

Draft Programmatic Environmental Assessment

Alternative Housing Pilot Program Permanent Housing

Orleans Parish, Louisiana
FEMA-1603/1607-DR-LA
April 2009



U.S. Department of Homeland Security
Federal Emergency Management Agency (FEMA)
Louisiana Transitional Recovery Office – New Orleans, LA

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Contract No. HSFEHQ-07-C-0173

TABLE OF CONTENTS

1.0	Introduction	1
1.1	Purpose and Need	2
1.2	Scope, and Use of the Programmatic Environmental Assessment	2
2.0	Alternatives.....	5
2.1	Alternative 1: No Action Alternative	5
2.2	Alternative 2: Proposed Action Alternative	5
3.0	Summary of Potential Impacts.....	7
4.0	Affected Environment, Environmental Consequences, and Mitigation Measures ...	8
4.1	Geology and Soils	8
4.1.1	Affected Environment	8
4.1.2	Environmental Consequences and Mitigation Measures.....	11
4.2	Air Quality.....	12
4.2.1	Affected Environment	12
4.2.2	Environmental Consequences and Mitigation Measures.....	14
4.3	Noise	16
4.3.1	Affected Environment	16
4.3.2	Environmental Consequences and Mitigation Measures.....	17
4.4	Water Quality.....	19
4.4.1	Affected Environment	19
4.4.2	Environmental Consequences and Mitigation Measures.....	21
4.5	Floodplains.....	22
4.5.1	Affected Environment	22
4.5.2	Environmental Consequences and Mitigation Measures.....	24
4.6	Wetlands	24
4.6.1	Affected Environment	24
4.6.2	Environmental Consequences and Mitigation Measures.....	25
4.7	Biological Resources.....	26
4.7.1	Affected Environment	26
4.7.2	Environmental Consequences and Mitigation Measures.....	28
4.8	Cultural Resources.....	29
4.8.1	Affected Environment	29
4.8.2	Environmental Consequences and Mitigation Measures.....	30
4.9	Socioeconomics	31
4.9.1	Affected Environment	31
4.9.2	Environmental Consequences and Mitigation Measures.....	35
4.10	Traffic and Transportation	36
4.10.1	Affected Environment	36
4.10.2	Environmental Consequences and Mitigation Measures.....	38
4.11	Hazardous Materials and Wastes.....	38
4.11.1	Affected Environment	38
4.11.2	Environmental Consequences and Mitigation Measures.....	40
5.0	Cumulative Impacts	42
6.0	List of Preparers.....	47
6.1	FEMA	47
6.2	Gulf South Research Corporation	47
6.3	URS Corporation	47
7.0	References.....	48

TABLES

Table 1.	Prime or Unique Farmland within the Program Area	11
Table 2.	National Ambient Air Quality Standards.....	13
Table 3.	Total Air Emissions (tons/year) from Construction Activities in Orleans Parish vs. the <i>de minimus</i> Levels.....	15
Table 4.	A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances	18
Table 5.	Noise Exposure Levels in Close Proximity of Construction Site	18
Table 6.	List of LDEQ Sub-watersheds Found in the Orleans Parish Program Area and Water Quality Attainment Status	20
Table 7.	Wetland Acreage in Orleans Parish, Louisiana	25
Table 8.	Federally Protected Species in Orleans Parish	27
Table 9.	State Protected Species Likely to Occur in Orleans Parish	28
Table 10.	Minority and Low-Income Population Summary Statistics	35
Table 11.	Federal and State Major Highways with Traffic Counts within the Project Area	36

PHOTOGRAPH

Photograph 1.	Typical Louisiana Cottages	6
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APPENDICES

Appendix A.	Figures
Appendix B.	Correspondence
Appendix C.	AHPP Cottage Designs
Appendix D.	Air Quality Calculations
Appendix E.	Floodplain and Wetlands Eight Step Planning Process and Public Notification

List of Acronyms and Abbreviations

µg/m ³	Micrograms per cubic meter of air
AADT	Average Annual Daily Traffic
ACHP	Advisory Council on Historic Preservation
AHPP	Alternative Housing Pilot Program
amsl	Above mean sea level
BMP	Best Management Practice
CAA	Clean Air Act
CO	Carbon monoxide
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHHA	Coastal High Hazard Area
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
DO	Dissolved oxygen
EA	Environmental Assessment
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
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
GNOCDC	Greater New Orleans Community Data Center
GSRC	Gulf South Research Corporation
HMGP	Hazard Mitigation Grant Program
HUD	U.S. Department of Housing and Urban Development
I	Interstate
IHNC	Inner Harbor Navigation Canal
LA	Louisiana state highway
LaDOTD	Louisiana Department of Transportation and Development
LaMP	Louisiana Mapping Project
LDA	Louisiana Division of Archeology
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
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

MBTA	Migratory Bird Treaty Act
mg/m ³	Milligrams per cubic meter of air
MLRA	Major Land Resource Area
MSA	Metropolitan Statistical Area
msl	Mean sea level
NA	Not applicable
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
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
PEA	Programmatic Environmental Assessment
Pb	Lead
PCPI	Per capita personal income
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
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Officer
SO ₂	Sulfur dioxide
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
WMA	Wildlife Management Area

WSRA
WUS
WWTP

Wild and Scenic Rivers Act
Waters of the U.S.
Waster Water Treatment Plant

SECTION 1.0
INTRODUCTION



1.0 Introduction

The Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA) is mandated by the United States (U.S.) Congress to administer Federal disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), Public Law (PL) 93-288, as amended. Under the authority of Section 408 of the Stafford Act, the Individual Assistance Program provides for temporary housing for disaster victims in the affected areas whose homes are uninhabitable or destroyed. This temporary housing is made available for the intermediate period (generally up to 18 months) that covers the gap between sheltering and securing permanent housing. FEMA typically addresses disaster-related housing requirements first with rental assistance and then through a manufactured homes. Manufactured homes have been used to meet both short- and long-term disaster housing needs and are typically placed on commercial pads or in group sites developed expressly for this purpose.

Although FEMA's traditional temporary housing options are sufficient to address the unmet housing needs of residents in most disasters, the catastrophic dimensions of the 2005 hurricane season challenged the efficacy of these traditional methods. These traditional methods are based on the statutory supposition that such assistance will generally not be required for more than 18 months. However, the impact of Hurricane Katrina on the Gulf Coast decimated the housing stock resulting in:

- a significant number of homes on private lots were completely destroyed;
- complete neighborhoods were destroyed;
- protracted community recovery timelines, with the likelihood that temporary housing may be required in some cases for extended periods;
- a shortage of resources for reconstruction of homes, uncertainty with respect to community and neighborhood recovery, labor shortage and other factors that limit the pace of recovery; and
- community and individual resistance to the use of manufactured homes for extended temporary housing; concurrent with the interest of the design community, local governments and Congress to find better temporary housing options for disaster victim use while pursuing permanent housing solutions.

Recognizing the extensive and complex housing challenges facing victims and communities as a result of the 2005 hurricane season, and acknowledging the limitations on FEMA's ordinary statutory authority to provide long-term and permanent housing solutions, the U.S. Congress appropriated funds to DHS to support alternative housing pilot programs (Emergency

Supplemental Appropriations Act, 2006, PL 109-234). The Alternative Housing Pilot Program (AHPP) represents a one-time exception to FEMA's existing authority under the 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.

The Louisiana Recovery Authority (LRA) has applied for FEMA funding under the AHPP to provide approximately 160 permanent housing units within Orleans Parish for eligible applicant families displaced by Hurricane Katrina throughout the State of Louisiana and particularly 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 5100.1, FEMA must fully understand and consider the environmental impacts of actions proposed for Federal funding. The purpose of this Programmatic Environmental Assessment (PEA) is to document the review and analysis of any potential impacts the AHPP would have on the natural and human environment in Orleans Parish, Louisiana.

