Supplemental Environmental Assessment #527 (SEA #527)

St. Mary Pump Station Safe House

St. Bernard Parish, Louisiana

SEA # 527

U.S. Army Corps of Engineers
Mississippi Valley Division
Regional Planning and Environment Division South

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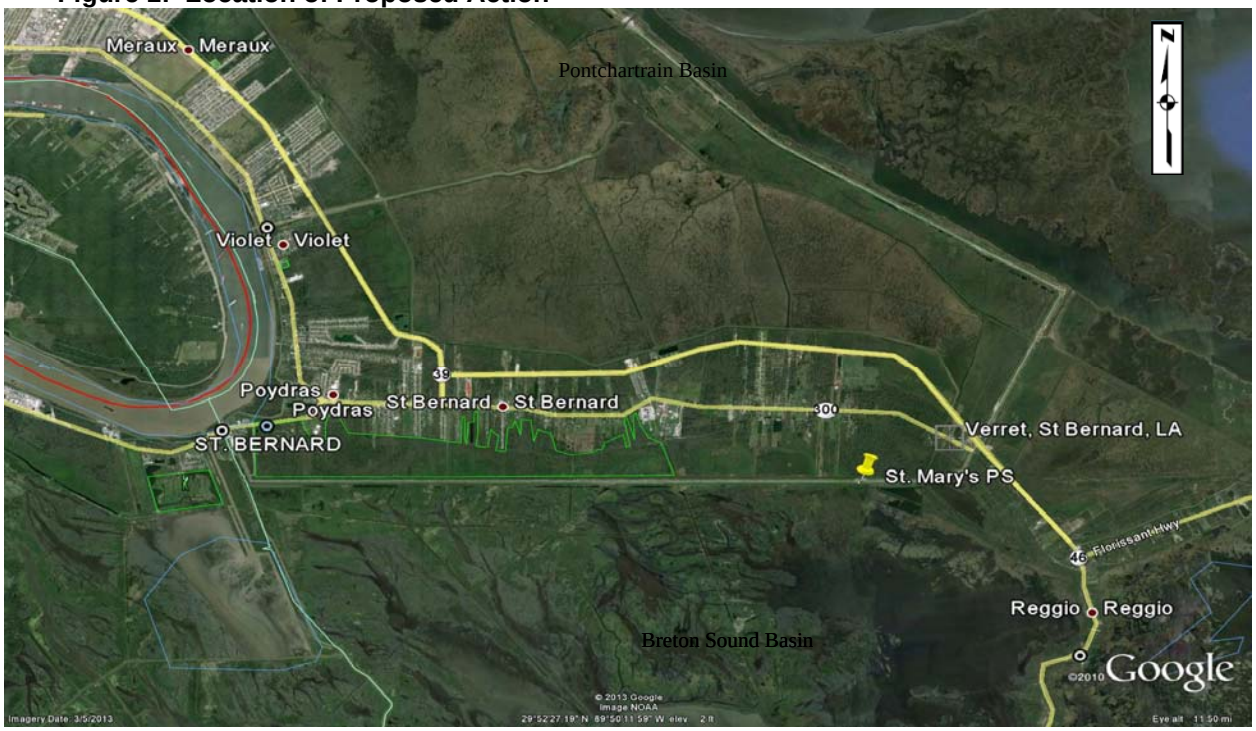
INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New Orleans District (MVN), has prepared this Supplemental Environmental Assessment #527 (SEA #527) to Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana: Individual Environmental Report (IER) #10 (2009) to evaluate the potential impacts associated with the construction of an emergency safe house at the St. Mary Pump Station in St. Bernard Parish, Louisiana. IER #10 and its Decision Record are incorporated by reference into this SEA.

IER #10 described work and impacts associated with raising the existing Chalmette Loop Levee reaches LPV 145, LPV 146, LPV 147, and LPV 148.02 to the 100-year level of risk reduction and constructing approximately 22 miles of floodwall on top of the levee. Specifically, the LPV 148 reach is located between Verret and the Caernarvon Floodwall from Baseline Stations 1118+60 to 1552+50. The proposed action for LPV 148 was to construct a T-wall on top of the existing levee as illustrated in figure 2. The T-wall was constructed within the existing right of way (ROW) for the original levee. Additionally, the St. Mary Pump Station fronting walls were replaced and the Creedmore Drainage Structure was demolished. The new T-wall levee was built to a height of approximately +29 ft (NAVD88) and serves the same purpose as the earthen levees in the area, to provide hurricane and storm damage risk reduction for St. Bernard Parish.

The St. Mary Pump Station is located near Verret in St. Bernard Parish, Louisiana (Figure 1). SEA #527 has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2.

Figure 1: Location of Proposed Action



PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to construct an emergency safe house at St. Mary Pump Station located approximately one mile southwest of Verret and south of Jourda Canal inSt. Bernard Parish, Louisiana (LA). As described in IER #10, the Creedmore Drainage Structure did not meet Hurricane & Storm Damage Risk Reduction System (HSDRRS) design guidelines and was permanently disabled during the construction of the Lake Pontchartrain and Vicinity (LPV) 148.02 floodwall. With the Creedmore drainage structure decommissioned, St. Mary Pump Station now provides the majority of drainage within the incorporated limits of St. Bernard parish (See Figure 5). A safe house at St. Mary Pump Station is necessary to provide a means to shelter personnel allowing them access to operate and troubleshoot the pumps onsite in advance of and during tropical events and emergencies. Extended pump station operations may be required to evacuate rainwater in advance of and during tropical events.

AUTHORITY FOR THE PROPOSED ACTION

The authority for the proposed action was provided as part of a number of hurricane protection projects spanning southeastern Louisiana, including the Lake Pontchartrain and Vicinity (LPV) Hurricane Protection Project and the West Bank and Vicinity (WBV) Hurricane Protection Project. Congress and the Administration granted a series of supplemental appropriations acts following Hurricanes Katrina and Rita to repair and upgrade the project systems damaged by the storms that gave additional authority to the USACE to construct 100-year HSDRRS projects.

The LPV Project was authorized under the Flood Control Act of 1965 (PL [Public Law] 89-298, Title II, Sec. 204) which amended, authorized a “project for hurricane protection on Lake Pontchartrain, Louisiana ... substantially in accordance with the recommendations of the Chief of Engineers in House Document 231, Eighty-ninth Congress.” The original statutory authorization for the LPV Project was amended by the Water Resources Development Acts (WRDA) of 1974 (PL 93-251, Title I, Sec. 92); 1986 (PL 99-662, Title VIII, Sec. 805); 1990 (PL 101-640, Sec. 116); 1992 (PL 102-580, Sec. 102); 1996 (PL 104-303, Sec. 325); 1999 (PL 106-53, Sec. 324); and 2000 (PL 106-541, Sec. 432); and the Energy and Water Development Appropriations Acts of 1992 (PL 102-104, Title I, Construction, General); 1993 (PL 102-377, Title I, Construction, General); and 1994 (PL 103-126, Title I, Construction, General).

The Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act of 2006 (3rd Supplemental - PL 109-148, Chapter 3, Construction, and Flood Control and Coastal Emergencies) authorized accelerated completion of the project and restoration of project features to design elevations at 100 percent Federal cost. The Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery of 2006 (4th Supplemental - PL 109-234, Title II, Chapter 3, Construction, and Flood Control and Coastal Emergencies) authorized construction of a 100-year level of risk reduction, the replacement or reinforcement of floodwalls, and the construction of levee armoring at critical locations. Additional Supplemental Appropriations include the U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act of 2007 (5th Supplemental - PL 110-28, Title IV, Chapter 3, Flood Control and Coastal Emergencies).

PRIOR REPORTS

Final Comprehensive Environmental Document Phase I Greater New Orleans Area Hurricane Storm Damage Risk Reduction System (CED Phase I)

CED Phase I was prepared to provide a preliminary cumulative impacts assessment and project updates for construction of the HSDRRS. The Final CED Phase I was released May 22, 2013 and a future final phase of the CED will be release when sufficient cumulative impacts information all HSDRRS work is available, after which, the District Commander will issue a Decision Record.

St. Bernard Parish Pump Station 2 & 3 Seepage Repairs Environmental Assessment (EA) #526

EA #526 was prepared to evaluate the actions required to repair a seepage problem at Pump Station 2 (Guichard) and Pump Station 3 (Bayou Villere) in St. Bernard Parish which included replacing drainage pipes and installation of a T-wall. The Finding of No Significant Impact (FONSI) was signed on April 8, 2014. This EA and FONSI are incorporated herein by reference (USACE, 2014).

Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana: Individual Environmental Report #10

This IER evaluated the actions required to provide improvement of the existing flood protection system of earthen levees and flood control structures commonly referred to as the “Chalmette Loop” in the LPV HSDRRS in St. Bernard Parish, LA. The DR was signed on May 26, 2009. This IER and DR are herein incorporated by reference (USACE, 2009).

U.S. Army Corps of Engineers Response to Hurricanes Katrina and Rita in Louisiana EA #433

EA #433 assessed the “after the fact” emergency actions taken by the USACE as a result of Hurricanes Katrina and Rita including actions to un-water the New Orleans metropolitan area, rehabilitate Federally authorized levees, and restore non-Federal levees and pump stations in Orleans, St. Bernard, Jefferson and Plaquemines Parishes and flood fight operations in St. Mary, Terrebonne, and Lafourche Parishes. The Finding of No Significant Impact (FONSI was signed on July 24, 2006. This EA and FONSI are herein incorporated by reference (USACE, 2006).

PUBLIC CONCERNS

Reduction of flood risk from rain events and tropical storms is of significant concern to residents and businesses in St. Bernard Parish, Louisiana. Construction of a safe house at the St. Mary Pump Station would provide a means to shelter personnel and allow them access to operate and troubleshoot the pumps onsite in advance and during tropical storm events and emergencies.

DESCRIPTION OF THE PROPOSED ACTION

A safe house to shelter pump station operators during hurricane and storm events is proposed to be constructed at St. Mary Pump Station #8 in St. Bernard Parish, LA in the vicinity of Verret (Figure 1). Construction includes installation of a pre-fabricated concrete emergency shelter building measuring approximately 32 feet (ft) x 17 ft x 8ft. The floor elevation would be set at approximately +24.0 ft. North Atlantic Vertical Datum (NAVD 88 2004.65). The project area encompasses 4.1 acres within existing right of way (Figure 2). No new right of way (ROW) would be required.

