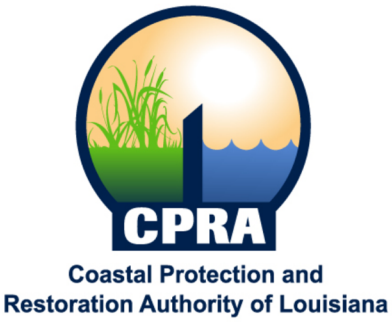

State of Louisiana
Coastal Protection and Restoration Authority
Operations Division

2014 Annual Inspection Report

for

Fritchie Marsh Restoration

State Project Number PO-06
Priority Project List 2

July 8, 2014
St. Tammany Parish

Prepared by:

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New Orleans Regional Office
CERM, Suite 309
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New Orleans, LA 70122

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Appendices

I. Introduction

The Fritchie Marsh Restoration Project (PO-06) project area contains intermediate and brackish marsh, and is located southeast of Slidell in St. Tammany Parish (Appendix A). The area is bounded by US Hwy 190 to the north, US Hwy 90 to the south and east, and LA Hwy 433 to the west and south.

II. Project Description and History

From 1956 to 1984, 2,260-ac (915-ha) of emergent marsh within the Fritchie Marsh project area were converted to open water, with the greatest loss occurring in the northern project area. This loss reflects a pattern of marsh deterioration from north to south due to a reduction of freshwater and sediment input into the northern part of the project area. Natural hydrologic patterns have been disrupted by the construction of the perimeter highways. These embankments isolate the marsh from the West Pearl River, and have restricted inflow of freshwater, nutrients, and sediment. Additionally, saltwater from Lake Pontchartrain enters the marsh through the W-14 canal and Little Lagoon during high tides and strong winds. As a result, the project area has converted from a predominantly fresh marsh in 1956 to a predominantly brackish marsh in 1990.

The objective of the Fritchie Marsh Restoration Project is to reduce marsh loss by restoring more natural hydrologic conditions in the project area through management of available freshwater. Specific objectives are (1) to increase freshwater flow and promote water exchange into the area from West Pearl River by enlarging the culvert at U.S. Highway 90 and by dredging portions of Salt Bayou and (2) increase freshwater flow into the northern project area by diverting flow from the W-14 canal.

The Fritchie Marsh Restoration Project was constructed in one phase beginning in October 2000 and completed in March 2001. The project has a 20-year economic life which began in March 2001.

The principal project features include:

- A 72-inch diameter by 136-foot long concrete culvert under U.S. Highway 90, rock riprap lining of the Salt Bayou channel bottom and pipe outlets, and installation of 308 linear feet of sheet piling to form a bulkhead.
- Dredging of approximately 5300 linear feet of Salt Bayou.
- Installation of a weir in the W-14 canal. The weir consists of 108 linear feet of sheet pile with a 20-foot wide boat bay.
- Dredging approximately 400 linear feet of the W-14 diversion channel.

In August 2005 Hurricane Katrina passed directly over the Fritchie Marsh Project area. The forces created by this storm caused significant damage to the marsh but not to any of the project features. Large areas of marsh were converted to open water, whereas sections of sheared marsh were deposited into the natural bayous and canals creating a number of

blockages. Existing breaches on the banks of Salt Bayou were enlarged and new breaches were created, which are diverting water away from the natural conveyance channels. The previously established hydrology within the project area has been significantly altered.

III. Inspection Purpose and Procedures

The purpose of the annual inspection of the Fritchie Marsh Restoration Project (PO-06) 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, OCPR 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 July 10, 2002). The annual inspection report also contains a summary of maintenance projects 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 project are outlined in Section II.

An inspection of the Fritchie Marsh Restoration Project (PO-06) was conducted on June 12, 2014 by Luke Prendergast (CPRA), David Chambers (CPRA), and Doug Baker (NRCS). Access to Salt Bayou was not possible due to siltation and lack of adequate launch facilities.

IV. Inspection Results

Hwy 90 Culvert and Stone Revetment

There is little change in this structure from the previous inspection. The bank scour reported in previous inspections appears to be ongoing, but does not currently pose a threat to the structure. A low area has developed in the north bank of the Salt Bayou channel near the revetment which appears to allow overbank flow of fresh water to directly enter the marsh during high water events. This area deserves continued observation during future inspections.

