



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

2015 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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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.

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 17, 2015, by Luke Prendergast and Melissa Hymel 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

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). Portions of the rock structure along the Central and East reaches have experienced significant settlement (Photos #2 and #3). A contract has been executed for a maintenance rock lift to restore these areas to the design elevation.

Marsh Creation Area

Due to the draft limitations of the inspection vessel, access to the marsh creation area was not feasible. Inspection of this feature was performed visually from outside the shoreline protection feature and from the Barataria Bay Waterway. The marsh creation area appeared well-vegetated with healthy marsh grass and Roseau cane (Photo #5). No maintenance needs were identified for this area.

V. Conclusions

The project is in fair condition. A maintenance rock lift is being performed on the shoreline protection feature which should be complete by late summer 2015. Approximately 6,000 linear feet of the rock dike will be capped to bring the shoreline protection up to the design elevation of +2.0' NAVD88. CPRA is leading the repair effort in consultation with NRCS.

VI. Recommendations

Continue to inspect the project features for condition and functionality, and perform the scheduled rock maintenance project as planned.

Immediate Repairs

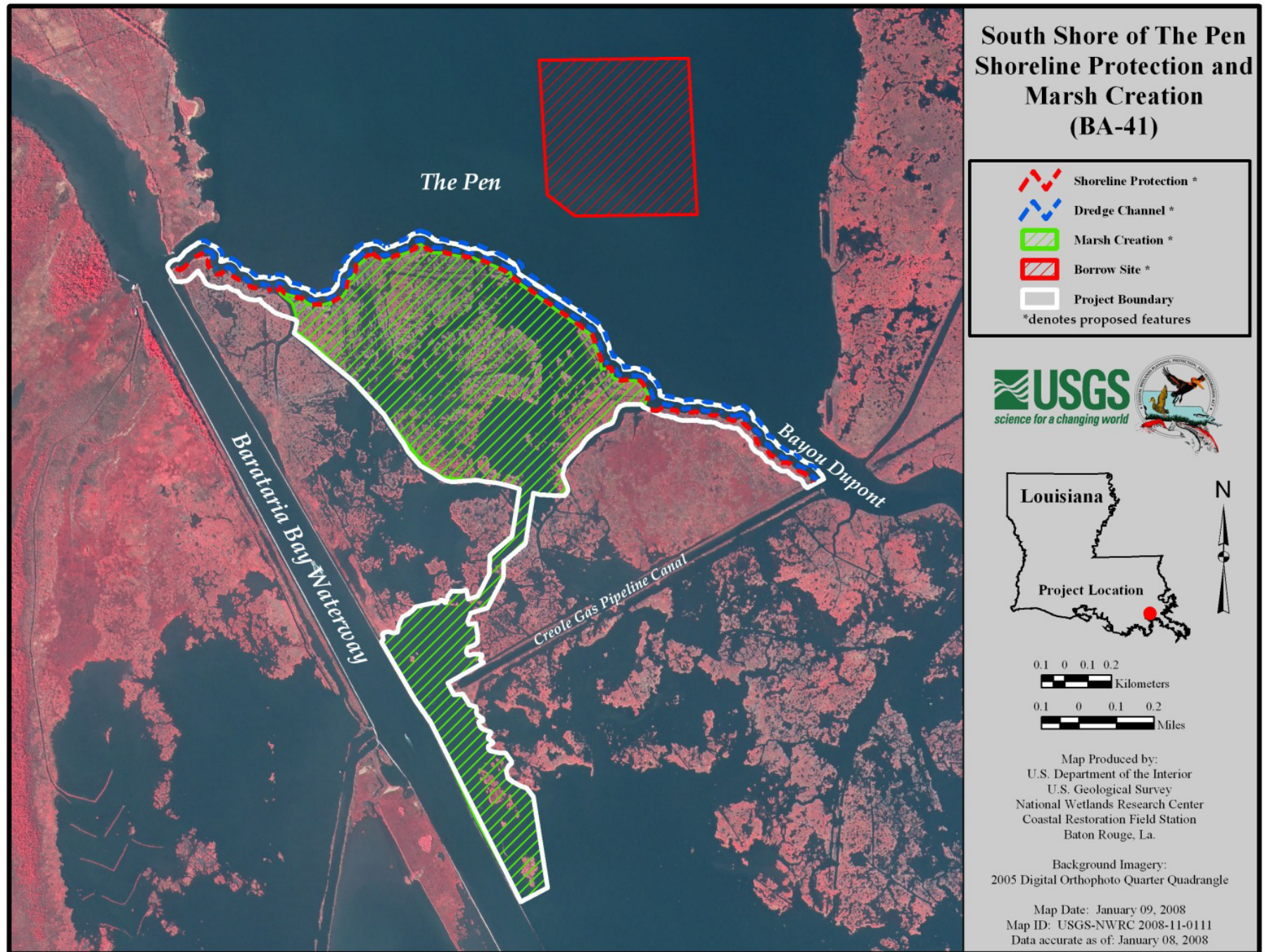
- Perform rock lift on Central and East Reaches.

