

Environmental Assessment
Alternative Housing Pilot Program
Fischer (Algiers) Group Housing Site,
New Orleans, Louisiana

Orleans Parish
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Gulf South Research Corporation
8081 GSRI Avenue
Baton Rouge, Louisiana 70820

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List of Acronyms and Abbreviations

µg/m ³	Micrograms per cubic meter of air
AA	Alternative Arrangement
AADT	Average Annual Daily Traffic
ABFE	Advisory Base Flood Elevation
ACHP	Advisory Council on Historic Preservation
AHPP	Alternative Housing Pilot Program
amsl	Above mean sea level
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
bgs	Below ground surface
BMP	Best Management Practice
C	Candidate species
CAA	Clean Air Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CO	Carbon monoxide
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CESQG	Conditionally exempt small quantity generators
CFR	Code of Federal Regulations
CH	Critical Habitat
CIA	Cumulative Impact Analysis
CUP	Coastal Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dB	Decibel
dBA	A-weighted decibel
DFIRM	Digital Flood Insurance Rate Maps
DHS	Department of Homeland Security
EA	Environmental Assessment
EDR	Environmental Data Resources Inc.
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
GIWW	Gulf Intracoastal Waterway
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
GNOCDC	Greater New Orleans Community Data Center
GSRC	Gulf South Research Corporation
HANO	Housing Authority of New Orleans
HMGP	Hazard Mitigation Grant Program

HUD	U.S. Department of Housing and Urban Development
I	Interstate
LA	Louisiana state highway
LaDOTD	Louisiana Department of Transportation and Development
LCP	Louisiana Coastal Management Program
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LNHP	Louisiana National Heritage Program
LOHSEP	Louisiana Office of Homeland Security and Emergency Preparedness
Louisiana Cottages	Permanent single-family AHPP units
LRA	Louisiana Recovery Authority
LTCR	Louisiana Long-term Community Recovery
LUST	Leaking underground storage tanks
MBTA	Migratory Bird Treaty Act
mg/m ³	Milligrams per cubic meter of air
msl	Mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	Nitrogen dioxide
NO _x	Nitrous oxides
NORTA	New Orleans Regional Transit Authority
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	NOAA National Marine Fisheries Service
NOMA	New Orleans Metropolitan Area
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O ₃	Ozone
P	Primary
PA	Programmatic Agreement
PCB	Polychlorinated biphenyls
Pb	Lead
PL	Public Law
PM-2.5	Particulate matter less than 2.5 micrometers
PM-10	Particulate matter less than 10 micrometers
ppm	Parts per million
POV	Personally owned vehicle
RCRA	Resource Conservation and Recovery Act
S	Secondary
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
Sk	Sharkey clay
SO ₂	Sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasures Plan
sq ft	Square feet
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act

State	State of Louisiana
SWPPP	Stormwater Pollution Prevention Plan
TSCA	Toxic Substances Control Act
US	U.S. highway
U.S.	United States
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compound
WSRA	Wild and Scenic Rivers Act
WUS	Waters of the U.S.

SECTION 1.0
INTRODUCTION



1.0 Introduction

Recognizing the extensive and complex housing challenges facing victims and communities along the Gulf Coast region as a result of the 2005 hurricane season, and acknowledging the limitations on the Federal Emergency Management Agency's (FEMA) ordinary statutory authority to provide long-term and permanent housing solutions, the United States (U.S.) Congress appropriated funds to the Department of Homeland Security (DHS) to support alternative housing pilot programs (Emergency Supplemental Appropriations Act, 2006, Public Law (PL) 109-234). The Alternative Housing Pilot Program (AHPP) represents a one-time exception to FEMA's existing authority under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). The Stafford Act legally binds FEMA to a temporary housing mission, by providing an opportunity to explore, implement, and evaluate innovative approaches to housing solutions, and to address ongoing housing challenges created by the 2005 hurricane season in the states of the Gulf Coast region, including the State of Louisiana (State) and specifically Orleans Parish.

The State through the Louisiana Recovery Authority (LRA) has applied for FEMA funding under the AHPP to provide permanent housing solutions for eligible applicant families displaced by Hurricanes Katrina and Rita in parishes throughout the State, including Orleans Parish (Appendix A, Figure 1).

In accordance with the National Environmental Policy Act (NEPA), as implemented through 40 Code of Federal Regulations (CFR) 1500 *et. seq.*, 44 CFR 10 *et. seq.*, and DHS's Management Directive 023.1 (formerly 5100.1), FEMA must fully understand and consider the environmental impacts of actions proposed for Federal funding. The purpose of this Environmental Assessment (EA) is to analyze potential impacts of the proposed AHPP housing project on the natural and human environment and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.1 Project Location

The proposed project site is located in the New Orleans West Bank neighborhood of Algiers, Orleans Parish, Louisiana, and is bound by Semmes Street to the north, General De Gaulle Drive to the south, the Mississippi River to the east, and Thayer Avenue on the west (Appendix A, Figure 2 [Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard,

and St. Tammany Parishes 2008]). LB Landry Avenue runs through the center of the proposed project site. The approximately 20-acre plot has previously been utilized by the Housing Authority of New Orleans (HANO) as high density multi-family government housing from the 1960s, which has since been demolished. The approximately 20-acre proposed site is part of a larger area that has been partially redeveloped by HANO in conjunction with U.S. Department of Housing and Urban Development (HUD). The proposed project site is presently owned by HANO and comprised of approximately 128 lots, of which 124 would be developed into AHPP housing, and is a continuation of the larger overall HANO redevelopment of the property.

SECTION 2.0
PURPOSE AND NEED



2.0 Purpose and Need

The purpose of this action is to provide alternative disaster housing for families displaced during natural disasters, such as the 2005 hurricane season in Orleans Parish. The alternative housing is to be implemented through a pilot program that includes long-term housing solutions. Further, the purpose of the pilot program includes implementing easily installed housing solutions that can be rapidly deployed to move families from temporary to permanent housing. The need for this action is to address the housing shortages caused by the catastrophic effects of natural disasters and to move disaster victims from temporary solutions (e.g., rental dwellings, manufactured housing, *etc.*) to permanent housing.

In Orleans Parish, as a result of Hurricanes Katrina and Rita, there were approximately 89,799 individuals housed in 23,343 temporary housing units. As of May 1, 2009, the FEMA mission for temporary housing solutions has phased out; however, there are still 667 temporary housing units occupied in Orleans Parish.

SECTION 3.0
ALTERNATIVES



3.0 Alternatives

This section describes the two alternatives the State, through the LRA and FEMA, proposes to undertake in order to evaluate permanent AHPP group housing to Louisiana residents displaced as a result of Hurricanes Katrina and Rita within Orleans Parish (program area) (Appendix A, Figure 1). The alternatives evaluated were: the No Action Alternative and the Proposed Action Alternative, which consists of construction of the Fischer (Algiers) group housing site. The alternatives are more fully described below.

3.1 Alternatives Evaluated

3.1.1 Alternative 1: No Action Alternative

Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA and is defined as maintaining the *status quo*, with no FEMA funding for any alternative action. This alternative evaluates the effects of not providing eligible assistance for a specific action and provides a benchmark against which other alternatives may be evaluated.

Under the No Action Alternative, no AHPP housing would be provided for families displaced from their homes. Rental resources are very limited in the affected area; people displaced by the 2005 hurricane season would remain in housing provided by family members or friends, in hotels, in temporary "dormitories" such as homeless shelters or churches, or in facilities damaged by the storm and determined structurally unsafe or unsanitary.

3.1.2 Alternative 2: Proposed Action Alternative

The Proposed Action Alternative would include construction of approximately 124 permanent single-family AHPP units (Louisiana Cottages) within the proposed project site. The proposed project site is owned by HANO and comprised of approximately 128 lots, not all of which would have AHPP housing. The approximate 20-acre plot has previously been utilized by HANO in the mid 1960s as multi-family government housing, which has since been demolished. Several lots located in the southeast corner of the project site (north of the intersection of LB Landry Avenue and Hendee Street) have been previously developed in an earlier phase of the HANO Fischer redevelopment. A conceptual site plan of the project site utilizing 124 of the lots is provided in Appendix C. In general, utilities, roads, and lights have been previously constructed per previous HANO redevelopment plans; however, installation of electrical power would be

required for all areas to the west of LB Landry Avenue and would require trenching to install power to each individual housing unit lot.

The proposed project site would consist of Louisiana Cottages, with living areas ranging from 874 square feet (sq ft) to 1,200 sq ft, as well as several expanded units with living areas up to 1,525 sq ft. Appendix C also provides the proposed layout to indicate which particular AHPP units would be used throughout the proposed development. Currently, it is anticipated there would be a total of 124 AHPP units; seven of which would be handicap accessible. It is anticipated that the mix of cottage designs would include 20 cottages with a living area of 874 sq ft, 64 cottages with a living area of 1,080 sq ft, 18 cottages with a living area of 1,112 sq ft, 10 cottages with a living area of 1,200 sq ft, and 12 cottages which can be expanded to accommodate living areas of up to 1,525 sq ft.

The Louisiana Cottages would be built on piers to bring them up to the required advisory base flood elevation (ABFE) of 3 feet above mean sea level (amsl), as necessary. Driveways would be constructed to facilitate access and parking for the AHPP cottages. A fence would partially enclose the project area. The houses would tie into existing water and sewer infrastructure currently located near each lot site and utilities would then be installed to each individual cottage. Photograph 1 shows a typical Louisiana Cottage.



Photograph 1. Typical Louisiana Cottage

Cottage Unit Foundations

The foundations on each Louisiana Cottage would be of pier and beam design and are designed to meet high wind hazard design criteria in Orleans Parish. With this type of foundation design, piers connected to wood or metal beams which form the frame of the house extend above the ground level and support the house structure. In turn the piers are connected with grade beams (concrete beams at grade). This type of foundation results in a crawl space underneath the house, in which wiring and duct work can be laid during construction, and allows the piers to be extended to meet elevation requirements. To ensure that the AHPP housing units in Orleans Parish are built to withstand wind driven forces, piles are driven into the ground.

These piles are connected to the grade beam which is in turn is connected to the piers with reinforcing bars also called rebar. By driving piles, soil is displaced and the surrounding soil is compressed, causing greater friction against the sides of the piles, and thus increasing their load-bearing capacity. As such, each AHPP housing unit would include 19 to 39 pilings per cottage design (Table 1). As illustrated in Appendix A, Figure 3, pilings would be driven to approximately 40 feet below ground surface (bgs) and would be wooden with diameters no larger than 12 inches at the base and 7 inches at the driving end of the pile. Attached to the pilings would be a concrete grade beam or chain wall which would generally be 24 to 30 inches bgs. Connected to the chain wall would be the piers for each particular cottage, and these piers would be elevated to the Digital Flood Insurance Rate Map (DFIRM) required elevation.

Table 1. Foundation Pile Details for each AHPP Cottage Design

Cottage Design Unit ID	Living Area of Each Unit (in square feet)	Number of Pilings Proposed per Unit
874	874	21
1080	1080	26
1112	1112	31-39
1200	1200	19
1480	1480	21
1525	1525	26

Source: Cypress Realty Partners, LLC 2009

Section 4.0 summarizes the potential impacts of the alternative and conditions or mitigation measures to avoid or reduce those impacts. Section 5.0 describes in detail the affected environment and analyzes the potential impacts of the No Action and Proposed Action Alternative. Section 6.0 outlines the cumulative impacts of the Proposed Action Alternative. Section 7.0 discusses the public involvement, and Section 8.0 outlines the interagency coordination by FEMA. A list of preparers is found in Section 9.0, and Section 10.0 provides the references cited throughout the document.

