



**State of Louisiana
Coastal Protection and Restoration Authority**

2017 Annual Inspection Report

for

**South Shore of The Pen Shoreline
Protection and Marsh Creation**

State Project Number BA-41
Priority Project List 14

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Jefferson Parish

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**2017 Annual Inspection Report
for
South Shore of The Pen Shoreline Protection and Marsh Creation
(BA-41)**

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I. Introduction

The South Shore of The Pen Shoreline Protection and Marsh Creation Project (BA-41) is located south of Lafitte in Jefferson Parish, Louisiana. The project area is bounded by the open waters of The Pen to the north, the Barataria Bay Waterway to the southwest, and the Lafitte oil & gas field to the southeast. A map of the project area is included in Appendix A.

II. Project Description and History

Formerly a marsh area which had been reclaimed for agricultural purposes, The Pen became an open-water body due to subsidence and a failure of the levee surrounding the agricultural impoundment. The triangular landmass bounded by the southern shoreline of The Pen, the Barataria Bay Waterway (Dupre Cut), and the Creole Gas Pipeline Canal has deteriorated over the years through shoreline erosion ranging from 5 to 30 feet per year, and interior marsh decline. Loss of this protective landmass would provide a more direct connection between the marine/tidal processes of the lower and the freshwater-dominated upper Barataria Basin. The objective of this project is to eliminate shoreline erosion along the south shore of The Pen, and to create and nourish the marsh area located between The Pen and the Barataria Bay Waterway.

Principal project features include:

1. Rock Shoreline Protection
 - 11,037 linear feet of rock dike, built in 3 reaches (West, Central, and East)
 - 19 settlement plates located along the rock dike during construction
2. Marsh Creation Fill Area
 - Approximately 75 acres of marsh east of the Barataria Bay Waterway
 - 11,484 linear feet of earthen containment dikes
3. Warning Signs
 - 21 permanent signs attached to timber pile supports

The purpose of the foreshore rock dike is to protect the existing adjacent marsh from excessive water exchange, wave action, and subsequent erosion. The structure also protects newly created marsh which was constructed as part of the project. This marsh was created by hydraulically dredging approximately 631,000 cubic yards of dredge material from a borrow area in The Pen. Containment was created by excavating material from within the marsh creation area prior to placement of hydraulically dredged fill.

Project construction began on July 8, 2010, and was completed on April 23, 2012. Project life is estimated to be 20 years, with field inspections planned annually.

Past Maintenance Events

A maintenance contract was awarded on June 30, 2015 to Luhr Bros., Inc. for the placement of graded riprap along portions of the Central and East Reaches which had experienced post-construction settlement. 13,005 tons of rock was placed at a cost of \$683,280.00. This work was completed August 28, 2015.

III. Inspection Purpose and Procedures

The purpose of the BA-41 annual inspection is to evaluate the constructed project features, to identify any deficiencies, and to prepare a report detailing the condition of project features and recommended corrective actions. Should it be determined that corrective actions are needed, the 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. 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 events performed since completion of the project are outlined in Section II.

An inspection of the BA-41 project was held on November 2, 2017, by Clay Worley and Barry Richard of CPRA, along with Quin Kinler of NRCS. Photographs of the inspection are included in Appendix B of this report.

IV. Inspection Results

Riprap Shoreline Protection

The West project reach was observed to be in generally good condition and was performing the project goal of protecting the marsh to the south (Photo # 1). However, portions of the rock structure along the Central and East reaches, which received a maintenance rock lift in 2015, have already experienced significant settlement (Photos #2-4).

Marsh Creation Area

Inspection of this feature was performed visually from the Barataria Bay Waterway due to lack of access over the rock shoreline protection structure and shallow depths encountered outside of established waterways. The marsh creation area appeared well-vegetated with healthy marsh grass and Roseau cane (Photos #5 & #6). No maintenance needs were identified for this area.

During construction, wooden mats were driven into the containment alignment to provide additional support for containing dredge material. These mats were left in place following construction and are still in place today. The landowner has expressed a desire to have these removed as they are currently falling apart and deteriorating and putting debris in and around the project area. These were never included in the O&M Plan as a project

feature, therefore there is no funding budgeted to perform any work to remove them. If they are to be removed it will require a request to the Task Force for funding prior to any work being done.

V. Conclusions

The majority of the project recently received a rock lift to bring it back to design elevation. There are many sections that appear to have resettled below this elevation. Some investigation and thought are needed before the next scheduled rock lift in 2026 to ensure better success. In the meantime the situation will continue to be monitored and proper warning signage will be maintained or upgraded to ensure public safety.

VI. Recommendations

Continue to inspect and assess the project features annually.

Immediate Repairs

- None at this time.

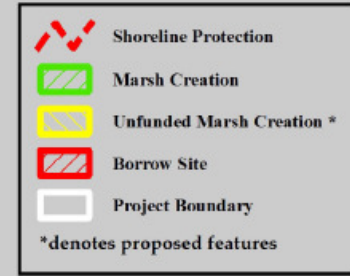
Programmed Maintenance

- Continue to observe rock structure for settlement.

Appendix A

Project Features Map

South Shore of The Pen Shoreline Protection and Marsh Creation (BA-41)



0.1 0 0.1 0.2
Kilometers

0.1 0 0.1 0.2
Miles

Map Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La.

Background Imagery:
2013 National Agriculture Inventory
Program (NAIP) Photography

Map Date: November 02, 2015
Map ID: USGS-NWRC 2016-11-0005
Data accurate as of: November 02, 2015



Appendix B

Photographs



Photo #1 – Shoreline Protection, West Reach



Photo #2 – Shoreline Protection, Central Reach



Photo #3 – Shoreline Protection, East Reach



Photo #4 – Shoreline Protection, East Reach



Photo #5 – Marsh Creation Area Viewed from Barataria Waterway



Photo #6 – Marsh Creation Area Viewed from Barataria Waterway

Appendix C

Three Year Budget Projection

[illegible]

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **BA-41 South Shore of the Pen**

Date of Inspection: 11/2/2017

Time: 1:00 pm

Structure No. n/a

Inspector(s): Worley, Kinler, Richard

Structure Description: Foreshore Rock Dike and Marsh Creation

Water Level

Inside: N/A

Outside: 1.50'

Type of Inspection: Annual

Weather Conditions: Mostly sunny, light wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Foreshore Rock Dike	Varying	settlement	n/a	1, 2, 3, 4	West reach was in good condition. Central and East reach had significant settlement
Settlement Plates	Good	See remarks	Minimal	1, 4	One of the settlement plate vertical posts was identified as missing during the 2015 maintenance project. No significant defects were noted on remaining posts.
Signage /Supports	Good	None	None	1	Warning signs and timber supports were in good condition.
Marsh Creation	Very Good	None	n/a	5, 6	Detailed inspection of this area was not possible due to limited access. The marsh fill area visible from the Barataria Bay Waterway appeared well-vegetated.