

Draft Environmental Assessment

# Municipal Yacht Harbor Fishing Pier

City of New Orleans  
Orleans Parish, Louisiana

November, 2012

FEMA-1603-DR-LA



**FEMA**

**U.S. Department of Homeland Security  
Federal Emergency Management Agency  
Region VI - Louisiana Recovery Office  
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ABFE	Advisory Base Flood Elevation
APE	Area of Potential Effects
ASL	Above Sea Level
BFE	Base Flood Elevation
BMP	Best Management Practices
CAA	Clean Air Act
CBD	Central Business District
CDOT	California Department of Transportation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH <sub>4</sub>	methane
CO	Carbon Monoxide
CUP	Coastal Use Permit
CWA	Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)
CZMA	Coastal Zone Management Act of 1972
DFIRM	Digital Flood Insurance Rate Map
DR	Disaster Declaration Number
dB	Decibels
dBA	A-weighted Decibels
DFIRM	Digital Flood Insurance Rate Map (Preliminary)
DHH	U.S. Department of Health and Human Services
DPS	Distinct Population Segment
EA	Environmental Assessment
EIS	Environmental Impact Statement
EFH	Essential Fish Habitat
EL	Elevation
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
et al.	et alii (and others)
et seq.	et sequens (and the following)
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
<i>FE</i>	Federally Endangered
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft	feet
<i>FT</i>	Federally Threatened
GHG	Green House Gas
GNO	Greater New Orleans
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
HFCs	Hydrofluorocarbons

HP	Historic Preservation
HSDRRS	Hurricane & Storm Damage Risk Reduction System
HUC	Hydrologic Unit Code
HUD	Housing and Urban Development
in	inch
IPaC	Information, Planning, and Conservation System (USFWS)
LA	Louisiana
LCRP	Louisiana Coastal Resources Program
LDWF	Louisiana Department of Wildlife and Fisheries
LDHH	Louisiana Department of Health and Hospitals
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LORS	Laws, Ordinances, Regulations and Standards
m	meters
M	Million
m <sup>3</sup>	cubic meters
MMPA	Marine Mammal Protection Act of 1972
mph	miles per hour
MRGO	Mississippi River Gulf Outlet
MSA	Magnuson-Stevens Fishery Conservation and Management Act of 1976
MVN	US Army Corps of Engineers, New Orleans District
MYH	Municipal Yacht Harbor
MYHMC	(New Orleans) Municipal Yacht Harbor Management Corporation
MYHFP	Municipal Yacht Harbor Fishing Pier
N <sub>2</sub> O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NLAA	Not Likely to Adversely Affect
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO <sub>x</sub>	Nitrous Oxides
NPL	National Priority List
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWA	Northwest Atlantic (DPS)
NWI	National Wetlands Inventory
O <sub>3</sub>	Ozone
OCM	Office of Coastal Management, Louisiana Department of Natural Resources
OHWM	Ordinary High Water Mark
OPPA	Office of Policy and Program Analysis (FEMA)
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement or Public Assistance
PAH	Poly-Aromatic Hydrocarbon

Pb	Lead
PCBs	Polychlorinated Biphenyls
P.L.	Public Law
PM <sub>10</sub>	Particulate Matter less than 10 µm and larger than 2.5 µm (Coarse Dust)
PM <sub>2.5</sub>	Particulate Matter less than 2.5 µm (Fine Dust)
PM <sub>10</sub>	Particulate Matter less than 10 µm and larger than 2.5 µm (Coarse Dust)
ppb	Parts per billion
ppm	Parts per million
PW	Project Worksheet
Qal	Holocene alluvial clay soils (soil mapping unit)
RHA	Rivers and Harbors Appropriation Act of 1899
ROD	Record of Decision
R.S.	Revised Statutes (Louisiana)
§	Section
S	South
SERO	Southeast Regional Office (NOAA Fisheries Service)
SLCRMA	Louisiana State and Local Coastal Resources Management Act
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SIPs	State Implementation Plans
SO <sub>2</sub>	Sulfur dioxide
SIPs	State Implementation Plans
SW	Southwest
SWPPP	Storm Water Pollution Prevention Plan
TMDLs	Total Maximum Daily Loads
TNW	Traditional Navigable Waterway
UME	Unusual Mortality Event
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
µg	Micrograms
µm	Micrometers
VE-zone	Velocity zone (Elevation Determined)
V-zone	Velocity zone (Undetermined Elevation)
WGS84	World Geodetic System, 1984
WPA	Works Project Administration
WSDOT	Washington State Department of Transportation

## 1 INTRODUCTION

### 1.1 Hurricane Katrina

Hurricane Katrina made landfall on August 29, 2005 near Buras, Louisiana with sustained winds of more than 125 mph. The subsequent storm surge damaged levees and entered the City of New Orleans from various coastal waterways including the 17<sup>th</sup> Street Canal, resulting in flooding throughout much of the area. Subsequently, the winds, flooding and storm surge caused substantial damage to the City of New Orleans' Municipal Yacht Harbor (MYH), including a public access fishing pier facility and restroom structure.

### 1.2 Project Authority

President George W. Bush signed a disaster declaration (FEMA-1603-DR-LA) 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), Public Law 93-288, as amended. Section 406 of the Stafford Act Authorizes FEMA's Public Assistance Program to repair, restore and replace State and local government and certain private nonprofit facilities damaged as a result of the declared event.

The City of New Orleans has submitted an application for FEMA funding under FEMA's Public Assistance Program being administered in response to the declared disaster: FEMA-1603-DR-LA. MYHMC proposes to remove the original pier facility and replace the fishing pier facility at a new location north of the boat launch area on the north side of Breakwater Drive (Figure 3).

This Environmental Assessment (EA) is being developed to help meet the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508) and FEMA's NEPA implementing regulations (44 CFR 10 *et seq.*).

The purpose of the EA is to further analyze potential environmental impacts of the proposed project at the MYH site. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

### 1.3 Site Location

The City of New Orleans' Municipal Yacht Harbor Fishing Pier (proposed project) is located on the south shore of Lake Pontchartrain in the sub-district of West End in the Lakeview District of New Orleans, Louisiana (Figures 1 & 2). The original pier facility in-part is located in Jefferson Parish with the restroom facility and proposed new pier location and related project staging areas located in Orleans Parish (USGS 1992a). The legal description for the proposed project location is Township 12 South, Range 11 East, Section 124 on the Spanish Fort, 7.5-minute Quadrangle, topographic map (USGS 1992a) and the proposed alternate project site latitude and longitude, decimal degree, coordinates, respectively are: 30.029230°, -90.119420° (WGS84). The proposed project sites are located north of West End Park (Figure 2). The proposed pier removal task and restroom facility rebuild sites are located on the west side of Breakwater Drive (lat/long 30.027935°, -90.120575°, WGS84) and the proposed pier replacement task is located north of Breakwater Drive and within the northwestern limits of the Breakwater Park area (lat./long. 30.029230°, -90.119420°, WGS84)(Figure 3).

#### 1.4 Site Description

The project site is a public outdoor use area along the west and northern sides of Breakwater Drive north of West End Park. Public facilities include: the remnants of the original pier facility, the remnants of a public restroom structure adjacent to the original pier that was leveled from storm surge during Hurricane Katrina, freshwater faucets, street lighting, parking areas for vehicles and vehicles with boat trailers, boat ramps, a breakwater wall and the open space recreational area (maintained lawn area) of Breakwater Park. The public facilities described are currently and generally in a state of disrepair with the exception of the maintained lawn area and breakwater wall. The overall function of the original pier, restroom, parking and boat launch facilities has been diminished substantially or diminished beyond public use and represents various public safety hazards in their current state.

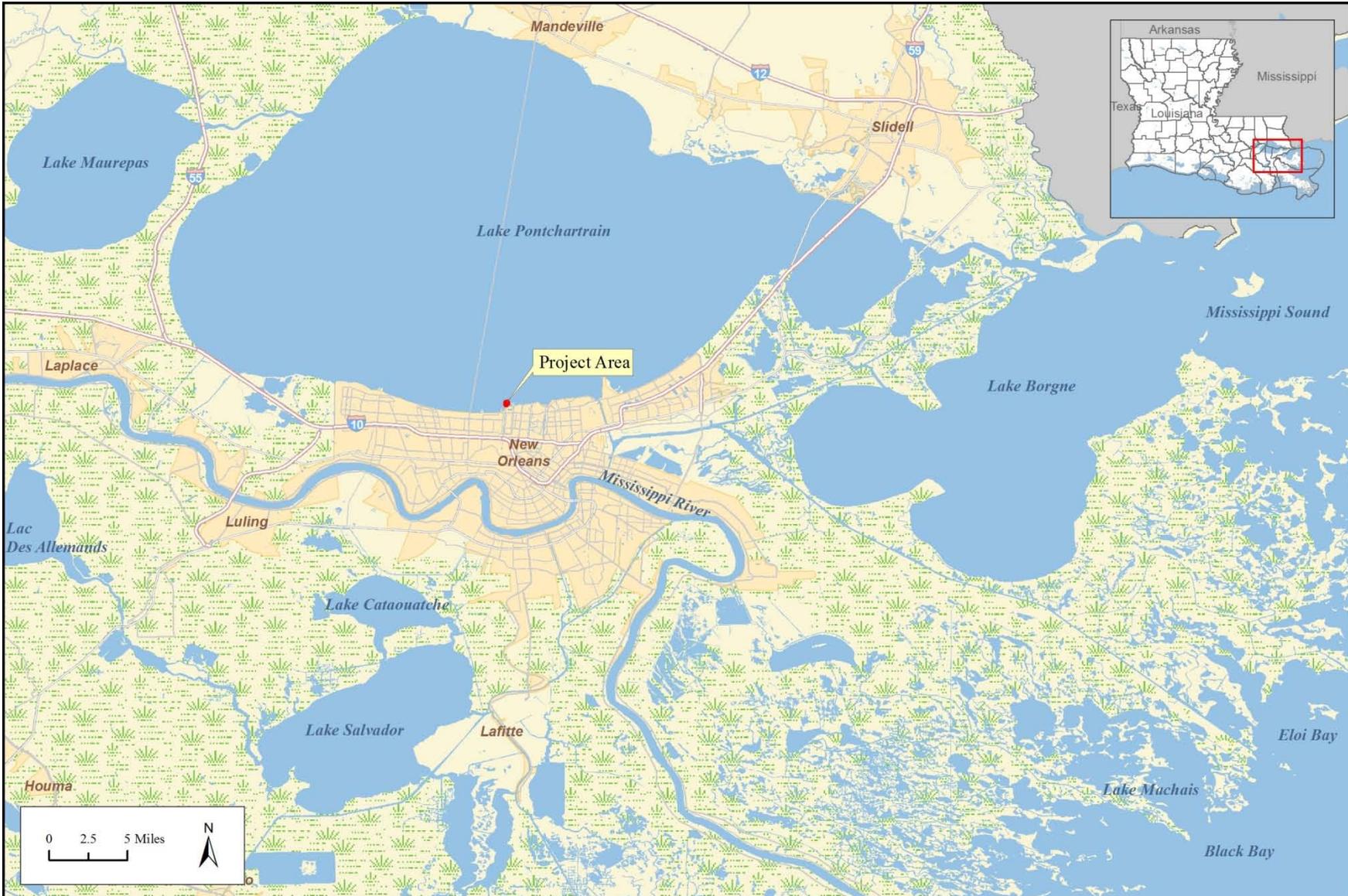
The east and south sides of Breakwater Drive are lined by 133 boathouses that are immediately adjacent to the Municipal Yacht Harbor Marina. These boathouse residences appear to be used primarily by vacationers and a few permanent residents. The typical construction of these marina homes includes equipment storage areas, boat storage and boat slips at ground level (approximately 2.14 ft to 4.24 ft ASL, USGS 2012b) with the living areas above on the second floor. The land use to the immediate north and south of West End Park, on North and South Roadway Streets, represents a mixed residential and business use area. The majority of the homes have been repaired since the damages caused by Hurricane Katrina or are currently being repaired.

West End Park is approximately 975 ft south-southeast of the original pier location. West End Park is 30-acres in size and includes open grassy areas, covered pavilions, a water feature and footbridge, shaded lawn and oak tree areas, concrete walking paths and an ornamental fountain in the center of the park (i.e. 1915 Darlington Electric Prismatic Fountain)(Friends of West End, Inc. 2012). West End Park is located approximately 1,560 ft due south of the proposed new pier alternate location.

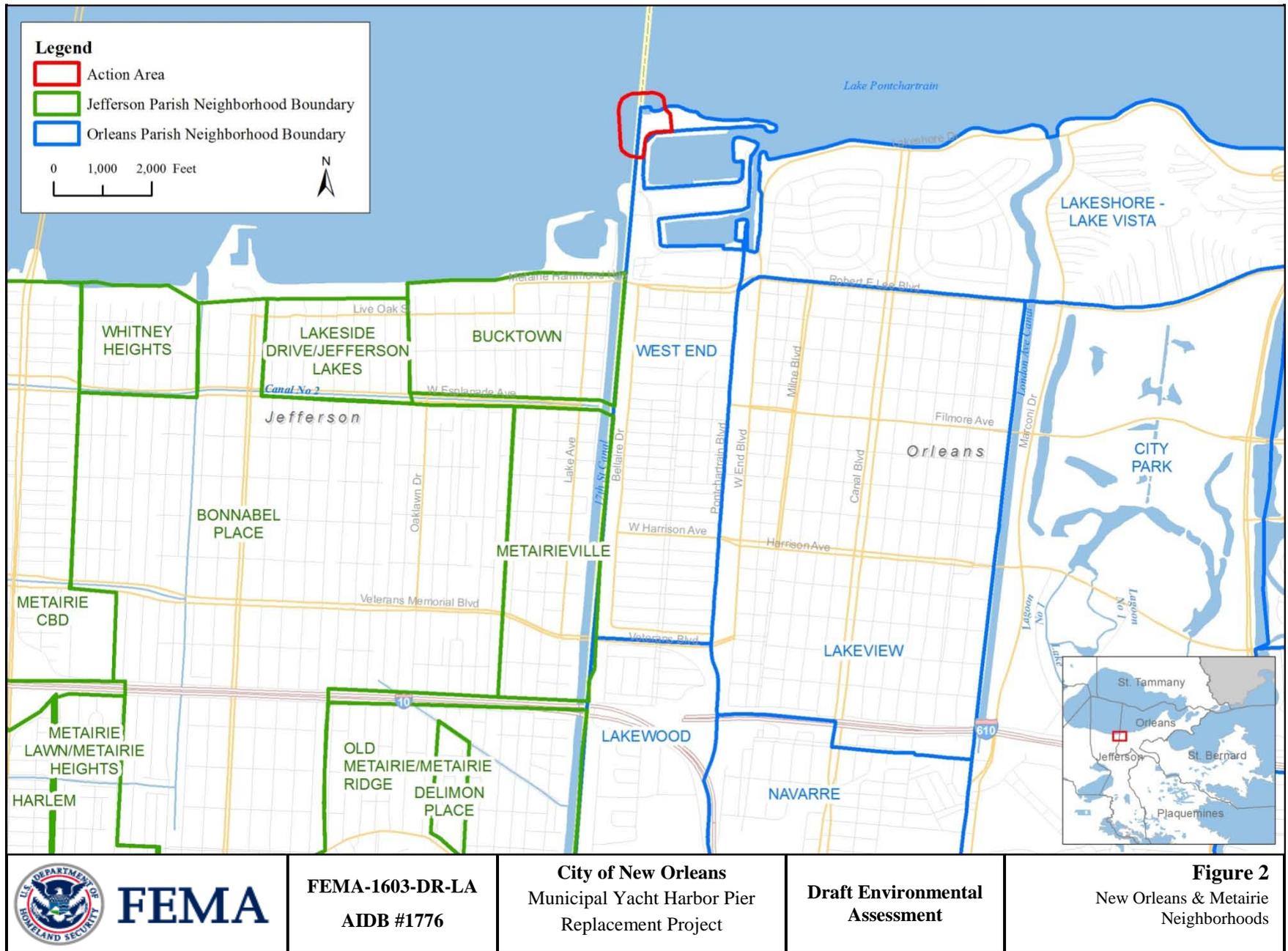
The Breakwater Park lawn area is located 530 ft northeast of the original pier and restroom location. Breakwater Park is primarily a large open lawn area with a shoreline area to the north and west of Breakwater Drive. The shoreline area is not suitable for recreational activities due to the large concrete blocks and rubble that has been placed there for bank protection.

