection, development, and conservation of natural resources.”

The CZO established nine (9) zoning districts that regulate such matters as “the location and use of structures, signs, water and land areas for agriculture, trade, industry, and residential use” within their specific zoning category. “These zoning districts also regulate, limit, or determine the height, bulk, and access to light and air of structures, the area of yards and other open spaces, the density of use, and the standards for site organization and layout.” The nine (9) zoning types consist of 1) Open Space, 2) Rural Development, 3) Historic Core Neighborhoods, 4) Historic Urban Neighborhoods, 5) Suburban Neighborhoods, 6) Commercial Center and Institutional Campus, 7) Centers for Industry, 8) Central Business, and 9) Overlay Zoning Districts.

According to Article 6, however, the CZO “does not apply to structures located within the public right-of-way, such as utilities.” In addition, Article 6 provides exemptions for essential services, stating that “[t]he following essential services may be permitted erected, constructed, altered, or maintained in any zoning district, unless otherwise indicated within this Ordinance. Development plan and design review ([Article IV,] Section 4.5) by the Executive Director of the City Planning Commission may be required.” These exemptions apply to:

- A. Traffic signals, fire hydrants, and similar equipment and accessories.
- B. Gas, electric, communication, water supply, and transmission/distribution systems.
- C. Elevated or underground water storage tanks.
- D. Stormwater and sanitary sewer collection and disposal systems.
- E. Utility poles, wires, mains, drains, pipes, conduits and cables reasonably necessary for the furnishing of adequate service by public utilities, municipal or other governmental agencies for the public health, safety and welfare.
- F. Streets.

Finally, there are three (3) local levee districts with regulatory authority over work near the New Orleans levee system. Permits are required for certain types of work, such as excavation, within 1,500 feet of Mississippi River levees and within 300 feet of hurricane protection levees. The Orleans Levee District is the main body with regulatory jurisdiction over levees within Orleans Parish; however, work near the parish boundary could potentially require coordination with the East Jefferson Levee District to the west or the Lake Borgne Basin Levee District to the east.

6.5.2 Existing Conditions

The city of New Orleans is located entirely within the parish of Orleans, in southeastern Louisiana. New Orleans/Orleans Parish has approximately 343,829 residents according to 2010 census figures (USDOC 2010). Orleans Parish is about 350 square miles in size, of which roughly 199 square miles (approximately 56.9 percent) is land; the remainder, 151 square miles, is open water (Trahan 1989). The parish is bordered on the east by Lake Borgne, St. Bernard Parish, and Plaquemines Parish; on the south by the Mississippi River, Plaquemines Parish, and Jefferson Parish; on the west by Jefferson Parish; and on the north by Lake Pontchartrain and St. Tammany Parish. Major transportation routes within Orleans Parish include Interstates 10 and 610 and U.S. Highways 11, 61, and 90.

Orleans Parish is primarily urban, with the exception of some areas of coastal marsh in the eastern part and woodlands on the west bank of the Mississippi River (the Lower Coast). The parish is within the Mississippi River delta, with a subtropical, humid climate typical of coastal regions along the Gulf of Mexico. The average winter temperature is 54°F and the average summer temperature is 81°F. Orleans Parish typically receives 59 inches of rainfall annually (Trahan 1989).

Although the corporate boundary of the city of New Orleans has been unchanged since the 1800s, the city's urban footprint has expanded significantly since then. Before 1900, urbanization was confined primarily to natural levees and ridges along the Mississippi River and elsewhere (the Esplanade Ridge, for example). In 1913, construction of a levee and pump system began, which allowed for the development of lower-lying areas and the back swamp. Between 1913 and 2000, the city's urbanized footprint almost doubled to approximately 71 square miles. The extent of urbanization has been relatively unchanged since the mid-1980s, however, when development slowed considerably due to a lack of large remaining developable tracts within the city, the general economic downturn resulting from the "oil bust," and ongoing concerns about quality of life issues related to crime and public education (CNO 2010c).

Land use differs from zoning in that it groups land distribution patterns into broad general categories. Zoning, on the other hand, regulates specific activities and functions within a particular land use category. Post-Hurricane Katrina, the general pattern of land use has not changed significantly; however, many properties are now vacant or abandoned. According to the latest available data presented in the City's 2010 Master Plan, land use within New Orleans consists approximately of: Residential – 25% of the total land area; Industrial (active or vacant) – 8%; Parkland/Recreation/Open Space and Non-Urban/Wetland/Undeveloped combined – 60%; Institutional/Public/Semi-Public – 3%; and Commercial/Mixed-Use – 4%. Within the Residential land use category, 57% is single family homes, 23% is two (2)- to four (4)-unit structures, and

29% percent is structures containing five (5) units or more. As a result of the hurricane, there are now about 59,000 vacant or blighted residential lots (CNO 2010c).

6.5.3 Environmental Consequences

Alternative 1 – No Action. The “No Action” alternative would leave the existing damaged infrastructure as is and, therefore, would have no effects on land use. The City’s Land Use and Master Plans would be severely curtailed, since business and resident access to reliable roads, water delivery, and sewerage systems would continue to be sub-standard.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). The Preferred Action Alternative would involve construction in a designated coastal zone; however, this action would have negligible impacts to coastal resources. In accordance with a 2013 LDNR OCM Special Public Notice, the granting of federal financial assistance as defined in 15 C.F.R. § 930.91 is fully consistent with the LCRP; however, consistency with the LCRP does not exempt applicants from the need to obtain a CUP. CNO is responsible for coordinating with LDNR OCM to obtain any CUP(s) that may be required for this project.

In addition, coordination with the appropriate local levee district(s) would be required for work within 1,500 feet of Mississippi River levees and/or within 300 feet of hurricane protection levees. CNO and SWBNO are responsible for obtaining any required permits from these districts and following any conditions imposed. The City of New Orleans is not located within a CBRS unit; therefore, there would be no effect to coastal barrier resources.

With respect to the Land Use Plan and local land use requirements, any work related to essential services as defined in Article 6 of the CZO is exempt from zoning restrictions; however, this article also stipulates that review of the proposed design by the Executive Director of the City Planning Commission may be required regardless. Should work under this alternative become necessary outside of City or SWBNO maintained rights-of-way or established servitudes, any necessary rights-of-entry or specialized permits would be obtained by the Applicant.

Alternative 3 – Complete Repairs on a System Basis. With respect to land use, Alternative 3 would be functionally equivalent to the Preferred Alternative, although the frequency and duration of service disruptions would likely increase since repairs to utilities and streets would not necessarily be coordinated. This alternative also would involve construction in a designated coastal zone and would require coordination with LDNR OCM for any necessary CUP(s). This action would have negligible impacts to coastal resources.

In addition, coordination with the appropriate local levee district(s) would be required for work within 1,500 feet of Mississippi River levees and/or within 300 feet of hurricane protection levees. CNO and SWBNO would be responsible for obtaining any required permits from these districts and following any conditions imposed. The City of New Orleans is not located within a CBRS unit; therefore, there would be no effect to coastal barrier resources.

With respect to the Land Use Plan and local land use requirements, any work related to essential services as defined in Article 6 of the CZO would be exempt from zoning restrictions; however, this article also stipulates that review of a proposed design by the Executive Director of the City Planning Commission still could be required. Should work under this alternative become

necessary outside of City or SWBNO maintained rights-of-way or established servitudes, any necessary rights-of-entry or specialized permits would be obtained by the Applicant.

6.6 Biological Resources

6.6.1 Regulatory Setting

Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1543) prohibits the taking of listed, threatened, and endangered species unless specifically authorized by permit from the US Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). “Take” is defined in 16 U.S.C. § 1532 (19) as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 C.F.R. § 17.3) (Endangered and Threatened Wildlife and Plants 1975).

Section 7(a)(2) of the ESA requires the lead federal agency to consult with either the USFWS or the NMFS, depending on which agency has jurisdiction over the federally listed species in question, when a federally funded project either may have the potential to adversely affect a federally listed species, or a federal action occurs within or may have the potential to impact designated critical habitat. The lead agency must consult with the USFWS, the NMFS, or both (agencies) as appropriate and will determine if a Biological Assessment (BA) is necessary to identify potentially adverse effects to federally listed species, their critical habitat, or both. If a BA is required, it will be followed by a Biological Opinion (BO) from the USFWS, the NMFS, or both depending on the jurisdiction of the federally listed species identified in the BA. If the impacts of a proposed federal project are considered negligible to federally listed species, the lead agency may instead prepare a letter to the agencies with a “May Affect, but Not Likely to Adversely Affect” determination requesting the relevant agency’s concurrence. This PEA serves to identify potential impacts and meet the ESA § 7 requirement by ascertaining the risks of the proposed action and alternatives to known federally listed species and their critical habitat, as well as providing a means for consultation with the agencies.

Migratory Bird Treaty Act

Unless otherwise permitted by regulation, the Migratory Bird Treaty Act of 1918 (16 U.S.C. § 703-712) prohibits pursuing; hunting; taking; capturing; killing; attempting to take, capture, or kill; possessing; offering for sale; selling; offering to purchase; purchasing; delivering for shipment; shipping; causing to be shipped; delivering for transportation; transporting; causing to be transported; carrying or causing to be carried by any means whatever; receiving for shipment, transportation, or carriage; or exporting; at any time or in any manner, any migratory bird or any part, nest, or egg of any such bird, that is included on the list of protected bird species (General Provisions; Revised List of Migratory Birds 2013). The USFWS enforces the provisions of this Act.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA), (16 U.S.C. 661-666c; Act of March 10, 1934, as amended) proposes to assure that fish and wildlife resources receive equal consideration with other values during the planning of water resources development projects. The Act was passed because the goals of water-related projects (e.g., flood control, irrigation, navigation, hydroelectric power) may conflict with the goal of conserving fish and wildlife resources. Conversely, developers can design water development projects to enhance the quality and enjoyment of fish and wildlife resources if such goals are incorporated into project plans.

The Act authorizes the U.S. Secretary of the Interior to provide assistance to and cooperate with federal, state, and public or private agencies and organizations in the development and protection of wildlife resources and habitat; make surveys and investigations of the wildlife in the public domain; and accept donations of land and funds that will further the purposes of the Act.

The FWCA requires federal agencies to consult with the USFWS whenever it plans to conduct, approve, or fund an undertaking involving the impoundment, diversion, deepening, control, or modification of a stream or body of water. The Act promotes conservation of wildlife resources by preventing loss of and damage to such resources and to provide for the development and improvement of wildlife resources in connection with the agency action.

6.6.2 Existing Conditions

The city of New Orleans is home to a number of animals adapted to urban conditions, including raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*), nine-banded armadillos (*Dasypus novemcinctus*), coyotes (*Canis latrans*), Norway rats (*Rattus norvegicus*) (Allman 2011), and various species of mice, as well as reptiles such as the green anole (*Anolis carolinensis*) and amphibians such as the green treefrog (*Hyla cinerea*, the State Amphibian of Louisiana) and the Gulf Coast toad (*Bufo valliceps*). A large number of common bird species are also present, including rock pigeons (*Columba livia*), mourning doves (*Zenaidura macroura*), boat-tailed grackles (*Quiscalus major*), ruby-throated hummingbirds (*Archilochus colubris*), and American robins (*Turdus migratorius*).

One (1) mammal species, the West Indian Manatee; two (2) fish species, the Atlantic Sturgeon and Pallid Sturgeon; two (2) bird species, the Sprague's Pipit and Piping Plover, and three (3) sea turtle species are uncommon Green Sea Turtle, Kemp's Ridley Sea Turtle and the Loggerhead Sea Turtle are federally listed as threatened or endangered, or candidate species and are known to occur within waterways in Orleans Parish (USFWS, April 2016). The proposed project site is also located within the Mississippi Flyway Zone (USFWS, 2016).

Mammals

West Indian Manatee. The West Indian manatee and its subspecies (Florida and Antillean) are federally listed under the ESA as Endangered and does have federally designated critical habitat that is located in the southwestern and eastern margins of Florida. The Florida subspecies (*T. m. latirostris*) is known to occur in Lakes Maurepas and Pontchartrain during the summer months, typically June through September, and various waterways within the Lake Pontchartrain Basin including the Amite, Blind, Tchefoncté, and Tickfaw Rivers. The known and historical range of the Florida subspecies extends from

Norfolk, Virginia south and westward along the Atlantic seaboard to Beaumont, Texas. In warmer months this subspecies has been observed as far north as Massachusetts (USFWS 2007b). Sightings in Louisiana, representing the western limits of their range in the Gulf of Mexico, are regarded as rare but increasing. The West Indian manatee has been known to occupy near shore marine environments, inshore estuaries and salt marshes and warm freshwater environments including: coastal tidal rivers and streams, mangrove swamps, freshwater springs and backwater bayou areas. Foraging habitat in coastal and riverine habitats include vegetated bottoms and shallow grass beds, with ready access to deep channels. In cooler months manatees will seek warmer waters including anthropogenic induced sources.

Birds

Piping Plover. Piping Plover is a shore bird and is federally listed as a threatened species. Ideal wintering habitat for the piping plover on the Gulf of Mexico coast would contain large sand flats or sand-mud flats adjacent to a tidal pass or tidal inlet. A thin layer of mud covering the sand seems to attract plovers, due to possible food or refuge association (Nicholls 1989). Nicholls observed that barrier beaches with over wash areas or sections of old marshes also attract plovers. A gulf-facing beach having a very low gradient, thus an increased intertidal zone, offers an almost equally attractive area. Also piping plovers will inhabit spoil islands on the Gulf Intracoastal Waterway on both Atlantic and Gulf Coasts. Birds are frequently associated with bays, lagoons and inlets. Critical habitat for this species has been designated along the shoreline margins of several gulf coast states including Louisiana.

Sprague's Pipit. Sprague's Pipit is a grassland bird species and is federally listed as a Candidate species. Sprague's Pipits are migratory birds that move from breeding grounds in the northern prairies of southern Canada and northern United States to the wintering grounds in southern United States and northern México. Spring migration primarily occurs through the central Great Plains in April and May. Fall migration primarily occurs through the Great Plains from late September through early November, with a few sightings from late August and extending in some years through the first week of December in New Mexico. Sprague's Pipit may occur in the vicinity of the proposed project.

Fish

Gulf Sturgeon. The Gulf sturgeon is a federally threatened fish species that has federally designated critical habitat within the project area. This fish is a large anadromous species that lives most of its life in estuarine or marine environments. It is known to occur in rivers, estuaries and near shore Gulf waters from Tampa, Florida westward to Lake Pontchartrain, Louisiana (NOAA 2012 and NMFS 2007). Adult Gulf sturgeons migrate during the spring to cool, spring-fed, riverine areas to spawn. These riverine areas in the Pontchartrain basin, currently or historically, include the Tchefuncte River, Tickfaw River, Tangipahoa River, Amite River and the Pearl River including the Middle Pearl River, Bogue Chitto, East Pearl River and West Pearl River segments. Juvenile Gulf sturgeon may remain in these riverine systems for up to three years before migrating to estuarine and/or marine waters as adults.

The adults initiate movement up to the rivers between February and April and migrate back out to the Gulf of Mexico between September and November (NOAA 2012).

The critical habitat constituents for the Gulf sturgeon identified by USFWS and NMFS (2003) include:

1. *Abundant prey items within riverine habitats for larval and juvenile life stages, and within estuarine and marine habitats and substrates for juvenile, subadult, and adult life stages;*
2. *Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone or hard clay;*
3. *Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed, depths, believed necessary for minimizing energy expenditures during fresh water residency and possibly for osmoregulatory functions;*
4. *A flow regime (i.e. the magnitude, frequency, duration, seasonality, and rate-of-change of fresh water discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging; and necessary for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larvae staging;*
5. *Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages;*
6. *Sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and*
7. *Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g. a river unobstructed by any permanent structure, or a dammed river that still allows for passage).*

Of the critical habitat constituents listed above, list items 5 – 7 are pertinent to the proposed project as it relates to Gulf sturgeon critical habitat.

Pallid Sturgeon. The pallid sturgeon is federally listed as an *endangered* fish species and currently does not have federally designated critical habitat. This species inhabits the bottoms of large river systems including the Missouri and Mississippi Rivers from Montana to Louisiana and the Atchafalaya River. In the Mississippi River Pallid Sturgeon tend to select main channel habitats. Food habits of this species range from aquatic insects to fish depending on life stage. The species can be long lived with females reaching sexual

maturity later than male. Spawning appears to occur between June and August, and females may not spawn each year.

Reptiles

Five species of sea turtles were identified as having the potential to occur in Jefferson and/or Orleans Parish. The following threatened and endangered sea turtle species are uncommon yet should be assumed to be present in Lake Pontchartrain: Green Sea Turtle, Kemp's Ridley Sea Turtle and the Loggerhead Sea Turtle.

Loggerhead Sea Turtle. On September 22, 2011, NMFS and USFWS issued a final rule changing the listing of loggerhead sea turtles from a single, threatened species to nine distinct population segments (DPSs) based on genetic information and known ranges. These DPSs were listed as either threatened or endangered (76 FR 58868). The Northwest Atlantic (NWA) DPS was listed as threatened under the ESA. The NWA DPS includes those areas approximately between the southern portions of Greenland to the northeast of Brazil and extends westward to include all of the Northern Atlantic to the continental seaboard (NMFS 2012b). The NWA DPS was further divided into five recovery units. The Northern Gulf of Mexico Recovery Unit encompasses those areas from Franklin County, Florida through Texas (76 FR 58868). The loggerhead sea turtle inhabits continental shelf and estuarine environments and occurs throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. In the western North Atlantic the loggerhead sea turtle predominantly nests from central North Carolina to southern tip of Florida with sporadic nesting sites along the shores of the Gulf of Mexico including Louisiana (Dodd 1988).

As hatchlings loggerhead sea turtles enter the sea from their natal beaches and typically begin a pelagic lifestyle that lasts from 7 to 12 years. These pelagic juveniles will occupy oceanic gyres and other loop currents (i.e. Gulf of Mexico) and feed opportunistically on various floating and emergent prey items. In the western Atlantic, subadult developmental habitats may also include lagoons, estuaries, and the mouths of bays and rivers rich in food resources. Some subadult loggerheads may not follow the gyre specific paradigm and may move between neritic and pelagic foraging habitat areas. Sub-adult and adult loggerheads are primarily found in coastal waters and prey on benthic invertebrates such as mollusks (e.g. snails, clams, squid, etc.) and decapods (e.g. crabs, shrimp) in hard bottom habitats (NMFS 2012b).

There are several known threats to sea turtles in general. Natural threats include predation by terrestrial animals (e.g. raccoons, ghost crab, fire ants, etc.) during hatching and marine predators (e.g. predatory fish) when they have reached the water. Sharks continue to be a chief predator of sea turtles well beyond the juvenile and sub-adult years. Some of the many anthropogenic threats include: ingestion of floating debris, entrapment in floating debris, pollution, collisions with boat propellers and various types of commercial fishing bycatch. Climate change may also be a contributing threat with increases in severity and

frequency of storms, rising beach temperatures during egg incubation and species range as determined by temperature.

Kemp's Ridley Sea Turtle. The Kemp's Ridley Sea Turtle range extends from the southern coast of the Yucatan Peninsula north to include all of the Gulf of Mexico and the entire western Atlantic seaboard from south Florida to Nova Scotia (NMFS 2007). This species nests almost exclusively off the coast of Mexico at Rancho Nuevo between May and July in mass nesting events called arribadas (Shaver *et al.* 2005). Like the loggerhead sea turtle the neonate Kemp's Ridley utilize the Loop Current in the Gulf of Mexico and may be taken to the Gulf Stream current by way of the Antilles Current. Adult Kemp's Ridley utilize hard and muddy bottom substrates in the shallow areas of the coastal Gulf of Mexico for foraging habitat. Prey items include crabs, fish, jellyfish, and various mollusks.

The inshore areas of Louisiana offer foraging habitat for Kemp's Ridley with an abundance of benthic invertebrates found in various substrates. Lake Pontchartrain as mentioned has a muddy substrate and an abundance of invertebrate prey species. Recent stranding data for the Kemp's Ridley for northern Gulf of Mexico identifies an occurrence in or near Lake Pontchartrain (NOAA 2012).

Green Sea Turtle. In U.S. Atlantic waters, green turtles are found in inshore and near shore waters around the U.S. Virgin Islands, Puerto Rico, and continental United States from Texas to Massachusetts (NMFS and USFWS 2007). In the U.S., green turtles nest primarily along the central and southeast coast of Florida. The Florida breeding population is federally listed as *Endangered* (NMFS and USFWS 2007). As with other sea turtles the green sea turtle from hatching begins an oceanic lifestyle and may remain in various gyres and oceanic loop currents for 5 to 6 years before transitioning to a neritic lifestyle. Near shore and inshore habitats typically selected include those areas rich with sea grass and algae. Green sea turtles may remain in these protected areas for up to 6 years. Once established these foraging areas will be returned to after breeding migrations every few years (NMFS and USFWS 2007). Diet for the green sea turtle includes sea grasses, algae and invertebrates including jellyfish and ctenophores (Heithaus *et al.* 2002).

Lake Pontchartrain itself may not offer suitable foraging habitat for the green sea turtle but the several freshwater inlets of Lake Pontchartrain may offer foraging habitat with dense areas of submerged aquatic vegetation and algae. Northern Gulf of Mexico stranding data for loggerhead, Kemp's Ridley and Green Sea Turtles indicates a recent stranding in the first half of 2012 of a Green Sea Turtle on the northeastern shore of Lake Pontchartrain near the Rigolets (NOAA 2012). Possible threats are in common with all other sea turtles.

6.6.3 Environmental Consequences

Alternative 1 – No Action. The “No Action” alternative would entail no undertaking. Therefore, there would be no effect on species federally listed as threatened, endangered species, critical habitat, or migratory birds.

Alternative 2 – (Proposed Action) – Comprehensive Infrastructure Repair and Restoration Program. This alternative entails the repair, replacement, or improvement of storm-damage roads

and underground utility lines to pre-storm condition and functionality. Portions of the proposed project area are located in previously disturbed areas with little value to migratory birds, or federally listed threatened/endangered species. FEMA has interpreted § 7(p) of the ESA to mean that restoring any infrastructure damaged or lost due to Hurricane Katrina back to its original footprint does not require ESA consultation (USFWS letter dated September 15, 2005 to FEMA). However, components of this project have the possibility of falling outside of the original footprint. As such, FEMA EHP consulted with LDWF and USFWS on March 29, 2015. Per dated correspondence from USFWS on April 21, 2016, the proposed project will have no effect on any Federal trust resources. To date, FEMA EHP is still awaiting a response/concurrence from LDWF. Therefore, FEMA finds that the proposed scope of work will have no effect on Federal or State trust resources.

All construction activities should avoid areas where threatened/endangered species are known to occur, as well as their critical habits.

Alternative 3 – Complete Repairs on a System Basis. This alternative consists of the completion of repairs to roads and drain lines by the City’s Department of Public Works (DPW) separate and independent of repairs to water and sewer lines by the Sewerage and Water Board of New Orleans (SWBNO), allowing each sub-grantee to complete repairs according to their own priorities. The locations proposed for infrastructure repair would be within fully developed areas. As such, no effects to biological resources would be anticipated.

FEMA EHP consulted with LDWF and USFWS on March 29, 2015. Per dated correspondence from USFWS on April 21, 2016, the proposed project will have no effect on any Federal trust resources. To date, FEMA EHP is still awaiting a response/concurrence from LDWF. Therefore, FEMA finds that the proposed scope of work will have no effect on Federal or State trust resources.

6.7 Air Quality

6.7.1 Regulatory Setting

The Clean Air Act (CAA) of 1970 (42 U.S.C. § 7401 et seq.), including its 1977 and 1990 amendments, is the federal law that regulates air emissions from stationary and mobile sources. This law tasks the United States Environmental Protection Agency (USEPA), among its other responsibilities, with establishing primary and secondary air quality standards. Primary air quality standards protect the public’s health, including the health of “sensitive populations, such as people with asthma, children, and older adults.” Secondary air quality standards protect the public’s welfare by promoting ecosystem health, preventing decreased open air visibility, and reducing damage to crops and buildings. The USEPA also has set National Ambient Air Quality Standards (NAAQS) for the following six (6) criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), ozone (O₃), particulate matter (less than 10 micrometers [PM₁₀] and less than 2.5 micrometers [PM_{2.5}]), and sulfur dioxide (SO₂).

In addition, the USEPA regulates hazardous air pollutants, such as asbestos, under the “air toxics” provisions of the CAA. Section 112 of the CAA established the National Emission Standards for Hazardous Air Pollutants (NESHAP) and required the USEPA to develop and enforce regulations to protect the public from exposure to airborne contaminants that are known to be hazardous to

human health. Major health effects associated with asbestos include lung cancer, mesothelioma, and asbestosis (USEPA 2016a).

Under the 1990 amendments to the CAA, the USEPA may delegate its regulatory authority to any state which has developed an approved State Implementation Plan (SIP) for carrying out the NAAQS mandates or an approved program for the prevention and mitigation of accidental releases under NESHAP. The State of Louisiana's initial SIP was approved on 5 July 2011, and has been revised several times since then. The Louisiana Department of Environmental Quality's (LDEQ) NESHAP regulatory program was re-approved by USEPA effective 27 April 2015 (New Source Performance Standards 2015). Louisiana's CAA implementing regulations are codified in Title 33.III of the Louisiana Environmental Regulatory Code.

According to 40 C.F.R. § 93.150(a), "No department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan" under NAAQS. In addition, 40 C.F.R. § 93.150(b) states, "A Federal agency must make a determination that a Federal action conforms to the applicable implementation plan in accordance with the requirements of this subpart before the action is taken." As a result, when FEMA provides financial assistance for a project, such as the one currently under review in this PEA, the CAA requires a General Conformity determination whenever the project site is located in a "non-attainment area" for any one (1) of the six (6) NAAQS criteria pollutants (Revisions to the General Conformity Regulations 2010).

