



**State of Louisiana  
Department of Natural Resources  
Coastal Engineering Division**

**2005/2006 Annual Inspection  
Report**

for

**BOSTON CANAL/VERMILION  
BAY SHORE RESTORATION  
PROJECT  
(TV-09)**

State Project Number TV-09  
Priority Project List 2

October 4, 2005  
Vermilion Parish

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## **I. Introduction**

The Boston Canal/Vermilion Bay Shore Restoration Project consists of approximately 466 acres of brackish marsh and open water. It is located in Vermilion Parish, approximately 12 miles south of Delcambre, LA on the northern bank of Vermilion Bay and at the mouth of Boston Canal. It is bounded on the south by Vermilion Bay, on the west by Mud Point, and on the east by Oaks Canal. (See Appendix A).

The Boston Canal/Vermilion Bay Shore Restoration 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 second Priority Project List. The Boston Canal/Vermilion Bay Shore Restoration Project has a twenty year (20 year) economic life, which began in October 1995.

## **II. Inspection Purpose and Procedures**

The purpose of the annual inspection of the Boston Canal/Vermilion Bay Shore Restoration Project (TV-09) 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, LDNR 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, 2002). 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 LDNR was responsible for the operation and maintenance phase of the vast majority of CWPPRA projects, that LDNR would be the responsible party for all Post Storm/Hurricane Assessments. After Hurricanes Katrina and Rita, every project appeared to have been impacted by the storms; therefore, LDNR determined that all projects should be assessed for damages (Broussard, 2006). With concurrence from the federal sponsor, LDNR has decided to use the information obtained during this post hurricane assessment in this Annual Maintenance Inspection.

An inspection of the Boston Canal/Vermilion Bay Shore Restoration Project (TV-09) was held on October 4, 2005 under clear skies and cool temperatures. In attendance were Stan Aucoin, Christine Thibodeaux, Beau Tate, Darrell Pontiff, Herbert Juneau and Patrick Landry of LDNR. NRCS was represented by Troy Mallach. Parties met at the Lafayette Field Office of CED and proceeded to the TV-09 project area. The annual inspection began at approximately 9:30 am.

The field inspection included a complete visual inspection of all features. Staff gauge readings were used to determine approximate elevations of water, rock weirs, earthen

embankments, steel bulkhead structures and other project features. 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

The Boston Canal Project involves the installation and maintenance of approximately 1,405 linear feet of foreshore rock dike along the northern bank of Vermilion Bay and both east and west banks of Boston Canal at its convergence with Vermilion Bay. Also included is the installation of approximately 34,000 plantings of smooth cordgrass (~14 miles) along the northern bank of Vermilion Bay between Mud Point and Oaks Canal. The purpose of the project is to maintain the integrity of approximately 466 acres of wetlands in the vicinity of Boston Canal by stabilizing the northern bank of the Vermilion Bay shoreline and to prevent further regression of the banks at the mouth of Boston Canal.

The principal project features include:

- 1 - Approximately 1,405 linear feet of rock breakwater on the northern bank Vermilion Bay at the mouth of the Boston Canal in Vermilion Parish
- 2 - Approximately 1100 linear feet of sediment fencing which consists of all lumber, hardware and woven geotextile fabric.
- 3 - Approximately 34,000 smooth cord grass plants planted between Mud Point and Oaks Canal along the northern bank of Vermilion Bay.

### IV. Summary of Past Operation and Maintenance Projects

**General Maintenance:** Below is a summary of completed maintenance projects and operation tasks performed since October 1995, the construction completion date of the Boston Canal/Vermilion Bay Shore Protection Project.

**Maintenance Project – Loland Broussard:** This maintenance project included the modification of the sediment trapping fences constructed behind the rock dikes by Loland Broussard of NRCS in concurrence with LDNR and at no cost to CWPPRA on March 7, 2002. Modification of the fences involved cutting the geotextile panels from the top of the fence down to approx. 6" below the mud line (~ 30") and removing the panel. The 4x4 wooden posts were not disturbed and left intact. The reinforcement wire behind each panel was severely deteriorated and virtually non-existent. The southern most fences were preventing sediment from filling the entire area behind the dikes. Since the fences have been removed, sediment has been more evenly distributed. Vegetation continues to increase.

**2005 Structure Operations:** There are no operations associated with this project.

## **V. Inspection Results**

### **Rock breakwaters**

For the most part, the breakwaters are in excellent post construction condition. There is no apparent toe scour or rock displacement. The western end of the dike where it ties into the Vermilion Bay shoreline continues to worsen. A small gap left during original construction appears to have caused this problem. While the situation is similar on the SE tie-in, it is not as severe. No gap was left on this end during construction. Recommendations made to repair these gaps during the O & M inspection of June 2003 have been reconsidered due to costs and logistics associated with such repairs. These areas will be closely monitored, and should the situation significantly worsen, steps will be taken to close/stabilize these areas. Signage and associated pilings are stable and functioning; however some of the signs were slightly bent around the pilings from Hurricane RITA damages. (Photos: Appendix B, Photos 1 - 4)

### **Sediment Fencing**

The sediment fencing has been removed as stated in Section IV above.