The original pier and restroom facility location is approximately 115 ft west of the boathouse residences on the west side of the Municipal Yacht Harbor Marina. The proposed (alternate) new pier location is approximately 355 ft north of the closest boathouse residence on Breakwater Drive.

The location of the original fishing pier is 2,250 ft north of the control gates of the 17<sup>th</sup> Street Canal, 2,110 ft north of the flood wall at West Roadway Street and approximately 490 ft south-southwest of the proposed (alternate) new pier location.



 <b>FEMA</b>	FEMA-1603-DR-LA AIDB #1776	City of New Orleans Municipal Yacht Harbor Pier Replacement Project	Draft Environmental Assessment	<b>Figure 1</b> Project Vicinity
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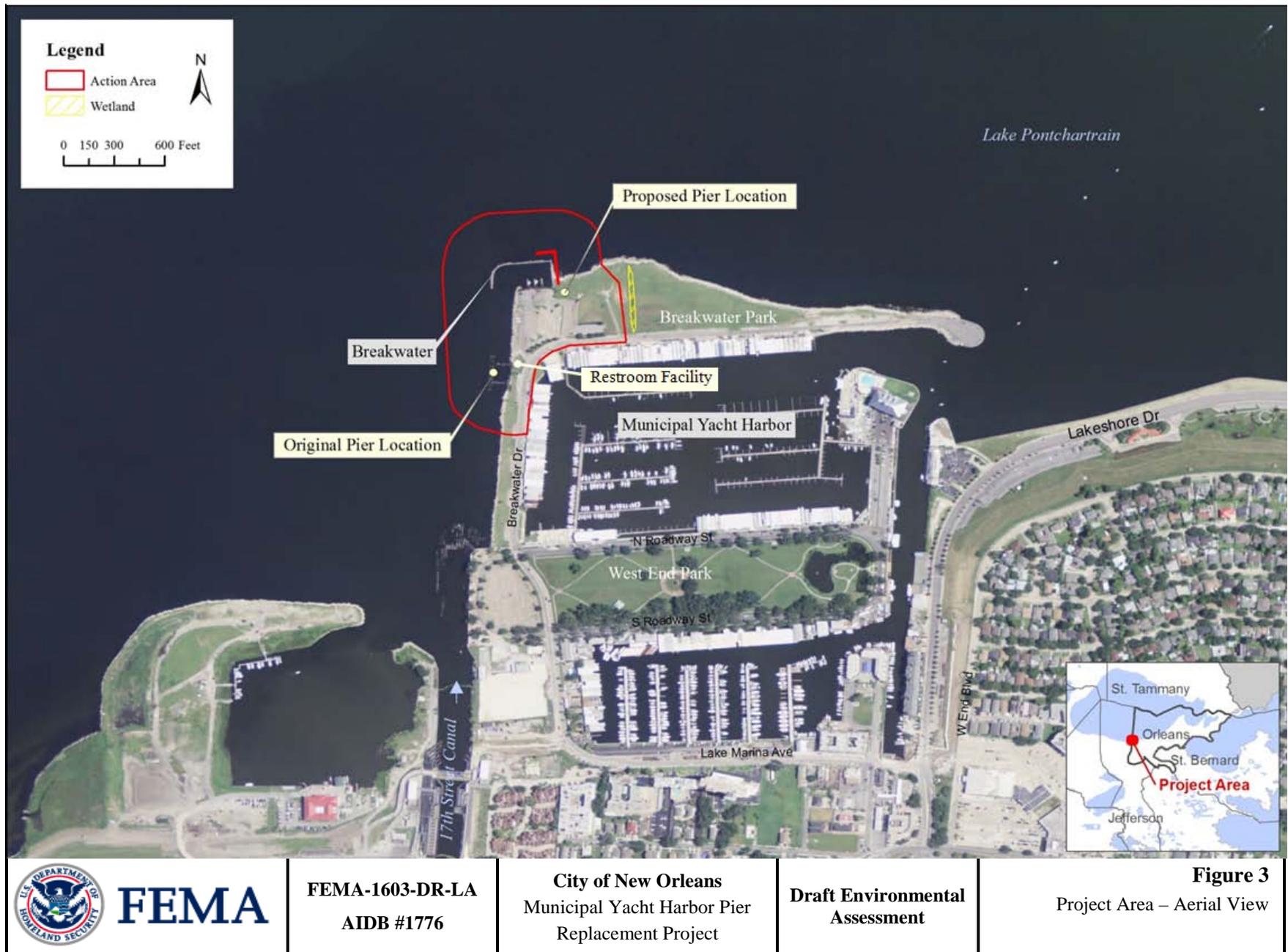


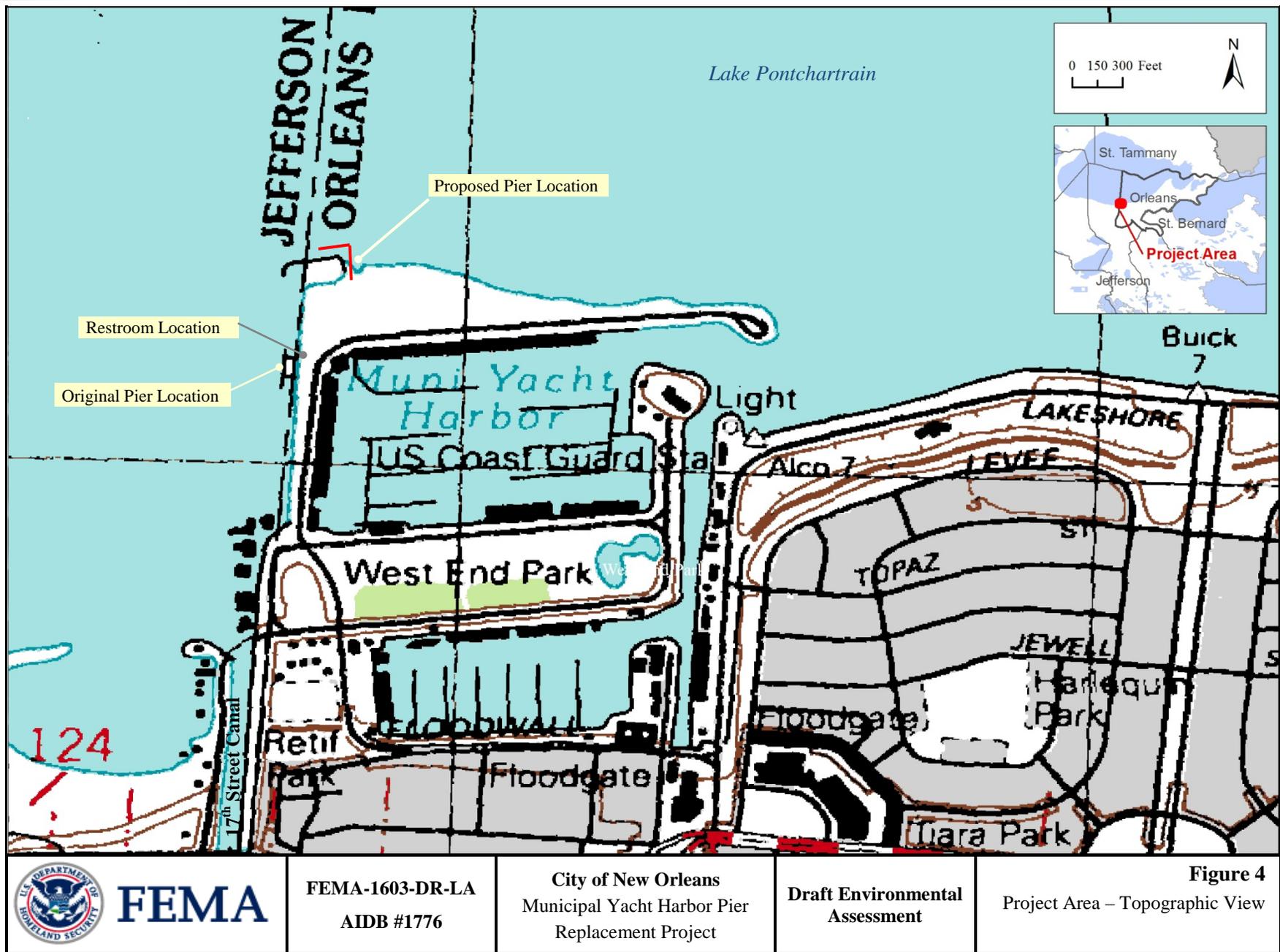
FEMA-1603-DR-LA  
AIDB #1776

City of New Orleans  
Municipal Yacht Harbor Pier  
Replacement Project

Draft Environmental  
Assessment

**Figure 2**  
New Orleans & Metairie  
Neighborhoods





## **1.5 Project Action Description**

### **1.5.1 Land Operations**

Land based operations will include the use of heavy equipment such as cranes to remove and install landside pier pilings, excavation equipment to remove soil to create a grade suitable for the concrete ramp portion of the proposed new pier, dump trucks to deliver sands and gravels and haul away debris and excavated soils, concrete mixing / delivery trucks, flat bed or low-boy tractor trailers to deliver heavy equipment to the site and pier structural components, front end loaders to move soils and debris from the site to dump trucks. Heavy equipment has the potential to leak and spill hydrocarbon based compounds (e.g. fuels, lubricants, brake and antifreeze fluids) during normal operations and require appropriate spill prevention and cleanup methods and materials. Heavy equipment will also produce noise above baseline conditions from running engines, earth moving actions, removing and delivering facility components and loading and unloading the heavy equipment from transport vehicles. Staging areas will need to be established for stockpiling refuse and debris related to pier removal and installation, restroom construction and materials needed to create the concrete ramp and wooden pier facility. Any earthen materials staged onsite have the potential to escape as fugitive dust or as sediment. Sediment generated during rain events has the potential to enter Lake Pontchartrain if adequate sediment control measures are not implemented. Areas where ground disturbing activities such as excavated areas and areas that may be disturbed from heavy equipment also have the potential to release sediment to Lake Pontchartrain if adequate erosion mitigations are not implemented. Any pipe or conduit material staged onsite has the potential to be used by animals for temporary shelter, hiding habitat or curiosity. The larger the inside diameter of the pipe typically the larger the animal it can stow.

### **1.5.2 Water Operations**

Project activities will include the use of powered and likely unpowered (barge) water vessels fitted with a crane to remove pier pilings and various structural attachments from the original pier facility and for the placement of new pier pilings at the proposed new pier location. Powered water vessels have the potential in shallow waters to dislodge and disperse sediment from the lake bottom, pose a risk of propeller strikes, have the potential to spill hydrocarbon based liquids and will produce noise from the engine and active propeller.

### **1.5.3 Pier Piling Removal Process**

The pier removal process may utilize any of three different methods: direct pull, vibratory extraction and / or clam shell depending on the condition of the pier pilings. The direct pull method utilizes a cable choker attached to a crane that pulls in a vertical direction to lift the piling directly out of the substrate and water column. The vibratory extraction method utilizes a large vibration hammer attached to the pier piling and lifted by a crane while the vibration hammer loosens the piling from the substrate. The clam shell method is used if a piling is broken and cannot be directly lifted from its footing. This method utilizes a clam shell bucket to excavate the substrate around the piling until it can be removed from the water. Any of these methods will remove the pilings from the water where they then can be disposed of properly. Removing the pilings from the substrate will release lakebed sediments into the water column which could cause a temporary disturbance to aquatic wildlife in the immediate area. The direct pull method would cause the least amount of impact. The vibratory extraction method will in addition to releasing sediment into the nearby waters will also emanate a sonic field that could disturb aquatic wildlife. Piling extraction with this method may take between 15 to 30 minutes per piling depending on existing substrate conditions and piling insertion depth. The original pier has approximately 70

pilings that will need to be removed. Lastly the clam shell bucket technique will likely be employed as several pilings have been broken near, at and below the water line. This method has the potential to dislodge and release the greatest amount of sediment into the water column.

#### **1.5.4 Pier Piling Installation Process**

The piling installation process may incorporate either an impact hammer or vibration head technique suspended from a crane which would be fitted to a water vessel or land based machinery. In either method the new piling is supported vertically while resting on the lakebed as either a piston-like hammer head or a vibratory hammer head drives the piling into the substrate at a depth sufficient to provide the necessary vertical support. Either method will release a minor amount of sediment from the lakebed into the water column which could disturb aquatic animals in the vicinity. Both the vibratory hammer head and the impact hammer method will emanate a sonic field that could disturb aquatic wildlife in the vicinity of the action. Approximately 69 pilings are scheduled for placement within the wetted area of Lake Pontchartrain. Ten pilings are scheduled to be installed on the bank leading to Lake Pontchartrain.

### **1.6 Background**

#### **1.6.1 Site History**

The inception of the MYH area originated as a right of administration grant to the city of New Orleans from the State of Louisiana in 1906. At that time the Lake Pontchartrain area north of the levee, west of the 17<sup>th</sup> Street Canal and east of what was then the New Basin Canal was filled in to create the West End Park area. Between 1938 and 1940, Breakwater Drive was created as a WPA project which allowed for the development of the MYH. In 1950 the perimeter of the MYH was developed with in-part privately owned boathouses as it appears today with the exception of a few businesses that are now interspersed between boathouses near West End Park. In 1979 the New Orleans Municipal Yacht Harbor Management Corporation (MYHMC) was formed as a means to repay a \$3.5 M MYH improvement loan from the National Oceanic and Atmospheric Administration (NOAA)(MYHMC 2012). The fishing pier was originally located on the west side of Breakwater Drive prior to its destruction during Hurricane Katrina (Figure 3). The original fishing pier facility provided for several years outdoor recreational opportunities to local, interstate and international recreational anglers and sightseers (MYHMC 2012).

## 2 PURPOSE AND NEED

Hurricane Katrina destroyed the original fishing pier facility beyond repair from storm surge. The fishing pier in its current state will need to be removed regardless of its final replacement destination. The MYHMC has indicated that the fishing pier would be better relocated north of Breakwater Drive, on the outside perimeter of a concrete breakwater wall, to be out of the path of the 17<sup>th</sup> Street Canal outflow. The outflow is believed to have a negative effect on sport fishing and hence the replacement of the fishing pier facility would be better served out of the direct path of the 17<sup>th</sup> Street Canal. In its current dilapidated condition the original pier represents a primary and secondary safety hazard to the public and diminishes the overall service, capacity and scenic integrity of the publically accessible MYH.