6.7.2 Existing Conditions

According to *The Green Book Nonattainment Areas for Criteria Pollutants* (USEPA 2016b), the Parish of Orleans is considered to be an "attainment area" for criteria pollutants. Pursuant to 40 C.F.R. § 93.157, "If an action's emissions are below the *de minimis* levels or the action is not located in a nonattainment or maintenance area, a conformity determination is not required" (Revisions to the General Conformity Regulations 2010). In addition, under the exemption provisions of 40 C.F.R. § 93.153(c)(1)(iv), "Routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities" are considered to be clearly *de minimis*. As a result, no General Conformity determination is required by FEMA for projects it funds within this parish. Road projects under the auspices of the Federal Highway Administration or Federal Transit Administration are subject to Transportation Conformity rules, which do not come into play for FEMA-funded projects.

Although Orleans Parish is considered to be an attainment area, the Master Plan recognizes the potential for better air quality through more transportation choices. For example, efficient mass transit, reduced vehicle congestion and travel times, better-maintained sidewalks, and more bicycle lanes all can reduce emissions and improve overall air quality (CNO 2010).

6.7.3 Environmental Consequences

Alternative 1 – No Action. The "No Action" alternative would involve no project and, therefore, no short- or long-term effects to air quality would occur.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). The Preferred Alternative potentially includes short-term impacts to air quality that are likely to occur during site preparation, excavation, demolition, and construction. Due to the age of some of the utility infrastructure proposed for repair, replacement, or improvement, asbestos-containing materials with friable asbestos may be present in cement-asbestos, or “transite,” pipes, and possibly in other materials workers may encounter. Particulate emissions from the generation of fugitive dust during project excavation and construction would be temporarily increased in the immediate vicinity of the project area. Other on-site sources of emissions would include internal combustion engines and heavy construction equipment. These effects would be localized and of short duration. No long-term air quality effects are anticipated.

To reduce potential short-term effects to air quality from construction-related activities, the contractor would be responsible for using BMPs to reduce fugitive dust generation and diesel emissions. For example, the contractor would be required to water down construction areas when necessary to minimize particulate matter and dust. Emissions from the burning of fuel by internal combustion engines (e.g., heavy equipment and earthmoving machinery) could temporarily increase the levels of some of the criteria pollutants, including CO₂, NO₂, O₃, and PM₁₀, and non-criteria pollutants such as volatile organic compounds. To reduce emissions of criteria pollutants, running times for fuel-burning equipment should be kept to a minimum and engines properly maintained. If asbestos is encountered during prosecution of the funded work, coordination with LDEQ would be required as necessary. CNO and SWBNO would be required to comply with the applicable provisions of 29 C.F.R. Parts 1910 and 1926 (OSHA – Worker Safety).

Alternative 3 – Complete Repairs on a System Basis. Alternative 3 also potentially includes short-term impacts to air quality from site preparation, excavation, demolition, and construction. As with Alternative 2, due to the age of some of the utility infrastructure proposed for repair, replacement, or improvement, asbestos-containing materials with friable asbestos may be present in cement-asbestos, or “transite,” pipes, and possibly in other materials workers may encounter. Particulate emissions from the generation of fugitive dust during project excavation and construction would be temporarily increased in the immediate vicinity of the project area. Other on-site sources of emissions would include internal combustion engines and heavy construction equipment. Although these effects would be localized and of short duration, if all necessary repairs to infrastructure are not completed concurrently at a given location, additional and possibly multiple future construction operations would be necessary, increasing air quality impacts over a longer period. No long-term air quality effects are anticipated.

To reduce potential short-term effects to air quality from construction-related activities, the contractor would be responsible for using BMPs to reduce fugitive dust generation and diesel emissions. For example, the contractor would be required to water down construction areas when necessary to minimize particulate matter and dust. Emissions from the burning of fuel by internal combustion engines (e.g., heavy equipment and earthmoving machinery) could temporarily increase the levels of some of the criteria pollutants, including CO₂, NO₂, O₃, and PM₁₀, and non-criteria pollutants such as volatile organic compounds. To reduce emissions of criteria pollutants, running times for fuel-burning equipment should be kept to a minimum and engines properly maintained. If asbestos is encountered during prosecution of the funded work, coordination with LDEQ would be required as necessary. CNO and SWBNO would be required to comply with the applicable provisions of 29 C.F.R. Parts 1910 and 1926 (OSHA – Worker Safety).

6.8 Climate Change

6.8.1 Regulatory Setting

E.O. 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, signed on 5 October 2009, directs federal agencies to reduce GHG emissions and address climate change in NEPA analyses. It expands upon the energy reduction and environmental performance requirements of E.O. 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, which it replaces.

A handful of important, non-condensable gases, plus water vapor, significantly contribute to the currently observed warming trend in world climate through the trapping of outbound radiation within the lower atmosphere (troposphere), a phenomenon commonly called the “greenhouse effect.” An increase in the atmospheric concentration of these greenhouse gases (GHGs), beginning with the onset of the Industrial Revolution, has resulted in a global temperature increase of approximately 1.5 °F since 1880 (IPCC 2014).

E.O. 13514 identifies numerous energy goals in several areas, including GHG management, management of sustainable buildings and communities, and fleet and transportation management. The GHGs covered by this E.O. are: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorinated compounds (PFCs). These GHGs have varying heat-trapping abilities and atmospheric lifetimes (U.S. President 2009). In addition, on 23 January 2012, FEMA issued a written statement, FEMA Climate Change Adaptation Policy Statement (2011-OPPA-01), affirming the directive of E.O. 13514 and enacting as policy measures to “integrate climate change adaptation considerations” into its programs and operations (DHS 2012). Recent guidance by CEQ also addresses climate change considerations in NEPA evaluations (CEQ 2014).

E.O. 13653, *Preparing the United States for the Impacts of Climate Change*, was signed by President Obama on 1 November 2013 (U.S. President 2013). This E.O. was issued with the purpose of preparing “the Nation for the impacts of climate change by undertaking actions to enhance climate preparedness and resilience.” Its main focus is the fostering of cooperation among the federal government and other groups, including state and local governments, as well as tribal, private-sector, and non-profit entities, in order to achieve the E.O.’s stated purpose. Cooperation is to be facilitated through coordinated planning and the adaptation of federal programs to “help safeguard our economy, infrastructure, environment, and natural resources,” in addition to improving climate preparedness and resilience.

One of the specific requirements of E.O. 13653 is that all federal agencies “reform policies and Federal funding programs that may, perhaps unintentionally, increase the vulnerability of natural or built systems, economic sectors, natural resources, or communities to climate change related risks.” In response to this directive, FEMA has begun augmenting its flood risk information to reflect potential sea level rise, considering climate change in hazard mitigation planning, and affording grantees the opportunity to incorporate climate resilience measures in alternate projects (DHS 2013, 2014).

6.8.2 Existing Conditions

Due to the nature of the sites to be impacted by proposed project activities (i.e., developed rights-of-way or servitudes), little vegetation is likely present and most areas would lack vegetation entirely. Areas with sparse or no vegetation, including existing paved sidewalks and streets, produce negligible GHG emissions, if any, but do not make a positive contribution to the removal of GHGs. As part of their photosynthetic process, all plants remove CO₂ from the atmosphere during daylight hours. Trees, in particular, provide an important climate function by removing, or sequestering, CO₂ from the atmosphere in their woody tissue for long durations.

Cities along the coast, such as New Orleans, are at increased risk for the negative effects of climate change. Areas outside the flood/hurricane protection levee system will be most vulnerable to sea level rise and increasingly intense storms due to warming of the waters of the Gulf of Mexico. In addition, warmer air temperatures will allow mosquitoes and other disease-carrying organisms to move into the southern U.S. from more tropical regions, potentially increasing the risk for diseases such as dengue fever, yellow fever, and malaria (Moore and Stone 2009).

According to a 2009 study on GHG emissions in New Orleans, 42% were found to be from the transportation sector, with the bulk of the remainder coming from fossil fuel use for the production of electricity. About 2% of the GHG emissions consisted of methane from the decomposition of solid waste. Methane is a considerably more potent GHG than CO₂. Between 1998 and 2007, however, New Orleans experienced an estimated 44% decrease in total GHG emissions, from 8.1 to 4.5 million tons, due to the dramatic population decrease post-Katrina. By implementing the recommendations of the 2010 Master Plan, a further reduction in GHG emissions can be achieved through a number of avenues, including an improved transportation system and better water/sewage management (Moore and Stone 2009).

6.8.3 Environmental Consequences

Alternative 1 – No Action

The “No Action” alternative would involve no project and, therefore, short- or long-term effects to GHG emissions would not occur.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative)

The Preferred Alternative includes short-term GHG emissions that are likely to occur during site preparation and construction. On-site sources of these construction-related emissions would consist primarily of internal combustion engines from vehicles and heavy non-road equipment. The effects would be localized and of short duration, however, and could be reduced by keeping running times for fuel-burning equipment to a minimum and properly maintaining their engines. In addition, because trees provide an important climate function by removing CO₂ from the atmosphere, trees potentially could be planted at nearby locations as a mitigation measure.

In addition, in order to mitigate emissions from paving activities, the choice of asphalt for paved surfaces would result in the generation of only one-quarter ($\frac{1}{4}$) of the GHG emissions expected for a comparable section of concrete pavement. Considering long-term maintenance requirements, over a 50-year life-cycle, asphalt pavement generates approximately one-third ($\frac{1}{3}$) of the GHG

emissions of reinforced concrete (Asphalt Pavement Alliance 2010, Chehovits and Galehouse 2010). If no changes are made to the current type of road surface, post-construction GHG emissions would not change appreciably from the present situation. With either material used, simply reducing traffic congestion and commute times through better roads would decrease traffic-related GHG emissions.

Finally, the GHGs, CH₄ and N₂O, are produced from the anaerobic decomposition of organic waste, such as sewage. Emissions of these two (2) constituents are known to occur from underground sewer pipes (Liu et al. 2015). As a result, repair or replacement of deteriorated sewer lines with a better-sealed sanitary sewerage system, as well as closing unknown cross-connections between the sanitary and storm sewer systems and clearing line obstructions that cause overflows (as required by the Consent Decree), will likely result in a beneficial effect to GHG emissions. In addition, any nutrient-rich wastewater currently leaking into the groundwater (Guillot 2015) and subsequently making its way to surface drainage features would be greatly reduced or eliminated, thereby reducing phytoplankton and algal blooms and the resulting GHG production from decomposing plant matter.

Finally, in keeping with E.O. 13653's mandate to "prepare the Nation for the impacts of climate change by undertaking actions to enhance climate preparedness and resilience," the proposed project would occur primarily within an area surrounded by hurricane protection and river levees. Although no coastal site is immune to the impacts of severe storms, the levee-protected location chosen for the Preferred Alternative could possibly make it more resistant to future climate change impacts, such as sea level rise.

Alternative 3 – Complete Repairs on a System Basis

This alternative would include short-term increases in GHG emissions, especially CO₂, from the burning of fossil fuels (diesel) by internal combustion engines during site preparation and construction. Under this alternative, GHG emissions and reductions would be similar to those of Alternative 2; however, the timing of these emissions and reductions would be quite different if all of the necessary repairs to infrastructure are not completed concurrently at a given location. In such a scenario, additional and possibly multiple future construction operations would be necessary, increasing GHG emissions over a longer period. In addition, the reductions that might be achieved through repaired infrastructure would be delayed, since repairs to roads, sewer lines, and storm drains would not necessarily occur at the same time.

6.9 Noise

6.9.1 Regulatory Setting

Noise is commonly defined as unwanted or unwelcome sound and most commonly measured in decibels (dBA) on the A-weighted scale (i.e., the scale most similar to the range of sounds that the human ear can hear). The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses. Sound is federally regulated by the Noise Control Act of 1972, which charges the USEPA with preparing guidelines for acceptable ambient noise levels. USEPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dBA DNL are "normally unacceptable" for noise-sensitive land uses

including residences, schools, or hospitals (USEPA 1974). The Noise Control Act, however, only charges implementation of noise standards to those federal agencies that operate noise-producing facilities or equipment.

The City of New Orleans Noise Ordinance (§ 66) places restrictions on any source of sound exceeding the maximum permissible sound level based on the time of day and the zoning district within which the sound is emitted. A number of exemptions exist for certain types of activities, however. In accordance with the City's Noise Ordinance § 66-138, "[n]oises from construction and demolition activities for which a building permit has been issued by the department of safety and permits are exempt from" maximum permissible sound level restrictions "between the hours of 7:00 a.m. and 11:00 p.m., except in those areas zoned as RS, RD, or RM residential districts. Construction and/or demolition activities shall not begin before 7:00 a.m. or continue after 6:00 p.m. in areas zoned as RS, RD, or RM residential districts, or within 300 feet of such residential districts. Mufflers on construction equipment shall be maintained" (CNO 2014b).

6.9.2 Existing Conditions

The geographic area under consideration in this PEA is primarily urban and encompasses the entire city including all of the zoning districts as defined by the City of New Orleans Comprehensive Zoning Ordinance, but most work would be performed in residential districts. Ambient noise levels are expected to be generally elevated when compared to rural and suburban communities. Secondary streets and main roads within the project area are predominantly concrete and asphalt and overlay a basic grid that is typical of American urban development. New Orleans' main roads are characterized by a landscaped "neutral ground" or median, of varying widths, that runs down the center of the street with subsurface sanitary sewer and water systems located within existing rights of way. The Southeast Louisiana Urban Flood Control Program is presently undertaking a series of large-scale drainage control projects through the city of New Orleans. This program will continue to generate construction-related noise in the affected area for the duration the effort which is expected to continue through 2017.

6.9.3 Environmental Consequences

Alternative 1 – No Action. Under the "No Action" alternative there would be no short- or long-term effects to noise levels because no construction would occur.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). Construction activities would result in short-term increases in noise during the reconstruction/reconfiguration period. Equipment and machinery utilized on the project sites would be expected to meet all local, state, and federal noise regulations. Repair, replacement, and improvement activities located in RS, RD or RM zones, or within 300 feet of such residential districts shall not begin before 7:00 a.m. or continue after 6:00 p.m. Due to the temporary nature of road construction activities and the city of New Orleans Noise Ordinance, noise would not exceed the maximum permissible sound level based on the time of day and the zoning district within which the sound is emitted, and long term noise effects would not occur.

Alternative 3 – Complete Repairs on a System Basis. Construction would be similar to those described under Alternative 2. Equipment and machinery utilized on the project site would be

expected to meet all local, state, and federal noise regulations. Repair, replacement, and improvement activities located in RS, RD or RM zones, or within 300 feet of such residential districts shall not begin before 7:00 a.m. or continue after 6:00 p.m. Due to the temporary nature of road construction activities and the city of New Orleans Noise Ordinance, noise would not exceed the maximum permissible sound level based on the time of day and the zoning district within which the sound is emitted, and long term noise effects would not occur

6.10 Traffic

6.10.1 Regulatory Setting

Roads play a major role in the management of traffic, particularly in densely-populated urban areas such as New Orleans. The Louisiana Department of Transportation and Development (LaDOTD) is responsible for maintaining public transportation, state highways, interstate highways under state jurisdiction, and bridges located within the state of Louisiana. These duties include the planning, design, and building of new highways in addition to the maintenance and upgrading of current highways. Roads not part of any highway system usually fall under the jurisdiction of and are maintained by applicable local government entities; however, the LaDOTD is responsible for assuring that all local agency federal-aid projects comply with all applicable federal and state requirements (LaDOTD 2016).

At the local level, the City of New Orleans' ordinance regarding Streets, Sidewalks, and Other Public Places, Article II, § 146-36, established the Complete Streets program, which was approved on 22 December 2011 and arose from a recommendation in the Master Plan (CNO 2010). With a mandate to commence no later than 1 December 2012, the Department of Public Works, in consultation with the City Planning Commission, is responsible for overseeing and implementing the program. This ordinance requires that "all transportation improvements are planned, designed and constructed to encourage walking, bicycling and transit use, while also promoting the full use of, and safe operations for all users of the City's transportation network." The preamble to the ordinance acknowledges that "amenities, such as sidewalks, bike lanes, bike racks, crosswalks, traffic calming measures, street and sidewalk lighting; targeted pedestrian and bicycle safety improvements; access improvements in compliance with the Americans with Disabilities Act (ADA); public transit facilities accommodation including, but not limited, to pedestrian access improvement to transit stops and stations; street trees and landscaping; drainage and storm water management; and street furniture" make a positive contribution toward an effective Complete Streets program (CNO 2011). By providing and encouraging alternative pedestrian- and bicycle-friendly modes of transportation, as well as mass transit, traffic congestion potentially can be reduced.

In addition, Article IX, § 154-1561, requires that trucks exceeding five (5) tons, such as those transporting materials to and from project sites, utilize established truck routes or the shortest practical route between their point of origin or destination and the nearest designated truck route. Ordinance §§ 154-1522 and 154-1523 place further restrictions on truck sizes and weights.

Finally, with respect to the placement of traffic signals and markers, signs are subject to regulation pursuant to both City ordinance and the CZO. Ordinance Article IV, § 106-213, allows the placement of signals and signs under the authority of the federal, state, or city government. Article

24 of the CZO exempts municipal signs from permit requirements, but requires their approval by the City Council.

6.10.2 Existing Conditions

As described in the Master Plan, New Orleans has a total of 1,652 miles of roads, of which only 105 miles are maintained by LaDOTD (CNO 2010). According to the Applicant, about 60% of these roads are asphalt-topped and 40% concrete-topped. In a 2008 Bureau of Government Research report, New Orleans' transportation system was portrayed as having been in "ill-health" for years. A 2004 survey "found that 32% of the streets needed major rehabilitation or total construction and another 34% were in need of immediate maintenance." About two-thirds of the city streets were in need of repair prior to Hurricane Katrina. The storm only exacerbated the situation. The 2010 Master Plan found that many of the City's roadways had not yet been repaired and were still in poor condition. In addition, most sidewalks were found to be in need of upkeep and lacked ADA ramps, crosswalks, and crossing signals.

In order to address the need for a more proactive approach, the Bureau of Government Research (2008) recommended that the City implement a pavement management system, also a mid-term goal (2015-2019) of the Master Plan. According to the Master Plan, a "pavement management system would provide clearly identified roadway repair needs, direct funds where most needed, and identify funding gaps. This would allow the City to expediently apply for funding by presenting a detailed plan with clearly identified needs." The preamble to a 2015 proposed amendment to Article VIII, § 154-861 of the Code of Ordinances asserted that "the City is undergoing a citywide pavement management assessment to provide data to create a comprehensive long-term plan to rebuild and repair interior streets across the city." As reported in a 2015 news article (Marlbrough 2015), the total bill for all of the needed road and infrastructure repairs and improvements could reach \$10 billion; however, FEMA is only one of several funding sources for this work.

Residents of New Orleans will benefit from better maintained roads, since the condition of many streets limits their use for relief of traffic congestion. Residents could also see a benefit from the associated improvements related to vehicular, pedestrian, and bicycle safety through repairs or improvements to signage, markings, or road resurfacing. According to a recent report, New Orleans is ranked among the worst 20 U.S. cities for traffic, based on the criterion of a 60% increase in commute time spent per 30-minute commute during peak periods (i.e., an ordinary 30-minute commute takes 48 minutes). New Orleans' traffic is also ranked among the worst 100 world cities (FOX8Live.com staff 2015).

6.10.3 Environmental Consequences

Alternative 1 – No Action. Implementation of the "No Action" alternative would have no effect on current traffic patterns as no construction would occur. Traffic congestion would not be relieved because necessary road repairs and improvements would not be performed.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). One of the goals of the Preferred Alternative is to coordinate improvements to drainage and stormwater management systems with road repairs in order "to increase efficiency, limit infrastructure costs, and preserve roadway quality and operations" (CNO 2010). As a result,

work executed under the Preferred Alternative would be performed in coordination with other existing capital improvement programs in such a way as to create minor work-related effects to traffic flow. Even so, a temporary increase in construction-related traffic during infrastructure repairs and improvements would be expected. Local residents and school children may be inconvenienced while the work is ongoing. In addition, there may be minor economic impacts to affected businesses due to difficulties in accessing these establishments; however, access to private property is required throughout construction. Signage advising customers how to access businesses would be provided, as necessary. Per standard City Department of Public Works (DPW) procedure, anticipated construction-related impacts to property access and arrangements to mitigate these impacts would be explained to residents and business owners prior to the start of construction in a pre-construction community meeting. A DPW point of contact would be identified for residents and business owners to call at any time during construction in order to resolve access-related issues.

While projects are ongoing, sidewalks, bike lanes, and other paths of travel would be kept in clean and passable condition, free of debris and hazardous conditions. Temporary bridges over demolished sections of sidewalks and temporary pavement, fill, and/or plates over excavated areas may be necessary, however. Garbage collection and mail service would have access provided on a continuous basis during project implementation. School bus and public transportation routes and pick-up locations would be established on a temporary basis in the event that these locations are impacted during construction. Fire hydrants, fire stations, fire escapes, and other public-safety related infrastructure would not be blocked or interfered with wherever possible.

Once complete, the various individual projects would result in improved road passability, greater safety, and reduced traffic congestion. Additionally, a Comprehensive Infrastructure Repair and Restoration Program should yield increased pedestrian safety through the installation of ADA accessible ramps and improved markings/signage at crossings. The proposed repairs and improvements would provide increased accessibility for the various local residential, religious, educational, medical, and recreational facilities in the area. Emergency public services also would have more efficient routes to use in the performance of their various duties.

Prior to the beginning of construction, notice of at least 48 hours would be given to residents and emergency response agencies in the event of upcoming street closures. During actual construction, at least one vehicle lane would always remain open, where possible. Temporary approaches to and crossings of intersecting streets and sidewalks would be provided for and kept in good condition wherever practical. Depending on the specific project location, various possibilities for detours and other traffic accommodations also would be available. During project implementation, the contractor would be expected to take all reasonable precautions to control site access. All activities would be conducted in a safe manner in accordance with OSHA work zone traffic safety requirements. The contractor would post appropriate signage and fencing to minimize foreseeable potential public safety concerns. Truck and equipment routes would be kept free of construction debris.

In addition, the contractor would be responsible for handling all traffic control and warning in accordance with the Manual of Uniform Traffic Control Devices, including placing signs and signals in advance of construction activities in order to alert pedestrians and motorists of the upcoming work and traffic pattern changes (e.g., detours or lanes dedicated for construction

equipment egress). There may be times when certain streets would be closed to all but local traffic and rerouting of through traffic to alternate roads might become necessary. The contractor would be expected to provide a traffic control schedule prior to commencing construction.

Alternative 3 – Complete Repairs on a System Basis. Under Alternative 3, a temporary increase in construction-related traffic during repair work also would be anticipated. BMPs, conditions, and access accommodations for private property would be similar to those described in the Preferred Alternative above. Since road and utility repairs would not necessarily be done concurrently, traffic and access disruptions could occur on several occasions within a given area. Once repairs and/or improvements have been completed, traffic would be expected to return to normal, with benefits similar to those of the Preferred Alternative.

Prior to the beginning of construction, notice of at least 48 hours would be given to residents and emergency response agencies in the event of upcoming street closures. During actual construction, at least one vehicle lane would always remain open where possible. Temporary approaches to and crossings of intersecting streets and sidewalks would be provided for and kept in good condition wherever practical. Depending on the specific project location, various possibilities for detours and other traffic accommodations also would be available. During project implementation, the contractor would be expected to take all reasonable precautions to control site access. All activities would be conducted in a safe manner in accordance with OSHA work zone traffic safety requirements. The contractor would post appropriate signage and fencing to minimize foreseeable potential public safety concerns. Truck and equipment routes would be kept free of construction debris.

In addition, the contractor would be responsible for handling all traffic control and warning in accordance with the Manual of Uniform Traffic Control Devices, including placing signs and signals in advance of construction activities in order to alert pedestrians and motorists of the upcoming work and traffic pattern changes (e.g., detours or lanes dedicated for construction equipment egress). There may be times when certain streets would be closed to all but local traffic and rerouting of through traffic to alternate roads might become necessary. The contractor would be expected to provide a traffic control schedule prior to commencing construction.

6.11 Environmental Justice

6.11.1 Regulatory Setting

Executive Order (E.O.) 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - was issued by President Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.

The E.O. directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order also directs each agency to develop a strategy for implementing environmental justice. The order is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as

provide minority and low-income communities' access to public information and public participation.

Title VI of the Civil Rights Act of 1964 declares it to be the policy of the United States that discrimination on the ground of race, color, or national origin shall not occur in connection with programs and activities receiving federal financial assistance. It is FEMA's policy to ensure that the civil rights of all persons receiving services or benefits from agency programs and activities are protected. No person shall, on the grounds of race, color, national origin, sex, religion, age, disability, English proficiency or economic status, be denied the benefits of, be deprived of participation in, or be discriminated against in any program or activity receiving financial assistance from FEMA. In particular, all personnel carrying out federal major disaster or emergency assistance functions, including the distribution of supplies, the processing of the applications, and other relief and assistance activities, shall perform their work in an equitable and impartial manner without discrimination. It is Agency policy to prohibit such discrimination in any programmatic guideline, procedure, or other directives. These prohibitions extend to all entities receiving federal financial assistance from the Agency, including state and local governments, Indian tribal governments, educational institutions, and any organization of any type obtaining benefits through the Public Assistance Program. FEMA's Title 44 CFR, Parts 7.11 through 7.16, outlines the Agency procedures for voluntary compliance, enforcement action, and processing complaints of discrimination in FEMA's federally assisted programs. Procedures for processing complaints of discrimination on the basis of disability in federally conducted programs can be found in Title 44 CFR, Part 16.170.