Figure 2: Existing Right of way and Limits of Work

The safe house would be supported on four concrete columns, these columns would each be supported by two reinforced concrete footers, and each footer would be supported by two H-Piles. The existing slope paving would be removed and the ground excavated to accommodate the footers. An existing drain inlet and an approximately 24 inch drainage line may need to be shifted over or relocated adjacent to the safe house and pump station to accommodate the structure. The excavated material would be reused to fill around the footers and drainage line. Crushed stone would be placed on top of the footers to prevent erosion of the earthen material. Any material excavated and not reused on site would be transported to an approved disposal facility. No borrow material would be required for this project. The safe house would tie into the existing utilities from the pump station. See Table 1 for additional information about construction materials.

Table 1: Proposed Action Data

Material	Information
Concrete columns	24 ft x 24 ft
Reinforced concrete footers	14 ft x 8 ft x 3 ft
Concrete to construct footers	Approx. 25 yd^3
H-Piles	HP 14 ft x 73 ft H-piles approx. 100' long ea.
Crushed stone	Approx. 7 yd^3

Access to the project site would be via Louisiana Highway 300 (Bayou Road), just north of the Bayou Road flood gate. Construction material and equipment would be transported to site via truck utilizing state roads and highways.

A temporary office (one trailer) and storage area for equipment and materials would be established within the limits of work. Grading activities and additional gravel may be used to cover existing gravel lots adjacent to the pump station for parking and ease of construction. The contractor would be required to return the project area to its pre-existing conditions when construction is complete. Equipment to be used includes a lattice boom and hydraulic cranes; pile hammer; impact hammer; excavator; dozer; compactor; and water, cement, and dump trucks. The contractor would comply with local noise ordinances.

The contractor would take reasonable measures to prevent unnecessary dust. Surfaces subject to creating dust would be kept moist with water. Dusty material piles on site or in transit shall be covered to prevent blowing. Silt fencing erosion control would be installed and maintained throughout project area consistent with the Storm Water Pollution Prevention Plan. It is estimated that the total duration of project construction activities would be approximately 6 to 9 months.

Figure 3: Typical emergency shelter/safe

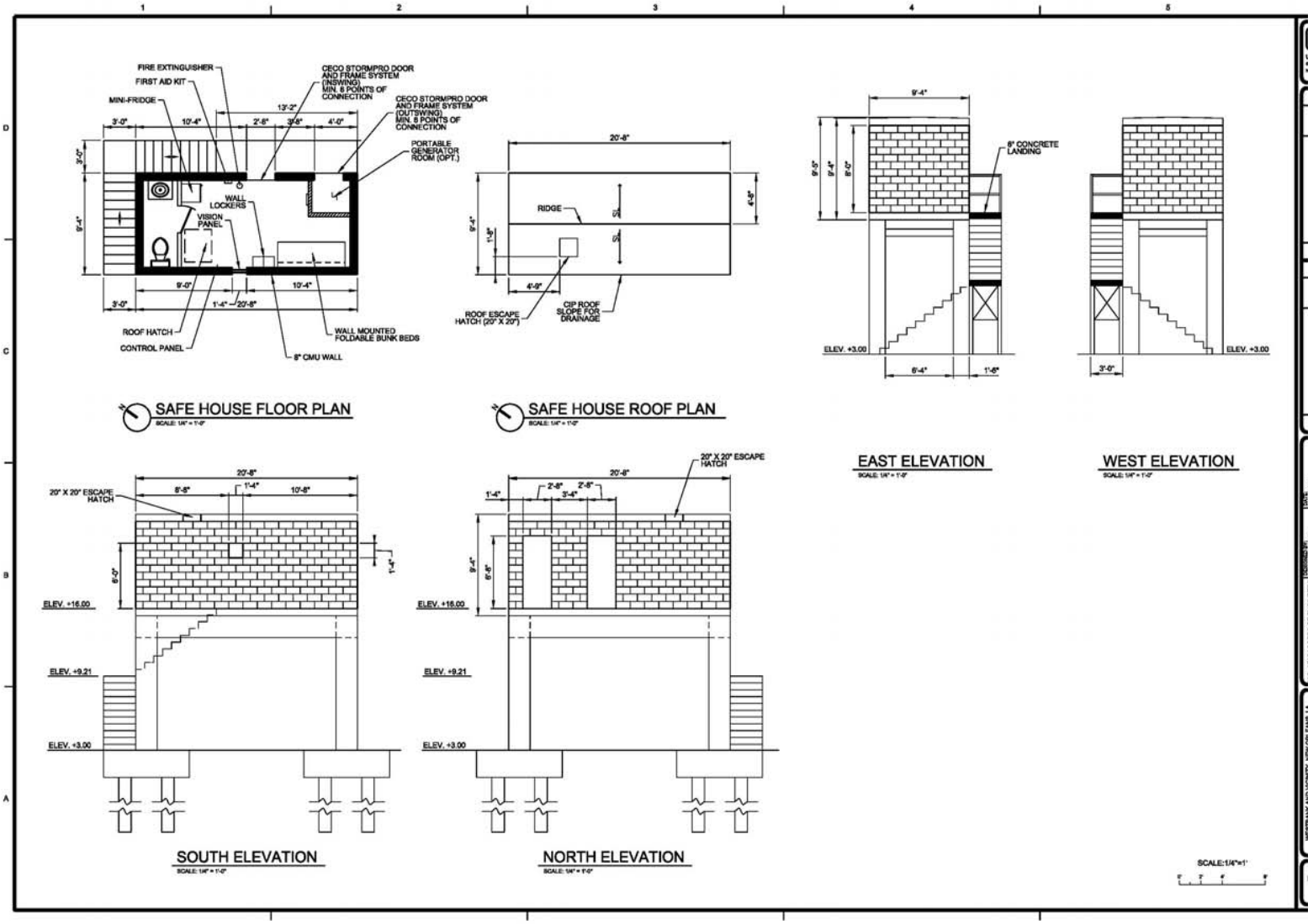


Figure 4: Proposed location of safe house on protected west side of St. Mary Pump Station on an existing concrete slab and possible relocation of drainage inlet

ALTERNATIVES TO THE PROPOSED ACTION

No Action Alternative

A no action alternative to the proposed action is also considered in this evaluation. In the no action alternative, the proposed safe house would not be constructed at the St. Mary Pump Station. Pump station operators would leave the pump station before the weather conditions reach tropical storm force and would return once the storm threat passes. During this period, the pumps at St. Mary Pump Station would not be operated to pump rainwater from behind the levee and floodwall into the central wetlands on the floodside of the levee. In the event that this were to occur drainage of the rising water on the protected side would be blocked; the rain water would accumulate behind the floodwall and flooding could occur.

ENVIRONMENTAL SETTING

GENERAL

The study area is within the Lake Ponchatrain and Breten Sound Basins. Boundaries are clearly defined to the west by levees and floodwalls along the Mississippi River, and to the east by eroding land brides of these lakes. The project area is located in St. Bernard Parish south of Verret (See Figure 1.)

Nearby towns to the project area include Kennilworth and Verret. LPV 148 and the St. Mary Pump Station are part of the 22 miles of the HSDRRS Federal LPV Chalmette Loop levee/T-wall which protects 75 square miles of urban and industrial land in St. Bernard Parish and a small section of Orleans Parish known as the Lower Ninth Ward.

CLIMATE

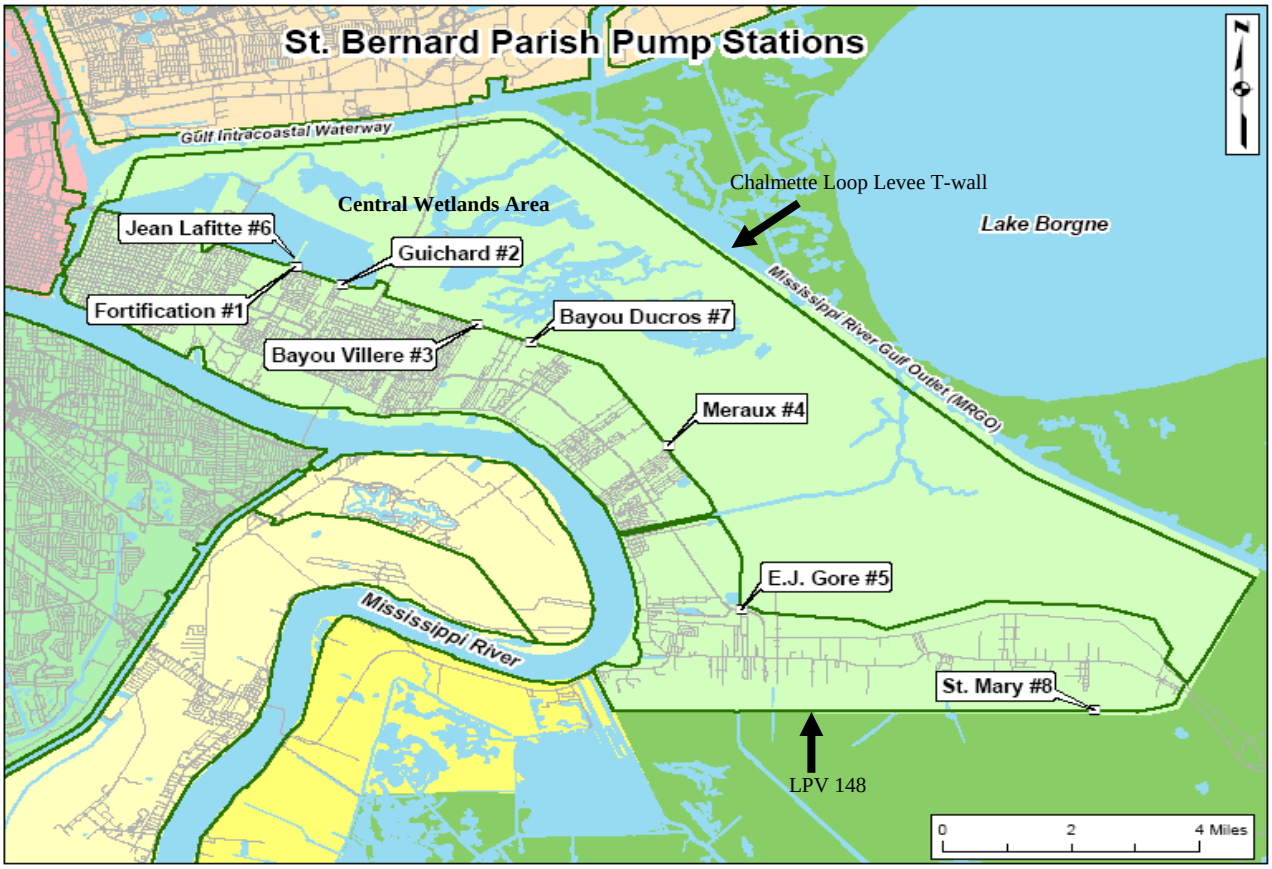
The region is part of the southeastern United States that has a humid subtropical climate. St. Bernard parish is dominated by warm, moist, maritime tropical air from the adjacent Gulf of Mexico. There is a 30% chance of tropical storm events each year on average and a 3-5% probability of a severe hurricane causing widespread damage to the area. The majority of these occurrences are during hurricane season between June and November. Summer thunderstorms are common, of short duration, and the amount and location of damage incurred varies. The average annual temperature in the project area is 67° F, with monthly average temperatures ranging from 81° F in July to 51° F in January. Average annual precipitation for the area is 62.0 inches, varying in monthly averages from 7.5 inches in July to 3.5 inches in October. Prevailing winds are from the southeast, with average wind speeds of 10 miles per hour.