Salt Bayou Dredging

Due to steep bank conditions and the presence of numerous fishermen occupying the revetment area, the inspection team was not able to access Salt Bayou by boat. Visual observation was performed from the Highway 90 shoulder adjacent to the culverts and revetment. As noted on a previous inspection, deadfall and aquatic vegetation were partially obstructing the bayou approximately 200 feet from the culvert outlet; however, flow was moving swiftly from the culverts into the project area.

W-14 Weir

There was no visible damage to the weir structure or handrails. The warning signs exhibited some fading from continuous sunlight exposure, but were still legible. The weir structure was operating as designed.

W-14 Diversion Channel Dredging

The channel depth was measured to be approximately 4.5 feet and was free of obstructions. A patch of emergent vegetation was visible in the channel outfall. The diversion channel appeared to be functioning as designed.

V. Conclusions

The project features for the Fritchie Marsh Restoration Project are performing as designed. Insufficient maintenance funds prevent re-dredging of the bayou. Warning sign maintenance at the W-14 weir was discussed and could be performed in fiscal year 2015 if the project team deems it appropriate. The application of reflective/conspicuity tape to the sign support pilings was discussed as a possible interim safety measure.

The main goal of the project is to divert and retain fresh water into the project area. Previous reports discussed an evaluation of Salt Bayou's effectiveness to deliver water to the project area. However, after reviewing the goals of the project it was determined that such an evaluation was not necessary. While a good portion of Salt Bayou has silted in, there is a stretch entering the project area from the culverts that remains deep. This allows fresh water to enter the project area, at which point the silted in bayou forces water to divert into adjacent marsh through the breaches in the bank fulfilling the referenced project goal.

VI. Recommendations

Continue to inspect the project features for functionality. Repair the warning signs at the W-14 Weir. CPRA will coordinate the sign repair in consultation with NRCS.

Immediate Repairs

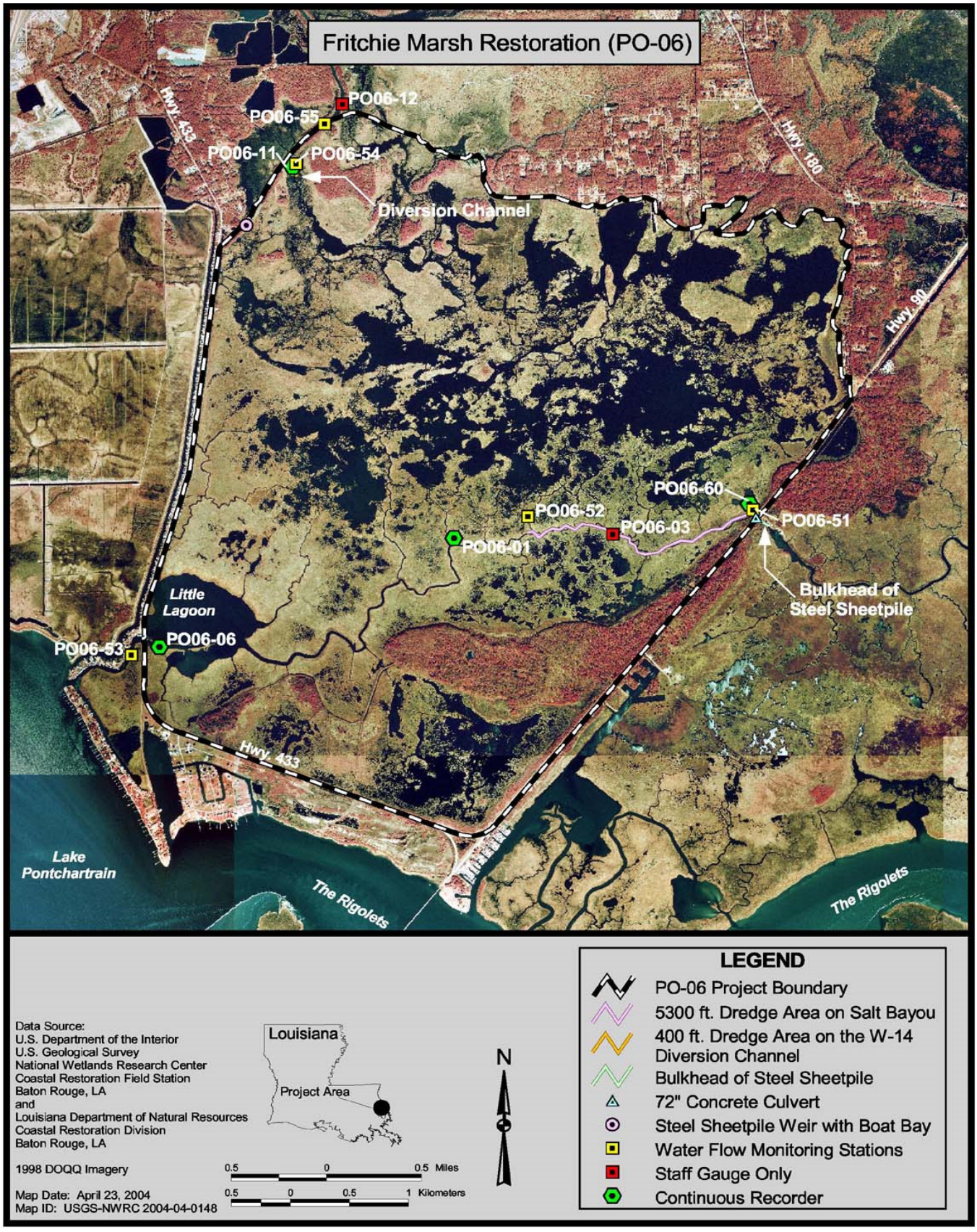
- None at this time.