This PEA analyzes the alternatives provided to determine that all persons are provided the same degree of protection from environmental and health hazards, as well as equal access to the decision-making process involved in determining a healthy environment for all communities.

6.11.2 Existing Conditions

Socioeconomic and demographic data for the project area (City of New Orleans, Orleans Parish, LA) was reviewed to determine if the proposed action would have a disproportionate adverse impact on minority or low-income persons. According to the U.S. Census, the population of Orleans Parish in 2005 (Pre-Katrina) was: 68.2% African American; 28.8% White; 3.1% Hispanic, and 2.5% Asian. The median household income for Orleans Parish in 2005 inflation-adjusted dollars was \$30,711, and 23.2% of families earned below the poverty level (USDOC 2014). In comparison, according to U.S. 2010-2014 Census data, the population of Orleans Parish is: 59.6% African American; 34.0% White; 5.4% Hispanic, and 3.0% Asian. The median household income for Orleans Parish is \$36,964, and 22.7% of families earn below the poverty level (USDOC 2014). The primary employment sectors in New Orleans are oil/gas and related activities, tourism, the port and ship/boat building, and aerospace manufacturing (City-Data 2009). The current unemployment rate in New Orleans is 6.1%, which is above the national average of 5.8% (BLS 2016). Because the scope of work evaluated encompasses a vast amount of area within Orleans Parish, all 18 zip codes within the project radius are further analyzed below:

Table 2. U.S. Census Socioeconomic/Demographic Data by Orleans Parish Zip Code. (USEPA 2010)

Zip Code	U.S. Census Data
70112	According to the U.S. Census, the population of 70112 is: 51.7% African American; 42.2% White; 6.5% Hispanic, and 1.3% Asian. Within 70112, 24.5% of persons earn below the poverty level.
70113	According to the U.S. Census, the population of 70113 is: 48.9% African American; 45.0% White; 6.2% Hispanic, and 1.5% Asian. Within 70113, 24.4% of persons earn below the poverty level.
70114	According to the U.S. Census, the population of 70114 is: 60.5% African American; 33.2% White; 7.2% Hispanic, and 1.4% Asian. Within 70112, 26.9% of persons earn below the poverty level.
70115	According to the U.S. Census, the population of 70115 is: 38.7% African American; 54.5% White; 5.8% Hispanic, and 2.6% Asian. Within 70115, 21.5% of persons earn below the poverty level.
70116	According to the U.S. Census, the population of 70116 is: 65.1% African American; 29.2% White; 6.1% Hispanic, and 1.1% Asian. Within 70116, 25.9% of persons earn below the poverty level.
70117	According to the U.S. Census, the population of 70117 is: 66.8% African American; 27.7% White; 3.0% Hispanic, and 1.0% Asian. Within 70117, 26.6% of persons earn below the poverty level.
70118	According to the U.S. Census, the population of 70118 is: 37.8% African American; 55.4% White; 5.9% Hispanic, and 2.6% Asian. Within 70118, 20.6% of persons earn below the poverty level.
70119	According to the U.S. Census, the population of 70119 is: 60.4% African American; 33.8% White; 6.1% Hispanic, and 1.4% Asian. Within 70119, 24.3% of persons earn below the poverty level.
70122	According to the U.S. Census, the population of 70122 is: 64.6% African American; 29.7% White; 5.7% Hispanic, and 1.3% Asian. Within 70122, 24.2% of persons earn below the poverty level.
70124	According to the U.S. Census, the population of 70124 is: 24.5% African American; 67.55% White; 9.6% Hispanic, and 2.5% Asian. Within 70124, 14.4% of persons earn below the poverty level.
70125	According to the U.S. Census, the population of 70125 is: 43.6% African American; 50.4% White; 6.6% Hispanic, and 1.6% Asian. Within 70125, 22.5% of persons earn below the poverty level.
70126	According to the U.S. Census, the population of 70126 is: 88.2% African American; 8.0% White; 5.8% Hispanic, and 1.1% Asian. Within 70126, 22.2% of persons earn below the poverty level.
70127	According to the U.S. Census, the population of 70127 is: 91.9% African American; 3.2% White; 2.3% Hispanic, and 2.4% Asian. Within 70127, 21.5% of persons earn below the poverty level.
70128	According to the U.S. Census, the population of 70128 is: 82.6% African American; 3.2% White; 3.4% Hispanic, and 11.0% Asian. Within 70128, 21.5% of persons earn below the poverty level.
70129	According to the U.S. Census, the population of 70129 is: 42.3% African American; 4.5% White; 9.8% Hispanic, and 45.7% Asian. Within 70129, 25.7% of persons earn below the poverty level.
70130	According to the U.S. Census, the population of 70130 is: 57.8% African American; 30.6% White; 6.4% Hispanic, and 1.6% Asian. Within 70130, 25.5% of persons earn below the poverty level.
70148	According to the U.S. Census, the population of 70148 is: 66.9% African American; 28.1% White; 4.2% Hispanic, and 1.7% Asian. Within 70148, 18.1% of persons earn below the poverty level.

6.11.3 Environmental Consequences

Alternative 1 – No Action Alternative. Under the No Action Alternative, the applicant would not repair, replace, or improve any damaged roads, drain lines, water lines, and sewer lines. The no action alternative would deprive New Orleans’ communities of needed repairs, which could potentially harm communities. Impaired roads, pipes, and sewer lines could damage personal property as well as pose significant health concerns to those affected communities. Low income and minority communities could be especially impacted, as their ability to absorb the financial strain of damaged property and health repercussions would be limited. As a result, there could be disproportionately high adverse effects on low-income or minority populations.

Alternative 2 (Preferred Alternative) – Comprehensive Infrastructure Repair and Restoration Program. The applicant would repair, replace, or improve roads, drain lines, water lines, and sewer lines to their pre-disaster condition and functionality. This alternative offers a comprehensive approach to infrastructure repair that would reduce the time required for completing repair/replacement work as well as provide more resilient infrastructure for future storm events (i.e. upgrades to codes and standards, green infrastructure, and drainage mitigation). This restoration program would be parish-wide and based on storm damage. A functioning road system is of utmost importance to minority and low-income residents; as it allows access to schools, basic social services, health services, and job opportunities outside of the immediate neighborhood. Access to safe water and sanitation is essential for health, security, livelihood, and quality of life. Therefore, many minority communities would likely see direct benefits with improved roads, water, and sewer line infrastructure.

No homes or businesses would be relocated, the work would not result in any additional demands on local police, fire, or emergency personnel, and would provide an expected increase in local employment and income. In addition, as much of the repair, improvement, or replace work is being performed in a residential area, construction activities would occur during the daytime hours to reduce disruption to residents. Expansive Public Notice to those affected communities has been and would continue to be provided. In addition to interactive websites, a NOLA 311 hotline, and media coverage, a minimum of one public meeting per neighborhood would be scheduled before the start of major construction activities (Recovery Roads 2013). The city of New Orleans has set up a website for stakeholders and the public that will maintain an updated public outreach calendar of events (Recovery Roads 2013). A comprehensive repair, replacement, and improvement approach would benefit the entire New Orleans community as a whole. As a result, there would be no disproportionate adverse human health, economic, or social effects on minority or low-income populations.

Alternative 3 – Complete Repairs on a System Basis. The applicant would repair, replace, and improve eligible roads back to their original configuration utilizing a block-by-block approach. This block-by-block approach would increase the time spent on repairs, as there would be increased administrative and logistical concerns. Developing a prioritization construction schedule that determined which neighborhoods were repaired first, could lead to concerns regarding fairness and equitable treatment of those neighborhood impacted. Mitigation opportunities would not be available, as roads would return to their exact pre-disaster condition

and location. Pre-Katrina flooding and road damage could be expected, as drainage mitigation opportunities would not be utilized. Low income and minority communities could be impacted, as their ability to absorb the financial strain of damaged property from flooding and poor road conditions as well as health repercussions would be limited. However, benefits to the community would exist as no homes or businesses would be relocated, no additional demand on local police, fire, or emergency personnel would be required, and would provide an expected increase in local employment and income. Roads would be repaired to their pre-storm condition, providing a positive benefit for the entire New Orleans community. As a result, there would be no disproportionate adverse human health, economic, or social effects on minority or low-income populations.

6.12 Human Health and Safety

6.12.1 Regulatory Setting

The NEPA process provides an opportunity to improve safety for new roadway and public utility projects. The process should:

- Include a safety analysis commensurate with the complexity of the project as part of the review process;
- Utilize the best available safety data specific to the project location in the review process;
- Involve safety analysis using the best available information and tools;
- Promote dialogue with the general public and key stakeholders about the safety aspects of the project;
- Address potential safety issues associated with construction; and
- Incorporate innovative educational and enforcement techniques to address issues.

Safety considerations can arise in many stages of the NEPA process. Safety concerns are a significant part of the impetus for the transportation and utility project under review (the project purpose and need). The existing storm damaged roads, water lines, sewer lines, and drainage appurtenances operate at a reduced capacity and efficiency. Leaking sewers increase adverse effects to public health through direct contact with sewage and cross contamination of sewage with leaking water supply lines. Water supply systems with insufficient pressure risk infectious outbreaks due to inadequate conditions for residual water treatment (the antimicrobial water treatment remaining effective at the end user). Adequate water supply pressure is critical to the functioning of the fire hydrant system. Insufficient fire hydrant pressure during a disaster response would impede firefighting and exacerbate the disaster conditions. Unrepaired roads contribute to accidents, vehicle damage, and increased traffic. During disasters, damaged roads and increased traffic can slow evacuation routes and delay response activities. Damaged drainage lines and catch basins can reduce system capacity and increase the frequency and severity of flooding.

The Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) provides for uniform design and setup of work zones, and includes guidance for the development of temporary traffic control plans that determine the flow of traffic through work zones. (FHWA 2012). The federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR, Subpart O) address operations of vehicles and equipment within off-highway job sites not open to public traffic. However Subpart O is not exhaustive in its coverage of

machinery types, or safety equipment, nor does it address work practices, traffic control plans, or shift work. Flagging and signaling practices are discussed in general terms in Subpart G, which covers signs, signals, and barricades.

6.12.2 Existing Conditions

Roadway construction workers routinely work in proximity to construction vehicles and motor vehicle traffic and face the risk of death or serious injury from passing motorists, construction vehicles and equipment. Flaggers and other workers on foot are exposed to the risk of being struck by traffic vehicles or construction equipment if they are not visible and protected from motorists or equipment operators. Workers who operate construction vehicles or equipment risk injury due to overturn, electrocution, collision, or being caught in running equipment. Construction workers, regardless of their assigned task, often work in conditions of low lighting, low visibility, and inclement weather, and may work in congested areas, with exposure to high traffic volume and speed. Open trenches present fall and engulfment hazards to site workers and pedestrian traffic. Furthermore, pedestrians and bicyclists must negotiate adjacent roads and sidewalks during construction and require special consideration during safety planning and decision-making.

Construction activities frequently involve the use of hazardous materials such as fuels, oils, solvents, cleaners, and degreasers. Additional safety concerns include, among other things, the use of torches for cutting and welding, sanding and abrading activities, and open excavations. Workers may be exposed to environmental contamination beneath roadways when roadways are impacted by historical construction, land use, or waste management practices. Unanticipated conditions could exist whereby workers could be exposed to hazardous substances, such as from an underground storage tank leak. Furthermore, workers exposed to human waste or sewage are at increased risk from disease.

Utility components may contain asbestos or lead, which could present a risk to workers and nearby populations from dust and fume inhalation. Excavation, filling, saw-cutting, jack-hammering, and paving activities have the potential for the generation of large quantities of dust and asphalt emissions. Impacts would be especially adverse for sensitive subpopulations such as hospital patients, the elderly, and infirm. Heavy equipment operation may generate noise that could adversely impact hearing and contribute to an unsafe environment. Construction rights-of-way may contain other utilities such as electrical transmission lines, gas lines, telecommunications, or petroleum pipelines, which increases risk of injury from inadvertent contact with utility lines. Fire and explosion can result from gas leaks, with especially severe risk if gas from a damaged pipe enters and accumulates in a nearby structure.

6.12.3 Environmental Consequences

Alternative 1 – No Action. Implementation of the “No Action” alternative would have negligible effects to current human health and safety as no construction would occur. The damaged infrastructure would not be repaired, which would result in continued operation in a diminished state. Roadways in disrepair would contribute to vehicle damage, accidents, and increased traffic congestion.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). Overall the completion of this alternative will increase public health and safety by repairing the damaged roads, sewers, and water lines. This alternative would increase the reliability of the water supply, eliminate sewage releases, and repair damaged roads and appurtenances. The repairs, replacements, or improvements would result in beneficial effects to human health, safer roads, improved fire protection, and potential flood reduction.

The repairs, improvements, and replacements would be built in accordance with applicable and relevant building codes and standards. Projects would be completed in compliance with federal, state, and local rules and regulations for safety and health, and will thereby, mitigate safety risks. Best management practices would be required to be incorporated into all work practices during construction to minimize risk and improve safety. Individual projects reviewed under this EA will be analyzed for any special safety concerns.

Project activities would include safety-related elements or mitigation strategies to address negative safety-related consequences. Construction projects provide an opportunity to incorporate proven safety countermeasures, such as exclusive pedestrian signal phasing at areas with high concentrations of pedestrians, median islands, refuge areas, barriers, or traffic calming to slow vehicles.

The community will have the opportunity to learn about the plans and comment on the project impacts, including safety. Announced public meetings will be held throughout the City to discuss issues, including those affecting the human health and safety of the community. There will be opportunity to raise questions and seek additional information regarding project plans.

Alternative 3 – Complete Repairs on a System Basis. Overall the completion of this alternative would increase public health and safety by repairing the damaged roads, sewers, and water lines. This alternative would increase the reliability of the water supply, eliminate sewage releases, and repair damaged roads and appurtenances. The repairs, replacements, or improvements would result in beneficial effects to human health, safer roads, improved fire protection, and potential flood reduction.

The repairs and replacements would be built in accordance with applicable and relevant building codes and standards. Projects would be completed in compliance with federal, state, and local rules and regulations for safety and health, and will thereby, mitigate safety risks. Best management practices would be required to be incorporated into all work practices during construction to minimize risk and improve safety. Individual projects reviewed under this PEA will be analyzed for any special safety concerns.

Project activities would include safety-related elements or mitigation strategies to address negative safety-related consequences. Construction projects provide an opportunity to incorporate proven safety countermeasures, such as exclusive pedestrian signal phasing at areas with high concentrations of pedestrians, median islands, refuge areas, barriers, or traffic calming to slow vehicles.

The community will have the opportunity to hear about the plans and comment on the project impacts, including safety. Announced public meetings will be held throughout the City to discuss

issues, including those affecting the human health and safety of the community. There will be opportunity to raise questions and seek additional information regarding project plans.

6.13 Hazardous Materials

6.13.1 Regulatory Setting

Hazardous materials and wastes are regulated in the United States under a variety of Federal and State laws. Federal laws and implementing regulations governing the management, storage, and disposal of hazardous materials and wastes include the Resource Conservation and Recovery Act (RCRA) the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Toxic Substances Control Act (TSCA), and the CAA. The purpose of these laws and regulations is to protect human health and the environment.

The RCRA is the Federal law that regulates the management of solid and hazardous wastes. While USEPA is the agency responsible for implementing this law, this responsibility is often delegated to the states, which is the case in Louisiana. The RCRA also sets forth a framework for the management of non-hazardous wastes, including the environmental problems that can result from improperly disposed nonhazardous solid wastes and leaking underground tanks that store petroleum and hazardous substances. The law focuses only on active and proposed facilities and does not address abandoned or historical sites.

The CERCLA governs the process of identifying and prioritizing the cleanup of abandoned sites contaminated by the release of hazardous substances. The USEPA was given power by Congress to seek out those parties responsible for any release and ensure their cooperation in the cleanup. For contaminated sites that do not meet the definition of a Superfund site, many states, including Louisiana, have developed laws and regulations that require investigation and cleanup. The LDEQ Brownfields Initiative and Voluntary Remediation Program spells out these requirements.

The Small Business Liability Relief and Revitalization Act (the Brownfield Amendments) clarified CERCLA liability provisions for potential property owners. If the potential property owners meet the specific provisions of the act, including an adequate inquiry on past uses of the property, the landowner will be able to assert the innocent landowner defense, contiguous property exemption, and bona fide prospective purchaser exemption to CERCLA liability. The USEPA has published the final “all appropriate inquiries” rule (40 C.F.R. 312.10) that establishes the criteria for conducting Environmental Site Assessments on properties considered for acquisition. This would apply to proposed activities which may require land acquisition for the establishment of new rights-of-way.

The TSCA provides the authority to the USEPA to administer programs covering the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon and lead-based paint. The provisions of TSCA that are likely to be applicable to the actions described in this PEA concern materials or items that may contain asbestos (piping materials) and lead (piping or lead-based paint).

Section 112 of the CAA requires the USEPA to develop National Emission Standards for Hazardous Air Pollutants (NESHAPs). Because air emissions from lead and asbestos (potentially

present in utility piping) present a human health risk they are considered hazardous air pollutants. Asbestos and lead management is regulated by the LDEQ.

6.13.2 Existing Conditions

Hazardous substances are defined as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health and the environment. Improper management and disposal of hazardous substances can lead to contamination of groundwater and surface water, including drinking water supplies, and soils. Evaluations of hazardous substances and wastes must consider whether any hazardous material will be generated by the proposed activity and whether a hazardous material already exists at the site or in the general vicinity of the site that could adversely impact the community or site workers. Existing hazardous materials and waste concerns could impact future use of a site.

Transit projects may encounter hazardous materials during construction, especially if a project is built on a brownfield or a previously disturbed site. Hazardous material is a generic term for anything toxic to humans or the environment. It includes dangerous waste, problem waste, petroleum products, and other hazardous substances. Materials that may constitute a hazardous waste include petroleum products, pesticides, organic compounds, heavy metals, or other compounds injurious to human health and the environment. The nature and extent of hazardous contamination can vary widely. Early detection, evaluation, and remediation of hazardous waste are essential to minimize project delays and protect the environment.

The following construction concerns are associated with areas of soil and/or groundwater contamination and/or building/structure demolition:

- Asbestos;
- Lead-based paint;
- Health and safety of workers encountering contaminated material;
- Special handling and disposal requirements for contaminated material and a corresponding cost increase;
- Inability to reuse contaminated soil as fill in other areas of the project.

The flood events in Louisiana resulting from the levee breaches caused by Hurricanes Katrina and Rita left behind sediments ranging in depth from less than an inch to several feet throughout various areas in Orleans, Plaquemines, and St. Bernard Parishes. USEPA conducted environmental testing and assessment of the sediment material. The results of those tests, which can be found at <http://www.epa.gov/katrina/testresults/sediments/summary.htm>, are incorporated by reference into this PEA.

6.13.3 Environmental Consequences

Alternative 1 – No Action. Implementation of the No Action Alternative would not disturb any hazardous materials or create potential hazards to human health related to hazardous material because no construction would occur.

Alternative 2 – Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative). During final design, additional information will be known about specific activities and associated rights-of-way. At that time, further investigation will be necessary to assess the potential for the presence of hazardous materials and characterize the extent and quantity of hazardous material that may be impacted by the project. The hazardous material investigations will address their nature and extent, adverse impacts, and mitigating measures to protect site workers and the nearby community.

Under the Preferred Alternative, the proposed facility improvements and new construction at the project sites could disturb subsurface hazardous materials or increase potential hazards to human health. The sites could be adjacent to hazardous or solid waste facilities. If hazardous materials are unexpectedly encountered in the project area during the construction activities, appropriate measures for the proper assessment, remediation, management and disposal of the contamination must be initiated in accordance with applicable federal, state, and local regulations. The contractor is required to take appropriate actions to prevent, minimize, and control the spill of hazardous materials at the proposed site.

Additionally, facilities must immediately report accidental releases of EHS chemicals and “hazardous substances” in quantities greater than corresponding Reportable Quantities defined in CERCLA to State and local officials. This information must be made available to the public. Facilities manufacturing, processing, or storing designated hazardous chemicals must make Material Safety Data Sheets (MSDSs) describing the properties and health effects of these chemicals available to State and local officials and local fire departments. Facilities must also report, to State and local officials and local fire departments, inventories of all onsite chemicals for which MSDSs exist. This information must be made available to the public.

An asbestos survey and a lead/lead-based paint survey would be conducted where piping demolition is required. If the analytical results indicate asbestos, lead piping, or lead-based paint is present, proper measures will be incorporated in the design documents and implemented during construction activities to minimize worker and public exposure to asbestos and lead and to ensure that demolition materials are handled and disposed of in accordance with applicable regulations. If analytical results indicate any materials contain asbestos, a comprehensive Asbestos Operations and Maintenance Plan would be developed in accordance with applicable regulations. This plan would address worker training, as well as safety measures to be taken when disturbing asbestos-containing materials, and during abatement activities. Work would be undertaken in accordance with applicable federal, state and local requirements.

The Agriculture Street landfill, an identified Superfund site on the National Priorities List, occupies approximately 95 acres in east central New Orleans. This landfill operated in the City from 1909 until the mid-1960’s, which resulted in hazardous materials contamination in soil and groundwater. The USEPA conducted cleanup operations and maintenance and monitoring are ongoing. Approximately 47 acres of the site were developed for private and public housing that included the Press Park Community Center, a recreation center, and the Moton Elementary School. A series of removal actions, or short-term cleanups, addressed remediation of threats to human health and the environment. The remedy for subsurface contamination at the Agriculture Street Landfill Superfund Site includes a subsurface geotextile mat over contaminated material left in place. The geotextile mat is covered by 18 inches of clean soil and a vegetative cover in the right

of ways. No waste source material was removed from beneath roadways, sidewalks, parking areas, or building foundation slabs.

Subsequent to the cleanup, the City entered into a Consent Decree with the USEPA to protect the remedy on the site, and thereby, the public health or welfare and the environment. As part of the Consent Decree, the City agreed to development of a Technical Abstract for Utility Operations within the Agriculture Street Landfill Superfund Site (USEPA 2006). This document stipulates procedures that must be followed when utility work affects the Agriculture Street Landfill site. The Consent Decree mandates that the City direct all its agencies and departments, including the Sewerage and Water Board and Public Works to incorporate the technical abstract and its incorporated procedures as standard operating procedures for all work at the Agriculture Street Landfill Superfund Site.

The comprehensive infrastructure repair and restoration program work affecting the Agriculture Street Landfill Superfund Site will be conditioned to comply with the terms of the Consent Agreement between the City and USEPA. Furthermore, this work will require a site-specific Tiered EA to assess any potential effects.

Alternative 3 – Complete Repairs on a System Basis. The impacts of completing repairs on a system wide basis would be similar to the impacts of the Comprehensive Infrastructure Repair and Restoration Program. During final design, additional information would be known about specific activities and associated rights-of-way. At that time, further investigation will be necessary to assess the potential for the presence of hazardous materials and characterize the extent and quantity of hazardous material that may be impacted by the project. The hazardous material investigations would address their nature and extent, adverse impacts, and mitigating measures to protect site workers and the nearby community.

Under this Alternative, the proposed infrastructure repairs could disturb subsurface hazardous materials or increase potential hazards to human health. The sites could be adjacent to hazardous material or solid waste facilities. If hazardous materials are unexpectedly encountered in the project area during the construction activities, appropriate measures for the proper assessment, remediation, management and disposal of the contamination must be initiated in accordance with applicable federal, state, and local regulations. The contractor would be required to take appropriate actions to prevent, minimize, and control the spill of hazardous materials at the proposed site. See Conditions.

Additionally, facilities must immediately report accidental releases of EHS chemicals and “hazardous substances” in quantities greater than corresponding Reportable Quantities defined in CERCLA to State and local officials. This information must be made available to the public. Facilities manufacturing, processing, or storing designated hazardous chemicals must make Material Safety Data Sheets (MSDSs) describing the properties and health effects of these chemicals available to State and local officials and local fire departments. Facilities must also report, to State and local officials and local fire departments, inventories of all onsite chemicals for which MSDSs exist. This information must be made available to the public.

An asbestos survey and a lead/lead-based paint survey would be conducted where piping demolition is required. If the analytical results indicate asbestos, lead piping, or lead-based paint

is present, proper measures will be incorporated in the design documents and implemented during construction activities to minimize worker and public exposure to asbestos and lead and to ensure that demolition materials are handled and disposed of in accordance with applicable regulations. If analytical results indicate any materials contain asbestos, a comprehensive Asbestos Operations and Maintenance Plan would be developed in accordance with applicable regulations. This Plan would address worker training, as well as safety measures to be taken when disturbing asbestos-containing materials, and during abatement activities. Work would be undertaken in accordance with applicable federal, state and local requirements.

All work undertaken for complete repair on a system basis affecting the Agriculture Street Landfill Superfund Site must be undertaken in accordance with the Consent Decree between the City and USEPA including the Technical Abstract for Utility Operations within the Agriculture Street Landfill Superfund Site. Furthermore, this work will require a site-specific Tiered EA to assess the potential effects.

6.14 Cultural Resources

6.14.1 Regulatory Setting

The consideration of impacts to historic and cultural resources is mandated under § 101(b)(4) of NEPA as implemented by 40 C.F.R. Parts 1501-1508. NEPA calls for the consideration of a broad range of historic and cultural resources, including American Indian Cultural Sites. Compliance with Section 106 of the National Historic Preservation Act (NHPA) is also mandated, but takes a more narrow focus on historic properties, while requiring federal agencies to allow the Advisory Council on Historic Preservation an opportunity to comment. As an additional consideration, it is the policy of the federal government to consult with Indian Tribal Governments on a Government-to-Government basis as required in E.O. 13175 (U.S. President 2000). Given these various mandates, FEMA has chosen to address potential impacts to historic properties through the “Section 106 consultation process” of NHPA as implemented through 36 C.F.R. Part 800.

