

Appendix D
Eight-Step Decision Document

MAGNOLIA RIDGE PUMP STATION
Executive Order 11988 and 11990 – Floodplain Management and Wetland Protection
Eight-Step Decision Making Process

Executive Order (EO) 11988 (Floodplain Management) requires federal agencies “to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of the floodplain and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” Similarly, EO 11990 requires federal agencies “to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.” FEMA’s implementing regulations are codified under 44 CFR Part 9, which includes an eight step decision making process for compliance with this part.

This eight step process is applied to the proposed St. Charles Magnolia Ridge Pump Station. The proposed project area is within the 100-year floodplain of Magnolia Ridge Watershed. The steps in the decision making process are as follows:

Step 1 Determine if the proposed action is located in the Base Floodplain and Wetland.

The Magnolia Ridge Pump Station involves the construction of a 500 cubic feet per second (cfs) pump station and a detention pond at the southernmost point in the watershed area in Boutte, Louisiana (Latitude: 29.862917; Longitude: -90.409203). The detention pond will serve as an intake basin (“sump”) for the pump station, in conjunction with an earthen levee built to elevation +7.5 National Geodetic Vertical Datum (NGVD) and a perimeter access road. The project area will span 135 feet by 80 feet and will include equipment consisting of pumps, electric motors, controls, and a generator which will sit on an exterior pad, elevated above the base flood elevation (BFE).

Four (4) pumps, each with a capacity of 125 cfs, will meet the required station capacity of 500 cfs. The mechanical and electrical equipment will be housed inside the metal pre-fabricated building which will be elevated above (BFE). Fuel for the engines and backup generator will be stored in a double walled tank inside the station footprint.

The pump station will discharge over the elevation +7.5 levee. The centerline of the discharge pipes will be 11 feet above existing grade. Additionally, the discharge side of the pump station will be fortified through the installation of a 2-foot thick riprap mat to prevent scouring on the flood side of the station.

The construction of the pump station and the required excavation will require the use of Temporary Retaining Structures (TRS), consisting of steel sheet piling, with associated walers and tiebacks to provide a secure braced excavation. Dewatering will be required in order to provide a dry bottom for the construction of a concrete foundation consisting of footings supported by timber pilings. Structural backfill will be required for the construction of the station foundation and substructure.

The pump station will be sized to accommodate both the storm water from the parallel canal along the Magnolia Ridge Levee as well as the Paradis Canal north of the closure structure during a high

storm surge event. The station will have the capability of being operated remotely by the St. Charles Parish Department of Public Works during a flood event.

The majority of St. Charles Parish consists of low elevation marsh-coastal areas. During heavy rainfall and tidal surge events, this area experiences flooding of structures and streets from Lake Pontchartrain, Lake Salvador, and Lake Catacuchte. Currently, there are 231 residences, 41 businesses, 2 public buildings, and 25 school/hospital/church buildings within the AE Flood Zone of the Magnolia Ridge watershed area, which encompasses parts of Boutte and Paradis, Louisiana. According to FEMA's preliminary Flood Insurance Rate Map (FIRM), Panel No. 22089C0250D, revised November 9, 2012, retrieved from the FEMA RiskMAP6 website (<http://www.riskmap6.com/>) on April 4, 2016, the proposed pump station site is located in a Zone AE with a Base Flood Elevation of +6 North American Vertical Datum, 1988 (NAVD).

The entire project area will be located within the 100-year floodplain ("Base Floodplain") of Paradis Canal. The floodplain in relation to the proposed project location is depicted below in Figure 1, FIRMette and Figure 2, FEMA Risk Map Flood Information for St, Charles, LA.

Figure 1: FIRMette.