WATERSHED

St. Bernard Parish is within the Lake Pontchartrain Basin and adjacent to the Breton Sound Basin. These watersheds are estuarine because of their tidal connection to the Gulf of Mexico. The majority of the St. Bernard parish is below sea level and because of this it requires a pumped drainage network comprised of eight drainage pump stations located along the non Federal back levee and the St. Mary Pump Station on the Chalmette loop Federal levee and T-wall. All suffered damage as result of Hurricane Katrina and repairs have been completed. Recently as part of the HSDRRS, a 22 mile long T-wall was constructed along the existing Chalmette loop levee and tied in to the existing St. Mary Pump Station. See EA #433 for specific details and impacts of repairs and IER #10 for the T-wall and St. Mary Pump Station tie-in construction.

Storm water and flood control in St. Bernard Parish is provided by a system of levees, floodwalls, canals and drainage pump stations (See Figure 5). All rainfall runoff is conveyed by gravity through a system of subsurface drainage lines into a grid of lateral canals that connect to major outfall canals. Water flow in the lateral canals can move in different directions depending upon the rainfall patterns and available pump station capacities. Water collects in the suction bays of various pump stations and then diesel powered and hydraulic pumps transport the water into the Central Wetlands Area (CWA) and the Breton Sound Basin. The lands of the St. Mary Pump Station and the levee and T-wall where the safe house construction is proposed are considered uplands developed with structures, gravel roads, and mowed grass; however, adjacent to area are waters of the United States (US) and wetlands of the CWA and Breton Sound Basin.

Figure 5: St. Bernard Parish Pump Stations



GEOLOGY

Soils of coastal southeastern Louisiana are typically peat, composed of muck and clays mixed with organic matter. Marsh and swamp deposits are found in the vicinity from New Orleans to Breton Sound and are primarily organic. The volume of these deposits is composed of approximately 60% or more of peat and other organic material. The remainder of this composition is predominately clay. Total organic thickness is normally 10 feet. Inland swamp deposits consist of approximately 70% clay, 30% peat, and organic materials. Logs, stumps, and root systems are often included in the peat and clays.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

The St. Mary Pump Station safe house is part of the larger IER #10 HSDRRS project, specifically LPV 148 that was extensively studied for HTRW issues. The safe house would be located immediately adjacent to the St. Mary Pump Station, which is within the ROW of LPV 148. Because the safe house is within the ROW of LPV 148 and the USACE has been present at the site during and after construction, no additional HTRW investigation is warranted for the proposed installation of the safe house.

RELEVANT RESOURCES

This section contains a description of relevant resources that could be impacted by the project. The resources (Table 1) described in this section are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to be not affected by the proposed action: commercial fisheries, threatened and endangered species (see coordination in Appendix 1), aquatic resources, wetlands, water quality, community cohesion, tax and property values, cypress swamp; cypress/tupelo swamp; freshwater lakes; bottomland hardwood forests; coastal wooded ridges; barrier islands; state-designated scenic streams; and municipal utilities. These resources will not be discussed further.

Table 2: Relevant Resources

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended.	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Essential Fish Habitat(EFH)	Magnuson-Stevens Fishery Conservation and Management Act of 1996, Public Law 104-297	Federal and state agencies recognize the value of EFH. The Act states, EFH is "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity."	Public places a high value on seafood and the recreational and commercial opportunities EFH provides.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, USFWS, NMFS, NRCS, USEPA, LDWF, and LADNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Gulf Water Bottoms	Fish and Wildlife Coordination Act, Marine Protection, Research, and Sanctuaries Act of 1990	State and Federal agencies recognize the value of Gulf water bottoms for the production of benthic organisms.	Environmental organizations and the public support the preservation of water quality and fishery resources.

Resource	Institutionally Important	Technically Important	Publicly Important
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979, as well as federal implementing regulations; additional statutory and regulatory requirements; other applicable cultural resource-related laws; and USACE policies and procedures.	Cultural resources are finite and non-renewable resources that include, but are not limited to both prehistoric and historic archaeological sites, historic standing structures, landscapes, and other culturally valued aspects of the environment, as well as sociocultural attributes, such as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions. Historic properties include districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places, and federal agencies are required to consider the effects of their actions on such properties.	Humans relate to their environment through their culture, and historic and cultural resources provide insights into ways of life, both past and present. The protection and enhancement of historic and cultural resources is in the best interest of the public, and federal agencies also have trust and treaty responsibilities to Tribes, which are partially fulfilled through the preservation and protection of trust resources and the consideration of potential effects on natural and cultural resources.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of to local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Aesthetics	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, the Coastal Barrier Resources Act of 1990, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.
Socio-Economic Resources	River and Harbor Flood Control Act of 1970 (PL 91-611).	N/A	Social concerns and items affecting area economy are of significant interest to community.

Resource	Institutionally Important	Technically Important	Publicly Important
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995,	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the tentatively selected plans.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.
Air Quality	Clean Air Act of 1963, Louisiana Environmental Quality Act of 1983.	State and Federal agencies recognize the status of ambient air quality in relation to the NAAQS.	Virtually all citizens express a desire for clean air.
Hydrology and Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and La State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, USEPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality. the national and state standards established to assess water quality	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

WILDLIFE

Existing Conditions

The project area is surrounded bottomland hardwoods (BLH), cypress swamp, and fresh and immediate marsh, interspersed with drainage and pipeline canals and remnant bayous within the CWA on the protected side and Breton Sound basin on the flood side. Wildlife associated with these habitats resides in the area. On the protected side directly adjacent to the LPV 148 levee and T-wall is the Jourda Canal which is connected by the St. Mary Pump Station to the Creedmore canal on the flood side of LPV 148. There are three wildlife access gates on the LPV 148 levee and T-wall, and the closest gate is approximately 400 feet west of the St. Mary Pump Station. Transient terrestrial wildlife could occur within the construction limits. However, because the project area is comprised of the elevated pump station, gravel road and parking lots, a waskey bridge, and paved concrete it is unlikely that any species reside on the pump station property. Terrestrial wildlife habitat along LPV 148 levee and T-wall consists principally of upland shrub/scrub and herbaceous communities on higher ground created by construction of the levees and on the top of the crown a concrete T-wall. The vegetation communities in the areas along the levee and T-wall consist mainly of planted grasses with herbs and scattered shrubs and small trees. The grass habitats along the levees are subject to periodic mowing and provide limited cover or other habitat components supportive of wildlife. Thus, habitats for terrestrial wildlife are present within the project area predominantly in shrub/scrub communities adjacent to the levee and T-wall. The CWA and Breton Sound basin bordering St. Mary Pump Station project area are covered predominantly by fresh/intermediate and brackish marsh and open water, cypress swamp and BLH, which provide habitat for aquatic and semi-aquatic wildlife, especially wading birds, water birds, and waterfowl.

Wildlife that typically inhabits terrestrial or brackish aquatic habitats surrounding the pump station includes a diverse assemblage of amphibians, reptiles, birds, and mammals. An amphibian that may occur in these habitats is the Gulf Coast toad (*Bufo valliceps*). Reptiles that may utilize project area habitats include the American alligator (*Alligator mississippiiensis*), common snapping turtle (*Chelydra serpentine*), red eared slider (*Trachemys scripta elegans*), green anole (*Anolis carolinensis*), mud snake (*Farancia abacura*), and speckled king snake (*Lampropeltis getula*). Mammals that may occur in the project area include the nutria (*Myocastor coypus*), muskrat (*Ondatra zibethicus*), swamp rabbit (*Sylvilagus aquaticus*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*).

Birds that may inhabit the surrounding area include both nonmigratory residents of the region and migratory species that are present only part of the year. Nonmigratory species that may use these habitats include the anhinga (*Anhinga anhinga*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea Herodias*), great egret (*Ardea alba*), tricolored heron (*Egretta tricolor*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), green heron (*Butorides virescens*). Migrant birds that may occur in the area include the Acadian flycatcher (*Empidonax virescens*), barn swallow (*Hirundo rustica*), swamp sparrow (*Melospiza georgiana*), song sparrow (*Melospiza melodia*), mallard (*Anas valisineria*), blue-winged teal (*Anas discors*), and diving ducks in the open waters of the marsh, such as lesser scaup (*Aythya affinis*), greater scaup (*Aythya marila*), and canvasback (*Aythya valisineria*).

Two other important species found in the area are the bald eagle (*Haliaeetus leucocephalus*) and the brown pelican (*Pelecanus occidentalis*), both of which have

been delisted by the US Fish and Wildlife Service (USFWS) as protected species. The bald eagle is protected under the Bald and Golden Eagle Protection Act. The bald eagle generally nests at the top of large trees, especially cypress snags in swamps, near open water bodies which are used for foraging. This habitat is found in the CWA. A Louisiana Department of Wildlife and Fisheries (LDWF) records search indicated that there is one bald eagle nest located in the CWA but not near the immediate project area. All bald eagle nests (active, inactive, or seemingly abandoned) are subject to protection and no major activities should occur within a 660-foot radius of a nest at any time. The brown pelican is a year-round resident of Louisiana that typically forages on fish in shallow estuarine waters. Food consists mainly of species of forage fish such as menhaden, mullet, sardines, pinfish, and anchovies. On a site visit January 24, 2014, only turkey vultures (*Cathartes aura*) were seen along the LPV 148 levee and T-wall, and within the limits of work no evidence of nests or wading or water bird colonies were seen.

