State of Louisiana

Coastal Protection and Restoration Authority of Louisiana (CPRA)

2011/2012 Annual Inspection Report

for

FRESHWATER BAYOU CANAL BANK STABILIZATION PROJECT (ME-13)

State Project Number ME-13
Priority Project List 5

May 16, 2012
Vermilion Parish

Prepared by:

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Table of Contents

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, CPRA 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 May 16, 2012 under sunny skies and mild temperatures. In attendance were Mel Guidry, Stan Aucoin, Jody White and Garret Broussard from CPRA with Dale Garber representing NRCS. The inspection began on the north end of the project at 10:04 am.

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. (Appendix B, Photos 1-2) The inspection noted numerous sections of foreshore rock dike that are below elevation 4.0 NAVD causing evident bank erosion. NRCS personnel previously performed a centerline profile survey of the foreshore rock dike along with cross-sections to determine the deficient reaches of the foreshore rock dike. Based on the surveys, NRCS and CPRA agreed to repair the deficient reaches of the foreshore rock dike to elevation 3.5' NAVD. Based on the survey information, NRCS computed the volume of rock required to cap the deficient reaches. CPRA will utilize the information from NRCS to prepare cost estimates for an O&M Funding Increase Request to the CWPPRA Task Force in the fall of 2012. (Appendix B, Photos 3-6)