In order to fulfill its § 106 responsibilities, FEMA has initiated consultation on this project in accordance with the Statewide Programmatic Agreement (Statewide Agreement) dated 17 August 2009, and amended on 22 July 2011, among the Louisiana State Historic Preservation Officer (SHPO), LA GOHSEP, the Alabama-Coushatta Tribe of Texas, the Caddo Nation, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw Indians, the Mississippi Band of Choctaw Indians, the Quapaw Tribe of Oklahoma, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, the Tunica-Biloxi Tribe of Louisiana, and the Advisory Council on Historic Preservation (DHS 2009) http://www.achp.gov/docs/fema_pa/LA%20PA%20executed.pdf. The Statewide Agreement was implemented by FEMA and consulting parties to streamline the § 106 review process.

The “Section 106 process” outlined in the Statewide Agreement provides for the use of Programmatic Allowances where the project scope meets certain pre-defined actions. Where the work does not meet these pre-defined actions, the “Section 106 process” in the Statewide Agreement requires the identification of historic properties that may be affected by the proposed action or alternatives within the project’s area of potential effects (APE). Historic properties, defined in § 101(a)(1)(A) of NHPA, include districts, sites (archaeological and religious/cultural),

buildings, structures, and objects that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). Historic properties are identified by qualified agency representatives in consultation with SHPO, Tribes, and other consulting parties. Below is a consideration of various alternatives and their effects on historic properties.

6.14.2 Existing Conditions

City of New Orleans – Standing Structures

Founded by Bienville in 1718 and initially laid out in 1721, New Orleans gained influence and later prominence in the 18th and 19th centuries based on the city’s strategic trade position on the Mississippi River. The layout and development of the city’s streets and roads reflects the city’s history of growth and development. Located between a curve of the river and Lake Pontchartrain to its north, the city’s initial development followed the high ground, along the Mississippi’s natural levee and ridges. Arterial boulevards and avenues generally ran parallel to the river’s path or perpendicular to it, along drainage canals. Secondary streets and roads overlay a basic grid, more typical of American urban development, onto this distinctive street pattern. New Orleans’ main roads are characterized by a landscaped “neutral ground” or median, of varying widths, that runs down the center of the street.

In the early nineteenth century, city streets were typically unpaved dirt that when wet and muddy created unsanitary conditions that hastened the spread of disease. Paving efforts began in the City of New Orleans in the early 1830s, significantly ahead of most other Southern cities. Early paving materials included shell, stone, gravel, planks, and brick. Sidewalks, or “banquettes”, measuring 7-8’ in width, were subsequently constructed, initially in the French Quarter and then in the surrounding areas. To further improve municipal sanitation, the city concurrently began to build water and sewer infrastructure beginning in the 1830s and 1840s. Following the city’s expansion through the nineteenth and early twentieth century, nearly all streets were paved by the 1930s.

The growth of the City of New Orleans since its founding is equally inseparable from the development of a large-scale drainage system, unique in the United States, and its corresponding sanitary sewer and water systems. These three innovative and distinctive engineering systems developed along with the city and underwent their most intensive advances during the first quarter of the 20th century. This water system is administered by the SWBNO, authorized by the Louisiana Legislature in 1899 and merged with the New Orleans Drainage Commission in 1903 to provide consolidated oversight of New Orleans’ water systems – water, sewerage and drainage. The Louisiana Engineering Society selected the water, drainage, and sewerage systems of New Orleans as among the ten most outstanding engineering achievements in the State of Louisiana and the American Society of Mechanical Engineers designated the A. B. Wood screw pump (built in 1914) as a Historic Mechanical Engineering Landmark as the most advanced low-lift drainage pump in use in the early 20th century, later used worldwide.

Based on FEMA’s review of existing documentation, data on known or existing historic sites provided by SHPO and historic maps and site visits, FEMA determined that there are 111 individual historic properties and 26 historic districts that are listed on the National Register of Historic Places located within Orleans Parish, which is contiguous with the boundaries of the City of New Orleans. There are approximately 45,000 properties, representing approximately 40% of

the city's urbanized area, located within the boundaries of these historic districts. In addition, there are 26 National Historic Landmarks that include the Vieux Carré, the Garden District and the St. Charles [Streetcar] Line.

City of New Orleans - Archaeological Resources

Based on FEMA's review of existing documentation, data on existing archaeological sites provided by SHPO and historic maps and site visits, FEMA determined, that there are a total of 705 recorded archaeological sites in Orleans Parish; many of them are located and further described in one of the 379 archaeological survey, evaluation, and mitigation reports that are on file with the Louisiana Division of Archaeology (accessed 4/7/2016). The archaeological deposits in this parish span from the Poverty Point Period (1700 B.C.) to the present. Archaeological deposits associated with the City of New Orleans are residential and institutional in scale. The drainage system, sewer system, and roadway systems are all institution scale historic and archaeological components of the city as a whole and are due consideration as potential historic properties; however, these components are well documented and already generally addressed in the current body of knowledge.

Louisiana's Comprehensive Archaeological Plan (Smith et al. 1983) placed Orleans Parish in Management Unit V (pp 93-113), and identified 25 research themes for the parish. Not all are relevant, but the focus on the development of historic New Orleans, the focus on military history, transportation (in the form of railroads and more localized transit), and a focus on the human changes on the environment are very relevant. One of the major research themes identified is:

Examine the effects on the Louisiana landscape that result from man's technological ability to manipulate his environment. What changes occurred as a result of deforestation and channelization of the Mississippi? Are there effects measurable archaeologically? Do changes in settlement patters, for instance, reflect this manipulation? (Smith et al. 1983: 286)

Pursuant to 36 CFR 800.4(b)(2), Phased Identification and Evaluation and 800.8, Coordination with the NEPA, FEMA has notified the SHPO, affected Tribes, and Consulting parties about FEMA's intent to conduct review on amendments as they are developed and provided to FEMA. See below for a generalized consideration of potential impacts.

6.14.3 Environmental Consequences

Alternative 1 – No Action. Implementation of the No Action Alternative would not affect any historic properties because no construction would occur.

Alternative 2 (Preferred Alternative) – Comprehensive Infrastructure Repair and Restoration Program. Under the Preferred Alternative, the proposed scope individually and cumulatively has the potential to adversely affect historic properties, FEMA will follow its Section 106 review procedures, described in Regulatory Setting 4.11.1, as each of the amendments are submitted to FEMA for consideration.

With the proposed action limited to the existing roads, foreseeable potential effects to historic properties include: damage, alteration or removal of historic streetscape features and materials

that contribute to the historic significance and character of the city's historic districts. These features may include, but are not limited to: alignment and configuration of streets, sidewalks and neutral grounds; trees or other landscaping elements; paving and curbing materials, streetcar tracks, street lights, street name tiles, or other street furniture. Additionally, unrecorded archaeological deposits associated with colonial and ante-bellum era New Orleans may be destroyed in certain areas of the city where the street grid has been re-aligned through time. Indirect effects to surrounding historic properties could potentially result from vibration created through prolonged construction activity.

FEMA will comply with Section 106 through a phased process, conducting identification and evaluation efforts and assessing effects as each individual amendment is identified by the Sub-Grantee. Compliance for individual amendments will not be complete until FEMA concludes the review set out in the 2009 Statewide Agreement or any subsequent Agreement. This approach is specifically provided for in this document.

If the proposed project does not have the potential to impact historic and archaeological resources, then there would be no affect to historic properties or archaeological resources and no further Section 106 review would be required. If the proposed project has the potential to affect historic properties, FEMA will initiate the Section 106 review process. If the Section 106 process results in an MOA or other agreement to resolve adverse effects and that agreement is required in order to reduce the level of impacts below significance under NEPA, a tiered SEA will be required.

Alternative 3 – Complete Repairs on a System Basis. This alternative consists of the completion of repairs to roads and drain lines by the City's Department of Public Works (DPW) separate and independent of repairs to water and sewer lines by the Sewerage and Water Board of New Orleans (SWBNO), allowing each sub-grantee to complete repairs according the their own priorities.

The NHPA Review program for this alternative would be the same as that identified for Alternative 2 (Preferred Alternative). However, it would likely be complicated by duplicative review and approval stages making the over-all approval timeframe longer than that anticipated for Alternative 2. Also, historic properties may be subjected to an additional risk of damage in locations where redundant construction activities occur.

If the proposed project does not have the potential to impact historic and archaeological resources, then there would be no affect to historic properties or archaeological resources and no further Section 106 review would be required. If the proposed project has the potential to affect historic properties, FEMA will initiate the Section 106 review process. If the Section 106 process results in an MOA or other agreement to resolve adverse effects and that agreement is required in order to reduce the level of impacts below significance under NEPA, a tiered SEA will be required.

7.0 CUMULATIVE IMPACTS

CEQ regulations state that the cumulative impact of a project represents the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 C.F.R. § 1508.7).

In its comprehensive guidance on cumulative impacts analysis under NEPA, CEQ notes that “the range of actions that must be considered includes not only the project proposal, but all connected and similar actions that could contribute to cumulative effects” (Regulations for Implementing the Procedural Provisions of the NEPA 2005). The term, “similar actions,” may be defined as “reasonably foreseeable or proposed agency actions [having] similarities that provide a basis for evaluating the environmental consequences together, such as common timing or geography” (40 C.F.R. § 1508.25[a][3]).

Not all potential issues identified during cumulative effects scoping need be included in a PEA. Because some effects may be irrelevant or inconsequential to decisions about the proposed action and alternatives, the focus of the cumulative effects analysis should be narrowed to important issues of national, regional, or local significance. To assist agencies in this narrowing process, CEQ (2007) provides a list of several basic questions to be considered, including: (1) Is the proposed action one of several similar past, present, or future actions in the same geographic area; (2) Do other activities (governmental or private) in the region have environmental effects similar to those of the proposed action?; (3) Have any recent or ongoing NEPA analyses of similar or nearby actions identified important adverse or beneficial cumulative effect issues?; and (4) Has the impact been historically significant, such that the importance of the resource is defined by past loss, past gain, or investments to restore resources?

It is normally insufficient when conducting a cumulative effects analysis to merely analyze effects within the immediate area of the proposed action. Geographic boundaries should be expanded for cumulative effects analysis and conducted on the scale of human communities, landscapes, watersheds, or airsheds. Temporal frames should be extended to encompass additional effects on the resources, ecosystems, and human communities of concern. A useful concept in determining appropriate geographic boundaries for a cumulative effects analysis is the project impact zone, that is, the area (and resources within that area) that could be affected by the proposed action. The area appropriate for analysis of cumulative effects will, in most instances, be a larger geographic area occupied by resources outside of the project impact zone (CEQ 2007).

FEMA has determined the boundary of Orleans Parish constitutes an appropriate project impact zone for this cumulative impacts analysis. In accordance with NEPA, and to the extent reasonable and practical, this PEA considered the combined effects of the Preferred Action alternative and other actions undertaken by FEMA, as well as actions by other public and private entities, that affect the environmental resources the proposed action also would affect, and occur within the considered geographic area and temporal frame(s).

Specifically, a range of past, present, and reasonably foreseeable future actions undertaken by FEMA within the designated geographic boundary area were reviewed: (1) for similarities such as scope of work, common timing and geography; (2) to determine environmental effects similar to those of the proposed action, if any; and (3) to identify the potential for cumulative impacts. As part of the cumulative effects analysis, FEMA also reviewed known past, present, and reasonably foreseeable future projects of federal agencies and other parties identified within the designated geographic boundary. These reviews were performed in order to assess the effects of proposed, completed, and ongoing activities and to determine whether the incremental impact of the current proposed action, when combined with the effects of other past, present, and reasonably foreseeable future projects, are cumulatively considerable or significant.

In the four-parish area of Orleans, St. Bernard, Plaquemines and Jefferson, Orleans Parish had the second-highest number of FEMA PA project sites for roads/bridges (over 180), with St. Bernard having the highest (over 220). Within Orleans Parish, these project sites comprised less than 2% of the over 10,000 FEMA program-funded emergency protective measures, repair projects and hazard mitigation projects that have occurred, are occurring, or are reasonably foreseen to occur to buildings, recreational and educational facilities, public utilities, and waterways from August 2005 through March 2016. Tables 3-4 and Figures 5-7 focus on project sites that meet two specific criteria within the study area: (1) roads/bridges, utilities, water control and recreational facilities project sites with obligated funding above FEMA’s 2005 “small projects” threshold of \$55,000 and (2) reviews for all project categories that were cleared with an Environmental Assessment (EA). For greater map readability, the study area was adjusted to end approximately one mile after the western-most data results in zip codes 70114 and 70129. FEMA-funded undertakings for the study area total 581 project sites and are divided into 8 categories: HMGP Stormwater Management (4%), HMGP Flood Control (2%), PA Protective Measures (less than 1%), PA Roads & Bridges (31%), PA Water Control Facilities (1%), PA Public Utilities (18%), PA Public Buildings (5%), and PA Recreational or Other (38%) (Tables 3-4). Fifty-one project sites in the study area were cleared with EAs. All FEMA-funded actions are subjected to various levels of environmental review as a requirement for the receipt of federal funding. An applicant’s failure to comply with any required environmental permitting or other condition is a grant violation, which can result in the loss of federal assistance, including funding.

Table 3. Data results for Selected FEMA-funded projects within the Orleans Parish study area by EHP Review Level.

<i>Program/Type</i>	<i>Total</i>	<i>Percent of All Project Sites</i>	<i>Standard Project Review</i>	<i>Cleared with EA</i>
HMGP - Flood Control	13	2%	11	2
HMGP - Stormwater Management	23	4%	18	5
PA - B - Protective Measures	1	Less than 1%	0	1
PA - C - Roads & Bridges	181	31%	180	1
PA - D - Water Control Facilities	7	1%	7	0
PA - E - Public Buildings	30	5%	0	30
PA - F - Public Utilities	107	18%	107	0
PA - G - Recreational or Other	219	38%	207	12
<i>Grand Total – All Project Site</i>	<i>581</i>		<i>530</i>	<i>51</i>

Table 4. Data results for Selected FEMA-funded projects within the Orleans Parish study area by Disaster/Type.

<i>Standard Project Review</i>	<i>Total</i>	<i>Percent of 530 Project Sites</i>	<i>1603</i>	<i>1607</i>	<i>1786</i>	<i>4080</i>
HMGP - Flood Control	11	2%	8	2	1	0
HMGP - Stormwater Management	18	3%	18	0	0	0
PA - C - Roads & Bridges	180	34%	176	0	2	2
PA - D - Water Control Facilities	7	1%	5	0	2	0

<i>Standard Project Review</i>	<i>Total</i>	<i>Percent of 530 Project Sites</i>	<i>1603</i>	<i>1607</i>	<i>1786</i>	<i>4080</i>
PA - F - Public Utilities	107	20%	107	0	0	0
PA - G - Recreational or Other	207	39%	198	0	0	9
Total	530		512	2	5	11
<i>Project Sites Cleared with EA</i>	<i>Total</i>	<i>Percent of 51 Project Sites</i>	<i>1603</i>	<i>1607</i>	<i>1786</i>	<i>4080</i>
HMGP - Flood Control	2	4%	2	0	0	0
HMGP - Stormwater Management	5	10%	4	1	0	0
PA - B - Protective Measures	1	2%	1	0	0	0
PA - C - Roads & Bridges	1	2%	1	0	0	0
PA - E - Public Buildings	30	59%	30	0	0	0
PA - G - Recreational or Other	12	24%	12	0	0	0
Total	51		50	0	0	0
<i>Grand Total – All Project Sites</i>	<i>581</i>		<i>562</i>	<i>3</i>	<i>5</i>	<i>11</i>

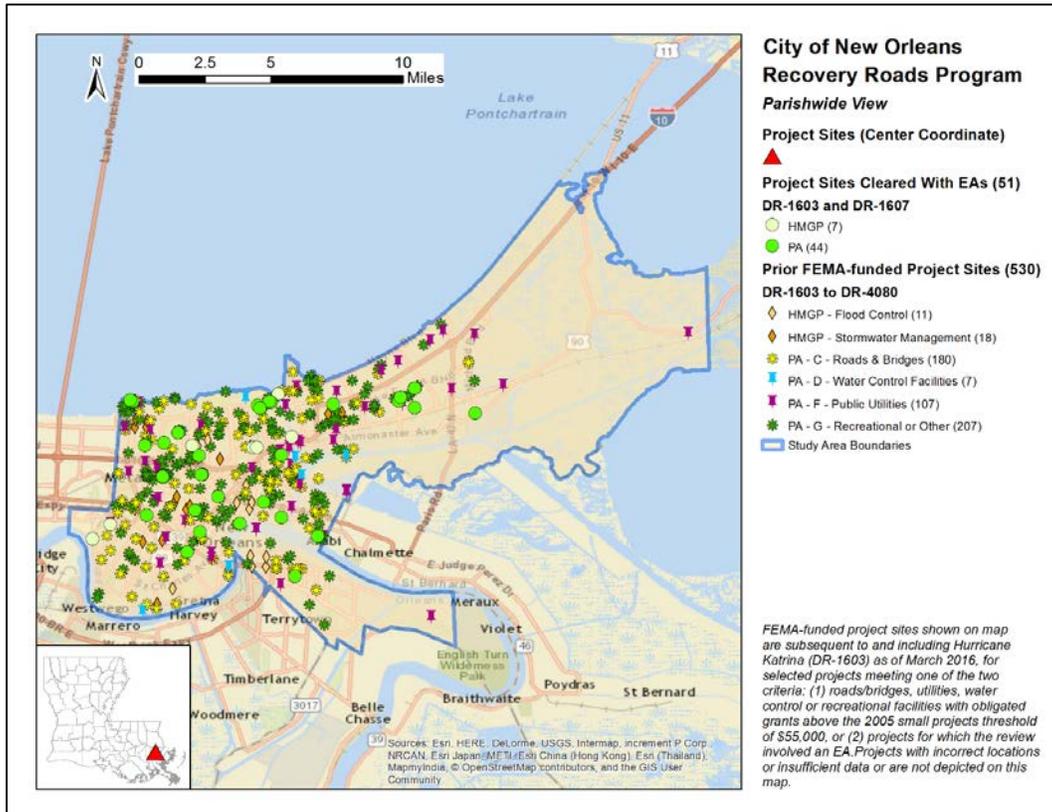


Figure 5. Map of FEMA Funded Projects within Orleans Parish (FEMA).

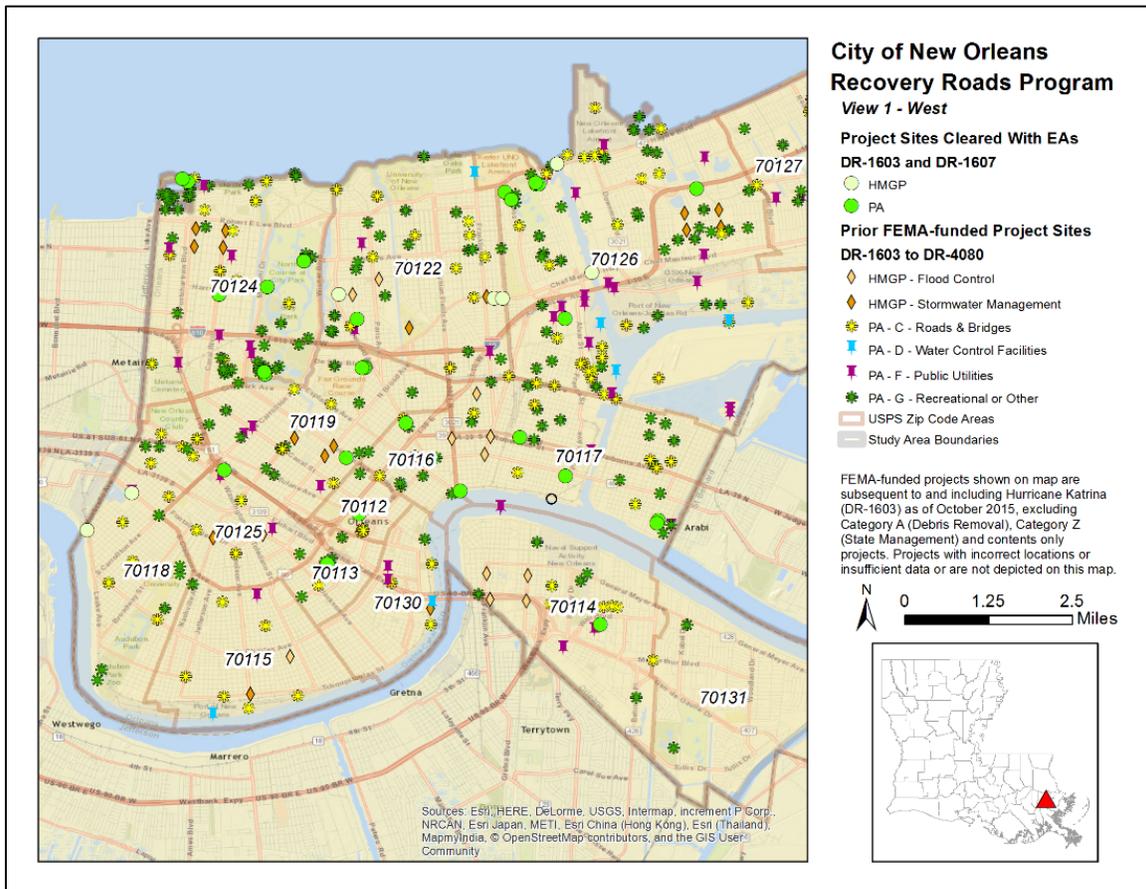


Figure 6. Map of FEMA-funded Projects within western Orleans Parish (FEMA)

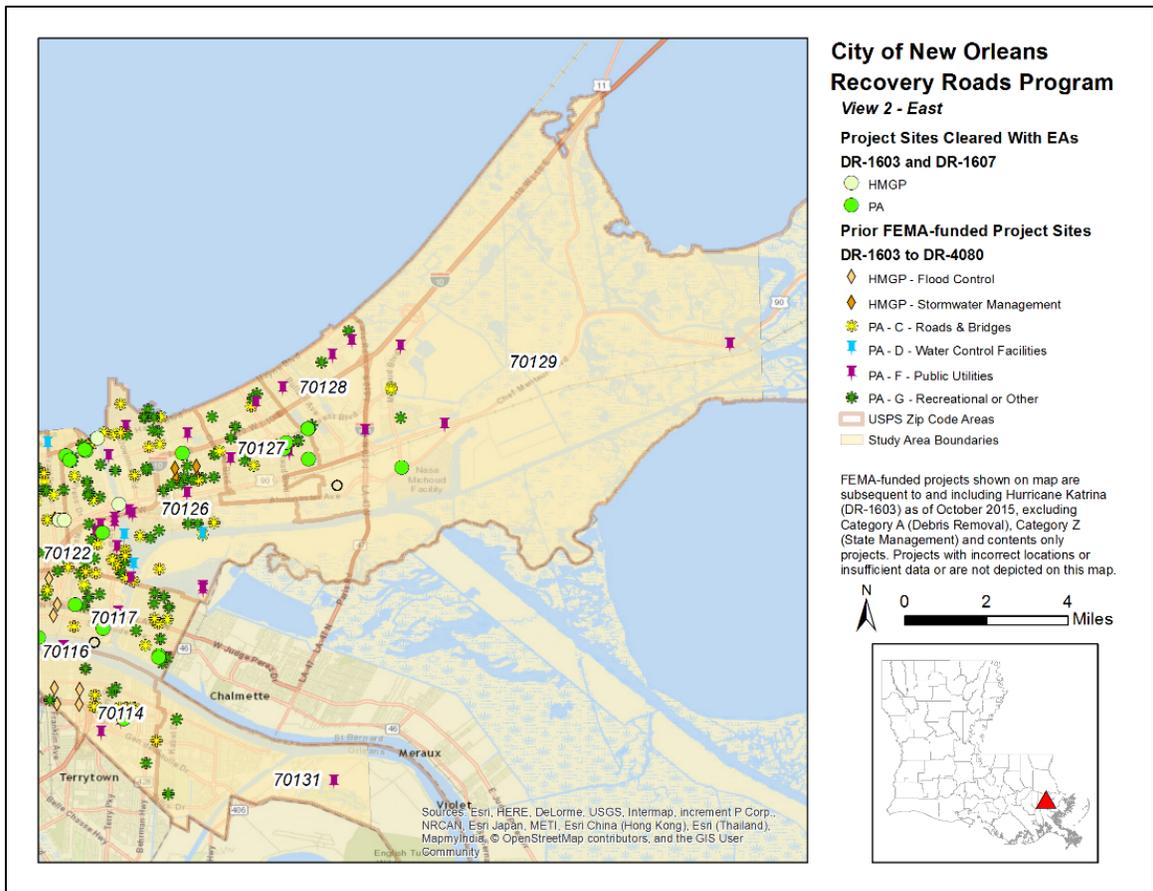


Figure 7. Map of FEMA Funded Projects within eastern Orleans Parish (FEMA).

After the devastation of the 2005 hurricane season, the USACE, Mississippi Valley Division, New Orleans District was tasked with the planning, design, and construction of a 350-mile system of levees, floodwalls, surge barriers, and pump stations to “increase public safety and enable the physical and economic recovery of the area to occur through the reduction of storm damage risk to residences, businesses, and other infrastructure from hurricanes (100-year storm events) and other high-water events within the Greater New Orleans Metropolitan Area.” Referred to as the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS), it is one of the largest civil works projects ever undertaken, at an estimated cost of \$14 billion (DoA 2013a). Major drainage features associated with this infrastructure project within Orleans Parish include the Mississippi River (Waterbody ID# LA070301) and the Industrial Canal (Waterbody ID# LA041501). Except during major river flooding events, these watercourses serve to remove excess water from the local area more efficiently, providing a positive cumulative benefit to residents and businesses.