Future Conditions with No Action

Under the no action alternative, no construction work would occur that would impact any wildlife in the project area. Pumping of storm water by operating pump stations from the developed areas of St. Bernard Parish into the surrounding water bodies in response to rainfall and non-tropical storm events would continue. However, because the St. Mary Pump Station does not have a safe house, this facility would not be able to operate throughout tropical storm events. If there were delays to pumping due to evacuated pump operators, wildlife areas in the vicinity of the St. Mary Pump Station within the HSDRRS could experience high water levels. Without construction of a safe house, tropical event flood risk to the wildlife community surrounding the project area would continue. No additional direct, indirect, or cumulative impacts would occur to wildlife if the no action alternative were implemented.

Future Conditions with the Proposed Action

The footprint of the proposed safe house construction area encompasses approximately 4.1 acres of existing pump station, levee and T-wall ROW. This area is not considered prime wildlife habitat but wildlife species do inhabit the surrounding CWA and Breton Sound Basin. Wildlife present in the vicinity would be temporarily impacted during construction by increases in noise, dust and traffic potentially increasing stress to these species. The construction of the safe house would occur on a concrete paved and gravel area. Earthwork, grading, and excavation activities if necessary to relocate the drain line could directly impact small, less mobile invertebrates and wildlife, such as small mammals, amphibians and reptiles by causing mortality. The noise created by driving four piles for the safe house construction could temporarily impact wildlife in the area. However mobile wildlife, such as birds and larger mammals, would likely leave the immediate construction area and relocate to the nearby bottomland hardwood, swamp and marsh areas, which provides more suitable habitat during construction.

Direct impacts to Bald Eagles and colonial nesting water birds would be avoided in accordance with the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act by the use of best management practices (BMPs) (see appendix 2A) and recommendations from USFWS. There are no known rookeries in the project area. However, colonial nesting water birds could utilize the adjacent area. Therefore, there could be a potential for minimal indirect impacts to colonial nesting water birds. These impacts could include the disturbance of roosting or foraging birds due to construction activity and noise. It is assumed the birds would relocate to adjacent foraging/roosting grounds. Nesting birds would not be impacted as no known nests exist in the area.

Prior to construction, surveys of the area would be conducted by USFWS and CEMVN biologists to confirm whether colonial nesting water bird rookeries are present and active. If nests are discovered, work would be required to take place outside of the USFWS and LDWF-declared buffer zones (Appendix 2). Work within the buffer zones may only take place during non-nesting season (September 1 to February 15). There would be no impacts to the bald eagle as no known nests are located near any project features. If an eagle's nest is sighted within the project area, a no-work zone would be implemented (see appendix 2).

Potential indirect impacts on wildlife from the proposed action would involve the displacement of wildlife populations, predominantly invertebrates, birds or small mammals, which utilize the expanses of turf grass that comprise the levee in the immediate project area. Movement of the limited numbers of wildlife that currently inhabit the existing levee and T-wall into nearby habitats, including the CWA and the Breton Sound Basin, would not be expected to put added pressure on these large terrestrial and aquatic habitats. Therefore, indirect impacts to the affected small wildlife populations and upland levee habitat would be minimal in light of the extensive more suitable surrounding habitat.

Potential cumulative impacts on wildlife within the project area from the proposed action would include the combined effects from the HSDRRS specifically the Chalmette Loop levee and T-wall, as well as Coastal Wetland Planning Protection Restoration Act (CWPPRA) projects such as wetland restoration; the Violet freshwater diversion project; Caernarvon freshwater diversion; and local community wetland restoration projects would reduce potential adverse cumulative impacts by positively affecting wildlife within and around the CWA and the Breton Sound Basin. The displacement of any wildlife would be temporary during construction activities and most displaced wildlife would return following project completion. Most of the upland levee habitat straddling the T-wall impacted is frequently mowed turf grass. No permanent impacts, only the temporary displacement of wildlife during construction activities would be anticipated from the proposed action. Wildlife would return to the area following project completion. See IER #10 and the Comprehensive Environmental Document, Phase 1, for additional discussion of cumulative impacts.

NOISE AND VIBRATION

Existing Conditions

In 1974, the U.S. Environmental Protection Agency (USEPA) provided information suggesting that continuous and long-term noise levels in excess of Day-night sound level (DNL) 65 weighted decibels (dBA) are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities of everyday life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. *A-weighing*, described in a-weighted decibels, approximates this

frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate level in dBA is provided in Table 5.

The dBA noise metric describes steady noise levels. Very few noises are, in fact, constant; therefore, a noise metric, Day-night Sound Level has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 P.M. to 7 A.M.). DNL is a useful descriptor for noise because (1) it averages ongoing, yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, Equivalent Sound Level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

Table 3: Common Sounds and Their Levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

Existing sources of noise near the project area include the pump station when in operation, air boat activity in the adjacent wetland, high-altitude aircraft over flights, and natural noises such as water, leaves rustling, and bird vocalizations.

Future Conditions with No Action

Under the no action alternative, additional noise associated with construction activities would not occur. Existing sources of noise as described above would continue to contribute to the noise environment. No additional direct, indirect, or cumulative noise impacts would occur.

Future Conditions with the Proposed Action

Short-term increases in noise due to construction activities would occur. Equipment would include lattice boom and hydraulic cranes; pile hammer; impact hammer; excavator; dozer; compactor; and water, cement, and dump trucks. Permissible hours of work would be consistent with local noise ordinances.

Table 4 presents noise emission levels for construction equipment expected to be used during the proposed construction activities. Anticipated sound levels at 200 feet range from 64 dBA to 79 dBA based on data from the Federal Highway Administration (FHWA; 2007)

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

Noise Source	200 feet	500 feet	1000 feet
Dump Truck	64	56	50
Crane	69	61	55
Bull Dozer	70	62	56
Pile Driver	79	71	65
Excavator	69	61	55

The specific impact of construction activities on the nearby receptors would vary depending on the type, number, and loudness of equipment in use. Individual pieces of heavy equipment typically generate noise levels of 80 dBA to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high noise levels typically extends to distances of 400 feet to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience substantial levels (greater than 62 dBA) of noise.

Figure 6*:* Range of noise impacts illustrated by red circle illustrating 1000 feet surrounding pump station

The nearest house is approximately 2,800 feet from the project site. As a result of the distance from the construction site, no direct, indirect or cumulative noise impacts to

residents are expected. Construction noise would end upon completion of the project in approximately nine months from the start of construction.

Construction noise would be expected to dominate the sound scape for all on-site personnel. Construction personnel, and particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

SOCIOECONOMIC RESOURCES

Existing Conditions

Population and Poverty Level

Following Hurricane Katrina on August 29, 2005 and the subsequent flooding of St. Bernard Parish, several areas within the parish suffered extensive damage leading to large-scale displacement of the resident population. Shortly after Hurricane Katrina, more damage was inflicted on the area by Hurricane Rita. Orleans Parish and St. Bernard Parish were hardest hit by these two hurricane events within the state. Previous studies have reported that nearly all residents within St. Bernard Parish were affected by the flooding (Congressional Research Service, November 2005). Assessments conducted by FEMA have reported nearly 97 percent of the total population of the parish were affected either by flooding or structural damages to their houses (ibid).

According to the 2010-2012 U.S. Census' American Community Survey (ACS), the population of St. Bernard Parish in 2012 was 39,326 substantially down from the Parish's pre-Katrina population of 64,576 in July 2005. Between 2005 (pre-Katrina) and 2012, St. Bernard Parish population decreased by 39.1%. In 2006, the population was 15,514 and in 2008 had increased to 28,362. Since 2006, the Parish population increased by 153 percent.

In 2012, whites are the largest race or ethnic group, accounting for 67.3 percent of the total population. Blacks or African-Americans comprise 18.6 percent of the population and are the second largest group within the area. "Other" race groups accounted for 4.6 percent of the population; this category includes persons who identify themselves as American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander or Some Other race. Minorities accounted for 32.7 percent of the St. Bernard Parish population. Persons of Hispanic Origin comprised nearly 9.5 percent of the total population.

Table 5: St. Bernard Parish Population, 2000-2012

		------- Non Hispanic --------				
Year	Total Population (%)	White (%)	African American (%)	Other (%)	Hispanic (%)	Total Minority* (%)
2000	68,305 (100)	57,400 (84.0)	5,224 (7.6)	1,975 (2.0)	3,706 (5.4)	10,905 (16.0)
2005 **	64,576 (100)	55,158 (85.4)	7,037 (10.9)	2,263 (3.5)	NA	9,300 (14.4)
2012 ***	39,326 (100)	26,471 (67.3)	7,305 (18.6)	1,804 (4.6)	3,746 (9.5)	12,855 (32.7)

*Includes Non Hispanic African Americans, Asians and "Other" Race and Hispanic.
**U.S. Census Bureau July 1, 2005. Non Hispanic by Race and Hispanic estimates not available. Data for 2005 includes Hispanics in all race categories.
***American Community Survey 3-year estimate (2010-2012).

Table 6: St. Bernard Parish, Population below Poverty Level, 2000-2012

Year	Total Population	Population below Poverty Level	Percent of Population
2000	68,305	8,687	13.1
2005	64,576	13,537	21.0
2012	39,326	6,694	17.2

Note: Poverty status is calculated using income earned in 1999, 2004 and 2011 for whom poverty status is determined.

The Census Bureau reports that the 2012 poverty threshold for a family of four is $23,050. The percent of individuals below the poverty level in 2012 for St. Bernard Parish was 17.2 percent. These are the most recent economic estimates for the parish. That percentage is down from July 2005 when 21% of the parish population had incomes below the poverty level. Both 2005 and 2012 figures are well above the rate in year 2000 when 13% of the population was below the poverty level.