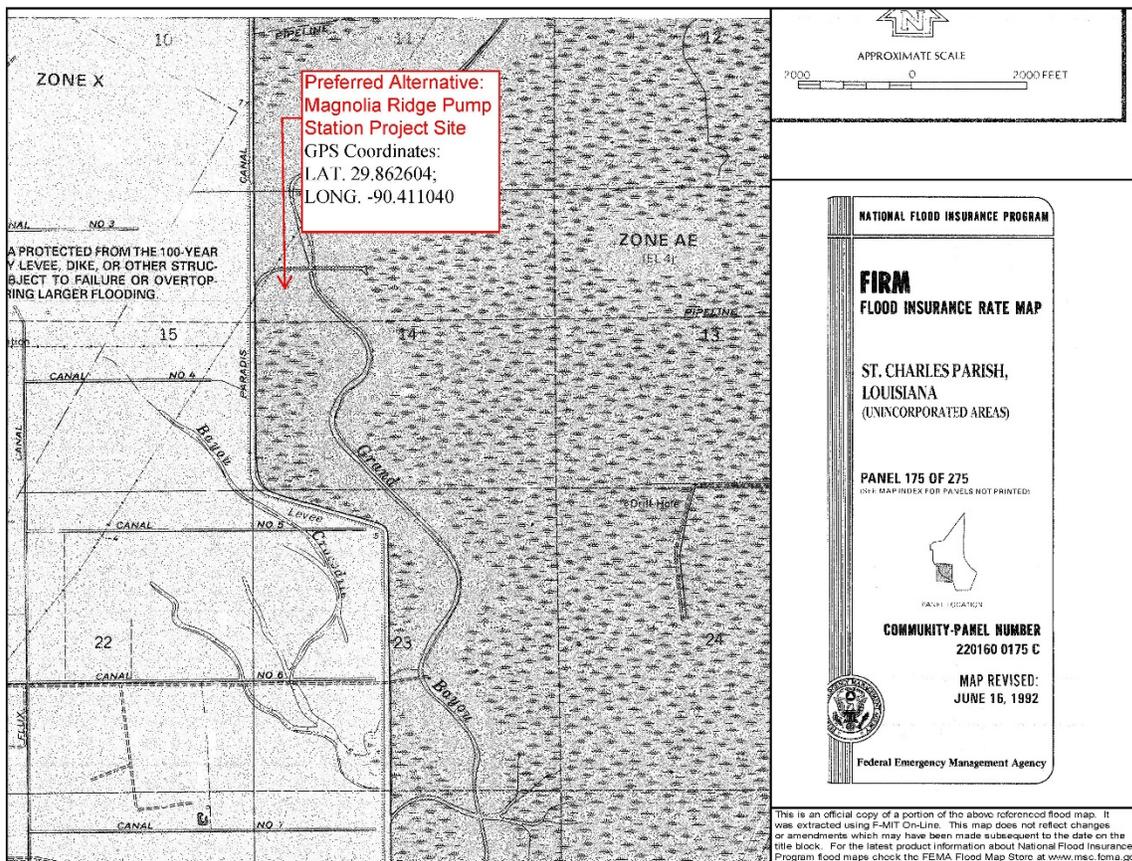
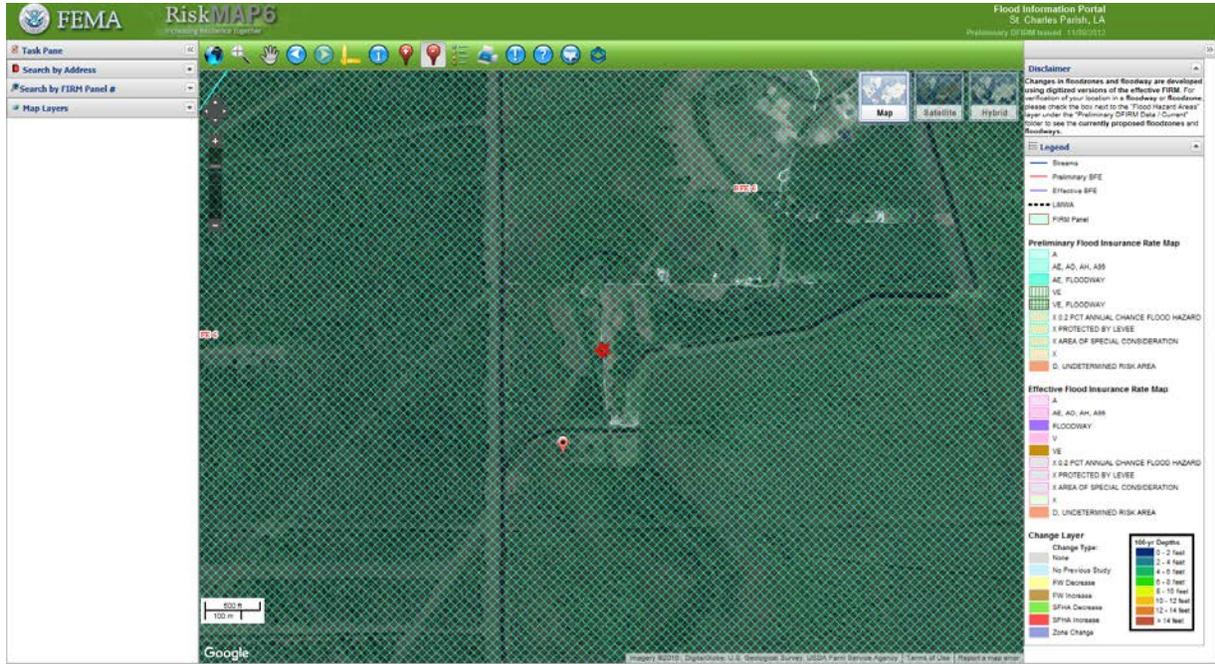
