



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

2016 Annual Inspection Report

for

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

State Project Number BA-41
Priority Project List 14

July 11, 2016
Jefferson Parish

Prepared by:

Luke Prendergast, E.I.
Coastal Protection and Restoration Authority
New Orleans Regional Office
CERM, Suite 309
2045 Lakeshore Drive
New Orleans, LA 70122

Table of Contents

I. Introduction.....	1
II. Project Description and History.....	1
III. Inspection Purpose and Procedures	2
IV. Inspection Results	2
V. Conclusions.....	2
VI. Recommendations.....	3
Immediate Repairs	3
Programmed Maintenance	3

Appendices

- Appendix A Project Features Map
- Appendix B Photographs
- Appendix C Three Year Budget Projections
- Appendix D Field Inspection Form

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 June 7, 2016, by Luke Prendergast and Jonathan Sherwood of CPRA, along with Quin Kinler of NRCS. Photographs of that inspection are included in Appendix B of this report.

IV. Inspection Results

Riprap Shoreline Protection

Tides in the project area were abnormally high on the day of the inspection, with water at or near the design elevation of the structure. The exposed areas of riprap were observed to be in good condition, and the project was meeting the goal of protecting the marsh to the south (Photos #1-4).

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.

V. Conclusions

The project is in good condition. The shoreline protection was recently restored to the design elevation of +2.0' NAVD88 which is sufficient to protect the southern shoreline of The Pen from wind-driven wave action and vessel wake.

VI. Recommendations

Continue to inspect and assess the project features annually.

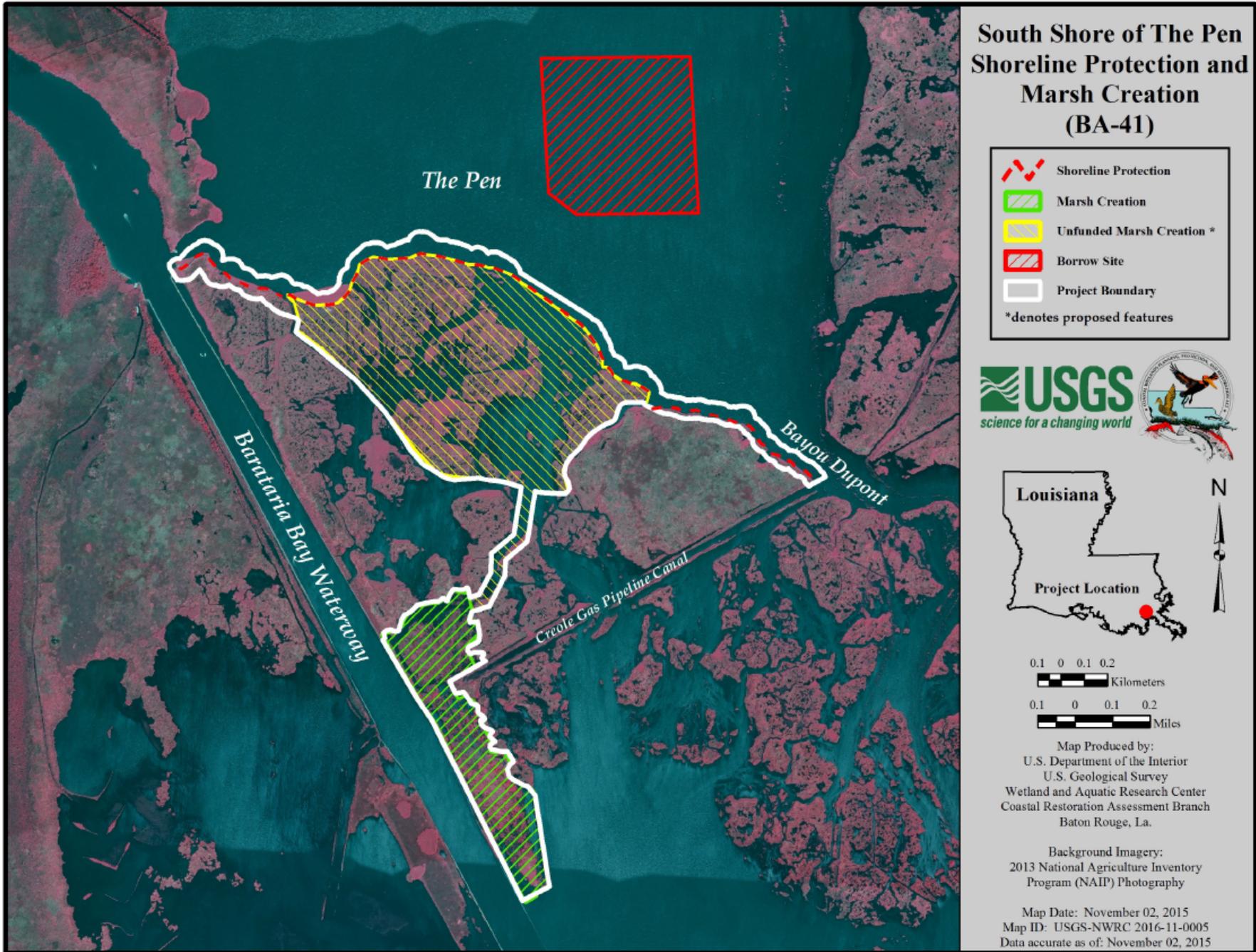
Immediate Repairs

- None at this time.