1.1 Purpose and Need

The purpose of this action is to provide alternative disaster housing for families displaced during the 2005 hurricane season in Orleans Parish that includes long-term and permanent solutions. The need for this action is to address the housing shortages caused by the catastrophic effects of Hurricane Katrina and to move disaster victims from current temporary solutions (*e.g.*, rental dwellings, manufactured housing, *etc.*) to permanent housing. As of March 2009, in Louisiana there are 3,815 families displaced by Hurricane Katrina in temporary housing units. In Orleans Parish, as of March 2009, there are currently still 1,167 families displaced by Hurricane Katrina in temporary housing units.

1.2 Scope, and Use of the Programmatic Environmental Assessment

FEMA has determined through experience that the majority of typical recurring actions proposed for funding, and for which an Environmental Assessment (EA) is required, can be grouped by type of action or location. These groups of actions can be evaluated in a PEA for compliance with NEPA and its implementing regulations without the need to develop and produce a stand-

alone EA for every action. In addition, satisfying NEPA compliance through the use of a PEA would also streamline the process and expedite the placement of displaced residents into permanent housing.

This PEA evaluates the long-term and permanent housing actions proposed by the LRA and FEMA under the AHPP for Louisiana residents, especially those in Orleans Parish, displaced as a result of the 2005 hurricane season. This PEA also provides the public and decision-makers with the information required to understand and evaluate the potential environmental consequences of these actions. FEMA will use this PEA to determine the level of environmental analysis and documentation required under NEPA for any proposed AHPP housing action in Orleans Parish, given the available site-specific information. If the alternatives, levels of analysis, and site-specific information of an action proposed for FEMA funding are fully and accurately described in this PEA, then no further documentation will be required to comply with NEPA.

Since Hurricane Katrina, FEMA has coordinated with various Federal and state agencies on the potential impacts of FEMA's proposed disaster response and recovery action on environmental and cultural resources. During the scoping process for the AHPP, FEMA has established that the actions described in Section 2.0 would be inclusive to actions identified by FEMA during their initial agency coordination process. Additional agency consultation with the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), U.S. Environmental Protection Agency (USEPA), U.S. Army Corps of Engineers (USACE), Natural Resource Conservation Services (NRCS), Louisiana Department of Wildlife and Fisheries (LDWF), and Louisiana Department of Environmental Quality (LDEQ) were conducted by FEMA requesting project review and any available information under their respective jurisdictions to ensure that the actions had no significant impacts on various natural resources. Coordination letters can be found in Appendix B. Due to the nature of this programmatic analysis, FEMA personnel and the Louisiana State Historic Preservation Officer (SHPO) have been in verbal communication prior to the development of the PEA and the SHPO has reviewed portions of this document.

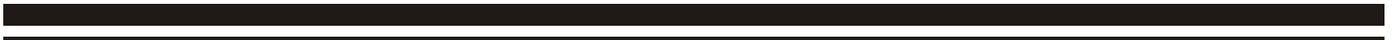
FEMA will review each proposed action on a case-by-case basis to assess its potential to impact resources. Any proposed action requiring further resource agency consultation or

coordination will be documented by FEMA with all supporting documentation in the project's administrative record.

Should a specific action be expected to (1) create impacts not identified in the PEA; (2) create impacts greater in magnitude, extent, or duration than those described in the PEA; or (3) require mitigation measures to keep impacts below significant levels that are not described in the PEA; a Supplemental Environmental Assessment (SEA) and corresponding Finding of No Significant Impact (FONSI) would be prepared to address the specific action. The SEA would be tiered from this PEA, in accordance with 40 CFR Part 1508.28.¹ Actions that are determined, during the preparation of the SEA, to require a more detailed or broader environmental review would be subject to the stand-alone EA process. Actions that are determined to have significant environmental impacts would be subject to the environmental impact statement (EIS) process.

¹Tiering refers to incorporating, by reference, the general assessments and discussions from this PEA into a focused SEA. The SEA would focus on the particular effects of the specific action.

SECTION 2.0
ALTERNATIVES



2.0 Alternatives

This section describes the alternative actions that the State of Louisiana (State), under the auspices of the LRA, and FEMA propose to undertake in order to provide AHPP housing to Louisiana residents displaced as a result of Hurricane Katrina within Orleans Parish and surrounding parishes (program area) (Appendix A, Figure 1). The two alternatives evaluated were: Alternative 1, the No Action Alternative and Alternative 2, which consists of the construction of permanent AHPP units on previously disturbed land in Orleans Parish, Louisiana. The alternatives are more fully described below.

2.1 Alternative 1: No Action Alternative

Inclusion of Alternative 1, a No Action Alternative, in the environmental analysis and documentation is required under NEPA. The No Action Alternative is defined as maintaining the *status quo*, with no FEMA funding for long-term or permanent housing. This alternative evaluates the effects of not providing long-term or permanent housing and provides a benchmark against which the action alternatives may be evaluated.

Under the No Action Alternative, persons who are receiving temporary resources would continue to do so, until a time when FEMA would discontinue providing temporary housing support. It is assumed that no state or local government agency or non-governmental organization would provide long-term or permanent housing for disaster victims. Displaced persons would be required to find a suitable housing solution without FEMA assistance including seeking out housing provided by: family members or friends; hotels; temporary “dormitories” such as homeless shelters or churches; facilities damaged by the storm and determined structurally unsafe or unsanitary; or through charitable donations.

2.2 Alternative 2: Proposed Action Alternative

Alternative 2 would include the construction of AHPP units on previously disturbed land. Previously disturbed land would include land that was previously residential or commercial. The site would be cleared of all debris and vegetation, then grubbed, contoured, and graded, if necessary. Projects under this alternative may require ground disturbing activities, including the demolition of former housing structures, slab/foundation removal, and the modification of utilities (*i.e.*, utility lines and septic systems) and entryways (driveways, sidewalks, *etc.*). If located within the 100-year floodplain, FEMA would require AHPP units be elevated at or above the required digital flood insurance rate map (DFIRM) elevation, as necessary. No AHPP units

would be located within the DFIRM Flood Zones V and VE, also called the Coastal High Hazard Area (CHAA).

Approximately 160 permanent single-family AHPP units (Louisiana Cottages) would be constructed throughout Orleans Parish. The living area for the various Louisiana Cottages at the proposed sites would range from 874 square feet (sq ft) to 1,112 sq ft, with several expanded units up to 1,525 sq ft. Appendix C provides architectural design and renderings of the AHPP cottages which would be utilized in the AHPP unit installations. The cottage design utilized at a particular location would



Photograph 1. Typical Louisiana Cottage

be based on the lot size, lot layout, and nearby housing designs. The Louisiana Cottages would be built on piers to raise them to the required elevation, as necessary. Photograph 1 shows a typical Louisiana Cottage.

If modification of existing utilities is not possible, new utilities installation would consist of connecting electrical service, domestic water service, stormwater systems, sanitary sewer service, and telecommunication service to existing local municipal infrastructure.

SECTION 3.0
SUMMARY OF POTENTIAL IMPACTS



3.0 Summary of Potential Impacts

The following table summarizes the potential impacts of the Alternatives. Potential impacts and conditions or mitigation measures to offset impacts are discussed further in Section 4.