Housing and Income

In 2010-2012, St. Bernard Parish had approximately 17,000 housing units, 19 percent of which were vacant. Of the total housing units, 78 percent were in single-unit structures, 15 percent were in multi-unit structures, and 7 percent were mobile homes. Forty- percent of the housing units were built since 1990. In 2010-2012, St. Bernard Parish had approximately 14,000 occupied housing units of which 9,600 (70 percent)

were owner occupied and 4,100 (30 percent) renter occupied. Nearly 38% of St. Bernard's housing stock was lost since July 2005; a vast majority of that can be attributed to Hurricane Katrina.

Table 7: St. Bernard Parish Housing and Income, 2000-2012

Year	Total Housing Units	Occupied Units (Households)	Median Household Income	Median Family Income
2000	26,790	25,123	$35,939	$42,785
2005	27,292	23,035	$34,858	$44,788
2012 *	16,796	13,694	$41,713	$46,040

*U.S. Census' American Community Survey 3-year estimate (2010-2012).

According to 2010-2012 demographic estimates from the Census Bureau, St. Bernard Parish had a median household income of $41,713 and a median family income of $46,040, both higher than pre-Katrina levels. Fifteen percent of households had income below $15,000 a year and 4 percent had income over $150,000 or more.

Seventy-nine percent of the households received earnings and 14 percent received retirement income other than Social Security. Twenty-six percent of the households received Social Security. The average income from Social Security was $14,668. These income sources are not mutually exclusive; that is, some households received income from more than one source.

Employment and the Labor Force

About 18,500 people were employed in St. Bernard Parish during 2012, according to the U.S. Census Bureau's ACS or 61 percent of the population 16 and over. The unemployment rate was 7.5%. The labor force shrunk after Hurricane Katrina by nearly 31% or by about 8,200 people.

Table 8: St. Bernard Parish Labor Force

Year	Labor Force	Unemployment Rate (%)
2000	31,267	3.4
2005	26,685	NA
2012	18,508	7.5

Seventy-nine percent of the employed were private wage and salary workers; nearly 14 percent were federal, state, or local government workers; and 7 percent were self-employed in their own (not incorporated) business. The largest share of jobs was in management, business, science, and art occupations.

Table 9: 2010 – 2012 Labor Force by Class of Worker, St. Bernard Parish

Class of Worker	Number	Percent
Private wage and salary	12,798	79.1
Federal, state or local gov't	2,220	13.7
Self employed/not incorporated	1,169	7.2

Table 10: Occupations for the civilian employed population 16 years and over in St. Bernard Parish in 2010-2012

Civilian employed population 16 years and over	Number	Percent
Management, business, science and arts occupations	4,068	25.1
Service occupations	3,024	18.7
Sales and office occupations	3,356	20.7
Natural resources, construction and maintenance occupations	2,593	16.0
Production, transportation and material moving occupations	3,146	19.4

Future Conditions with No Action

Under the No Action alternative, a safe house would not be constructed. As a result, the St. Mary Pump Station might need to be abandoned during a severe tropical storm event and may not be operated through the entire storm event. The no action alternative would not provide an increment of risk reduction to the residents living within the area. At the time the pump stations become inoperable due to evacuation of personnel, there would be an increase in flood risk. Without construction of a safe house, that flood risk to the communities of St. Bernard Parish remains and the risk of potential associated damage to housing units and other public and commercial structures also remains.

Future Conditions with the Proposed Action

With the implementation of the proposed action, short-term beneficial economic impacts would occur during construction activities from the associated construction costs and purchase of materials. The improvements at the St. Mary Pump Station by constructing a safe house would allow the facility to operate throughout a storm event and would reduce the possibility of large-scale flooding in St. Bernard Parish. As a result, a reduction in the costs resulting from flood damage would be expected from the implementation of the proposed action. The additional hurricane, storm, and flood damage risk reduction resulting from implementation of the proposed action would benefit the entire parish.

Short-term beneficial impacts could include minimal employment generation, along with purchases of material that would stimulate the local economy and the larger region. The proposed construction activities could help generate employment and increase income levels, and contribute to a more rapid restoration of the previous local tax base needed to provide public facilities and services. The proposed additional hurricane and storm damage risk reduction provided by this project and other safe houses being built by FEMA as well as other risk reduction projects may further encourage the growth of businesses and industries in the study area.

Transportation

Existing Conditions

The proposed project is located in a rural area of St. Bernard Parish, with farming and fishing communities centered on the natural ridges of the Mississippi River and Bayou Terre aux Boeufs. Local two lane secondary roads are located in the immediate vicinity of the project as well as arterial roads such as Highways 46 and 300 which deliver traffic into neighborhoods. Generally, the level of service for Highway 46 and 300 includes small volumes of local traffic with a moderate density of vehicles during peak commute hours. Two Interstate Highways, Interstate 10 and I-510, provide access to St. Bernard.

Future Conditions with No Action

The No Action alternative would not require any construction and therefore would result in no change in traffic flow or patterns.

Future Conditions with the Proposed Action

Access to the St. Mary Pump Station for construction is available via Interstates I-10 and 510. The local roads that may be used to transport materials to the site include St. Bernard Highway (Highway 46) which is a four lane divided road and Bayou Road (Highway 300). Only a small segment of Highway 300 would be used by trucks delivering materials including the pre-fabricated building and concrete columns to the site. There would be daily traffic for the workers' personal vehicles to the project site. During the mobilization phase, there would be truck traffic to deliver the required equipment. Mobilization should take about 2 weeks to get all of the equipment on the site. Throughout the construction effort, there would be various deliveries of materials that would be needed to construct the project.

Construction equipment and movement of construction materials would be required during the construction period. The small number of vehicle trips to the facility would not significantly impact traffic flow or patterns on arterial or secondary roads but would have minor, short-term impacts on nearby two-lane roads such as Highway 300 and residential streets located on-route to the facility. Once construction is complete, no additional vehicle trips are anticipated; therefore, there would be no long-term impacts to traffic flow or patterns as a result of the Proposed Action.

ENVIRONMENTAL JUSTICE

Existing Conditions

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994 (E.O. 12898) and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations.

Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, some other race or a combination of two or more races. A minority population exists where the percentage of

minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2012 are those whose income is $23,050 for a family of four using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a census tract or block numbering area with 20 percent or more of its residents below the poverty threshold level and an "extreme poverty area" as one with 40 percent or more below the poverty threshold level. This resource is technically significant because the social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the proposed actions. This resource is publicly significant because of public concerns about the equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of Federal laws, regulations, policies, and actions.

A residential area along Highway 300 is within 0.66 miles of the St. Mary Pump Station and the proposed safe house site. Census Block data is used to identify minority composition of EJ communities in the potential impact area. In this area, there are 25 houses located on a segment of Highway 300 that would be used to transport the necessary materials for construction of the safe house at the St. Mary Pump Station. Two U.S. Census Blocks (2045 and 2026) in census tract 30105 comprise the neighborhood along the transportation route nearest the site. In 2010, as reported by the U.S. Census Bureau, 81.0 percent of residents of these two Census Blocks are minority (non-white or Hispanic) which classifies the potential impact area as an EJ community.

Table 11: Neighborhood Population using Census Block data for EJ Analysis

Census Blocks	Total Population	Minority	% Minority
2045, 2026	74	60	81.08

Source: 2010 U.S. Census.

A larger geographic area is used to determine the low income population in the area of potential impact since income data is not available at the smaller geographic Census Block level. Census Block Group 2 data in Census Tract 030105 was used to determine the number of people below the poverty threshold. Block Group 2 in Census Tract 030105 extends westward from the St. Mary Pump Station access road. Nine percent of the population in Block Group 2 has incomes below the poverty level.

Table 12: Low Income Population using Census Block Group data for EJ Analysis

Block Group 2	Number	Percent
Total Population	364	100
Low Income	33	9.0

Source: 2010 U.S. Census' ACS 2010-2012.

Future Conditions with No Action

Under the No Action Alternative, a safe house would not be constructed at the St. Mary Pump Station. The pump station would continue to be operated as it is today. In the event of a severe storm event, pump station operators would be evacuated rendering the station inoperable if flood waters reached critical electrical equipment. Therefore, without implementation of the proposed action, the status quo would remain in regards to flood risk.

Future Conditions with Proposed Action

Noise and dust impacts are not anticipated as all residents are further than 1,000 feet from the proposed construction site. Any impacts from the construction of the pre-fabricated safe house and concrete pile driving would be limited to the transport of needed construction materials by truck through the area. These impacts would be minimal and could include increased traffic noise and dust. The focus of the EJ analysis includes those households that may see minimal and temporary impacts related to trucks transporting the materials to the site. Several truck trips would transport the materials needed for placement of the safe house at the pump station. Trucks would use the four lane Highway 46 for the longest part of the trip in St. Bernard Parish. However, a small segment of Highway 300 which passes through residential areas would be used by the trucks. The segment of Highway 300 that would be used passes through Census Blocks 2045 and 2026, which have 25 houses according to the 2010 U.S. Census. The two census blocks are considered the potential impact area.

Table 13 below, shows the white and minority population of St. Bernard Parish and of the impact area. Approximately 81% of the impact area residents are minority (60/74) which is well above the 50% statistical threshold which identifies an EJ community. Only 0.5% of the parish minority residents are in the impact area while 0.1% of parish white residents live there. The temporary and minimal truck impacts do not disproportionately affect minority residents. Additionally, the nearby community would benefit from the flood risk reduction that the continuous operation of the St. Mary Pump Station would provide during tropical storm events.

Table 13: Relationship between the Project Area and the Parish for EJ Analysis

Population	St. Bernard Parish	Project Impact Area*	Percent in St. Bernard Parish	Percent in Impact Area
Total	39,326	74	100%	0.2%
White	26,471	14	67%	0.1%
Minority**	12,855	60	33%	0.5%

*Project Impact Area data represents population in Census Blocks 2045 and 2026 of Census Tract 030105.
**Minority includes non-Hispanic black and other non-white races and Hispanics.

Additionally, E.O. 12898 directs Federal agencies to assess impacts to low income communities. Income data is available from the U.S. Census for much larger geographic areas than population data. Block Group data, which combines many smaller Census Block areas together, is the unit of analysis for income. About 9% of the residents within Block Group 2 of Census Tract 030105 are below the poverty level (33/364), which is well below the criteria for a poverty area and does not qualify as an EJ community.

There would be no disproportionate adverse direct, indirect, or cumulative impacts on minority or low-income communities within the study area per 2010 U.S. Census information and requirements of E.O. 12898.