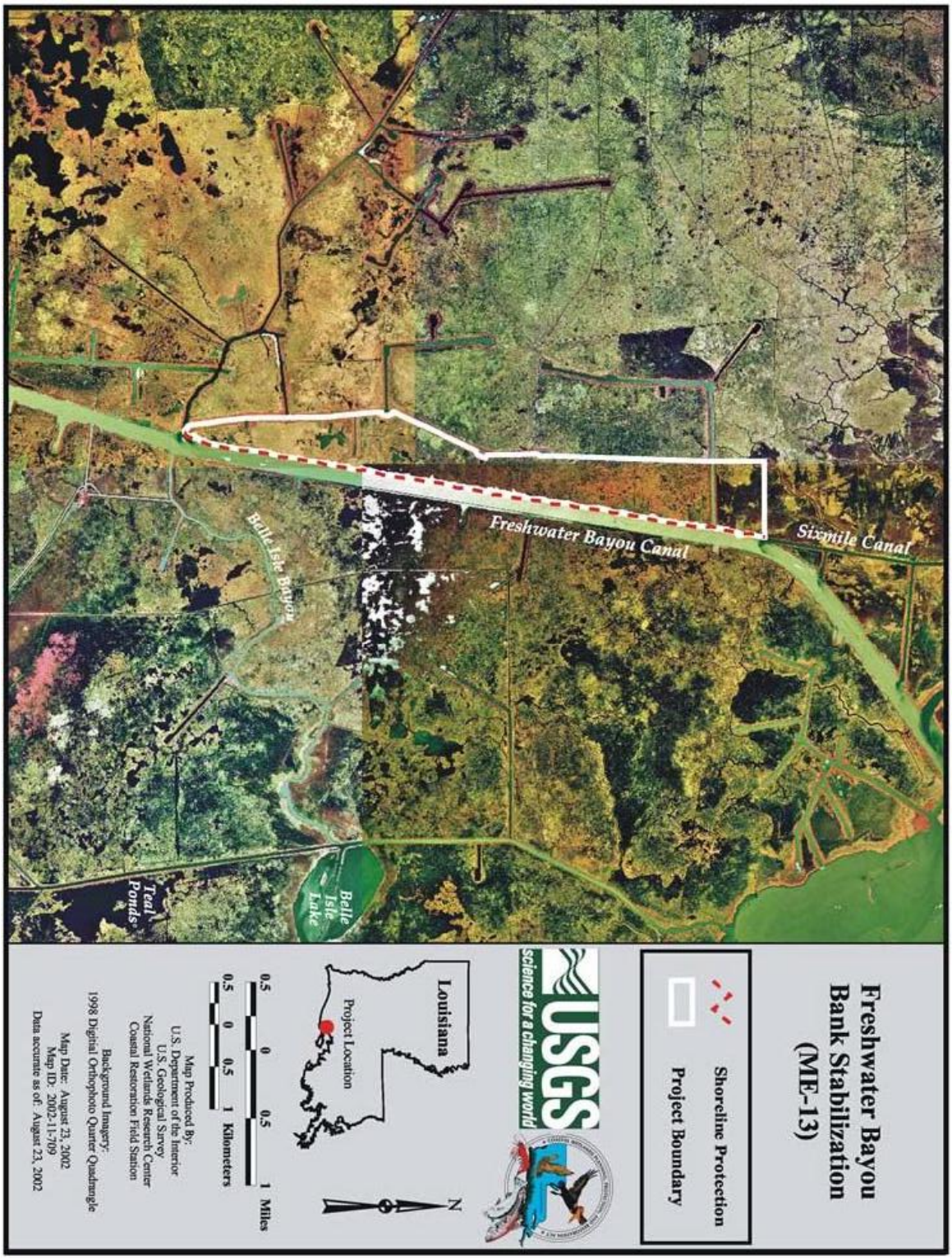
VI. Conclusions and Recommendations

Overall the Freshwater Bayou Canal Bank Stabilization Project is in good condition with the exception of the noted sections of low areas of rock dike.

Upon approval in FY12, the maintenance event to address the deficient reaches of foreshore rock dike is expected to begin in FY13-FY14. In an effort to reduce cost, the Engineering, Design and Construction of this maintenance event will be combined with the Freshwater Bayou Wetland protection Project (ME-04).

Appendix A

Project Features Map


Freshwater Bayou Canal
Sixmile Canal
Belle Isle Bayou
Belle Isle Lake
Teal Ponds
Freshwater Bayou Bank Stabilization (ME-13)
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: 2002-11-709
Data accurate as of: August 23, 2002

Appendix B

Photographs

Photo No. 1, Typical Rock Dike

Photo No. 2, Vegetation Expansion up to Rock Dike

Photo No. 3, Low Area in Rock Dike but Continued Growth of Vegetation

Photo No. 4, Erosion of Bank Behind Low Area in Rock Dike

Photo No. 5, Erosion of Bank Behind Displaced Rock Dike

Photo No. 6, Erosion of Bank Behind Low Area in Rock Dike

Appendix C

Three Year Budget Projection

FRESHWATER BAYOU CANAL BANK STABILIZATION / ME-13 / PPL5

Three-Year Operations & Maintenance Budgets 07/01/2012 - 06/30/2015

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

	2012/2013 (-15)	2013/2014 (-16)	2014/2015 (-17)
Maintenance Inspection	$ 6,269.00	$ 6,457.00	$ 6,651.00
Structure Operation	$ -	$ -	$ -
State Administration	$ 2,000.00	$ 13,000.00	$ -
Federal Administration	$ 2,000.00	$ 8,000.00	$ -
Maintenance/Rehabilitation			

12/13 Description: E&D for capping of rock dike.

E&D	$ 125,000.00
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	$ 125,000.00

13/14 Description: Capping of rock dike.

E&D	$ -	
Construction	$ 2,764,781.00	Incl. 25% Contingency
Construction Oversight	$ 75,000.00	
Sub Total - Maint. And Rehab.	$ 2,839,781.00	

14/15 Description:

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

	2012/2013 (-15)	2013/2014 (-16)	2014/2015 (-17)
Total O&M Budgets	**$ 135,269.00**	**$ 2,867,238.00**	**$ 6,651.00**

O &M Budget (3 yr Total)	**$ 3,009,158.00**
Unexpended O & M Budget	**$ 37,783.00**
Remaining O & M Budget (Projected)	**$ (2,971,375.00)**

OPERATION AND MAINTENANCE BUDGET WORKSHEET

FRESHWATER BAYOU BANK STABILIZATION/ PROJECT NO. ME-13 / PPL NO. 5 / 2012-2013

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	$6,269.00	**$6,269.00**
General Structure Maintenance	LUMP	0	$0.00	**$0.00**
Engineering and Design	LUMP	1	$125,000.00	**$125,000.00**
Operations Contract	LUMP	0	$0.00	**$0.00**
Construction Oversight	LUMP	0	$0.00	**$0.00**

ADMINISTRATION

OCPR / CRD Admin.	LUMP	1	$2,000.00	$2,000.00
FEDERAL SPONSOR Admin.	LUMP	1	$2,000.00	$2,000.00
SURVEY Admin.	LUMP	0	$0.00	$0.00
OTHER				$0.00
			TOTAL ADMINISTRATION COSTS:	**$4,000.00**

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:					
Secondary Monument	EACH	0	$0.00	$0.00
Staff Gauge / Recorders	EACH	0	$0.00	$0.00
Marsh Elevation / Topography	LUMP	0	$0.00	$0.00
TBM Installation	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL SURVEY COSTS:	**$0.00**

GEOTECHNICAL

GEOTECH DESCRIPTION:					
Borings	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL GEOTECHNICAL COSTS:	**$0.00**