	Alternative 1: No Action Alternative	Alternative 2: 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. Potential soil erosion would be minimized through the use of Best Management Practices (BMP).
Air Quality	No impacts to air quality are anticipated.	Temporary increases in equipment exhaust emissions and fugitive dust emissions during construction would occur. To minimize potential impacts to air resources, LRA would ensure equipment is well maintained, idling is minimized, and periodic watering of active construction areas occurs.
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. To minimize this impact, construction activities would be limited to 7:30 AM to 5:30 PM, Monday through Friday. Construction activities would not occur in the late evenings and early mornings or on weekends and holidays.
Water Quality	No impacts to water quality are anticipated.	Minor, short-term impacts to water quality are anticipated under this alternative during construction activities. BMPs such as installing silt fences and revegetating bare soils would be implemented to minimize these impacts. Project activities under this alternative are not anticipated to impact wild and scenic rivers or the Louisiana Coastal Zone. FEMA would consult with LDEQ regarding National Pollutant Discharge Elimination System (NPDES) permitting and water quality certification and the Louisiana General Land Office for Coastal Zone Management Act (CZMA) compliance. LRA would mitigate construction impacts by applying BMPs to reduce transport of sediment, debris, oils, and hazardous substances.
Floodplains	No impacts to floodplains are anticipated.	Construction of the AHPP units could occur in the 100-year floodplain; however, all structures would be elevated so that the lowest floor is at or above the required DFIRM elevation, where applicable. Impacts to floodplains would be considered a minor, but insignificant adverse effect. No project under this alternative would be located within the Coastal High Hazard Area (CHHA) (DFIRM Flood Zone V or VE).
Wetlands	No impacts to wetlands are anticipated.	No wetlands would be impacted under this alternative.
Biological Resources	No impacts to biological resources are anticipated.	Under this alternative there is little to no potential that the AHPP units on nearby land would impact biological resources. FEMA would consult with USFWS or NOAA Fisheries in an effort to identify actions to potentially minimize any impacts and to identify proposed mitigation.
Cultural Resources	No impacts to historic properties (including subsurface properties) are anticipated.	Under this alternative there is the potential to affect subsurface historic properties. This alternative may also involve the demolition of existing structures; therefore, above ground historic properties, including National Register Historic Districts, may potentially be affected. Section 106 consultation with SHPO and any affected tribes would occur, and a process has been agreed upon by the SHPO and FEMA which would be followed for any property with historic property concerns and other Programmatic Agreement (PA) Stipulations would be invoked.
Socioeconomics	Displaced residents would continue to utilize FEMA manufactured homes and park model homes. Existing adverse health effects could continue to affect displaced residents.	Beneficial socioeconomic effects would be anticipated.
Traffic and Transportation	No impacts to traffic and transportation are expected.	Short-term impacts to traffic and transportation could occur during construction. However, FEMA and the LRA would consult with the City of New Orleans to identify mitigation measures to lessen construction impacts.
Hazardous Materials and Wastes	No direct effects from hazardous materials and wastes are anticipated; however, indirect negative impacts to displaced residents from substandard housing could occur.	No additional use of hazardous materials is anticipated. Should LRA encounter any explosive or flammable materials, toxic chemicals, and/or radioactive materials during site clearing and demolition then LRA would follow the requirements of 24 CFR Part 51. In addition, all debris associated with site clearing would be removed and disposed of in accordance with all Federal, state, and local regulations.

SECTION 4.0
AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES,
AND MITIGATION MEASURES

4.0 Affected Environment, Environmental Consequences, and Mitigation Measures

The following subsections discuss the regulatory setting and the existing conditions for the following resource areas in Louisiana that may be impacted by the action alternative and the no action alternative considered:

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

This discussion is broad and regional in nature. It does not include a complete inventory of each resource, but does provide information to characterize those resources. This section also describes the potential impacts that each alternative could have on the identified resources. When mitigation is appropriate to avoid or reduce adverse impacts, these measures are also described.

4.1 Geology and Soils

4.1.1 Affected Environment

Regulatory Setting

Various land use regulations of Federal, state, and local governments may impose special restrictions on land use or land treatment. The U.S. Department of Agriculture (USDA), through its NRCS, publishes soil surveys to identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations (USDA 2006).

NRCS soil surveys are developed to provide information about the soils in a specific area. They include a description of the soils, their location within the parish, and the soil properties and limitations. Currently, soils are mapped according to the boundaries of major land resource areas (MLRA). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA 2006). Soil survey areas typically consist of parts of one or more MLRA. After describing the soils in the survey area and determining their properties, soil scientists assign the soils to taxonomic classes (units). Each map unit is defined by a unique combination of soil components in predictable proportions. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans (USDA 2006).

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 (proponent), 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, 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

Louisiana is not considered seismically active although the State has experienced periodic small earthquakes. A belt of mostly seaward-facing normal faults borders the northern Gulf of Mexico in most of the Gulf Coast region. As the faults number in the hundreds, the Gulf Coast faults are consolidated into four large groups which are designated as Class A, B, C, and D. Class A is one in which geologic evidence demonstrates the existence of a Quaternary fault of tectonic origin. Whereas with Class B, the geologic evidence demonstrates the existence of Quaternary deformation, but either the fault might not extend deeply enough to be a potential source of significant earthquakes or the currently available geologic evidence is somewhat indeterminate (U. S. Geological Survey and Louisiana Geological Survey 2006).

The gulf-margin normal faults in Louisiana are assigned as Class B structures (Wheeler and Heinrich 1998).

Most of the land surface in the New Orleans Metropolitan Statistical Area (MSA) is subsiding relative to mean sea level. Subsidence is the combined effect of geological movement along faults and the compaction of poorly consolidated sediments. Subsidence of the land surface in the New Orleans area is attributed to the drainage and oxidation of organic soils, aquifer-system compaction related to groundwater withdrawals, natural compaction and dewatering of surficial sediments, and tectonic activity (Burkett *et al.* 2003).

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 two inches per decade, and it is anticipated that it will sink roughly one 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 one to two 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 will likely flood in a future storm due to subsidence and sea-level rise (Burkett *et al.* 2003).

There are two MLRAs in Orleans Parish: Southern Mississippi River Alluvium and Gulf Coast Marsh. There are 9,548 acres of Southern Mississippi River Alluvium in Louisiana (USDA 2006). The Gulf Coast Marsh MLRA runs along the Gulf Coast of Louisiana, Mississippi, and Texas, and this MLRA consists of 20,914 acres in Louisiana (USDA 2006).

Both of these MLRAs are in the Mississippi Alluvial Plain Section of the Coastal Plain Province of the Atlantic Plain. The Southern Mississippi River Alluvium is on the alluvial plain along the lower Mississippi River. The landforms in the area are level or depressional to very gently undulating alluvial plains, backswamps, oxbows, natural levees, and terraces. The parts of the MLRA south of Baton Rouge, Louisiana, are on a deltaic plain. Landform shapes range from convex on natural levees and undulating terraces to concave in oxbows. These shapes differentiate water-shedding positions from water-receiving positions, both of which have a major role in soil formation and hydrology. Average elevations in Orleans Parish start at sea level or lower in most of the Southern Mississippi River Alluvium area (USDA 2006).

The Gulf Coast Marsh MLRA in Orleans Parish is part of the Mississippi River Delta and has a ragged shoreline. There are many rivers, lakes, bayous, tidal channels, and manmade canals. Elevation generally ranges from sea level to about 7 feet above mean sea level (amsl), but can be as high as 10 feet amsl on beach ridges, canal spoil banks, and natural levees. Some areas that are protected by levees have subsided below sea level (USDA 2006).

There are a total of 18 soil map units in Orleans Parish (USDA 2006). Orleans Parish contains soils designated as prime or unique farmland. Within the program area there are 5 map units classified as prime farmland (Table 1). These map units combined total 36,504 acres of prime farmland in Orleans Parish (USDA 2007).