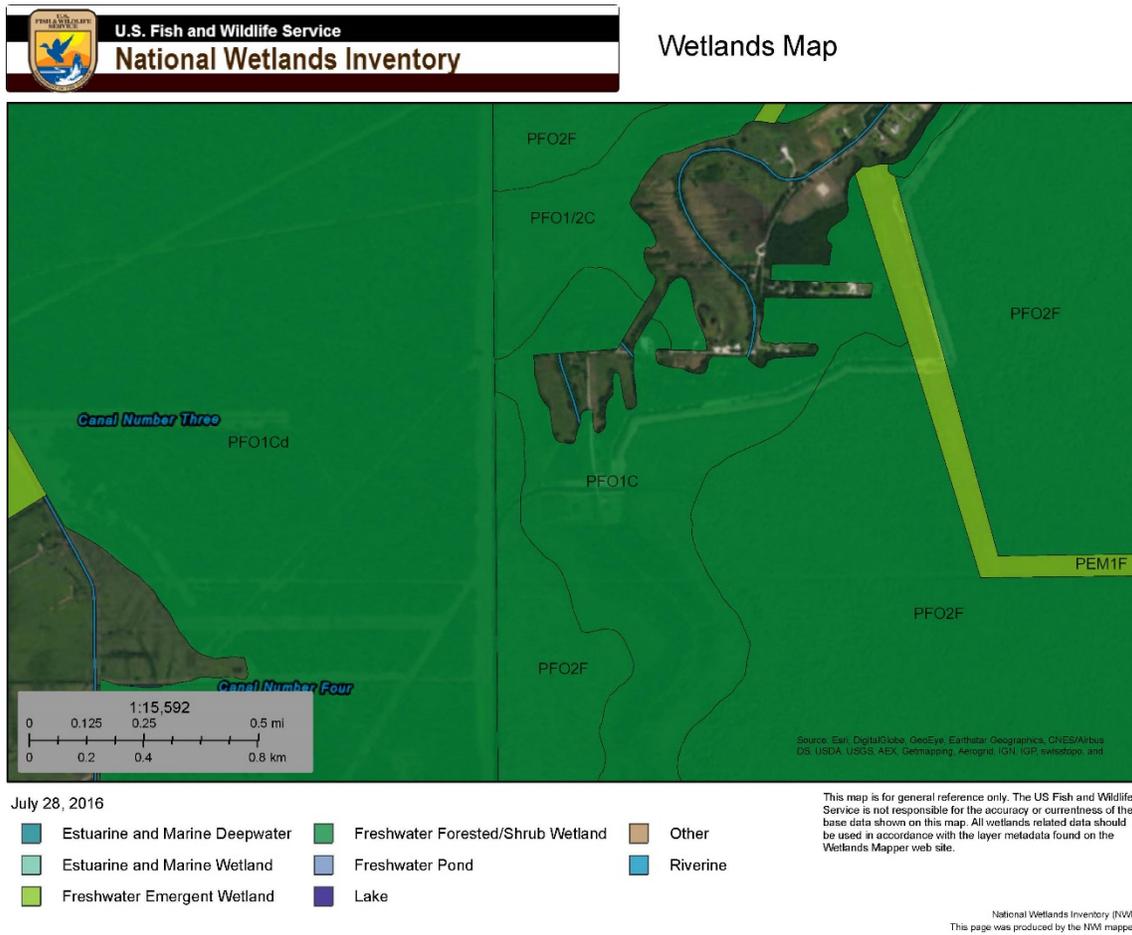


