



**State of Louisiana  
Department of Natural Resources  
Coastal Engineering Division**

**2005/2006 Annual Inspection  
Report**

for

**CLEAR MARAIS SHORE  
PROTECTION PROJECT  
(CS-22)**

State Project Number CS-22  
Priority Project List 2

October 6, 2005  
Cameron Parish

Prepared by:

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## **I. Introduction**

The Clear Marais Shore Protection Project (State Project No. CS-22) is located in the Calcasieu-Sabine Basin on the northern bank of the Gulf Intracoastal Waterway in Calcasieu Parish. The 4,637 acre project area extends from the Alkali Ditch on the northern shore of the GIWW westward for approximately 35,375 linear feet. (See Appendix A).

The Clear Marais Shore Protection 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 Clear Marais Project has a twenty –year (20 year) economic life, which began in March 1997.

## **II. Inspection Purpose and Procedures**

The purpose of the annual inspection of the Clear Marais Shore Protection Project (CS-22) 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, 2002). 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.

In 2003, the CWPPRA Task Force determined, due to the fact that LDNR was responsible for the operation and maintenance phase of the vast majority of CWPPRA projects, that LDNR would be the responsible party for all Post Storm/Hurricane Assessments. After Hurricanes Katrina and Rita, every project appeared to have been impacted by the storms; therefore, LDNR determined that all projects should be assessed for damages (Broussard, 2006). With concurrence from the federal sponsor, LDNR has decided to use the information obtained during this post hurricane assessment in this Annual Maintenance Inspection.

An inspection of the Clear Marais Shore Protection Project (CS-22) was held on October 6, 2005 under clear skies and mild temperatures. In attendance was Stan Aucoin, Herb Juneau, Mark Mouledous and Ricky Brouillette from LDNR, Cindy Steyer from NRCS and Joy Merino from NMFS (both for other inspections). Parties left the Lafayette Field Office of CED, and proceeded to the CS-22 project area. The boat was launched at the park at the foot of the Ellender Bridge over the Gulf Intracoastal Waterway. The annual inspection began at approximately 9:00 am at the eastern end of the rock dike at its intersection with Alkali Ditch.

The field inspection included a complete visual inspection of all features. No staff gauge readings were available to determine approximate elevations of water, or rock dikes. Parties agreed on an estimated water level of approximately +2.6' NAVD. Photographs were taken

at each project feature (see Appendix B) and Field Inspection notes were completed in the field to record measurements and deficiencies (see Appendix D).

### **III. Project Description and History**

Wetlands in their natural state are among the most productive areas on earth, and they are central to the culture and development of south Louisiana. The Coastal Wetlands Planning, Protection and Restoration Act provides a substantial federal commitment to help Louisiana save its coastal wetlands. The wetlands are a fragile environment, which is disappearing at a rate of over 25 square miles of marsh a year in Louisiana, which is 80 percent of the nation's annual coastal wetland loss. The wetlands provide many benefits including commercial and recreational value, wildlife habitat, wintering habitat for millions of the continent's migratory ducks and geese, nursery habitat for one of America's largest fish and shellfish harvests, erosion control, flood protection and acting as storm buffers. Additionally the wetlands help maintain water quality.

Due to navigational improvements on the Calcasieu River, the hydrology of the Calcasieu/Sabine Basin has changed. Salt water intrusion has resulted in an increase in salt and brackish wetlands as well as loss and/or conversion of fresh and intermediate wetlands.

The Clear Marais wetlands, which encompasses approximately 4,637 acres, is one of the few remaining tracts of freshwater wetlands located within the Calcasieu/Sabine Basin. As mentioned above, this area provides important nursery habitat for estuarine-dependent fish and shellfish species, wintering habitat for migratory waterfowl, and foraging habitat for wading birds. Although these wetlands are privately owned and not available for use by the general public, they are important to the wildlife and fisheries resources of surrounding water bodies in the Calcasieu/Sabine Basin.

The north bank of the GIWW was eroding adjacent to these wetlands to the extent that several of the Clear Marais wetland lakes were connected to the GIWW. The present levee served to protect interior freshwater wetlands from salinity fluctuations and wave erosion. Implementation of the proposed 6.7 miles of rock dike has ensured the stability of this levee thereby protecting these interior lakes and marshes.

Construction of the Clear Marais Shore Protection Project was completed in March 1997 and has a 20-year economic life.

