



State of Louisiana

**Coastal Protection and Restoration
Authority of Louisiana (CPRA)**

2011/2012 Annual Inspection Report

for

FRESHWATER BAYOU WETLANDS PROJECT (ME-04)

State Project Number ME-04
Priority Project List 3

May 16, 2012
Vermilion Parish

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I. Introduction

The Freshwater Bayou Wetlands Project (State Project No. ME-04) 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 Wetlands 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 second Priority Project List. The Freshwater Bayou Wetlands Project has a twenty –year (20 year) project life, which began in March 1995.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Freshwater Bayou Wetlands Project (ME-04) 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 Wetlands Project are outlined in Section IV.

An inspection of the Freshwater Bayou Wetlands Project (ME-04) 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 and Dale Garber representing NRCS. The inspection began at the northern end of the rock dike alignment at 10:50 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. (See Appendix D).

III. Project Description and History

The Freshwater Bayou Wetlands (ME-04) project encompasses approximately 37,000 acres of fresh to intermediate wetlands located between La. Hwy. 82 and Freshwater Bayou Canal, approximately 5 mi east of White Lake, Louisiana (figure 1). Boat wake-induced shoreline

erosion, which averaged 12.5 ft/yr along each bank of Freshwater Bayou Canal between 1968 and 1992 (Brown & Root 1992), has deteriorated the spoil banks along the channel, allowing multiple breaches to form, and tidal scour of the organic soils in the adjacent wetlands to ensue. Between 1968 and 1990, the bank width of this navigation canal increased almost fourfold, resulting in the loss of 768 acres of coastal wetlands (Good et al. 1995).

The project plan (USDA/SCS 1994) divides the project area into three Conservation Treatment Units (CTU's), with CTU 1 and 3 benefiting directly from the shoreline protection work implemented under Phase 1 of the project. The objective of Phase 1 of this project is to prevent further widening of the Freshwater Bayou Canal channel into the project area, thereby protecting existing emergent wetlands along the west bank of the canal from further deterioration caused by shoreline erosion and tidal scour. The specific goal of the project is to decrease the rate of erosion and wetland loss along the west bank of Freshwater Bayou Canal using a rock dike. Construction of approximately 28,000 linear ft of free-standing, continuous rock dike along the west bank of the canal was completed in March 1995 by using existing rock that was salvaged from a weir at Wax Lake Outlet. The USACE provided manpower and equipment to facilitate removal of the rock from the weir and transport to the FWB Wetlands location for initial construction of this project.

Phase 2 of this CWPPRA project authorized the installation of eight (8) box-type water control structures with a single flapgate, a variable-crest weir, and two fixed-crest weirs (one with a 4 inch vertical slot) in the project area. Three structures are located in CTU 1, three in CTU 2, and two in CTU 3. A number of water control structures were already in place prior to the project. Additional structures were installed by the landowner at the landowner's expense, to enhance the operation of the eight CWPPRA structures. Phase 2 construction of the water control structures and weirs was completed in October 1998 and is maintained by the landowner. Phase 1 is the only feature that is maintained by CPRA.

The Phase 1 principal project features include:

- Site 1 - Foreshore Rock Dike (approximately 28,000 linear feet)

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since March 1995, the construction completion date of the Freshwater Bayou Wetlands Project (ME-04).

2002 - Freshwater Bayou Wetlands Maintenance Project – LDNR: This maintenance project included the installation of approximately 26,750 tons of 1000 lb gradation stone to repair fifteen thousand, two hundred and sixty-three linear feet of bank. Quantity limitations prevented the repair of all sections required. Construction was completed on 4/22/2002. The cost associated with the engineering, design and construction of the Freshwater Bayou Wetlands Maintenance Project is as follows:

Construction:	\$615,900.00
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Engineering & Design:	\$ 46,882.86
Construction Administration:	\$ 36,954.00
Construction Oversight/As-builts:	\$ 17,311.06
Project Total:	\$717,047.92

2005 - Freshwater Bayou Wetlands Maintenance Project – LDNR (Luhr Bros. Contractor): This maintenance project included the installation of approximately 21,370 tons of 1,250 lb gradation stone to repair 11,426 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 Wetlands Maintenance Project is as follows:

Construction:	\$472,660.50
Engineering & Design:	\$ 1,282.84
Construction Administration:	\$ 5,625.00
Construction Oversight/As-builts:	\$ 4,419.68
Project Total:	\$483,988.02

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

V. Inspection Results

Site 1—Foreshore rock dike

The inspection revealed the 11,420 linear feet of foreshore rock dike repaired in the 2005 maintenance project is in good condition. (Appendix B, Photos 1-3) 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 of the foreshore rock dike. 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 4 - 6)

