Lafourche Parish Government

RESTORE ACT
MULTIYEAR IMPLEMENTATION PLAN

AMENDMENT – PHASE II & III Grand Bayou Freshwater Reintroduction

February 2018

MULTIYEAR IMPLEMENTATION PLAN

Lafourche Parish's Multiyear Implementation Plan (multiyear plan) was adopted by the Lafourche Parish Council on October 27, 2015 and was accepted by the Treasury on February 18, 2016. As an update to Lafourche Parish's initial RESTORE Act Multiyear Plan, the project described in this amendment will be finalized after the public comment period described below has concluded.

Public Review and Comment Period

The draft amendment to the multiyear plan shall be published and made available for public review and comment for a minimum of forty-five (45) days in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations in accordance with 31 C.F.R. 34.503(b)(4) and 34.503(g). Public comments on the draft multiyear plan were accepted from May 22, 2018-July 8, 2018, and from February 28, 2018 to April 15, 2018, by both email and regular mail. A second public notice period was needed due to a correction that needed to be made to the amended matrix and narrative. The detail narrative remained the same for both comment periods.

The draft multiyear plan was made available on the Lafourche Parish website (http://www.lafourchegov.org) with explicit instructions regarding how to submit public comments. In addition, the draft multiyear plan was presented to the Lafourche Parish Council on February 27, 2018. A hard copy of the amendment was available for viewing at the Lafourche Parish Government Complex in Mathews, LA.

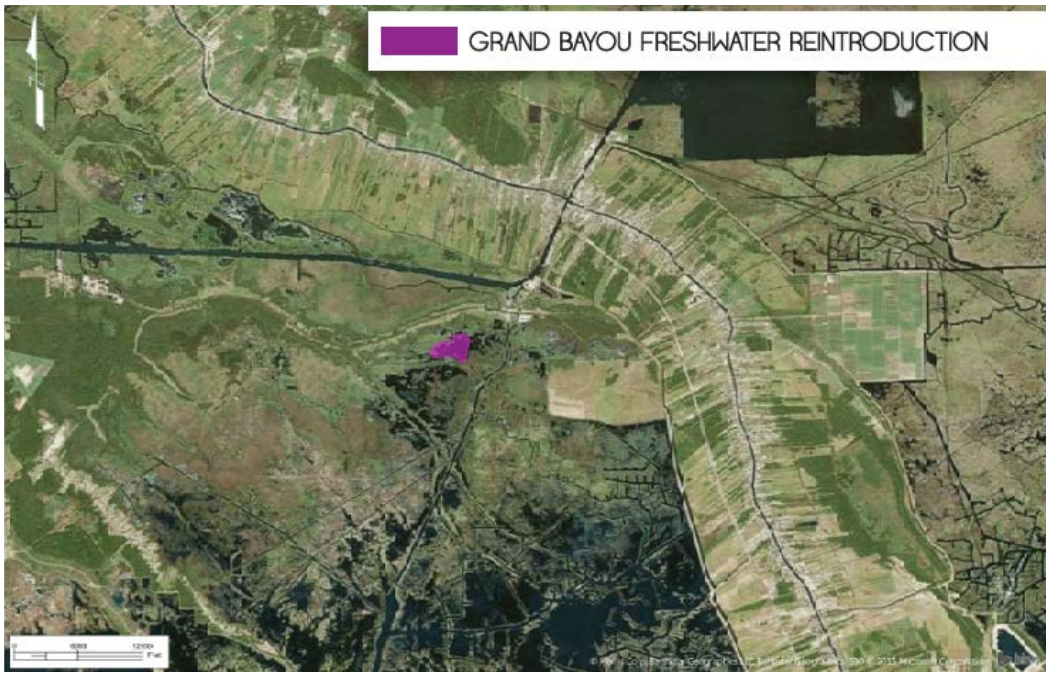
No public comments were received during the comment period.

The Lafourche Parish Council adopted Resolution No. 18-131 on May 8, 2018 to approve the Lafourche Parish Implementation Plan. The Lafourche Parish Coastal Zone Manager submitted the multiyear plan to Treasury for acceptance on July 25, 2018.