CONSTRUCTION

CONSTRUCTION DESCRIPTION:					
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	0	0.0	0	$0.00	$0.00
	0	0.0	0	$0.00	$0.00
	0	0.0	0	$0.00	$0.00
Filter Cloth / Geogrid Fabric		SQ YD	0	$0.00	$0.00
Navigation Aid		EACH	0	$0.00	$0.00
Signage		EACH	0	$0.00	$0.00
General Excavation / Fill		CU YD	0	$0.00	$0.00
Dredging		CU YD	0	$0.00	$0.00
Sheet Piles (Lin Ft or Sq Yds)			0	$0.00	$0.00
Timber Piles (each or lump sum)			0	$0.00	$0.00
Timber Members (each or lump sum)			0	$0.00	$0.00
Hardware		LUMP	0	$0.00	$0.00
Materials		LUMP	0	$0.00	$0.00
Mob / Demob		LUMP	0	$0.00	$0.00
Contingency (20%)		LUMP	0	$0.00	$0.00
General Structure Maintenance		LUMP	0	$0.00	$0.00
			0	$0.00	$0.00
			0	$0.00	$0.00
			0	$0.00	$0.00
				TOTAL CONSTRUCTION COSTS:	**$0.00**

TOTAL OPERATIONS AND MAINTENANCE BUDGET: **$135,269.00**

OPERATION AND MAINTENANCE BUDGET WORKSHEET

FRESHWATER BAYOU BANK STABILIZATION/ PROJECT NO. ME-13 / PPL NO. 5 / 2013-2014

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	$6,457.00	**$6,457.00**
General Structure Maintenance	LUMP	0	$0.00	**$0.00**
Engineering and Design	LUMP	0	$0.00	**$0.00**
Operations Contract	LUMP	0	$0.00	**$0.00**
Construction Oversight	LUMP	1	$75,000.00	**$75,000.00**

ADMINISTRATION

OCPR / CRD Admin.	LUMP	1	$13,000.00	$13,000.00
FEDERAL SPONSOR Admin.	LUMP	1	$8,000.00	$8,000.00
SURVEY Admin.	LUMP	0	$0.00	$0.00
OTHER				$0.00
			TOTAL ADMINISTRATION COSTS:	**$21,000.00**

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:					
Secondary Monument	EACH	0	$0.00	$0.00
Staff Gauge / Recorders	EACH	0	$0.00	$0.00
Marsh Elevation / Topography	LUMP	0	$0.00	$0.00
TBM Installation	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL SURVEY COSTS:	**$0.00**

GEOTECHNICAL

GEOTECH DESCRIPTION:					
Borings	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL GEOTECHNICAL COSTS:	**$0.00**

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	Cap rock dike				
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	0	0.0	27,491	$75.00	$2,061,825.00
	0	0.0	0	$0.00	$0.00
	0	0.0	0	$0.00	$0.00
Filter Cloth / Geogrid Fabric		SQ YD	0	$0.00	$0.00
Navigation Aid		EACH	0	$0.00	$0.00
Signage		EACH	0	$0.00	$0.00
General Excavation / Fill		CU YD	0	$0.00	$0.00
Dredging		CU YD	0	$0.00	$0.00
Sheet Piles (Lin Ft or Sq Yds)			0	$0.00	$0.00
Timber Piles (each or lump sum)			0	$0.00	$0.00
Timber Members (each or lump sum)			0	$0.00	$0.00
Hardware		LUMP	0	$0.00	$0.00
Materials		LUMP	0	$0.00	$0.00
Mob / Demob		LUMP	1	$150,000.00	$150,000.00
Contingency (25%) (2,211,825 x 0.25)		LUMP	1	$552,956.00	$552,956.00
General Structure Maintenance		LUMP	0	$0.00	$0.00
			0	$0.00	$0.00
			0	$0.00	$0.00
			0	$0.00	$0.00
				TOTAL CONSTRUCTION COSTS:	**$2,764,781.00**

TOTAL OPERATIONS AND MAINTENANCE BUDGET: **$2,867,238.00**

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 Canal Bank Stabilization Project
Structure No. N/A

Structure Description: Foreshore Rock Dike

Type of Inspection: Annual

Date of Inspection: May 16, 2012 Time: 10:04 am

Inspector(s): Mel Guidry, Stan Aucoin, Garret Broussard, Jody White (CPRA)
Dale Garber (NRCS)

Water Level : 0.4 at Maxie Pierce Landing Staff Gage (Note: MWL- 0.3)
Weather Conditions: sunny skies and mild 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	Maintenance work to restore dike to constructed elevation is still in good condition. Vegetation growth was noted.
				3,4,5	There are low areas along the rock dike which are producing bank erosion.
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?