Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2010/2011 Annual Inspection Report

for

FRESHWATER BAYOU CANAL BANK STABILIZATION PROJECT (ME-13)

State Project Number ME-13
Priority Project List 5

April 12, 2011
Vermilion Parish

Prepared by:

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Appendices

I. Introduction

The Freshwater Bayou Canal Bank Stabilization Project (ME-13) is located in the Mermentau Basin on the western bank of the Freshwater Bayou Canal in Vermilion Parish just south of the town of Intracoastal City. Structural components of the project extend from the North Prong/Belle Isle Canal south to the Humble/Acadiana Marina Canal. (See Appendix A).

The Freshwater Bayou Canal Bank Stabilization Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the fifth Priority Project List. The Freshwater Bayou Canal Bank Stabilization Project has a twenty –year (20 year) economic life, which began in June 1998.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Freshwater Bayou Canal Bank Stabilization Project (ME-13) is to evaluate the constructed project features to identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, LDNR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan, 2003). The annual inspection report also contains a summary of maintenance projects which were completed since completion of constructed project features and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the Freshwater Bayou Canal Bank Stabilization Project are outlined in Section IV.

An inspection of the Freshwater Bayou Canal Bank Stabilization Project (ME-13) was held on April 12, 2011 under sunny skies and cool temperatures. In attendance were Dion Broussard, Darrell Pontiff and Mel Guidry from (OCPR), with Loland Broussard and Charles Slocum (NRCS). The inspection began on the southern end of the project at 1:00 pm.

The field inspection included a complete visual inspection of the entire project site. Staff gauge readings when available and existing temporary benchmarks were used to determine approximate water level and foreshore rock dike elevation. Field Inspection notes were completed in the field to verify areas requiring repairs. (see Appendix D).

III. Project Description and History

Constructed between 1965 and 1967, the FBC channel extends from the Gulf Intracoastal Waterway (GIWW) at Intracoastal City to the Gulf of Mexico (GOM), providing safe passage for deep-draft vessels of commercial interests from the GOM to the GIWW. The canal includes a lock at the GOM to reduce saltwater intrusion into the fresh water and low salinity

interior wetlands along the canal. Between 1979 and 1986, approximately 300,000 tons of cargo was transported along FBC, mostly in oil and gas service and supply vessels and commercial fishing boats (U. S. Army Corps of Engineers [USACE] 1989).

The main cause of wetland loss in the ME-13 project area is boat wake-induced erosion of the canal spoil banks and the fragile organic soils of the adjacent marsh along the west bank of the canal (USACE and Louisiana Department of Natural Resources [LDNR] 1994). The subsequent impact of tidal scour and seasonal salinity spikes entering FBC, mainly from Little Vermilion Bay, exacerbates the loss of shoreline marsh in the project area. When completed in 1967, the average bank width of the original FBC channel was 173 ft. By 1990, the average bank width of the channel had more than tripled to 583 ft (Good et al. 1995). Brown and Root (1992) estimated that between 1968 and 1992, shoreline erosion along FBC averaged 12.5 ft/yr on each bank.

The principal project features include:

- Site 1 - Foreshore Rock Dike (approximately 23,193 linear feet)

The original dike was constructed in 1998. The dike was built to elevation +4.0 (NAVD 88) with a four foot crown width and a 1 on 2 side slopes, using 1,100 lb (max-size) stone.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since June 1998, the construction completion date of the Freshwater Bayou Canal Bank Stabilization Project (ME-13).

2005 - Freshwater Bayou Canal Bank Stabilization Maintenance Project – LDNR (Luhr Bros. Contractor): This maintenance project included the installation of approximately 20,987 tons of 1,250 lb gradation stone to repair 9,130 linear feet of bank. Quantity limitations prevented the repair of all sections required. Construction was completed on 12/15/2005. The cost associated with the engineering, design and construction of the Freshwater Bayou Canal Stabilization Maintenance Project is as follows:

Construction:	$464,368.55
Engineering & Design:	$ 2,234.46
Construction Administration:	$ 5,625.00
Construction Oversight/As builts:	$ 15,503.10
Project Total:	**$487,731.11**

Structure Operations: There are no active operations associated with this project.