VI. Conclusions and Recommendations

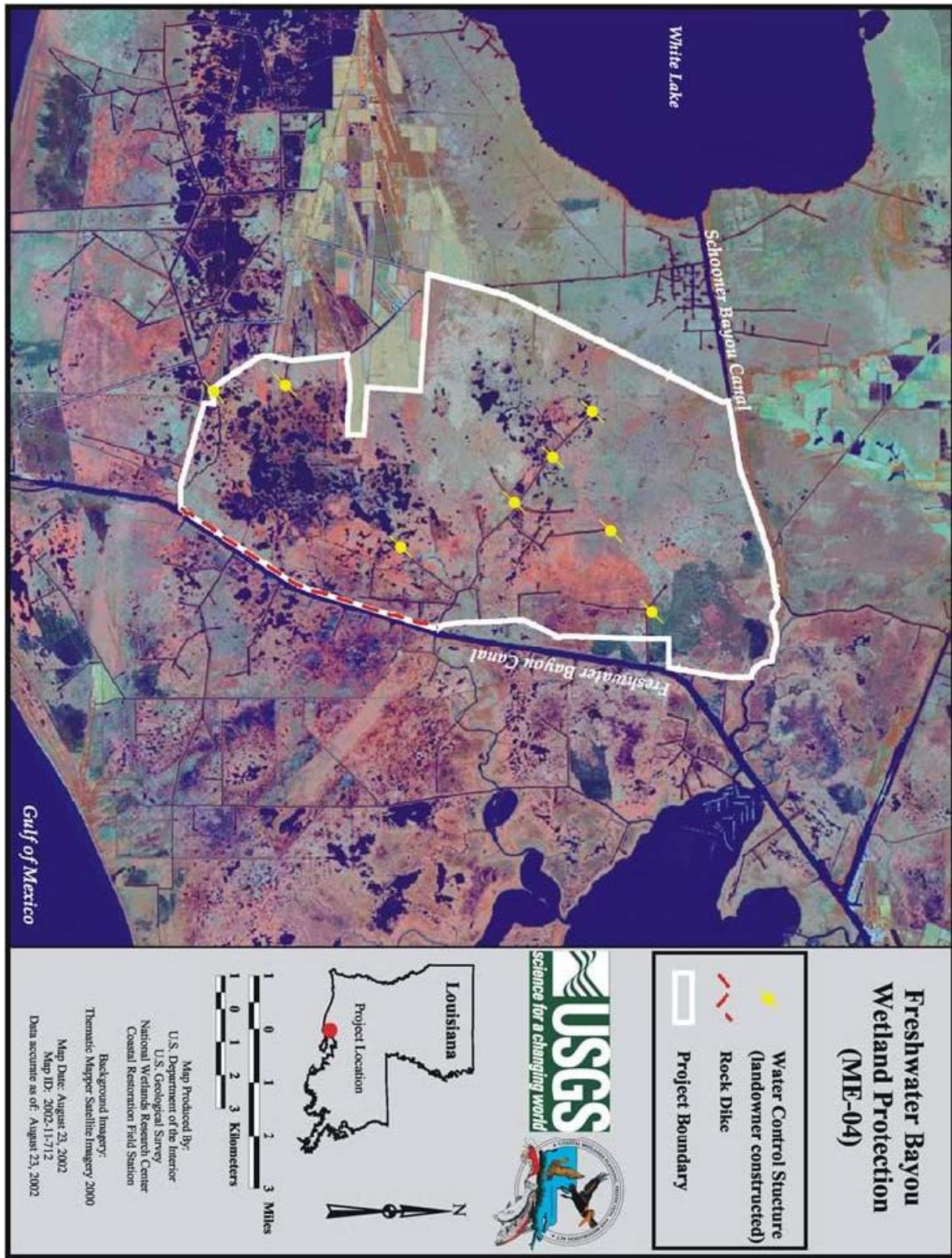
Overall the Freshwater Bayou Wetland Protection Project is in good condition and appears to have stabilized the erosion of the Freshwater Bayou Canal Bank line. Upon approval in FY12, the maintenance event to address the deficient reaches of foreshore rock dike is expected to begin FY13-FY14. In an effort to reduce costs, the Engineering, Design, and Construction Contract for ME-04 Freshwater Bayou Wetland Protection Project will be

combined with the maintenance proposed for ME-13 Freshwater Bayou Canal Bank Stabilization Project.

