March 2022

Cost figures as of: February 2023

Breton Landbridge Marsh Creation (West)
River aux Chenes to Grand Lake (BS-38)

Project Status

Approved Date: 2019 **Project Area:** 561 acres
Approved Funds: $30.2 M **Total Est. Cost**: $31.7 M
Net Benefit After 20 Years: 379 acres
Status: Construction
Project Type: Marsh Creation
PPL #: 28

Location

This project is located in Region 2, Breton Basin, Plaquemines Parish.

Problems

Historically, this area was nourished by the freshwater delivered by the Mississippi River until the creation of the levees along the lower river. In 1991, the Caernarvon Freshwater Diversion began delivering freshwater to the marshes in the area. The major cause of wetland loss has been from storm activity (i.e. Hurricane Betsy and Katrina), causing both storm-induced scouring and salt water intrusion. Altered hydrology and oil/gas development have exacerbated this loss. High subsidence rates range from 2.1-3.5 ft/century. Natural lakes and bays increase in size due to coalescense with marsh lost to water and increased wave fetch. The 1984 to 2020 USGS loss rate is -1.75%/yr for the extended boundary area.

Many areas of once healthy marsh platforms in Breton Sound have converted to open water. Continued marsh loss in this area will affect the overall ecosystem functions within the sound.

Restoration Strategy

The specific goals of the project are to: 1) Create 430 acres of intermediate marsh, 2) Nourish 131 acres of existing intermediate marsh, 3) Maximum the amount of time the created marsh platform is intertidal throughout the 20 year design life of the project, and 4) Use three lake dike designs to provide enhanced containment along the southern perimeter of Grand Lake.

This project will create and nourish marsh along the south side of Grand Lake via confined placement in five fill areas using sediment dredged from Grand Lake. Four of the fill placement areas will be fronted by constructing lake dikes using a combination of bucket dredge and marsh buggies. Only the intertidal lakeside slope of two lake dike designs would be planted with appropriate vegetation. One lake dike design and all of the fill placement areas would not be planted. The non-lakeside portions of the dikes will be gapped (i.e., the lake dikes would not be gapped) no later than three years post construction to reestablish hydrologic connectivity to adjacent wetlands.

The overall landbridge concept incorporates marsh and shoreline restoration in a west-to-east configuration across the basin to be completed in two to three phases. This overall, long-range, restoration goal would create/nourish 1,000 to 2,000 acres of intermediate marsh across seven miles of the Breton Basin from River aux Chenes to Bayou Terre aux Boeufs.

Progress to Date

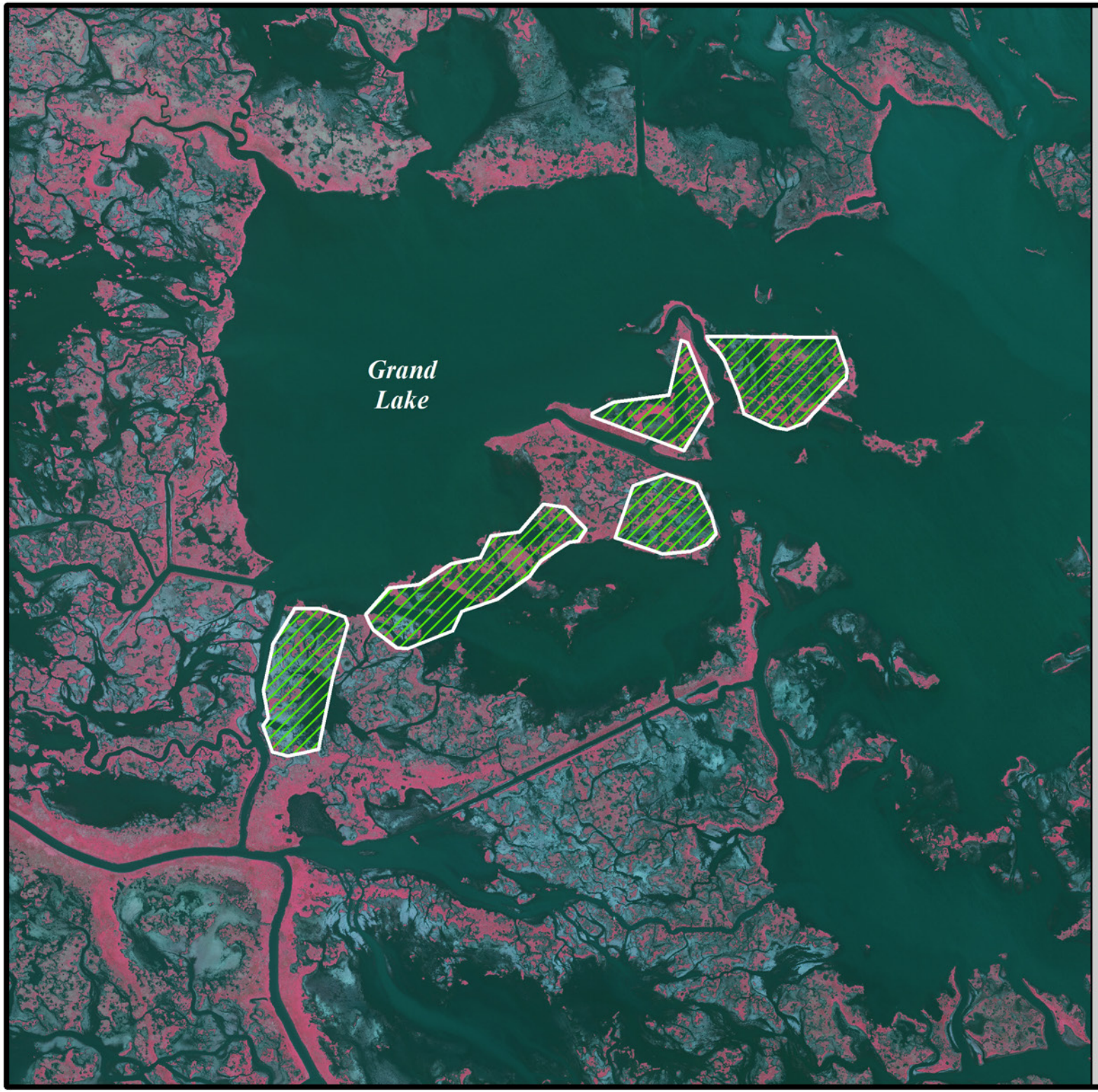
This project was approved for Phase I Engineering and Design in February 2019. The project was approved for Phase II Construction in January 2022.

This project is on Priority Project List (PPL) 28.

For more information, please contact:

Federal Sponsor:
National Marine Fisheries Service
Baton Rouge, LA
(225) 380-0089

Local Sponsor:
Coastal Protection and Restoration Authority
Baton Rouge, LA
(225) 342-4733



Breton Landbridge Marsh Creation (West) (BS-38)

Marsh Creation *

Project Boundary

*denotes proposed features

USGS
science for a changing world

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0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Map Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La.

Background Imagery:
2019 NAIP Photography

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