Programmed Maintenance

- Warning sign repair at W-14 Weir as determined by CPRA and NRCS.

Appendix A

Project Features Map


Fritchie Marsh Restoration (PO-06)
PO06-12
PO06-55
PO06-11
PO06-54
Diversion Channel
Hwy. 433
Hwy. 180
Hwy. 90
PO06-60
PO06-52
PO06-03
PO06-51
PO06-01
Bulkhead of Steel Sheetpile
Little Lagoon
PO06-06
PO06-53
Hwy. 433
Lake Pontchartrain
The Rigolets
The Rigolets
LEGEND
PO-06 Project Boundary
5300 ft. Dredge Area on Salt Bayou
400 ft. Dredge Area on the W-14 Diversion Channel
Bulkhead of Steel Sheetpile
72" Concrete Culvert
Steel Sheetpile Weir with Boat Bay
Water Flow Monitoring Stations
Staff Gauge Only
Continuous Recorder
Data Source:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
and
Louisiana Department of Natural Resources
Coastal Restoration Division
Baton Rouge, LA
1998 DOQQ Imagery
Map Date: April 23, 2004
Map ID: USGS-NWRC 2004-04-0148
Louisiana
Project Area
N
0.5 0 0.5 Miles
0.5 0 0.5 1 Kilometers