CULTURAL RESOURCES

Existing Conditions

The St. Mary Pump Station was constructed in 1996, and was repaired after 2005 as part of the improvement to the LPV148 St. Bernard portion of protection levee. St. Mary Pump Station is less than 50 years old and is not exemplary of unusual or historic construction techniques or pumping technology. The LPV148 levee and T-wall upon which the pump station sits, is modern and artificial construction that does not hold potential to contain a cultural resource. Neither the pump station nor the grounds underneath have characteristics that would make them eligible for listing on the National Register of Historic Places. Construction of a safe house is within the same footprint previously studied for cultural resources during the HSDRRS construction, and that construction did not affect any historic property within the proposed project area.

Cultural Resources survey of the LPV148 corridor, including the St. Mary Pump Station, was undertaken in 2006 (Report 22-3165 IER #10). Coordination for no historic properties affected by actions on this portion of levee has previously taken place with Louisiana State Historic Preservation Officer (SHPO) in a letter dated November 17, 2008 and with interested federally-recognized Tribes via distribution of IER#10 in April of 2009.

Future Conditions with No Action

Without implementation of the proposed action, conditions for cultural resources would continue as they currently exist. If ability of pump stations to perform is

diminished by no action, it is possible that cultural resources could be damaged during a flooding event.

Future Conditions with the Proposed Action

With implementation of the proposed action, no cultural resources exist to be affected within the project area. If ability of pump stations to perform is increased by the proposed action, it is possible that potential damages to cultural resources from a flood event would be reduced or avoided.

RECREATIONAL RESOURCES

Existing Conditions

There is no recreation within the St. Mary Pump Station project area. Drainage canals, levee gates, and the T-wall prevent public access. Approximately 2 miles west of the project area is St. Bernard State Park with the developed areas further from the project area (approximately 6 miles.) Facilities at the state park include a picnic area, playground, disc golf course, swimming pool, multi-use trails, manmade lagoons, and campground. Approximately 7 miles west of the project area is Dean's boat launch which provides access to the Caernarvon Spillway, Big Mar, and Lake Lery. Approximately 3 miles south west of the project area is Reggio's Marina boat launch which provides access to Reggio Canal. North of the project area is Jourda Canal; however a floodwall blocks the canal preventing boat access near the project area. South of the project area there is the potential for fishing, boating, and duck hunting however use is expected to be low because of the marsh/aquatic vegetation adjacent to the pump station.

Future Conditions with No Action

Without implementation of the proposed action, the conditions within the recreational environment would continue as they have in the past and would be dictated by the natural land use patterns and processes that have dominated in the past. Recreational infrastructure in St. Bernard Parish would remain vulnerable to storm surges during tropical events.

Future with the Proposed Action

Because of the marsh/aquatic vegetation adjacent to the pump station, boat activity is minimal. Air boats within 1000 ft of the construction site may experience noise impacts. These impacts are temporary and would end when construction is complete. No impacts are anticipated due to construction to other recreational resources. No indirect or cumulative impacts are expected.

VISUAL RESOURCES

Existing Conditions

The immediate area is relatively flat terrain mixed with a variety of water resources to the south of the levee. Vegetation in the study area is a mixture of native and non-native trees and some dense hardwoods. Stands of forest dominate the landscape to the north of the levee. Land use in the area is an even mix of undeveloped lands and single family residential (located to the northeast). Overall access to the site is limited. User activity is relatively low in this region, and primarily relegated to agricultural, residential, and some recreational uses. There are no known Scenic Byways in or near the project area. There are no major state or Federally protected lands in the vicinity of

the project area. There are no known state recognized scenic streams in the vicinity of the project area.

Future Conditions with No Action

Under the no action alternative, there would be no direct or indirect impacts to visual resources. Visual resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices and policies.

With the no action alternative, there are no foreseen cumulative impacts to visual resources. Cumulative impacts would be the incremental direct and indirect impacts of not implementing the proposed action and the continued loss of wetland and habitats due to human development and conversion of existing forested wetlands and swamp habitats to marsh and open water. Any future changes or alterations to the area would evolve in a natural process over the course of time, or by local land use patterns and maintenance practices. These incremental direct and indirect impacts would be in addition to the direct and indirect impacts of visual resources in the region, Louisiana and the nation.

Future Conditions with the Proposed Action

In terms of public and institutional significance, the direct impacts to visual resources would be minimal throughout the study area. The study area is remote with limited access. Protected scenic resources are non-existent in the area. Levee and a ~+30 ft T-wall, and the St. Mary pump station itself as well as the associated equipment, structures and other facilities that accompany them, are already a part of the landscape in the project area. Indirect impacts to visual resources would be negligible.

Cumulative impacts would be the incremental direct and indirect impacts of implementing and operating the proposed alternative on visual resources in addition to the direct and indirect impacts to visual resources by other previous, existing and authorized restoration projects in the region, Louisiana, and the nation. In this case, cumulative impacts would be minimal to negligible.

AIR QUALITY

Existing Conditions

The U.S. Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called “criteria” pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (PM-10 and PM-2.5), and sulfur dioxide (SO_2). Ozone is the only parameter not directly emitted into the air but forms in the atmosphere when three atoms of oxygen (03) are combined by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air. The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review 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. A conformity assessment would require quantifying the direct and indirect emissions of criteria pollutants caused by the Federal action to determine whether the proposed action conforms to Clean Air Act requirements and any State Implementation Plan (SIP).

The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions "conform with" (i.e., do not undermine) the approved State Implementation Plan (SIP) for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS.

St. Bernard Parish was designated by the USEPA as SO_2 non-attainment area under the 1-hour standard effective October 4, 2013. This classification is the result of area-wide air quality modeling studies, and the information is readily available from Louisiana Department of Environmental Quality, Office of Environmental Assessment and Environmental Services.

Federal activities proposed in St. Bernard Parish may be subject to the state's general conformity regulations as promulgated under LAC 33:III.14.A, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A general conformity applicability determination is made by estimating the total of direct and indirect SO_2 emissions caused by the construction of the project. Prescribed *de minimis* levels of 100 tons per year per pollutant are applicable in St. Bernard Parish. Projects that would result in discharges below the *de minimis* level are exempt from further consultation and development of mitigation plans for reducing emissions. The proposed action would produce emissions below the *de minimus* threshold. (Emission calculations are contained in Appendix 2.) Accordingly, a conformity review is not required.

Future Conditions with No Action

With implementation of the no action, the proposed safe house project would not be constructed; the status of attainment of air quality for St. Bernard Parish would not change from current conditions.

Future Conditions with the Proposed Action

With implementation of the proposed action, on-site construction activities are expected to produce less than 2.0 tons per year of SO_2 emissions (which is markedly less than the *de minimis* level of 100 tons per year per pollutant). Thus, the ambient air quality in St. Bernard Parish would not noticeably change from current conditions, and the status of attainment for the parish would not be altered.

CUMULATIVE IMPACTS

Section 1508.8 of Title 40 CFR defines cumulative impacts as:

…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.

Other ongoing projects in the New Orleans metropolitan area include the West Bank and Vicinity and Lake Pontchartrain and Vicinity HSDRRS projects; the New Orleans to Venice, LA Hurricane Protection Project; the Plaquemines Non-Federal Levee; and the South East Urban Flood Control Project. It is foreseeable that further levee upgrades to Louisiana's Federal and non-Federal levees would continue for a number of years. Changes would be made to the existing pump station network, including constructing new pump stations and closure structures at the lakeside ends of the three Orleans parish drainage canals (17th Street, Orleans, and London Avenue) and closure structures on the GIWW/MRGO and the IHNC. St. Bernard Parish Government, Lake Borgne Basin Levee District (LBBLD), and the Southeast Louisiana Flood Protection Authority – East (SELFPA-E) are working together on projects approved by the Governor's Office of Homeland Security and Emergency Preparedness and Federal Emergency Management Agency. These projects include building safe houses at St. Bernard Pump Stations #1 and 7 which would provide additional flood risk reduction to St. Bernard Parish. The proposed action is expected to contribute minimal impacts to the cumulative impacts of other ongoing and future projects in the New Orleans metropolitan area. See IER #10 and the CED, Phase 1 for additional evaluation of cumulative impacts.

COORDINATION

Preparation of this Draft EA and a Finding of No Significant Impact (FONSI) has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as federally recognized Tribes, environmental groups and other interested parties. The following agencies, as well as other interested parties, received copies of this Draft EA and FONSI:

Department of the Interior, Fish and Wildlife Service
National Marine Fisheries Service
Environmental Protection Agency, Region VI
Natural Resources Conservation Service
State Conservationist Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources
Coastal Management Division
Louisiana Department of Natural Resources
Coastal Restoration Division
Louisiana Department of Environmental Quality (LDEQ)
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer

Comments received from agencies in preparation of the draft are included in the following Compliance Section. Comments received from the above agencies as well as the general public will be considered prior to a decision on the proposed action.

MITIGATION

No wetlands or waters of the United States would be directly impacted by the safe house construction therefore no mitigation would occur as result of the proposed action. No mitigation is required for cultural resources or other important resource.

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved with the coordination and review of this Draft EA with appropriate agencies, organizations, and individuals.

A Coastal Zone Consistency Determination was received March 28, 2014 from the Louisiana Department of Natural Resources stating that the proposed modification (C20080556 mod 02) is consistent with the Louisiana Coastal Resources Program.

A “no effect” determination was made for any threatened and endangered species and coordination with the USFWS under the Fish and Wildlife Coordination Act and Section 7 of the Threatened and Endangered Species Act was initiated on January 21, 2014. USFWS concurred on the same day by email correspondence and responded that “no further endangered species act coordination is necessary at this time.” Coordination with USFWS would be completed upon finalization of EA #526.

A “no effect” determination was made for essential fish habitat and coordination was initiated with National Marine Fisheries Service (NMFS) by phone call February 19, 2014 with Patrick Williams of NMFS and would be completed upon finalization of EA #527.

No 404(b)1 evaluation is required and no Section 401 Water Quality Certification is required by the Louisiana Department of Environmental Quality because no work would impact wetlands or waters of the United States.

Cultural Resources survey of the LPV148 corridor, including the St. Mary Pump Station, was undertaken in 2006 (Report 22-3165 IER #10). Coordination for no historic properties affected by actions on this portion of levee has previously taken place with Louisiana State Historic Preservation Officer (SHPO) in a letter dated November 17, 2008 and March 17, 2014 and with interested federally-recognized Tribes via distribution of IER#10 in April of 2009.