SECTION 4.0
SUMMARY OF IMPACTS AND MITIGATION



4.0 Summary of Impacts and Mitigation

The following table summarizes the potential impacts of the No Action and Proposed Action Alternatives and the conditions or mitigation to offset those impacts. Potential impacts to resources are discussed in greater detail in Section 5.0.

Summary of Impacts

Affected Environment	No Action Alternative	Proposed Action Alternative
Geology and Soils	No impacts to geology, soils, or prime or unique farmland are anticipated.	No additional impacts to geology are anticipated; however, short-term construction impacts to soils could occur. As the proposed sites have been previously disturbed and converted for residential use, this alternative is not anticipated to impact prime, unique, or important farmlands. Vibratory pile driving operations may potentially affect adjacent structures; however, a smaller type of vibratory pile driver would be utilized for site which creates less vibration. Potential soil erosion would be minimized through the use of Best Management Practices (BMP) and a vibration threshold value would be utilized by the piling contractor to minimize any potential damage to adjacent homes.
Water Quality	No impacts to water quality are anticipated.	Temporary and minor impacts from erosion and sedimentation to surface water are possible during construction activities. A Stormwater Pollution Prevention Plan (SWPPP) and a National Pollutant Discharge Elimination System (NPDES) permit would be required. Appropriate BMPs would be implemented to minimize these impacts and minimize runoff. Additionally, a Coastal Use Permit (CUP) may be required.
Floodplains	No impacts to floodplains are anticipated.	Construction would occur in the 100-year floodplain; therefore, the potential to impact floodplains would be likely. However, the addition of fill was conducted previously by HANO and the AHPP unit cottages would be installed on piers above the ABFE. Therefore, minor, but insignificant impacts would occur.
Wetlands	No impacts to wetlands or waters of the U.S (WUS) are anticipated.	No impacts to wetlands or WUS are anticipated.
Air Quality	No impacts to air quality are anticipated.	Temporary and minor impacts to air quality would occur during the construction period. To minimize these impacts all construction equipment would be properly maintained and dust suppression BMPs would be implemented.

Affected Environment	No Action Alternative	Proposed Action Alternative
Noise	No impacts to noise are anticipated.	Short-term impacts from increased noise could occur at the proposed project sites during construction and have the potential to expose sensitive receptors to noise emissions that are normally unacceptable; however, these noise levels would only be for approximately 180 days. To minimize this impact, all construction activities would be limited to 8:00 AM to 6:00 PM, Monday through Friday. Construction activities would not occur in the late evenings, early mornings, or on weekends. Should schools be located nearby, special construction mitigations would potentially be utilized, such as the use of noise barriers or adjustment of the construction schedule to the summer months, school holidays, or in the afternoon prior to 6:00 p.m. when students are not in class.
Biological Resources	No impacts to biological resources are anticipated.	Approximately 20 acres of previously disturbed land, with sparse grasses, have previously been cleared for construction of the proposed project. No impacts to Federally or state-listed species are anticipated.
Cultural Resources	No impacts to cultural resources are anticipated.	No impacts to archaeological or cultural resources are anticipated. In the event of a find during ground disturbance, activities in the area of the find would be suspended, and appropriate mitigation measures would be developed in consultation with the State Historic Preservation Officer (SHPO) and appropriate Indian Tribes.
Socioeconomics	Displaced residents would continue to utilize FEMA manufactured housing and mobile homes. Potential health effects could continue to affect displaced residents.	Housing at the proposed project sites would be offered to families and individuals regardless of their race or economic background who were displaced or impacted by the 2005 hurricane season, thereby providing beneficial socioeconomic effects. Noise from installation of the AHPP cottages could potentially cause adverse impacts to minority or low-income populations; however, the noise impacts are short-term and it is anticipated that the construction activities for the 124 units would take approximately 180 days. In addition, noise impacts would be minimized to adjacent residences by scheduling construction activities during daylight hours during the work week.
Traffic and Transportation	No impacts to traffic are anticipated.	Short-term impacts would occur during construction activities and minimal, but insignificant, impacts would occur after occupancy of the AHPP cottages due to an increase in traffic volumes. To minimize these impacts during construction, traffic along adjacent roadways would be temporarily rerouted as necessary during construction, and any lane closures would be coordinated with the appropriate local government.

Affected Environment	No Action Alternative	Proposed Action Alternative
Hazardous Materials and Wastes	No impacts to hazardous materials are anticipated.	<p>The adjacent area is populated by facilities and sites frequently seen in urban settings. These facilities and sites could potentially impact the surrounding environment due to spills or pollutants that migrate offsite; however, the adjacent sites and facilities do not currently pose environmental concerns to the proposed AHPP site.</p> <p>Excavation activities could expose or otherwise affect subsurface hazardous wastes or materials; any hazardous materials discovered, generated, or used during construction would be disposed of and handled in accordance with applicable local, state, and Federal regulations.</p>

*SECTION 5.0
AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES,
AND MITIGATION MEASURES*

5.0 Affected Environment, Environmental Consequences, and Mitigation Measures

The following subsections discuss the regulatory setting and the existing conditions for the following resource areas in Orleans Parish, Louisiana, that may be impacted by the No Action Alternative and the Proposed Action Alternative considered.

- Geology and Soils
- Water Quality
- Floodplains
- Wetlands
- Air Quality
- Noise
- Biological Resources
- Cultural Resources
- Socioeconomics
- Traffic and Transportation
- Hazardous Materials and Wastes

5.1 Geology and Soils

5.1.1 Affected Environment

Regulatory Setting

The Farmland Protection Policy Act (FPPA) requires Federal agencies to evaluate the effects (direct and indirect) of their activities before taking any action that could result in converting designated prime or unique farmland or farmland of statewide and local importance for nonagricultural purposes. If an action would adversely affect farmland preservation, alternative actions that could avoid or lessen adverse effects must be considered. Determination of the level of impact on prime and unique farmland or farmland of statewide and local importance is done by the lead Federal agency, which inventories farmlands affected by the proposed action and scores the land as part of a Farmland Conversion Impact Rating (AD 1006 Form), for each alternative. In consultation with the proponent, Natural Resources Conservation Service (NRCS) completes the AD 1006 Form and determines the level of consideration for protection of farmlands that needs to occur under the FPPA (NRCS 2008).

Existing Conditions

There are several active seismic faults in Louisiana, most of which are located in the southern third of the State. The southern portion of the State lies within the geologic tectonic province known as the Gulf Coast Basin. There is one active fault in Orleans Parish which is oriented east/west and bisects the southern portion of Lake Pontchartrain. In general the State is not considered seismically active. Even though the State does experience periodic small

earthquakes, seismic activity is classified as gradual, creeping movements rather than the breaking of rock associated with earthquakes (Louisiana Geological Survey 2001). Surface exposures in Orleans Parish consist of Quaternary (Pleistocene and Holocene) sediments. The parish is underlain by coast-parallel terraces formed by deposits of the Mississippi River and smaller coastal-plain streams and bayous from the recent geologic past. The terraces are remnants of pre-existing floodplains that have been cut into by the river and various streams and bayous.

The rates of subsidence and sea-level rise are important considerations in the restoration of the City of New Orleans and the wetlands that protect it. New Orleans is sinking at an average rate of 2.0 inches per decade, and it is anticipated that it will sink roughly 3.3 feet (1.0 meter) in the next 100 years relative to mean sea level (Burkett *et al.* 2003). In addition, the ocean is also rising and during the last century, the ocean rose approximately 0.4 to 0.8 inches (1.0 to 2.0 millimeters) per year (Burkett *et al.* 2003). Within the next century if nothing is done to modify the existing infrastructure, some areas of the city that did not flood as a result of Hurricane Katrina would likely flood in a future storm due to subsidence and sea-level rise (Burkett *et al.* 2003).

The entire proposed site contains one soil type, Sharkey Clay (Sk). The Sharkey Series consists of poorly drained, very slowly permeable, firm, mineral soils (U.S. Department of Agriculture [USDA] 2008). Although the Sharkey Clay is classified as prime farmland soils, prime or unique farmlands would not be impacted by the proposed project due to the site's previous and past land use as multi-family government residential housing. The proposed project site is located relatively close to the Mississippi River, and in general, the elevation and slope are slight due to old levee deposits from the river. Prior to demolition of the HANO multi-family government housing in August 2008, the elevation in the vicinity of the 20-acre site was approximately 1 foot amsl.

The low bearing strength of many of the soil types in Orleans Parish and the subsidence that is occurring throughout much of Orleans Parish require that buildings be supported by pilings that are driven to as deep as 40 to 50 feet into more competent underlying clay units. Typically, properly spaced pilings stabilize foundations, and, to a degree, can retard subsidence directly under buildings.

5.1.2 Environmental Consequences and Mitigation Measures

5.1.2.1 No Action Alternative

This alternative does not include any FEMA action. Therefore, FEMA would not be required to comply with the FPPA. The No Action Alternative does not have the potential to affect geology, soils, or prime or unique farmland.

5.1.2.2 Proposed Action Alternative

No impacts to geology would occur due to the minimal depth of disturbance from the installation of cottage footings and driveway placement. As the project site was graded and contoured during previous demolition and development, it is anticipated that any soil loss would be minimal. Short-term impacts to soils would occur during any additional ground clearing or site preparation, including the installation of driveways. Project site soils would be disturbed and there is a potential for localized increase in soil erosion during construction.

The FPPA directed that Federal agencies must assess the NRCS classification of soils as prime or unique farmland. According to the NRCS, all of the common soils, except urban land, are classified as prime farmland soils. The site's previous land use as multi-family government housing precluded its use for crop production and makes the land unavailable for farming. Therefore, FPPA does not apply and the withdrawal of these soils for use as an AHPP group development would not require a Farmland Conversion Impact Rating Analysis.

On March 10, 2009, a letter requesting project review was sent to NRCS and is included in Appendix B. On May 12, the NRCS sent a response stating that there would be no impact to prime farmland and, in addition, that there would be no adverse effect to the surrounding environment provided the mitigation measures outlined would be utilized during construction. This response is also included in Appendix B.

Soil Vibrations from Cottage Foundation Activities

Under the Proposed Action Alternative, pilings would be installed based on the soil and geotechnical information determined by geotechnical assessment and a pile driving test which would be performed by the LRA. Utilizing the site piling tests and geotechnical information performed for HANO in 2004, it is anticipated that the pilings would be driven in the subsurface through the use of a vibratory pile driver and would utilize wooden pilings for the cottage foundations. Piles would be driven approximately 40 feet bgs with pile diameters at

approximately 12 inches at the base and 7 inches at the driving end (Eustis Engineering Company, Inc. 2004).

Vibratory pile driving operations may potentially affect adjacent structures. The energy generated from vibrating pile compactor/drivers is dissipated either as pile penetration or as radiated wave energy. A small vibratory compactor/driver would be utilized for pile driving at the Fischer group site, similar to a “KHP 135 II” vibratory compactor/driver (also called a Hydra-Pak) by Kent Demolition Tools. This type of vibratory compactor/driver would provide 13,500 pounds of impulse force at 2,000 cycles per minute and would be attached to a small excavator (Jay Gillen personal communication 2009).