Appendix B

Photographs

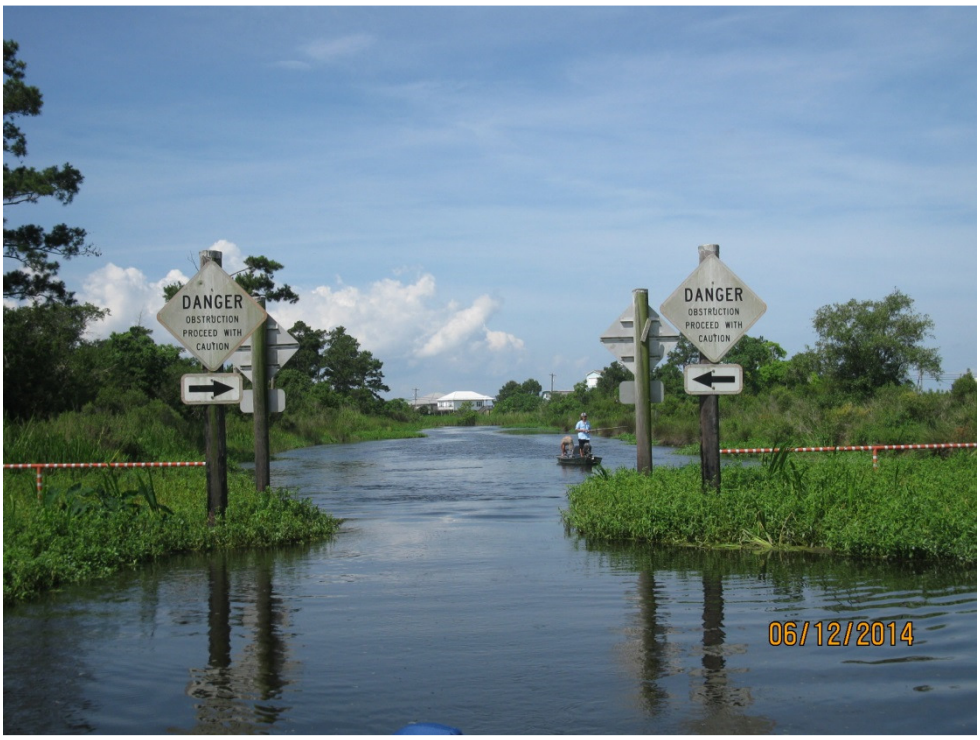


Photo 1: W-14 Weir

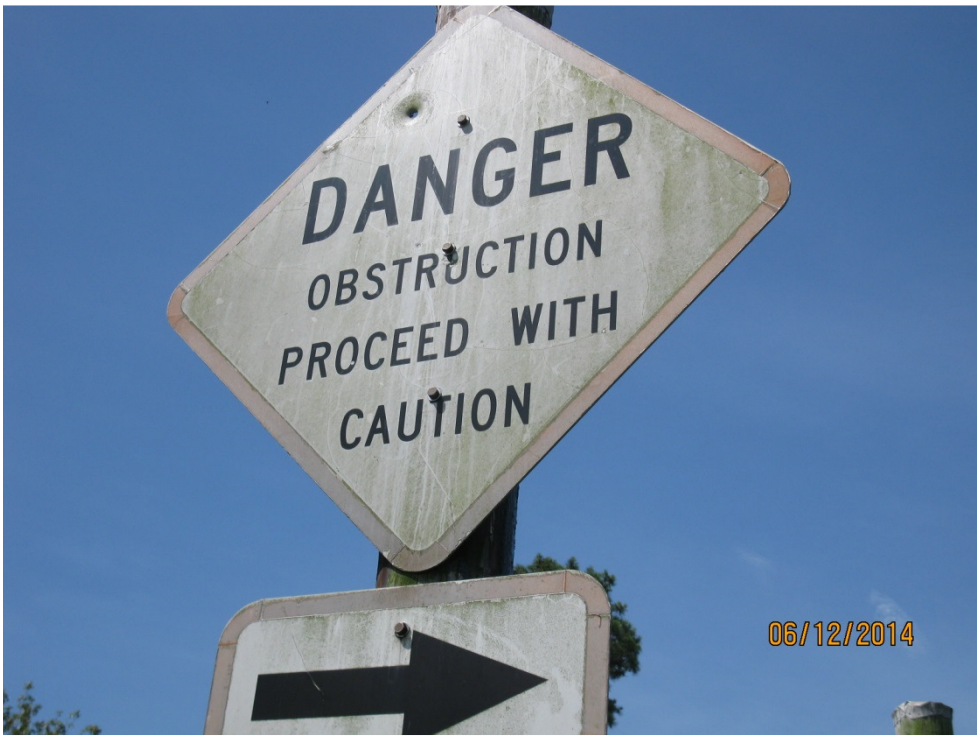


Photo 2: Warning Sign at W-14 Weir

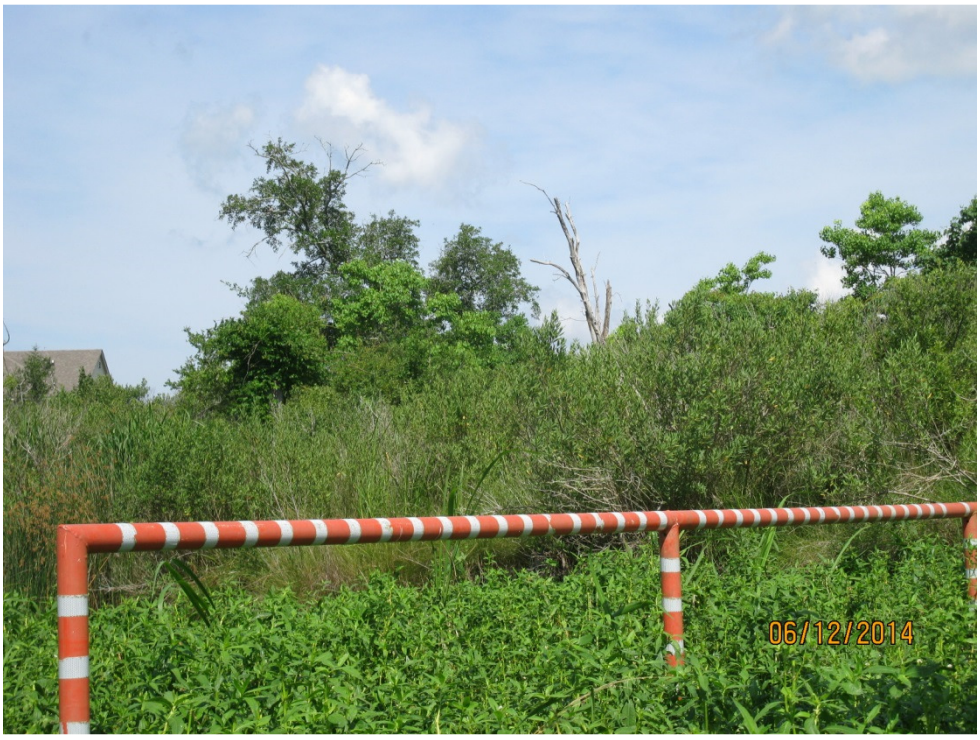


Photo 3: W-14 Weir Handrail

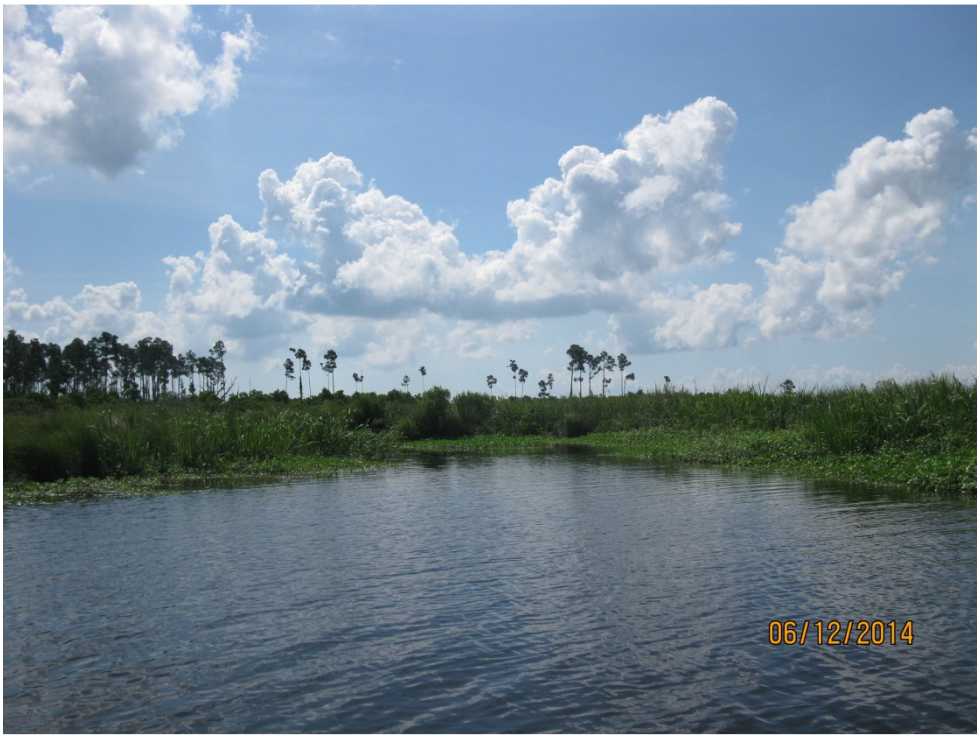


Photo 4: W-14 Diversion Channel

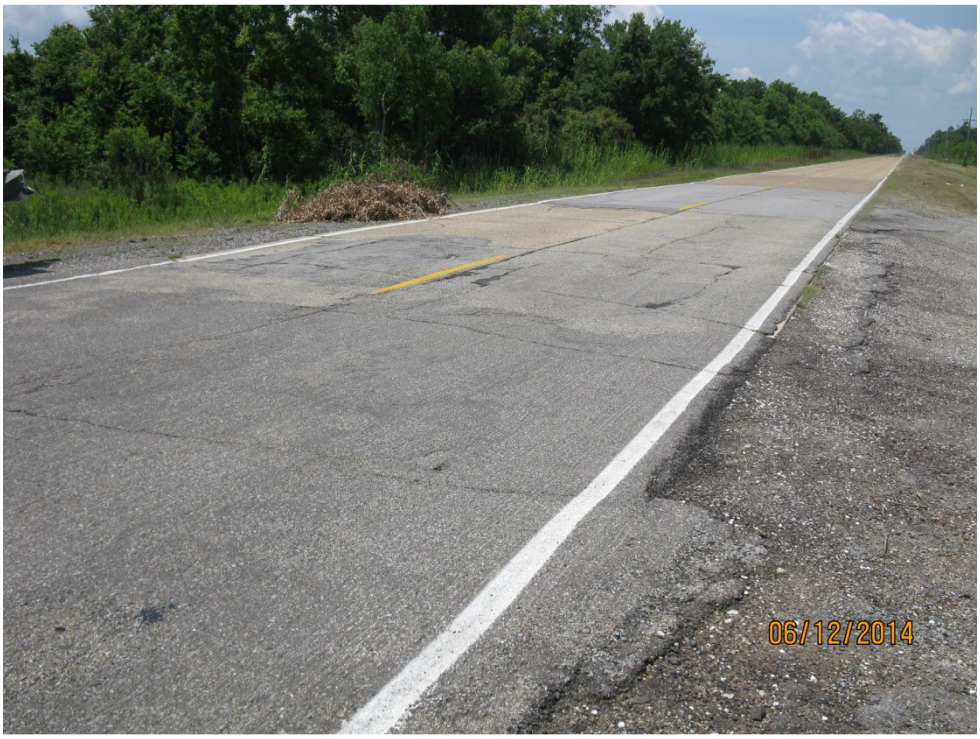


Photo 5: Hwy. 90 Road Surface Above Culverts

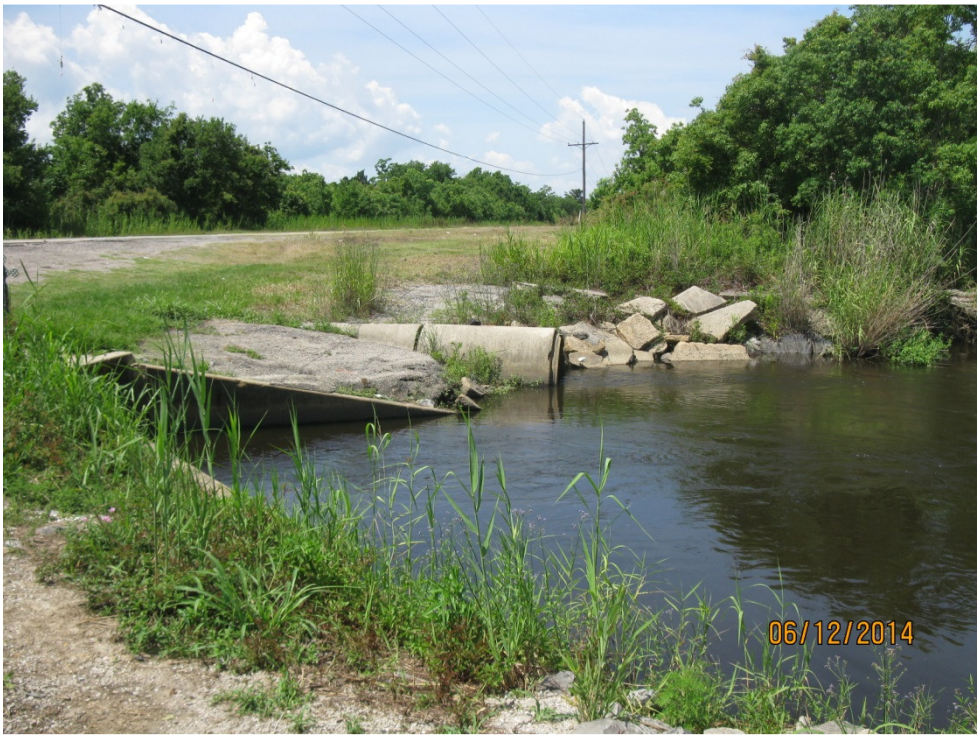


Photo 6: Culverts from Project Side

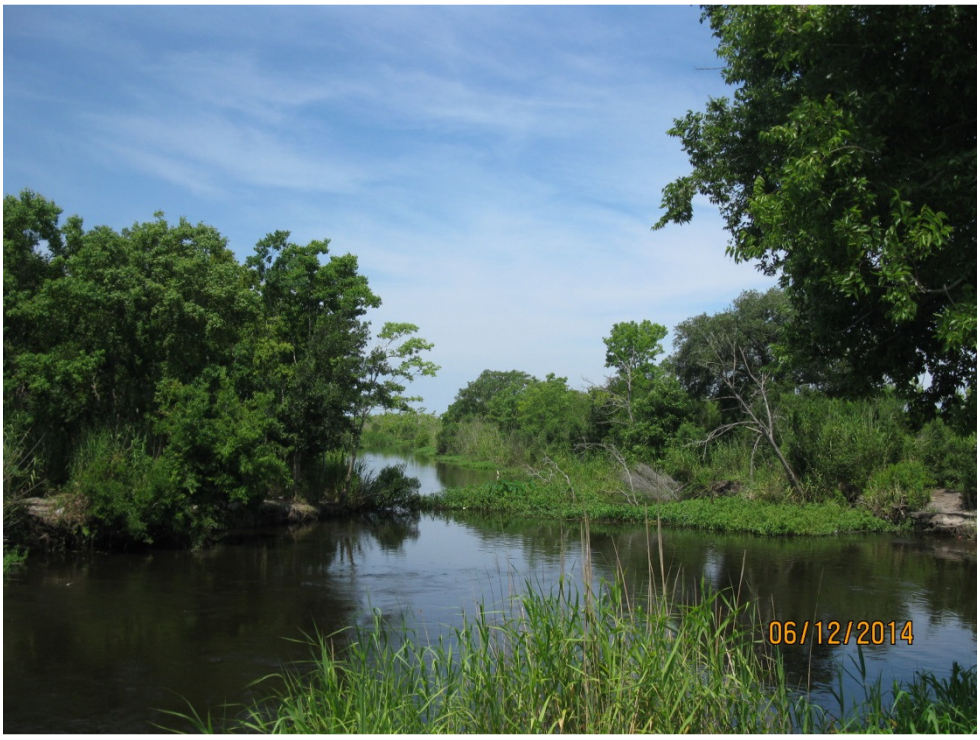


Photo 7: Salt Bayou Flowing into Project Area

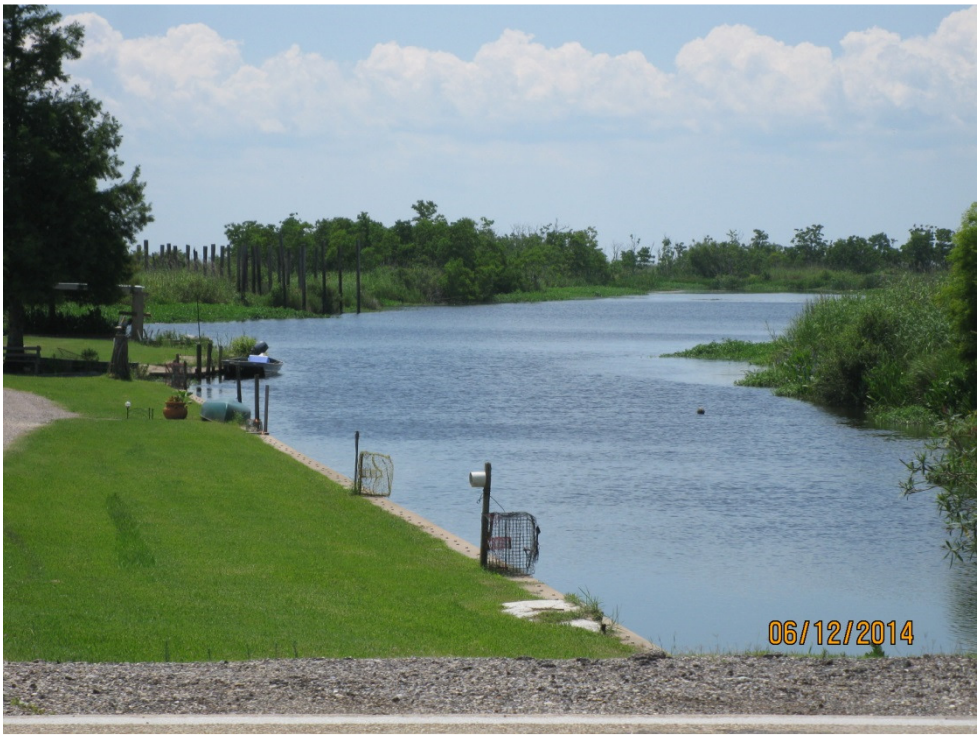


Photo 8: Bulkhead on Southeast Side of Hwy. 90

Appendix C

Three Year Budget Projection

2014 Annual Inspection Report
Fritchie Marsh Restoration
State Project No. PO-06

Fritchie Marsh Hydrologic Restoration (PO-06)																					