Based on a soil type study of subsidence rates (Chapiewsky *et al.* 2006), the ideal soils for development within Orleans Parish are Commerce/Cancienne Series (Cm, Co, CS), found high on natural levees; followed by the Sharkey Series (Sk, Sh) found at intermediate levels on natural levees. These soils are firm, with high mineral content. Another potentially good soil would be the Harahan Series (Ha), due to its high clay content. It is found in former drained swamps. The least desirable soils for development, based on type are Allemands (Ae), and Aquests (An, AT), due to their high organic matter content. These will compact easily when drained. An intermediate type for building is Westwego Series (Ww). It is a mix of clayey and organic material, found in artificially drained areas that are protected by artificial levees.

Table 1. Prime or Unique Farmland within the Program Area

Map Unit Symbol	Map Unit Name	Rating	Acres
Cm	Cancienne silt loam	prime farmland	4,799
Co	Cancienne silty clay loam	prime farmland	2,379
Ha	Harahan clay	prime farmland	10,369
Sh	Schriever silty clay loam	prime farmland	1,097
Sk	Schriever clay	prime farmland	17,860
Total			36,504

Source: USDA 2007

4.1.2 Environmental Consequences and Mitigation Measures

Alternative 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.

Alternative 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. Project sites soils would be disturbed, and there is a potential for localized increase in soil erosion during construction.

As the site locations were previously graded and contoured during previous 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. Any soil loss would be directly from ground disturbing activities or indirectly via wind or water. Best Management Practices (BMP), such as the development and implementation of an erosion and sedimentation control plan, the 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 off-site. FEMA would work closely with the NRCS to determine each site specific action's potential impact to prime or unique farmland. Additionally, the installation of individual AHPP units would not be expected to impact more than 1 acre of soil per installation. Should a specific action have the potential to impact prime or unique farmland, FEMA would determine if the proposed site is within the limits of an incorporated city or if the site contains state-listed prime, unique, or important soils. If the site is within incorporated city limits or does not contain prime, unique, or important soils, the action complies with FPPA and no further documentation is required. Otherwise, FEMA would prepare the appropriate sections of an AD 1006 Farmland Conversion Impact Rating Form for the action, coordinate with the NRCS to determine the overall impact of the conversion, and document the results of FPPA compliance in the project's administrative record.

On March 17, 2009, a letter requesting project review was sent to NRCS and is included in Appendix B. No response has been received to date.

4.2 Air Quality**4.2.1 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" standards. 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 2.

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 2. 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 (100µm 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 2008a).

4.2.2 Environmental Consequences and Mitigation Measures

Alternative 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.

Alternative 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 driveways. 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-month presented in AP- 42 Section 13 Miscellaneous Sources 13.2.3.3 (USEPA 2001).

USEPA's NONROAD Model (USEPA 2005a) 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 contribute to the overall air emission budget. Emissions from delivery trucks, construction worker commuters traveling to the job site were calculated using the USEPA MOBILE 6.2 Model (USEPA 2005b, 2005c and 2005d).

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 Alternative 2 are presented in Table 3. Details of the analyses are presented in Appendix D.

Several sources of air pollutants contribute to the over-all air impacts of the construction project. The air results in Table 3 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

As can be seen from the table below, 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 the implementation of Alternative 2.

Table 3. Total Air Emissions (tons/year) from Construction Activities in Orleans Parish vs. the *de minimis* Levels

Pollutant	Total (tons/year)	<i>de minimis</i> Thresholds (tons/year)
CO	30.17	100
Volatile Organic Compounds (VOC)	5.66	100
Nitrous Oxides (NO _x)	39.86	100
PM-10	10.72	100
PM-2.5	3.97	100
SO ₂	4.76	100

Source: 40 CFR 51.853 and Gulf South Research Corporation (GSRC) model projections.

Note: Orleans Parish is in attainment for all NAAQS.

Ongoing Air Emissions

Air emissions from the personally owned vehicles (POV) from the 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 the 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 should be

implemented to minimize fugitive dust. In particular, wetting solutions would be applied to construction area to minimize the emissions of fugitive dust. By using these BMPs, air emissions from Alternative 2 would be temporary and should not significantly impair air quality in the region.

4.3 Noise

4.3.1 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. It is generally agreed that people perceive intrusive noise at night as being 10 A-weighted decibel (dBA). A-weighted decibel 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. This perception is largely because background environmental sound levels at night in most areas are also approximately 10 dBA lower than those during the day. Acceptable noise levels have been established by the U.S. Department of Housing and Urban Development (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 constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

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

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

dBA_2 = dBA at distance 2 from source (predicted)
 dBA_1 = dBA at distance 1 from source (measured)
 d_2 = Distance to location 2 from the source
 d_1 = Distance to location 1 from the source

Source: California Department of Transportation 1998

4.3.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

Under the No Action Alternative, the AHPP dwellings would not be constructed, and there would be no noise impacts resulting from construction activities or increased vehicle traffic on local roads.

Alternative 2: Proposed Action Alternative

The project sites would be located in urban areas with potentially a number of sensitive noise receptors located within 500 feet of the construction site. The installation of the new AHPP units would require the use of common construction equipment. Table 4 describes noise emission levels for construction equipment which range from 70 dBA to 84 dBA (Federal Highway Administration 2007 [FHWA] 2007).

Assuming the worst case scenario of 84 dBA, the noise model projected that noise levels of 84 dBA from a point source (*i.e.*, auger drill rig) would have to travel 450 feet before the noise would be attenuated to an acceptable level of 65 dBA. To achieve an attenuation of 84 dBA to

a normally unacceptable level of 75 dBA, the distance from the noise source to the receptor is 140 feet. Table 5 presents the estimated noise exposure to sensitive noise receptors within 140 feet and 450 feet from the boundary of the construction sites.

Assuming the construction activities are contained within the delineated construction area, several residential receptors may be exposed to noise emissions that are unacceptable and normally unacceptable.

Table 4. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Backhoe	78	72	68	58	52
Crane	81	75	69	61	55
Dump truck	76	70	64	56	50
Excavator	81	75	69	61	55
Front end loader	79	73	67	59	53
Concrete mixer truck	79	73	67	59	53
Pneumatic tools	81	75	69	61	55
Auger drill rig	84	78	72	64	58
Bull dozer	82	76	70	62	56
Generator	81	75	69	61	55

Source: FHWA 2007 and GSRC

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

Table 5. Noise Exposure Levels in Close Proximity of Construction Site

Noise Receptor	Distance from Construction Site	Noise Exposure
Single Family Homes	Within 450 feet	Greater than 65 dBA and less than 75 dBA
Multiple Family Units	Within 450 feet	Greater than 65 dBA and less than 75 dBA
Single Family Homes	Within 140 feet	Greater than 75 dBA
Multiple Family Units	Within 140 feet	Greater than 75 dBA

The construction activities have the potential to expose sensitive receptors to noise emissions that are normally unacceptable. To minimize this impact, construction activities would be limited to daylight hours during the work week when most of the residents are at school or at work. The construction activities from Alternative 2 would not create significant impacts to sensitive noise receptors adjacent to the project sites if the construction activities are limited to 7:30 AM to 5:30 PM on Monday through Friday. Construction activities would not occur in the late evenings and

early mornings or on weekends and holidays. Noise impacts should be minor if these timing restrictions are implemented when constructing new homes and driveways.

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 when students are not in classes.