As a primary hazard, the original fishing pier has been reportedly used by children as a climbing structure in its dilapidated state. With large rocks beneath shallow waters a fall from the dilapidated pier could cause a life threatening injury. As a secondary hazard, recreational fishermen and sightseers are now using the breakwater wall north of the boat launch to fish from. The breakwater wall is a concrete structure that does not have a means of egress (no ramps, ladders or stairs) if a person or animal (pet) should fall into the water below. Hence, the current unintended use of the breakwater facility as a fishing and sightseeing platform represents a serious drowning hazard for a fallen victim, who may not be able to swim to the shoreline safely.

The original restroom structure was leveled from bombardment by storm surge and related flotsam. The restroom structure was the only restroom available to the public within the West End and Breakwater Park areas. The ability to affectively accommodate the public's sanitation needs is a basic requirement for any urban, public use area. This essential requirement is fundamental to the inherent usability and purpose of an urban, open-public facility.

### 3 ALTERNATIVES

#### 3.1 Description of Alternatives

This section describes alternatives that were considered in addressing the purpose and needs stated in the above section. Three alternatives were evaluated: No Action, Demolition and Reconstruction (within existing footprint), and Demolition and Relocation (Proposed Action).

The replacement of the restroom facility, as planned by the applicant, will be returned to its pre-disaster footprint with modifications for height and access per the more stringent of local or federal floodplain regulations (Appendix A). Under current NEPA regulations this action would qualify as being Categorical Exclusion (Catex) from the preparation of environmental impact statements or environmental assessments due to its “replacement with upgrades for current codes and standards” category of action. Under 44 CFR 10.8 (d)(2) the replacement of the restroom facility would qualify as a number 15, Level 2, Categorical Exclusion or Catex 15. Because the replacement of this structure does not have the potential for environmental impacts that would be classified as Extraordinary Circumstances [44 CFR 10.8 (d)(3)] and it would not contribute appreciably to cumulative impacts, this action will not be further reviewed in this EA document.

##### 3.1.1 Alternative 1 - No Action

Under the No Action alternative, MYH fishing pier will be left in its current condition, which consists of a damaged and dilapidated remnant pier facility that poses a threat to public safety and contributes to the blight of an already damaged public facility. In addition, the leveled restroom facility would not be replaced to its previous footprint and capacity. The site would remain in its current blighted state creating unsafe conditions for the general public. This alternative will be evaluated throughout this EA.

##### 3.1.2 Alternative 2 - Removal and Reconstruction at Original Location

Under Alternative 2, the MYH fishing pier would be demolished and rebuilt in its current location. The replacement of the fishing pier in its original location is not a favorable action to the applicant as the recreational fishing at the original location may be negatively impacted from the outflow of the 17<sup>th</sup> Street Canal which lays approximately 1,550 ft to the south. In addition, the leveled restroom facility would be replaced to its previous footprint and capacity, with building height and access modifications to accommodate the floodplain requirements. This alternative will be evaluated throughout this EA.

##### 3.1.3 Alternative 3 - Removal and Reconstruction at Alternate Location (Proposed Action)

Under Alternative 3, the MYF original fishing pier facility would be removed and relocated approximately 500 ft north-northeast where it would follow the outside contour of the existing breakwater wall. This proposed action may enhance the recreational fishing experience by being out of the direct path of the 17<sup>th</sup> Street Canal outflow. In addition, the leveled restroom facility would be replaced to its previous footprint and capacity, with building height and access modifications to accommodate the floodplain requirements. This alternative will be evaluated throughout this EA.

## 4 AFFECTED ENVIRONMENT AND ALTERNATIVES ANALYSIS

### 4.1 Geology, Soils and Topography

#### 4.1.1 Regulatory Setting

##### *4.1.1.1 Farmland Protection Policy Act*

The Farmland Protection Policy Act (FPPA)(7 USC 4201 – 4209) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state and local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not authorize the Federal Government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

#### 4.1.1 Existing Conditions

The site geology and the site history are important aspects to the overall construction and structural placement of the replacement pier. The site geology and soils has been significantly altered from its natural state from the shoreline filling activities back in 1938 to 1940. Prior to the Breakwater Drive area being converted from lakeshore habitat into its current state this area was underwater as a part of Lake Pontchartrain. Soils dredged from Lake Pontchartrain were used as fill material to fill-in the shore line area between the 17th Street Canal and the London Avenue Canal. The lake bottom sediments that were utilized are Holocene alluvial clay soils (map unit Qal)(Snead 1984, USGS 2012a). Based on the NRCS Soil Survey Report, these aquent, alluvial clay soils (AT - Aquents, dredged, frequently flooded) persist to a depth of 80 inches or more. There is likely a sandy gravel layer at this depth as indicated in the geological report for this site. The soils are indicated as very poorly drained with slopes of 0-1 percent (NRCS 2012). The implications of very poorly drained soils are that they will readily convey storm derived surface waters to down-slope areas. In the case of the project setting Lake Pontchartrain is the lowest topographical area and therefore is the sink for the surface runoff upland sources. This site-soil attribute therefore has as a greater capacity to carry waterborne sediment in surface storm runoff to Lake Pontchartrain. According to a database query for Prime Farmland Soils in NRCS's Soil Data Mart (online) for Orleans Parish, Louisiana, "Aquents, dredged, frequently flooded (AT)" are not listed as a Prime Farmland Soil (NRCS 2012).

#### 4.1.2 Environmental Consequences

##### Alternative 1: No Action

Under the No Action Alternative, there would be no project related impacts to farmland subject to the FPPA.

##### Alternative 2 - Removal and Reconstruction at Original Location

Under Alternative 2, there would be no project related impacts to farmland subject to the FPPA as Prime Farmland soils are not located in or near the project area.

### Alternative 3 - Removal and Reconstruction at Alternate Location (Proposed Action)

Under the Proposed Alternative, there would be no project related impacts to farmland subject to the FPPA as Prime Farmland soils are not located in or near the project area.

## **4.2 Waters of the United States and Wetlands**

### **4.2.1 Regulatory Setting**

#### **4.2.1.1 Clean Water Act § 303**

Section 303(d) of the federal Clean Water Act (CWA) requires states to develop a list of impaired waters. A water is considered impaired if the current water quality does not meet the numeric or narrative criteria in a water quality standard or the designated use that is described by that state is not achieved. Section 303(d)(2) requires that States submit and EPA 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 (EPA 2012). 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, impairing primary contact use (e.g., swimming, water skiing), mercury and polychlorinated biphenyls (PCBs) in fish tissue, impairing fish consumption use, low dissolved oxygen, copper, phosphorus, manganese, excessive siltation, physical-habitat alterations, and total suspended solids which impair aquatic life use.

#### **4.2.1.2 Clean Water Act § 401**

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

#### **4.2.1.3 Clean Water Act § 404**

Waters of the United States are defined as “all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) all interstate waters, including interstate “wetlands”; (c) all other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industrial purposes by industries in interstate commerce; (d) all impoundments of waters otherwise defined as waters of the United States under this definition; (e) tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) the territorial sea; and (g) Wetlands

adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition” (40 CFR 122.2).

*Wetlands are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (40 CFR 122.2).*

The USACE regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to Section 404 of the Clean Water Act.

Lake Pontchartrain is a traditional navigable waterway (TNW) subject to the ebb and flow of the tide and is therefore considered a water of the United States, under the definition in 40 CFR 122.2. Lake Pontchartrain, its tributaries, associated wetlands and other waters are under the jurisdiction of the USACE.

#### **4.2.1.4 Rivers and Harbors Act of 1899**

Sections 9 and 10 of the Rivers and Harbors Act (33 U.S.C. § 401 & 403, respectively) require permission of the USACE (33 CFR § 320-332) to construct any bridge, dike, dam, or causeway in or over any navigable water or to cause any diversion or obstruction to the navigable capacity of any water in the United States, including any pier, boom, breakwater, or jetty. Section 10 further states that the accomplishment of any other work affecting the course, location, condition, or physical capacity of navigable waters of the United States is subject to the approval of the USACE pursuant to Section 10.

#### **4.2.1.5 Executive Order 11990 – Protection of Wetlands**

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

#### **4.2.2 Existing Conditions**

The original, dilapidated pier and the proposed new pier location are both located within the ordinary high water mark (OHWM) of Lake Pontchartrain (Lake). The Lake is an estuarine waterbody subject to the influence of tide, approximately 640 square miles in area, that receives fresh water from several natural rivers and streams in the northern lake basin and a marine water influence from the Gulf of Mexico in the east via Lake Borgne, Chef Menteur Pass, The Rigolets and other smaller bayou connections. On the south shore of the Lake are several areas of connectivity to the Mississippi River. The largest, Bonnet Carré Spillway, is located west of Norco, LA and is used during flooding events to reduce the likelihood of flooding by the Mississippi River by allowing floodwaters from the Mississippi River to flow via the Bonnet Carré Spillway to the Lake and ultimately to the Gulf of Mexico. Other permanent confluences with the Lake and the Mississippi River include the Inner Harbor Navigation Canal or “Industrial Canal” and the Mississippi River Gulf Outlet (MRGO). In addition, the City of New Orleans utilizes the following canals that terminate in the Lake as part of its flood control operations: 17<sup>th</sup> Street Canal, London Avenue Canal and Orleans Avenue Canal.

The Lake is part of the Lake Pontchartrain (HUC 080902) watershed area which is inclusive of Liberty Bayou-Tchefuncta (HUC 08090201), Lake Pontchartrain (HUC08090202) and the Eastern Louisiana Coastal (HUC 08090203) watershed areas (USGS 2010).

The Lake is used extensively for commercial and sport fishing; crab, shrimp and oyster harvesting, as well as barge traffic. The Lake is an important economic resource for local, interstate and foreign commerce. The U.S. Fish & Wildlife Service's (USFWS) National Wetlands Inventory (NWI) map defines the Lake under the Cowardin Classification System (Cowardin *et al.* 1979) as a mesohaline, estuarine, subtidal water with an unconsolidated bottom (wetland code: E1UBL5)(USFWS 2012a). Based on NWI results and color aerial imagery reconnaissance (Google Earth 2012) no additional waters of the U.S., including wetlands, were identified within the proposed project area (Appendix A).

During a site visit on June 08, 2012 a wetland / drainage feature was identified to the west of the project area. This wetland area is comprised of a drainage ditch that runs from Breakwater Drive northward towards Lake Pontchartrain through a grassy area of Breakwater Park (Figure 3). This wetland feature was not delineated because it was outside of the action area. However, it will be noted that this wetland feature is a sensitive habitat and will be avoided. The determination that this area was a wetland was made by the observance of obligate hydrophytic vegetation, standing water that supported obligate surface-floating hydrophytic plants, tracks of obligate riverine mammals, dark soils with a reduced chroma and a convex hydrology that would support the standing of water for a sufficient amount of time to cause oxygen depletion in the soil strata. This wetland feature lacked direct connectivity to Lake Pontchartrain even though it appeared to be the original purpose of this feature indicated by an approximate 4-inch in diameter plastic pipe that had been broken off and filled on the north end of the wetland feature.

As of 2010, the designated area "*Lake Pontchartrain Basin Coastal Bays and Gulf Waters to the State 3 mile limit*" is listed as an impaired waterway for fecal Coliform contamination from an unknown source pursuant to CWA § 303(d)(LDEQ 2010). The south beaches of the Lake have also been under a "No Swim Advisory" since June 01, 1985 due to fecal Coliform contamination (LDEQ 2012).

### **4.2.3 Environmental Consequences**

#### Alternative 1: No Action

Under the No Action Alternative, there would be no project related impacts to waters of the United States or wetlands.

However, even under the No Action Alternative (i.e. the absence of FEMA project funding) the applicant would still be responsible for removing the dilapidated pier structure. If a RHA § 10 permit was issued for the original construction of the pier this action would fall under that permit. If however a RHA Section 10 permit was never issued then the pier removal action would require a RHA § 10 permit from the USACOE. Because there would be no addition of dredge or fill material to waters of the U.S. a CWA § 404 permit would not be required. In the piers current dilapidated condition it represents a public safety hazard, a potential nautical hazard and contributes to the blight of the overall West End neighborhood area.

#### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, a RHA § 10 permit would be required prior to removing the original pier and replacing the pier in its current location. This permit may not be approved by USACOE due to the proximity of the pier to the 17<sup>th</sup> Street Canal and possible impacts to the pier from the force of its outflow. In addition, water quality impacts from the 17<sup>th</sup> Street Canal outflow may be detrimental to the expressed purpose of the fishing pier – to facilitate a safe recreational fishing opportunity to the public and utilization of open space by sightseers.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, a RHA § 10 permit would be required prior to removing the original pier and replacing the pier in an alternate location. The alternate location is out of the direct path of the 17<sup>th</sup> Street Canal and therefore would not be impacted from forces relating to its outflow or detrimental changes in water quality.

### **4.3 Floodplains**

#### **4.3.1 Regulatory Setting**

##### **4.3.1.1 Executive Order 11988**

Executive Order (EO) 11988, Floodplain Management, requires federal agencies to avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. FEMA's regulations for complying with EO 11988 are found at 44 CFR Part 9, Floodplain Management and Protection of Wetlands.

#### **4.3.2 Existing Conditions**

In July 2005, FEMA initiated a series of flood insurance studies for many of the Louisiana coastal parishes as part of the Flood Map Modernization effort through FEMA's National Flood Insurance Fund. These studies were necessary because the flood hazard and risk information shown on many Flood Insurance Rate Maps (FIRMs) was developed during the 1970's, and the physical terrain had changed significantly, such as major loss of wetland areas. After hurricanes Katrina and Rita, FEMA expanded the scope of work to include all of coastal Louisiana. The magnitude of the impacts of hurricanes Katrina and Rita reinforced the urgency to obtain additional flood recovery data for the coastal zones of Louisiana. More detailed analysis was possible because new data obtained after the hurricanes included information on levees and levee systems, new high-water marks, and new hurricane parameters (LaMP 2007).

During an initial post-hurricane analysis, FEMA determined that the "100-Year" or 1-percent chance storm flood elevations on FIRMs for many Louisiana communities, referred to as Base Flood Elevations (BFEs), were too low. FEMA created recovery maps showing the extent and magnitude of hurricanes Katrina's and Rita's surge, as well as information on other storms over the past 25 years (LaMP 2007). 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 (LaMP 2007).

Updated preliminary flood hazard maps from an intensive five-year mapping project guided by FEMA are now provided to all Louisiana coastal parishes. The new maps released in early 2008, known as Preliminary Digital Flood Insurance Rate Maps (DFIRMs), are based on the most technically advanced flood insurance studies ever performed for Louisiana, followed by multiple levels of review. The DFIRMs provide communities with a more scientific approach to economic development, hazard mitigation planning, emergency response and post-flood recovery (LaMP 2007).

The USACE is currently working on a Hurricane and Storm Damage Risk Reduction System (HSDRRS) for the Greater New Orleans (GNO) area (Miller 2011). This 350-mile system of levees, floodwalls, surge barriers, and pump stations will reduce the flood risk associated with a storm event. In September of 2011, the USACE provided FEMA with assurances that the HSDRRS is capable of defending against a storm surge with a one percent (1%) annual chance

event of occurring in any given year (Miller 2011). The areas protected include portions of St. Bernard, St. Charles, Jefferson, Orleans, and Plaquemines parishes. FEMA has now begun revising the preliminary DFIRMs within the HSDRRS to incorporate the reduced flood risk associated with the system improvements (Miller 2011).