The principal project features include:

- Site 1 - Foreshore Rock Dike (approximately 35,375 linear feet)

### **IV. Summary of Past Operation and Maintenance Projects**

**General Maintenance:** No maintenance has been necessary on this project.

**2005/2006 Structure Operations:** There are no active operations associated with this project.

## **V. Inspection Results**

### **Site 1—Foreshore rock dike**

The dike is in good condition and appears to be in the same condition as to what existed prior to the storm. Approximately 4,000 to 5,000 linear feet of dike is below construction elevation. This appears to be the result of slight settlement rather than displacement. Several of the settlement plates placed during construction are broken/leaning/damaged/ etc. and are no longer useful. One section of dike, approximately 0.5 miles from the Alkali Ditch, has apparently been removed by hunters and or fishermen. This section is only about 4 feet wide with rock removed to an approximate +0.5 NAVD elevation. No apparent need for any maintenance at this time. (Photos: Appendix B, Photos 1-4)

## **VI. Conclusions and Recommendations**

Overall, the Clear Marais Shore Protection Project is in good condition and functioning as designed with only minor problems noted, and did not sustain any discernable damage from Hurricane RITA. A structural assessment survey is scheduled to be performed during the fall of 2006. Two staff gauges will also be installed at this time. Stand pipes on the settlement plates installed on future projects of this type should be much shorter in height. Damage to these plates has apparently been caused by barges or other similar type traffic running in to or tying up to these pipes making them useless for any post-construction settlement information. A much shorter pipe should serve to protect these pipes and/or discourage people from using them as mooring devices.

**Appendix A**  
**Project Features Map**



# Clear Marais Bank Protection (CS-22)

 **Shoreline Protection**  
 **Project Boundary**

**USGS**  
*science for a changing world*



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 20, 2002  
 Map ID: 2002-11-699  
 Data accurate as of: August 20, 2002

**Appendix B**  
**Photographs**



Photo 1, Typical rock dike.



Photo 2, Rock dike tie-in.



Photo 3, Rock dike with settlement plate.

## **Appendix C**

### **Three Year Budget Projection**

**CLEAR MARAIS SP / CS22 / PPL2**  
**Three-Year Operations & Maintenance Budgets 07/01/2005 - 06/30/08**

<u>Project Manager</u> Pat Landry	<u>O &amp; M Manager</u> Mel Guidry	<u>Federal Sponsor</u> COE	<u>Prepared By</u> Mel Guidry
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	2005/2006	2006/2007	2007/2008
<b>Maintenance Inspection</b>	\$ 4,955.00	\$ 5,250.00	\$ 5,407.00
<b>Structure Operation</b>			\$ -
<b>Administration</b>		\$ 2,000.00	\$ -

**Maintenance/Rehabilitation**

05/06 Description:

<i>E&amp;D</i>	
<i>Construction</i>	\$ -
<i>Construction Oversight</i>	\$ -
<i>Sub Total - Maint. And Rehab.</i>	\$ -

06/07 Description: Structural assesment survey

<i>E&amp;D</i>	\$ 20,000.00
<i>Construction</i>	
<i>Construction Oversight</i>	
<i>Sub Total - Maint. And Rehab.</i>	\$ 20,000.00

07/08 Description:

<i>E&amp;D</i>	
<i>Construction</i>	
<i>Construction Oversight</i>	
<i>Sub Total - Maint. And Rehab.</i>	\$ -

	2005/2006	2006/2007	2007/2008
<b><u>Total O&amp;M Budgets</u></b>	\$ 4,955.00	\$ 27,250.00	\$ 5,407.00

<b><u>O &amp; M Budget (3 yr Total)</u></b>	<b>\$ 37,612.00</b>
<b><u>Existing O &amp; M Budget</u></b>	<b>\$ 742,938.00</b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b>\$ 705,326.00</b>

**OPERATION AND MAINTENANCE BUDGET WORKSHEET**  
**CLEAR MARAIS SP PROJECT / PROJECT NO. CS-22 / PPL NO. 2**

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$5,250.00	\$5,250.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$0.00	\$0.00

**ADMINISTRATION**

LDNR / CRD Admin.	LUMP	1	\$0.00	\$0.00
FEDERAL SPONSOR Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	1	\$2,000.00	\$2,000.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$2,000.00</b>

**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	
Structural Assessment/Report	LUMP	1	\$20,000.00	\$20,000.00	
<b>TOTAL SURVEY COSTS:</b>				<b>\$20,000.00</b>	

**GEOTECHNICAL**

GEOTECH DESCRIPTION:					
Borings	EACH	0	\$0.00	\$0.00	
OTHER				\$0.00	
<b>TOTAL GEOTECHNICAL COSTS:</b>				<b>\$0.00</b>	

**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	1	\$0.00	\$0.00		
Contingency	LUMP	1	\$0.00	\$0.00		
General Structure Maintenance	LUMP	1	\$0.00	\$0.00		
OTHER			\$0.00	\$0.00		
OTHER			\$0.00	\$0.00		
OTHER			\$0.00	\$0.00		
<b>TOTAL CONSTRUCTION COSTS:</b>					<b>\$0.00</b>	

**TOTAL OPERATIONS AND MAINTENANCE BUDGET:**

**\$27,250.00**

## **Appendix D**

### **Field Inspection Form**

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: CS-22 Clear Marais Shoreline Protection

Date of Inspection: October 6, 2005 Time:

Structure No.

Inspector(s): Stan Aucoin, Herb Juneau, Mark Mouledous  
 Ricky Brouillette(LDNR); Cindy Steyer (NRCS), Joy Merino (NMFS)  
 Water Level +2.6

Structure Description: , Rock Dike

Type of Inspection: Annual

Weather Conditions: Clear & mild

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	
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**