Figure 2: FEMA Risk Map Flood Information for St, Charles, LA.



The National Wetlands Inventory map identified Freshwater Forested/Shrub wetlands within the project area. The USACE jurisdictional determination further refined the wetland type by identifying 29.7 acres of bald cypress/tupelo swamp and 37.3 acres of bottomland hardwoods within the project area. The floodplain in relation to the proposed project location is depicted below in Figure 3, Wetland Map.

Figure 3: Wetland Map.



Step 2 Early public notice (Preliminary Notice).

A Joint Public Notice for the Magnolia Ridge Phase of the WBHPL, which includes the Proposed Action alternative, was published in the Times-Picayune regional newspaper on May 6, 2013, and has been discussed at numerous public meetings held in St. Charles Parish, during which public hearings were held.

Step 3 Identify and evaluate alternatives to locating in the base floodplain and wetland.

Two alternatives were identified and evaluated under the Environmental Assessment, the No Action alternative and the Proposed Action alternative. The proposed Magnolia Ridge Pump Station project, is part of a larger flood protection project, the St. Charles Parish West Bank Hurricane Protection Levee (WBHPL). The WBHPL is a three (3) phased nine (9) mile earthen levee alignment that extends from the Sunset Levee on the western flank in Des Allemands to the Davis Pond West Guide Levee to the east in Luling. Each phase of the WBHPL includes several other separate projects not included in this project proposal such as: three (3) new drainage pumping stations, numerous T-Walls at pipeline crossings and existing pump stations, and tidal exchange structures which are necessary to address both the interior drainage and the encapsulated wetlands ecosystem. None of the separate projects have been/are being funded by FEMA. To that end, location of the Magnolia Ridge Pump Station is contingent on the location of the larger WPBPL so relocation outside the 100-year floodplain and wetland was considered, but rejected. The WBPHL is being constructed to provide residents of the West Bank of St. Charles Parish with flood protection during heavy rain and storm surge events. Should the other phases of the WBHPL be constructed and the No Action alternative be selected, residents of the Magnolia Ridge watershed area would be vulnerable to severe flooding. Interior drainage during heavy rain events would have to be drained via the deployment of temporary pumps to prevent the flooding of residences, streets, utilities, etc. This process is often timely, expensive, and less effective. The cumulative impacts to the environment (resources) resulting from the flooding would be significant. Therefore, the no action alternative has been considered, but rejected.

Step 4 Identify impacts of proposed action associated with occupancy or modification of the floodplain and wetland.

Per 44 CFR 9.10 FEMA must consider whether the proposed action will result in an increase in the useful life of any structure or facility in question, maintain the investment at risk and exposure of lives to the flood hazard, or forego an opportunity to restore the natural and beneficial values served by floodplains or wetlands. FEMA should specifically consider and evaluate impacts associated with modification of floodplains; additional impacts which may occur when certain types of actions may support subsequent action which have additional impacts of their own; adverse impacts of the proposed actions on lives and property and on natural and beneficial floodplain values; and these three categories of factors: flood hazard-related factors, natural values-related factors, and factors relevant to a proposed action's effects on the survival and quality of wetlands.

Per 44 CFR, natural values-related factors include, water resource values (natural moderation of floods, water quality maintenance, and ground water recharge); living resource values (fish and wildlife and biological productivity); cultural resource values (archaeological and historic sites, and open space recreation and green belts); and agricultural, aqua cultural and forestry resource values. Factors relevant to a proposed action's effects on the survival and quality of wetlands include public health, safety, and welfare, including water supply, quality, recharge and discharge; pollution; flood and storm hazards; and sediment and erosion; maintenance of natural systems, including conservation and long term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and other uses of wetlands in the public interest, including recreational, scientific, and cultural uses.

Construction of the Pump Station in the floodplain would increase the risk of structural damage to the pump station and its ancillary components due to flooding. It is not anticipated that the Proposed Action would result in an increased base discharge nor should it increase the flood hazard potential to other structures. The purpose of this action is to reduce impacts of flooding. Ideally collectively enhance flood protection for this area. The addition of a pump station will strengthen future recovery and resiliency efforts through increased protection of life, safety, and infrastructure during a flood event.

As stated under Steps 1 and 3, the surrounding area is well developed and construction of the larger levee system is underway. The addition of a new pump station is anticipated to extend the useful life of the surrounding communities' infrastructure and will not encourage future development in the floodplain beyond the current conditions. The parcel does not offer suitable habitat for any federally listed species, but could support native plant and wildlife species if allowed to return to its native state.