4.4 Water Quality

4.4.1 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 National Pollutant Discharge Elimination System (NPDES) under Section 402 and permits for dredged or fill material under Section 404 (USEPA 2008b). In addition, the USACE regulates the discharge of dredged or filled material into waters of the U.S., including wetlands, pursuant to Section 404 of the CWA (USACE 1998).

Section 303(d) of the CWA requires that states develop a list of waters which are not meeting water quality standards and not supporting their designated uses (USEPA 2008b). Multiple project sites may be located in several LDEQ sub-watersheds some of which are on the LDEQ Water Quality Inventory Integrated Report (Section 305(b) and 303(d)) in 2006 for violating criteria such as the dissolved oxygen (DO), metals, chloride and sulfate criteria (LDEQ 2006).

Designated uses are defined as primary contact recreation which includes swimming and water skiing, secondary contact recreation which includes boating and sailing, and fish and wildlife propagation which include water quality parameters that effect the health of fish and wildlife such as the concentration DO, total dissolved solids, nutrients, *etc.*

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 2008b).

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.

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.

Existing Conditions

Major water bodies in the program area consist of the Mississippi River, Lake Pontchartrain, and the Gulf Intracoastal Waterway. Smaller hydrologic features include a number of drainage canals and marshes. The existing water quality conditions for each of the sub-watersheds in the located in Orleans Parish are summarized in Table 6 below.

Table 6. List of LDEQ Sub-watersheds Found in the Orleans Parish Program Area and Water Quality Attainment Status

Sub-watershed Name & LDEQ ID	Water Quality Attainment Status	Suspected Causes of Impairment	Suspected Sources of Impairment
020601 Gulf Intracoastal Waterway	Not meeting primary contact recreation standards	Fecal coliform	Vessel sanitary waste Municipal point source discharges
070301 Mississippi River	Fully meeting standards	NA	NA
041001 Lake Pontchartrain – South Shore Beaches	Not meeting primary contact recreation standards	Fecal Coliform	Sanitary sewer overflows
041002 Lake Pontchartrain – East of LA Hwy.11	Fully meeting standards	NA	NA
042001 Lake Borgne	Not meeting oyster propagation standards	Fecal coliform	Source unknown
041701 The Rigolets	Fully meeting standards	NA	NA
041704 Lake St. Catherine	Fully meeting standards	NA	NA
041702 Bayou Sauvage	Fully meeting standards	NA	NA
041703 Gulf Intracoastal Waterway – Chef Menteur Pass Mississippi	Not meeting oyster propagation standards	Fecal coliform	Septic systems
041401 New Orleans East	Not meeting primary contact	Fecal coliform	Sanitary sewer overflows

Table 6, continued

Sub-watershed Name & LDEQ ID	Water Quality Attainment Status	Suspected Causes of Impairment	Suspected Sources of Impairment
Leveed Waterbodies	recreation, secondary contact recreation and fish and wildlife propagation standards	Dissolved oxygen	Municipal wastes from urban area
042004 Bayou Bienvenue	Fully meeting standards	NA	NA
041601 Intracoastal Waterway-Inner Harbor Navigation Canal (IHNC) to Chef Pass	Not meeting oyster propagation standards	Fecal coliform	Source unknown
041302 Lake Pontchartrain Drainage Canals	Not meeting primary contact recreation and secondary contact recreation standards	Fecal coliform Dissolved oxygen	Sanitary sewer overflows Municipal wastes from urban area
041501 IHNC Mississippi River to Lake Pontchartrain	Fully meeting standards	NA	NA
041301 Bayou St. Jahn	Fully meeting standards	NA	NA
041901 Mississippi River Gulf Outlet	Fully meeting standards	NA	NA
042002 Bayou Bienvenue – Bayou Villery to Lake Borgne	Fully meeting standards	NA	NA

Source: LDEQ 2006 303 (d) Water Quality Inventory Integrated Report List of Impaired Watersheds [303 (d) list].
NA – Not Applicable

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

4.4.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

This alternative does not include any FEMA action. Therefore, FEMA would not be required to comply with the CWA, CZMA, or WSRA. The No Action Alternative does not have the potential to affect water quality.

Alternative 2: Proposed Action Alternative

Minor, short-term impacts to the downstream surface waters may occur during the construction activities due to soil erosion. However project activities under this alternative are not anticipated to impact WSRA or waters of the U.S. (WUS). Existing stormwater drains and ditches located within or adjacent to the proposed project sites would be removed and reconfigured to provide improved drainage and accommodate unit placement. It is anticipated that the installation of AHPP units would impact less than 1 acre; however, should a construction site be greater than 1 acre, the site would then require a Stormwater Pollution Prevention Plan (SWPPP) as part of

the NPDES permit process. The NPDES permit would identify BMPs for protection of water quality within ephemeral and perennial streams. To reduce impacts to the downstream surface waters, the LRA would implement appropriate BMPs, such as installing silt fences and revegetating bare soils. The LRA or its contractors would be required to obtain an approved SWPPP and NPDES permit prior to the start of construction.

Sewage would be treated at a licensed Waste Water Treatment Plant (WWTP) or an engineered septic system. In addition, stormwater would be conveyed to the local municipal stormwater system or treated on-site by retention ponds. Finally, FEMA and the LRA would coordinate with appropriate agencies regarding NPDES permitting, water quality certification, and CZMA compliance for construction and operation of any WWTP. For activities not exempt from NPDES permitting or water quality certification or not consistent with the Louisiana Coastal Resource Program, FEMA would document permitting and other requirements to comply with CWA and CZMA in the project's administrative record. A Coastal Use Permit (CUP) may be required or other authorization from Louisiana Department of Natural Resources (LDNR) and Orleans Parish local Coastal Management Program may require additional permitting. If a development is occurring in Orleans Parish and it is located within the local coastal zone, an application must be submitted to LDNR or the Local Coastal Zone Administrator to determine if a permit is necessary.

On March 17, 2009, a letter requesting review was sent to LDEQ and is included in Appendix B. No response has been received to date.

4.5 Floodplains

4.5.1 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.

Existing Conditions

According to the FEMA-supported Louisiana Mapping Project (LaMP), over 75 percent of Orleans Parish is located in a floodplain with most of the Parish at elevations at or below sea level. Consistent with EO 11988, preliminary DFIRMs published by FEMA in November 13, 2008 were examined during the preparation of this EA (LaMP 2009). FEMA requires that rebuilt communities adhere to the elevation requirements established by the 2008 DFIRM. The majority of Orleans Parish (over 75 percent) according to the 2008 DFIRMS range from 100-year floodplain designations of Zone AE with elevations from -6 to 12 feet mean sea level (msl) (referenced to the North American Vertical Datum of 1988) and Zone VE with elevations ranging from 11 to 21 msl (LaMP 2008). The DFIRMs which illustrate the flood hazard zones for Orleans Parish can be found at http://www.lamappingproject.com/dfirm/Orleans_DFIRM/imap.html.

4.5.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

This 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.

Alternative 2: Proposed Action Alternative

Under the Proposed Action Alternative, the AHPP units could potentially be constructed in a designated 100-year floodplain; therefore, FEMA and the City of New Orleans would require the units be elevated to a finished floor elevation at or above the DFIRM required elevation. An elevation survey would be performed by the LRA for each proposed AHPP site. To minimize impacts to the floodplain, the LRA proposes to elevate units on piers to achieve the appropriate elevation requirement. The use of fill material is not anticipated for the elevation of AHPP housing units within the 100-year floodplain.

The loss of floodplain area in the vicinity of the project would generally be considered a direct, permanent adverse effect; however, as the program area is the entire Orleans Parish (115,616 acres of land and 108,534 acres of water) and the 160 proposed AHPP houses are scattered throughout previously developed neighborhoods within the Parish, the Proposed Action Alternative would cause minor, but insignificant effects. In addition, the use of a pier system to elevate units would not likely increase flood levels or velocities downstream from the site.

