Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2008/2009 Annual Inspection Report

for

HOLLY BEACH SAND MANAGEMENT PROJECT (CS-31)

State Project Number CS-31
Priority Project List 11

October 20, 2008
Cameron Parish

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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, 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, 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.

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

An inspection of the Holly Beach Sand Management Project (CS-31) was held on October 20, 2008 under sunny skies and warm temperatures. In attendance were Stan Aucoin, Pat Landry, Tommy McGinnis and Darrell Pontiff from OCPR LFO, and Dale Garber from NRCS. The annual inspection began at approximately 1:00 p.m. on the eastern 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. In 2008, Hurricane Ike caused additional damage to the project destroying the sand fence and existing vegetation. A post Ike survey was conducted and approximately 362,616 CY of sand was lost pre/post Ike and a total of 1.26 M CY of sand has been displaced pre Hurricane Rita versus post Hurricane Ike. A beach re-nourishment maintenance project will be considered.

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 sand beach nourishment area has been swept clean from the high tidal surge from the storm. Very little debris has been deposited from the receding waters. The sand plateau appears to have some erosion such that the large rock adjacent to LA Hwy 82 has been exposed as well as some posts appear to be out of the ground approximately 5 feet instead of the constructed 4 foot height. Also, there are several areas where the receding storm surge waters created cuts into the sand beach pushing the sand out into the Gulf towards the segmented rock breakwaters. Some of the sand from the beach has been pushed inland around the camps. (Photos: Appendix B, Photos 1 – 4).

Sand Fence

The sand fence has been completely destroyed with no visible signs of the sand fence material. There are some remaining 4x4 posts left standing, however the majority are broken off near the sand or leaning. There are no signs of any vegetation left that was planted along and adjacent to the sand fence alignment. (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. The existing remnants of the sand fencing will need to be removed and disposed of and new sand fencing will need to be installed. Vegetative plantings will need to be placed along the new sand fence alignment. An abbreviated post Hurricane Ike survey was conducted in comparison to the post Hurricane Rita survey performed in 2005 to determine any sand quantities lost that can be attributed to Hurricane Ike which will be made part of a FEMA claim. Replacement of the displaced sand is considered a priority by residents in Cameron Parish.

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, 2003
Map ID: USGS-NWRC 2004-11-5012
Data accurate as of December 22, 2003
Gulf of Mexico
Cameron Parish
Beach Canal
Holly Beach
Cameron Beach
Rockefeller Refuge
Mud Lake

Appendix B

Photographs

Photo No. 1, Typical view of destroyed sand fence and erosion to beach

Photo No. 2, Close up view of receding water sand erosion

Photo No. 3, Another view of receding water sand erosion

Photo No. 4, Sand from beach pushed inland

Appendix C

Three Year Budget Projection

HOLLY BEACH SAND MANAGEMENT/ CS-31 / PPL 11

Three-Year Operations & Maintenance Budgets 07/01/2009 - 06/30/2012

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

	2009/2010	2010/2011	2011/2012
Maintenance Inspection	$ 5,737.00	$ 5,909.00	$ 6,086.00
Structure Operation			
Administration	$6,000.00		$ -
Maintenance/Rehabilitation			

09/10 Description: Replace sand fence and vegetative plantings.

E&D	$30,000.00
Construction	$508,200.00
Construction Oversight	$20,000.00
Sub Total - Maint. And Rehab.	$ 558,200.00

10/11 Description:

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

11/12 Description:

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

	2009/2010	2010/2011	2011/2012
Total O&M Budgets	**$ 569,937.00**	**$ 5,909.00**	**$ 6,086.00**

O &M Budget (3 yr Total)	**$ 581,932.00**
Unexpended O & M Budget	**$ 222,072.00**
Remaining O & M Budget (Projected)	**$ (359,860.00)**

OPERATION AND MAINTENANCE BUDGET WORKSHEET

HOLLY BEACH SAND MANAGEMENT/ PROJECT NO. CS-31/ PPL NO.11

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	$5,737.00	**$5,737.00**
General Structure Maintenance	LUMP	1	$0.00	**$0.00**
Engineering and Design	LUMP	1	$30,000.00	**$30,000.00**
Operations Contract	LUMP	1	$0.00	**$0.00**
Construction Oversight	LUMP	1	$20,000.00	**$20,000.00**

ADMINISTRATION

OCPR / CRD Admin.	LUMP	1	$5,000.00	$5,000.00
FEDERAL SPONSOR Admin.	LUMP	1	$1,000.00	$1,000.00
SURVEY Admin.	LUMP	0	$0.00	$0.00
OTHER				$0.00
			TOTAL ADMINISTRATION COSTS:	**$6,000.00**

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	1	$0.00	$0.00
TBM Installation	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL SURVEY COSTS:	**$0.00**

GEOTECHNICAL

GEOTECH DESCRIPTION:					
Borings/Sand Search	EACH	0	$0.00	$0.00
OTHER				$0.00
			TOTAL GEOTECHNICAL COSTS:	**$0.00**

CONSTRUCTION

CONSTRUCTION DESCRIPTION: Replace sand fence and vegetative plantings.

Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
Bank Paving	0	0.0	0	$0.00	$0.00
Rip Rap - Structures (LUMP)	0	0.0	0	$0.00	$0.00
Crushed Stone - Breaches	0	0.0	0	$0.00	$0.00
Filter Cloth / Geogrid Fabric		SQ YD	0	$0.00	$0.00
Navigation Aid		EACH		$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)		SQ FT	0	$0.00	$0.00
Batter Piles (each or lump sum)		LN FT	0	$0.00	$0.00
Timber Members (each or lump sum)			0	$0.00	$0.00
Hardware		LUMP	1	$0.00	$0.00
Materials		LUMP	1	$0.00	$0.00
Mob / Demob		LUMP	1	$0.00	$0.00
Contingency (10%)		LUMP	1	$46,200.00	$46,200.00
General Structure Maintenance		LUMP	1	$0.00	$0.00
Sand Fencing		LN FT	46,000	$7.00	$322,000.00
Vegetative Plantings		EACH	28,000	$5.00	$140,000.00
OTHER				$0.00	$0.00
				TOTAL CONSTRUCTION COSTS:	**$508,200.00**

TOTAL OPERATIONS AND MAINTENANCE BUDGET: **$569,937.00**

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 20, 2007 Time: 1:00 pm

Structure No.

Inspector(s): Stan Aucoin, Darrell Pontiff, Pat landry(OCPR)
Tommy McGinnis (OCPR), Dale Garber (NRCS)

Structure Description: Sand fencing and beach fill.

Type of Inspection: Annual

Weather Conditions:sunny & warm

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			1-4	Sand fence completely destroyed, no signs of any vegetation.
Signage /Supports	N/A				
Sand (fill)	Good			1-4	Beach fill in fair condition, minimal trash and debris from high water storm surge.
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