



Coastal Protection and
Restoration Authority of Louisiana

State of Louisiana

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

**2011/2012 Annual Inspection
Report**

For

**HUMBLE CANAL HYDROLOGIC
RESTORATION PROJECT
(ME-11)**

State Project Number ME-11
Priority Project List 8

March 24, 2011
Cameron Parish



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I. Introduction

The Humble Canal Hydrologic Restoration Project (ME-11) encompasses 4,030 acres (1228.34 ha) in Cameron Parish, Louisiana. The project is bounded by the Little Chenier Ridge to the south, the Mermentau River to the east, oilfield canals on the west, and an east-west trenaise and an oilfield canal along the north. The marsh is classified as a fresh marsh with 68 percent of the project area being marsh and 32 percent open water, based on the Louisiana Department of Natural Resource's GIS data for 1988–90 (See Appendix A).

The Humble Canal Hydrologic Restoration 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 eight Priority Project List. The Humble Canal Project has a twenty-year (20 year) project life, which began in March 2003.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Humble Canal Hydrologic Restoration Project (ME-11) is to evaluate the constructed project features, 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, if any, 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.

An inspection of the Humble Canal Hydrologic Restoration Project (ME-11) was held on March 28, 2012 under partly cloudy skies and mild temperatures. In attendance were Mel Guidry, Stan Aucoin, Bern Wood, and Jody White from CPRA, along with Charles Slocum representing NRCS. All parties met at the Lafayette Field Office. The boat was launched off of Little Chenier Road at the Mermentau River and traveled north to the Humble Canal Project Site. The annual inspection began at approximately 11:00 a.m. at the marine barrier fence on the juncture of the Humble Canal Project Outfall Channel and the Mermentau River.

The field inspection included a complete visual inspection of all project features. Staff gauge readings where available were used to determine approximate elevations of water, earthen embankments, water control structure and other project features. Photographs were taken at each project feature (see Appendix B) and Field Inspection notes were completed in the field to record measurements and any notable deficiencies (see Appendix D).

III. Project Description and History

The Humble Canal and its laterals were constructed for mineral exploration during the early 1950's and increased water exchange between the Mermentau River and the eastern end of Big Burn Marsh. Dredging of the Mermentau River in 1952 and construction of the Mermentau River to the Gulf of Mexico Navigation Channel in 1978 provided greater commercial use of the Mermentau River Basin. But as with other deepwater shipping channels along Louisiana's fragile coast, one environmental consequence has been increased northward migration and intrusion of saltwater, and the deterioration of fresh water wetlands.

Historically, floods occurring in spring inundated wetlands with fresh water. As water levels receded, salt water could slowly move into the basin through meandering bayous, especially during periods of low rainfall in late summer and early fall. The basin once functioned as a nursery for a variety of marine species that favor a low salinity environment. Projects initiated by various interests have disrupted the basin's natural processes. Extended periods of high water in the upper basin and saltwater intrusion in the lower basin have imposed physiological stresses on vegetated wetlands resulting in their conversion to open water (USDA/NRCS 1997). However, the vegetation in the project area was classified as freshwater marsh in 1968 (Chabreck et al. 1968), and vegetation maps produced in the last three decades still classify the project area as a freshwater marsh (Chabreck and Linscombe 1978,1988,1998,2010).

The Humble Canal Hydrologic Restoration Project (ME-11) was completed in March 2003 and involved the installation of a water control structure consisting of 5 - 48" x 50' corrugated aluminum pipes with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads, approximately 88 linear feet of hyacinth fence, and approximately 100 linear feet of marine barrier fence. The structure is designed to improve the removal rate of excess water within the project area while preventing salt water from entering. The hyacinth fence will prevent large amounts of vegetation and debris from interfering with the operational capabilities of the structure. The marine barrier will prevent boats from getting too close to the structure.

The specific goals of the project are:

1. Increase present (yr 2000) land to water ratio.
2. Maintain mean water levels in the project area between 6 in below and 2 in above marsh level.
3. Maintain mean monthly salinity (0–3 ppt) in the project area after construction and prevent salinities from exceeding 7 ppt.
4. Increase or maintain the occurrence and cover of fresh marsh vegetation species in the project area.
5. Increase frequency of occurrence of submerged aquatic vegetation (SAV) in the project area.