FEMA has completed the Eight-Step Planning Process to ensure that its actions are consistent with EO 11988 within Orleans Parish. Initial and final notices for the building of FEMA housing within the Parish have 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.

4.6 Wetlands

4.6.1 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 (USACE 1998).

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 USFWS which provides wetland information by digital data files. The NWI currently includes data for Orleans Parish. Based upon the NWI, there are approximately 48,314 acres of estuarine and marine wetlands, freshwater emergent wetlands, and freshwater forested/shrub wetlands within Orleans Parish (Table 7) (USFWS 2006).

Table 7. Wetland Acreage in Orleans Parish, Louisiana

Wetland Type	Acres
Estuarine and Marine Wetlands	31,833
Freshwater Emergent Wetlands	5,299
Freshwater Forested/Shrub Wetlands	11,182
Total	48,314

USFWS 2006

4.6.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

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

Alternative 2: Proposed Action Alternative

Under this alternative, permanent AHPP cottages would be placed on previously developed land, thus this alternative is not anticipated to impact wetlands or WUS. However, FEMA has completed the Eight-Step Planning Process for Floodplains and Wetlands to ensure that its actions are consistent with EOs 11998 and 11990 within Orleans Parish (Appendix E).

On March 17, 2009, a letter requesting project review was sent to USACE. No response has been received to date.

4.7 Biological Resources

4.7.1 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 must ensure that any action authorized, funded, or implemented is not likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction of critical habitat for these species. To accomplish this, Federal agencies must consult with the USFWS or NOAA National Marine Fisheries Service (Fisheries) when taking action that has the potential to affect species listed as endangered or threatened or proposed for threatened or endangered listing.

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, then 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 the 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

Federally endangered and threatened animal species listed for Orleans Parish are shown below in Table 8.

Table 8. Federally Protected Species in Orleans Parish

Common Name	Scientific Name	Status	Habitat
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted in Louisiana	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 United States, 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).

LDWF has listed 17 species of plants and animals and five natural communities that are rare, threatened, or endangered in Orleans Parish (LNHP 2008). The state species likely to occur in the program area are listed below (Table 9). Three species are listed as endangered, one species is listed as threatened, one species is prohibited, and one species is listed as restricted harvest by LDWF within Orleans Parish (LNHP 2008).

There is one Wildlife Management area (WMA) located in Orleans Parish. Bayou Sauvage National Wildlife Refuge was established in 1990. Bayou Sauvage has 23,000 acres of fresh and brackish marshes, all within the city limits of New Orleans, making it the Nation's largest

urban wildlife refuge. The refuge is located in the St. Bernard Delta of the Mississippi River (USFWS 2008b).

Table 9. State Protected Species Likely to Occur in Orleans Parish

Common Name	Scientific Name	Status	Habitat
Bald eagle	<i>Haliaeetus leucocephalus</i>	Endangered	Cypress swamps in coastal Louisiana, prefer to nest in sturdy cypress trees adjacent to open water where they forage for fish
Gulf sturgeon	<i>Acipenser 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
Paddlefish	<i>Polydon spathula</i>	Prohibited	Prefers deeper, low-current areas of river systems including side channels, backwaters, oxbow lakes, other river lakes, and tail waters below dams
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	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
Diamondback terrapin	<i>Malaclemys terrepin</i>	Restricted Harvest	Restricted to saline or brackish habitats. They prefer seagrass beds, marshes and estuaries (especially those bordered by mangroves) are favored habitats

Source: LNHP 2008

The majority of specific proposed properties utilized by the AHPP would be in urban areas that have been previously developed. These urban areas provide limited wildlife habitat. Wildlife species most likely to inhabit urban properties within the program area include those which are able to easily adapt to an urban environment.

4.7.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

This 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, or the Sustainable Fisheries Act. The No Action Alternative does not have the potential to affect sensitive biological resources.

Alternative 2: Proposed Action Alternative

The site preparation and installation of AHPP units on previously disturbed land has little potential to affect sensitive biological resources. FEMA would evaluate the locations of the proposed housing site and all auxiliary facilities, such as septic systems and water wells to determine the potential for the program to affect threatened and endangered species or their habitats, migratory birds, natural waterways, or EFH and follow the procedure as outlined below.

If FEMA determines that the project has no potential to affect threatened and endangered species or their habitats, migratory birds, natural waterways, or EFH, then the program would be in compliance with MBTA, Sustainable Fisheries Act, and Section 7 of the ESA; and no further documentation would be required. If FEMA determines that the project has the potential to affect threatened or endangered species or their habitats, migratory birds, natural waterways, or EFH, then FEMA would consult with USFWS or NOAA Fisheries to minimize any impacts and to identify additional proposed mitigation. Any additional consultation required under the MBTA, Sustainable Fisheries Act, or Section 7 of the ESA, would be documented in the project's administrative record, and to ensure full NEPA compliance, a SEA would be developed.

On March 17, 2009, letters requesting project review were sent to USFWS, NOAA, and LDWF and are included in Appendix B. A response was received from USFWS on April 2, 2009 that states there would be no affect on biological resources. No responses have been received from NOAA and LDWF to date.

4.8 Cultural Resources**4.8.1 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 Programmatic Agreement (PA) dated December 3, 2004 to streamline the Section 106 review process. A copy of the PA for Louisiana is provided on the FEMA website site at <http://www.fema.gov/plan/ehp/hp/programmatic.shtm>.

Existing Conditions

The LRA proposes to utilize AHPP funding for the construction of 160 single-family, permanent housing units scattered throughout Orleans Parish.

Orleans Parish, Louisiana has had a rich and diverse cultural past. A records search at the Louisiana Division of Archaeology (LDA) in Baton Rouge revealed that a total of 454 site records are on file. Orleans Parish has also received extensive research attention with 131 cultural resources surveys on file at the LDA at the time of writing. In addition, Orleans Parish also hosts 145 listings on the NRHP including 29 historic districts (including listed and eligible).

4.8.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

This alternative does not include any FEMA undertaking. Therefore, no historic properties or subsurface historic properties review would be required of FEMA 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.

Alternative 2: Proposed Action Alternative

This alternative includes some ground disturbing activities. Thus, there is the potential to affect subsurface historic properties. This alternative may also involve the demolition of existing structures; therefore, above ground historic properties, including National Register Historic Districts, may potentially be affected. Currently, the individual proposed locations for the

individual AHPP units have not been confirmed. At such time the proposed locations for the individual AHPP units are determined FEMA will comply with the Section 106 process by identifying any impacts to historic properties in accordance with the streamlined Section 106 review process agreed upon in the above mentioned PA. This Section 106 compliance process will also include consultation with Federally recognized Indian tribes that attach religious or cultural significance to the area. Projects having the potential to adversely affect historic properties would be subject to a SEA. If FEMA determines that an adverse effect will result from the proposed action, FEMA will invite interested members of the public to comment on the project and participate in the resolution of those adverse effects.

If during the course of work, 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 shall 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 twenty-four hours of the discovery. LRA or its contractor shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery. The LRA and its contractor will not proceed with work until FEMA completes consultation with the SHPO and/or federally recognized Indian Tribes.

4.9 Socioeconomics

4.9.1 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 sites would be scattered throughout Orleans Parish. Orleans Parish was heavily impacted from Hurricane Katrina with widespread damage to housing and other infrastructure. Since Hurricane Katrina, the Greater New Orleans Community Data Center (GNOCDC) has used U.S. Postal Service Delivery statistics to track repopulation in the greater New Orleans area. According to GNOCDC, 198,232 households were actively receiving mail in Orleans Parish in July 2005, prior to Hurricane Katrina. As of December 2008, a total of 146,113 households were actively receiving mail in Orleans Parish, representing approximately 73.7 percent of the July 2005 households (GNOCDC 2008).