Public Review of the draft EA will be completed prior to a decision on a finding of no significant impact (FONSI).

CONCLUSION

The proposed safe house construction at the St. Mary Pump Station would improve storm damage risk reduction by reducing the risk of flooding in St. Bernard Parish and would add to the storm damage risk reduction benefits of the entire HSDRRS. This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no impacts upon cultural resources, threatened and endangered species, water quality, essential fish habitat, fisheries, wetlands, environmental justice, and recreation. Minimal and only temporary impacts would be expected to air quality, noise and vibration, socioeconomics, and wildlife. Signature of the FONSI is dependent upon the findings of this draft EA as well as public and agency comments received during the 30-day public review period.

PREPARED BY

Draft EA # 527 and FONSI were prepared by Debra Wright, Outdoor Recreation Planner, with relevant sections prepared by: Laura Wilkinson –Wildlife; Joe Musso – HTRW and Air Quality, Paul Hughbanks – Cultural Resources; Andrew Perez – Socioeconomics and Environmental Justice; Kelly McCaffrey – Aesthetics; Sean Brunet – Project Manager, and Christopher Gilmore – Senior Project Manager. Technical review was conducted by Sandra Stiles, Supervisory Biologist. Agency technical review was conducted by Elliot Stefanik, Biologist. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; Regional Planning and Environment Division, South, CEMVN-PDR-RS; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

LITERATURE CITED

Federal Highway Administration. 2007. Special Report: Highway Construction Noise: Measurement, Prediction, and Mitigation. Appendix A Higway Construction Equipment Noise Levels and Ranges. InternetURL: http://www.fhwa.dot.gov/environment/noise/higway/hcn06.htm.

Harris, Cyril, M. 1998. Handbook of Acoustical Measurement and Noise Control. McGraw-Hill, Dallas, TX.

USACE. 2014. St. Bernard Parish Pump Station 2 &3 Seepage Repairs Environmental Assessment. USACE, Mississippi Valley Division, New Orleans District.

USACE. 2006. U.S. Army Corps of Engineers Response to Hurricanes Katrina and Rita in Louisiana Environmental Assessment. USACE, Mississippi Valley Division, New Orleans District.

USACE. 2009. Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana: Individual Environmental Report. USACE, Mississippi Valley Division, New Orleans District.

U.S. Census' American Community Survey (2010-2012).

APPENDIX 1

Agency Coordination

Classification: UNCLASSIFIED
Caveats: NONE

No effect determination for threatened and endangered species on January 21, 2014.

-----Original Message-----
From: Walther, David [mailto:david_walther@fws.gov]
Sent: Tuesday, January 21, 2014 2:31 PM
To: Wilkinson, Laura L MVN
Subject: [EXTERNAL] Re: no affect determination for St. Mary's Safehouse (UNCLASSIFIED)

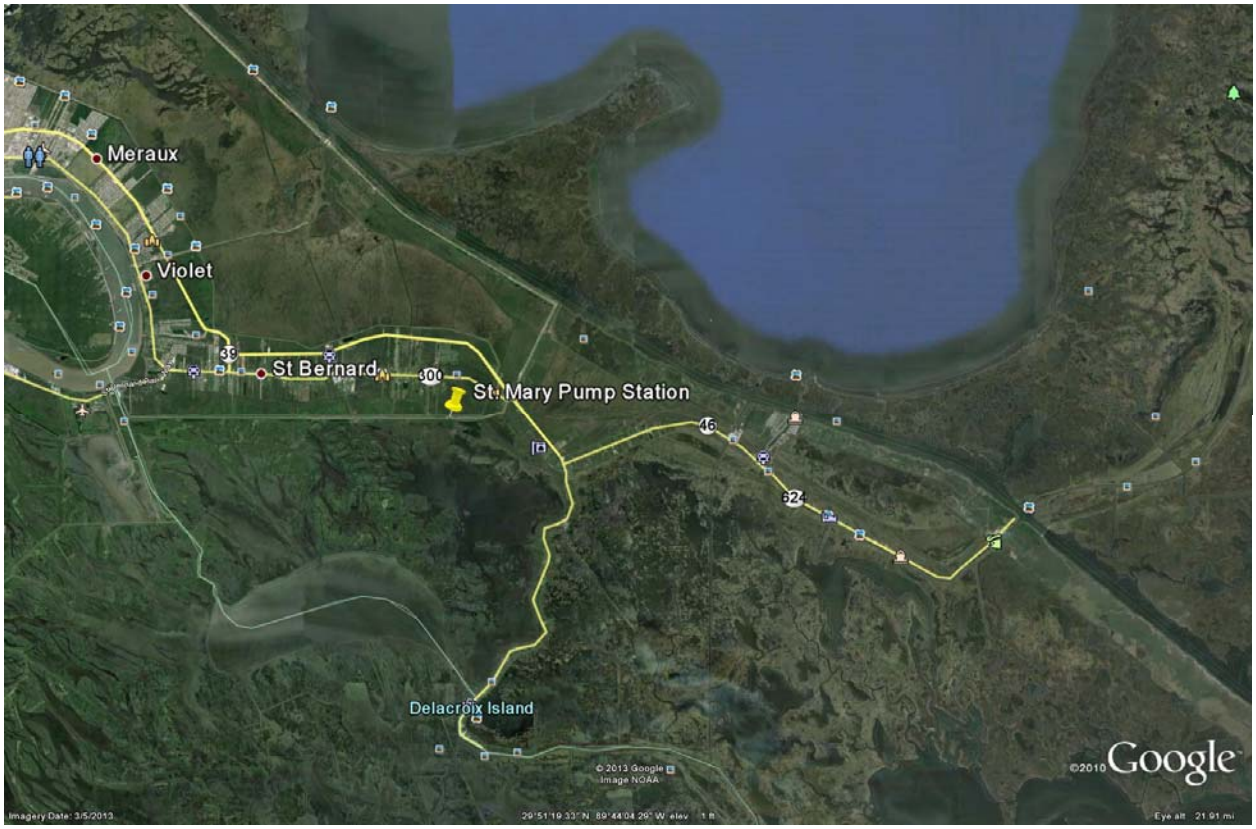
Laura Lee,

I have checked our screening map and agree with your "no effect" determination. No further ESA coordination is necessary at this time.

On Tue, Jan 21, 2014 at 12:10 PM, Wilkinson, Laura L MVN <Laura.L.Wilkinson@usace.army.mil> wrote:

Classification: UNCLASSIFIED
Caveats: NONE

Hi,
I have a new Environmental Assessment that I am working on where we would like to install a 10'X22' prefabricated concrete safe house within the footprint of the St. Mary's Pump station in St. Bernard Parish, Louisiana. The area was recently impacted by the HSDRRS Chalmette Loop construction and is still considered under construction b/c it has not been turned over to the local sponsor. As part of the construction, I do not see any impacts to threatened or endangered species, wetlands, wildlife, bottomland hardwoods, or any water resources. As such, I would like to make a "no effect" determination but wanted to check with you to see if I needed to draft an official coordination letter. Attached is the St. Mary Pump Station site, a zoomed out google earth with the lat/long information, the map of where the bald eagle nest is (which I believe is ~3.75 miles away), and preliminary layout information for the safehouse.
Thanks,
Laura Lee Wilkinson
Biologist
CEMVN PDN-UDP


Meraux
Violet
St Bernard
St. Mary Pump Station
Delacroix Island
©2010 Google

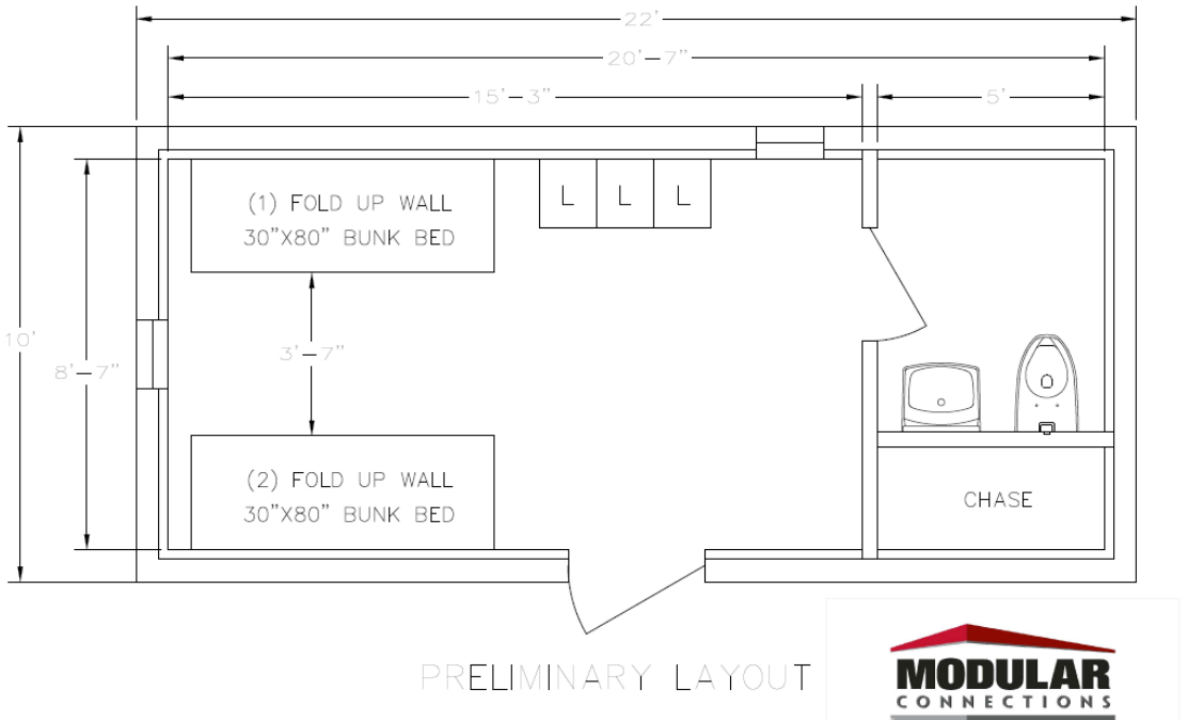

22'
20'–7"
15'–3"
5'
10'
8'–7"
3'–7"
(1) FOLD UP WALL
30"X80" BUNK BED
L
L
L
(2) FOLD UP WALL
30"X80" BUNK BED
CHASE
PRELIMINARY LAYOUT
MODULAR
CONNECTIONS

