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

July 1, 2015
Jefferson Parish

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New Orleans, LA 70122
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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
2015 Annual Inspection Report
S. Shore of The Pen Shoreline Protection & Marsh Creation
State Project No. BA-41

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 Barataria Waterway
Appendix C

Three Year Budget Projection
### 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 | 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 |
|----------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Corps Admin                | $786          | $802           | $818           | $835           | $851           | $868           | $886           | $903           | $921           | $940           | $958           | $978           | $997           | $1,017         | $1,038         | $1,058         | $1,080         | $1,101         | $1,123         | $1,146         | $19,107        | $3,241         |
| **Total**                  | **$4,103,381**| **$2,315,211** | **$64,579**    | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** | **$1,255,922** |

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<th>Projected O&amp;M Expenditures</th>
<th>Remaining Current Project Life Budget</th>
<th>Current Budget</th>
</tr>
</thead>
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<tr>
<td>Maintenance Inspection</td>
<td>$3,227</td>
<td>$0</td>
</tr>
<tr>
<td>Engineering Monitoring</td>
<td>$0</td>
<td>$0</td>
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<td>Sign Maintenance</td>
<td>$166,488</td>
<td>$0</td>
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<td>Engineering Surveys</td>
<td>$59,045</td>
<td>$67,820</td>
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<tr>
<td>Settlement Plate Surveys</td>
<td>$2,256</td>
<td>$24,415</td>
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<td>Federal S&amp;A</td>
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<td>$1,255,922</td>
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<td>Maintenance Rock Lift</td>
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<td>E&amp;D</td>
<td>$675,000</td>
<td>$675,000</td>
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<td>Construction Oversight</td>
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<td><strong>Total</strong></td>
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<table>
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<tr>
<th>O&amp;M Expenditures from COE Report</th>
<th>Current O&amp;M Budget less COE Admin</th>
<th>Current Project Life Budget less COE Admin</th>
<th>Total Estimated O&amp;M Expenditures (as of May 2015)</th>
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<td>$19,392</td>
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<td>$54,625</td>
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<th>State O&amp;M Expenditures not submitted for in-kind credit</th>
<th>Remaining Available O&amp;M Budget</th>
<th>Total Projected Project Life Budget</th>
<th>Project Life Budget Request Amount</th>
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<td>$0</td>
<td>$2,257,345</td>
<td>$2,806,793</td>
<td>($1,277,481)</td>
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<tr>
<th>Federal Sponsor MIPRs (if applicable)</th>
<th>Add'l Funding amount needed thru FY16-FY18</th>
<th>Project Life Budget Request Amount</th>
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<tbody>
<tr>
<td>$35,233</td>
<td>($1,257,729)</td>
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Appendix D

Field Inspection Form
## MAINTENANCE INSPECTION REPORT CHECK SHEET

**Project No. / Name:** BA-41 South Shore of the Pen  
**Structure No.:** n/a  
**Structure Description:** Foreshore Rock Dike and Marsh Creation  
**Date of Inspection:** 6/17/2015  
**Type of Inspection:** Annual  
**Weather Conditions:** Mostly sunny, light wind  

<table>
<thead>
<tr>
<th>Item</th>
<th>Condition</th>
<th>Physical Damage</th>
<th>Corrosion</th>
<th>Photo #</th>
<th>Observations and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreshore Rock Dike</td>
<td>Varies;</td>
<td>See remarks</td>
<td>n/a</td>
<td>1, 2, 3, 4</td>
<td>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.</td>
</tr>
<tr>
<td>Settlement Plates</td>
<td>Good</td>
<td>None</td>
<td>None</td>
<td>4</td>
<td>No significant defects noted.</td>
</tr>
<tr>
<td>Signage /Supports</td>
<td>Good</td>
<td>None</td>
<td>None</td>
<td>2, 3, 4</td>
<td>Warning signs and timber supports were in good condition.</td>
</tr>
<tr>
<td>Marsh Creation</td>
<td>Very Good</td>
<td>None</td>
<td>n/a</td>
<td>5</td>
<td>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.</td>
</tr>
</tbody>
</table>