Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2007/2008 Annual Inspection Report

for

HOLLY BEACH SAND MANAGEMENT PROJECT (CS-31)

State Project Number CS-31
Priority Project List 11

October 30, 2007
Cameron Parish

Prepared by:

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Table Of Contents

Appendices

I. Introduction

The Holly Beach Sand Management Project (CS-31) consists of approximately 10,849 acres of brackish marsh, intermediate marsh and sand dune in Cameron Parish Louisiana. The project is located between the communities of Holly Beach and Constance Beach on the Gulf of Mexico shoreline in southwest LA and is divided into two areas separated by LA Hwy. 82 (See Appendix A).

The Holly Beach Sand Management 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 eleventh Priority Project List. Funding consisted of fifty percent NRCS funds, twenty-five percent CIAP (Coastal Impact Assistance Program of NOAA) funds, and twenty-five percent from the State of Louisiana. The Holly Beach Project has a twenty –year (20 year) economic life, which began in April 2003.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Holly Beach Sand Management Project (CS-31) 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, 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 Holly Beach Sand Management Project (CS-31) was held on October 30, 2007 under sunny skies and cool temperatures. In attendance were Stan Aucoin and Darrell Pontiff from LDNR LFO, Darin Lee from LDNR TFO, and Dale Garber from NRCS. The annual inspection began at approximately 10:30 a.m. on the western boundary of the project area.

The field inspection included a complete visual inspection of all features. Staff gauge readings where available were used to determine approximate elevations of water, sand dunes, and sand fencing. 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

Between 1991 and 1995, the Louisiana Department of Natural Resources partnered with the Louisiana Department of Transportation and Development, constructed 85 breakwaters along the Gulf of Mexico shoreline in southwest LA. In conjunction with the CS-31 project, funded separately, some maintenance/modifications were performed on several of these breakwaters.

The Holly Beach Sand Management Project (CS-31) was constructed between breakwaters 10 and 72 and was completed in April 2003. It involved the construction of a 5.3 mile long, 1.75 million cubic yard beach nourishment beginning approximately 3 miles west of the community of Holly beach and ending approximately 8.3 miles west of Holly Beach. Sand was being blown across La. Hwy. 82 so fencing, as a result of a contract change order, was installed along the first 18,730 linear feet of beach. Another 11,000 linear feet was installed under separate contract with the La. Department of Agriculture and Forestry through their subsidiary, Gulf Coast Soil and Water Conservation District of Lake Charles. Both sides of this sand fence were planted with bitter panicum under a DNR contract. Also involved was the removal of six experimental breakwaters. Construction of the project will help to protect LA Hwy. 82 and the vast marsh area north of same. The principle project features of the Holly Beach Sand Management Project include the following:

A. **Beach Nourishment:** 5.3 miles of newly constructed beach beginning at approximately breakwater 72 and extending westward to approximately breakwater 10.

B. **Sand Fence:** Approximately 29,730 linear feet of sand fencing with associated pedestrian and vehicle gaps.

Stabilization of this area is critical since this ridge is the only hydrological barrier separating thousands of acres of low energy, intermediate and brackish marsh along the southern boundary of the Sabine National Wildlife Refuge from the high energy, saline waters of the Gulf of Mexico. The highway revetment has already been undermined in some sections, and the underlying Chenier is in danger of being breached. A breach of this ridge would lead to direct wave erosion and saltwater intrusion into fragile wetlands to the north.

Re-establishing the beach profile using sediment dredged from an old deposited sand bar area approximately 5 miles offshore from what was once the Sabine River, will (1) maintain the integrity and functionality of the Chenier/beach ridge; (2) reduce over-wash occurrences of the Chenier/beach ridge during episodic higher wave energy events in the Gulf of Mexico; (3) provide storm protection to intermediate and brackish marsh habitats north of the Chenier/beach ridge; (4) restore the littoral drift system, thereby reducing down drift erosion rates; and (5) allow for monitoring and quantification of beach profile changes and beach shape development.

Hurricane Rita in 2005 destroyed the existing sand fence and caused some sand erosion on the beach plateau. A post Rita survey was conducted and approximately 407,000 CY of sand was displaced since the project was completed.

The specific goals of the project are:

1. Protect approximately 8,600 acres of existing intermediate and brackish wetlands north of La. Hwy. 82 between Holly and Constance Beaches.

2. Protect approximately 300 acres of beach dune and coastal Chenier habitat along the shoreline of the Gulf of Mexico from erosion and degradation due to wave energies.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since April 2003, the construction completion date of the Holly Beach Sand Management Project (CS-31).

April 2005 - The LA Dept. of Agriculture along with the Cameron Parish Police Jury installed approximately an additional 10,000 linear feet of sand fencing along with approximately 4,000 plants in April 2005.

July 2006 – The LA Dept. of Agriculture installed approximately 5,550 plants along the entire length of the beach project.