The 2008 Preliminary DFIRMs – currently viewed as the best available flood risk data for the five GNO parishes – do not consider the completion of the HSDRRS. In many areas, the flood risk has been significantly reduced due to heightened protection. To ensure that the best available data is used when reviewing and approving grant applications within the HSDRRS, FEMA will re-examine individual grant reconstruction projects using sound engineering data and judgment. The case-by-case review may indicate that the source of best available flood risk data for a reconstruction project is preliminary DFIRMs, ABFEs, or other relevant sound engineering data. No project should be built to a floodplain management standard that is less protective than what the community has adopted in local ordinances through their participation in the National Flood Insurance Program (Miller 2011). By Memorandum of February 17, 2012 from Frank Pagano, Mitigation Division Director of FEMA Region 6 to John Connolly, Senior Public Assistance Advisor, Louisiana Recovery Office, this project is located outside the protection of the HSDRRS; therefore, the 2008 Preliminary Digital Flood Insurance Rate Map (DFIRM) must be used for establishing the BFE (Pagano 2012).

In compliance with FEMA policy implementing EO 11988, Floodplain Management, the proposed project was reviewed for possible impacts associated with occupancy or modification to a floodplain. Orleans Parish enrolled in the NFIP on November 3, 1970.

### **4.3.3 Environmental Consequences**

#### Alternative 1: No Action

Under this alternative, no work would occur and there would be no additional impact to the floodplain.

#### Alternative 2: Pier Removal and Reconstruction in Same Location

This alternative restores the function and capacity of facilities lost as a result of the disaster in the same location. The site is located within a Zone “VE”, EL 17 North American Vertical Datum (NAVD) per Preliminary Digital Flood Insurance Rate Map 22071C0115 F, dated November 13, 2008. The proposed project will be located in a Coastal High Hazard area. This area is subject to the hazard of high velocity waters from tidal surge or hurricane wave wash. The proposed location is at risk of flood damage from surging water. FEMA’s regulations implementing EO 11988, Floodplain Management, prohibit the Agency from funding new construction in V-zones that is not functionally dependent on water or otherwise facilitates open space use. This project Scope of Work involves the reconstruction of a pier that is functionally dependent on water and the replacement of a restroom structure that is not functionally dependent and does not facilitate open space use. New construction of a functionally dependent pier is consistent with Floodplain Management regulations of 44 CFR 9.

The restroom replacement has also been determined to be eligible by attached FEMA Memorandum of June 2, 2009 from James A. Walke, Acting Assistant Administrator, FEMA Disaster Assistance Directorate to FEMA Regional Administrators and Acting Regional Administrators for Regions I - X, Transitional Recovery Office Directors and Federal Coordinating Officers (Walke 2009) and also by attached Memorandum of July 15, 2009 from Elizabeth A. Zimmerman, Assistant Administrator, FEMA Disaster Assistance Directorate to FEMA Regional Administrators and Acting Regional Administrators for Regions I - X, Transitional Recovery Office Directors and Federal Coordinating Officers (Zimmerman 2012).

By Memorandum of February 17, 2012 from Frank Pagano, Mitigation Division Director of FEMA Region 6 to John Connolly, Senior Public Assistance Advisor, Louisiana Recovery Office, the 2008 Preliminary Digital Flood Insurance Rate Map (DFIRM) elevation is required for the restroom structure (Pagano 2012). Harm to and within the floodplain must be minimized. New construction must be compliant with 44 CFR 9 minimization standards and current codes and standards. Per 44 CFR 9.11 (d)(9), where possible, disaster-proofing of the building and/or elimination of such future losses should occur by relocation of those building contents, materials and equipment outside or above the base floodplain. CNO would be required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these permit(s) should be documented to the local floodplain administrator and copies provided to LA GOHSEP and FEMA as part of the permanent project files. In compliance with EO 11988, an 8-Step Process showing considered alternatives was completed, is attached or on file. A Cumulative Public Notice was published 10/26/07 - 11/07/07, and is on file.

Alternative 3: Pier Removal and Replacement in Alternate Location

The proposed project restores the function and capacity of facilities lost as a result of the disaster. The restroom facility will be located in its pre-existing footprint with elevation to the BFE. The pier will be relocated in a more practicable location but still within the vicinity of the original pier. The site is located within a Zone "VE", EL 17 North American Vertical Datum (NAVD) per Preliminary Digital Flood Insurance Rate Map 22071C0115 F, dated 11.13.08. All aspects of the proposed project will be located in a Coastal High Hazard area. This area is subject to the hazard of high velocity waters from tidal surge or hurricane wave wash. There proposed location is at risk of flood damage from surging water. FEMA's regulations implementing EO 11988, Floodplain Management, prohibit the Agency from funding new construction in V-Zones that is not functionally dependent on water or otherwise facilitates open space use. This project Scope of Work involves the relocation of a pier that is functionally dependent on water and the replacement of a restroom structure that is not functionally dependent and does not facilitate open space use. New construction of a functionally dependent pier is consistent with Floodplain Management regulations of 44 CFR 9. The restroom replacement has also been determined to be eligible by attached FEMA memorandum of June 2, 2009 from James A. Walke, Acting Assistant Administrator, FEMA Disaster Assistance Directorate to FEMA Regional Administrators and Acting Regional Administrators for Regions I - X, Transitional Recovery Office Directors and Federal Coordinating Officers (Walke 2009) and also by attached Memorandum of July 15, 2009 from Elizabeth A. Zimmerman, Assistant Administrator, FEMA Disaster Assistance Directorate to FEMA Regional Administrators and Acting Regional Administrators for Regions I - X, Transitional Recovery Office Directors and Federal Coordinating Officers (Zimmerman 2012). By Memorandum of February 17, 2012 from Frank Pagano, Mitigation Division Director of FEMA Region 6 to John Connolly, Senior Public Assistance Advisor, Louisiana Recovery Office, the 2008 Preliminary Digital Flood Insurance Rate Map (DFIRM) elevation is required for the restroom structure (Pagano 2012). Harm to and within the floodplain must be minimized. New construction must be compliant with 44 CFR 9 minimization standards and current codes and standards. Per 44 CFR 9.11 (d)(9), where possible, disaster-proofing of the building and/or elimination of such future losses should occur by relocation of those building contents, materials and equipment outside or above the base floodplain. CNO is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. Applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these permit(s) should be documented to the local floodplain administrator and copies provided to LA GOHSEP and FEMA as part of the permanent project files. In compliance with EO 11988, an 8-Step Process

showing considered alternatives was completed and is attached. A Cumulative Public Notice was published October 26, 2007 – November 07, 2007, and is on file.

#### **4.4 Coastal Resources**

##### **4.4.1 Regulatory Setting**

###### **4.4.1.1 Coastal Zone Management Act of 1972**

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

The Act's definition of a coastal zone includes coastal waters extending to the outer limit of state submerged land title and ownership, adjacent shorelines and land extending inward to the extent necessary to control shorelines. A coastal zone includes islands, beaches, transitional and intertidal areas, and salt marshes.

The CZMA requires that states develop a State Coastal Zone Management Plan or program and that any federal agency conducting or supporting activities affecting the coastal zone conduct or support those activities in a manner consistent with the approved state plan or program.

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 the activity would be consistent with the plan.

###### **4.4.1.2 Louisiana State and Local Coastal Resources Management Act of 1978**

Pursuant to the CZMA, the Louisiana State and Local Coastal Resources Management Act (R.S. 49:214:21 *et seq.* Act 1978, No. 361)(SLCRMA), 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 Resource's Office of Coastal Management (OCM). If a proposed action is within the Coastal Zone boundary, OCM will review the eligibility of the project prior to its review from other federal agencies (USACOE, USFWS & NMFS). The mechanism used to review these projects is the Coastal Use Permit (CUP). Per the CZMA, all proposed federal projects must undergo a Consistency Determination by OCM for that projects consistency with the state's Coastal Resource Program (i.e. LCRP).

##### **4.4.2 Existing Conditions**

The proposed project area including the original pier and proposed alternate pier location are within the Louisiana Coastal Zone (Appendix A). Per the CZMA and LCRP the OCM will review the project actions as they relate to the protection of coastal resources for a Consistency Determination.

##### **4.4.3 Environmental Consequences**

###### Alternative 1: No Action

Under the No Action Alternative, a CUP and subsequently a RHA § 10 permit would be required for the removal of the original pier, if these permits have not been obtained already from the original construction. Because the pier represents a public safety hazard and because under the RHA § 10 permit a pier that is no longer serviceable must be removed the “No Action” alternative cannot be legally fulfilled.

#### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, a CUP and subsequently a RHA § 10 permit would be required for the removal of the original pier, if these permits have not been obtained already from the original construction. Due to the location of the original pier in relation to the 17<sup>th</sup> Street Canal returning the pier to its original location may not be feasible or permitted under the CUP or RHA § 10 permit.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, a CUP and subsequently a RHA § 10 permit would be required for the removal of the original pier, if these permits have not been obtained already from the original construction. Because the 17<sup>th</sup> Street Canal’s outflow is directed towards the original pier location using the same footprint may not be a practical alternative whereas the proposed alternate location is not in the outflow of the canal. There are no foreseeable impacts to the coastal zone from Alternative 3 that are in excess of Alternative 2 i.e. the impacts would be equal from the direct placement of the pier.

## 4.5 Noise

### 4.5.1 Regulatory Setting

#### 4.5.1.1 *Noise Control Act of 1972*

The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The Act also serves to (1) establish a means for effective coordination of Federal research and activities in noise control; (2) authorize the establishment of Federal noise emission standards for products distributed in commerce; and (3) provide information to the public respecting the noise emission and noise reduction characteristics of such products.

Noise when viewed as a resource is institutionally significant because of the Noise Control Act of 1972. Compliance with surface carrier noise emissions is technically significant. Exposure of persons to noise or generation of noise levels in excess of applicable standards is publicly significant due to health reasons and annoyance.

Noise-sensitive receptors are located in areas with land uses that are associated with indoor and outdoor activities and that may be subject to substantial interference from noise. These land uses include residential dwellings, hotels, hospitals, nursing homes, educational facilities and libraries.

Acceptable noise levels have been established by the U.S. Department of Housing and Urban Development (HUD) for construction activities in residential areas:

**Acceptable** (not exceeding 65 dBA) – The noise exposure may be of some concern but common building construction will make the indoor environment acceptable and the outdoor environment will be reasonably pleasant for recreation.

**Normally Unacceptable** (above 65 but not greater than 75 dBA) – The noise exposure is significantly more severe; barriers may be necessary between the site and prominent noise

sources to make the outdoor environment acceptable; special building constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

**Unacceptable** (greater than 75 dBA) – The noise exposure at the site is so severe that the construction costs to make the indoor noise environment acceptable may be prohibitive and the outdoor environment would still be unacceptable (HUD 1984).

The sound level most commonly used for noise planning purposes is 65 dBA and represents a compromise between community impact and the need for activities like construction. EPA identified 55 dBA as a level below which there is no adverse impact (EPA 1974). As a point of reference, an average conversation between two people three ft away from each other ranges around 60 dB and the threshold of discomfort or pain is around 120 dB.

#### **4.5.2 Existing Conditions**

Noise sensitive land uses in or near the project area are marina boathouse residences on the east and south sides of Breakwater Drive. The nearest residential dwellings are approximately 118 ft to the east of the original pier location and 358 ft to the south of the proposed alternate project area. The dominant noise sources in the vicinity are vehicle traffic on roadways (Breakwater Drive), marina boat traffic (Municipal Yacht Harbor) and active construction / repair projects throughout the neighborhood area.

#### **4.5.3 Environmental Consequences**

##### Alternative 1: No Action

Under the No Action Alternative there would be no net increase of noise.

##### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, the pier removal and installation processes use similar hydraulic mechanisms to remove and install pier pilings. Removal of pier pilings utilizes a vibratory head attached to a crane boom to simultaneously loosen the piling from its surrounding substrate and lift it out of the water. Noise generated from this process would include the barge based crane itself and the vibratory head. Pier piling installation may be performed in a similar manner where a vibratory head attached to a crane boom is placed on a pier piling while it is vibrated in place into the substrata below. Another common practice for placing pier piles is to use an impact hammer which utilizes a large piston to impact the piling and drive it into the earthen substrata below.

As a general rule of thumb, noise generated by a stationary noise source, or “point source,” will decrease by approximately 6 dBA over hard surfaces and 9 dBA over soft surfaces for each doubling of the distance (CDOT 1998).

An approximate decibel rating for the vibratory hammer head at 50 ft is approximately 78.9 dBA (WSDOT 2010). Therefore given the basic method above we can estimate that the decibel level at the closest residence from the original pier location would be approximately 72 dBA.

At 72 dBA the level of noise falls into HUD’s criterion of noise as being within the Normally Unacceptable range of above 65 but not greater than 75 dBA (HUD 1984). Within this range the noise exposure is severe and barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable and to ensure that people indoors are sufficiently protected from the outdoor noise.

Noise estimates for the impact hammer on a 12 in diameter wood pile is 180 dB (peak) at 32.08 ft (10 m) (Illinworth & Rodkin 2007). Again, using the formulaic assumptions stated above the

noise level at the nearest residence would be approximately 171 dB (peak). Based on the HUD noise acceptable noise levels this range is within the Unacceptable range being greater than 75 dBA.

Therefore the vibratory method would be the preferred method and would require the least amount of noise attenuating mitigation or timing and duration mitigation measures to bring noise levels down to within the Acceptable range.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, the process of removing the original pier would not change nor would the distance to the nearest sensitive receptor as discussed under Alternative 2. The difference between Alternative 2 and Alternative 3 is the minimum distance to the nearest sensitive receptor from the proposed pier installation site. In the case of Alternative 3 this distance is 358 ft. Sound attenuation at this distance would result in a dB rating of approximately 26.4 dB (using an average of 7.5 dB drop per each doubling distance due to the mixed hard and soft ground conditions onsite) for the vibratory hammer pier installation method. Based on the HUD scale 26.4 dB is well within the Acceptable range.

The impact hammer would have an approximate decibel rating of 96.3 dB. This rating is still within the Unacceptable range as defined by HUD.

Based on these analyses, Alternative 3 is the most practicable alternative for the least amount of impacts to sensitive receptors. Additionally the impact hammer method is not a suitable method due to the degree of noise generated and the proximity to sensitive receptors under Alternative 2 or 3.

Because the pier is being returned to pre-disaster capacity it is not anticipated that daily use would exceed the average use levels in 2005, based on populations estimates in 2005 and 2010, and therefore there would be no net increase in noise from traffic along Breakwater Drive from 2005 levels.

## **4.6 Climate and Air Quality**

### **4.6.1 Regulatory Setting**

#### **4.6.1.1 Clean Air Act of 1970**

The Clean Air Act (CAA) (42 U.S.C. §7401 *et seq.*) is the federal law that regulates air emissions from stationary and mobile sources. This law tasks EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The six criteria pollutants regulated by the CAA are: carbon monoxide (CO), lead (Pb), nitrogen oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), particulate matter (less than 10 micrometers [PM<sub>10</sub>] and less than 2.5 micrometers [PM<sub>2.5</sub>]), and sulfur dioxide (SO<sub>2</sub>) (Table 1).