Criteria for ground vibrations have been established to protect adjacent structures and human health. The U.S. Bureau of Mines recommends that vibrations not exceed 0.5 inches per second near structures. This guideline insures that adjacent structures do not experience damages. A qualified vibration monitor from a testing laboratory would monitor the vibrations at the nearest structure and a threshold limit set by the piling contractor would ensure that all vibrations would not exceed the U.S. Bureau of Mines recommendation. Typically in urban settings the pile driving contractor would utilize a threshold limit of 0.4 inches per second (Gillen personal communication 2009 and Ken Meyn personal communication 2009). Based on the soil at the proposed Fischer site, which offers little resistance (in general clays, clay loams, and silty clays), each piling should take less than 10 minutes to install. It is anticipated that approximately 100 piles or 4 cottage foundations would be driven or installed per day.

Mitigation Measures

Any soil loss would be directly from ground disturbing activities or indirectly via wind or water erosion. BMPs, such as development and implementation of an erosion and sedimentation control plan, use of silt fences or hay bales, revegetation of disturbed soils, and maintenance of site soil stockpiles, would be utilized to prevent soils from eroding and dispersing offsite.

Foundation Installation

The construction contractors for the Proposed Action Alternative would employ a qualified laboratory and staff to monitor the vibratory pile driving activities within 250 feet of any adjacent structure such as the nearby schools or homes. The laboratory field technicians would be deployed to the construction sites where they would install vibration sensory devices

(seismographs) into the soils next to the adjacent structures on all sides of the construction site. Seismographs would detect vibrations from the pile driving equipment and alert the field technicians if the vibrations were approaching 0.5 inches per second. If this threshold was approached the pile driving activities would be terminated and mitigation measures to reduce vibrations would be implemented. Mitigation measures which could be utilized to reduce vibrations include drilling a pilot hole for the pile or wetting the pile and hole to lubricate the downward insertion (Gillen personal communication 2009). If these mitigation measures are implemented, vibration impacts to adjacent structures from driving piles at the construction sites of the Proposed Action Alternative would be short-term and minor.

5.2 Water Quality

5.2.1 Affected Environment

Regulatory Setting

The Clean Water Act (CWA) establishes the basic structure for regulating pollutant discharges to navigable waters of the U.S. It sets forth procedures for effluent limitations, water quality standards and implementation plans, national performance standards, and point source (*e.g.*, municipal wastewater discharges) and nonpoint source programs (*e.g.*, stormwater). The CWA also establishes the NPDES under Section 402 and permits for dredged or fill material under Section 404 (U.S. Environmental Protection Agency [USEPA] 2008a).

The U.S. Army Corps of Engineers (USACE) is charged with regulating the disposal of dredged and fill materials under Section 404 of the CWA. A Section 404 permit from the USACE must be obtained for any dredge or fill activities within jurisdictional waters of the U.S. During the permit review process, the USACE determines which of two permits is appropriate for the proposed action. General Permit, issued on a state, regional, and nationwide basis and covering a variety of activities, including minimal individual and cumulative adverse affects, or Individual Permit, issued for a case-specific activity (USACE 1998).

Section 401 of the CWA specifies that states must certify that any activity subject to a permit issued by a Federal agency, such as a CWA Section 404 permit, meets all state water quality standards. Water quality certification is also necessary when a project qualifies for a General Permit, even if the activity does not need to be reported to the USACE (USEPA 2008a).

The Wild and Scenic Rivers Act (WSRA) preserves selected rivers in a free-flowing condition and protects their local environments. These rivers possess outstanding scenic, recreational, geologic, fish and wildlife, historic, or cultural values.

The Coastal Zone Management Act (CZMA) of 1972 authorizes the Coastal Zone Management Program (CZMP), which is a Federal-state partnership dedicated to comprehensive management of the Nation's coastal resources. By making Federal funds available, the law encourages states to preserve, protect, and, where possible, restore or enhance valuable natural coastal resources, such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. Any Federal or state agency whose activities directly affect the coastal zone must, to the maximum extent practicable, be consistent with approved state management programs. In 1978, the Louisiana State and Local Coastal Resources Management Act authorized the development, at the parish level, of local coastal management programs (LCPs). Once an LCP has received Federal and state approval, the parish becomes the permitting authority for coastal uses of local concern.

Existing Conditions

Major water bodies adjacent to the proposed project area consist of the Gulf Intracoastal Waterway (GIWW) and the Mississippi River. Smaller hydrologic features include a number of drainage canals and marshes. The project site is located in the Louisiana Department of Environmental Quality (LDEQ) subwatershed (#020601) which is in non-attainment for primary contact recreational uses. The existing water quality conditions for the subwatershed in which the proposed project area are located is summarized in Table 2 below.

Table 2. List of LDEQ Sub-Watersheds Found in the Project Study Area and Water Quality Attainment Status

Sub-Watershed Name and LDEQ ID	Water Quality Attainment Status	Suspected Causes of Impairment	Suspected Sources of Impairment
Gulf Intracoastal Waterway 020601	Not meeting primary contact recreation	Fecal coliforms	Municipal point discharges Sanitary wastes from vessels

Source: LDEQ 2006 303 (d) Water Quality Inventory Integrated Report List of Impaired Watersheds [303 (d) list].

A site visit on February 27, 2009, provided further drainage pattern information. Based on the site visit, surface water flows from the adjacent property to the west on to the site and then

continues southeast eventually draining into a canal which runs from the northwest to the southeast along a portion of Thayer Avenue and General De Gaulle Drive.

Orleans Parish is within the Louisiana Coastal Zone and adopted a LCP in 1985. The Orleans Parish Division of Planning and Development administers this local program.

5.2.2 Environmental Consequences and Mitigation Measures

5.2.2.1 No Action Alternative

Under the No Action Alternative, adverse impacts to surface water would not occur. Therefore, FEMA would not be required to comply with the CWA, CZMA, LCRP, or WSRA. The No Action Alternative does not have the potential to affect water quality.

5.2.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, temporary short-term impacts to downstream surface waters may occur during the construction period due to soil erosion. Construction sites which are greater than 1 acre require a Stormwater Pollution Prevention Plan (SWPPP) as part of the NPDES permit process. During construction activities, water quality within ephemeral and perennial streams would be protected through implementation of BMPs such as silt fences, as specified in the SWPPP. A site-specific Spill Prevention, Control, and Countermeasure Plan (SPCCP) would also be in place prior to the start of construction. BMPs outlined in these plans would reduce the potential of soils, oil and grease, and construction debris to migrate into local watersheds.

The installation of the AHPP housing units would increase the amount of impervious surfaces in the area. Impervious surfaces reduce the amount of rainwater infiltration and percolation. Impervious surfaces increase the flow of migrating rainwater and sheet and rill erosion of exposed soils occurs. Stream bed and bank scouring and erosion are often associated with impervious surfaces. Adequate vegetation around the housing units would mitigate these effects of impervious surfaces. With the proper vegetative cover and other SWPPP measures, significant impacts to water quality would not occur.

Project activities under this alternative are not anticipated to impact wild and scenic rivers. Orleans Parish is within the Louisiana Coastal Zone and a CUP or other authorization from the Orleans Parish LCP may be required. A letter requesting project review was sent to the City of

New Orleans on July 10, 2009. No response has been received to date. On March 10, 2009, a letter requesting review was sent to LDEQ and is included in Appendix B. LDEQ responded on April 6, 2009, and indicated that they had no objections if the mitigation measures outlined in the document are followed and the correct permits or applications are submitted.

5.3 Floodplains

5.3.1 Affected Environment

Regulatory Setting

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. A floodplain is defined as the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year. The critical action floodplain is defined as the 500-year floodplain (0.2 percent chance floodplain) (USEPA 1979). The 500-year floodplain as defined by 40 CFR 9 as an area, including the base floodplain, which is subject to inundation from a flood having a 0.2 percent chance of being equaled or exceeded in any given year.

Flood zones are land areas identified by FEMA that describe the land area in terms of its risk of flooding. A flood insurance rate map (FIRM) is a map created by the National Flood Insurance Program (NFIP) for floodplain management and insurance purposes. Digital versions of these maps are called DFIRMs. A FIRM would generally show a community's flood zones and floodplain boundaries. However, maps are constantly being updated due to changes in geography, construction and mitigation activities, and meteorological events (FEMA 2008).

EO 11988 requires that Federal agencies proposing activities in a 100-year floodplain must consider alternatives to avoid adverse effects and incompatible development in the floodplain. In accordance with 44 CFR Part 9, critical actions, such as the development of hazardous waste facilities, hospitals, or utility plants, must be undertaken outside of a 500-year floodplain. If no practicable alternatives exist to siting an action in the floodplain, the action must be designed to minimize potential harm to or within the floodplain. Furthermore, a notice must be publicly circulated explaining the action and the reasons for siting in the floodplain. When evaluating actions in the floodplain, FEMA applies the decision process described in 44 CFR Part 9, referred to as the Eight-Step Planning Process, to ensure that its actions are consistent with EO

11988. By its nature, the NEPA compliance process involves the same basic decision-making process as the Eight-Step Planning Process.

Existing Conditions

Since demolition of the HANO buildings in 2008 the site has been cleared and roughly graded. The site is relatively flat with typical elevation ranges from -1.78 to -0.22 feet mean sea level (msl) (elevations referenced to the North American Vertical Datum of 1988), although several low spots are scattered within the proposed site which range in elevation from -3.18 to -1.89 feet msl. Consistent with EO 11988, preliminary DFIRMs were examined during the preparation of this EA. According to the FEMA November 13, 2008, preliminary DFIRM, the proposed site is located within the 100-year floodplain in Flood Zone AE EL 3 (Louisiana Mapping Project 2008). FEMA requires that rebuilt communities adhere to the elevation requirements established by the 2008 DFIRM. The DFIRM which illustrates the flood hazard zones for the proposed Fischer site can be found at <http://www.lamappingproject.com/parish-orleans.html>.

5.3.2 Environmental Consequences and Mitigation Measures

5.3.2.1 No Action Alternative

This No Action Alternative does not include any FEMA actions. Therefore, FEMA would not be required to comply with EO 11998. The No Action Alternative does not have the potential to affect floodplains.

5.3.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, the AHPP units would be constructed in a designated 100-year floodplain; therefore, FEMA would require that the first floor of a building be elevated above the DFIRM or to the City of New Orleans' required permitting code, whichever is more restrictive. The proposed project would elevate AHPP units above the ABFE through the placement of AHPP units on elevated piers, as necessary.

The loss of floodplain area in the vicinity of the project would generally be considered a direct, permanent adverse effect; however, as the site has been previously developed with additional fill placed at the site, the Proposed Action Alternative would cause minor, but insignificant effects. Furthermore, construction of AHPP units within the 100-year floodplain would not likely increase flood levels or velocities downstream from the site. Although the project does not encourage additional development within the floodplain, the proposed project would result in

providing civic support to populations living in the floodplain which would be an adverse indirect effect. Prior to actual construction, each housing unit lot will be required to have an elevation certificate to ensure it meets the FEMA DFIRM elevation or the City of New Orleans permitting requirements, whichever is more restrictive.

FEMA has completed the Eight-Step Planning Process to ensure that its actions are consistent with EO 11988 within Orleans Parish. An initial and final notice for the building of FEMA housing within the parish has been previously publicized. A copy of the final public notice (dated November 30, 2007) and the Eight-Step Planning Process for this Proposed Action Alternative can be found in Appendix E.