V. Inspection Results

Site 1—Foreshore rock dike

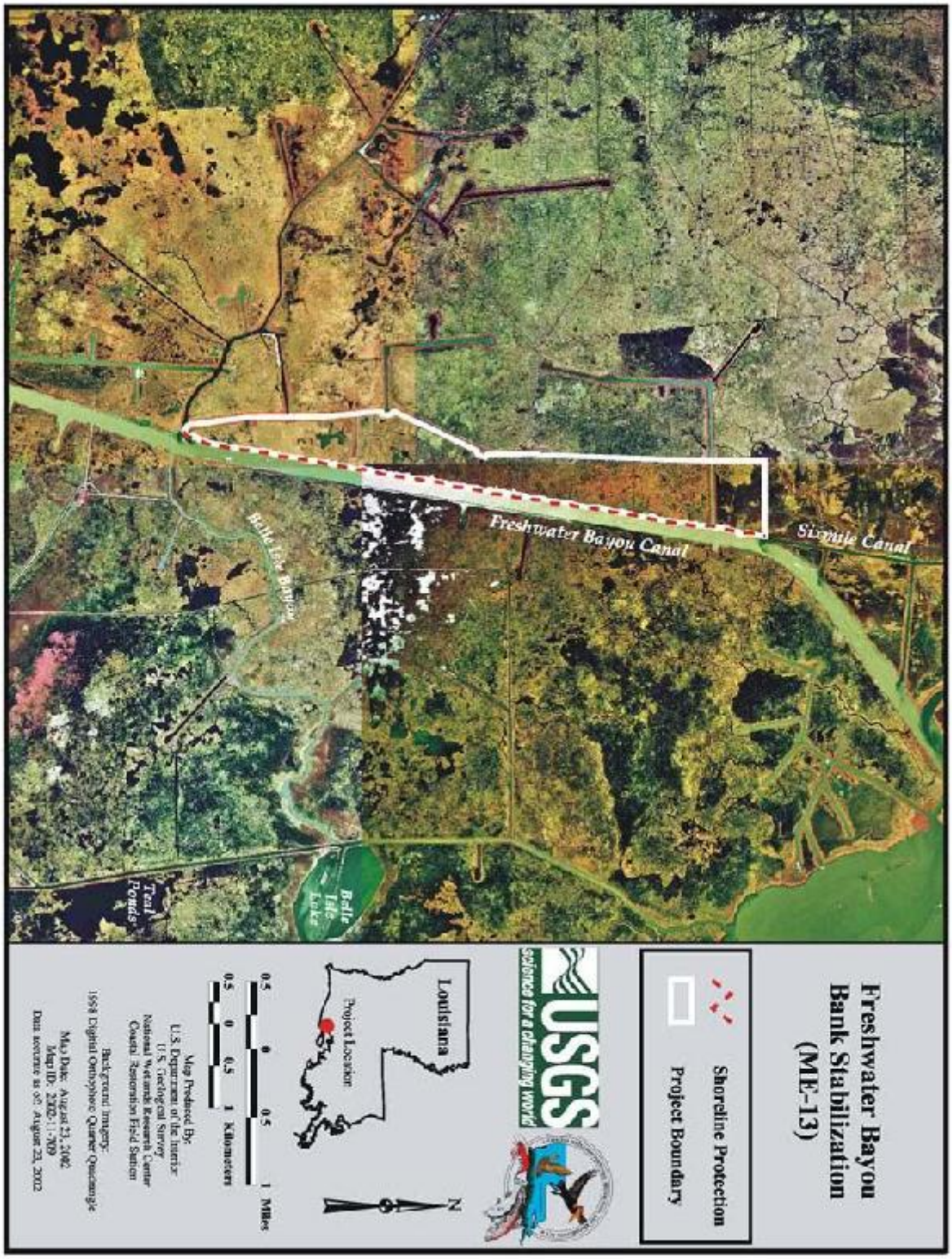
The inspection revealed the 9,130 linear feet of foreshore rock dike repaired in the 2005 maintenance project is in good condition. The additional 7,000 linear feet of foreshore rock dike has numerous sections that are below elevation 4.0 NAVD and have recently been surveyed by NRCS personnel. An estimate will be prepared and a funding request submitted to CWPPRA in the fall of 2011 to restore these sections of rock dike to their original elevation. (Photos: Appendix B, Photos 1-3)