Under the 1977 amendments to the CAA, air quality that does not achieve the NAAQS are required to develop and maintain State Implementation Plans. These plans constitute a federally enforceable definition of the State's approach (or plan) and schedule for the attainment of the NAAQS. Air quality management areas are designated as "attainment," "nonattainment," or "unclassified" for each individual criteria pollutant depending on whether concentrations exceed an applicable NAAQS. Areas that have been re-designated from nonattainment to attainment are called maintenance areas.

**Table 1 National Ambient Air Quality Standards - Criteria Pollutants**

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup> <sup>(1)</sup>	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb <sup>(2)</sup>	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm <sup>(3)</sup>	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution [71 FR 61144, Oct 17, 2006]	PM <sub>2.5</sub>	primary and secondary	Annual	15 µg/m <sup>3</sup>	annual mean, averaged over 3 years
			24-hour	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb <sup>(4)</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Table Data: October 2011

Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m<sup>3</sup>).

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(3) Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO<sub>2</sub> standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

***General Conformity Rule***

The General Conformity Rule ensures that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national standards for air quality. Established under the CAA § 176(c)(4), the General Conformity Rule plays an important role in helping states and tribes improve air quality in those areas that do not meet the NAAQS. Under the General Conformity Rule, federal agencies must work with State, Tribal and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan (EPA 2011).

***4.6.1.2 New Orleans Ozone Maintenance Area***

The LDEQ submitted a maintenance plan addressing the 1997 8-hour ozone standard for the New Orleans Ozone Maintenance Area on June 29, 2007. This area is designated unclassifiable/attainment for the 1997 ozone standard. EPA determined this request for the New Orleans Ozone Maintenance Area was complete on August 8, 2007. This maintenance plan meets the requirements of the CAA § 110(a)(1) and is consistent with EPA's maintenance plan guidance document dated May 20, 2005. The EPA therefore approved the 1997 8-hour ozone NAAQS maintenance plan for the New Orleans Ozone Maintenance Area including the parishes of Jefferson, Orleans, St. Bernard and St. Charles on September 16, 2008 (73 FR 59523, Oct. 9, 2008).

***4.6.1.3 Executive Order 13514***

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, signed on October 5, 2009, directs federal agencies to reduce Green House Gas (GHG) emissions and address climate change in NEPA analysis. It expands upon the energy reduction and environmental performance requirements of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. It 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 EO 13514 are: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, perfluorocarbon and sulfur hexafluoride. These GHGs have varying heat-trapping abilities and atmospheric lifetimes.

On January 23, 2012, FEMA issued a policy statement, *FEMA Climate Change Adaptation Policy Statement (2011-OPPA-1)*, accounting for the direction pursuant to EO 13514 and enacted as policy additional measures that ultimately serve FEMA's mission by not attributing to the effects of global warming (FEMA 2012).

***4.6.1.4 Final Mandatory GHG Inventory Rule***

In response to the Consolidation Appropriations Act (House Resolution 2764; P.L. 110 – 161), EPA has issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires large sources that emit 27,557 tons or more per year of GHG emissions to report GHG emissions in the U.S., collect accurate and timely emissions data to inform future policy decisions, and submit annual GHG reports to the EPA. The final rule was signed by the EPA administrator on September 22, 2009, published in the Federal Register on October 30, 2009, and made effective December 29, 2009.

***4.6.2 Existing Conditions***

The proposed project is located in the New Orleans Ozone Maintenance Area which has been designated "attainment" for this air quality management area, effectively June 15, 2004 by EPA.

Temporary increases in air pollution from the proposed action would occur from three main sources: 1) emissions from transportation of construction materials such as earthen fill, concrete,

gravel and pier structural members to the project site and removal of waste material (e.g. remnant of the old pier); 2) combustible emissions from the engines of construction equipment, workers' automobiles commuting to the job site and 3) fugitive dust (PM<sub>10</sub>) when soils are disturbed at the proposed alternate pier location and earthen stockpiles.

All sources of air pollution related to the proposed project are under the temporary definition and are classified as mobile equipment i.e. cars, trucks, motorized vessels.

The combined population of the four parishes represented as the New Orleans Maintenance Area for the 2000 Census was approximately 1 million. Post Hurricane Katrina, the July 01, 2006 Census Bureau estimated a 31% decrease of the 2000 census. Even though the population since Hurricane Katrina is rising it may not return to pre-disaster level during the 10-year ozone maintenance period (LDEQ 2007).

### **4.6.3 Environmental Consequences**

#### Alternative 1: No Action

Under the No Action Alternative there would be no additions of air pollution resulting from the proposed project.

#### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, all of the project activities will occur in Jefferson and Orleans Parish's, these Parish's' are part of the New Orleans Ozone Maintenance Area which is in attainment for all NAAQS; therefore, the air emissions generated by the proposed project activities would not trigger a conformity determination. As there are no violations of air quality standards and no conflicts with the State Implementation Plans (SIPs), the direct and indirect impacts on air quality from the implementation of Alternative 2 would be short-term and less than significant.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, there would be no difference in the emissions generated from what was identified in Alternative 2.

Therefore project related emissions will not have an appreciable negative effect on local or regional air quality and will not pose as a project constraint.

## **4.7 Federally Protected Species**

### **4.7.1 Regulatory Setting**

#### **4.7.1.1 Endangered Species Act of 1973**

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

Section 7 (a)(2) of the ESA requires the lead federal government agency to consult with either the USFWS or the NMFS, depending which agency has jurisdiction over the federally listed species in question, when a federally funded project may have the potential to adversely affect a federally listed species or a federal action occurs within or may have the potential to impact

designated critical habitat. The lead agency will consult with the USFWS or the NMFS or both as appropriate and will determine if a biological assessment is necessary to identify potential adverse effects to federally listed species, their critical habitat or both. If a biological assessment is required it will be followed by a biological opinion from the USFWS, the NMFS or both (Agencies) depending on the jurisdiction of the federally listed species identified in the biological assessment. If impacts of a proposed federal project are considered negligible to federally listed species the lead agency may instead prepare a concurrence letter to the Agencies with a “*May Affect, but Not Likely to Adversely Affect*” determination requesting that agency’s concurrence. This EA serves to identify potential impacts and meet the ESA § 7 requirement by identifying risks of the proposed action alternatives to known federally listed species and their critical habitat and by providing a means for consultation with the Agencies.

Pursuant to the ESA, FEMA’s Louisiana Recovery Office began informal consultation with the USFWS on June 26, 2012 and NOAA-NMFS on June 28, 2012 to identify potential project related impacts to species that are federally protected under the ESA and MMPA (Appendix C). With prior input from the agencies FEMA identified conservation measures that would reduce potential impacts to a discountable level to any one species and therefore FEMA requested a *May Affect, but Not Likely to Adversely Affect* determination concurrence from the agencies. In addition, FEMA also requested concurrence from USFWS that the proposed project will not *destroy or adversely modify* designated critical habitat (Unit 8) for the Gulf sturgeon. FEMA received an ESA § 7 concurrence (response) letter dated July 24, 2012 stating USFWS’s concurrence that the proposed project activities “... *are not likely to adversely affect the gulf sturgeon or its critical habitat*”. FEMA waited beyond 90 days for a response letter from NMFS which would have stated a concurrence to FEMA’s June 28<sup>th</sup> letter or additional conservation measures to ensure a “not likely to adversely affect” determination. Because FEMA did not receive a response from NMFS, a “concurrence determination” will be assumed for the federally listed species under their regulatory purview.

#### **4.7.1.2 Marine Mammal Protection Act of 1972**

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. § 1361 *et seq.*) protects all marine mammals, regardless of whether or not they are listed under the ESA. The Secretary of Commerce is responsible for the protection of all cetaceans (whales, porpoises, and dolphins) and pinnipeds (seals and sea lions), except walruses, and has delegated authority for implementing the MMPA to NMFS. The Secretary of the Interior is responsible for the protection of walruses, polar bears, sea otters, manatees, and dugongs, and has delegated this responsibility to the USFWS. These responsibilities include providing oversight and advice to regulatory agencies on all federal actions that might affect these species. The MMPA prohibits the “take” of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. Under the MMPA, take is defined as “*harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect any marine mammal.*” (16 U.S.C. § 1362 (13)).

#### **4.7.1.3 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Bald and Golden Eagle Protection Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

For purposes of these guidelines, "disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

A violation of the Bald and Golden Eagle Protection Act can result in a fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

#### ***4.7.1.4 Magnuson-Stevens Fishery Conservation and Management Act of 1976***

##### **The MSA**

The Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as amended through January 17, 2007)(MSA) was first enacted in 1976 and has since undergone revisions and amendments in 1996 and 2007 as the Sustainable Fisheries Act and the MSA Reinvestment Act, respectively. The MSA is designed to protect fish off the coasts of the United States, the highly migratory species of the high seas, the species which dwell on or in the Continental Shelf appertaining to the United States, and the anadromous species which spawn in United States rivers or estuaries, as these species constitute valuable and renewable natural resources.

##### **Essential Fish Habitat (EFH)**

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established a new requirement to describe and identify "essential fish habitat" (EFH) in each federal fishery management plan. NOAA Fisheries Service issued EFH regulations in January 2002. EFH is defined in the Magnuson-Stevens Act as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The rules promulgated by the NMFS in 1997 and 2002 further clarify EFH with the following definitions: waters - aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate - sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary - the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and spawning, breeding, feeding, or growth to maturity - stages representing a species' full life cycle (NOAA 2012). In Louisiana, the Gulf of Mexico Fishery Management Council is the governing body responsible for identifying which species of fish, shrimp, lobster and coral will be included in the Gulf of Mexico Fishery Management Plan (FMP). The species list for the Gulf of Mexico FMP is available in Appendix B. Of this list the following species are recognized as having EFH or are economically important marine fishery species in or near the project area (Table 2).

#### **4.7.2 Existing Conditions**

Using FWS's IPaC portal, to determine the potential for federally listed species to be present in Jefferson and Orleans Parish's, generated ten species that are either candidates for listing or are federally listed as threatened or endangered. Table 2 below accounts for the IPaC database results, the results from USFWS's Critical Habitat Mapper (USFWS 2012b) and NOAA's critical

habitat maps for individual sea turtle species. Of the ten federally listed species identified the following five species have the potential for occurring in or near the project area: Gulf sturgeon (*FT*), West Indian manatee (*FE*), green sea turtle (*FT*), Kemp's Ridley sea turtle (*FE*) and the loggerhead sea turtle (*FT*). Of the critical habitat reviewed for all federally listed species the Gulf sturgeon was the only species to have designated critical habitat within the project area or could possibly be affected by the proposed project.

During a site visit on June 08, 2012, a FEMA biologist determined there was no suitable nesting or perching habitat in the projects vicinity for Bald Eagle, Golden Eagle or Osprey. The water around the site does however offer foraging habitat for piscivorous (fish eating) birds of prey such as Bald Eagles and Osprey.

Using the NOAA – NMFS EFH Mapper (online, V3.0) mapping program several shellfish and finfish species were identified as having designated EFH in Lake Pontchartrain (Table 3).

Two species were identified that have the potential to be present in or near the project area that are protected under the MMPA. These include the West Indian manatee and bottlenose dolphin.

Several economically important shellfish and finfish species were also identified to have the potential for being in the project area. These species have local, domestic and international commercial and recreational economic value.

#### **4.7.2.1 ESA Federally Listed Species & Critical Habitat**

##### **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 (Haig 1985, Nicholls 1989). 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 (Haig 1985). 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. Winter 2001 census observations were in the following habitat type: mudflats (36.3%), sandy beaches (33.2%), sand/salt flats (23.1%) algal mats (2.8%), oyster reefs (1.0%) and gravel shores (0.1%)(Elliott-Smith and Haig 2004). Critical habitat for this species has been designated along the shoreline margins of several gulf coast states including Louisiana (USFWS 2012c). The closest area of critical habitat is in Plaquemines Parish approximately 20 miles south of the project area. While the project area is within this species range there is little to no available habitat present in the project area for Piping Plover.

##### ***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 (Jones 2010). 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 (Jones 2010). Sprague's pipit may occur in the vicinity of the proposed project but insufficient data regarding its overwintering range is available to be certain (Table 2). Current data does suggest its non-breeding; overwintering range extends from central Louisiana westward to Texas, south to Mexico and

northward including the southern regions of New Mexico and Arizona (Jones 2010, Robbins and Dale 1999). No suitable overwintering habitat is available in or near the project area.

### **Fishes**

#### ***Gulf Sturgeon***

The Gulf sturgeon is a federally Threatened fish species that has federally designated critical habitat within the project area (Appendix A)(USFWS 2012c). 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 nearshore 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 (USFWS and Gulf States Marine Fisheries Commission 1995). 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 proposed project is located towards the western limit of the designated Gulf sturgeon critical habitat area - Unit 8. This critical habitat unit extends eastward from the Lake Pontchartrain Causeway (a twin highway bridge supported by pilings extending 33.6 km (20.9 mi) from the north to the south) encompassing the north and south margins of Lake Pontchartrain to the Mississippi Sound (Appendix A). This critical habitat area provides juvenile, subadult and adult feeding, resting and passage habitat for Gulf sturgeon from the Pascagoula and Pearl Rivers subpopulations. Lake Pontchartrain in particular provides essential winter habitat for the Pearl River Gulf sturgeon subpopulation (USFWS & NMFS 2003). 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 (USFWS 2007a). The pallid sturgeon being known to only occupy the Mississippi and Atchafalaya River systems in Louisiana is outside of the potential for occurring in Lake Pontchartrain with the exception of stochastic flooding events necessitating the release of waters through Bonnet Carré Spillway from the Mississippi River into Lake Pontchartrain. There is no data to suggest that pallid sturgeons would survive in brackish, estuarine waters such as Lake Pontchartrain as they are known to be an obligate freshwater species (Cech and Doroshov 2004).

#### **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 (USFWS 2012c). 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 (Appendix A) including the Amite, Blind, Tchefuncte, 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 nearshore 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 (USFWS 2007b). 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 (USFWS 2007b).

#### **Reptiles**

##### **Sea Turtles**

Five species of sea turtles were identified as having the potential to occur in Jefferson and/or Orleans Parish (Table 2)(USFWS 2012b). Based on personal communication with fisheries biologist Eric Hawk (NMFS SERO), stranding data from NMFS' Sea Turtle Stranding and Salvage Network (NOAA 2012 )(Appendix A) and a confirmed report of a Lake Pontchartrain shrimp trawler ensnaring a Kemp's ridley sea turtle (seaturtle.org 1999); 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 tip 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 (Dodd 1988). 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). While nesting has been known to occur on the barrier islands off the Louisiana coast this area is not known to be as frequently used as the Gulf coastlines of Alabama and west Florida (NMFS 2012b, 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 (Dodd 1988, NMFS 2012b, Witherington 2002). In the western Atlantic, subadult developmental habitats may also include lagoons, estuaries, and the mouths of bays and rivers rich in food resources (Dodd 1988). Witzell (2002) suggests that 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 molluscs (e.g. snails, clams, squid) 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) during hatching and marine predators (e.g. predatory fishes) 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.