5.4 Wetlands

5.4.1 Affected Environment

Regulatory Setting

The CWA, as amended in 1977, established the basic framework for regulating discharges of pollutants into the WUS. The USACE regulates the discharge of dredged or filled material into WUS, including wetlands, pursuant to Section 404 of the CWA.

In addition, EO 11990 (Protection of Wetlands) requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. The implementation of EO 11990 is described in 44 CFR Part 9. As with EO 11988, the Eight-Step Planning Process is used to evaluate the potential effects of an action on wetlands (Appendix E). As discussed in the CWA subsection above, formal legal protection of jurisdictional wetlands is promulgated through Section 404 of the CWA. A permit from the USACE may be required if an action has the potential to affect wetlands.

Existing Conditions

The National Wetlands Inventory (NWI) is a resource provided by the United States Fish and Wildlife Service (USFWS) which provides wetland information by digital data files. The NWI currently includes data for Orleans Parish. Based upon the NWI, there are no jurisdictional wetlands present within the Fischer proposed program area (USFWS 2006). A Gulf South Research Corporation (GSRC) natural resource specialist visited the proposed site on February 27, 2009 and confirmed that the construction of AHHP units would be in an area that does not contain wetland vegetation, hydrologic conditions, or hydric soils characteristic of wetlands.

5.4.2 Environmental Consequences and Mitigation Measures

5.4.2.1 No Action Alternative

Under the No Action Alternative, FEMA would not install AHPP housing on the proposed project site. Therefore, no impacts to wetlands or WUS would occur.

5.4.2.2 Proposed Action Alternative

No WUS, including wetlands, occur on the proposed project site. Under the Proposed Action Alternative, no impacts to WUS, including wetlands, would occur.

On March 10, 2009, a letter requesting project review was sent to USACE and is included in Appendix B. A response from the USACE (see Appendix B) was received on April 9, 2009, which states that they do not anticipate any adverse impacts to any USACE project and do not believe that the property is a wetland subject.

5.5 Air Quality

5.5.1 Affected Environment

Regulatory Setting

The USEPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants. The NAAQS standards are classified as either "primary" or "secondary". The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM-2.5), and lead (Pb). NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS are included in Table 3.

Areas that do not meet these NAAQS standards are called non-attainment areas or maintenance areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. The Federal Conformity Rule was first promulgated in 1993 by the USEPA, following the passage of Amendments to the Clean Air Act (CAA) in 1990. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS.

Table 3. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m ³)	P
1-hour average	35ppm (40mg/m ³)	P
Nitrogen Dioxide (NO₂)		
Annual arithmetic mean	0.053ppm (100µg/m ³)	P and S
Ozone (O₃)		
8-hour average*	0.08ppm (157µg/m ³)	P and S
1-hour average*	0.12ppm (235µg/m ³)	P and S
Lead (Pb)		
Quarterly average	1.5µg/m ³	P and S
Particulate<10 micrometers (PM-10)		
Annual arithmetic mean	50µg/m ³	P and S
24-hour average	150µg/m ³	P and S
Particulate<2.5 micrometers (PM-2.5)		
Annual arithmetic mean	15µg/m ³	P and S
24-hour average	65µg/m ³	P and S
Sulfur Dioxide (SO₂)		
Annual average mean	0.03ppm (80µg/m ³)	P
24-hour average	0.14ppm (365µg/m ³)	P
3-hour average	0.50ppm (1300µg/m ³)	S

Legend: P= Primary S= Secondary

Source: USEPA 2006

ppm = parts per million

mg/m³ = milligrams per cubic meter of air µg/m³ = micrograms per cubic meter of air

* Parenthetical value is an approximate equivalent concentration

A conformity analysis is the process used to determine whether a Federal action meets the requirements of the General Conformity Rule. It requires the responsible Federal agency to evaluate the nature of the proposed action and associated air pollutant emissions, calculate emissions as a result of the proposed action, and mitigate emissions if *de minimis* thresholds are exceeded.

Existing Conditions

Orleans Parish is currently in attainment for all NAAQS (USEPA 2008).

5.5.2 Environmental Consequences and Mitigation Measures

5.5.2.1 No Action Alternative

Under the No Action Alternative, traffic volumes and air quality would continue at current levels. No localized or regional effects to air quality are expected.

5.5.2.2 Proposed Action Alternative

Temporary and minor increases in air pollution would occur from the use of construction equipment (combustible emissions) and the disturbance of soils (fugitive dust) during construction of the new structures and access roads. Fugitive dust emissions were calculated using the emission factor of 0.19 ton per acre per month (Midwest Research Institute 1996), which is a more current standard than the 1985 PM-10 emission factor of 1.2 tons per acre per month presented in AP- 42 Section 13 Miscellaneous Sources 13.2.3.3 (USEPA 2001).

USEPA's NONROAD Model (USEPA 2005) was used, as recommended by USEPA's *Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999* (USEPA 2001), to calculate emissions from construction equipment. Combustible emission calculations were made for standard construction equipment, such as bulldozers, excavators, pole trucks, front-end loaders, backhoes, cranes, and dump trucks. Assumptions were made regarding the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Construction workers would temporarily increase the combustible emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks also contribute to the overall air emission budget. Emissions from delivery trucks and construction worker commuters traveling to the job site were calculated using the USEPA MOBILE 6.2 Model (USEPA 2005a, 2005b and 2005c).

The total air quality emissions were calculated for the construction activities occurring in Orleans Parish to compare to the General Conformity Rule. Summaries of the total emissions for the Proposed Action Alternative are presented in Table 4. Details of the analyses are presented in Appendix D.

Several sources of air pollutants contribute to the overall air impacts of the construction project.

The air results in Table 4 included emissions from:

1. combustible engines of construction equipment
2. construction workers commute to and from work
3. supply trucks delivering materials to construction site
4. fugitive dust from job site ground disturbances

Table 4. Total Air Emissions (tons/year) from Construction Activities in Orleans Parish vs. the *de minimus* Levels

Pollutant	Total (tons/year)	<i>de minimus</i> Thresholds (tons/year)
CO	19.10	100
Volatile Organic Compounds (VOC)	3.57	100
Nitrous Oxides (NOx)	24.06	100
PM-10	24.82	100
PM-2.5	4.25	100
SO ₂	2.93	100

Source: 40 CFR 51.853 and GSRC model projections.

Note: Orleans Parish is in attainment for all NAAQS.

As can be seen from the table, the proposed construction activities do not exceed *de minimis* thresholds in Orleans Parish, and do not require a Conformity Determination. As there are no violations of air quality standards and no conflicts with the State implementation plans, there would be no significant impacts to air quality from implementation of the Proposed Action Alternative.

Ongoing Air Emissions

Air emissions from the personally owned vehicles (POV) of new residents commuting to work and daily auto activities were not calculated. The new residents would most likely be from areas inside Orleans Parish that were devastated by Hurricane Katrina. The air emissions would be transferring from one part of the air-shed (Orleans Parish) to another.

During construction of the proposed project, proper and routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the design standards of all construction equipment. Dust suppression methods and wetting solutions would be implemented in construction areas to minimize fugitive dust. By using these BMPs, air emissions from the Proposed Action Alternative would be temporary and should not significantly impair air quality in the region.

5.6 Noise

5.6.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (*i.e.*, hearing loss, damage to structures, *etc.*) or subjective judgments (*e.g.*, community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel

(dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB and the threshold of discomfort or pain is around 120 dB.

Noise levels occurring at night generally produce a greater annoyance than do the same levels occurring during the day. A-weighted decibel (dBA) is a measure of noise at a given, maximum level or constant state level louder than the same level of intrusive noise during the day, at least in terms of its potential for causing community annoyance. It is generally agreed that people perceive intrusive noise at night as being 10.0 dBA. This perception is largely because background environmental sound levels at night in most areas are also approximately 10.0 dBA lower than those during the day. Acceptable noise levels have been established by HUD for construction activities in residential areas (HUD 1984):

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 and play.

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 construction 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.

As a general rule of thumb, noise generated by a stationary noise source, or “point source,” will decrease by approximately 6.0 dBA over hard surfaces and 9.0 dBA over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on. To estimate the attenuation of the noise over a given distance the following relationship is utilized:

$$\text{Equation 1: } dBA_2 = dBA_1 - 20 \log (d_2/d_1)$$

Where:

- dBA₂ = dBA at distance 2 from source (predicted)
- dBA₁ = dBA at distance 1 from source (measured)
- d₂ = Distance to location 2 from the source
- d₁ = Distance to location 1 from the source

Source: California Department of Transportation 1998

Existing Conditions

The proposed project site is comprised of approximately 124 individual lots. Across LB Landry Avenue, HANO has recently built 47 single and multiple family dwellings in separate redevelopment phases of the overall Fischer area. Two schools, William J. Fischer Charter School, and Murray Henderson Elementary are located immediately north of the proposed project site. Additionally, an elderly residence community is located on Semmes Street across from the Murray Henderson Elementary School. These homes, schools, and elderly community facility would be classified as sensitive noise receptors.

Ambient noise measurements were recorded in the neighborhood adjacent to the project site on June 30, 2009, with a Rion Company NL-32 sound level meter. Noise measurements were performed at 27 different locations throughout the neighborhood and ranged from 56 dBA to 84 dBA with the highest ambient noise emissions along LB Landry Avenue, a divided four lane road which runs through the center of the proposed project site. The highest recorded noise measurement (84 dBA) was in front of William J. Fischer Charter School which is adjacent to LB. Landry Avenue. The second greatest ambient noise source was from the U.S. General DeGaulle Drive exit ramp of a major artery running through Orleans Parish. This exit ramp from Highway 90 is located approximately 600 feet south of the proposed Fischer site.

5.6.2 Environmental Consequences and Mitigation Measures

5.6.2.1 No Action Alternative

Under the No Action Alternative, construction of AHPP housing at the proposed project site would not occur; therefore, no noise impacts would result.

5.6.2.2 Proposed Action Alternative

General Construction Activities

The installation of new AHPP units would require the use of common construction equipment for the majority of the construction activities; however, installation of the units' foundations would require use of a vibratory compactor/driver. Table 5 describes the noise emissions at various distances of typical construction equipment which would be utilized at the proposed Fischer site. Construction equipment used during installation of the foundations would include vibratory pile drivers and for this proposed project a small "KHP 135 II" vibratory compactor/driver by Kent, or its equivalent, would be used to drive foundation piles. Approximately 19 to 39 piles would be installed at each foundation to a depth of approximately 40 feet bgs. In general, vibratory hammers are treated as a continuous noise source.

Table 5. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances¹

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Vibratory Compactor/Driver	75	69	63	55	49
Dump Truck	76	70	64	56	50
Excavator	82	76	70	62	56
Front End Loader	79	73	67	59	53
Concrete Mixer Truck	79	73	67	59	53
Pneumatic Tools	81	75	69	61	55
Backhoe	78	72	66	58	52
Generator	81	75	69	61	55

Source: FHWA 2007 and GSRC

1. The dBA at 50 feet is a measured noise emission (Federal Highway Administration [FHWA] 2007). The 100 to 1,000 foot results are GSRC modeled estimates.

Based on in-situ noise measurements during test pile activities on June 30, 2009, the noise emissions of the vibratory compactor/driver ranged from 70 dBA to 84 dBA at a distance of approximately 50 feet from the source; the medians for the three test piles were all 75 dBA. Assuming a conservative scenario of 75 dBA, for pile driving activities, the noise model projected that noise levels of 75 dBA from a point source (i.e., small vibratory compactor/driver) would have to travel 53 feet before the noise would be attenuated to a normally unacceptable level of 75 dBA. However, at 170 feet from the point source, noise would be attenuated to acceptable levels of 65 dBA. Noise emissions from the "KHP 135 II" are comparatively low and are anticipated to be within acceptable noise levels. Based on the in-situ measurements as well

as noise model projections it is anticipated that other construction equipment (82 dBA) will produce the dominant noise emissions during construction activities.