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 – Settlement in Central Reach



Photo #4 – End of East Reach at Bayou Dupont and Pipeline Canal



Photo #5 – Marsh Creation Area Viewed from Baratavia Waterway

Appendix C

Three Year Budget Projection

2015 Annual Inspection Report
S. Shore of The Pen Shoreline Protection & Marsh Creation
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

urrent 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 Budget
Maintenance Inspection				\$3,227	\$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	\$64,579	\$9,876
Engineering Monitoring																					\$0	\$0
Sign Maintenance							\$166,488														\$166,488	\$0
Engineering Surveys							\$59,045							\$67,820							\$126,865	\$0
Settlement Plate Surveys							\$21,256			\$22,556				\$24,415							\$68,227	\$0
Federal S&A				\$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	\$90,223	\$9,876
Maintenance Rock Lift														\$1,255,922							\$1,255,922	\$0
E&D				\$91,569																	\$91,569	\$91,569
Construction				\$675,000																	\$675,000	\$675,000
Construction Oversight				\$213,295																	\$213,295	\$213,295
Total				\$986,318	\$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	\$2,752,169	\$999,616

O&M Expenditures from COE Report	\$19,392	Current O&M Budget less COE Admin	\$2,311,970	Current Project Life Budget less COE Admin	\$4,084,274
State O&M Expenditures not submitted for in-kind credit	\$0	Remaining Available O&M Budget	\$2,257,345	Total Projected Project Life Budget	\$2,806,793
Federal Sponsor MIPRs (if applicable)	\$35,233	Add'l Funding amount needed thru FY16-FY18	(\$1,257,729)	Project Life Budget Request Amount	(\$1,277,481)
Total Estimated O&M Expenditures (as of May 2015)	\$54,625				

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

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

Date of Inspection: 6/17/2015

Time: 11:00 am

Structure No. n/a

Inspector(s): Prendergast, Kinler, Hymel

Structure Description: Foreshore Rock Dike and Marsh Creation

Water Level

Inside: N/A

Outside: 1.30'

Type of Inspection: Annual

Weather Conditions: Mostly sunny, light wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Foreshore Rock Dike	Varies; See remarks	See remarks	n/a	1, 2, 3, 4	The West Reach appeared to be in good condition. The East Reach and eastern half of the Central Reach have experienced settlement. A contract has been executed to perform a maintenance lift this summer.
Settlement Plates	Good	None	None	4	No significant defects noted.
Signage /Supports	Good	None	None	2, 3, 4	Warning signs and timber supports were in good condition.
Marsh Creation	Very Good	None	n/a	5	Detailed inspection of this area was not possible due to limited access. However, the marsh fill area visible from the Barataria Bay Waterway appeared well-vegetated.