Coastal Protection and Restoration Authority of Louisiana

State of Louisiana

Coastal Protection and Restoration Authority of Louisiana (CPRA)

2011/2012 Annual Inspection Report

for

HOLLY BEACH SAND MANAGEMENT PROJECT (CS-31)

State Project Number CS-31
Priority Project List 11

December 21, 2011
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, 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 Holly Beach Sand Management Project (CS-31) was held on December 21, 2011 under sunny skies and cool temperatures. In attendance were Darrell Pontiff, and Dion Broussard from CPRA; Dale Garber, Vicki Supler, and Mike Griffin from NRCS. The annual inspection began at approximately 10:00 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.

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 $222,843)

September 2011 – Sand Fence Replacement – A maintenance event was performed to replace 46,000 linear feet of sand fence destroyed by storm surge from Hurricane IKE. The primary contractor was Petron L.L.C. Subcontractors were Lohmann Fencing and Landscape Management Services. Work began on September 9, 2011 and the contract was completed on December 22, 2012. There were 45,434 feet of sand fence constructed and approximately 30,000 bitter panicum plants planted. The cost associated with the engineering, design and construction of the Holly Beach Sand Management Sand Fence Project (Post Hurricane Ike – 2010) is as follows:

Construction:	$290,989.60
Engineering and Design:	$10,000.00
Construction Admin./Oversight:	$16,312.00
As builts:	$11,309.00
TOTAL CONSTRUCTION COST:	**$328,610.60**

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

V. Inspection Results

Beach Nourishment

There has been substantial loss of beach head. The sand fence alignment had to be adjusted from the preconstruction survey alignment, as the alignment would have placed the fence in the surf. Additionally, during construction, the fence alignment had to be moved north several times due to encroachment of gulf waters. An existing dune is in place and barring a hurricane a new dune should be created in a few years with the installation of the new sand fence. (Photos: Appendix B, Photos 1 – 4).

Sand Fence

The sand fence is in good condition overall as construction has just completed. A 150 foot section of fence had to be removed during construction due to damage from high water. Post construction, approximately 300 feet of fence was also damaged from high water. (Photos: Appendix B, Photos 1 - 4).

VI. Conclusions and Recommendations

Overall, the Holly Beach Sand Management Project is in fair condition and functioning as designed with problems as noted above. Beach nourishment should be considered in the near future as wind and wave action are scouring the beach and encroaching on LA Highway 82.

Appendix A

Project Features Map


Holly Beach Sand Management (CS-31)
Project Boundary
USGS
science for a changing world
Louisiana
Project Location
N
1 0 1 Miles
1 0 1 Kilometers
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: December 23, 2008
Map ID: USGS-NWRC 2009-11-0012
Data accurate as of: December 23, 2008
Gulf of Mexico
Constance Beach
Holly Beach
Beach Canal
Mud Lake

Appendix B

Photographs

Photo No. 1, Typical sand fence section

Photo No. 2, 150 foot section of damaged fence removed

Photo No. 3, Spliced fence section

Photo No. 4, Sand collecting on each side of fence beginning to form a dune. Also, plantings can be seen at toe of new dune on northern side of fence.

Appendix C

Three Year Budget Projection

HOLLY BEACH SAND MANAGEMENT/ CS-31 / PPL 11

Three-Year Operations & Maintenance Budgets 07/01/2012 - 06/30/2015

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Pat Landry	*Dion Broussard*	*NRCS*	*Dion Broussard*

	2012/2013 (-10)	2013/2014 (-11)	2014/2015 (-12)
Maintenance Inspection	$ 6,269.00	$ 6,457.00	$ 6,651.00
Structure Operation			
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	**$ 6,269.00**	**$ 6,457.00**	**$ 6,651.00**

O &M Budget (3 yr Total)	**$ 19,377.00**
Unexpended O & M Budget	**$ 148,952.00**
Remaining O & M Budget (Projected)	**$ 129,575.00**

Note: CPRA has obligated State Surplus money ($564,200) while awaiting FEMA Appeal.

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: CS-31 Holly Beach

Date of Inspection: December 21, 2012 Time: 10:00 am

Structure No.

Inspector(s): Darrell Pontiff, Dion Broussard (CPRA)
Dale Garber, Vicki Supler, Mike Griffin (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				
Vegetation	Good			1-4	Approximately 28,000 plants installed as part of maintenance event.
Sand Fencing	Good			1-4	Sand fence newly reconstructed and in good condition. 45,434 linear feet of fence installed
Signage /Supports	N/A				
Sand (fill)	Fair			1-4	Beach fill in fair condition, but retreating.
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?