General construction noise impacts were assessed for a daily noise exposure based on a 10-hour work shift during daytime hours. Assuming a conservative scenario of 82 dBA, for general construction activities, the noise model projected that noise levels of 75 dBA from a point source (*i.e.*, excavator) would have to travel 110 feet before the noise would be attenuated to a normally unacceptable level of 75 dBA. However, at 360 feet from the point source, noise would be attenuated to acceptable levels of 65 dBA.

The residential homes and sensitive noise receptors that may be exposed to noise emissions greater than 75 dBA are located east and northeast of the project site. Appendix A, Figure 4 presents the modeled 65 and 75 dBA noise contours over a map of the proposed project area and adjacent neighborhoods and illustrates how general construction noise emissions would project into the surrounding area. In addition, the hashed area in Figure 4 indicates which housing unit construction area's noise levels would place the adjacent residences and schools within the higher 75 dBA. After that phase of construction is complete the remainder of the proposed site would not place any sensitive receptors within unacceptable noise levels (75 dBA). Table 6 summarizes the number of sensitive noise receptors that may be affected by noise emissions produced during general construction activities.

Table 6. Sensitive Noise Receptors in Close Proximity to General Construction Activities

Noise Receptor	Number of Units	Distance from Construction Site	Noise Exposure
Residential Homes	36	Within 360 feet	Greater than 65 dBA and less than 75 dBA
Schools	2	Within 360 feet	Greater than 65 dBA and less than 75 dBA
Residential Homes	17	Within 110 feet	Greater than 75 dBA
Schools	1	Within 110 feet	Greater than 75 dBA

Mitigation Measures

To minimize the noise impact potential, construction traffic should avoid LB Landry Avenue and be re-routed from General DeGaulle Drive to Thayer Avenue and around the southwest end of the project site. Construction activity would be limited to daylight hours during the work week, between 8:00 am to 6:00 pm on Monday through Friday (City of New Orleans, Code of Ordinances, Sec. 66-138, Article IV. 2009). Noise impacts to the residential housing would be minor if these timing and travel restrictions are implemented.

The Murray Henderson Elementary School is located within 100 feet of the proposed project site and may be exposed to construction noise emissions greater than 75 dBA. To mitigate the potential noise impact to the school, it is recommended that the construction plan includes a noise barrier fence along the school property between the project site and school. The noise barrier would reduce noise emissions from construction activities by approximately 13 to 15 dBA (Allan Block Corporation 2007) which would reduce emissions to below the 75 dBA threshold. If noise mitigation actions are implemented, noise emissions produced by the Proposed Action Alternative would not significantly impair the noise environment at Murray Henderson Elementary School. Should the noise barrier not be utilized, construction of the foundations could be scheduled to occur during the summer months, during school holidays when students are not in classes, or after the school day ends.

Overall, the noise generated by construction of the Proposed Action Alternative would be intermittent and last for less than one year, after which, noise levels would return to ambient levels. Implementation of the mitigation actions suggested above would reduce the noise emissions to levels that are normally acceptable. Therefore, the noise impacts from general construction activities should not significantly impair the noise environment at nearby schools and local neighborhoods.

5.7 Biological Resources

5.7.1 Affected Environment

Regulatory Setting

The Endangered Species Act (ESA) establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. Section 7 of the ESA mandates that all Federal agencies ensure any action authorized, funded, or implemented is not likely to jeopardize the continued existence of a threatened or endangered species or result in destruction of critical habitat for these species. To accomplish this, Federal agencies must consult with the USFWS or the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries) when taking action that has the potential to affect species listed as endangered or threatened or proposed for listing as threatened or endangered.

The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird species listed in 50 CFR 10, including feathers or other parts, nests,

eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandoning eggs or young) may be considered take, and is potentially punishable by fines and/or imprisonment. If an action is determined to cause a potential take of migratory birds, as described above, a consultation process with the USFWS needs to be initiated to determine measures to minimize or avoid these impacts. This consultation should start as an informal process.

The Magnuson-Stevens Fishery Conservation and Management Act (as amended), also known as the Sustainable Fisheries Act, requires all Federal agencies to consult with NOAA Fisheries on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat (EFH). The EFH provisions of the Sustainable Fisheries Act are designed to protect fisheries habitat from being lost due to disturbance and degradation.

Existing Conditions

The project area is currently disturbed and there is limited vegetation onsite. Orleans Parish has three species listed as Federally threatened or endangered and one species currently delisted. Federally endangered and threatened animal species listed for Orleans Parish are shown below in Table 7.

Table 7. Federally Protected Species in Orleans Parish

Common Name	Scientific Name	Status	Habitat
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	Cypress swamps in coastal Louisiana, prefer to nest in sturdy cypress trees adjacent to open water where they forage for fish
Gulf sturgeon	<i>Carpenter oxyrinchus desotoi</i>	Threatened	All saltwater habitats, except during the spawning season when it is found in major rivers that empty into the Gulf of Mexico
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	Large rivers in southeast U.S. including the Mississippi River; prefers the main channels of excessively turbid rivers in areas with strong currents over firm sandy bottom
Manatee	<i>Trichechus manatus</i>	Endangered	Marine open water, bays, and rivers, generally restricted to rivers and estuaries although manatees may enter salt water when traveling from site to site; often found in waters with submerged aquatic beds or floating vegetation

Source: USFWS 2008a, Louisiana National Heritage Program (LNHP) 2008, USFWS 2009

There is critical habitat for the gulf sturgeon in Orleans Parish. It is located in Lake Pontchartrain from the Jefferson Parish boundary eastward, the Rigolets, and Lake Saint Catherine (USFWS 2009).

Louisiana Department of Wildlife and Fisheries (LDWF) has listed 17 species of plants and animals and five natural communities that are rare, threatened, or endangered in Orleans Parish (Louisiana National Heritage Program [LNHP] 2008). Six state species are likely to occur in the program area and include the three federally endangered and threatened animal species and one delisted species listed above in Table 7 with the addition of the paddlefish (*Polydon spathula*) and the diamondback terrapin (*Malaclemys terrapin*). Per the State, the bald eagle, pallid sturgeon, and manatees are listed as endangered, the gulf sturgeon is listed as threatened, the paddlefish is prohibited, and the diamondback terrapin is listed as restricted harvest by LDWF within Orleans Parish (LNHP 2008). Typically the paddlefish prefers deeper, low-current areas of river systems including side channels, backwaters, oxbow lakes, other river lakes, and tail waters below dams while the diamondback terrapin is restricted to saline or brackish habitats. Additionally, the diamondback terrapin prefers sea grass beds, marshes, and estuaries (especially those bordered by mangroves) as favored habitats (LNHP 2008).

The project area has previously been disturbed by demolition and subsequent road and utility placement. As such, there are currently no trees within the project area, and few grasses are growing within the project area. The property is surrounded by urban and commercial developments.

5.7.2 Environmental Consequences and Mitigation Measures

5.7.2.1 No Action Alternative

The No Action Alternative does not include any FEMA action. Therefore, FEMA would not be required to consult with USFWS, NOAA Fisheries, or LDWF to comply with the ESA, MBTA, Fish and Wildlife Coordination Act (FWCA), or Sustainable Fisheries Act. Compliance with EO 13112 is also not required. The No Action Alternative does not have the potential to affect sensitive biological resources.

5.7.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, approximately 20 acres of previously developed land would be cleared of vegetation, graded, and converted to AHPP housing; however, no mature

woody vegetation would be lost as a result of the Proposed Action Alternative. Since the permanent housing site is surrounded, for the most part, by residential and commercial areas, there is only limited use of the site by common urban wildlife species.

No suitable habitats exist to support the West Indian manatee, the Gulf sturgeon, or the Pallid sturgeon within the proposed site. Likewise, no suitable habitat exists for any state-listed species within the proposed site. Therefore, the Proposed Action would not have the potential to affect any Federal or state-listed species.

On March 10, 2009, letters requesting project review were sent to USFWS, NOAA, and LDWF and are included in Appendix B. Responses were provided by LDWF and NOAA on March 16, 2009, in which LDWF stated that no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project and NOAA Fisheries stated that the area is previously disturbed and is not classified as EFH or supportive of marine fisheries resources and therefore has no comment. On March 18, 2009 and July 21, 2009 USFWS responded to FEMA that the project is not likely to affect Federal resources protected under the ESA. An additional response was received from NOAA Fisheries on July 22, 2009 after review of the draft EA which stated again that the project is not located in an area classified as EFH or supportive of marine fishery resources and as such had no comments on the draft EA.

5.8 Cultural Resources

5.8.1 Affected Environment

Regulatory Setting

The National Historic Preservation Act (NHPA) declares Federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. Subsequent amendments designated the SHPO as the individual responsible for administering state-level programs. Section 106 of the NHPA and implementing regulations (36 CFR Part 800) outline the procedures to be followed in the documentation, evaluation, and mitigation of impacts on historic properties. The Section 106 process applies to any Federal undertaking that has the potential to affect historic properties. The Section 106 process includes identifying significant historic properties that may be affected by an action and mitigating adverse effects to properties listed, or eligible for listing, in the National Register of Historic Places (NRHP) (36 CFR 60.4).

FEMA, Louisiana SHPO, Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), formerly the Louisiana Office of Homeland Security and Emergency Preparedness (LOHSEP), and the Advisory Council on Historic Preservation (ACHP) have executed a Statewide Programmatic Agreement (PA) dated December 3, 2004, to streamline the Section 106 review process (hereafter referred to as the 2004 Statewide PA). A copy of the Statewide PA for Louisiana is provided on the FEMA website site at <http://www.fema.gov/plan/ehp/hp/programmatic.shtm>. FEMA proposes to revise the 2004 Statewide PA and this revised Statewide PA will apply immediately upon its execution.

Existing Conditions

The proposed project includes installing 124 AHPP cottages on approximately 20 acres within the proposed Fischer site which is defined as the Area of Potential Effect (APE). The 20-acre parcel of land has previously been developed for high density housing projects in the 1960s, which has since been demolished.

For this proposed undertaking, a records search for previously reported sites and cultural resources surveys within one mile of the proposed project area was conducted at the Louisiana Division of Archaeology in Baton Rouge, Louisiana. The records search revealed that five archaeological sites have been reported within one mile of the proposed project area. These sites 16OR125, 16OR137, 16OR428, 16JE212, and 16OR248 are located outside of the proposed 20-acre site and will not be affected by the proposed undertaking. The 1879 Hardee Map of New Orleans shows the area as undeveloped, cutover swamp land while the 1883 Robinson map shows a portion of the proposed site as having been gridded for city streets but not yet containing any residences. The 1909 and the 1937 Sanborn Fire Insurance Maps do not provide coverage of the project area and thus would indicate the lack of historic development in this area. The 20-acre proposed Fischer site does not lie within a historic district or within the view shed of any reported historic properties. The Fischer site has been highly disturbed by both the construction and demolition of high density slab-on-grade housing projects. Historic map research indicates a relative lack of development within the project area and if any cultural resources previously existed on the property they likely have long since been disturbed by multiple construction episodes. Presently, all structures have been demolished and the land is redeveloped with many of the utilities and infrastructure existing and ready for use once AHPP homes are installed.