Table 5 below lists and briefly describes known present, past, and reasonably foreseeable infrastructure and recovery improvement projects, including activities identified by FEMA that may have the potential for cumulative impacts when combined with the effects of the present proposed action. The table also identifies the potential for cumulative impacts when combined with the effects of the proposed action and the rationale for that assessment.

Table 5. Projects that May Have the Potential to Contribute to Cumulative Impacts

Project Name/Status	Lead Agency or Firm	Location	Description	Cumulative Impact	Rationale
City of New Orleans City-Wide Road Repairs	City of New Orleans Department of Public Works	New Orleans City-Wide	Repairs, replacements, and improvements to roads and components damaged as a result of Hurricane Katrina. Elements include upgrades to current codes and standards including mitigation measures to reduce the risk of future damages in the next flood.	Less than significant	Effects of this project when combined with those of the proposed action will not result in significant cumulative impacts.

Project Name/Status	Lead Agency or Firm	Location	Description	Cumulative Impact	Rationale
Comprehensive Environmental Document, Phase I Study for HSDRRS	USACE	217 miles of post-Katrina HSDRRS work located within the Greater New Orleans Metropolitan Area; the area within Lake Pontchartrain and Vicinity (LPV) and West Bank and Vicinity (WBV).	Evaluates the cumulative impacts associated with the implementation of the HSDRRS; describes cumulative impacts of HSDRRS construction completed as of July 2011; and incorporates information from Individual Environmental Reports (IERs) and supplemental IERs completed as of 15 November 2010	Less than significant	Adversely affected resources for the HSDRRS project (regional soils, habitat supporting wildlife, wetlands and jurisdictional bottomland hardwood resources) are significantly different from those in the currently proposed action. Through mitigation and compensation measures, the overall socioeconomic benefits are expected to outweigh the unavoidable natural resources impacts and, thus, would not impact the proposed action.
Hurricane Storm Damage Risk Reduction System	U.S. Army Corps of Engineers	New Orleans Regional Metropolitan Area	Complete re-engineering the levee system in New Orleans and surrounding areas in order to withstand effects from a “100 year storm,” or a storm that has a one percent chance of occurring each year.	Less than significant impacts	Effects from this project reduce overall impacts in the areas levee protected from the base flood including the site of the proposed action.
New Orleans East Streetscape	HUD	Eastern New Orleans	Addition of sidewalks, street lights, trees, a bike lane, and trash receptacles	Less than significant impacts	Restoration and improvement to existing infrastructure

Project Name/Status	Lead Agency or Firm	Location	Description	Cumulative Impact	Rationale
New Orleans Rail Gateway	Federal Railroad Administration	Rail corridors citywide	Environmental Impact Statement currently in preparation for upgrades to the city's rail system (LaDOTD 2014)	Less than significant	Although the NOPBR is adjacent to the proposed cruise terminal, close coordination will occur with the railroad to minimize traffic disruption
New Orleans Sewer and Water Board Water Supply and Sanitary Sewer System-Wide Repairs	Sewer and Water Board of New Orleans	New Orleans City-Wide	Repairs and improvements to water and sanitary sewer system components damaged as a result of Hurricane Katrina. Elements include upgrades to current codes and standards including mitigation measures to reduce the risk of future damages in the next flood.	Less than significant impacts	Project is conditioned to comply with minimum NFIP floodplain development regulations as adopted by the local community and will thereby reduce risk and increase protection from future damage.
Recovery School District Single Settlement Request	Recovery School District	New Orleans City Wide	Refurbishment, repair, reconstruction, and new construction for restoration of the school system.	Less than significant impacts	Project is conditioned to comply with minimum NFIP floodplain development regulations as adopted by the local community and will thereby reduce risk and increase protection from future damage.

Project Name/Status	Lead Agency or Firm	Location	Description	Cumulative Impact	Rationale
Response to Hurricanes Katrina and Rita	USACE	Orleans, St. Bernard, Jefferson, Plaquemines, St. Mary's, Terrebonne, and Lafourche Parishes	Evaluates emergency actions to unwater New Orleans Metropolitan Area; rehabilitate federally authorized levees, and restore non-federal levees and pump stations (Orleans, St. Bernard, Jefferson and Plaquemines Parishes); and flood flight operations (St. Mary's, Terrebone, and Lafourche Parishes)	No effect	Adverse impacts to resources (wetlands) required compensatory mitigation and are significantly different from those in the currently proposed action; no similar resources associated with proposed action; no impact on proposed action
SWBNO Pump Stations	USACE	Throughout Orleans Parish	Pump station elevation	Negligible	Restoration and improvements to existing infrastructure; no impact on proposed action

As identified in Table 5, the cumulative effect of these present, past, and reasonably foreseeable future actions is not anticipated to result in a significant impact to any resource. Each of the projects either aims to restore or improve the function of pre-existing infrastructure within an urban setting or proposes redevelopment consistent with current zoning requirements, with minimal impacts to the natural and human environment.

8.0 EVALUATION

FEMA’s experience is that road repair projects would have minimal adverse cumulative impacts. Implementing best management practices (BMP) which are incorporated into this document are expected to limit both individual and cumulative impacts. Mitigation measures to reduce impacts are addressed in each affected environment section and the project conditions section. These facilities will be constructed in localized areas, and the construction impacts is typically short-term and temporary for each individual site. However, site and project-specific information will be needed for all projects to appropriately take into consideration the potential for cumulative impacts on the various resource areas discussed in this PEA. FEMA will take cumulative impacts into account when evaluating whether the particular action fits within this PEA. FEMA will prepare RECs for each individual or group of actions and will take into account the unique project and site conditions. In doing this evaluation, FEMA will take a hard look at cumulative impacts when the

road project is likely to produce moderate effects (as defined in the affected environment section) on a particular resource or area of concern. In some circumstances, this evaluation may indicate the need for the preparation of a tiered SEA even when the tiered SEA is not triggered by the thresholds established in Table 1. FEMA will also take a hard look at cumulative impacts whenever a tiered SEA is triggered under this PEA in accordance with the thresholds established in Table 1.

9.0 CONDITIONS AND MITIGATION MEASURES

FEMA requires that the Applicant take the following measures to the extent practicable and applicable to avoid or further minimize impacts to the quality of the human environment. The general mitigation measures outlined in this section may be superseded by higher or more stringent standards required by the particular federal, or territory, tribe, or local government agency issuing a permit, license, or approval for the project.

- Follow applicable state, territory, tribal, and local permitting requirements for construction;
- Water down construction site two to three times per day if dust emissions become a problem;
- Enclose or water down exposed dirt storage piles;
- Minimize the disturbed area and preserve vegetation to the maximum extent possible;
- Maintain topsoil whenever possible;
- Phase construction activities to the extent possible;
- Control stormwater flowing to and through the project site;
- Protect slopes by using measures such as erosion control blankets, bonded fiber matrices, turf reinforcement mats, silt fences (for moderate slopes), etc.;
- Temporarily protect storm drain inlets until site is stabilized;
- Retain sediment on-site and control dewatering practices by using sediment traps or basins for large areas (> 1 acre) when appropriate;
- Establish stabilized construction entrances/exits (e.g. large crushed rocks, stone pads, steel wash racks, hose-down systems, and pads);
- Limit construction activities, including operation of heavy machinery, to normal business hours (M-F 7am-5pm);
- Avoid engaging in construction activities within 200 feet of noise-sensitive receptors such as schools, hospitals, residential areas, nursing homes, etc.
- Ensure adequate maintenance of equipment, including proper engine maintenance, adequate tire inflation, and proper maintenance of pollution control devices;

- The Applicant is required to protect existing individual trees through project design and implementation. If tree removal is unavoidable, the Applicant is required to plant two new trees for every one removed.
- Applicant shall comply with all local, state, and federal requirements related to sediment control, disposal of solid waste, control and containment of spills, and discharge of surface runoff and stormwater from the site.
- Prior to construction activities, at least 48-hours notice must be given to residents and emergency response agencies in advance of any street closures, anticipated periods of low water pressure, or disruptions in service for non-Applicant-controlled utilities.
- Care should be taken to ensure that any potentially hazardous or toxic materials used for, generated, or encountered during pressure washing, cleaning, or any other construction activities, do not impact groundwater, waterways, wetlands, or nearby stormwater conveyance systems. Potentially hazardous and toxic wastes generated or encountered during these processes should be isolated, contained, and disposed of in an approved manner. This condition includes petroleum products and by-products use in machinery and equipment. The Applicant shall be responsible for complying with all relative rules of the Clean Water Act (CWA). No activity performed should have any impact on waters of the state.
- Individual construction projects may require stormwater pollution prevention plans consistent with the Applicant's MS4 permit. The Applicant is responsible for preparing and implementing any such required plans.
- In order to minimize indirect impacts (erosion, sedimentation, dust, and other construction-related disturbances) to nearby waters of the U.S. and surrounding drainage areas, the contractor must ensure compliance with all local, state, and federal requirements related to sediment control, disposal of solid waste, control and containment of spills, and discharge of surface runoff and stormwater from the site. All documentation pertaining to these activities and Applicant compliance with any conditions should be forwarded to LA GOHSEP and FEMA for inclusion in the permanent project files.
- The Applicant is responsible for acquiring any Section 401/404 Clean Water Act (CWA) permits and/or Section 10 permits under the Rivers and Harbors Act. When these permits are required, Applicant must maintain documentation of compliance with applicable Nationwide Permit (NWP), exemption from requirements, or obtain individual permits from U.S. Army Corps of Engineers prior to construction, unless exempt by the NWP from pre-construction notification. The Applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- The Applicant shall ensure that best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the clean water act and executive order 11990.

- The Louisiana Department of Natural Resources (LDNR) requires that a complete Coastal Use Permit (CUP) Application package (Joint Application Form, location maps, project illustration plats with plan and cross section views, etc.) along with the appropriate application fee, be submitted to their office prior to construction. The Applicant is responsible for coordinating with and obtaining any required CUPs or other authorizations from the LDNR OCM's Permits and Mitigation Division prior to initiating work. The Applicant must comply with all conditions of the required permits. All documentation pertaining to these activities and Applicant compliance with any conditions should be forwarded to the state and FEMA for inclusion in the permanent project files.
- Coordination with the appropriate local levee district(s) would be required for work within 1,500 feet of Mississippi River levees and/or within 300 feet of hurricane protection levees. CNO and SWBNO are responsible for obtaining any required permits from these districts and following any conditions imposed.
- Erosion control measures must be implemented for any ground disturbing activities (e.g. excavated areas to receive concrete fill, ground disturbed by heavy equipment). Choice of erosion control measure will be employed based on the type and duration of disturbance (i.e. fiber rolls may be used to control sediment runoff around excavated sites that will be filled with concrete, areas of broken ground due to heavy equipment may receive mulch or hydro-seeding to control sediment runoff as needed, etc.).
- A spill prevention and emergency response plan (SPERP) will be required for all construction contractor groups. The SPERP will need to identify at a minimum: emergency contact numbers for local, state and federal environmental and public health agencies, material safety data sheets (MSDS) for all hazardous substances, hazardous material inventory, spill prevention plan, spill response plan/emergency response plan, spill response equipment (e.g. absorbent pads, disposal containers) and reporting requirements.
- Avoid engaging in construction activities within 660 feet of a bald or golden eagle nest during nesting and fledging, as nesting eagles are quite sensitive to human activities during these times.
- No project may be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the NFIP. FEMA PA-funded projects carried out in the floodplain must be coordinated with the local floodplain administrator for a floodplain development permit prior to the undertaking, and the action must be carried out in compliance with relevant, applicable, and required local codes and standards and thereby, will reduce the risk of future flood loss, minimize the impacts of floods on safety, health, and welfare, and preserve and possibly restore beneficial floodplain values as required by E.O. 11988. Coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA for inclusion in the permanent project files.

- Adverse effects must be minimized in accordance with FEMA's minimization standards in 44 C.F.R. § 9.11. Treatment measures would be required to reduce adverse impacts below the level of significance.
- If any asbestos containing materials (ACM) and/or other hazardous materials are found during remediation or repair/replacement activities, the Applicant shall comply with all federal, state, and local abatement and disposal requirements under the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Louisiana Administrative Code 33:III 5151. Demolition activities related to possible asbestos-containing materials (PACM) must be inspected for ACM/PACM where it is safe to do so. Should ACM be present, the Applicant is responsible for ensuring proper disposal in accordance with the previously referenced administrative orders. Regardless of the asbestos content, the Applicant is responsible for ensuring that all renovation or demolition activities are coordinated with the LDEQ to the extent required prior to initiating work. All documentation pertaining to these activities and Applicant compliance with any conditions should be forwarded to the state and FEMA for inclusion in the permanent project files.
- Unusable equipment, debris, and material shall be disposed of in an approved manner and location. The Applicant must handle, manage, and dispose of petroleum products, hazardous materials, and/or toxic waste in accordance with all local, state, and federal agency requirements. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- Appropriate measures for the proper assessment, remediation, management, and disposal of any contamination discovered in the course of construction activities must be initiated in accordance with applicable federal, state, and local regulations. The contractor is required to take appropriate actions to prevent, minimize, and control the spill of hazardous materials at the proposed site.
- Contractor and/or sub-contractors must properly handle, package, transport and dispose of hazardous materials and/or waste in accordance with all local, state, and federal regulations, laws, and ordinances, including all Occupational Safety and Health Administration worker exposure regulations covered within 29 C.F.R. Parts 1910 and 1926.
- All work affecting the Agriculture Street Landfill Superfund Site must be undertaken in accordance with the Consent Decree between the City and USEPA including the *Technical Abstract for Utility Operations within the Agriculture Street Landfill Superfund Site*.
- Louisiana law (Part VII of Chapter 8 of Title 40, and the sections as R.S. 40:1749.11 to 40:1749.26) requires excavators and demolishers to call a regional notification center prior to beginning work. Prior to any excavation or demolition, each excavator or demolisher, including cable television owners or operators, shall serve telephonic notice of the intent to excavate or demolish to the regional notification center serving the area in which the proposed excavation or demolition is to take place. Such notice shall be given to the notification center at least 96 hours, but not more than 120 hours (excluding weekends and holidays) prior to the commencement of any excavation or demolition activity. See entire laws at www.laonecall.com or call 1-800-272-3020 for more information.

- This project involves the modification of a public structure that may contain surfaces coated with lead-based paint. The Applicant is responsible complying with all local, state, and federal laws and ensuring that project activities are coordinated with the Louisiana Department of Environmental Quality for abatement activities.
- The Applicant is responsible for obtaining and/or complying with all federal, state and local permits, ordinances and/or requirements for the collection, handling, storage, transportation and disposal of any medical, hazardous, biological, radiological, pharmaceutical or toxic related waste or debris. Equipment such as ice machines, refrigerators, generators, air conditioning units, computers, and televisions may contain chlorofluorocarbons (CFCs), used oil, diesel and other petroleum products, mercury switches, used oil filters, fuel filters, and batteries. The Applicant shall handle, manage, and dispose of damaged materials and equipment that may be hazardous waste, universal waste, and hazardous materials in accordance with the requirements of local, state, and federal regulations.
- Contractor and/or Subcontractors will properly handle, package, transport and dispose of hazardous materials and/or waste in accordance with all local, state and federal regulations, laws and ordinances including all OSHA worker exposure regulations covered within 29 CFR 1910 and 1926.
- All waste is to be transported by an entity maintaining a current "waste hauler permit" specifically for the waste being transported, as required by Louisiana Department of Transportation and Development (DOTD), LDEQ, and other regulations.
- Disposal of demolition debris must be in accordance with all federal, state, and local laws, regulations, and rules. Prior to disposal, the Applicant must identify and provide to FEMA and GOHSEP the waste disposal site, including the complete name, location, telephone number, and contact person of the facility. Due to the presence of the Agriculture Street Landfill Superfund site and the potentially hazardous nature of material to be removed from the site, all construction and demolition debris must be disposed in a Type I Industrial Landfill. The disposal facility must be permitted by the State of Louisiana Department of Environmental Quality Permit Support Division to receive Regulated Asbestos Containing Material. Waste must be packaged, labeled, manifested, and transported in accordance with LDEQ regulations and requirements.
- To minimize worker and public health and safety risks from project construction and closure, all construction and closure work must be done using qualified personnel trained in the proper use of construction equipment, including all appropriate safety precautions. Additionally, all activities must be conducted in a safe manner in accordance with the standards specified in OSHA regulations.
- Appropriate signage and barriers shall be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes. The contractor will implement traffic control measures, as necessary. This shall include Applicant 24-hour emergency contact information.
- Applicant is responsible for maintaining construction site perimeter fencing.

- The Applicant and its contractor(s) must take all reasonable precautions to control construction site access during project implementation, including posting appropriate signage and fencing to minimize foreseeable potential public safety concerns. All activities shall be conducted in a safe manner in accordance with OSHA work zone traffic safety requirements. Truck and equipment routes must be kept free of construction debris.
- The Applicant and its contractor(s) are responsible for implementing all traffic control and warning in accordance with the Manual of Uniform Traffic Control Devices, including placing signs and signals in advance of construction activities in order to alert pedestrians and motorists of the upcoming work and traffic pattern changes.
- Applicant will perform all Treatment Measures identified by FEMA through the Section 106 review to offset any adverse effects.
- Applicant will implement an **Inadvertent Discovery Clause** to account for unanticipated discoveries. It shall read: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the Applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The Applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The Applicant will not proceed with work until FEMA HP completes consultation with the SHPO, and others as appropriate.
- Applicant will implement a **Louisiana Unmarked Human Burial Sites Preservation Act** discovery provision, as well. It shall read: If human bone or unmarked grave(s) are present within the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The Applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four (24) hours of the discovery. The Applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two (72) hours of the discovery.
- If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- All precautions should be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permits Division at (225) 219-9371 to determine if your proposed project requires a permit.

General comments/conditions provided by LDEQ:

- If your project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit is required. An application or Notice of Intent will be required if the sludge management practice includes preparing biosolids for land

application or preparing sewage sludge to be hauled to a landfill. Additional information may be obtained on the LDEQ website at <http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx> or by contacting the LDEQ Water Permits Division at (225) 219- 9371.

- All precautions should be observed to protect the groundwater of the region.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- 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.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.

10.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

10.1 FEMA Public Involvement

FEMA has invited the public to comment on the proposed action during a fifteen (15) day comment period, which will conclude on June 6, 2016. The public notice is being published on Friday 13 May, Sunday 15 May, Wednesday 18 May, and Friday 20 May 2016, in the Times-Picayune, the journal of record for Orleans Parish. The public notice is also being published on Thursday 12 May through Friday 20 May 2016, in the Baton Rouge Advocate. The documents also can be downloaded from FEMA's website at <http://www.fema.gov/media-library/search/ADD>. Written comments on the Notification or related matters can be faxed to FEMA's Louisiana Recovery Office at (225) 267-2962 or emailed to: fema-noma@dhs.gov; or mailed to FEMA Louisiana Recovery Office, Attn: FEMA EHP, 1500 Main Street, Baton Rouge, Louisiana 70802. Comments also may be e-mailed to fema-noma@dhs.gov or faxed to (225) 346-5848. Verbal comments will be accepted or recorded at 504-491-0399. If no substantive comments are received, the draft PEA and associated FONSI will become final.

The draft PEA and draft FONSI are available for review at the following locations:

New Orleans Main Public Library, 219 Loyola Ave., New Orleans, Louisiana 70112 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

East New Orleans Branch Library, 5641 Read Blvd., New Orleans, Louisiana 70127 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Robert E. Smith Branch Library, 6301 Canal Blvd., New Orleans, Louisiana 70124 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Algiers Regional Library, 3014 Holiday Dr., New Orleans, Louisiana 70131 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Martin Luther King Branch Library, 1611 Caffin Ave., New Orleans, Louisiana 70117 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday and 10:00 a.m. to 5:00 p.m. Friday and Saturday).

10.2 CNO Public Involvement

Over the past 12 months, the City has conducted and/or participated in over 70 meetings in the community discussing planned JIRR work with residents and stakeholders. The majority of these meetings were conducted prior to the start of work on a FEMA-funded construction project in a particular City neighborhood. Other public meetings include the following:

Table 6. Partial List of Public Meetings Discussions about JIRR.

Date	Meeting
December 16, 2015	Presentation to the Fix My Streets Financing Working Group discussing the scope of work, scheduling of work, and construction impacts of planned JIRR project (Recovery Roads Program) work. The Fix My Streets Financing Working Group was formed by the City as a group of subject matter experts and community leaders that is charged with developing recommendations about how the City can pay for interior street repairs. A copy of this presentation, meeting minutes, and responses to questions is posted on the DPW website at http://www.nola.gov/dpw/fix-my-streets-financing-working-group/ .
October 14, 2015	Presentation to the Civic Leadership Academy discussing the scope of work, scheduling of work, and construction impacts of planned JIRR project (Recovery Roads Program) work. The Civic Leadership Academy is a training program for neighborhood association leaders sponsored by the Mayor’s Office of Neighborhood Engagement.
July 7, 2015	Presentation to the City Council Public Works, Sanitation and Environmental Committee to discuss the coordination of JIRR planned work with other capital improvement programs. A copy of this presentation and subsequent discussion, commentary, and responses can be found on the City webpage at http://nolacitycouncil.com/video/video_legislative.asp .
March 3, 2015	Presentation to the City Council Public Works, Sanitation and Environmental Committee to provide an update on the progress of the Recovery Roads Program and the timeline for future construction work under this program. A copy of this presentation and subsequent discussion, commentary, and responses can be found on the City webpage at http://nolacitycouncil.com/video/video_legislative.asp .

In addition to public meetings, the City maintains the following interactive websites that provide general information, maps, and fact sheets about the JIRR (Recovery Roads Program): www.nola.gov/dpw , www.recoveryroads.nola.gov, and www.roadworks.nola.gov. Links to all three webpages can be found on each interactive website.

- **Nola.gov/DPW:** The Department of Public Works' webpage allows users to report infrastructure and street damage. Users can also request a number of permits and review planned or ongoing projects.
- **Recoveryroads.nola.gov:** This webpage contains a program overview and visual GIS-enabled maps to enable users to review which areas have approved eligible damage repairs. The website will also contain program status statistics, upcoming public meetings notices and events, traffic interruption alerts, and upcoming contract awards (90 day look ahead) scheduled to be updated on a quarterly basis.
- **Roadworks.nola.gov:** Roadworks is a collaboration between DPW and SWBNO. This mapping application informs citizens about past, current, and future road work projects that affect the City. Layers in the map are updated monthly.

The Communications Plan during execution of the JIRR project will encompass a comprehensive and coordinated effort by the City of New Orleans Communications Department, Mayor's Office of Neighborhood Engagement, SWBNO, and DPW to convey the complexities of construction work needed on roads and sidewalks, as well as the water mains, sewer lines, and drain lines beneath City streets. The strategy will be tailored to reach as many citizens, stakeholders, businesses, and partner agencies as possible and will feature an interactive website, planned neighborhood meetings, public presentations, fact sheets, partner coordination meetings, and joint news releases for inquiries, responses, and feedback.

The following communication tools will be employed as part of an integrated marketing approach to provide updates on the progress of each project to a variety of key stakeholders.

1. **Program Websites.** Interactive websites include: www.nola.gov/dpw , www.recoveryroads.nola.gov, and www.roadworks.nola.gov. Links to all three webpages can be found on each interactive website.
2. **Neighborhood Meetings.** A minimum of one public meeting per neighborhood will be scheduled about approximately two weeks prior to the start of major construction activities in that neighborhood. The meeting will identify the project management team to the residents, explain the construction schedule, describe the project scope of work, and disclose any temporary construction inconveniences that will be in effect due to the construction work. Visual aids, fact sheets, and a PowerPoint presentation will be employed, at a minimum, to convey information to the target audience. The meetings will be coordinated by the DPW with assistance from the Mayor's Office of Neighborhood Engagement.
3. **Public Presentations.** Upon request, presentations will be made to professional organizations and economic development organizations. Presentations will be posted on nola.gov/DPW or RecoveryRoads.nola.gov.

4. **Fact Sheets.** Fact sheets and maps will be produced to distribute at public meetings covering an overview of the program, program status, current/planned project locations, and program points of contact.
5. **PowerPoint Presentations.** A PowerPoint presentation shell will be produced to be part of the standard briefing packet. Part of the presentation will be a static program overview and part of the presentation will be updated as required based on progress and the target audience.

10.3 Agency Coordination

FEMA is the lead federal agency for the NEPA compliance process for this Public Assistance Project. It is the responsibility of the lead agency to conduct the preparation and review of NEPA documents in a way that is responsive to the needs of the Parish communities while meeting the spirit and intent of NEPA and complying with all NEPA provisions. As part of the development of early interagency coordination related to the proposed action, state and federal resource protection agencies were contacted and FEMA distributed an informal scoping notification through a Solicitation of Views.

These resource agencies include the Louisiana State Historical Preservation Officer, U.S. Fish and Wildlife Service, the Governor's Office of Homeland Security and Emergency Preparedness, Louisiana Department of Environmental Quality, Louisiana Department of Wildlife and Fisheries, U.S. Environmental Protection Agency, Louisiana Department of Natural Resources, and the U.S. Army Corps of Engineers.

FEMA has received no objections to the project as proposed subsequent to these notifications. Comments and conditions received from the agencies have been incorporated into this Programmatic Environmental Assessment (Appendix A).

In accordance with applicable local, state, and federal regulations, the applicant would be responsible for acquiring any necessary permits prior to commencing construction at the proposed project site.

