February 2008 (rev)
Cost figures as of: January 2017

Freshwater Bayou Wetland Protection (ME-04)

Project Status

Approved Date: 1992 **Project Area:** 14,381 acres
Approved Funds: $6.04 M **Total Est. Cost:** $6.05 M
Net Benefit After 20 Years: 1,593 acres
Status: Completed June 1998
Project Type: Hydrologic Restoration and Shoreline Protection
PPL #: 2

Location

The project is located on the west bank of the Freshwater Bayou Canal, approximately 8 miles northeast of Pecan Island, Louisiana. It encompasses 36,928 acres of intermediate marsh and open water in Vermilion Parish.

Problems

Boat wake-induced shoreline erosion, which averaged 12.5 feet per year along each bank of Freshwater Bayou Canal, has deteriorated the spoil banks along the canal, creating multiple breaches that allow tidal erosion of the organic soils in the adjacent wetlands.

Between 1968 and 1990, the bank width of this navigation canal increased threefold (from 172 feet to 583 feet), resulting in the loss of 1,124 acres of coastal wetlands.

Restoration Strategy

Approximately 28,000 linear feet of freestanding, continuous rock dike were built along the west bank of Freshwater Bayou Canal. The USDA Natural Resources Conservation Service and Louisiana Department of Natural Resources worked with the landowner to develop other preservation features in the area. The landowner installed several other structures that were not funded by CWPPRA but will complement CWPPRA project features.

Project effectiveness is being determined by monitoring vegetation, water quality, and changes in vegetated and non-vegetated areas in the project area with aerial photography taken before and after construction. In addition, shoreline change is being measured by comparing pre-construction and post-construction shoreline surveys.

This continuous rock dike will drastically reduce boat wake-induced shoreline erosion.

Progress to Date

Shoreline surveys taken 1 year after construction show that while reference area sites *eroded* at a rate of 9.00 feet per year, the project area *built* land at an average rate of 1.53 feet per year. These data indicate that the rock dike has successfully prevented or significantly reduced erosion of the protected segment of canal bank for the year following construction.

In both the project area and the reference area, monthly mean post-construction salinities were higher at all stations than pre-construction salinities, but project area salinities generally remained within the target range of zero to five parts per thousand. Higher salinities in the post-construction period could be a result of drought and tropical storm activity.

Control of the water level within the project area is being compromised by breeches in the spoil banks along the Freshwater Bayou Canal adjacent to the rock dike. The first post-construction survey of emergent vegetation took place in October 2001, and the data are still under analysis.

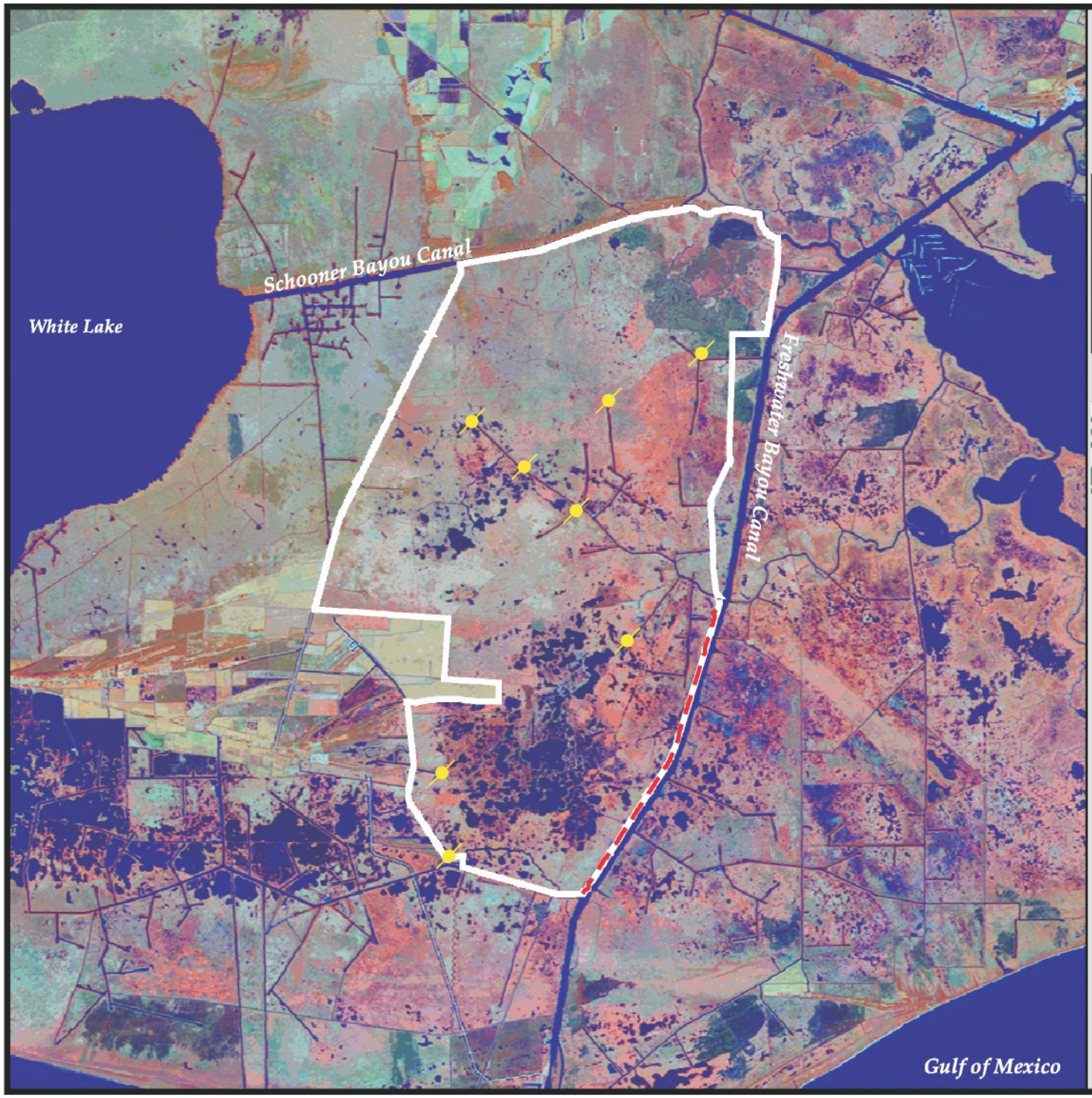
Maintenance surveys of the rock dike were completed in February 1998 and May 2001. Maintenance of the rock dike is currently being implemented.

The 2003 OM&M report concluded that the ME-04 rock dike along the Freshwater Bayou Canal adjacent to CTU1 has worked quite will to reduce erosion along this shoreline, but since the structure is water permeable, it does very little to prevent tidal exchange during high tides and storm surges. This project is on Priority Project List 2.

For more project information, please contact:

Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7756

Local Sponsor:
Coastal Protection and Restoration Authority
Baton Rouge, LA
(225) 342-4736



Freshwater Bayou Wetland Protection (ME-04)

Water Control Stucture (landowner constructed)

Rock Dike

Project Boundary

USGS
science for a changing world

N

1 0 1 2 3 Miles

1 0 1 2 3 Kilometers

Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station

Background Imagery:
Thematic Mapper Satellite Imagery 2000

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