Lake Pontchartrain has limited hard bottom substrate and comprised largely of a muddy (mucky) bottom comprised of small silt and clay particles (USGS 2002, Whitmore 2006). Lake Pontchartrain is used extensively for the commercial harvest of white and brown shrimp, blue crabs and until 1990 was used extensively for the harvest of *Rangia cuneata* clams (Abadie and Poirrier 2002). These abundant invertebrate species are within the wide range of prey items for the loggerhead sea turtle and may account for the presence of this species in Lake Pontchartrain.

### ***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. This pelagic developmental time may last up to two years at which time the Kemp's ridley becomes a neritic species (Collard and Ogren 1990). 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 molluscs.

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).

Possible threats are in common with all other sea turtles.

### ***Green Sea Turtle***

The green turtle has a circumglobal distribution, occurring throughout tropical, subtropical waters and to a lesser extent temperate waters (NMFS and USFWS 2007). In U.S. Atlantic waters, green turtles are found in inshore and nearshore waters around the U.S. Virgin Islands, Puerto Rico, and continental United States from Texas to Massachusetts (NMFS and USFWS 1991). 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.

Current literature does not address the salinity preferences of sea turtles but inferences can be made that brackish environments like that found in Lake Pontchartrain at least in an ephemeral sense support foraging behavior (Morreale and Standora 2005). With recent insights into sea turtle behavior much of the baseline knowledge regarding sea turtle migrations, site selection, feeding habits, juvenile vs. adult behavior is constantly being challenged and revised (Heithaus *et al.* 2002, Morreale and Standora 2005, McClellan and Read 2007).

**Table 2 Candidate, Threatened or Endangered Species Known to Occur in Jefferson and/or Orleans Parish**

Common Name	Scientific Name	Federal Status <sup>†</sup>	Critical Habitat	Agency Jurisdiction (FEMA)	Habitat Requirements	Determination <sup>‡</sup> / Rationale
<b>Birds</b>						
Piping Plover	<i>Charadrius melodus</i>	Threatened	Yes <sup>3</sup>	USFWS	Shore bird that breeds in the Great Lakes and northern plains regions and overwinters on the coastlines of the Gulf of Mexico. Preferred overwintering habitat is coastal sand dunes and algal matt areas.	No Effect / Suitable overwintering habitat (P = 0.1) for this species is not found in or near the proposed project area. Closest designated Critical Habitat is > 20 miles south of proposed project location.
Sprague's Pipit	<i>Anthus spragueii</i>	Candidate	No	USFWS	Grassland bird that overwinters during its non-breeding season from western Louisiana to Mexico and southwestern states.	No Effect / Project area is outside the suggested overwintering range of this species.
<b>Fishes</b>						
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened	Yes	USFWS	Anadromous species that spends most of its life in marine habitats and spawns in riverine systems. Found in a variety of substrate areas based on age class of species.	NLAA / Project area is located in designated critical habitat. Project activities will not have a significant impact on critical habitat constituents. Effects may include temporary disturbance.
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	No	USFWS	A freshwater obligate species. Prefers large, free-flowing turbid river bottoms. No information exists on preferred spawning habitat.	No Effect / No suitable habitat present.
<b>Mammals</b>						
West Indian manatee	<i>Trichechus manatus</i>	Endangered / Strategic Stock (MMPA) <sup>4</sup>	Yes <sup>1</sup>	USFWS	Found in marine, estuarine, and freshwater environments with a strong preference for warm and well vegetated waters.	NLAA / Lake Pontchartrain is a known transitional habitat for West Indian manatee.
<b>Reptiles</b>						
Green sea turtle	<i>Chelonia mydas</i>	Threatened	Yes <sup>1</sup>	NOAA-NMFS	Shallow waters (except when migrating) inside reefs, bays, and inlets. Attracted to lagoons and shoals with an abundance of marine grass and algae.	NLAA / Habitat availability is unknown but reported sightings have been made in Lake Pontchartrain.

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Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	Yes <sup>1</sup>	NOAA-NMFS	Nesting habitat includes low and high energy beaches of tropical locations. Non-nesting habitat preferences include mangroves and areas of high energy coastline with rock outcrops, shoals and jetties.	No Effect / Suitable habitat does not occur in or near the proposed project area.
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	No	NOAA-NMFS	Nesting habitat includes sandy beaches typically between Mexico and Texas. Non-nesting habitat is primarily oceanic for juveniles and neritic for adults.	NLAA / Lake Pontchartrain may offer suitable foraging habitat.
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	Yes <sup>1</sup>	NOAA-NMFS	Nesting habitat includes high energy warm water, beaches. Non-nesting habitat includes marine environments with a preference for pelagic areas.	No Effect / Suitable habitat does not occur in or near the proposed project area.
Loggerhead sea turtle* - NWA DPS	<i>Caretta caretta</i>	Threatened	No	NOAA-NMFS	Nesting habitat includes high energy warm water, beaches. Non-nesting includes: bays, sounds, and estuaries along the Atlantic and Gulf coasts and nearshore and oceanic habitats.	NLAA / Lake Pontchartrain may offer suitable foraging habitat.
<p>† ESA status designations in Table 2 are relevant to Louisiana only; ESA listing status may be different elsewhere.</p> <p>‡ Endangered Species Act - Project Effect Determination Proposed by FEMA.</p> <p>1 Critical habitat is not designated in Louisiana.</p> <p>2 Critical habitat is designated in Louisiana, but does not occur within Jefferson or Orleans Parish.</p> <p>3 Critical habitat may occur in Jefferson and/or Orleans Parish, but not within the proposed project area.</p> <p>4 Marine Mammal Protection Act of 1972 (MMPA) Stock Assessment</p>						

- Table data acquired from: USFWS Jefferson and Orleans Parish TES species data accessed 5/8/2012 from USFWS IPaC Web Portal (<http://ecos.fws.gov/IPaC/>); USFWS Critical Habitat by species data accessed 5/8/2012 from USFWS Critical Habitat Portal (<http://criticalhabitat.fws.gov/crithab/>); \*NOAA Office of Protected Fisheries – Loggerhead Turtle Website, Accessed 5/08/2012 (<http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm#habitat>); Sea Turtle Critical Habitat, NOAA, OPR 5/08/2012

#### **4.7.2.2 Marine Mammal Species Protected Under MMPA**

Two species with the potential to be within the project area that are under the protection of the MMPA include the West Indian manatee and the bottlenose dolphin (Table 2).

##### ***West Indian Manatee***

The West Indian manatee has been known to occur in Lake Maurepas and Lake Pontchartrain during the summer months when water temperatures in the lakes are warmer. While not confirmed warm water inputs into Lake Pontchartrain like that of the 17<sup>th</sup> Street Canal may attract manatees that are early in their summer migration. Sightings of manatees in Lake Pontchartrain have recently become more common requiring more scrutiny of projects in Lake Pontchartrain.

The West Indian manatee's taxonomy, federal status, biological requirements and seasonal migrations are further discussed under Section 4.7.2.1 above.

##### ***Bottlenose Dolphin***

The bottlenose dolphin is a rare but known occurrence in Lake Pontchartrain. A pod of approximately 30-40 individuals were observed and monitored by NMFS from April of 2008 to at least 2009 ( $\geq 30$  months)(Barry *et al.* 2008 and NMFS 2011). This pod of dolphins was monitored by NMFS for injuries as a result of living in an estuarine environment for prolonged periods of time. The noted injuries included topical lesions that were typical of injuries as a result of living in low salinity environments (Barry *et al.* 2008).

At least one individual bottlenose dolphin is also known to be a resident at the Lakeshore Estates marina on the north shore of Lake Pontchartrain since August of 2005 (NOLA.com 2012). This area is immediately west of the Rigolets which is one of Lake Pontchartrain's passages to the Gulf of Mexico. It is probable that this individual dolphin is able to reside in this area due to higher and fluctuating salinity levels at the Rigolets than found in most areas of Lake Pontchartrain (McCorquodale and Georgiou 2003).

Beginning in 2010, an Unusual Mortality Event (UME) under the MMPA was issued for cetaceans in the northern Gulf of Mexico and remains current as of this writing. NOAA has documented several bottlenose dolphins and two unspecified species of dolphins that were found stranded on the north and south shores of Lake Pontchartrain during 2010. The stranding in Lake Pontchartrain represents a minority of the total strandings in the northern Gulf of Mexico and no stranding reports were made during 2011 or to date in 2012 for Lake Pontchartrain (NOAA 2012b).

While there is evidence of bottlenose and to a lesser extent other dolphin species utilizing Lake Pontchartrain it is unclear to what extent and if there are any geographical limits that may correlate with water salinity in Lake Pontchartrain.

While not a typical resident of Lake Pontchartrain, bottlenose dolphins have been known to occur in the Lake. Bottlenose dolphins are a marine mammal species and are federally protected under the MMPA. These dolphins likely enter the Lake from the Gulf of Mexico while in search of prey items such as bay anchovies and at times menhaden. The bottlenose dolphin is not an estuarine species and will incur injury if they remain in a brackish environment for too long. It has been purported that a pod of approximately 33 bottlenose dolphins utilize Lake Pontchartrain for feeding habitat and will retreat to the marine waters of the Lake Borgne area when their health deteriorates to an unspecified level and then return to Lake Pontchartrain to feed when their condition improves. Dolphins and other marine mammals rely upon acoustics for communication, navigation and identification of prey species and are known to be drawn to and can be sensitive to anthropogenic derived underwater sounds.

#### **4.7.2.3 Federally Managed and Economically Important Species**

In addition to species protected under the under the ESA and MMPA, there are invertebrate and finfish species known to occur in Lake Pontchartrain that are managed under: a FMP and may have designated EFH under the MSA or are an economically important species to the local economy. Species that are economically important support commercial fisheries that distribute their catch locally as well as internationally and contribute to the local sport fishing industry (Table 2).

#### **4.7.2.4 Federally Managed Species with Designated EFH**

Five species of marine and estuarine fauna with designated EFH are known to inhabit the south lake area of Lake Pontchartrain.

##### ***Shrimp***

Three shrimp species are known to inhabit the waters of Lake Pontchartrain, these include the white, brown and pink shrimp. These shrimp species have similar lifecycles where spawning occurs in the open ocean and the fertilized eggs, after developing into a post-larval stage, are brought into estuarine areas by tidal and aeolian currents. The postlarval shrimp develop in the nutrient rich demersal estuarine zone until reaching a juvenile size between 70 to 100 mm. The juvenile shrimp then emigrate back to the open waters of the Gulf of Mexico as adults to complete their life cycle. Brown shrimp postlarvae enter inshore waters from the Gulf of Mexico in late winter and begin their emigration back to the gulf open waters in late spring. White shrimp enter the inshore waters in late spring and will emigrate back to the gulf waters in late fall when they have reached an optimum size or cold weather triggers their return (Roberts et al. 1995). Of these three shrimp species the white and the brown are the most abundant and economically important (LDWF 1992). The pink shrimp is a rare occurrence in Lake Pontchartrain (Milanes 2002).

##### ***Red Drum***

The red drum, also known locally as “redfish” or “reds”, begins its lifecycle in estuarine environments until it reaches 3 to 4 years when it then returns to the coastal waters of the Gulf of Mexico. Red drums are a locally prized game fish but are of minimal importance to the commercial fishing industry. Executive Order 13449 (October 20, 2007) “Protection of Striped Bass and Red Drum Fish Populations” signed by President George W. Bush calls for the conservation of red drum “*for the recreational, economic, and environmental benefit of the present and future generations of Americans*”.

##### ***Bull Shark***

Bull sharks are a large shark species that are well adapted to living in marine, estuarine and freshwater habitats. The bull shark EFH does not extend into Lake Pontchartrain but is managed under an FMP subcategory of Large Coastal Sharks that covers much of the gulf coastal areas extending from south Florida westward to the Texas-Mexico border (NMFS 2009). Bull sharks are common in Lake Pontchartrain and use the estuary for foraging, spawning habitat and juvenile development (Milanes 2002).

#### **4.7.2.5 Economically Important Marine Fishery Species**

According to Gulfsources.org (a consortium of four different State of Louisiana environmental agencies), Louisiana is second only to Alaska in terms of both tonnage and dockside revenues from commercial fishing. The top estuarine-dependent species, in the Gulf of Mexico, constitute 89 percent of the value of landings, whereas California and Pacific Island landings are only 13 percent estuarine-dependent.

Specifically, several economically important estuarine and marine species are harvested from Lake Pontchartrain. According to USGS (2002), these species include: black drum, spotted and sand sea trout, Atlantic sheepshead, blue crab (hard, soft, peeler) and brown and white shrimp. Gulf menhaden, a small fish prized for its oil, while not harvested in Lake Pontchartrain do spend an important part of their juvenile lives in estuarine waters. At 613,261 metric tons for the Gulf of Mexico in 2011, Gulf menhaden yield higher biomass catch than any other fish species listed in Table 3 (NMFS 2012a).

**Table 3 Federally Protected and Economically Important Marine & Estuarine Species Known to Occur in the South Lake Region of Lake Pontchartrain, LA.**

<b>Marine Species Protected Under MMPA</b>				
Common Name	Scientific Name	Lifestages	MMPA	Potential Impact (None, Low, Medium, High)
bottlenose dolphin	<i>Tursiops truncatus</i>	adult	strategic stock*†	None
West Indian manatee	<i>Trichechus manatus</i>	adult	strategic stock	Low
<b>Federally Managed Species with Designated EFH</b>				
Common Name	Scientific Name	Lifestages‡	FMP	Potential Impact (None, Low, Medium, High)
white shrimp	<i>Penaeus setiferus</i>	larvae, juveniles	Shrimp	Low
brown shrimp	<i>Penaeus aztecus</i>	larvae, juveniles		Low
pink shrimp	<i>Penaeus duorarum</i>	juvenile, adult (rare)		None
red drum	<i>Sciaenops ocellatus</i>	juvenile	Red Drum	Low
bull shark <sup>1</sup>	<i>Carcharhinus leucas</i>	juvenile, adult	Large Coastal Sharks	Low
<b>Economically Important Marine Fishery Species</b>				
Common Name	Scientific Name	Lifestages‡	Potential Impact (None, Low, Medium, High)	
blue crab	<i>Callinectes sapidus</i>	juvenile, adult, mating	Low	
Atlantic croaker	<i>Micropogonias undulates</i>	juvenile, adult	Low	
bay anchovy	<i>Anchoa mitchilli</i>	all lifestages	Low	
black drum	<i>Pogonias cromis</i>	all lifestages	Low	
crevalle jack	<i>Carnax hippos</i>	juvenile	Low	

gulf menhaden	<i>Brevoortia patronus</i>	larvae, juvenile	Low
sand seatrout	<i>Cynoscion arenarius</i>	juvenile, adult	Low
southern flounder	<i>Paralichthys lethostigma</i>	juvenile, adult	Low
spotted seatrout	<i>Cynoscion nebulosus</i>	all lifestages	Low
striped mullet	<i>Mugil cephalus</i>	juvenile, adult	Low

-Table generated in part per comments received by Richard Hartman (NMFS) on 5/15/2012 and †Milanes (2002).

1 – EFH for bull sharks (all ages) is *not* located in Lake Pontchartrain.