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APPENDIX A
AGENCY CORRESPONDENCE

From: Holmes, Leschina
Sent: Friday, March 25, 2016 2:22 PM
To: cmichon@wlf.la.gov
Cc: Spann, Tiffany (tiffany.spann@fema.dhs.gov); Cramer, Jerame
Subject: Solicitation of views, CNO/SWBNO Joint Infrastructure Recovery Request (JIRR) project;

U.S. Department of Homeland Security
Federal Emergency Management Agency FEMA-DR 1603 LA
1500 Main St.
Baton Rouge, LA 70802

March 25, 2016

MEMORANDUM TO: See Distribution

SUBJECT: Scoping Notification/Solicitation of Views

To Whom It May Concern:

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) is mandated by the U.S. Congress to administer Federal disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. The purpose of FEMA's Public Assistance (PA) Program is to fund projects to repair, restore, and replace facilities damaged as a result of the declared event. FEMA is considering providing PA Program funding for the attached project in relation to Hurricanes Katrina and Rita (FEMA-1603/1607-DR-LA).

On August 29, 2005, Hurricane Katrina struck the Gulf Coast of the United States, near the City of New Orleans. The storm made landfall as a Category 3 storm on the Saffir-Simpson Hurricane Scale, with sustained winds of 100–140 miles per hour. The storm resulted in a twenty (20) foot tidal surge which carried silt, mud, and debris and caused extensive damage to roads, drain lines, water lines, and sewer lines located in 72 neighborhoods within the City of New Orleans (CNO) As requested by the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and the CNO/Sewage and Water Board (SWBNO) [Applicants], FEMA proposes to fund repair or replacement of storm-damage roads and underground utility lines throughout Orleans Parish. Reasonable alternatives to the proposed action have been identified to allow for meaningful subsequent comparison of how these alternatives may affect the human and natural environment. See below.

The proposed action would utilize FEMA-provided PA funding to repair or replace storm-damage roads and underground utility lines to pre-storm condition and functionality. Comprehensive infrastructure repair and restoration projects will consist of one or more of the following project elements: drainage system damage assessment, underground utility line point repair or replacement, incidental repairs, minor rehabilitation, and major rehabilitation and full roadway reconstruction.

To ensure compliance with the National Environmental Policy Act (NEPA), Executive Orders (EOs), and other applicable Federal regulations, FEMA-EHP will be preparing Programmatic Environmental Assessment (PEA). We request that your office review the attached documents

for a determination as to the requirements of any formal consultations, regulatory permits, determinations, or authorizations.

Please respond within thirty (30) calendar days of the date of this scoping notification. If our office receives no comments at the close of this period, we will assume that your agency does not object to the project as proposed.

Comments may be faxed to 225-346-5848, emailed to Leschina.holmes@fema.dhs.gov or mailed to the attention of LeSchina Holmes, Environmental/Historic Preservation (EHP) Department, at the address above.

For questions regarding this matter, please contact LeSchina Holmes, Lead Environmental Protection Specialist at (504) 235-6512.

Tiffany Spann-Winnfield,
Deputy Environmental Liaison Officer (DELO)

Attachments: SOW, map

Distribution: USFWS, LDWF

03/25/2016

Project: Joint Infrastructure Recovery Request (JIRR) project
Applicant: City of New Orleans (CNO), Sewage and Water Board (SWBNO)

Parish: Orleans Parish

Lat/Long: Various locations (see attached map)

Scope of Work:

(Proposed Action) – Comprehensive Infrastructure Repair and Restoration

Program: The proposed action would utilize FEMA-provided Public Assistance (PA) funding to repair or replace storm-damage roads and underground utility lines to pre-storm condition and functionality. Comprehensive infrastructure repair and restoration projects would consist of one (1) or more of the following project elements: drainage system damage assessment, underground utility line point repair or replacement, incidental repairs, minor rehabilitation, and major rehabilitation and full roadway reconstruction. Equipment utilized to perform this work may include, but not limited to, dump trucks, powered hand equipment to saw cut pavement and break-up damaged pavement, front end loader, backhoe, boring machine, excavator, pipe puller, pipe lining machine, concrete truck, compactor, bulldozer, grader, milling machine, asphalt paver, roadway striping machine, and asphalt roller.

Drainage System Damage Assessment. The proposed work would consist of the inspection of underground drainage lines that are less than 36 inches in diameter. This may include the visual inspection of any drain line, manhole and drainage inlet structure (catch basin, culvert, surface inlet) and their connection to the drain line, the flushing and cleaning of the drainage inlet structure and drain line to allow for further non-evasive inspection, the inspection of the underground drain line and its connections to inlet structures, other drain lines, and manholes by closed circuit television cameras (CCTV) and laser and other inspection equipment, and an analysis of the results of these inspections.

In general, a visual inspection of the manhole or inlet structure at the beginning of the segment of drain line to be inspected would occur first. If the inlet structure or manhole is clogged such that inspection equipment is not able to be lowered into the drain line, the inlet structure and/or drain line would be cleaned to allow access by inspection equipment. Any soil and/or vegetative debris removed would be disposed of at an approved disposal facility. Then the inspection equipment would be placed into the drain line and moved through the drain line segment, collecting data on the condition of the drain line via video, laser and other sensors. At the end of the segment, the inspection equipment would be removed and the process would begin again at the beginning of the next drain line segment. If necessary, heavy cleaning and by-pass pumping operations may be employed to facilitate the flushing and inspection of heavily clogged / blocked line segments.

Underground Utility Line Point Repair or Replacement. The proposed work would consist of the demolition, removal, reconstruction and/or repair of damaged City-owned

underground utility (water, sewer or drainage) lines and associated utility structures and/or roadway structures, full-depth pavement restoration of damaged and/or excavated sections of pavement. This may include patching the roadway surface and repair work on roadway pavement, sub-base and/or base courses, placement of engineering fabrics, ditches/swales, sidewalks, ADA-compliant handicapped ramps, curbs and gutters, driveway aprons, drainage inlet structures, manholes, connections, valves, fittings, meters, and/or hydrants, restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right-of-way or existing servitudes/easements.

In cases where an underground drainage line, water line, and/or sewer line buried underneath the roadway or within the public right of way is identified as damaged and eligible for repair or replacement, a 4-6 foot wide trench would be excavated along the length of pipe needing to be replaced to the depth of the existing pipe, plus required trench foundation materials, and the damaged section of pipe removed. The trench width may vary depending on the type and depth of the utility to be repaired and bracing / shoring methods required due to site conditions and/or soil mechanics. Existing drainage lines are typically buried between 3-6 feet beneath the roadway surface; water main lines are typically buried 4-10 feet beneath the roadway surface; and sewer lines are typically buried 6-15 feet beneath the roadway surface. Service lateral depths vary from the point of origin at the main to the connection point. Utility main and service lateral depths may vary, or be temporarily offset, as required to obtain necessary clearance from other existing infrastructure features. Once the damaged section of pipe is removed, a new section of pipe would be installed and connected to the existing pipe, the trench would be backfilled with acceptable material, and any paving or other existing features impacted within the removal limits repaired as needed.

New drainage lines would be sized to the 10-year storm event (or per the current master drainage plan) and meet minimum size (15 inches in diameter) requirements. New drainage lines would typically be installed using concrete pipe. Any drain line sections to be repaired would be accomplished with concrete pipe from joint to joint (or structure), or by using an approved plastic (PVC) pipe connected to existing pipe to remain. Pipe repairs would typically be at least 10 feet in length.

The size of water and sewer lines that are installed may be increased based on needed system capacity. Any sub-base or base material that was removed would be replaced with acceptable material. Then any pavement removed would be reinstalled and joined to the existing pavement structure, and any other impacted existing features repaired as needed. In some cases, where damage is not as severe and sufficient hydraulic capacity can be maintained, a thin lining may be inserted into the existing sewer line instead of removing the damaged section. In this case, excavation of the damaged utility line would not be required. In some cases, due to existing conflicts underground, a new underground water line may be installed by boring underneath the ground in lieu of trenching and excavation. The pipe type used in water and sewer repairs or replacements would be in accordance with the latest SWB standards. Pipe replacements would typically span from node to node.

If warranted, due to existing conditions or design requirements, the location of the main may be relocated to avoid conflicts and ensure installation in accordance with design standards and any applicable code requirements. Any connections and fittings within

replaced or repaired utility pipe sections would be reestablished, repaired, or replaced as needed. Abandoned lines would be removed or filled and capped depending on the pipe type, pipe and existing surrounding conditions, and other planned scopes of work.

Incidental Roadway Repairs. The proposed work would consist of the demolition, removal, reconstruction and/or repair of damaged associated pavement structures and/or roadway structures such as sidewalks, ADA-compliant handicapped ramps, gutters, curb, driveways, driveway aprons, sidewalk foot laps, swales, bus pads, drainage inlet structures, utility manholes, connections, covers, and valves, and fire hydrants within the public right-of-way.

In general, any incidental roadway structures identified as damaged and eligible for repair or replacement would be removed. The material removed may include the structure itself, base and/or sub-base material underneath or surrounding the structure up to 24 inches from the structure to a depth of up to 24 inches beneath the structure, depending on the extent of damage, and/or any removed utility pipes and structures. Once the damaged structure or portion of the structure is removed, any sub-base or base material that was removed would be replaced with acceptable material. Then a new structure would be installed and joined to the existing pavement structure. Pavement removed would be replaced with in kind or similar acceptable material.

Minor Pavement Rehabilitation. The proposed work would consist of the demolition, removal and up to full-depth pavement restoration of damaged and/or excavated sections of concrete, asphalt or composite pavement on 50% or less of the total surface area of a given street block. This may include patching the roadway surface and repair work on roadway pavement, sub-base and/or base courses, placement of engineering fabrics, re-establishment of positive drainage to prevent pooling, and repairs to sidewalks, ADA-compliant handicapped ramps, curbs and gutters, driveway aprons, drainage inlet structures, manholes, connections, valves, and/or hydrants, and the restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right of way.

In general, the pavement identified as damaged and eligible for repair or replacement would be saw cut and removed. The material removed may include the pavement itself, base material underneath the pavement, sub-base material beneath the base material to a depth of up to 24 inches, depending on the extent of damage, and/or any removed utility pipes and structures. Any construction debris removed would be disposed of at an approved disposal facility. Any sub-base or base material that was removed would be replaced with acceptable fill material. Then, any damaged pavement removed would be replaced with new pavement and joined to the existing pavement structure. Pavement removed would be replaced with in kind or similar acceptable material.

Major Pavement Rehabilitation. The proposed work would consist of the demolition, removal, full-depth pavement restoration of damaged and/or excavated sections of pavement, and resurfacing of the entire street block. Scope may include the cold planning and/or milling of the existing asphalt roadway surface and repaving the roadway, the replacement of concrete panels, and work on asphalt or composite roadway pavement, sub-base and/or base courses, placement of engineering fabrics, ditches, sidewalks, ADA-compliant handicapped ramps, curbs and gutters, foot laps, driveway

aprons, drainage catch basins and/or inlet structures, utility manholes, connections, valves, and/or hydrants, restoration of medians, parking lanes, bike lanes, and/or other incidental paved areas within the public right of way.

In general, the pavement identified by FEMA as damaged and eligible for PA funded repair or replacement would be saw cut and removed. The material removed may include the pavement itself, base material underneath the pavement, sub-base material beneath the base material to a depth of up to 24 inches, depending on the extent of damage, and/or any removed utility pipes and structures. Any sub-base or base material that was removed would be replaced with acceptable material. Any damaged pavement removed would be replaced with new pavement and joined to the existing pavement structure. Pavement removed would be replaced with in-kind or similar acceptable material. Then, if the roadway is an asphalt-paved or asphalt-topped concrete roadway, the top 1.5-3.5 inches of asphalt (wearing surface) would be milled and removed.

Full Roadway Reconstruction. The proposed work would consist of the demolition, removal and reconstruction of the roadway pavement structure, associated pavement structures, and all city-owned underground utility lines and roadway-associated structures. Scope may include work on roadway pavement (concrete, asphalt or composite), sub-base and/or base courses, ditches/swales, sidewalks, ADA-compliant handicapped ramps, gutters, curbs, roadway striping, driveway aprons, drainage catch basins and/or inlet structures, utility manholes, placement of geotextile or geo-grid, connections, valves, and/or hydrants, bio swales and other green infrastructure/storm water management features, parking and bicycle lanes, relocation of underground streetlight and/or traffic signal conduit, restoration of medians and/or other incidental paved area within the public right-of-way. The City may repave a roadway with a different pavement type than what was in place prior to the start of work based on engineering considerations and a life-cycle cost analysis (i.e., reconstruct an existing asphalt or composite pavement street with concrete or a combination of concrete and pervious concrete). Materials used for road work pavement may include asphaltic concrete, Portland cement concrete, brick pavers, porous asphalt pavement, pervious Portland cement concrete, permeable interlocking pavers, and/or asphaltic prime, binder, and/or tack coat treatments. Underground pipes may be made of ductile iron, plastic (PVC), or reinforced concrete.

In general, the roadway pavement, base material underneath the pavement, and sub-base material beneath the base material, would be removed. A 4-6 foot wide trench along the length of the roadway would be excavated to the depth of the designed new sewer lines plus required trench foundation materials, a new section of pipe would be installed and connected to the existing sewer line, and the old sewer lines would be removed or filled in. The trench would then be backfilled with acceptable material. A 4-6 foot wide trench along the length of the roadway would then be excavated to the depth of the designed new water line plus required trench foundation materials, a new section of pipe would be installed, chlorinated and tested, and then connected to the existing water line. The existing water line would then be removed or filled in. A 4-6 foot wide trench along the length of the roadway would then be excavated to the depth of the designed new drainage line plus required trench foundation materials; a new section of pipe would be installed and connected to the existing drainage line. The existing drainage line would then be

removed or filled in. The trench would then be backfilled with acceptable material. Existing drainage lines are typically buried between 3-6 feet beneath the roadway surface; water main lines are typically buried 4-10 feet beneath the roadway surface; and sewer lines are typically buried 6-15 feet beneath the roadway surface. The trench width may vary depending on the type and depth of the utility to be repaired and bracing / shoring methods required due to site conditions and/or soil mechanics. Service lateral depths vary from the point of origin at the main to the connection point. Utility main and service lateral depths may vary, or be temporarily offset, as required to obtain necessary clearance from other existing infrastructure features. Any sub-base or base material that was removed would be replaced with acceptable material. Then the sub-base and base would be placed and compacted and any paving or other existing features impacted within the removal limits repaired as needed. The roadway traffic lane configuration may be adjusted to accommodate a bicycle lane, bus stop, and/or parking lane, but the overall width of the roadway would remain the same and within the public right-of-way.

The type of pipe used for water and sewer repairs or replacements would be in accordance with the latest SWB standards. Pipe replacements would typically span from node to node. New drainage lines would be sized to the 10-year storm event (or per the current master drainage plan) and meet minimum size (15 inches in diameter) requirements. New drainage lines would typically be installed using concrete pipe. Any drain line sections to be repaired would be accomplished with concrete pipe from joint to joint (or structure), or by using an approved plastic pipe connected to existing pipe to remain. Pipe repairs would typically be at least 10 feet in length.

If warranted, due to existing conditions or design requirements, the location of the water main or sewer line may be relocated to avoid conflicts with other underground utilities and ensure installation in accordance with design standards and any applicable code requirements. Any connections and fittings within replaced or repaired utility pipe sections would be re-established, repaired, or replaced as needed. Abandoned lines would be removed or filled and capped depending on the pipe type, pipe and existing surrounding conditions, and other planned scope of work.

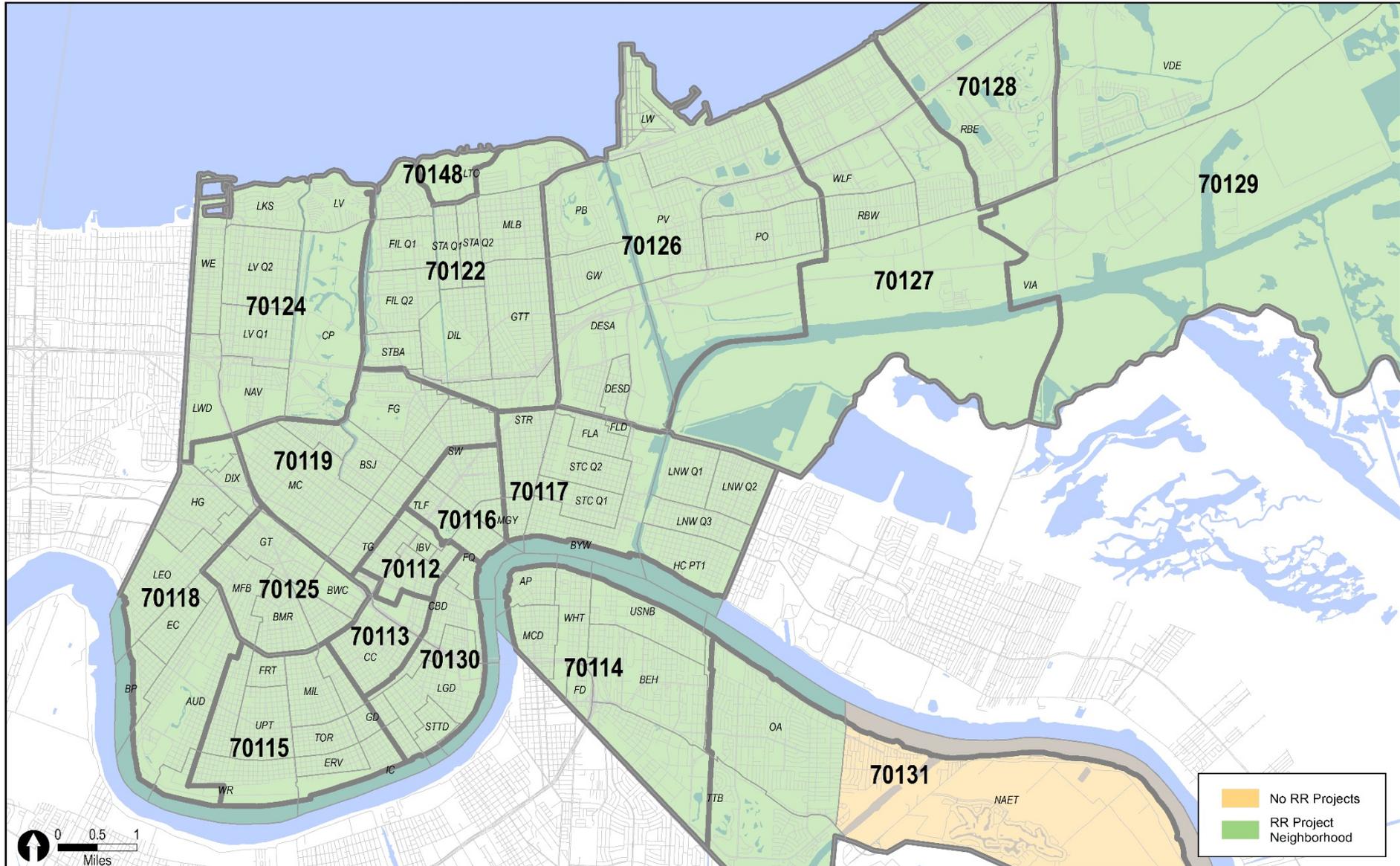
In addition to the general scope of work entailed with the major scope categories referenced above, the planned projects may also include other incidental repair scope as direct pay items in the construction contracts or as incidental work to the primary repair scope at no direct payment. Potential incidental repair scope may include, but are not limited to, mobilization; project signage; pre-construction videos/photographs; construction layout; clearing and grubbing; temporary fencing; removal of structures and obstructions; general excavation; saw cutting pavement, sidewalk, drive aprons, curbs/gutters, and ADA ramps; preparation of roadway pavement subgrade; scarifying and compacting existing base materials; removal and replacement of unsuitable subgrade (with granular material); repair or replacement of parking and bike lanes; traffic control and temporary signs & barricades; hazard mitigation and erosion control measures; traffic maintenance aggregate; temporary pavement over utility trenches or future pavement tie-in locations; temporary regulatory signage; resetting or replacement of street name tiles and paving inlaid emblems; relaying, restoring or replacing sub-lying cobblestone, brick, and other atypical sub-base materials in-kind or with suitable materials; brick and paver sidewalks, drive aprons, foot-laps, or incidental surfaces within public right-of-way;

railroad and trolley track crossing devices and specialty work adjacent or parallel to railroad and trolley track crossings; bus pads or bus stops; bus stop shelters and benches; dead end installations; temporary and permanent pavement striping and markers and symbols; raised pavement markers and object markers; loop detectors for traffic signals; conduit for traffic devices, school beacons, and street lights; root pruning and trenching; tree trimming; seeding and fertilization; joint and crack cleaning and sealant; trench drains; drain line outfall pipes; repair, replacement and/or adjustment of manholes and catch basins/inlets; utility conflict or junction boxes; replacement or adjustment of utility meter and valve boxes; utility cleanouts; curbs & gutters of various types, including timber and granite curbs; gravel alleyways; utility service curb markings and symbols; and specialty work with pavement edge or shoulder treatments.



FEMA RECOVERY ROADS PROGRAM PROJECT LOCATIONS

City of New Orleans Department of Public Works: 10 March 2016



	No RR Projects
	RR Project Neighborhood

From: Gutierrez, Raul [mailto: Gutierrez.Raul@epa.gov]

Sent: Tuesday, April 19, 2016 12:47 PM

To: Spann, Tiffany

Subject: RE: NEPA Solicitation of Views Joint Infrastructure Recovery Request (JIRR) Project PEA

The U.S. Environmental Protection Agency (EPA) has completed your request for a solicitation of views concerning the Joint Infrastructure Recovery Request (JIRR) Project Programmatic Environmental Assessment in New Orleans, Louisiana. The comments that follow are being provided relative to the EPA's *404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230)* and *Executive Order 11990*.

At this time, the EPA does not object to the project as proposed and recommends coordination with the U.S. Army Corps of Engineers at the New Orleans District Office to verify if jurisdictional waters of the U.S. occur on site and which permits, if any, are needed. Thanks for the opportunity to review the proposed project. If you have any questions or would like to discuss the issue further, please do not hesitate to contact me at (504) 862-2371.

Raul Gutierrez, Ph.D.
Wetlands Section (6WQ-EM)
US EPA Region 6
(504) 862-2371

Office:
US Army Corps of Engineers
New Orleans District
CEMVN-OD-SC
Post Office Box 60267
New Orleans, Louisiana 70160-0267



Trahan, Amy <amy_trahan@fws.gov>

Fwd: Solicitation of views, CNO/SWBNO Joint Infrastructure Recovery Request (JIRR) project;

1 message

Fuller, Deborah <deborah_fuller@fws.gov>
To: Amy Trahan <amy_trahan@fws.gov>

Fri, Apr 1, 2016 at 8:18 AM

sorry

Debbie Fuller
Fish & Wildlife Biologist
U.S. Fish and Wildlife Service
646 Cajundome Blvd., Suite 400
Lafayette, LA 70506

ph.: 337-291-3124
fax: 337-291-3139

www.fws.gov/lafayette

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
 Will have no effect on those resources
 Is not likely to adversely affect those resources.
This finding fulfills the requirements under Section 7(a)(2) of the Act.

Debbie A Fuller *April 24 2016*
Acting Supervisor
Louisiana Field Office
U.S. Fish and Wildlife Service
Date

----- Forwarded message -----

From: **Holmes, Leschina** <Leschina.Holmes@fema.dhs.gov>
Date: Fri, Mar 25, 2016 at 2:30 PM
Subject: Solicitation of views, CNO/SWBNO Joint Infrastructure Recovery Request (JIRR) project;
To: "deborah_fuller@fws.gov" <deborah_fuller@fws.gov>
Cc: "Spann, Tiffany" <Tiffany.Spann@fema.dhs.gov>, "Cramer, Jerame" <Jerame.Cramer@fema.dhs.gov>

U.S. Department of Homeland Security
Federal Emergency Management Agency FEMA-DR 1603 LA
1500 Main St.
Baton Rouge, LA 70802

March 25, 2016

MEMORANDUM TO: See Distribution

SUBJECT: Scoping Notification/Solicitation of Views

April 5, 2016

Tiffany Spann-Winfield
Deputy Environmental Liaison Officer
FEMA LRO
1500 Main St
Baton Rouge, LA 70802

tiffany.spann@fema.dhs.gov

RE: 160328/0250 Joint Infrastructure Recovery Request Project PEA
FEMA Funding
Orleans Parish

Dear Ms. Spann-Winfield:

The Department of Environmental Quality (LDEQ), Business and Community Outreach Division has received your request for comments on the above referenced project.

After reviewing your request, the Department has no objections based on the information provided in your submittal. However, for your information, the following general comments have been included. Please be advised that if you should encounter a problem during the implementation of this project, you should immediately notify LDEQ's Single-Point-of-contact (SPOC) at (225) 219-3640.

- Please take any necessary steps to obtain and/or update all necessary approvals and environmental permits regarding this proposed project.
- If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- All precautions should be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permits Division at (225) 219-9371 to determine if your proposed project requires a permit.
- If your project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit is required. An application or Notice of Intent will be required if the sludge management practice includes preparing biosolids for land application or preparing sewage sludge to be hauled to a landfill. Additional information may be obtained on the LDEQ website at <http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx> or by contacting the LDEQ Water Permits Division at (225) 219- 9371.
- If any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps directly regarding permitting issues. If a Corps permit is required, part of the application process may involve a water quality certification from LDEQ.
- All precautions should be observed to protect the groundwater of the region.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.
- 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.

Currently, Orleans Parish is classified as attainment with the National Ambient Air Quality Standards and has no general conformity determination obligations.

Please send all future requests to my attention. If you have any questions, please feel free to contact me at (225) 219-3954 or by email at linda.hardy@la.gov.