Grand Bayou Freshwater Reintroduction
Phase II and III - Engineering, Design, and Permitting Activities

The Grand Bayou Freshwater Reintroduction Project consists of the following three planning phases: Phase I project was included in Lafourche Parish's initial multiyear plan and funded by Treasury at $79,870 for the creation of a preliminary engineering and design report that will

identify project areas or components that are most feasible, and outline a recommended path forward for project implementation. Phase II is to create a modeling technical report that will describe the study methodology, assumptions, model development and results. Phase III is to complete 100% engineering and design package that will finalize construction plans and specifications and complete bid documents. The primary goal of this underlying restoration project is to increase the flow of freshwater from the Atchafalaya River down Grand Bayou Canal via the Gulf



Intracoastal Waterway (GIWW). The future construction phase is to increase the flow of freshwater from the GIWW into Grand Bayou Canal from approximately 600 cubic feet per second to 1,600 cubic feet per second; redirect much of the freshwater from Grand Bayou Canal into the marshes east and west of Grand Bayou Canal; create 112 acres of fresh marsh; and nourish an additional 14 acres of intermediate marsh west of Grand Bayou Canal near Highway 24. The completion of Phase II and Phase III engineering, design, and permitting activities are required to advance the project toward implementation.

Need

To complete Phase II and Phase III engineering and design, and permitting activities to advance the project toward implementation. Without restoration, this region will continue to see the breakup of marshes and the conversion of low salinity marshes to brackish and saline marsh. More than 16,000 acres of marsh have been lost in this area since 1949, and a significant amount of this land loss may be attributed to direct removal and altered hydrology from canal dredging. Altered hydrology remains a current cause of land loss along with high rates of subsidence, which

are estimated to be between 2.1 and 3.5 feet/ century (LCWCRTF 1999). Because of the high number of canals that have been dredged in the area, high salinity Gulf waters move rapidly northward into the marshes within the project area from Lake Felicity and Lake Raccourci. The amount of high salinity waters moving north is increasing as the marshes continue to breakup and disappear. The only freshwater input to this area originates from the GIWW along the northern project boundary. The freshwater inflow from the GIWW is restricted by the small cross-section of the channel north of the Highway 24 Bridge that could be dredged and the cross-section of the channel for several thousand feet south of that bridge. There is also a restriction (earthen plug) in Margaret's Bayou, which prevents freshwater from moving east from Grand Bayou into the broken marshes. The wetland loss currently experienced in this area jeopardizes natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands and it makes nearby communities more susceptible to flooding from storm events. This project requires additional data collection and hydrologic analysis, as well as initial permitting to coordinate with agency and flood protection authority representatives.

Purpose

The purpose of this project is to complete engineering, design, and permitting activities to advance the project toward implementation.

Objectives of Phase II and Phase III

Phase II is to create a modeling technical report that describes the study methodology, assumptions, model development and results. The following activities will be undertaken during this Phase:

1. **Conduct hydrologic modeling:** This will include development of model scenarios needed for delineation of marsh areas of interest, hydraulic boundaries, and proposed dredging and spoil placement and to identify water control structures.
2. **Data collection and analysis:** Review existing models, data, and recommend additional data collection to support modeling: This will include obtaining further relevant studies, models, topographic, and monitoring data, data gap analysis, and develop a data collection plan based on project needs and existing data.
3. **Develop model geometry:** This will update model geometry and topography and preform preliminary test simulations
4. **Review existing monitoring data and develop boundary conditions for the model:** This will include obtaining and reviewing data from applicable data sources.

5. **Conduct calibration and verification of the system-wide model**: This will include performing calibration and verification simulations.
6. **Perform model scenarios:** This will establish base conditions and evaluate changes in the water level, velocity, and salinity in the study area and extract predicted values of these variables at several points of interest in the system
7. **Prepare output charges, figures, and tables of water levels and salinity changes:** This will provide time-series charts, maps, animations, and tables reporting on the studied variables.
8. **Create modeling technical report:** The report will describe the study methodology, assumptions, model development and results.

Phase III is to complete 100% engineering and design package that will finalize construction plans and specifications and complete bid documents. The following activities will be undertaken during this Phase:

1. **Prepare 30% design package:** This will include estimated construction cost and duration, permit drawings and application submittal, and ongoing agency coordination.
2. **Prepare 95% design package:** This will include preliminary construction plans and specifications.
3. **Complete 100% engineering and design package:** This will finalize construction plans and specifications and complete bid documents.

RESTORE Act Applicability

This project meets the following eligibility criteria as outlined in the RESTORE Act:

- Restoration/protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region
- Mitigation of damage to fish, wildlife, and natural resources
- Coastal flood protection and related infrastructure

Proposed Schedule

Project dates assume a start date of January 1, 2019 and will be ready to bid by January 2021.

Proposed Funding

Additional RESTORE funds requested are $195,277.

The additional requested funds, along with $412,722 in Spill Impact Component funds through the CPRA Parish Matching Program, will be used to complete these activities.

Success Metrics

Receipt of a 100% engineering and design packet and complete bid documents will be obtained and used as a path forward toward project construction.