October 2006 – Sand Fence Replacement (FEMA Project) – A maintenance event was performed to replace 46,000 linear feet of sand fence destroyed by Hurricane RITA. The contractor was Landscape Management Services from Lake Charles, LA. Work began on October 9, 2006 and the contract was completed on November 27, 2006. The cost associated with the engineering, design and construction of the Holly Beach Sand Fence Maintenance Project is as follows:

Construction:	$ 218,473.50
Engineering & Design:	$ 10,000.00
Construction Admin./Oversight	$ 10,000.00
As builts:	$ 8,797.50
TOTAL CONSTRUCTION COST:	**$ 247,271.00**

(Note: FEMA reimbursed $222,842.97 towards the sand replacement project.)

Structure Operations: There are no structural components of the project therefore no operations are required.

V. Inspection Results

Beach Nourishment

The entire reach of the 28,000 linear feet of the beach fill area appeared generally clean and had areas of scattered debris. The recent Hurricane HUMBERTO which made landfall in east Texas on September 13, 2007 pushed debris against the sand fence or carried same away via westerly currents. The sand fill was judged to be in excellent shape, with the majority of the "plateau area" that was initially constructed still in place. Beyond the western end of the project, we observed that some significant amounts of sand material had been deposited onto areas adjacent to the beach as per visual observation and recent 2005 aerial photography. (Photos: Appendix B, Photos 1 & 3).

Sand Fence

The entire initially installed sand fence was destroyed by Hurricane RITA and a Sand Fence Repair Maintenance Project to replace 46,000 linear feet was performed as noted above in Section IV. The primary fence is currently in good condition with only a few minor areas having damage to the fence. The secondary fence from the western end of the project to approximately mid-point of the project area is in good condition. However, the remaining secondary fence from mid-point of the project to the eastern end has sustained damage from high water events, in particular the high surge from Hurricane HUMBERTO in September, 2007. In some areas the fence is laying down, in other areas the entire fence and some posts are missing. Sand dunes have developed in front of and behind the primary fence along most of the project. Sand is accumulating and developing a plateau in some areas between the secondary and primary fence locations, where approximately one-half of the secondary fence is covered with sand. The vegetative plants located adjacent to both fence alignments are doing well and helping to trap sand and develop small dunes. (Photos: Appendix B, Photos 2, 3, 4 & 5).

VI. Conclusions and Recommendations

Overall, the Holly Beach Sand Management Project is in good condition and functioning as designed with problems as noted above. The beach plateau is still functional after the sand erosion from Hurricane Rita. Although some parts of the secondary fence have sustained damage and may not be functioning, it was agreed that no maintenance would be performed at this time. Such that this area of secondary fence is located closest to the waters edge, or wet sand line, it is susceptible to damage by high water events, which will probably occur again. It was discussed to monitor the situation for one more year and then make a decision to relocate the fence further back, away from the water or perhaps leave the damaged fence as is and install vegetative plantings between the primary and secondary fencing.

Appendix A

Project Features Map


Holly Beach Sand Management (CS-31)
Project Boundary
Gulf of Mexico
Holly Beach
Louisiana
Project Location
Miles
Kilometers
USGS

Appendix B

Photographs

Photo 1, View of sand enhancement project, looking west beyond project limits. (10-30-2007)

Photo 2, Close up view of beach head with vegetative plants adjacent to the fence. (10-30-2007)

Photo 3, View of primary and secondary fence located on western end of the project. (10-30-2007)

Photo 4, Secondary fence (from mid-project eastward) has sustained damage from high tide events. (10-30-2007)

Photo 5, Close up view of damaged secondary fence looking eastward. (10-30-2007)

Appendix C

Three Year Budget Projection

HOLLY BEACH SAND MANAGEMENT/ CS-31 / PPL 11

Three-Year Operations & Maintenance Budgets 07/01/2008 - 06/30/2011

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Pat Landry	*Darrell Pontiff*	*NRCS*	*Darrell Pontiff*

	2008/2009	2009/2010	2010/2011
Maintenance Inspection	$ 5,570.00	$ 5,737.00	$ 5,909.00
Structure Operation			
Administration			$ -
Maintenance/Rehabilitation			

08/09 Description: Periodic sand survey

E&D	$21,000.00
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	$ 21,000.00

09/10 Description:

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

10/11 Description:

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

	2008/2009	2009/2010	2010/2011
Total O&M Budgets	**$ 26,570.00**	**$ 5,737.00**	**$ 5,909.00**

O &M Budget (3 yr Total)	**$ 38,216.00**
Unexpended O & M Budget	**$ 222,964.04**
Remaining O & M Budget (Projected)	**$ 184,748.04**

Appendix D

Field Inspection Form

Annual Inspection Report
HOLLY BEACH SAND MANAGEMENT PROJECT
State Project No. CS-31

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: CS-31 Holly Beach

Date of Inspection: October 30, 2007 Time: 10:30 am

Structure No.

Inspector(s): Stan Aucoin, Darrell Pontiff, Darin Lee(LDNR)
Dale Garber (NRCS)

Structure Description: Sand fencing and beach fill.

Type of Inspection: Annual

Weather Conditions:sunny & cool

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				
Sand Fencing	Good			2,3,4, & 5	Sand fence completely replaced, however some of the secondary fence is damaged from high water events. Vegetation adjacent to both the primary and secondary fence alignments are doing well.
Signage /Supports	N/A				
Sand (fill)	Good			1,3	Beach fill in good condition, some trash and debris from high water events.
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