Sincerely,

Linda M. Hardy

Louisiana Department of Environmental Quality
Office of the Secretary
P.O. Box 4301
Baton Rouge, LA 70821-4301
Ph: (225) 219-3954
Fax: (225) 219-3971
Email: linda.hardy@la.gov



FEMA

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA-1603/1607-DR-LA
FEMA Louisiana Recovery Office
Environmental/Historic Preservation
1500 Main Street
Baton Rouge, LA 70802

May 11, 2016

Phillip E. Boggan II
State Historic Preservation Officer
Department of Culture, Recreation & Tourism
P.O. Box 44247
Baton Rouge LA 70804

RE: Section 106 Notification, Hurricane Katrina, FEMA 1603-DR-LA

Applicant: City of New Orleans and Sewerage and Water Board of New Orleans
Undertaking: Joint Infrastructure Recovery Request (JIRR): Parish-wide Repair of Roads, Drainage lines, Water lines, and Sewer lines in New Orleans, Orleans Parish, LA (CNO/DPW PA PW# 1603-21032; SWBNO PA PW# 1603-21031)

Dear Mr. Boggan II:

The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the following major Disaster Declarations:

FEMA-1603-DR-LA, dated August 29, 2005, as amended.

FEMA, through its Public Assistance Program, proposes to fund the **Joint Infrastructure Recovery Request (JIRR): Parish-wide Repair of Roads, Drainage lines, Water lines, and Sewer lines in New Orleans, Orleans Parish, LA** (Undertaking) as requested by the City of New Orleans, Department of Public Works, and the Sewerage and Water Board of New Orleans (Applicants). FEMA is notifying you of the above-referenced Undertaking pursuant to 36 CFR 800.4(b) (2), Phased Identification and Evaluation and 800.8, Coordination with the NEPA. FEMA is notifying the SHPO, affected Tribes, and Consulting parties about FEMA's intent to conduct review on amendments as they are developed and provided to FEMA (Phased Identification and Evaluation for Historic Properties).

Description of the Undertaking

The Sandy Recovery Improvement Act of 2013 (SRIA) (PL113-2), amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act and allows for greater flexibility in using federal funds for Public Assistance applicants and less administrative burden and costs, if applicants accept grants based on fixed, capped estimates following alternative procedures for permanent work. Use of all or part of the excess grant funds for cost-effective activities that reduce the risk of future damage, and independent expert validation of estimated project costs, if requested, is a viable use of the excess grant funds.

The City and the Sewerage and Water Board of New Orleans (SWBNO) seek to utilize the flexibilities provided under SRIA for FEMA-provided PA funding to repair, replace, or improve damage sustained due to Hurricane Katrina to roads, drainage lines, water lines, and sewer lines in the City and jointly restore this infrastructure to its pre-storm condition and functionality.

For this Undertaking, the Applicants proposed to following efforts at locations parish-wide:

Drainage System Damage Assessment. The proposed work will consist of the inspection of underground drainage lines that are less than 36 inches in diameter.

Underground Utility Line Point Repair or Replacement. The proposed work will consist of the demolition, removal, reconstruction and/or repair of damaged City-owned underground utility (water, sewer or drainage) lines and associated utility structures and/or roadway structures, and full-depth pavement restoration of damaged and/or excavated sections of pavement

Minor Pavement Rehabilitation. The proposed work will consist of the demolition, removal and up to full-depth pavement restoration of damaged and/or excavated sections of concrete, asphalt or composite pavement on a given street block.

Major Pavement Rehabilitation. The proposed work will consist of the demolition, removal, full-depth pavement restoration of damaged and/or excavated sections of pavement, and resurfacing of the entire street block.

Full Roadway Reconstruction. The proposed work will consist of the demolition, removal and reconstruction of the roadway pavement structure, associated pavement structures, and all city-owned underground utility lines and roadway-associated structures.

A generalized location map of the Undertaking (Figure 1) and of the Zip Codes were proposed is planned (Figure 2) are attached.

Phased Identification and Evaluation of Historic Properties

FEMA will comply with Section 106 through a phased process, conducting identification and evaluation efforts and assessing effects as each individual amendment (Incremental SOW Amendments) is identified by the Sub-Grantee.

The following outlines the process for review and approval of Incremental SOW Amendments:

1. The sub-grantee will submit a formal request to GOHSEP/FEMA for the proposed incremental SOW amendment (amendment). It shall include:
 - a. The proposed detailed design, specifications, and contract sow detailing the location/neighborhoods and schematics;
 - b. A detailed narrative description of the proposed work, an estimate of the proposed project costs, and an anticipated start and completion date of the work; and
 - c. A completed special projects checklist.
2. GOHSEP will review the amendment submittal and transmit it to FEMA.
3. FEMA EHP staff will perform a review of each amendment. FEMA will work with the grantee/sub-grantee to address any EHP concerns to ensure compliance. This effort may require modifications to the proposed project/contract.
4. Other than the non-destructive planning and design, no work or procurement should commence prior to the issuance of specific FEMA approval for each incremental amendment.
5. After FEMA has reviewed the funding eligibility of each amendment, FEMA will communicate its formal letter to GOHSEP and the sub-grantee. The sub-grantee will be encouraged to proceed with the legal procurement of the contract proposal upon the FEMA EHP clearance.

In summary, compliance for individual amendments will not be complete until FEMA concludes the review set out in the 2009 Statewide Agreement or any subsequent Agreement.

With the proposed action limited to the existing roadways, foreseeable potential effects to historic properties include: damage, alteration or removal of historic streetscape features and materials that contribute to the historic significance and character of the city's historic districts. These features may include, but are not limited to: alignment and configuration of streets, sidewalks and neutral grounds; trees or other landscaping elements; paving and curbing materials, streetcar tracks, street lights, street name tiles, or other street furniture. Additionally, unrecorded archaeological deposits associated with colonial and ante-bellum era New Orleans may be affected in certain areas of the city where the street grid has been re-aligned through time. Indirect effects to surrounding historic properties could potentially result from vibration created through extended construction activity. While these are foreseeable affects, FEMA has not made a Finding of Effect. FEMA will do this as individual amendments to the project are developed and submitted to FEMA EHP for review, if they do not meet the Allowances outlined in the 2009 Statewide Agreement.

As a general approach, FEMA shall be applying these conditions to each of the two grants, to facilitate the project specific reviews.

Conditions

The Applicant must comply with the following NHPA conditions as a general approach. Specific conditions, if necessary, will be presented with each amendment.

- Applicant will perform all Treatment Measures identified by FEMA through the Section 106 review to offset any adverse effects, as assigned by FEMA.
- Applicant will implement an **Inadvertent Discovery and Unexpected Effects Clause** to account for unanticipated discoveries and unexpected effects. It shall read: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered or unexpected effects to historic properties, including architecture, architectural elements, and/or archaeology, are identified, the applicant shall stop work in the general vicinity of the discovery or unexpected effect and take all reasonable measures to avoid or minimize harm to the finds or affected property. The applicant will ensure that the discovery or unexpected effects are secured and stabilized, as necessary, and access to the area is restricted. The applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The applicant will not proceed with work until FEMA HP completes consultation with the SHPO, and others, as appropriate.
- Applicant will implement a **Louisiana Unmarked Human Burial Sites Preservation Act** discovery provision, as well. It shall read: If human bone or unmarked grave(s) are present within the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery.

FEMA does not require a response to this notification; however, should you have any questions regarding this notification or if you need additional information regarding this Undertaking, please contact me at (504) 247-7771 or jerame.cramer@fema.dhs.gov, or Kathryn Wollan, Lead Historic Preservation Specialist at (504) 289-1941 or kathryn.wollan@fema.dhs.gov or Jason Emery, Lead Historic Preservation Specialist at (504) 570-7292 or jason.emery@fema.dhs.gov.

Sincerely,

**JERAME J
CRAMER**

Digitally signed by JERAME J CRAMER
DN: c=US, o=U.S. Government, ou=Department
of Homeland Security, ou=FEMA, ou=People,
cn=JERAME J CRAMER
0.9.2342.19200300.100.1.1=0972893910.FEMA
Date: 2016.05.12 13:13:41 -05'00'

Jeramé J. Cramer
Environmental Liaison Officer
FEMA-DR-1603-LA, FEMA-DR-1607-LA

CC: File
Division of Archaeology Reviewer
Division of Historic Preservation Reviewer
State Historic Preservation Office



Figure 1. Upper-right box denotes location of Louisiana in red. The 64 Louisiana parishes are outlined, Orleans Parish is highlighted in red. This is the area where the JIRR work will occur.

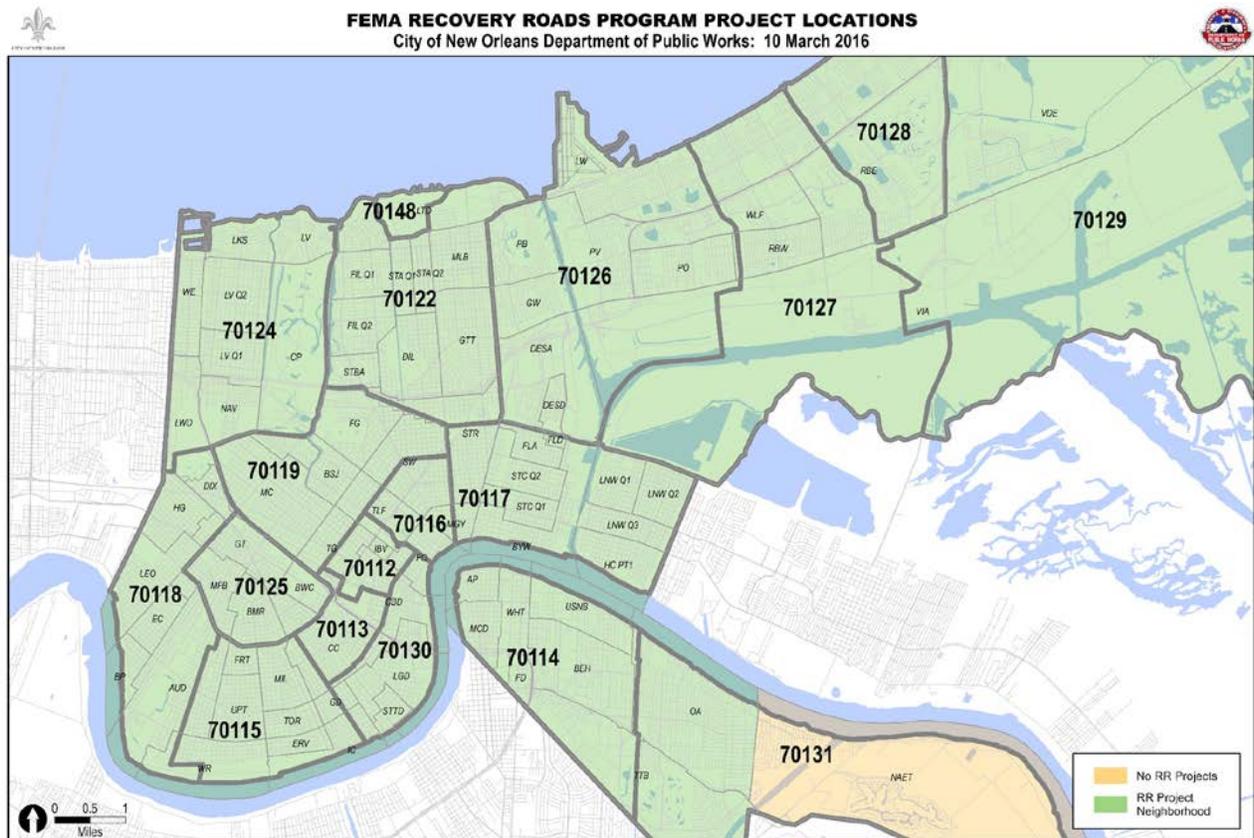


Figure 2. City Map with zip codes where proposed work will occur. Note, no work is proposed for Zip Code 70131.

APPENDIX B
PUBLIC NOTICE, 8-STEP
8-STEP PLANNING DOCUMENT, DRAFT FONSI

**PUBLIC NOTICE OF AVAILABILITY
DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT AND
DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR A JOINT INFRASTRUCTURE RECOVERY REQUEST FROM
THE CITY OF NEW ORLEANS DEPARTMENT OF PUBLIC WORKS AND
SEWERAGE AND WATER BOARD OF NEW ORLEANS**

As a result of damages from Hurricane Katrina on August 29, 2005, the Federal Emergency Management Agency (FEMA) was authorized under a Presidential disaster declaration (FEMA-1603-DR-LA) to provide Federal assistance to designated disaster areas in Louisiana. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (PL 93288), Section 406, authorizes FEMA's Public Assistance (PA) Program to provide financial and other forms of assistance to State and local governments to support response, recovery, and mitigation efforts following Presidentially declared disasters.

The Sandy Recovery Improvement Act of 2013 (SRIA) (PL113-2), amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. SRIA allows for greater flexibility in the use of federal funds for PA applicants and less administrative burden and costs, if applicants accept grant based on fixed, capped estimates following alternative procedures regarding permanent work on the basis of fixed estimates, in lieu contributions on the basis of estimates for repair, restoration, reconstruction or replacement of public facilities, consolidation of work into a single project, use of all or part of the excess grant funds for cost-effective activities that reduce the risk of future damage, and independent expert validation of estimated project costs if requested.

The purpose of this project is to repair damage sustained as a result of Hurricane Katrina to roads, drainage lines, water lines, and sewer lines within the City of New Orleans (CNO) and restore this infrastructure in order to provide safe and adequate transportation facilities that promote future community growth and economic development, more efficiently provide safe drinking water, to support fire protection and the public health of all residents, improve sewerage collection services to support public safety and sanitation, and more effectively collect and convey stormwater out of the City to reduce the risk from future flooding events. Storm-related damage is negatively impacting the ability of these critical infrastructure systems to function as intended, inhibiting growth and economic development, accelerating further degradation due to normal usage, and exposing the public to undo hardship and health risks. Work in neighborhoods without any work planned as part of this project may be completed by the City under other programs as additional funding becomes available in accordance with the City's pavement management system and capital improvement program.

The City and the Sewerage and Water Board of New Orleans (SWBNO) seek to utilize the flexibilities provided under SRIA for FEMA-provided PA funding to repair, replace, or improve damage sustained due to Hurricane Katrina to roads, drainage lines, water lines, and sewer lines in the City and jointly restore this infrastructure to its pre-storm condition and functionality.

In accordance with 44 CFR Part 10, FEMA regulations to implement the National Environmental Policy Act (NEPA), a Programmatic Environmental Assessment (PEA) for the JIRR Project will be prepared. The purpose of the PEA is to analyze the potential environmental impacts associated with the repair, replacement, or improvements of roads, drain lines, water lines, and sewer lines located in neighborhoods within the City of New Orleans and to determine whether to prepare an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI). The draft FONSI is FEMA's finding that the preferred action will not have a significant effect on the human and natural environment.

The purpose of the PEA is to analyze the potential environmental impacts associated with the preferred action and two alternatives. The draft EA evaluates a No Action Alternative; the Preferred Action Alternative, which is to implement a *Comprehensive infrastructure repair and restoration program* (the FEMA-Funded Recovery Road Program); and an Alternative Action, which is to *Complete repairs, replacements or improvements using the standard FEMA PA grant process*.

Additional NEPA documents providing greater detail will follow this PEA once the plans and specifications for individual projects are developed beyond the preliminary design stage. These future reports for individual projects within the Recovery Roads Program will be evaluated to determine whether to prepare a Record of Environmental Consideration (REC) for the project or a Stand-alone Environmental Assessment (SEA).

The draft PEA and draft FONSI are available for review at the following locations:

New Orleans Main Public Library, 219 Loyola Ave., New Orleans, Louisiana 70112 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

East New Orleans Branch Library, 5641 Read Blvd., New Orleans, Louisiana 70127 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Robert E. Smith Branch Library, 6301 Canal Blvd., New Orleans, Louisiana 70124 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Algiers Regional Library, 3014 Holiday Dr., New Orleans, Louisiana 70131 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday, 10:00 a.m. to 5:00 p.m. Friday and Saturday, and 1:00 p.m. to 5:00 p.m. Sunday).

Martin Luther King Branch Library, 1611 Caffin Ave., New Orleans, Louisiana 70117 (hours of operation are 10:00 a.m. to 8:00 p.m., Monday-Thursday and 10:00 a.m. to 5:00 p.m. Friday and Saturday).

The documents also can be downloaded from FEMA's website at <http://www.fema.gov/media-library/search/ADD>

This public notice is being published on Friday 13 May, Sunday 15 May, Wednesday 18 May, and Friday 20 May 2016, in the Times-Picayune, the journal of record for Orleans Parish.

This public notice is also being published on Thursday 12 May through Friday 20 May 2016, in the Baton Rouge Advocate.

The public comment period will be 15 days, which will conclude on June 6, 2016. Written comments on the Notification or related matters can be faxed to FEMA's Louisiana Recovery Office at (225) 267-2962 or emailed to: fema-noma@dhs.gov; or mailed to FEMA Louisiana Recovery Office, Attn: FEMA EHP, 1500 Main Street, Baton Rouge, Louisiana 70802. Comments also may be e-mailed to fema-noma@dhs.gov or faxed to (225) 346-5848. Verbal comments will be accepted or recorded at 504-491-0399. If no substantive comments are received, the draft EA and associated FONSI will become final.

**FLOODPLAIN 8-STEP PLANNING DOCUMENT
CITY OF NEW ORLEAN
DEPARTMENT OF PUBLIC WORKS AND
SEWER AND WATER BOARD
COMPREHENSIVE INFRASTRUCTURE REPAIR PROGRAM
ENVIRONMENTAL ASSESSMENT
FEMA 1603-DR-LA**

Executive Order 11988 - FLOODPLAIN MANAGEMENT
Executive Order 11990 - WETLAND PROTECTION

Date: 12 April 2016

Prepared by: John Renne, Floodplain Specialist

Applicant: City of New Orleans

Project Title: Comprehensive Infrastructure Repair Program

Early in the morning on August 29, 2005, Hurricane Katrina struck the Gulf Coast of the United States, near the City of New Orleans. The storm made landfall as a Category 3 storm on the Saffir-Simpson Hurricane Scale, with sustained winds of 100–140 miles per hour. By the time Hurricane Katrina struck New Orleans, it had already been raining heavily for hours, saturating the ground and weakening roadway foundations. When the storm surge arrived, many of the City’s levees and floodwalls were overwhelmed and failed. Eventually, nearly 80 percent of the city was under up to 16 feet of water. A significant part of the City remained flooded for several weeks and it took 43 days to completely remove the flood waters from the City. The road network was then subjected to heavy traffic loadings as a result of the debris removal and usage by emergency and heavy construction vehicles.

As a result of damages from Hurricane Katrina on August 29, 2005, the Federal Emergency Management Agency (“FEMA”) was authorized under a Presidential disaster declaration (FEMA-1603-DR-LA) to provide Federal assistance to designated disaster areas in Louisiana. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (PL 93288), Section 406, authorizes FEMA’s Public Assistance (PA) Program to provide financial and other forms of assistance to State and local governments to support response, recovery, and mitigation efforts following Presidentially declared disasters. The Sandy Recovery Improvement Act of 2013 (“SRIA”) (PL113-2), amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by adding Section 429, to establish an expedited and unified interagency review process to ensure compliance with environmental and historic requirements under Federal law relating to disaster recovery projects, in order to expedite the recovery process, consistent with applicable law. This process coordinates environmental and historic preservation reviews to expedite planning and decision-making for disaster recovery projects. SRIA also allows for greater flexibility in the use of Federal funds for PA applicants and far less administrative burden and costs, if applicants accept grants based on fixed, capped estimates following alternative procedures regarding permanent work on the basis of fixed estimates, in lieu contributions on the basis of estimates for repair, restoration, reconstruction or replacement of public facilities,

consolidation of work into a single project, use of all or part of the excess grant funds for cost-effective activities that reduce the risk of future damage, and independent expert validation of estimated project costs if requested.

In accordance with 44 CFR Part 10, FEMA regulations to implement the national Environmental Policy Act (“NEPA”), a Programmatic Environmental Assessment (“PEA”) for the JIIR Project will be prepared. The purpose of the PEA is to analyze the potential environmental impacts associated with the repair of roads, drain lines, water lines, and sewer lines located in 72 neighborhoods within the City of New Orleans and to determine whether to prepare an Environmental Impact Statement (“EIS”) or Finding of No Significant Impact (“FONSI”). Additional NEPA documents providing greater detail will follow (tier off) this PEA once the plans and specifications for individual projects are developed beyond the preliminary design stage. These future tiered reports for individual projects within the Recovery Roads Program will be referred to as Individual Environmental Reports (“IERs”) and be used to determine whether to prepare a Record of Environmental Consideration (“REC”) for the project or a Stand-alone Environmental Assessment (“SEA”) is required. Supplementary IERs may be added on a case-by-case basis if needed to account for additional unforeseen conditions during final design or construction.

FEMA is preparing a National Environmental Policy Act (NEPA) Environmental Assessment (EA), incorporated by reference herein, to analyze potential environmental impacts of the proposed project, including those affecting facilities in the base floodplain and protection of wetlands. FEMA will use the findings in the EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI), and to support the floodplain and wetland “eight-step” planning and public participation requirements in 44 C.F.R. Part 9.

44 C.F.R. 9.6 details an eight-step process that decision-makers must use when considering projects that have potential impacts to or within the floodplain. The eight-step process assesses the action with regard to human susceptibility to flood harm and impacts to wetlands. The eight-step analyzes principle flood problems, risks from flooding, history of flood loss, and existing flood protection measures. The process includes public notice and opportunity for the public to have early and meaningful participation in decision-making and alternative selection. In conjunction with the EA development, the eight-step process formulates and describes considered alternatives; determines their practicability; and includes requirements to incorporate measures to minimize and mitigate potential risks from flooding and impacts to wetlands.

STEP 1

Determine whether the proposed actions are located in a wetland and/or the 100-year floodplain (500-year floodplain for critical actions [44 C.F.R. § 9.4]), or whether they have the potential to affect or be affected by a floodplain or a wetland (see 44 C.F.R. § 9.7).

The project is located in a floodplain as mapped by:

Orleans Parish Flood Insurance Study
Preliminary 22071CV000A dated 13 November 2008

Revised Preliminary Digital Flood Insurance Rate Map Panels
Dates: 13 November 2008, 09 November 2012, and 01 December 2014

The project is located in a wetland as identified by:

A review of the U.S. Fish and Wildlife National Wetland Inventory indicates the proposed project location is not located in a mapped wetland or U.S. waters.

STEP 2

Notify the public at the earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision making process (see 44 C.F.R. § 9.8).

Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Notice will be or has been provided by:

Applicable - Notice will be or has been provided by: A cumulative public notice was published in the *New Orleans Times Picayune*, *Baton Rouge Advocate*, *Lafayette Daily Advertiser*, *Lake Charles American Press* and the *Hammond Star* on 7-9 November 2005. The public is invited to comment on the proposed action. This public notice is being published on Friday 13 May, Sunday 15 May, Wednesday 18 May, and Friday 20 May 2016, in the *Times-Picayune*, the journal of record for Orleans Parish. This public notice is also being published on Thursday 12 May through Friday 20 May 2016, in the *Baton Rouge Advocate*. The public comment period will be 15 days, which will conclude on June 6, 2016. Written comments on the Notification or related matters can be faxed to FEMA's Louisiana Recovery Office at (225) 267-2962 or emailed to: fema-noma@dhs.gov; or mailed to FEMA Louisiana Recovery Office, Attn: FEMA EHP, 1500 Main Street, Baton Rouge, Louisiana 70802. Comments also may be e-mailed to fema-noma@dhs.gov or faxed to (225) 346-5848. Verbal comments will be accepted or recorded at 504-491-0399. If no substantive comments are received, the draft EA and associated FONSI will become final.

STEP 3

Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions and the "no action" option) [see 44 C.F.R. § 9.9]. If a practicable alternative exists outside the floodplain or wetland, FEMA must locate the action at the alternative site.

Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Alternatives identified in the EA document or as described below: This PEA presents an analysis of three alternatives: Alternative 1 (No Action Alternative), Alternative 2 (Preferred Action Alternative – Comprehensive Infrastructure Repair and Restoration Program), and Alternative 3 (Complete Repairs on a System Basis). Alternatives 4 (Strategic Infrastructure Restoration) and 5 (Full Reconstruction) were eliminated from further consideration in this PEA because they do not meet the project’s screening criteria.

- **Alternative 1: No Action** –Under the No Action Alternative, CNO and SWBNO would not receive FEMA funding to repair any damaged roads, drain lines, water lines, and sewer lines. Storm-related damage would continue to negatively impact the ability of these roads, drain lines, water lines, and sewer lines to function as intended. Consequently, the community would be deprived of critical infrastructure which would inhibit the City’s future growth and economic development, accelerating further degradation of the City’s transportation network, drainage system, water distribution system, and sewerage collection system, and exposing the public to undo hardship and health risks. This alternative does not meet the purpose and need, but will continue to be evaluated throughout this PEA and serve as a baseline comparison of impacts from other action alternatives.
- **Alternative 2: Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative)** – The preferred action alternative would utilize FEMA-provided PA funding to repair, replace, or improve storm-damage roads and underground utility lines to pre-storm condition and functionality. Comprehensive infrastructure repair and restoration projects will consist of one or more of the following project elements: drainage system damage assessment, underground utility line point repair or replacement, incidental repairs, minor rehabilitation, and major rehabilitation and full roadway reconstruction (details included in construction section). Equipment utilized to perform this work may include, but not limited to, dump trucks, powered hand equipment to saw cut pavement and break-up damaged pavement, front end loader, backhoe, boring machine, excavator, pipe puller, pipe lining machine, concrete truck, compactor, bulldozer, grader, milling machine, asphalt paver, roadway striping machine, and asphalt roller.
- **Alternative 3: Complete System Repair** – This alternative consists of the completion of repairs to roads and drain lines by the City’s Department of Public Works (DPW) separate and independent of repairs to water and sewer

lines by the Sewerage and Water Board of New Orleans (SWBNO), allowing each sub-grantee to complete repairs according to their own priorities. This alternative would likely result in newly paved roads being torn up to enable the completion of water and/or sewer line repairs, increasing construction-related impacts to residents and increasing the risk for a duplication of PA program benefits. Recent governance reforms have been instituted by the City to consolidate management oversight of road and utility-related infrastructure and increase coordination amongst agencies working in the public right of way to improve efficiency and mitigate construction-related impacts. This alternative is a less desirable alternative, however, it does not necessarily render this action alternative unreasonable. Although the conflicts inherent in this alternative must be considered, the alternative nevertheless meets the purpose and need of the action. This action alternative, therefore, will continue to be evaluated throughout this PEA.