VI. Conclusions and Recommendations

Overall the Freshwater Bayou Canal Bank Stabilization Project is in good condition and appears to have stabilized the erosion of the Freshwater Bayou Canal Bankline. The project area shoreline averaged an erosion rate of -0.03 ft/yr from 1998 to 2009 while the reference area eroded at -7.92 ft/yr. The highest rate of erosion occurred at the north end of reference area 2 where the shoreline retreated 158.8 ft over the time period. The above mentioned 7,000 linear feet of foreshore rock will require a maintenance event FY12-FY13 after the anticipated funding approval in FY11.

Appendix A

Project Features Map


Freshwater Bayou Canal
Belle Isle Bayou
Belle Isle Lake
Teal Ponds
Freshwater Bayou Canal
Shoreline Protection
Project Boundary
USGS
science for a changing world
Louisiana
Project Location
N
0.5 0 0.5 1 Miles
0.5 0 0.5 1 Kilometers
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: August 23, 2002
Map ID: 2002-1-709
Data accurate as of: August 23, 2002

Appendix B

Photographs

Photo No. 1, Typical rock dike

Photo No. 2, View showing accretion behind rock dike

Photo No. 3, View of typical low area showing stable bank behind dike as well as low sections of dike

Appendix C

Three Year Budget Projection

FRESHWATER BAYOU CANAL BANK STABILIZATION / ME-13 / PPL5

Three-Year Operations & Maintenance Budgets 07/01/2011 - 06/30/2014

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Mel Guidry	*Mel Guidry*	*NRCS*	*Mel Guidry*

	2011/2012 (-14)	2012/2013 (-15)	2013/2014 (-16)
Maintenance Inspection	$ 6,086.00	$ 6,269.00	$ 6,457.00
Structure Operation	$ -	$ -	$ -
State Administration		$ 20,000.00	$ -
Federal Administration		$ -	$ -
Maintenance/Rehabilitation			

11/12 Description: E&D for capping of rock dike.

E&D	$ 287,520.00
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	$ 287,520.00

12/13 Description: Capping of rock dike.

E&D	$ -
Construction	$ 2,875,200.00
Construction Oversight	$ 191,680.00
Sub Total - Maint. And Rehab.	$ 3,066,880.00

13/14 Description:

E&D	$ -
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

	2011/2012 (-14)	2012/2013 (-15)	2013/2014 (-16)
Total O&M Budgets	**$ 293,606.00**	**$ 3,093,149.00**	**$ 6,457.00**

O &M Budget (3 yr Total)	**$ 3,393,212.00**
Unexpended O & M Budget	**$ 42,482.00**
Remaining O & M Budget (Projected)	**$ (3,350,730.00)**

Appendix D

Field Inspection Form

Annual Inspection Report
FRESHWATER BAYOU CANAL
BANK STABILIZATION PROJECT
State Project No. ME-13

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-13 Freshwater Bayou

Date of Inspection: April 12, 2011 Time: 1:00 pm

Structure No. N/A

Inspector(s): Dion Broussard, Mel Guidry, Darrell Pontiff (OCPR)
Loland Broussard, Charles Slocum (NRCS),

Structure Description: Foreshore Rock Dike

Water Level : -0.5

Type of Inspection: Annual

Weather Conditions: sunny skies and cool temperatures

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	N/A				
Steel Grating	N/A				
Stop Logs	N/A				
Hardware	N/A				
Timber Piles	N/A				
Timber Wales	N/A				
Galv. Pile Caps	N/A				
Cables	N/A				
Signage /Supports	N/A				
Rip Rap (fill) (foreshore dike)	Good			1,2,3	Recent maintenance work to restore dike to constructed elevation is still in good condition. A few low areas exist along rock dike.
Earthen Embankment	N/A				

What are the conditions of the existing levees?
Are there any noticeable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?

Appendix E

Locations to be Monitored