The functions of the floodplain to provide flood storage and conveyance, filter nutrients and impurities from runoff, reduce flood velocities, reduce flood peaks, moderate temperature of water, reduce sedimentation, promote infiltration and aquifer recharge, and reduce frequency and duration of low surface flows will remain intact after the implementation of the project. There will be minor reductions in these services due to the conversion of the approximately 2 acres of undisturbed land, but there will not be significant adverse impacts to these services provided by the floodplain. The Development of the site will not impact groundwater recharge. Water quality may be impacted during the construction phase due to sedimentation and run-off. These impacts are considered to be minor and temporary effects to water quality that would be at or below water quality standards or criteria. The proposed action would not cause or contribute to the exceedance of current water quality standards on a short-term or prolonged basis.

Based on the U.S. Fish and Wildlife Services (USFWS) National Wetlands Inventory map available online at the National Wetlands Inventory website (<http://fws.gov/wetlands/>) on January 12, 2016, Freshwater Forested/Shrub wetlands were identified in the project area. The USACE has indicated that 29.7 acres of bald cypress/tupelo swamp and 37.3 acres of bottomland hardwoods will be impacted as a result of this project. As a result, the project will likely impact local wetland ecology.

Floodplains also provide services in the form of providing fish and wildlife habitat, breeding, and feeding grounds. These floodplain values will not be adversely impacted and the overall integrity of the ecosystem will not be impacted. FEMA has determined the project will have no effect on threatened and endangered species and will not adversely modify or otherwise affect critical habitat. The proposed action would have negligible impacts to native species and their habitats and population levels of native species would not be affected. Sufficient habitat would remain functional to maintain viability of all species.

Step 5 Design or modify the proposed action to minimize threats to life and property and preserve its natural and beneficial floodplain and wetland values.

Best management practices (BMPs) are included in the Section 7 Mitigation Measures of the EA. Implementation of the Section 7 measures is a requirement of the EA's Finding of No Significant

Impact (FONSI). As explained above, construction of the pump station is not expected to result in an increased base discharge nor will it increase flood hazard to other structures or encourage further development in the floodplain.

In order to reduce the impacts identified in Step 4 of flooding on the proposed ancillary structure and its occupants, the structure and its supporting utilities will be elevated at or above the 100-year elevation. The finished floor of the metal pre-fabricated building, electrical components and generator will be at or above the 100-year flood elevation of 6 feet. In addition, St. Charles Parish has received a letter of approval from the local floodplain administrator and will obtain required permits prior to initiating work (see Appendix B).

St. Charles Parish obtained a Department of the Army Permit (MVN-2000-0722-EOO) under Section 404 of the Clean Water Act issued March 19, 2002 and re-authorized for the proposed project on August 12, 2014. Although wetlands will be impacted, USACE compulsory wetland mitigation will compensate the loss of those natural resources when the permittee purchases 37.7 acres of cypress tupelo swamp wetlands and 56.2 acres of bottomland hardwood wetlands from the Riverside Coastal Mitigation Lands. In addition, a Coastal Use Permit (C.U.P. No. P20121273) was issued August 8, 2014. The Parish will adhere to the conditions of these permits which seek to minimize potential adverse impacts to and from the floodplains, wetlands, and coastal resources. Furthermore, unavoidable impacts to vegetated wetlands will be mitigated through payments to a Louisiana Department of Natural Resources (DNR) and U.S. Army Core of Engineers (USACE) approved mitigation bank.

All coordination pertaining to these activities and applicant compliance with any additional conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.

Step 6 Re-evaluate the proposed action.

The project will not expose any segment of the population to flood hazards and will instead afford the population additional protection from future flood hazards. The action will not facilitate development in the floodplains to any greater degree than non-floodplain areas of the community. The project will not aggravate the current flood hazard because the facilities would not impede or redirect flood flows. The project will not disrupt floodplain values because it will not change water levels in the floodplain, and will not reduce habitat in the floodplain.

Unavoidable impacts to vegetated wetlands will be mitigated through payments to a Louisiana DNR and USACE approved mitigation bank. Therefore, it is still practicable to construct the proposed project within the floodplain.

Alternatives consisting of locating the project outside the floodplain and wetland or taking “no action” are not practicable.

Step 7 Final Notification

In accordance with 44 CFR § 9.12, St. Charles Parish must prepare and provide a final public notice 15 days prior to the start of construction activities. The final public notice must provide

the public with an explanation of the final decision that the floodplain is the only practicable alternative.

Step 8 Implement the action

The proposed St. Charles Magnolia Ridge Pump Station will be constructed in accordance with applicable floodplain development requirements, USACE permit conditions, and adhere to the grant conditions outlined this decision document and the Environmental Assessment.