Federal Sponsor: NRCS																					
Construction Completed : March 6, 2001																					
PPL 2																					
Current Approved O&M Budget	Year 0	Year - 1	Year -2	Year -3	Year -4	Year -5	Year -6	Year -7	Year -8	Year -9	Year -10	Year -11	Year -12	Year -13	Year -14	Year -15	Year -16	Year - 17	Year -18	Year -19	Project Life	Currently
June 2009	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	Budget	Funded
State O&M	$3,773	$3,871	$3,972	$4,075	$4,181	$4,289	$4,401	$4,515	$4,633	$132,614	$4,877	$5,004	$5,134	$5,267	$5,404	$5,545	$5,689	$5,837	$5,988	$6,144	$225,211	$225,211
Corps Admin																					$0	$0
Federal S&A																					$0	$0
Total																					$225,211	$225,211
																					Remaining	Current 3 year
Projected O&M Expenditures																					Project Life	Request
Maintenance Inspection													$3,996	$4,100	$4,206	$4,316	$4,428	$4,543	$4,661	$4,782	$35,033	$12,622
General Maintenance																					$0	$0
Surveys																					$0	$0
Sign Replacement														$14,000							$14,000	$14,000
Federal S&A																					$0	$0
Maintenance/Rehabilitation																					$0	$0
E&D																					$0	$0
Construction																					$0	$0
Construction Oversight																					$0	$0
Total					$0	$0	$0	$0	$0	$0	$0	$0	$3,996	$18,100	$4,206	$4,316	$4,428	$4,543	$4,661	$4,782	$49,033	$26,622
O&M Expenditures from COE Lana Report				$127,499				Current O&M Budget less COE Admin					$225,211				Current Project Life Budget less COE Admin					$225,211
State O&M Expenditures not submitted for in-kind credit				$0				Remaining Available O&M Budget					$97,713				Total Projected Project Life Budget					$176,532