- **Alternative 4 – Strategic Infrastructure Restoration** - This alternative involved the relocation of residents from neighborhoods and other areas within the City where severe infrastructure damage occurred and/or with a high degree of risk in future flood events to alternative neighborhood locations within the City, reconstruction or major rehabilitation of streets in these neighborhoods, and converting heavily damaged and high risk areas to green space. This alternative would have required extensive real estate acquisition and population displacement and re-settlement, and resulted in substantial impacts to cultural and environmental resources. Based on how the City’s transportation network, drainage system, water distribution system, and sewer collection system are currently designed to operate and are laid out, this alternative would also have required a comprehensive re-engineering of these infrastructure systems to adjust operations and compensate for any portions of the current systems that would have been removed from service. This alternative was eliminated from further consideration as impractical, inconsistent with the project purpose and need, and not suitable for FEMA funding under its PA program.
- **Alternative 5 – Full Reconstruction** - This alternative involved the complete reconstruction of all streets within Orleans Parish, to include roadway pavement, drain lines, water lines, sewer lines, and other associated infrastructure such as sidewalks, gutters, curbs, street furniture, signalization, street lighting, and signage located within the public right of way. This alternative would cost approximately \$10 billion dollars and take approximately 30 years to complete. This alternative was eliminated from further consideration as impractical and not suitable for FEMA funding under its PA program.

STEP 4

Identify the full range or potential direct or indirect impacts associated with, the occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action (see 44 C.F.R. § 9.10).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Alternatives are described below:

- **Alternative 1: No Action** – NEPA analyses must include an evaluation of the No Action Alternative, against which the effects of the action alternatives can be evaluated and compared. Under the No Action Alternative, FEMA would not provide PA funding to the City to repair damage sustained as a result of Hurricane Katrina to roads, drainage lines, water lines, and sewer lines within Orleans Parish. The City could choose to move forward with these repairs on its own with additional financial assistance from other sources; however, the potential for this to occur is entirely speculative and not likely. Therefore, for the purposes of this NEPA analysis, it is assumed that under the No Action Alternative no new repairs would be completed on damaged roads, drain lines, water lines, and sewer lines. Storm-related damage would continue to negatively impact the ability of these roads, drain lines, water lines, and sewer lines to function as intended, inhibiting the City’s future growth and economic development, accelerating further degradation of the City’s transportation network, drainage system, water distribution system, and sewerage collection system, and exposing the public to undo hardship and health risks.
- **Alternative 2: Comprehensive Infrastructure Repair and Restoration Program (Preferred Alternative)** – Alternative 2 was reviewed for possible impacts associated with occupancy or modification to a floodplain. Sewer overflows from flooding can overwhelm the capacity of drainage systems, roads, culverts, channels, and detention structures. The comprehensive infrastructure repair and restoration program would restore the roads and utility infrastructure, which will increase the capacity for draining and conveying high stormwater flows and reduce flooding. The repaired infrastructure will reduce spills and leakage from the sewer system and reduce human health and ecological impacts. The infrastructure repair would encourage redevelopment in the base floodplain and stimulate future growth subject to damage in future flooding. Repairs and reconstruction will also increase the useful life of the facilities. The program would maintain and likely expand significant investment in the base floodplain and expose facilities to moderate residual flood hazards, which may increase the need for future disaster assistance. The project would accommodate the existing uses of the floodplain and reinforce existing land use patterns that have developed without reflection on flood hazard and risk minimization. Floodplain development requiring mitigation

and minimization treatment measures and compliance with floodplain codes and standards would increase costs. Adverse impacts to floodplains during construction could result from temporary service disruptions that would render portions of the system inoperable and contribute to an increase in localized flooding. Poorly maintained construction sites can lead to the release of pollutants to stormwater runoff and increased sedimentation, which would reduce water quality.

- **Alternative 3: Complete Repairs on a System Basis** – Sewer overflows from flooding can overwhelm the capacity of drainage systems, roads, culverts, channels, and detention structures. The comprehensive infrastructure repair and restoration program would restore the roads and utility infrastructure, which will increase the capacity for draining and conveying high stormwater flows and reduce flooding. The repaired infrastructure will reduce spills and leakage from the sewer system and reduce human health and ecological impacts. The infrastructure repair would encourage redevelopment in the base floodplain and stimulate future growth subject to damage in future flooding. Repairs and reconstruction will also increase the useful life of the facilities. The program would maintain and likely expand significant investment in the base floodplain and expose facilities to moderate residual flood hazards, which may increase the need for future disaster assistance. The project would accommodate the existing uses of the floodplain and reinforce existing land use patterns that have developed without reflection on flood hazard and risk minimization. Floodplain development requiring mitigation and minimization treatment measures and compliance with floodplain codes and standards would increase costs. Adverse impacts to floodplains during construction could result from temporary service disruptions that would render portions of the system inoperable and contribute to an increase in localized flooding. Poorly maintained construction sites can lead to the release of pollutants to stormwater runoff and increased sedimentation, which would reduce water quality.

STEP 5

Minimize the potential adverse impacts and support to or within floodplains and wetlands to be identified under Step # 4, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands (see 44 C.F.R. § 9.11).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable – Construction of the infrastructure shall be completed in accordance with all local floodplain ordinances with applicable codes and standards applied to mitigate and minimize adverse effects (compliance with locally-adopted minimum NFIP standards and requirements).

Adverse effects would be minimized in accordance with FEMA’s minimization standards in 44 CFR 9.11. Treatment measures would be

required to reduce adverse impacts below the level of significance. New construction must be compliant with current codes and standards. Per 44 C.F.R. § 9.11(d)(6), no project should be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the NFIP. The Applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. Coordination pertaining to these activities and Applicant compliance with any conditions must be documented and copies forwarded to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA for inclusion in the permanent project files. The replacement of facility contents, materials and equipment (mechanical and electrical) must be, where possible, wet or dry-proofed, elevated, or relocated to or above the BFE, or the level of the 500-year flood for critical actions. FEMA will require a site-specific Tiered EA for projects in the floodplain.

In order to minimize indirect impacts (erosion, sedimentation, dust, and other construction-related disturbances) to the nearby waters of the United States and well-defined drainage areas surrounding the site, the contractor should implement Best Management Practices (BMPs) that meet the Louisiana Department of Environmental Quality's (LDEQ's) permitting specifications for storm water discharge regulated under §§ 401 and 402 of the CWA, and include the following into the daily operations of the construction activities: silt screens, barriers (e.g., hay bales), berms/dikes, and/or fences or other such components to be placed where and as needed.

STEP 6

Reevaluate the proposed action to determine first, if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others and its potential to disrupt floodplain and wetland values and second, if alternatives preliminarily rejected at Step # 3 are practicable in light of the information gained in Steps # 4 and # 5. FEMA shall not act in a floodplain or wetland unless it is the only practicable location (see 44 C.F.R. § 9.9).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - The proposed action is the chosen practicable alternative based upon a review of possible adverse effects on the floodplain and community and socioeconomic expectations.

STEP 7

Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative (see 44 C.F.R. § 9.12).

- Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Finding is or will be prepared as described below:

A public notice has been published as part of the NEPA Environmental Assessment for the proposed action.

STEP 8

Review the implementation and post-implementation phases of the proposed action to ensure that the requirements of the order are fully implemented. Oversight responsibility shall be integrated into existing processes.

Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Review the implementation and post-implementation phase of the proposed action to ensure that the requirement stated in 9.11 are fully implemented.

Applicable - Oversight responsibility established as follows:



FEMA

**U.S. Department of Homeland Security
Federal Emergency Management Agency, Region VI
Louisiana Recovery Office
1500 Main Street
Baton Rouge, Louisiana 70802**

**DRAFT FINDING OF NO SIGNIFICANT IMPACT
JOINT INFRASTRUCTURE RECOVERY REQUEST FROM
THE CITY OF NEW ORLEANS AND
SEWERAGE AND WATER BOARD OF NEW ORLEANS
*FEMA-1603-DR-LA***

BACKGROUND

Hurricane Katrina, a Category 3 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 125 miles per hour (mph). The accompanying high winds and storm surge caused extensive damage to public infrastructure throughout the City of New Orleans.

As a result of damages from Hurricane Katrina, the Federal Emergency Management Agency (FEMA) was authorized under a Presidential disaster declaration (FEMA-1603-DR-LA) to provide Federal assistance to designated disaster areas in Louisiana. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (PL 93288), Section 406, authorizes FEMA's Public Assistance (PA) Program to provide financial and other forms of assistance to State and local governments to support response, recovery, and mitigation efforts following Presidentially declared disasters.

The Sandy Recovery Improvement Act of 2013 (SRIA) (PL113-2), amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. SRIA allows for greater flexibility in the use of federal funds for PA applicants and less administrative burden and costs, if applicants accept grants based on fixed, capped estimates following alternative procedures regarding permanent work on the basis of fixed estimates, in lieu contributions on the basis of estimates for repair, restoration, reconstruction or replacement of public facilities, consolidation of work into a single project, use of all or part of the excess grant funds for cost-effective activities that reduce the risk of future damage, and independent expert validation of estimated project costs if requested.

The purpose of this project is to repair, improve, or replace damage sustained as a result of Hurricane Katrina to roads, drainage lines, water lines, and sewer lines within the City of New Orleans (CNO) and restore this infrastructure in order to provide safe and adequate transportation facilities that promote future community growth and economic development, more efficiently provide safe drinking water, to support fire protection and the public health of all residents, improve sewerage collection services to support public safety and sanitation, and more effectively collect and convey stormwater out of the City to reduce the risk from future flooding events. Storm-related damage is negatively impacting the ability of these critical infrastructure systems to function as intended, inhibiting growth and economic development, accelerating further

degradation due to normal usage, and exposing the public to undo hardship and health risks. Work in neighborhoods without any work planned as part of this project may be completed by the City under other programs as additional funding becomes available in accordance with the City's pavement management system and capital improvement program.

The City and the Sewerage and Water Board of New Orleans (SWBNO) seek to utilize the flexibilities provided under SRIA for FEMA-provided PA funding to repair, replace, or improve damage sustained due to Hurricane Katrina to roads, drainage lines, water lines, and sewer lines in the City and jointly restore this infrastructure to its pre-storm condition and functionality.

Pursuant to the Council on Environmental Quality's procedures for implementing the National Environmental Policy Act (NEPA) at 40 C.F.R. § 1506.3 and in accordance with 44 C.F.R. Part 10, FEMA regulations to implement NEPA, a Programmatic Environmental Assessment (PEA) was prepared. The purpose of the PEA is to analyze the potential environmental impacts associated with the preferred action and two alternatives. The draft EA evaluated a No Action Alternative; the Preferred Action Alternative, which is to implement a ***Comprehensive infrastructure repair and restoration program*** (the FEMA-Funded Recovery Road Program); and an Alternative Action, which is to ***Complete repairs, replacements or improvements using the standard FEMA PA grant process***.

In accordance with 44 CFR Part 10, FEMA regulations to implement the National Environmental Policy Act (NEPA), a Programmatic Environmental Assessment (PEA) for the JIRR Project has been prepared. The purpose of the PEA is to analyze the potential environmental impacts associated with the repair, replacement, or improvements of roads, drain lines, water lines, and sewer lines located in neighborhoods within the City of New Orleans and to determine whether to prepare an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI). The draft FONSI is FEMA's finding that the preferred action will not have a significant effect on the human and natural environment.

Additional NEPA documents providing greater detail will follow this PEA once the plans and specifications for individual projects are developed beyond the preliminary design stage. These future reports for individual projects within the Recovery Roads Program will be evaluated to determine whether to prepare a Record of Environmental Consideration (REC) for the project, A Tiered Site-Specific EA or a Stand-alone Environmental Assessment.

FINDINGS

FEMA has evaluated the proposed project for significant adverse impacts to geology, soils, water resources (surface water, groundwater, and wetlands), floodplains, coastal resources, air quality, biological resources (vegetation, fish and wildlife, federally-listed threatened or endangered species and critical habitats), cultural resources, socioeconomics (including minority and low income populations), safety, noise, and hazardous materials. The results of these evaluations, as well as consultations and input from other federal and state agencies, are presented in the PEA. During the construction period, short-term impacts to water quality, air quality, and noise are anticipated. All short-term impacts require conditions to minimize and mitigate impacts to the proposed project site and surrounding areas.

CONDITIONS

The following conditions and mitigation measures must be met as part of the implementation of the project. Failure to comply with these conditions and mitigation measures will jeopardize federal funds:

- Follow applicable state, territory, tribal, and local permitting requirements for construction;
- Water down construction site two to three times per day if dust emissions become a problem;
- Enclose or water down exposed dirt storage piles;
- Minimize the disturbed area and preserve vegetation to the maximum extent possible;
- Maintain topsoil whenever possible;
- Phase construction activities to the extent possible;
- Control stormwater flowing to and through the project site;
- Protect slopes by using measures such as erosion control blankets, bonded fiber matrices, turf reinforcement mats, silt fences (for moderate slopes), etc.;
- Temporarily protect storm drain inlets until site is stabilized;
- Retain sediment on-site and control dewatering practices by using sediment traps or basins for large areas (> 1 acre) when appropriate;
- Establish stabilized construction entrances/exits (e.g. large crushed rocks, stone pads, steel wash racks, hose-down systems, and pads);
- Limit construction activities, including operation of heavy machinery, to normal business hours (M-F 7am-5pm);
- Avoid engaging in construction activities within 200 feet of noise-sensitive receptors such as schools, hospitals, residential areas, nursing homes, etc.
- Ensure adequate maintenance of equipment, including proper engine maintenance, adequate tire inflation, and proper maintenance of pollution control devices;
- The Applicant is required to protect existing individual trees through project design and implementation. If tree removal is unavoidable, the Applicant is required to plant two new trees for every one removed.
- Applicant shall comply with all local, state, and federal requirements related to sediment control, disposal of solid waste, control and containment of spills, and discharge of surface runoff and stormwater from the site.

- Prior to construction activities, at least 48-hours notice must be given to residents and emergency response agencies in advance of any street closures, anticipated periods of low water pressure, or disruptions in service for non-Applicant-controlled utilities.
- Care should be taken to ensure that any potentially hazardous or toxic materials used for, generated, or encountered during pressure washing, cleaning, or any other construction activities, do not impact groundwater, waterways, wetlands, or nearby stormwater conveyance systems. Potentially hazardous and toxic wastes generated or encountered during these processes should be isolated, contained, and disposed of in an approved manner. This condition includes petroleum products and by-products use in machinery and equipment. The Applicant shall be responsible for complying with all relative rules of the Clean Water Act (CWA). No activity performed should have any impact on waters of the state.
- Individual construction projects may require stormwater pollution prevention plans consistent with the Applicant's MS4 permit. The Applicant is responsible for preparing and implementing any such required plans.
- In order to minimize indirect impacts (erosion, sedimentation, dust, and other construction-related disturbances) to nearby waters of the U.S. and surrounding drainage areas, the contractor must ensure compliance with all local, state, and federal requirements related to sediment control, disposal of solid waste, control and containment of spills, and discharge of surface runoff and stormwater from the site. All documentation pertaining to these activities and Applicant compliance with any conditions should be forwarded to LA GOHSEP and FEMA for inclusion in the permanent project files.
- The Applicant is responsible for acquiring any Section 401/404 Clean Water Act (CWA) permits and/or Section 10 permits under the Rivers and Harbors Act. When these permits are required, Applicant must maintain documentation of compliance with applicable Nationwide Permit (NWP), exemption from requirements, or obtain individual permits from U.S. Army Corps of Engineers prior to construction, unless exempt by the NWP from pre-construction notification. The Applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- The Applicant shall ensure that best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the clean water act and executive order 11990.
- The Louisiana Department of Natural Resources (LDNR) requires that a complete Coastal Use Permit (CUP) Application package (Joint Application Form, location maps, project illustration plats with plan and cross section views, etc.) along with the appropriate application fee, be submitted to their office prior to construction. The Applicant is responsible for coordinating with and obtaining any required CUPs or other authorizations from the LDNR OCM's Permits and Mitigation Division prior to initiating work. The Applicant must comply with all conditions of the required permits. All documentation

pertaining to these activities and Applicant compliance with any conditions should be forwarded to the state and FEMA for inclusion in the permanent project files.

- Coordination with the appropriate local levee district(s) would be required for work within 1,500 feet of Mississippi River levees and/or within 300 feet of hurricane protection levees. CNO and SWBNO are responsible for obtaining any required permits from these districts and following any conditions imposed.
- Erosion control measures must be implemented for any ground disturbing activities (e.g. excavated areas to receive concrete fill, ground disturbed by heavy equipment). Choice of erosion control measure will be employed based on the type and duration of disturbance (i.e. fiber rolls may be used to control sediment runoff around excavated sites that will be filled with concrete, areas of broken ground due to heavy equipment may receive mulch or hydro-seeding to control sediment runoff as needed, etc.).
- A spill prevention and emergency response plan (SPERP) will be required for all construction contractor groups. The SPERP will need to identify at a minimum: emergency contact numbers for local, state and federal environmental and public health agencies, material safety data sheets (MSDS) for all hazardous substances, hazardous material inventory, spill prevention plan, spill response plan/emergency response plan, spill response equipment (e.g. absorbent pads, disposal containers) and reporting requirements.
- Avoid engaging in construction activities within 660 feet of a bald or golden eagle nest during nesting and fledging, as nesting eagles are quite sensitive to human activities during these times.
- No project may be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the NFIP. FEMA PA-funded projects carried out in the floodplain must be coordinated with the local floodplain administrator for a floodplain development permit prior to the undertaking, and the action must be carried out in compliance with relevant, applicable, and required local codes and standards and thereby, will reduce the risk of future flood loss, minimize the impacts of floods on safety, health, and welfare, and preserve and possibly restore beneficial floodplain values as required by E.O. 11988. Coordination pertaining to these activities and Applicant compliance with any conditions should be documented and copies forwarded to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and FEMA for inclusion in the permanent project files.
- Adverse effects must be minimized in accordance with FEMA's minimization standards in 44 C.F.R. § 9.11. Treatment measures would be required to reduce adverse impacts below the level of significance.
- If any asbestos containing materials (ACM) and/or other hazardous materials are found during remediation or repair/replacement activities, the Applicant shall comply with all federal, state, and local abatement and disposal requirements under the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Louisiana Administrative Code 33:III 5151. Demolition activities related to possible asbestos-containing materials (PACM) must be inspected for ACM/PACM where it is safe to do so. Should ACM be

present, the Applicant is responsible for ensuring proper disposal in accordance with the previously referenced administrative orders. Regardless of the asbestos content, the Applicant is responsible for ensuring that all renovation or demolition activities are coordinated with the LDEQ to the extent required prior to initiating work. All documentation pertaining to these activities and Applicant compliance with any conditions should be forwarded to the state and FEMA for inclusion in the permanent project files.

- Unusable equipment, debris, and material shall be disposed of in an approved manner and location. The Applicant must handle, manage, and dispose of petroleum products, hazardous materials, and/or toxic waste in accordance with all local, state, and federal agency requirements. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- Appropriate measures for the proper assessment, remediation, management, and disposal of any contamination discovered in the course of construction activities must be initiated in accordance with applicable federal, state, and local regulations. The contractor is required to take appropriate actions to prevent, minimize, and control the spill of hazardous materials at the proposed site.
- Contractor and/or sub-contractors must properly handle, package, transport and dispose of hazardous materials and/or waste in accordance with all local, state, and federal regulations, laws, and ordinances, including all Occupational Safety and Health Administration worker exposure regulations covered within 29 C.F.R. Parts 1910 and 1926.
- All work affecting the Agriculture Street Landfill Superfund Site must be undertaken in accordance with the Consent Decree between the City and USEPA including the *Technical Abstract for Utility Operations within the Agriculture Street Landfill Superfund Site*.
- Louisiana law (Part VII of Chapter 8 of Title 40, and the sections as R.S. 40:1749.11 to 40:1749.26) requires excavators and demolishers to call a regional notification center prior to beginning work. Prior to any excavation or demolition, each excavator or demolisher, including cable television owners or operators, shall serve telephonic notice of the intent to excavate or demolish to the regional notification center serving the area in which the proposed excavation or demolition is to take place. Such notice shall be given to the notification center at least 96 hours, but not more than 120 hours (excluding weekends and holidays) prior to the commencement of any excavation or demolition activity. See entire laws at www.laonecall.com or call 1-800-272-3020 for more information.
- This project involves the modification of a public structure that may contain surfaces coated with lead-based paint. The Applicant is responsible complying with all local, state, and federal laws and ensuring that project activities are coordinated with the Louisiana Department of Environmental Quality for abatement activities.
- The Applicant is responsible for obtaining and/or complying with all federal, state and local permits, ordinances and/or requirements for the collection, handling, storage, transportation and disposal of any medical, hazardous, biological, radiological, pharmaceutical or toxic related waste or debris. Equipment such as ice machines,

refrigerators, generators, air conditioning units, computers, and televisions may contain chlorofluorocarbons (CFCs), used oil, diesel and other petroleum products, mercury switches, used oil filters, fuel filters, and batteries. The Applicant shall handle, manage, and dispose of damaged materials and equipment that may be hazardous waste, universal waste, and hazardous materials in accordance with the requirements of local, state, and federal regulations.

- Contractor and/or Subcontractors will properly handle, package, transport and dispose of hazardous materials and/or waste in accordance with all local, state and federal regulations, laws and ordinances including all OSHA worker exposure regulations covered within 29 CFR 1910 and 1926.
- All waste is to be transported by an entity maintaining a current "waste hauler permit" specifically for the waste being transported, as required by Louisiana Department of Transportation and Development (DOTD), LDEQ, and other regulations.
- Disposal of demolition debris must be in accordance with all federal, state, and local laws, regulations, and rules. Prior to disposal, the Applicant must identify and provide to FEMA and GOHSEP the waste disposal site, including the complete name, location, telephone number, and contact person of the facility. Due to the presence of the Agriculture Street Landfill Superfund site and the potentially hazardous nature of material to be removed from the site, all construction and demolition debris must be disposed in a Type I Industrial Landfill. The disposal facility must be permitted by the State of Louisiana Department of Environmental Quality Permit Support Division to receive Regulated Asbestos Containing Material. Waste must be packaged, labeled, manifested, and transported in accordance with LDEQ regulations and requirements.
- To minimize worker and public health and safety risks from project construction and closure, all construction and closure work must be done using qualified personnel trained in the proper use of construction equipment, including all appropriate safety precautions. Additionally, all activities must be conducted in a safe manner in accordance with the standards specified in OSHA regulations.
- Appropriate signage and barriers shall be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes. The contractor will implement traffic control measures, as necessary. This shall include Applicant 24-hour emergency contact information.
- Applicant is responsible for maintaining construction site perimeter fencing.
- The Applicant and its contractor(s) must take all reasonable precautions to control construction site access during project implementation, including posting appropriate signage and fencing to minimize foreseeable potential public safety concerns. All activities shall be conducted in a safe manner in accordance with OSHA work zone traffic safety requirements. Truck and equipment routes must be kept free of construction debris.
- The Applicant and its contractor(s) are responsible for implementing all traffic control and warning in accordance with the Manual of Uniform Traffic Control Devices, including

placing signs and signals in advance of construction activities in order to alert pedestrians and motorists of the upcoming work and traffic pattern changes.

- Applicant will perform all Treatment Measures identified by FEMA through the Section 106 review to offset any adverse effects.
- Applicant will implement an **Inadvertent Discovery Clause** to account for unanticipated discoveries. It shall read: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the Applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The Applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The Applicant will not proceed with work until FEMA HP completes consultation with the SHPO, and others as appropriate.
- Applicant will implement a **Louisiana Unmarked Human Burial Sites Preservation Act** discovery provision, as well. It shall read: If human bone or unmarked grave(s) are present within the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The Applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four (24) hours of the discovery. The Applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two (72) hours of the discovery.

General comments/conditions provided by LDEQ:

- If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- All precautions should be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permits Division at (225) 219-9371 to determine if your proposed project requires a permit.
- If your project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit is required. An application or Notice of Intent will be required if the sludge management practice includes preparing biosolids for land application or preparing sewage sludge to be hauled to a landfill. Additional information may be obtained on the LDEQ website at <http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx> or by contacting the LDEQ Water Permits Division at (225) 219- 9371.
- All precautions should be observed to protect the groundwater of the region.
- Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.

- 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.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.

CONCLUSION

The results of these evaluations, as well as consultations and input from other federal and state agencies, are presented in the PEA. Based on the information analyzed, FEMA has determined that the implementation of the proposed action would not result in significant adverse impacts to the quality of the natural and human environment. In addition, the proposed project does not appear to have the potential for significant cumulative effects when combined with past, present, and reasonably foreseeable future actions. As a result of this draft FONSI, an Environmental Impact Statement will not be prepared (per 44 C.F.R. § 10.9) and the proposed project as described in the PEA may proceed.

APPROVALS:

Jerame J. Cramer,
Environmental Liaison Officer
LRO – 1603/1607-DR-LA

Date

Thomas M. (Mike) Womack
Director of Louisiana Recovery Office
FEMA-1603/1607-DR-LA

Date