The US 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 a population of 288,113 as of July 1, 2007 (U.S. Census Bureau [USCB] 2008; Brookings Institute 2009). As of December 2008, the population of Orleans Parish had reached approximately 74 percent of its pre-Katrina estimate (Brookings Institute 2009).

The availability of affordable housing has been a serious issue in Orleans Parish in the years following Hurricane Katrina. According to FEMA estimates, 71 percent of housing units in the Parish were damaged. A total of 107,379 housing units were flooded in Orleans Parish while an additional 26,965 units sustained wind damage. In 2000, prior to Hurricane Katrina, there were approximately twice as many (215,091) housing units in Orleans Parish as in 2006, and the vacancy rate was 12 percent (USCB 2007). The total number of housing units in the Orleans Parish was 140,848 in 2007 (USCB 2007). Of the housing units within Orleans Parish, 101,221 (71.9 percent) are occupied and the remaining 39,627 (28 percent) are vacant. Approximately 50 percent (50,743) of the occupied housing units are owner occupied, while 50 percent (50,478) are renter occupied (USCB 2007). The number of households within Orleans Parish dropped from 188,251 in 2000 to an estimated 101,221 in 2007 (USCB 2007).

A total of 3,815 families in Orleans Parish were receiving Disaster Housing Assistance Program vouchers as of March 2009. Permits for new multi-family construction increased significantly in Orleans Parish during 2007, where 2,200 units were permitted to replace inventory destroyed by Hurricane Katrina, compared to 355 units permitted in 2006. Financing for this construction activity, driven by the Gulf Opportunity Zone legislation, has made use of tax exempt bonds and low-income housing credits. Permits for new single-family construction have increased significantly in Orleans Parish during 2007.

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), while 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).

According to the 2007 U.S. Census, the median household income in Orleans Parish was estimated to be \$35,409. Approximately 19 percent of local families lived below the poverty level (USCB 2007). The total work force for Orleans Parish in June 2005 prior to Hurricane Katrina was approximately 636,886 individuals (U.S. Bureau of Labor Statistics 2009). After the 2005 hurricane season, the work force dropped substantially to total of 504,802 employed individuals in Orleans Parish in October 2006 before reaching a low in January 2006 of 465,018 individuals (U.S. Bureau of Labor Statistics 2009). Since the January 2006 low, the total work force of Orleans Parish has steadily increased. As of November 2008, the total workforce for Orleans Parish was estimated to be 526,782, nearly 83 percent of the pre-Katrina work force (U.S. Bureau of Labor Statistics 2009).

In 2006, Orleans Parish had a per capita personal income (PCPI) of \$59,449. This PCPI ranked 2nd in the State and was 187 percent of the State average, \$31,821, and 162 percent of the National average, \$36,714. The 2006 PCPI reflected an increase of 352.5 percent from 2005. The 2005 to 2006 State change was approximately 28 percent, and the National change was approximately 6 percent. In 1996 the PCPI of Orleans was \$22,216 and ranked 4th in the State. The 1996 to 2006 average annual growth rate of PCPI was nearly 10 percent. The average

annual growth rate for the State was 4.9 percent and for the Nation was 4.3 percent (Bureau of Economic Analysis [BEA] 2006).

According to the U.S. Census Bureau, the 2000 unemployment rate in Orleans Parish was 5.5 percent (USCB 2000). The June 2005 pre-Katrina unemployment rate in the Parish was 5.6 percent. Following the 2005 hurricane season, the unemployment rate Orleans Parish dramatically increased to 15.2 percent by September 2005 and rose again to 15.9 percent by November 2005 (U.S. Bureau of Labor Statistics 2009). As residents and employment opportunities have continued to return to Orleans Parish, the unemployment rate has dropped. As of November 2008, the unemployment rate was 4.9 percent (U.S. Bureau of Labor Statistics 2009).

The majority of jobs within Orleans Parish are in the leisure and hospitality, professional and business, trade, transportation, and utilities, state government, and education and health services sectors. Leisure and hospitality jobs employed the most people in Orleans Parish in 2008 with 31,474 individuals holding these jobs (U.S. Bureau of Labor Statistics 2009). As of 2008, professional and business services jobs employed 25,619 individuals, trade, transportation, and utilities jobs employed 23,450 individuals, and education and health services jobs employed 23,528 individuals in the Parish (U.S. Bureau of Labor Statistics 2009).

At the time of the 2007 Census, the population of Orleans Parish was approximately 63.5 percent African American and 31.6 percent Caucasian. Approximately 19 percent of families and 23 percent of individuals were living below the poverty level. Compared to the State as a whole, the percentage of African Americans and other minority groups was higher in Orleans Parish, as was the percentage of people and families living in poverty (Table 10) (USCB 2007). Although the number of individuals living in the Orleans Parish has decreased substantially since Hurricane Katrina, the proportion of minority and low-income populations is anticipated to be similar to pre-Katrina conditions. Of the total population of Orleans Parish, 21.3 percent is comprised of children under the age of 18 (USCB 2007).

Table 10. Minority and Low-Income Population Summary Statistics

Demographics	Orleans Parish	Louisiana
Caucasian	31.6 percent	64 percent
African American	63.5 percent	31.9 percent
Other non-white	4.9 percent	4.1 percent
Families below poverty level	18.6 percent	15 percent

Source: US Census Bureau 2007

4.9.2 Environmental Consequences and Mitigation Measures

Alternative 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 would 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 subjected to adverse financial impacts due to the relocations which are distant from their places of employment. Further, the hosts and displaced residents could endure emotional stress associated with the 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.

Alternative 2: Proposed Action Alternative

Alternative 2 is not expected to pose disproportionately high and adverse public health or environmental effects on minority or low-income populations. 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 and demographics are not among the eligibility requirements.

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. The specific demographics of 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 the 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.

4.10 Traffic and Transportation

4.10.1 Affected Environment

Regulatory Setting

The Louisiana Department of Transportation and Development (LaDOTD) is responsible for the 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. The LaDOTD (District 02) consists of a seven parish region and includes Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles and Terrebonne Parishes. As shown below in Table 10, Orleans Parish has an extensive network of Federal (Interstates [I] and US highways [US]) and state highways (LA) throughout the program area.

Existing Conditions

The State provides actual traffic counts along various highways for the year 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 to 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).

Table 11. Federal and State Major Highways with 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 proposed 160 project sites would be scattered throughout Orleans Parish, Louisiana. Public transportation within the Parish, including buses and street cars, is provided by the New Orleans Regional Transit Authority (NORTA). There are several fixed routes operating within the City of New Orleans near the project sites. Service is provided from 5:00 AM to 10:00 PM on weekdays and 6:00 AM to 10:00 PM on weekends and holidays. A map of the current fixed routes within the City of New Orleans is provided (Appendix A, Figure 2). The Lil'Easy is NORTA's new flexible-route transit service for the Lower Ninth Ward. The service will use 14-seat mini-buses to circulate throughout a neighborhood, connecting people with other public transit. It combines three main bus stops that are also transfer points, with 24 new flexible stops spread throughout the neighborhood. The service operates the same hours as the other NORTA buses.