Federal Sponsor MIPRs (if applicable)				$0				**Incremental Funding Request Amount FY15-FY17**					**-$71,091**				**Project Life Budget Request Amount**					**-$48,680**
Total Estimated O&M Expenditures (as of June 2014)				$127,499																		

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **PO-06 Fritchie Marsh**

Date of Inspection: 6/12/2014 Time: 9:30am

Structure No. n/a

Inspector(s): Prendergast, Chambers (CPRA); Baker (NRCS)

Structure Description: **HWY 90 Culvert & Salt Bayou Bulkhead**

Water Level Inside: n/a Outside: n/a

Type of Inspection: **Annual**

Weather Conditions: Warm, partly cloudy

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	None	None	8	Good condition.
Handrails, Grating, Hardware, etc.	Good	None	None	3	Vegetation surrounding railings, overall condition is good.
Signage, Supports	See Remarks	See Remarks	None	1, 2	Wood support piles are in good condition. Signage and angle braces appear structurally sound. Large-caliber bullet hole in one sign. Reflective finish is faded but signs are legible.
Rock RipRap channel lining	Good	None	None	6	Good condition. Rip-rap covered by concrete debris on South bank.
W-14 Weir structure	Good	None	None	1	Submerged; flow visible.
W-14 diversion channel dredge	Good	N/A	None	4	Emergent vegetation in outfall.
Salt Bayou dredging	See Remarks	N/A	None	7	Boat access not possible. Inspection performed from culverts at Hwy 90. Deadfall in channel, but flow moving well into project area.
72" Diameter culvert	Good	None	None	6	Functioning properly. Structure appears sound.
HWY 90 road surface	Good	None	None	5	Road surface appeared to be in generally good condition. Some minor cracking; asphalt appeared to have been ground and patched in areas.