Programmed Maintenance

- Continue to observe rock structure for settlement.

Appendix A
Project Features Map



Appendix B

Photographs



Photo #1 – Shoreline Protection, West Reach



Photo #2 – Shoreline Protection, Central Reach



Photo #3 – Shoreline Protection, Central 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

Annual Inspection Report
 South Shore of The Pen
 State Project No. BA-41

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

Federal Sponsor: NRCS
 Construction Completed : 4/23/2012
 PPL 14

Current Approved O&M Budget - February 2008	Year 0 FY13	Year - 1 FY14	Year -2 FY15	Year -3 FY16	Year -4 FY17	Year -5 FY18	Year -6 FY19	Year -7 FY20	Year -8 FY21	Year -9 FY22	Year -10 FY23	Year -11 FY24	Year -12 FY25	Year -13 FY26	Year -14 FY27	Year -15 FY28	Year -16 FY29	Year - 17 FY30	Year -18 FY31	Year -19 FY32	Project Life Budget	Currently Funded
State O&M	\$74,271	\$22,354	\$2,165,845	\$3,227	\$3,292	\$3,357	\$250,214	\$3,493	\$3,563	\$26,191	\$3,707	\$3,781	\$3,857	\$1,352,091	\$4,012	\$4,093	\$4,174	\$4,258	\$4,343	\$4,430	\$3,944,552	\$2,262,470
Corps Admin	\$786	\$802	\$818	\$835	\$851	\$868	\$886	\$903	\$921	\$940	\$959	\$978	\$997	\$1,017	\$1,038	\$1,058	\$1,080	\$1,101	\$1,123	\$1,146	\$19,107	\$3,241
Federal S&A	\$5,081	\$3,583	\$40,836	\$3,227	\$3,292	\$3,357	\$6,377	\$3,493	\$3,563	\$4,198	\$3,707	\$3,781	\$3,857	\$26,061	\$4,012	\$4,093	\$4,174	\$4,258	\$4,343	\$4,430	\$139,722	\$49,500
Total																					\$4,103,381	\$2,315,211 per Lana

Projected O&M Expenditures																					Remaining Project Life	Current 3-YR Budget
Maintenance Inspection					\$3,292	\$3,357	\$3,425	\$3,493	\$3,563	\$3,634	\$3,707	\$3,781	\$3,856	\$3,934	\$4,012	\$4,092	\$4,175	\$4,258	\$4,343	\$4,430	\$61,352	\$10,073
Engineering Monitoring																					\$0	\$0
Sign Maintenance							\$166,488														\$166,488	\$166,488
Engineering Surveys							\$59,045							\$67,820							\$126,865	\$59,045
Settlement Plate Surveys							\$21,256			\$22,556				\$24,415							\$68,227	\$21,256
Federal S&A					\$3,292	\$3,357	\$6,377	\$3,493	\$3,563	\$4,198	\$3,707	\$3,781	\$3,857	\$26,061	\$4,012	\$4,093	\$4,174	\$4,258	\$4,343	\$4,430	\$86,996	\$13,026
Maintenance Rock Lift														\$1,255,922							\$1,255,922	\$0
E&D																					\$0	\$0
Construction																					\$0	\$0
Construction Oversight																					\$0	\$0
Total					\$6,584	\$6,714	\$256,591	\$6,986	\$7,126	\$30,388	\$7,414	\$7,562	\$7,713	\$1,378,152	\$8,024	\$8,185	\$8,349	\$8,516	\$8,686	\$8,860	\$1,765,850	\$269,889

O&M Expenditures from COE Report	\$23,050
State O&M Expenditures not submitted for in-kind credit	\$867,610 estimated
Federal Sponsor MIPRs (if applicable)	\$35,233
Total Estimated O&M Expenditures (as of June 2016)	\$925,893

Current O&M Budget less COE Admin	\$2,311,970
Estimated O&M Expenditures To-Date	\$925,893
Remaining Available O&M Budget	\$1,386,077
Projected 3-Year Budget Expenditures	\$269,889
3-Year Budget Surplus (Shortfall Request)	\$1,116,188

Current Project Life Budget less COE Admin	\$4,084,274
Total Projected Project Life Budget	\$2,691,744
Project Life Budget Surplus (Shortfall)	\$1,392,530

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

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

Date of Inspection: 6/7/2016

Time: 12:15 pm

Structure No. n/a

Inspector(s): Prendergast, Kinler, Sherwood

Structure Description: __Foreshore Rock Dike and Marsh Creation

Water Level

Inside: N/A

Outside: 1.90'

Type of Inspection: Annual

Weather Conditions: Mostly sunny, light wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Foreshore Rock Dike	Very Good	None	n/a	1, 2, 3, 4	High water on the day of the inspection prevented thorough observation; however, the visible portions of the rock breakwater appeared to be in very good condition following the 2015 maintenance lift.
Settlement Plates	Good	See remarks	Minimal	1, 2	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.