Figure 2 – St. Mary's Pump Station during construction of the LPV 148.02A floodwall

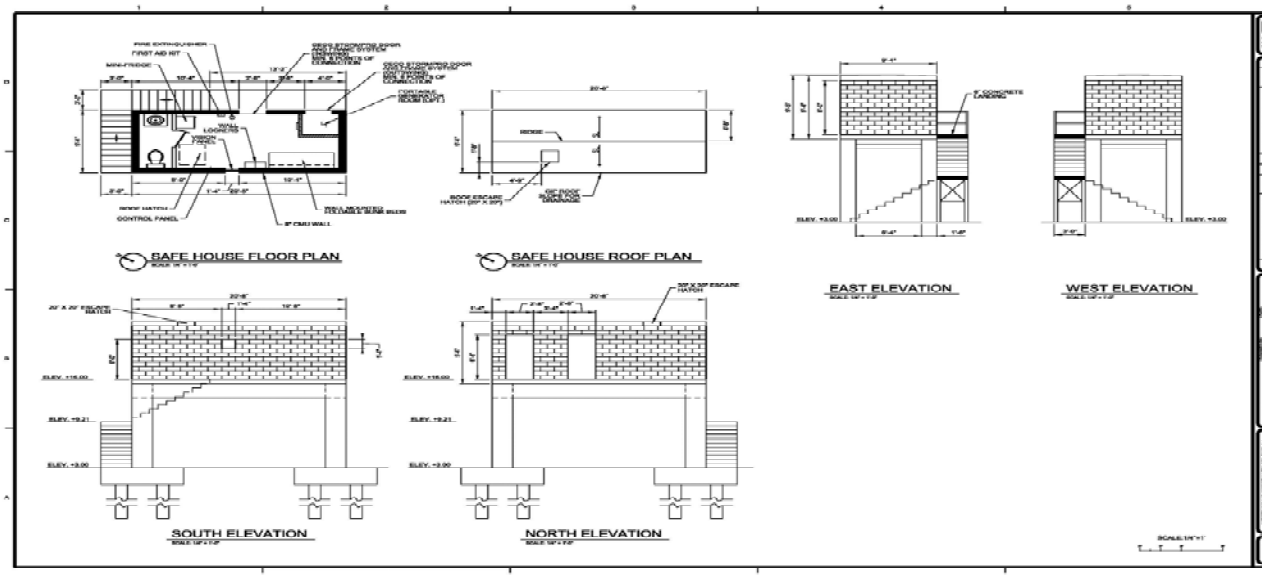


Figure 3 – Typical emergency shelter/safehouse vertical design for St. Mary's Pump Station

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

17 MAR 2014

Regional Planning and
Environment Division, South

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.

Pam Breaux 4-8-14
Pam Breaux Date
State Historic Preservation Officer

Ms. Pam Breaux
State Historic Preservation Officer
Department of Culture, Recreation and Tourism
Office of Cultural Development
P.O. Box 44247
Baton Rouge, Louisiana 70804

Re: St Mary Pump Station Safe House, St Bernard Parish, Louisiana.

Dear Ms. Breaux:

The U.S. Army Corps of Engineers, New Orleans District (The Corps) is proposing to build a Safe House for protection of personnel, at the St. Mary Pump Station (also called Pump Station #8) in St. Bernard Parish. The location of the Pump Station can be seen in the enclosed images.

The St. Mary Pump Station was constructed in 1996, and was repaired/overhauled after 2005 as part of the improvement to the LPV148 St. Bernard portion of protection levee. St. Mary Pump Station is less than 50 years old and is not exemplary of historic construction techniques or pumping technology. The LPV148 levee upon which the Pump Station is located, is modern and artificial construction that does not hold potential to contain a cultural resource. The Safe House currently proposed would be constructed adjacent to the existing Pump Station and on top of artificial levee.

Cultural Resources study of the LPV148 corridor, including the St. Mary Pump Station, was undertaken in 2006. No cultural resources were recorded for this portion of levee. The conclusion of no historic properties affected was coordinated with the Individual Environmental Report (IER) #10 (Goodwin and Associates, Inc. 2008; 22-3165), and with the Draft Report for the Lake Pontchartrain and Vicinity Project Area in 2011 (Heller et al. 2011; 22-3804).

The Corps concludes that there are no historic properties affected by this project. We ask that you provide comments to this conclusion within 30 days. Please contact Dr. Paul Hughbanks, (504) 862-1100, Paul.J.Hughbanks@usace.army.mil, with any questions or comments.

Sincerely,

Joan M. Exnicios

Joan M. Exnicios
Chief, Environmental Planning Branch

RECEIVED
MAR 17 2014
ARCHAEOLOGY

Enclosures

BOBBY JINDAL
GOVERNOR

STEPHEN CHUSTZ
INTERIM SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF COASTAL MANAGEMENT

March 28, 2014

Laura Lee Wilkinson
Corps of Engineers- New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

RE: **C20080556 mod 02,** Coastal Zone Consistency
New Orleans District, Corps of Engineers
Direct Federal Action
SEA # 527: Construct St. Mary Pump Station Safe House for IER 10, the Chalmette Loop Levee
St. Bernard Parish

Dear Ms. Wilkinson:

The above referenced modification has been reviewed for consistency with the Louisiana Coastal Resources Program in accordance with Section 307 (c) of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in this application, is consistent with the LCRP. If you have any questions concerning this determination please contact Carol Crapanzano of the Consistency Section at (225) 342-9425.

Sincerely,

Don Haydel
Acting Administrator
Interagency Affairs/Field Services Division

DH/JDH/cmc

cc: David Butler, LDWF
William McCartney, St. Bernard Parish
Frank Cole, OCM FI

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APPENDIX 2

Migratory Bird Treaty Act
&
Bald and Golden Eagle Protection Act
Best Management Practices

MIGRATORY BIRD TREATY ACT and
BALD AND GOLDEN EAGLE PROTECTION ACT
BEST MANAGEMENT PRACTICES

Colonial nesting wading birds (including but not limited to, herons, egrets, and Ibis), seabirds/water-birds (including, but not limited to terns, gulls, Black Skimmers, and Brown Pelicans) and bald eagles are known to roost, forage and nest in the project area. The birds and their nests are protected by the Migratory Bird Treaty Act (MBTA) and must not be disturbed or destroyed. As such, in areas near known rookeries, nesting prevention measures may be necessary in order to insure the success of the nesting season. These measures would be developed by CEMVN in coordination with USFWS and LDWF and would be implemented by a trained biologist. The nesting activity period extends from 15 February through 1 September for colonial nesting wading and seabirds/water birds, and September to May for bald eagles. Therefore, the nesting prevention measures should begin well before February.
CEMVN and USFWS biologists will conduct surveys prior to construction to determine the presence and/or location of any eagle's nests, colonial nesting wading/water birds and/or rookeries and if nesting prevention measures would be necessary. Nest prevention measures shall be intended to deter birds from nesting within applicable the designated buffer zone of construction areas without physically harming birds or disturbing any existing nests. Nest prevention measures may be used in combination and/or adjusted to be most effective.
At minimum, nest prevention measures shall include, but not be limited to the following:

- Flagging/Streamers
- Vehicular/Pedestrian Traffic
- Clapping and Yelling
- Horn Blowing

Once work has commenced, the presence of nesting eagles, wading birds and/or seabirds/water-birds within the minimum distances from the work area, as specified in paragraph entitled "No Work Distances", shall be immediately reported to the Environmental Technical Manager, Ms. Tammy Gilmore, of the U.S. Army Corps of Engineers at (504) 862-1002 email address tammy.h.gilmore@usace.army.mil

No Work Distances

No-work distance restrictions are as follows:

- o Terns, Gulls, and Black Skimmers -650 feet;
- o Colonial nesting wading birds -1,000 feet; and,
- o Brown Pelicans -2,000 feet; and,
- o Bald Eagles -660 feet.

Coordination by the New Orleans District personnel with the U.S. Fish and Wildlife Service may result in a reduction or relaxing of these no-work distances depending on the species of birds found nesting at the work site and specific site conditions.

APPENDIX 3
Air Quality

St. Mary Pump Station Safe House
Verret, St. Bernard Parish, LA

Table 1
Combustible Emissions

Assumptions for Combustible Emissions					
Type of Construction Equipment	Number of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Diesel Crane	2	300	10	113	678000
Diesel Crane, Hydraulic	1	400	8	30	96000
Diesel Bull Dozer	1	150	8	60	72000
Diesel Excavator	2	315	8	30	151200
Diesel Dump Truck	1	350	6	30	63000
Diesel Road Compactor	1	340	8	30	81600
Water Truck	1	350	6	60	126000
Cement Truck	1	350	8	2	5600
Generator Set	1	750	10	30	225000

Table 2
Emission Factors

Type of Construction Equipment	SO2 g/hp-hr	SO2 lbs/hp-hr
Diesel Crane	1.070	0.0024
Diesel Crane, Hydraulic	1.070	0.0024
Diesel Bull Dozer	1.070	0.0024
Diesel Excavator	1.070	0.0024
Diesel Dump Truck	1.070	0.0024
Diesel Road Compactor	1.070	0.0024
Water Truck	1.070	0.0024
Cement Truck	1.070	0.0024
Generator Set	1.070	0.0024

Convert grams to pounds: (g) x (.0022) = lbs

Emission Factors derived from the EPA's NONROAD2010 model

Table 3

Annual VOC and NOx Emissions Totals

Total Calculated Emissions	
Type of Construction Equipment	SO2 lbs/hp-hr
Diesel Crane	0.814
Diesel Crane, Hydraulic	0.115
Diesel Bull Dozer	0.086
Diesel Excavator	0.181
Diesel Dump Truck	0.076
Diesel Road Compactor	0.098
Water Truck	0.151
Cement Truck	0.007
Generator Set	0.270
TOTALS	1.798

Emissions Formula: (lbs/hp-hr)x(hp)x(hr)x(days)x(# of units)/2000 = Tons/yr

NOTE: The listed equipment is the type and number of equipment that may typically be used at a pump station safe house construction project.