In addition, impacts from Hurricane Rita resulted in marsh loss near the Transcontinental pipeline. During the original construction, the rock dike in this area was tied into that marsh and exchange was limited between Freshwater Bayou and the interior marsh. Marsh loss from Rita has allowed increased exchange behind the rock dike and is increasing erosion and marsh loss along the shoreline and in the interior marsh. The Vermilion Parish Police Jury has obtained (\$360,000) from the Interim Emergency Board to address a 300 foot section of rock dike originally gapped when the Freshwater Bayou Wetland Project was constructed in 1995. The 300 foot gap closure will occur before the proposed FY13-FY14 maintenance event mentioned above..

Appendix A

Project Features Map



Appendix B

Photos



Photo No. 1, Typical Rock Dike



Photo No. 2, Vegetation Behind Rock Dike



Photo No. 3, Typical Rock Dike



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



Photo No. 5, Low Areas in Rock Dike



Photo No. 6, Low Areas in Rock Dike

Appendix C
Three Year Budget Projection

FRESHWATER BAYOU / ME04 / PPL2
Three-Year Operations & Maintenance Budgets 07/01/2012 - 06/30/2015

<u>Project Manager</u>	<u>O & M Manager</u>	<u>Federal Sponsor</u>	<u>Prepared By</u>
<i>Pat Landry</i>	<i>Mel Guidry</i>	<i>NRCS</i>	<i>Mel Guidry</i>

	2012/2013 (-18)	2013/2014 (-19)	2014/2015 (-20)
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	\$ 2,244,550.00	(Incl. 25% Contingency)
Construction Oversight	\$ 75,000.00	
Sub Total - Maint. And Rehab.	\$ 2,319,550.00	

14/15 Description:

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

	2012/2013 (-18)	2013/2014 (-19)	2014/2015 (-20)
Total O&M Budgets	\$ 135,269.00	\$ 2,347,007.00	\$ 6,651.00

O & M Budget (3 yr Total)	\$ 2,488,927.00
Unexpended O & M Budget	\$ 71,312.00
Remaining O & M Budget (Projected)	\$ (2,417,615.00)

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FRESHWATER BAYOU WETLANDS
State Project No. ME-04

OPERATION AND MAINTENANCE BUDGET WORKSHEET
FRESHWATER BAYOU / PROJECT NO. ME-04 / PPL NO. 2 / 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:	Construction of Pipeline Closure and Capping of Rock Dike				
	Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE
		0	0.0	0	\$0.00
		0	0.0	0	\$0.00
		0	0.0	0	\$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**

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FRESHWATER BAYOU WETLANDS
State Project No. ME-04

OPERATION AND MAINTENANCE BUDGET WORKSHEET
FRESHWATER BAYOU / PROJECT NO. ME-04 / PPL NO. 2 / 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:	E & D for Pipeline Gap Closure and Capping of Rock Dike				
	Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE
	Rip Rap	0	0.0	21,942	\$75.00
		0	0.0	0	\$0.00
		0	0.0	0	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0		\$0.00
	Navigation Aid	EACH	0		\$0.00
	Signage	EACH	0		\$0.00
	General Excavation / Fill	CU YD	0		\$0.00
	Dredging	CU YD	0		\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0		\$0.00
	Timber Piles (each or lump sum)		0		\$0.00
	Timber Members (each or lump sum)		0		\$0.00
	Hardware	LUMP	0		\$0.00
	Materials	LUMP	0		\$0.00
	Mob / Demob	LUMP	1		\$150,000.00
	Contingency (25%) (1,795,650 x 0.25)	LUMP	1		\$448,900.00
	General Structure Maintenance	LUMP	0		\$0.00
			0		\$0.00
			0		\$0.00
			0		\$0.00
TOTAL CONSTRUCTION COSTS:					\$2,244,550.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: **\$2,347,007.00**

Appendix D
Field Inspection Form

Annual Inspection Report
FRESHWATER BAYOU WETLANDS
State Project No. ME-04

MAINTENANCE INSPECTION REPORT CHECK SHEET					
Project No. / Name:	ME-04 Freshwater Bayou Wetland Protection			Date of Inspection: May 16, 2012 Time: 10:50 am	
Structure No.	N/A			Inspector(s): Mel Guidry, Stan Aucoin, Jody White, and Garret Broussard (CPRA) Dale Garber (NRCS)	
Structure Description:	Foreshore Rock Dike			Water Level : 0.4 at 10:04am at Maxie Pierce Staff Gage Weather Conditions: sunny and mild temperatures	
Type of Inspection:	Annual				
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 4,5,6	Recent maintenance work to restore dike to constructed elevation still in good condition. Approx. 2,000 LF still below +4.0 NAVD88 and will be addressed through a proposed maintenance event.
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?					