\* Refers to bottlenose dolphins in NMFS aerial image B02 for the Mississippi Sound area (Gordon et al. 2011)

† **Strategic Stock:** defined by the MMPA as a marine mammal stock--

- for which the level of direct human-caused mortality exceeds the potential biological removal level;
- which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or
- which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

### 4.7.3 Site Conditions

A site visit was conducted by FEMA’s New Orleans LRO, Environmental Historic Preservation Department on June 08, 2012 at the City of New Orleans’ Municipal Yacht Harbor. The site visit was conducted by Adam Borden (Lead Environmental Protection Specialist) and Kristiaan Stuart (Environmental Protection Specialist). A reconnaissance level survey was conducted during the site visit to assess available habitat for federally listed species, the presence or absence of sensitive habitat areas including wetlands and determine the proposed project layout plans relative to any sensitive species or habitat areas. Meteorological conditions that day included low clouds with light rain, air temperature at 82°F, and medium winds S-SW at 8 to 11 mph. A list of all species encountered was taken during the site visit (see Appendix B).

#### *Original Pier Location*

The first location assessed was the original pier location where remnants (mostly vertical piles) of the pier still remain. The pier piles were submerged in water ranging in depth of approximately 6-inches to several ft. The submerged portions of the piles were covered in filamentous algae and did not appear to have any bivalves attached to them. As with most piers it is likely these piles offer anchoring and feeding habitat for invertebrates and feeding habitat for small fishes and shore birds that feed on these animals. A Black-crowned Night-heron for example was observed on the shore line using the pier structure for cover and feeding habitat. The substrate around the original pier started on the shore line as large boulder and cobble sized fragments of concrete armoring and became smaller to mostly cobble sized pieces with gravels interspersed between. Beyond a depth of approximately 3.0 ft the substrate could not be identified due to water turbidity. There were no signs of floating or anchored-submerged aquatic vegetation within visual range or evidenced in aerial imagery around the original pier location.

The substrate of Lake Pontchartrain largely consists of muck with hard and sandy substrates being a limiting factor for many benthic invertebrate species (Whitmore 2006). According to Ross et al. (2008) subadult and adult sturgeon predominantly utilize shallow waters with sandy substrates with a high potential prey abundance of benthic invertebrates. Areas not consistent with a thick muddy bottom in Lake Pontchartrain would be in areas with increased fluvial velocities such as river mouths and tidal inlets where sediment sorting is more likely to occur and fluvial morphological features such as shoals are more likely to be present. Based on aerial measurements from Google Earth (2011) the original pier site is located approximately 2,250 ft

north of the 17<sup>th</sup> Street Canal outflow gates (Figure 2). With an operational outflow velocity of 4.2 knots that extends to the end of the breakwater wall (unpublished data) it is probable that the substrate in the outfall area is moderately different than surrounding areas outside of the outfall thalweg.

The upland areas surrounding the original pier location is consistent with a public park setting with predominantly ruderal habitat areas including ornamental plantings, cultivar escapees, paved parking areas, street lighting and paved roadways. There were no signs on the shoreline substrate, the pier pilings or utility poles of new or old migratory bird nests or evidence of accumulations of white-wash that would suggest this site in particular is being used extensively by large shore birds (e.g. egrets and herons) or other migratory bird species (e.g. Osprey and Bald Eagles).

#### ***Proposed Pier Location***

The area around the proposed pier location includes parking areas, boat launch facility, an open grassy area of Breakwater Park and a breakwater wall that extends north into Lake Pontchartrain for approximately 160 ft and then westward for an additional 400 ft. Like the original pier location the upland habitat areas are either maintained as open recreational fields or are ruderal areas with little to no native vegetation. Approximately 300 ft to the west of the breakwater wall is a constructed drainage with an associated freshwater emergent wetland that runs from north to south and was created to drain storm runoff from Breakwater Drive. The north end of the drainage appeared to have a small, approximately 6 in culvert, that drained the ditch into Lake Pontchartrain but this area has been filled in with soil and the direct connection no longer exists.

The littoral area between the northern margin of Breakwater Park and Lake Pontchartrain is predominantly boulder sized recycled concrete armoring with coarse gravels and bivalve shells comprising the interstitial spaces. The larger substrate represented the predominant size class in the wetted littoral margin. No shore birds were seen utilizing this area for foraging or cover during the site visit. The larger concrete substrate also follows the outer lakeside margin of the breakwater wall. This substrate was covered with filamentous algae and did not have any signs of attached bivalve invertebrates. There were no signs of natant, anchored-submerged or emergent aquatic vegetation within visual range or evidenced in aerial imagery around the proposed pier location.

There are several water oak trees (*Quercus nigra*) lining Breakwater Drive. These medium sized oak trees could be used for nesting and perching habitat for bird species ranging from a Red-shouldered Hawk sized bird and smaller. There was no evidence of nests or white-wash that would suggest perching or pecking habitat utilization in these trees.

#### **4.7.4 Environmental Consequences**

##### Alternative 1: No Action

The No Action alternative would have no impact on species federally listed under the ESA as threatened or endangered.

##### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, five federally listed species have the potential for occurring in or near the project area: Gulf sturgeon (*FT*), West Indian manatee (*FE*), green sea turtle (*FT*), Kemp's Ridley sea turtle (*FE*) and the loggerhead sea turtle (*FT*). Critical habitat for the Gulf sturgeon has been designated within the project area. Based on FEMA's review, the potential impacts to these species and critical habitat constituents are discountable with the implementation of the prescribed conservation measures. Therefore FEMA has requested the Services concurrence for a *May Affect but Not Likely to Adversely Affect* project determination. In a letter dated July 24,

2012 (USFWS 2012e) the USFWS concurred with FEMA's determination on the West Indian manatee and the Gulf sturgeon based on the known available habitat and required conservation measures detailed in FEMA's June 26, 2012 request for concurrence (Appendix C).

Two species are under the protection of the MMPA as Strategic Stock species. These are the West Indian manatee (also protected under the ESA as *Federally Endangered*) and the bottlenose dolphin. As in the determination for the ESA, FEMA suggests that potential impacts to the West Indian manatee are discountable given the implementation of the prescribed conservation measures. Therefore FEMA has asked for the concurrence under MMPA for a *May Affect but Not Likely to Adversely Affect* project determination for the West Indian manatee if construction were to occur during its migratory season, otherwise a "No Effect" determination would be issued by FEMA for impacts to West Indian manatee. Because of the low probability of bottlenose dolphin or other dolphin species being present in Lake Pontchartrain and / or being impacted by the proposed project FEMA has issued a "No Effect" determination under the MMPA.

Impacts to economically important shellfish and finfish species would be negligible due to the limitations inherent with sport fishing at a fixed location. The pier itself will contribute to the micro-ecology around it by offering a solid surface on its abutments or pilings that are a limiting environmental component in Lake Pontchartrain. Therefore it is reasonable to conclude that the pier will provide a rare habitat in Lake Pontchartrain which in time will attract an entire food chain of aquatic species. Some of these species will undoubtedly be opportunistic game fish thus putting them within reach of sport fishermen utilizing the fishing pier. Due to its extremely small size and minute potential for impact relative to the 630 square mile area of Lake Pontchartrain and over 115 linear miles of similar nearshore habitat the potential effects to economically important fishery species is discountable.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, there would be no difference under Alternative 3 than Alternative 2 stated above. The change in location of the fishing pier would not constitute a significant increase or decrease in net impact to the species or populations identified in Alternative 2.

## **4.8 Environmental Justice**

### **4.8.1 Regulatory**

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

### **4.8.2 Existing Conditions**

According to the most readily available (2010) from the U.S. Bureau of the Census, Demographic Profile Highlights for New Orleans zip code 70124, 90.1 % of the population is white, 4.8 percent is black, 6.3 % is Hispanic, 2.1 % is Asian, 0.2 % is Native American, and 0.1 % is Native Hawaiian. The median household income was \$64,973 (Census Bureau, 2010). The 2010 United States poverty threshold for one person is \$11,139 and \$14,676 for a householder under the age of 65 (Census Bureau 2012).

### **4.8.3 Environmental Consequences**

#### Alternative 1: No Action

The No Action alternative would not involve the implementation of a federal program, policy, or activity. Therefore, there will be no disproportionate adverse impacts to low-income or minority populations.

#### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, there would be no disproportional adverse impacts to low income or minority populations.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, there would be no disproportional adverse impacts to low income or minority populations.

### **4.9 Public Health and Safety**

Safety and security issues considered in this EA include the health and safety of the area residents and the general public as well as the protection of personnel involved in activities related to implementation of the proposed project.

As the project area and facilities of concern currently exist, they represent a real danger to the public at large. The original and dilapidated fishing pier is damaged beyond a usable or a repairable state and must be removed. As it currently stands, it offers children a tempting and unsafe structure to climb on as this sort of activity has been reported to have happen in the past (WWLTV 2012). It may also represent a vessel navigational hazard during nighttime hours due to the non-operable lighting on or near the fishing pier. The area around the boat launch, including the original pier facility, is used extensively by kayakers, recreational boaters and personal watercraft enthusiasts.

Currently many recreational fishermen have chosen to utilize the breakwater wall north of the boat launch area as a replacement platform for the original pier (personal observation). The breakwater wall is not a suitable platform for any type of recreational activity due to the lack of egress features (stairs, ramps or ladders leading out of the water) and safety barriers such as hand rails and stiles. If a member of the public were to fall off the breakwater wall and into the surrounding water there is no way for them to get back out of the water to safety unless they were able to successfully swim up to 145 ft to the opposite shore. A similar scenario is possible if a pet were to fall off the breakwater wall and the owner then tried to retrieve the pet.

#### Alternative 1: No Action

Under No Action alternative, no work would occur and the pier facility would be allowed to further deteriorate and the public safety hazard would not be remedied.

#### Alternative 2: Pier Removal and Replace in Same Location

Under Alternative 2, the safety element as represented by the dilapidated original pier would be removed and replaced with a functioning and safer fishing pier. Any new pier facility will have to meet current codes and standards for safety and will therefore offer a safer alternative to the pier that previously existed.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

Under Alternative 3, with regards to offering a new and up to codes and standards fishing pier facility Alternative 3 is similar to Alternative 2 with the exception of the breakwater wall being

the only platform in its area to fish from. By installing the replacement pier adjacent to the breakwater wall (as proposed) it would offer the safest alternative for recreational fishing.

#### **4.10 Cultural Resources**

##### **4.10.1 Regulatory**

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

FEMA has reviewed this project in accordance with the Statewide Programmatic Agreement (PA) dated August 17, 2009 and amended on July 22, 2011 between the Louisiana State Historic Preservation Officer (SHPO), the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (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 (2009 Statewide PA as amended). The 2009 Statewide PA, as amended, was created to streamline the Section 106 review process.

##### **4.10.2 Existing Conditions**

On May 25, 2012, FEMA Historic Preservation staff consulted the NRHP database and the Louisiana Cultural Resources Map and determined that the property is not located within a listed or eligible National Register Historic District nor is it located within view-shed of a property individually listed in the NRHP. The original pier (destroyed) was constructed after 1973 and subsequently does not meet the criteria to qualify for NRHP listing under Criterion Consideration G as it is less than fifty (50) years of age. In addition, there are no standing structures present at the new, proposed location of the pier.

Upon consultation of data provided by SHPO on May 17, 2012, there is one recorded archaeological site within one mile of the project location. This archaeological site (# 16JE40) is an undetermined prehistoric site on the shore of Lake Pontchartrain. However, this site will not be affected by the current undertaking. According to the *Cultural Resources Survey of Terrestrial and Offshore Locations, Lake Pontchartrain and Vicinity Hurricane Protection Project, Louisiana* written by New World Research, Inc. in 1983, no terrestrial or submerged archaeological deposits were found in the area. Additionally, historic maps indicate that the project location is within an area that is artificial fill created in the twentieth century. The soils are artificial fill and there is no archaeological probability zone information as the undertaking is within artificial fill.

##### **4.10.3 Environmental Consequences**

###### Alternative 1: No Action

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

#### Alternative 2: Pier Removal and Replace in Same Location

The proposed undertaking would utilize FEMA funding for the replacement of the Municipal Yacht Harbor, Breakwater Drive, New Orleans, Orleans Parish, Louisiana, (Latitude: 30.027952, Longitude: -90.120592). The original Fishing Pier was constructed in 1973 and does not meet the 50-year-criterion or Criteria Consideration G of the National Register guidelines to be considered eligible for the National Register of Historic Places. Data provided by the SHPO indicates that there are no known archaeological sites within the project area. The scope of work would meet the criteria in FEMA's Programmatic Agreement dated August 17, 2009 and amended on July 22, 2011 (2009 Statewide PA, as amended), Appendix C: Programmatic Allowances, Item I, Section J. Therefore, no impacts to cultural resources would be anticipated by the proposed action. The applicant must comply with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) and the Inadvertent Discovery Clause, which can be found under the conditions section of this EA.

#### Alternative 3: Pier Removal and Replace in Alternate Location (Proposed Action)

The proposed undertaking would utilize FEMA funding for the replacement of the Municipal Yacht Harbor, Breakwater Drive, New Orleans, Orleans Parish, Louisiana, (Latitude: 30.029405, Longitude: -90.119502). Ground disturbing activities involved in construction do not have the potential to affect below ground historic resources; based on FEMA's research of data provided by SHPO on May 17, 2012, there is one recorded archaeological site within one mile of the archaeological APE. 16JE40 is an undetermined prehistoric site on the shore of Lake Pontchartrain. However, this site will not be affected by the proposed alternative. The soils are artificial fill and there is no archaeological probability zone information as the undertaking is within artificial fill. On May 25, 2012, FEMA Historic Preservation Staff consulted the NRHP database and the Louisiana Cultural Resources Map and determined that the property is not located within a listed or eligible National Register Historic District nor is it located within viewshed of a property individually listed in the NRHP. FEMA has determined that there are No Historic Properties Affected as a result of the proposed action. SHPO concurrence with FEMA's determination was received, dated June, 13, 2012. Consultation with affected Tribes (Alabama Coushatta Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee Creek Nation, Quapaw Tribe of Oklahoma, Seminole Nation of Oklahoma, Tunica Biloxi Tribe of Louisiana) was conducted per 36 CFR § 800.2(c)(2)(i)(B). The Tribes did not object within the regulatory timeframes. Therefore, no impacts to cultural resources are anticipated by the proposed action. The applicant must comply with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) and the Inadvertent Discovery Clause, which can be found under the conditions section of this EA.

#### **4.11 Conclusion of Proposed Alternative**

Based on the information reviewed in this section Alternative 3 – “Pier Removal and Replace in Alternate Location” represents the best practical alternative. Under the “No Action” alternative the original pier would remain in its dilapidated condition and continue to represent a hazard to the public as an unintended use liability and as a potential nautical hazard. The facility would continue to deteriorate and add to the blight of a neighborhood that has made significant improvements to the functional and visual properties of that area. Under Alternative 2 – “Pier Removal and Replace in Same Location” there is no net difference in the environmental impact between this alternative and the proposed alternative. However, if Alternative 2 was adopted the safety concern of the public using the breakwater wall as an unintended fishing platform would still exist and thereby pose a threat to public safety. Additionally, due to the proximity of the

original pier structure to the nearby residences the noise created from the extraction and installation of the pier pilings would be above acceptable limits without mitigation. Whereas under Alternative 3, the distance is great enough from the proposed action site that the sound would not be above acceptable limits. Lastly, under Alternative 2 the pier would be in the direct path of the 17<sup>th</sup> Street Canal outflow which may have a negative impact on the pier itself and would presumably have a negative impact on recreational fishing conditions at that site. With these considerations FEMA is adopting Alternative 3 as having the least amount of environmental impact and the greatest contribution to the human environment and is therefore adopting Alternative 3 as the proposed alternative.