5.8.2 Environmental Consequences and Mitigation Measures

5.8.2.1 No Action Alternative

This alternative does not include any FEMA undertaking. Therefore, FEMA has no further responsibility under Section 106 of the NHPA. The possibility exists that potentially historic, private structures such as churches and homeless shelters would be modified for use as temporary dormitories. Further, potentially historic, structurally unsafe, or unsanitary facilities may be modified. Since FEMA does not participate in any activities under the No Action Alternative, it does not need to take into consideration the actions of individuals, local governments, or the state that affect historic structures. Neither would FEMA need to take into consideration impacts to subsurface historic properties, or coincidentally in proximity to such resources under the No Action Alternative.

5.8.2.2 Proposed Action Alternative

The Proposed Action would include construction of approximately 124 AHPP dwellings on the Fischer housing site, a previously developed 20-acre plot of land. The construction plan for these AHPP cottages may require some ground disturbance, including possible contouring and grading and construction of driveways and the tie-in into existing water, electrical power, and sewer infrastructure for each individual cottage. Much of this ground disturbance already occurred during the original development of the housing site.

On July 20, 2004, SHPO concurred with a letter drafted by Citywide Testing and Inspections, Inc for HUD, that no known archaeological sites or historic properties would be affected by demolishing the existing 1960's housing and redeveloping the property. On July 9, 2009, the LRA informed FEMA that the current proposal for the proposed Fischer housing site bears the same scope of work as referenced in the July 20, 2004, HUD letter, and that all 20 acres of the site are intended to be used by the AHPP in the same manner. FEMA has reviewed this earlier consultation and agrees with these recommendations based on a review of the applicant's current plans, a review of the Division of Archaeology's site files, and archival map research. Therefore, given Stipulation I (Lead Agency Coordination), Subsection B, in the Statewide PA dated December 3, 2004, no further review is required for this project as it has been previously reviewed and approved under the NHPA in another Federal program.

If, during the course of AHPP construction, archaeological artifacts (prehistoric or historic) or human remains are discovered, LRA and its contractor shall stop work in the vicinity of the

discovery and take all reasonable measures to avoid or minimize harm to the finds. All archaeological findings or remains would be secured and access to the sensitive area restricted. LRA or its contractors will immediately inform FEMA of the discovery. If unmarked graves are present, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 *et seq.*) is required. LRA or its contractor shall notify the law enforcement agency of the jurisdiction where the remains are located within 24 hours of the discovery. LRA or its contractor shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within 72 hours of the discovery. The LRA and its contractor will not proceed with work until consultation with the SHPO and/or Federally recognized Indian Tribes is completed with assistance from FEMA.

5.9 Socioeconomics

5.9.1 Affected Environment

Regulatory Setting

EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) requires Federal lead agencies to ensure rights established under Title VI of the Civil Rights Act of 1964 when analyzing environmental effects. FEMA and most Federal lead agencies determine impacts on low-income and minority communities as part of the NEPA compliance process. Agencies are required to identify and correct programs, policies, and activities that have disproportionately high and adverse human health or environmental effects on minority or low-income populations. EO 12898 also tasks Federal agencies with ensuring that public notifications regarding environmental issues are concise, understandable, and readily accessible.

EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks) requires Federal agencies to identify and assess health risks and safety risks that may disproportionately affect children. As with EO 12898, FEMA and most Federal lead agencies determine impacts on children as part of the NEPA compliance process.

Existing Conditions

The project site is located in the City of New Orleans in Orleans Parish. The 2000 U.S. Census population of New Orleans zip code 70114 (which surrounds the project site) consisted of 28,385 people and 12,351 housing units, and the median household income was estimated at \$23,379 in 1999. Approximately 30.3 percent of local families lived below the poverty level (U.S.

Census Bureau [USCB] 2000). Since Hurricane Katrina, the GNOCDC has been using U.S. Postal Service delivery statistics to track repopulation in the greater New Orleans area. According to GNOCDC, 11,897 households were actively receiving mail in zip code 70114 in July 2005, prior to Hurricane Katrina. From March 2008 to September 2008, there was a 7 percent increase in the number of residences actively receiving mail within the 70114 zipcode (Brookings Institute 2009). In December 2008, a total of 10,570 households were actively receiving mail in zip code 70114 (GNOCDC 2008). Overall, the population in the Algiers area of the city had reached 95 percent of its pre-Katrina population by September 2008 (Brookings Institute 2009).

The U.S. Census population of Orleans Parish in 2000 was approximately 484,674. This population had dropped to an estimated 223,388 by 2006, largely as a result of Hurricane Katrina, but has since increased to 288,113 as of July 1, 2007 (USCB 2008; Brookings Institute 2009). As of December 2008, the population of Orleans Parish had reached 73.7 percent of its pre-Katrina estimate (Brookings Institute 2009).

Public services have continued to return to the New Orleans area since Hurricane Katrina. As of October 2008, 65 private schools were open in Orleans Parish and 89 public schools were open in the City of New Orleans (Brookings Institution 2009). As of December 2008, 13 state-licensed hospitals and 12 public libraries were operating in Orleans Parish (Brookings Institution 2009). As of January 2009, 125 child care centers were open in the New Orleans metro area (Brookings Institution 2009). Prior to Hurricane Katrina, 93 private schools, 23 state-licensed hospitals, and 275 childcare centers were open in Orleans Parish, and 128 public schools were open in the City of New Orleans (Brookings Institution 2008).

EO 12898 requires that each Federal agency identify and address the effects of its programs, policies, and activities on minority and low-income populations. The function of the EO is to avoid disproportionately high and adverse public health or environmental impacts to the target populations. Further, EO 12898 also tasks Federal agencies with ensuring that public notifications regarding environmental issues are concise, understandable, and readily accessible.

At the time of the 2000 Census, the population of New Orleans zip code 70114 was approximately 73.6 percent African American and 21.8 percent Caucasian. Approximately 30.3

percent of families and 35.3 percent of individuals were living below the poverty level. In comparison to Orleans Parish, the 70114 zip code had a higher percentage of residents and families living below the poverty level. Compared to the State as a whole, the percentage of African Americans and other minority groups was higher in zip code 70114, as was the percentage of people and families living in poverty (Table 8) (USCB 2000). Although the number of individuals living in the 70114 zip code has decreased substantially since Hurricane Katrina, the proportion of minority and low-income populations is anticipated to be similar to pre-Katrina conditions.

Table 8. Minority and Low-Income Population Summary Statistics

Demographics	New Orleans Zip Code 70114	Orleans Parish	Louisiana
Caucasian	22 percent	28 percent	64 percent
African American	74 percent	67 percent	33 percent
Other Non-White	4 percent	5 percent	15 percent
Families Below Poverty Level	30 percent	24 percent	16 percent

Source: USCB 2000

Of the total population of Orleans Parish, 21.3 percent is comprised of children under the age of 18 (USCB 2006).

5.9.2 Environmental Consequences and Mitigation Measures

5.9.2.1 No Action Alternative

Although there is no requirement for compliance with EOs 12898 and 13045 when there are no Federal actions, the No Action Alternative would likely result in disproportionate health and safety risks to low-income and minority persons and to children, as these groups will be most likely to be affected by the lack of permanent housing.

Displaced persons currently residing with family members or friends, in hotels, in temporary dormitories, or in structurally unsafe or unsanitary facilities would result in adverse socioeconomic and public safety impacts. The hosts would suffer the economic effects of these living arrangements from expending additional living expenses, such as food and increased utility use. In many cases, displaced residents would be subject to adverse financial impacts due to relocations and being distant from their places of employment. Further, the hosts and displaced residents could endure emotional stress associated with disruption of their normal

lives. For persons who attempt to occupy structurally unsafe or unsanitary facilities, public safety associated with building collapse and transmission of disease is a high risk.

5.9.2.2 Proposed Action Alternative

Noise resulting from installation of the proposed AHPP cottages would likely cause disproportionately adverse impacts to minority or low-income populations; however, conversely, the socioeconomic benefits from installation of the AHPP cottages would also be disproportionately distributed among minority or low-income populations.

Although limited flooding occurred near the proposed Fischer site, various studies indicate that Hurricane Katrina caused severe flood damage in the majority of all New Orleans neighborhoods, regardless of income and other social factors. These studies also suggest that pre-existing socioeconomic conditions play a significant role in the ability of particular economic classes to respond immediately to the disaster and to cope with rebuilding after such a devastating natural disaster. Affordable housing is an essential need for those lower income level families affected by Hurricane Katrina and who in general are the least likely to have the resources to rebuild. Low and moderate income level families are the families that HANO and the LRA are targeting through both the existing phase of the Fischer redevelopment, as well as with the AHPP housing proposed in this action. In general, the availability of Federal assistance, including AHPP housing for displaced individuals, is consistent with EO 12898. All forms of FEMA disaster housing assistance are available to any affected household that meets the conditions of eligibility; demographics are not among the eligibility requirements.

With establishment of the Fischer AHPP housing units in the West Bank neighborhood of Algiers, it is estimated that approximately 575 individuals would return to the Fischer neighborhood from other areas in Louisiana, but primarily within Orleans Parish (HUD 2004). The project site is located within an urban area and is surrounded by existing residential areas. The AHPP housing units would tie into water and sewer infrastructure that is currently being constructed at the site. Existing public services, such as schools, fire and police services, child care, and medical services would be adequate for this influx of people. Minor beneficial economic impacts are anticipated as new residents use local services and purchase materials from local businesses.

The housing at the proposed project site would be offered to families and individuals regardless of race or economic background who were displaced or impacted by Hurricanes Katrina and Rita. The specific demographics of the Fischer (Algiers) occupants are not available at this time because specific individuals or families are in the process of being identified for this area. However, the demographic makeup of future residents is anticipated to be similar to the community as a whole. Furthermore, the availability of AHPP housing would result in a positive impact to displaced individuals regardless of their race or economic status.

5.10 Traffic and Transportation

5.10.1 Affected Environment

The Louisiana Department of Transportation and Development (LaDOTD) is responsible for design, construction, and maintenance of the state highway system, as well as the portion of the Federal interstate highways within Louisiana's boundaries. Arterials, connectors, rural roads, and local roads are constructed and maintained by parish or city governments.

Existing Conditions

As shown below in Table 9, Orleans Parish has an extensive network of Federal (Interstates [I] and US highways [US]) and state highways (LA) throughout the program area.

Table 9. Major Federal and State Highway Traffic Counts within the Project Area

Parish	Highways	AADT
Orleans	I-10	55,439 – 128,072
	I-510	23,969 – 31,498
	I-610	69,691 – 76,074
	US 61	36,136 – 38,394
	US 90	2,559 – 101,366
	LA 39	37,103 – 53,333
	LA 46	21,790 – 28,396
	LA 47	7,598 – 21,984

Source: LaDOTD 2008

The State currently provides actual traffic counts along various highways for the years 2004, 2005, and 2006, depending on the parish. Traffic counts are given in units of Average Annual Daily Traffic (AADT). As shown below, in Orleans Parish the highest of the traffic counts on Federal highways was on the interstate system of I-10 and I-610 with counts ranging from 69,691, and 128,072. On other Federal highways (US 61 and US 90) counts ranged from as low

as 2,559 to as high as 101,366. State highway traffic counts ranged from 7,598 to 53,333 AADT (LaDOTD 2008).