### **Smooth Cordgrass plantings**

To inspect the shoreline plantings, we only traveled west from Boston Canal to Four Mile Cut along the Vermilion Bay shoreline. Because of time and logistic constraints, we did not inspect the plantings east of Boston Canal or west of Four Mile Cut. The shoreline plantings appear green and relatively unharmed. Areas where the plantings were missing did not appear to have recent storm related erosion and were associated with stands of *Phragmites australis*. The marsh behind the plantings appeared stressed and matted probably due to high water levels and salinity. It is likely, however, that those areas will quickly return to their preexisting conditions. The vegetation within the rock dike was burned by salt water but should survive. Some vegetation stations were visible with plantings still intact and 4 x 4 posts standing in water. (Photos: Appendix B, Photo 5)

## **VI. Conclusions and Recommendations**

The Boston Canal/Vermilion Bay Shore Restoration Project is in good condition and functioning as intended and suffered no discernable damage from Hurricane RITA. Installation of a staff gauge in the vicinity is recommended. As recommended in previous inspections, the sediment fences installed during construction should be re-evaluated in similar projects in the future. Because survivorship and percent cover of *S. alterniflora* was lessened in established stands of *Phragmites australis*, it is suggested that this planting situation be avoided.

**Appendix A**  
**Project Features Map**



**Boston Canal/  
Vermilion Bay  
Bank Protection  
(TV-09)**

-  Containment Dike
-  Vegetative Plantings
-  Sediment Fence
-  Project Boundary



Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
National Wetlands Research Center  
Coastal Restoration Field Station

Background Imagery:  
Map Image: Thematic Mapper Satellite Imagery 2000  
Inset Image: 1994 Color Infrared Aerial Photography  
Map Date: September 3, 2002  
Map ID: 2002-11-741  
Data accurate as of: September 3, 2002

**Appendix B**  
**Photographs**



Photo 1, Rock dike west side of canal



Photo 2, Rock dike, east side canal.



Photo 3, Western tie-in along bayshore.



Photo 4, Eastern tie-in along bayshore.



Photo 5, Vegetative plantings along bayshore, between Boston Canal and Four Mile Cut.

## **Appendix C**

### **Three Year Budget Projection**

**BOSTON CANAL/ TV-09 / PPL 2**  
**Three-Year Operations & Maintenance Budgets 07/01/2005 - 06/30/08**

<u>Project Manager</u> Pat Landry	<u>O &amp; M Manager</u> Mel Guidry	<u>Federal Sponsor</u> NRCS	<u>Prepared By</u> Mel Guidry
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	2005/2006	2006/2007	2007/2008
<b>Maintenance Inspection</b>	\$ 4,955.00	\$ 5,250.00	\$ 5,407.00
<b>Structure Operation</b>			
<b>Administration</b>		\$ -	\$ -

**Maintenance/Rehabilitation**

**05/06 Description:**

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E&D	
Construction	
Construction Oversight	
<b>Sub Total - Maint. And Rehab.</b>	<b>\$ -</b>

**06/07 Description:**

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E&D	\$ -
Construction	\$ -
Construction Oversight	\$ -
<b>Sub Total - Maint. And Rehab.</b>	<b>\$ -</b>

**07/08 Description:**

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E&D	\$ -
Construction	\$ -
Construction Oversight	\$ -
<b>Sub Total - Maint. And Rehab.</b>	<b>\$ -</b>

	2005/2006	2006/2007	2007/2008
<b><u>Total O&amp;M Budgets</u></b>	<b>\$ 4,955.00</b>	<b>\$ 5,250.00</b>	<b>\$ 5,407.00</b>

<b><u>O &amp; M Budget (3 yr Total)</u></b>	<b>\$ 15,612.00</b>
<b><u>Existing O &amp; M Budget</u></b>	<b>\$ 159,917.00</b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b>\$ 144,305.00</b>

## **Appendix D**

### **Field Inspection Form**

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: Boston Canal/Vermilion Bay Bank Protection

Date of Inspection: October 4, 2005 Time: 10:00 a.m.

Structure No.

Inspector(s): Stan Aucoin, Pat Landry, Herb Juneau, Darrell Pontiff  
Christine Thibodeaux, Beau Tate, LDNR  
Troy Mallach, NRCS

Structure Description: Rock Dike

Water Level Inside: \_\_\_\_\_ Outside: \_\_\_\_\_  
Weather Conditions: Sunny and cool temperatures

Type of Inspection: Annual

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				
Cables	N/A				
Signage / Supports	Good				Some signs slightly bent from Hurricane RITA damages.
Rip Rap (fill)	Good			1,2,3, & 4	Western end of rock dike needs some repair.
Vegetative Plantings	Good			5	

- 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**