The Louis Armstrong New Orleans International Airport is approximately 12 miles west of the proposed site in Kenner, Jefferson Parish, Louisiana. The New Orleans Lakefront Airport is located on the south shore of Lake Pontchartrain within Orleans Parish. It is the only airport in the New Orleans metropolitan area and offers access to southeast Louisiana as well as the Mississippi Gulf Coast. In the 1950's, New Orleans Lakefront Airport was designated as a general aviation airport. Currently, three runways serve private, corporate, and military, and commercial air carrier aircraft. The New Orleans Amtrak Station is located on Loyola Avenue and is potentially near some of the proposed sites, and provides passenger train service. There are three Amtrak routes that serve New Orleans: the New Orleans route would take a passenger from New Orleans to Memphis to Chicago; the Crescent route would take a passenger from New Orleans to Atlanta to New York; and the Sunset Limited will take a passenger from New Orleans to San Antonio to Los Angeles. Several roadways including I-10, I-310, I-610, US 61 and the Pontchartrain Expressway (US 90) serve as major arteries throughout Orleans Parish. A transportation map is provided (Appendix A, Figure 3).

Due to the low to moderate income of the residents in the FEMA housing, personal transportation including vehicles 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 self-evacuate; 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, this process would be reversed. Citizens are encouraged to first provide for their own evacuation through neighbors, friends and family but would have this evacuation method of last resort available (City of New Orleans 2006).

4.10.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

Under this alternative, traffic volumes would increase in the vicinity of the housing provided by friends and family members, hotels, and temporary dormitories. Because these locations would be scattered across a large area, no localized or regional effects on transportation are expected.

Alternative 2: Proposed Action Alternative

This alternative could result in short-term increased traffic volumes associated with site preparation, and installation of the AHPP units in areas that were previously developed housing sites. To minimize adverse impacts on traffic resulting from construction equipment, traffic along adjacent roadways would be temporarily rerouted as necessary during construction, traffic lane closures would be coordinated with the appropriate local government, equipment staging and worker POV would be sited to hinder the traffic flow as little as possible in the areas where the actions are implemented. Adjacent residential neighborhoods and commercial/industrial areas would be notified in advance of construction activities and any rerouting of local traffic. Since the AHPP housing units are being installed on once occupied, previously developed land, traffic volumes should return to pre-construction levels after completion.

Traffic volumes would also increase in the vicinity of the project site from new residents. However, the increase in traffic volumes will be negligible relative to total traffic volume capacities local to each project site. Therefore, the level of service on the ingress and egress street would not be less than development of each property under the No Action Alternative.

4.11 Hazardous Materials and Wastes

4.11.1 Affected Environment

Regulatory Setting

Hazardous materials and wastes 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 materials and wastes 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. RCRA 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 has delegated this responsibility to the State. RCRA also sets forth a framework for the management of non-hazardous wastes. The 1986 amendments to RCRA enable USEPA 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 USEPA the ability to track the approximately 75,000 industrial chemicals currently produced or imported into the U.S. USEPA repeatedly screens these chemicals, and can require reporting or testing of those that may pose an environmental or human-health hazard. USEPA may ban the manufacture and import of those chemicals that pose an unreasonable risk and control these chemicals as necessary to protect human health and the environment.

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.

Existing Conditions

Louisiana has 10 National Priorities List (NPL) sites; however, Orleans Parish has only one active NPL site (USEPA 2008c). The NPL site is the Agricultural Street Landfill and it is located

approximately 3.0 miles northeast of the Central Business District and the Vieux Carre and is bounded on the north by Higgins Road and on the east by Clouet and Montegut Streets. The U. S. EPA Comprehensive Environmental Response Compensation and Liability Information System ID is LAD98154486 (USEPA 2008b).

4.11.2 Environmental Consequences and Mitigation Measures

Alternative 1: No Action Alternative

Although 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 Hurricane Katrina. Residents who find themselves without alternative housing may continue to live within an area contaminated by hazardous materials or wastes, such as petro-chemicals (from ruptured storage tanks), air-borne asbestos (from damaged asbestos-containing materials), or lead-paint chips (from peeling surfaces). Further, temporary dormitories not typically used as shelters could contain lead-based paint or other sources of hazardous materials or wastes.

Alternative 2: Proposed Action Alternative

The program area is populated by sites and facilities frequently seen in older urban settings. These sites and facilities could potentially impact the surrounding environment due to spills or pollutants that migrate off-site; however, each of the proposed specific sites (160 sites) would have a site reconnaissance and on project sites where hazardous materials are suspected or known to existing on or adjacent to the proposed project area FEMA would provide further site investigation. FEMA would remove project sites having the potential to impact hazardous materials or wastes from program consideration. FEMA would conduct LRA and FEMA would coordinate with State and local agencies, and USEPA, on any findings, as appropriate, and results documented in the project's administrative record.

In addition, 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. Should LRA or its contractors encounter any explosive or flammable materials, toxic chemicals, and/or radioactive materials during site clearing and demolition than LRA would follow the requirements of 24 CFR Part 51 to minimize any potential harm to human health or the natural environment. In addition, all debris associated with site

clearing would be removed and disposed of in accordance with all Federal, state, and local regulations.

Former housing structures may be eligible for demolition and depending on the age of the home may potentially contain lead- and asbestos-containing material. If this is likely, LRA or its contractor would ensure that the disposal of any lead or asbestos containing material is properly disposed of after demolition of the structure.

SECTION 5.0
CUMULATIVE IMPACTS



5.0 Cumulative Impacts

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

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 projects by Federal and state agencies. These projects and the proposed AHPP actions may have impacts to the proposed project areas and their surroundings. However, it is anticipated that this action would not have cumulative impacts on most resources, other than its potential to impact cultural resources. This determination is primarily due to the fact that the Proposed Action Alternative would consist of the scattered installation of the 160 AHPP units throughout Orleans Parish. Historic properties may have cumulative impacts and would require an individual evaluation if the individual site affect historic districts. Cumulative impacts of the proposed AHPP actions will be considered by FEMA when determining the compatibility of this PEA for specific actions. Should FEMA identify, during the course of the project, cumulative impacts that would be greater in magnitude, extent, or duration than the direct and indirect effects described in the PEA, a SEA would be prepared to analyze the potential environmental impacts of the proposed AHPP action and other recovery efforts.

FEMA

AHPP Projects

The LRA has proposed to utilize AHPP funds for various projects in and around Orleans Parish. The LRA proposed the installation of a limited AHPP group housing development located in the Louisiana Army National Guard installation at Jackson Barracks in the Lower Ninth Ward neighborhood of Orleans Parish. Within the West Bank neighborhood of Algiers, the LRA has also proposed construction of approximately 105 AHPP units at the Fischer AHPP group site in Orleans Parish. In addition, a group housing development is proposed in nearby Jefferson Parish for the Ephesus AHPP group housing site in Westwego at the 800 block of Wayne

Avenue. EAs have been or are being performed by FEMA to analyze the impacts of these proposed AHPP housing projects to the natural and human 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 infrastructure permanent work 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 the 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, but must comply with all other environmental and historic preservation laws, regulations, and EOs. However, the use of these funds for projects other than the repair to pre-disaster conditions (*e.g.*, improved projects and alternate projects) is not exempt from NEPA compliance.

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) provides funding for activities that mitigate the impacts 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, acquisition of facilities, *etc.*

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 Road Home 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 in 2005, 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 NRHDs 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 lead 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 and 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 several of these areas are provided below (Louisiana Speaks 2006).

Current environmental restoration and improvement projects in Orleans Parish include the restoration of 1,100 acres of City Park, restoration of urban forest throughout the Parish in 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.

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.

In addition, 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 would significantly reduce storm surge and protect coastal wetlands, and develop alternatives to levees to protect the City of New Orleans from flooding (Louisiana Speaker).

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SECTION 7.0
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