The principle project features of the Humble Canal Hydrologic Restoration Project include the following:

- A. **Water Control Structure:** One water control structure consisting of 5 - 48" x 50' corrugated aluminum pipe with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads.
- B. **Water Hyacinth Fence:** Approximately 88 linear feet of hyacinth fence.
- C. **Marine Barrier Fence:** Approximately 100 linear feet of marine vessel barrier fence.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since March 2003, the construction completion date of the Humble Canal Hydrologic Restoration Project (ME-11).

2009 M & M Electric – Repairs were made to the structure to repair storm damage as well as routine maintenance repairs. Forty five (45) tons of rock rip rap were placed around the wingwalls. Sixty tons (60) tons of crushed stone aggregate were placed on top of the structure along with five-hundred (500) square yards of geotextile fabric. Repairs were made to the hyacinth guard, flap gates, locking arms and stop logs. Two warning signs were replaced at the marine vessel barrier. The costs associated with this maintenance event were as follows:

E & D, Construction Oversight, As Builts	\$15,314.00
Construction Contract (Incl. C.O. # 1)	\$59,300.00
TOTAL	\$74,614.00

Structure Operations: In accordance with the operation schedule outlined in the Operation and Maintenance Plan, the structure was operated as required, by Miami Corporation personnel at no cost to CPRA. Effective July 2012, the structure will be operated by CPRA contractor, Simon and Delaney.

V. Inspection Results

Marine barrier fence

The structure is in excellent condition and the warning signs were intact. (Photos: Appendix B, Photo 1)

Hyacinth Guard

This feature is in good condition. The wire fence material, wooden pilings, and bracing replaced during the last maintenance event are in working order. (Photos: Appendix B, Photo 3)

Water Control Structure

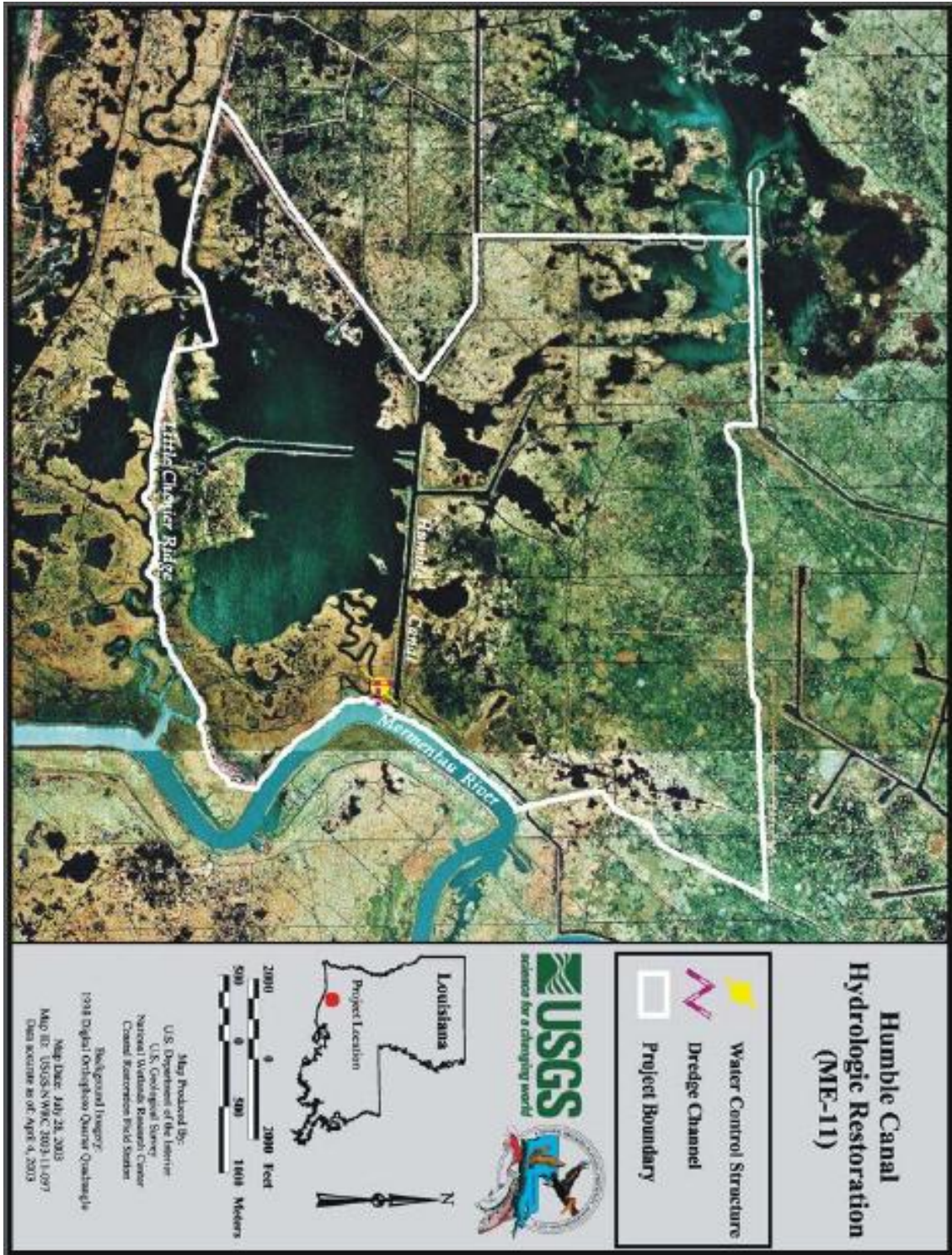
The structure is in good condition. The stoplogs, flap gates, and screw gate appear to be functioning as intended. The wingwall rock armor on the inlet and outlet side of the structure and the crushed stone aggregate on the top of the structure are intact. The water level was at 2.3 on the staff gauge. (Photos: Appendix B, Photos 2, 3 & 4)