## 5 CUMULATIVE IMPACTS

According to CEQ regulations (40 CFR 1508.7), cumulative impacts represent the impact on the environment that 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 CFR 1508.7). In accordance with NEPA and to the extent reasonable and practical, this EA considered the combined effect of the Proposed Action Alternative and other actions occurring or proposed in the vicinity of the proposed project site. Table 4 below lists all projects known to FEMA to have recently occurred or are planned that have the potential for cumulative impacts. Table 4 identifies the potential for cumulative impacts and the rationale for that assessment.

**Table 4 Projects that May Have the Potential to Contribute to Cumulative Impacts.**

Project Name / Status	Lead Agency	Location	Description	Cumulative Impacts	Rationale
<b>Municipal Yacht Harbor – PW18042v4</b>	FEMA	401 North Roadway, New Orleans 70124	Repairs to pier fender system, replacement of 99 40 ft pier piles and 1,980 pile furring strips, bulkhead repair, finger and end pier repair, watchman’s office and restrooms replacement, replacement of Pier 9, and electrical repairs to individual boat slips.	Less than significant	USFWS – No Affect determination for federally listed species, July 25, 2008.  State and Federal environmental permitting requirements as a condition for FEMA funding.
<b>LPV 27 26 R4 – Reach 4 /</b> Completion scheduled for 2012 4 <sup>th</sup> quarter for Causeway, earthen levee – complete.	East Jefferson Levee District	Between the Suburban Canal in Metairie and Causeway Blvd. in Metairie	Replace and repair to 100yr standard sheetpile, floodwalls and earthen levees along Lake Pontchartrain and Causeway Blvd.	None	No in-water work. Community components are significantly different from study neighborhood.
<b>LPV 27 26 R5 – Reach 5 /</b> Levee repair – complete, breakwater – complete, Bonnabel Blvd. floodgate - 2013	East Jefferson Levee District	Between Causeway Blvd. and the 17 <sup>th</sup> Street Canal in Metairie	Replace and repair to 100yr standard sheetpile, floodwalls and earthen levees along Lake Pontchartrain. Build breakwater at Bonnabel Canal Pump Station.	Less than significant.	In-water work represented by the breakwater wall facility was completed in 2010.
<b>LPV 27 26 Special Issues: Shoreline Protection – Reaches 4 and 5 /</b> Complete	East Jefferson Levee District	Lake Pontchartrain shoreline between Suburban Canal and 17 <sup>th</sup> Street Canal.	Replace shoreline rock revetment.	None.	Project completed in 2010. Two years have elapsed between shoreline revetment project and proposed project.

<b>Project Name / Status</b>	<b>Lead Agency</b>	<b>Location</b>	<b>Description</b>	<b>Cumulative Impacts</b>	<b>Rationale</b>
<b>Permanent Canal Closures and Pumps (PCCP) along the 17th Street, Orleans Avenue, and London Avenue Outfall Canals at or near Lake Pontchartrain, Orleans and Jefferson Parishes, LA / In design.</b>	USACOE	17th Street, Orleans Avenue, and London Avenue Outfall Canals	Permanently close outflow canals and install discharge end pumping stations.	Unknown	The expected operational capacity for the 17 <sup>th</sup> Street Canal pumps is 12,500 CFS. How this translates into velocity will depend on the size and number of the outflow pipes. Greatest impact would be relevant to Alternative 2.
<b>Hurricane and Storm Damage Risk Reduction System, Lake Pontchartrain &amp; Vicinity - Jefferson Parish / Complete</b>	USACOE	Lake Pontchartrain Coastline from Orleans Parish west to St. Charles Parish - ~3.5mi	3.5 mile floodwall along the Jefferson-St. Charles Parish line; 10 miles of an enlarged levee along the Jefferson Parish Lakefront including four vehicular floodgates and floodwalls connecting the four Jefferson Parish lakefront pump stations to the lakefront hurricane protection levee alignment. Also included are two breakwaters in Lake Pontchartrain at two of the lakefront pump station discharge channels.	Less than significant.	In-water work includes the construction of two breakwater walls and the Jefferson Parish fronting protection / rock dike construction.
<b>LPV 101 &amp; 102 Lakefront Levee – Orleans East Bank –17th St. Canal to Topaz &amp; Topaz to Orleans Canal / Complete</b>	USACOE	17th Street Canal to Orleans Canal on east bank levee	Rebuilding of approximately 4.4 miles of levee, 7,600 ft of floodwall, 16 vehicle access gates and one sector gate structure.	None	No in-water work conducted. No effect to disadvantaged populations.

Cumulative impacts to resources are anticipated but are unknown at this time. The proposed pumping station at the 17<sup>th</sup> Street Canal would have the greatest probability for impacts to the facility and its intended use if Alternative 2 was adopted.

## 6 CONDITIONS AND MITIGATION MEASURES

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

### 6.1 Applicable Laws, Ordinances, Regulations and Standards (LORS)

FEMA funding will be contingent upon following all laws relating to and including, but not limited to, the federal acts described in this EA, including the acquisition of any required federal permits and implementation of those permit requirements. In addition, all state and local laws and standards will be adhered to in the planning and execution of the final project.

### 6.2 Federally Protected Species and Critical Habitat Conservation Measures

#### 6.2.1 West Indian manatee (*FE*) Conservation Measures

The following conservation measures during the West Indian manatee summer migration (June 01 through September 30) will be employed by construction personnel as a contingency for FEMA funding:

1. All personnel related to the construction project will receive worker awareness training on the West Indian manatee. This training will include at a minimum: the laws protecting the West Indian manatee (Marine Mammal Protection Act, 1972 and the Endangered Species Act of 1973) as a federally endangered species, a definition of “*take*” as it applies to the Endangered Species Act, the fines and possible imprisonment for *take* of a West Indian manatee, images of the West Indian manatee as it is likely to be seen in Lake Pontchartrain, vessel work area restrictions and special operating conditions, monitoring requirements, procedures if a manatee is sighted within 100-yards of the active work zone and who to call and who will call if a manatee is sighted. All personnel will need to sign a worker awareness training *sign-in sheet* as a record of their attendance and training received. Any new workers that did not receive the training will need to be trained before working in or near construction areas that require *in-water* work.
2. Informational signs will be posted in visible areas in any construction area where in-water work occurs including all project related vessels. The signs will have an image of a manatee as it is likely to be seen in Lake Pontchartrain, the federal listing status of the manatee, possible punishment for *take* of a manatee and phone numbers to immediately call in the event a manatee is seen: USFWS’s Lafayette Field Office (337) 291-3100 and the LDWF, Natural Heritage Program (225) 765-2821. These informational signs will be weather proofed (laminated) and large enough so that they can be read from a distance of 20-feet. Signs will be posted prior to and for the duration of the construction project.
3. One person per construction site will be made responsible by their crew lead (if not the lead) to call the phone numbers stated above in the event a manatee is sighted.
4. All construction personnel will be responsible for monitoring water-related activities for the presence of manatees as part of their regular duties.
5. The following are special conditions that will be followed in the event a manatee is sighted within 100-yards of the project area:
  - a. All construction personnel will have “*Stop Work*” authority if they see a manatee within 50-feet of a construction activity including moving vessels.

- b. All vessels will operate at no-wake/idle speeds within 100-yards of the work area.
- c. In-water sediment barriers or siltation barriers will need to be re-secured and monitored.
- d. Work will only resume without restriction when a sighted manatee is greater than 100-yards away from the project area.

The following conservation measures for the West Indian manatee will be employed by construction personnel, regardless of season, as a contingency for FEMA funding:

1. All construction personnel will be responsible for monitoring water-related activities for the presence of manatees as part of their regular duties.
2. The following are special conditions that will be followed in the event a manatee is sighted within 100-yards of the project area:
  - a. All construction personnel will have “*Stop Work*” authority if they see a manatee within 50-feet of a construction activity including moving vessels.
  - b. All vessels will operate at no-wake/idle speeds within 100-yards of the work area.
  - c. In-water sediment barriers or siltation barriers will need to be re-secured and monitored.
  - d. Work will only resume without restriction when a sighted manatee is greater than 100-yards away from the project area.

#### **6.2.2 Gulf sturgeon (*FT*) Conservation Measures**

The following conservation measures for Gulf sturgeon will be employed by construction personnel as a contingency for FEMA funding:

1. All personnel related to the construction project will receive worker awareness training on the Gulf sturgeon. This training will include at a minimum: the laws protecting the Gulf sturgeon (Endangered Species Act of 1973) as a federally endangered species, a definition of “*take*” as it applies to the Endangered Species Act § 3.19, the fines and possible imprisonment for *take* of a Gulf sturgeon, images of the Gulf sturgeon as it is likely to be seen in Lake Pontchartrain. All personnel will need to sign a worker awareness training *sign-in sheet* as a record of their attendance and training received. Any new workers that did not receive the training will need to be trained before working in or near construction areas.
2. 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.
3. Sediment control features (BMPs) will be implemented on land to limit sediment delivery to Lake Pontchartrain. Sediment control features will be required around all spoil and

unclean gravel, sand and/or soil stock piles. Sediment control features may include but will not be limited to: sediment (silt) fence, straw waddles (fiber rolls), straw bales, sandbag barriers, plastic sheeting, storm drain inlet protection and street sweeping/vacuuming. As with any stormwater control methods the implementation of the appropriate controls will be dictated by the type and amount of sediment being controlled and the forecasted environmental conditions. Monitoring of sediment control features will be required prior to and during rain events to ensure control features are installed correctly and are functioning as necessary.

4. In-water silt barriers (turbidity curtains) will be utilized at the pier removal site and the new pier location during in-water work activities. Silt barriers will need to be installed in a manner that contains the dislodged lakebed sediment to the immediate work area.
5. Barge decks that receive removed pilings and lakebed sediments will be fitted with containment basins made of plastic sheeting draped over straw bale sidewalls. Disposal of all debris and containment basin will be conducted to standards of local, state and federal laws.
6. Erosion control will be necessary 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. For example, 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 hydroseeding to control sediment runoff as needed.
7. Any floating debris will be trapped by the silt barrier and removed from the water.
8. In-water work will only be conducted when waters are calm enough to allow for the efficacy of the silt barrier system.
9. Preserved wood used for pier piles and attachments will need to meet EPA standards for in-saltwater (or brackish water) application.
10. All BMPs identified above may be subject to additional requirements based on US Army Corps of Engineer's Rivers and Harbors Act § 10 and Clean Water Act permitting requirements.

### **6.2.3 Loggerhead (*FT*), Kemp's Ridley (*FE*), and Green Sea Turtles (*FT*) Conservation Measures**

The following conservation measures for federally listed sea turtles will be employed by construction personnel as a contingency for FEMA funding:

1. All personnel related to the construction project will receive worker awareness training on sea turtles. This training will include at a minimum: the laws protecting federally listed sea turtles (Endangered Species Act of 1973) as federally threatened or endangered species, a definition of "take" as it applies to the Endangered Species Act, the fines and possible imprisonment for *take* of a federally listed sea turtle, images of sea turtles as they are likely to be seen in Lake Pontchartrain, vessel work area restrictions and special operating conditions, monitoring requirements, procedures if a sea turtle is sighted within 100-yards of the active work zone and who to call and who will call if a sea turtle is sighted. All personnel will need to sign a worker awareness training *sign-in sheet* as a

- record of their attendance and training received. Any new workers that did not receive the training will need to be trained before working in or near construction areas that require *in-water* work.
2. One person per construction site will be made responsible by their crew lead (if not the lead) to call the phone numbers stated here in the event a sea turtle is sighted. NMFS Baton Rouge Field Office (504) 389-0508 and the LDWF, Natural Heritage Program (225) 765-2821.
  3. All construction personnel will be responsible for monitoring water-related activities for the presence of sea turtles as part of their regular duties.
  4. The following are special conditions that will be followed in the event a sea turtle is sighted within 100-yards of the project area:
    - a. All construction personnel will have “*Stop Work*” authority if they see a sea turtle within 50-feet of a construction activity including moving vessels.
    - b. All vessels will operate at no-wake/idle speeds within 100-yards of the work area.
    - c. In-water sediment barriers or siltation barriers will need to be re-secured and monitored.
    - d. Work will only resume without restriction when a sighted sea turtle is greater than 100-yards away from the project area.

### **6.3 Archeological Artifacts**

1. Fill or borrow material used must be sourced from sites that do not contain any buried cultural materials (i.e., wells, cisterns, foundations, basements, prehistoric Indian artifacts, human burials, and the like). If during the course of work, archaeological artifacts (prehistoric or historic) or human remains are discovered, City of New Orleans and/or its contractors must immediately stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The Applicant and GOHSEP must inform the FEMA Public Assistance program, who would in turn contact the FEMA Historic Preservation staff. The Applicant must not proceed with work until FEMA completes the necessary reviews required by Section 106 of NHPA. In addition, if unmarked graves are present, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act is required. In that situation, the Applicant must notify the local law enforcement agency within 24 hours of the discovery, and notify FEMA and the Louisiana Division of Archaeology at (225) 342-8170 within 72 hours of the discovery. Failure to comply with these stipulations may jeopardize FEMA funding of the project.
2. If human bone or unmarked grave(s) are present with the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery.
3. 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.

#### **6.4 General Construction**

1. Construction traffic should be closely monitored and controlled as appropriate. All construction activities would be conducted in a safe manner in accordance with OSHA work zone traffic safety requirements.
2. To alert motorists and pedestrians of project activities, appropriate signage and barriers would be on site prior to and during construction activities. During construction activities, the construction site(s) would be fenced off to discourage trespassers.
3. LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that the LDEQ Water Permit Division be contacted at (225) 219-3181 to determine whether the proposed improvements require one of these permits. The contractor is required to implement BMPs that meet the LDEQ permitting specifications for storm water discharge regulated under Section 402 of the CWA.
4. Any changes or modifications to the proposed project would require a revised USACE determination. Off-site locations of activities such as borrow, disposals, haul-and detour-roads and work mobilization site developments may be subject to the USACE regulatory requirements.

#### **6.5 Hazardous materials and Spill Response**

1. 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.
2. In the event of a spill of hazardous chemicals including petro-chemicals into a waterway or that may come in contact with a waterway the EPA Region 6 – Spill Hotline 866-372-7745 (866-EPA-SPILL) will be called by the acting construction site supervisor.

#### **6.6 Floodplain Conditions**

1. New construction must be compliant with 44 CFR 9 minimization standards and current codes and standards. Per 44 CFR 9.11 (d)(9), where possible, disaster-proofing of the building and/or elimination of such future losses should occur by relocation of those building contents, materials and equipment outside or above the base floodplain.
2. CNO is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities.
3. Applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities.
4. All coordination pertaining to these permit(s) should be documented to the local floodplain administrator and copies provided to LA GOHSEP and FEMA as part of the permanent project files.

## 7 PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

FEMA is the lead federal agency for conducting 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, federal and state resource protection agencies were contacted and FEMA distributed an informal scoping notification through a Solicitation of Views. A record of agency consultation and public involvement can be seen in Appendices C & D, respectively.

## 8 LIST OF PREPARERS

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