The proposed project site is located in Algiers, Orleans Parish, Louisiana; is bordered to the west by Thayer Street; to the north by commercial properties along Semmes Street and Murray Henderson Elementary School; to the east by a residential neighborhood and the Pontchartrain Expressway; and to the south by General DeGaulle Drive. LB Landry Avenue runs through the center of the proposed project site. Interstate 10 (I-10) and the Pontchartrain Expressway (US 90) are major arteries through Orleans Parish and are located approximately 7 miles north, and 0.5 mile east, respectively, of the proposed project site. A transportation map is provided in Appendix A, Figure 5. The New Orleans Regional Transit Authority (NORTA) provides public transportation, including buses and street cars, in the area. The Algiers Loop, Algiers Owl Loop, and General Meyer routes run through the project area. A mass transit map is provided in Appendix A, Figure 6.

Due to the low to moderate income of residents in FEMA housing, personal transportation may not be readily available during emergency evacuation times. The City of New Orleans has a City Assisted Evacuation Plan in place to help citizens who want to evacuate during an emergency but lack the capability to do so; this includes citizens without transportation and those in need of medical resources. The City of New Orleans has the responsibility for getting the citizens from pre-identified pick-up locations to registration centers and debarkation points, which would be the Morial Convention Center, Union Passenger Terminal and Louis Armstrong Airport. The State then has the responsibility for moving the citizens from the threat area and into shelters. When the threat has passed and re-entry is authorized, the process will be reversed. Citizens are encouraged to first provide for their own evacuation through neighbors, friends, and family but will have this evacuation method of last resort available (City of New Orleans 2006).

5.10.2 Environmental Consequences and Mitigation Measures

5.10.2.1 No Action Alternative

Under the No Action Alternative there would be no AHPP units constructed; displaced residents would continue to utilize temporary housing. There would be no effect on traffic or transportation.

5.10.2.2 Proposed Action Alternative

Under this alternative, no significant adverse impacts to public roads, site access, or traffic levels are anticipated. There would be a minor temporary increase in the volume of construction traffic associated with site preparation, construction, and installation of the AHPP units on the roads in the immediate vicinity of the proposed project site. This construction traffic could potentially result in a slower traffic flow for the duration of the construction phase, particularly for LB Landry Avenue which runs through the center of the proposed project site. To minimize any adverse impacts to traffic, construction vehicles and equipment would be stored on site during project construction, appropriate signage would be posted on affected roadways, and adjacent residential neighborhoods and commercial/industrial areas would be notified in advance of construction activities and any rerouting of local traffic, particularly for LB Landry Avenue which runs through the center of the proposed project site. Since the permanent housing would replace previously demolished housing, traffic volumes should return to pre-construction historic levels upon completion of construction.

Traffic volumes would also increase in the vicinity of the proposed group site from new residents. However, current zoning for the property would allow approximately 124 homes to be built on the land that previously contained HANO housing. There would be at least two streets allowing ingress/egress of vehicles under the Proposed Action Alternative; therefore, the level of service on the streets would be similar to the previous HANO housing that existing prior to 2004.

5.11 Hazardous Materials and Wastes

5.11.1 Affected Environment

5.11.1.1 Regulatory Setting

Hazardous wastes and materials are regulated in the U.S. under a variety of Federal and state laws. Federal laws and subsequent regulations governing the assessment, transportation, and disposal of hazardous wastes and materials include the Resource Conservation and Recovery Act (RCRA); the RCRA Hazardous and Solid Waste Amendments; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Solid Waste Act; the Toxic Substances Control Act (TSCA); and the CAA. RCRA is the Federal law that regulates hazardous waste from “cradle to grave,” that is, from the time the waste is generated through its management, storage, transport, treatment, and final disposal. USEPA is responsible for implementing this law and may delegate this responsibility to individual states. Louisiana has been delegated with this responsibility. RCRA also sets forth a framework for the management

of non-hazardous wastes. The 1986 amendments to RCRA enable the USEPA through LDEQ to address the environmental problems that can result from underground tanks storing petroleum and hazardous substances. RCRA focuses only on active and proposed facilities, and does not address abandoned or historical sites.

TSCA gives the USEPA the ability to track the approximately 75,000 industrial chemicals currently produced or imported into the U.S. The USEPA repeatedly screens these chemicals, and can require reporting or testing of those chemicals that may pose an environmental or human-health hazard. The USEPA may ban the manufacture and import of those chemicals that pose an unreasonable risk. TSCA supplements other Federal statutes, including CAA and the Toxic Release Inventory under the Emergency Planning and Community-Right-to-Know Act. TSCA includes regulations regarding asbestos and polychlorinated biphenyls (PCB). CERCLA and the Superfund Amendments and Reauthorization Act (SARA) govern the process for identifying and prioritizing the cleanup of abandoned or other sites not regulated under RCRA that are contaminated by the release of hazardous materials. The USEPA was given power to seek out those parties responsible for any release and ensure their cooperation in the cleanup.

Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies. Section 112 of the CAA requires the USEPA to develop emission standards for hazardous air pollutants. In response to this section, the USEPA published a list of hazardous air pollutants and promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations. Because lead and asbestos present a substantial risk to human health as a result of air emissions from one or more source categories, they are considered hazardous air pollutants and, thus, hazardous materials. The Asbestos NESHAP (40 CFR 61, Subpart M) addresses milling, manufacturing, and fabricating operations; demolition and renovation activities; waste disposal issues; active and inactive waste disposal sites; and asbestos conversion processes.

5.11.1.2 Existing Conditions

Louisiana has 10 National Priorities List (NPL) sites; however, Orleans Parish has only one active NPL site (USEPA 2008b). The NPL site is the Agricultural Street Landfill and it is across the Mississippi River and approximately 4.5 miles due north of the proposed site. The EPA

Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) ID number is LAD98154486 (USEPA 2008b).

GSRC contracted Environmental Data Resources Inc. (EDR) to search Federal and state databases for any contaminant that could constitute an environmental risk to the project area within a search radius as defined by American Society for Testing and Materials (ASTM) 2006 guidelines (ASTM E1527-05). Upon review by GSRC, the radius report revealed three findings of leaking underground storage tanks (LUST), two RCRA conditionally exempt small quantity generators (CESQG), a drycleaner, a wastewater treatment facility, a brownfields site, and four historical auto stations within the 0.5 mile of the proposed site (EDR 2009). Two of the three LUST sites had the tanks removed and are still undergoing remediation or have been remediated to acceptable levels. The third LUST site had a piping leak which was repaired and the subsequent remediation effort was completed and approved by LDEQ. The two RCRA CESQG have had no environmental violations. The Brownfields property is the Algiers Incinerator and is undergoing targeted Brownfields assessment efforts. None of the sites are known to have any outstanding environmental violations with LDEQ.

5.11.2 Environmental Consequences and Mitigation Measures

5.11.2.1 No Action Alternative

Although the No Action Alternative would not actively use hazardous materials or generate hazardous wastes, it may prolong the exposure of individuals to hazardous materials or wastes that may have been generated by Hurricanes Katrina and Rita. Residents who find themselves without alternative housing may continue to live within an area contaminated by hazardous materials or wastes, such as petrochemicals (from ruptured storage tanks), air-borne asbestos (from damaged asbestos-containing materials), or lead-paint chips (from peeling painted surfaces). Further, temporary dormitories not typically used as shelters could contain lead-based paint or other sources of hazardous materials or wastes.

5.11.2.2 Proposed Action Alternative

The adjacent project area is populated by sites and facilities frequently seen in urban settings. These sites and facilities could potentially impact the surrounding environment due to spills or pollutants that migrate offsite; however, based on review of the records provided in the EDR report and an additional records search through LDEQ public database, the adjacent sites or facilities do not currently pose environmental concerns to the proposed AHPP site.

Additionally, under this alternative, project activities are not anticipated to impact hazardous materials or wastes. Ground disturbing activities could expose or otherwise affect subsurface hazardous wastes or materials. A site visit was conducted by GSRC on February 27, 2009. No hazardous materials or wastes were observed onsite and no staining of the project area was noted. Furthermore, the site was demolished and cleared in late 2008 and no material appears to have been left behind. In addition, based on the GSRC site visit and review of all obtainable data, construction of AHPP units at the proposed project site is not likely to affect hazardous materials or wastes in the general vicinity of the project site.

Any hazardous materials discovered, used, or generated during construction activities would be handled and disposed of in accordance with Federal, state, and local regulations. If any hazardous wastes are confirmed or suspected at the site, the LRA would follow local, state, and Federal regulations for the handling, transport, and disposal of these substances prior to installation of AHPP units. The LRA and the State would coordinate with state and local agencies, and the USEPA, as appropriate.

On March 10, 2009, a letter requesting project review was sent to USEPA and is included in Appendix B. LDEQ responded on April 6, 2009, with no comments regarding the hazardous materials and waste section of the EA.

SECTION 6.0
CUMULATIVE IMPACTS



6.0 Cumulative Impacts

According to the Council on Environmental Quality (CEQ) regulations, cumulative impacts represent the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative 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 AHPP in Louisiana and other actions occurring or proposed in the vicinity of the proposed Fischer group site.

The Louisiana Gulf Coast is undergoing recovery efforts after the 2005 hurricane season which includes demolition, reconstruction, and new construction, both within the private sector as well as by Federal and state agencies. The USACE is undergoing one of the largest projects in their history, the rebuilding of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System, which will improve approximately 350 miles of levees, concrete floodwalls, and other structures to meet 100-year level of risk reduction. These improvements include movement of large volumes of borrow material for levee construction, thousands of H-piles, sheet piles, and large quantities of concrete for floodwall construction. In addition, LaDOTD has an unusually large number of infrastructure improvements ongoing in and around Orleans Parish such as the Huey P. Long Bridge widening, the 1-10 Twin Span Bridge replacement, and the I-10 and Causeway Boulevard interchange improvements. These infrastructure projects, as well as others in the Parish, are due both to the repair of damage caused by the 2005 hurricane season as well as needed maintenance and improvements. The combination of recovery development projects, including those mentioned above, and the proposed AHPP actions would have cumulative impacts to Orleans Parish. However, it is anticipated that the Proposed Action would not have cumulative impacts on most resources addressed in this EA.

Cumulative impacts from the AHPP program in Orleans Parish would occur to noise and socioeconomics. Although there would be short-term adverse cumulative noise, socioeconomic, and transportation impacts, in the long-term these private, State, and Federal development projects would provide Orleans Parish with hurricane damage risk reduction, better transportation infrastructure, and improved housing conditions, which enable lower income and displaced residents of New Orleans to have a higher standard of living than may

have been possible prior to the 2005 hurricane season. Furthermore, the expenditure of Federal funds for all of these improvement projects has a cumulative socioeconomic benefit through job creation and purchases of materials and supplies.

In December 2005, DHS and CEQ established a NEPA Alternative Arrangement (AA) process to enable timely action on grant applications to restore safe and healthful living conditions in New Orleans Metropolitan Area (NOMA) while observing the requirements and objectives of NEPA. NOMA includes Orleans, Jefferson, St. Bernard, Plaquemines, St. Tammany, St. Charles, and St. John the Baptist Parishes. A requirement of AA was to address projects which may have potentially significant cumulative environmental effects upon the various resources in the area. AA enable FEMA to consider the potential for significant direct, indirect, and cumulative impacts to the human environment from reconstruction of critical physical infrastructure in NOMA through its grant programs. AA has been developed in consultation with CEQ pursuant to NEPA regulations found in 40 CFR 1506.11 and 44 CFR Part 10.13. FEMA's determination of the need for this arrangement was based on the immense number and complexity of FEMA-funded actions, when evaluated with all future Federal, state, and local actions in the area.