VI. Conclusions and Recommendations

Overall, the Humble Canal Hydrologic Restoration Project structural components are in good condition and functioning as designed. It is recommended that grass control is included in the operations contract.

Water level data evaluated in the 2010 OM&M report indicated that although the water control structure is functioning properly, the project's target water levels are being exceeded during heavy rain events. On four or more occasions, the Cameron Gravity Drainage District had to open a plug located north of the weir to relieve flooding. In addition, homes on the southern boundary of the project area are experiencing flooding during these heavy rains. To address this, the Cameron Gravity Drainage District is in the process of obtaining a permit to construct a permanent spillway structure to prevent the need for cutting the plug during high water.

Appendix A
Project Features Map



Appendix B
Photographs



Photo No. 1, Marine barrier with signage.



Photo No. 2, Inlet side of structure



Photo No. 3, Inlet side of structure



Photo No. 4, Outlet side of structure

Appendix C
Three Year Budget Projection

HUMBLE CANAL / ME-11 / PPL8
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>
Pat Landry	Mel Guidry	NRCS	Mel Guidry

	2012/2013 (-10)	2013/2014 (-11)	2014/2015 (-12)
Maintenance Inspection	\$ 6,269.00	\$ 6,457.00	\$ 6,651.00
Structure Operation	\$ 11,000.00	\$ 12,000.00	\$ 13,000.00
State Administration			\$ -
Federal Administration			\$ -

Maintenance/Rehabilitation

12/13 Description:

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

13/14 Description:

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

14/15 Description:

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

	2012/2013 (-10)	2013/2014 (-11)	2014/2015 (-12)
Total O&M Budgets	\$ 17,269.00	\$ 18,457.00	\$ 19,651.00

O & M Budget (3 yr Total)	\$ 55,377.00
Unexpended O & M Budget	\$ 141,818.00
Remaining O & M Budget (Projected)	\$ 86,441.00

Appendix D
Field Inspection Form

Annual Inspection Report
HUMBLE CANAL HYDROLOGIC RESTORATION PROJECT
State Project No. ME-11

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: March 28, 2012 Time: 11:00am

Structure No. N/A
Structure Description: 5 - 48" x 50' corrugated aluminum pipe with weir type drop inlets and flap gated outlets/ 1 1 - 18" x 50' corrugated alum.pipe with screw gate
Type of Inspection: Annual

Inspector(s): CPRA- Mel Guidry, Stan Aucoin, Jody White, Bern Wood
NRCS- Charles Slocum

Water Level : 2.3 on Staff Gauge on Inlet Side of Structure
Weather Conditions: Partly Cloudy and mild

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Timber Bulkhead / Caps	good				
Steel Grating	good			2 & 3	
Stop Logs	good			3	
Storage Box	good				
Hardware	good			3	
Timber Piles	good			4	
Timber Wales	good				
Galv. Pile Caps	good			4	
Lifting device	good				
Signage /Supports	N/A				
Rip Rap (fill)	good				
Structure Embankment (Crushed Stone)	good			2-4	Recommend grass control in future operation contract.
Eathern Embankment	good			4	
Inlet Channel	good				

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?

Stable on both the inlet and outlet channels.
No
N/A
Unkown
No