Rather than spend time and resources trying to quantify the potential significance and proportion of the impacts caused by the FEMA-funded actions (as opposed to the actions of others), emphasis is placed on identifying and implementing mitigation measures for the potential impacts. This approach entails characterizing the typical recurring FEMA-funded actions and assessing the potential impacts of those actions on different resources. Based on this assessment and to comply with CEQ AA, FEMA is in the process of preparing a Cumulative Impact Analysis (CIA). FEMA will identify cumulative impacts to the socioeconomic resources, wetland and coastal systems, and historic properties in NOMA and the mitigation measures for any potential impact. The actions taken into account as part of the CIA include all FEMA-funded actions within the NOMA, regardless of the program under which they are funded. The three primary FEMA programs include Individual Assistance, Hazard Mitigation, and Public Assistance.

Although restoration of eligible infrastructure substantially to its pre-disaster conditions is excluded from NEPA by Section 5159 of the Stafford Act, FEMA anticipates that the

applications from the State for NOMA will more strongly reflect future demands than returning to pre-disaster conditions.

FEMA currently administers grant programs to fund the repair, restoration, and replacement of eligible infrastructure that has been damaged or destroyed in areas that have been included in a Presidential disaster declaration. Some of the other ongoing FEMA projects and Orleans Parish-wide projects are outlined below.

FEMA

AHPP Projects

The LRA has proposed to utilize AHPP funds for various projects in and around Orleans Parish. The LRA proposed installation of a limited group housing development of approximately 95 AHPP units located in the Louisiana Army National Guard installation at Jackson Barracks in the Lower Ninth Ward neighborhood and the construction of approximately 160 AHPP units scattered throughout Orleans Parish. In addition, a group site is being proposed in Jefferson Parish for the Ephesus site in Westwego at the 800 block of Wayne Avenue. EAs and PEAs have been or are being performed by FEMA to analyze the impacts of these proposed AHPP housing projects to the natural environment.

Public Assistance Grant Program

The Public Assistance Grant Program provides grants for debris removal, emergency protective measures, repairing infrastructure to pre-disaster conditions, and permanent infrastructure work (e.g., improved projects and alternate projects) beyond its pre-disaster conditions for both publicly-owned facilities as well as private non-profit organizations (FEMA 2007). FEMA, through its Public Assistance Grant Program, is involved in multiple projects for restoration of public infrastructure in Orleans Parish. Although many of these projects are exempted from the requirements of NEPA under Section 316 of the Stafford Act, they must comply with all other environmental and historic preservation laws, regulations, and EOs.

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides funding for activities that mitigate the impact of future disasters including, but not limited to, retrofitting of commercial and residential structures, reconstruction of homes with hazard mitigation measures, elevation of structures, flood-proofing of structures, and acquisition of facilities.

The State is using part of their available HMGP funds to assist in the Road Home Program efforts. In particular, HMGP funds would be used for the elevations and reconstruction of some homes identified under the Program. In December 2007, FEMA announced a program exception that would allow the agency to provide HMGP assistance to actions that were initiated or completed without the agency's approval in the State. FEMA issued a PEA for these activities and executed a PA under Section 106 of the NHPA.

Demolition Activities

After the 2005 hurricane season devastated southern Louisiana, FEMA implemented a disaster response program funding demolition of homes identified by the local government as a threat to public health and/or safety. As a Federally funded program, these demolitions are subject to review under Section 106 of the NHPA. FEMA conducts individual historic review of buildings eligible for this program to identify those demolitions which would affect historic properties. From the onset, there was a general acknowledgement that this demolition program would potentially have adverse effects to historic properties, particularly in Orleans Parish with its many National Register Historic Districts and widespread devastation. Very early in the process, FEMA recognized that the 106 review and potential adverse effects in Orleans Parish necessitated a programmatic approach in order to mitigate the potential loss to the historic fabric of New Orleans.

Building on the existing Louisiana PA, FEMA initiated consultation which led to a Secondary Programmatic Agreement for Orleans Parish to encompass private property demolitions. Adverse effects resulting from the private property demolitions are programmatically addressed on a specific basis with pre-demolition treatment measures for NRHP-eligible homes. This process is outlined below.

- Buildings which were found to be historic, primarily contributing to historic districts, are individually discussed in a meeting with all interested parties (FEMA, City of New Orleans, SHPO, National Trust for Historic Preservation, and the Preservation Resource Center) to examine alternatives to demolition for each property.
- After this is complete, each NRHP-eligible house is photographed for archival recordation.
- Finally, before demolition, each building is assessed by a team of historic architects and specialists from the above organizations to identify character-defining architectural elements to be removed prior to demolition.
- Once removed, these items are given to the Preservation Resource Center, a local non-profit preservation advocacy group to be resold into the community.

Orleans Parish

The Parish Recovery Planning Tool, created by the Louisiana Long-term Community Recovery (LTCR) planning team, allows Federal and state agencies, local parish governments, general public, and displaced Louisianans, as well as other LTCR parish teams, access to the planning process. Recovery goals specific to Orleans Parish include restoration and improvement projects in the following areas:

- Environmental
- Housing and Community Development
- Economic and Workforce Development
- Public Health and Healthcare
- Transportation and Infrastructure
- Education
- Human Services
- Flood Protection and Coastal Restoration

Details about current projects in these areas are provided below (Louisiana Speaks 2006).

Current environmental restoration and improvement projects in Orleans Parish include restoration of 1,100 acres of City Park, restoration of urban forest throughout the parish in an effort to replace some of the approximately 40,000 public trees (under the jurisdiction of the New Orleans Department of Parks and Parkways) growing in parks, along the City's extensive network of neutral grounds (medians), and within the public right-of-way that were lost as a result of the 2005 hurricane season, and rebuilding of JM Bartholomew Municipal Golf Course.

Current housing and community development efforts are underway in Orleans Parish to address the housing shortage caused by the 2005 hurricane season by providing assistance to rebuild up to 134,000 damaged or destroyed rental units and rehabilitating up to 67,000 owner-occupied homes, including quality, affordable housing options for approximately 30,000 displaced senior residents and 17,000 displaced low income families. The Parish also has plans for mixed use developments and restoring and protecting approximately 33,000 historic and culturally significant buildings.

Orleans Parish recovery economic and workforce development goals include: strengthening the areas of the city where small and minority businesses begin, grow, and mature; strengthening and restoring tourism to pre-storm levels within three years; targeting assistance for small and emerging industries and firms; revitalizing older and underutilized areas of the downtown;

increasing the number and quality of the local labor supply; and diversifying employment so that there is a greater share of manufacturing and light industrial employment.

Public health and healthcare goals in Orleans Parish are aimed at re-establishing medical infrastructure and quality services, ensuring the minimum, adequate access to behavioral health services (the standard of which is one full-time mental health provider per 9,000 people and one full-time substance abuse counselor per 4,200 people), and re-establishing comprehensive primary care services through a neighborhood-based service delivery model.

Transportation and infrastructure goals specific to Orleans Parish include the following: re-establishing the parish's roadways and traffic management to efficiently accommodate traffic through the city; stimulating a swift revitalization of commercial and residential neighborhoods while encouraging access between communities across the waterways; re-establishing the regional mass transit system in order to provide efficient, safe, and environmentally friendly public transit services to nearly 220,000 individuals in New Orleans; relocating existing deep draft port facilities, tenants, and industries of the Port of New Orleans in order to provide a safer and deeper port for the movement of up to 50 million tons of cargo per year; and collecting data on damages to the sewer and water delivery systems in order to accurately quantify water loss.

Within Orleans Parish, goals were set forth in order to create or restore 4,000 acres of critically located coastal wetlands and other habitats that buffer and protect communities and infrastructure in Orleans Parish and southeast Louisiana, build structures to serve as storm surge buffers that will significantly reduce storm surge and protect coastal wetlands, and develop alternatives to levees to protect the City of New Orleans from flooding.

City of New Orleans

The City of New Orleans is undertaking an unprecedented level of capital improvement and street and landscape enhancement projects to rebuild New Orleans to pre-storm conditions. Already, \$1.1 billion has been allocated toward active recovery projects (City of New Orleans 2009a).

Recovery projects in New Orleans are currently being funded by several sources including:

- DHS and Emergency Preparedness
- State Revolving Loan Fund
- Community Development Block Grants

- General Obligation Bonds—city bonds voted on by citizens prior to Hurricanes Katrina and Rita

SECTION 7.0
PUBLIC INVOLVEMENT



7.0 Public Involvement

Public involvement is being performed in compliance with NEPA, FEMA's regulations implementing NEPA at 44 CFR 10.9(c), and EO 12898, 11988, and 11990. An electronic version of the draft EA was provided to interested agencies prior to and during the public comment period. Agency coordination and consultation will be deemed complete at the end of the public comment period. All agency and public correspondence is provided in Appendix B. In addition, the LRA has informed the current nearby HANO residents of the proposed project.

A Public Notice was published in *The Times Picayune* newspaper during the public comment period from July 17, 2009 through July 31, 2009. Written comments on the draft EA could be faxed to FEMA's representative in New Orleans, Louisiana, at (504) 762-2670 and could be emailed to Cynthia.Teeter@dhs.gov. The draft EA was available for viewing and downloading from FEMA's website at <http://www.fema.gov/plan/ehp/envdocuments/ea-region6.shtm> and was available for review at the HANO office on 4100 Touro Street, New Orleans 70122. The draft EA was also available for public review at the Algiers Point/Hubbell Branch Public Library, 725 Pelican Street, New Orleans, Louisiana 70114, and the Algiers Regional Branch Public Library, 3014 Holiday Drive, New Orleans, Louisiana 70131, during the public comment period. If no substantive comments are received, the draft EA will become final, a FONSI will be issued, and the initial Public Notice will also serve as the final Public Notice. Substantive comments will be addressed as appropriate in the final EA. During the public comment period no substantive comments were received.

SECTION 8.0
AGENCY COORDINATION



8.0 Agency Coordination

The following agencies and organizations were contacted by a letter requesting project review during preparation of this EA. Any response letters received to date are included in Appendix B.

Federal

- U. S. Fish and Wildlife Services (USFWS)
- Natural Resources Conservation Service (NRCS)
- U.S. Environmental Protection Agency (USEPA)
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Army Corps of Engineers (USACE)

State

- Louisiana Department of Wildlife and Fisheries (LDWF)
- Louisiana Department of Environmental Quality (LDEQ)
- Office of Culture, Recreation and Tourism, SHPO

City

- City of New Orleans' Coastal Zone Management Administrator

SECTION 9.0
LIST OF PREPARERS



9.0 List of Preparers

FEMA

Jomar Maldonado, Environmental Program Specialist

Cynthia Teeter, Deputy Environmental Liaison Officer

GSRC

Denise Rousseau Ford, Project Manager

Carey Lynn Perry, Resource Section Preparer and Reviewer

Nicole Forsyth, Resource Section Preparer

Allen Fuller, Resource Section Preparer

Greg Lacy, Resource Section Preparer

Steve Kolian, Resource Section Preparer

Sharon Newman, GIS Analyst

Curt Schaeffer, Resource Section Preparer

Bretton Somers, Resource Section Preparer

Suna Adam Knaus, Senior Reviewer

URS Corporation

Brian Mehok, Environmental Coordinator and Reviewer

SECTION 10.0
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