



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

**2005/2006 Annual Inspection  
Report**

for

**VERMILION RIVER CUT-OFF  
BANK EROSION PROTECTION  
PROJECT**

State Project Number TV-03  
Priority Project List 1

October 4, 2005  
Vermilion Parish

Prepared by:

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## **I. Introduction**

The Vermilion River Cut-Off Project (State Project No. TV-03) is located in the Teche-Vermilion Basin on the eastern bank of the Vermilion River Cut-Off in Vermilion Parish just south of the town of Intracoastal City. (See Appendix A).

The Vermilion River Cut-Off 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 first Priority Project List. The Vermilion River Cut-Off Project has a twenty –year (20 year) economic life, which began in March 1996.

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

The purpose of the annual inspection of the Vermilion River Cut-Off Project (TV-03) 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, 2003). The annual inspection report also contains a summary of maintenance projects 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. A summary of past operation and maintenance projects completed since completion of the Vermilion River Cut-Off Project are outlined in Section IV.

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 Vermilion River Cut-Off Project (TV-03) was held on October 4, 2005 under sunny skies and mild temperatures. In attendance was Stan Aucoin, Pat Landry, Herb Juneau, Darrell Pontiff, Christine Thibodeaux, and Beau Tate from LDNR, Troy Mallach representing NRCS (for other inspections), and John Foret of NOAA Fisheries (for other inspections). Representatives from the USACE were invited but were unable to attend. All parties met at the Lafayette Field Office of CED and traveled to Intracoastal City in Vermilion Parish, LA. The annual inspection began at

approximately 12:30 p.m. at the southern end of the rock dike on the Vermilion River Cut-Off.

The field inspection included a complete visual inspection of the entire project site. Staff gauge readings and existing temporary benchmarks were used to determine approximate elevations of water and rock weirs. 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**

Wetlands in their natural state are among the most productive areas on earth, and they are central to the culture and development of south Louisiana. The Coastal Wetlands Planning, Protection and Restoration Act provides a substantial federal commitment to help Louisiana save its coastal wetlands. The wetlands are a fragile environment, which is disappearing at a rate of over 25 square miles of marsh a year in Louisiana, which is 80 percent of the nation's annual coastal wetland loss. The wetlands provide many benefits including commercial and recreational value, wildlife habitat, wintering habitat for millions of the continent's migratory ducks and geese, nursery habitat for one of America's largest fish and shellfish harvests, erosion control, flood protection and acting as storm buffers. Additionally the wetlands help maintain water quality.

In the time period since the construction of the Vermilion River Cutoff in 1944, a large section of the west bank of the cutoff has eroded as a result of both bay-side wave action and boat wakes within the cutoff. Erosion of the west bank of the Vermilion River Cutoff, (estimated at 23.3 ft/yr from comparisons of 1955-1985 aerial photography), has occurred to the extent that the land bridge between the cutoff and Vermilion Bay, to the west, is breached in several places. The breaches were allowing wind driven waves from the bay to cross the cutoff and attack the east bank. Thus, erosion on the east bank was also occurring at an accelerated rate. The erosion on the east bank threatened to breach the land bridge between the cutoff and Onion Lake. The purpose of the project was to take action to protect the east bank and prevent the scale of deterioration that has occurred on the west bank. The specific plan objectives were:

- 1) Maintain and protect approximately 54 acres of brackish marsh along the eastern side of the Vermilion River Cutoff that will contribute to protecting the integrity of several thousand acres of the Onion Lake wetland complex.
- 2) Prevent the Vermilion River Cutoff from widening into adjacent marshes.

The Vermilion River Cutoff, near Intracoastal City, La., was constructed in 1944 to connect the Vermilion River and the Gulf Intracoastal Waterway (GIWW) with Vermilion Bay for navigational purposes. It is located in the Teche-Vermilion Basin in Vermilion Parish. The Vermilion River Cutoff Bank Erosion Protection Project (T/V-03)

consists of approximately 6,200 linear feet of rock breakwater along the eastern embankment of the Vermilion River Cutoff Channel in the vicinity of Onion Lake and Onion Bayou. The project has a twenty-year economic life, which began in March of 1996.

The principal project features include:

- Site 1 - Foreshore Rock Dike (approximately 6,200 linear feet)

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

##### **General Maintenance:**

###### **September 2005 - Luhr Brothers, Inc.**

Provided labor and materials to restore the rock dike to original constructed elevations. Approximately 5,573 tons of rock were placed over the sections of dike that were below permitted elevation of +3.5 NAVD88. The project was completed in September, 2005.

**Total Construction Cost                      \$130,655.45**

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

#### **V. Inspection Results**

##### **Site 1—Foreshore rock dike**

The foreshore dike is in very good condition with the recent completion of the maintenance event to raise the dike to original permitted elevations. The entire project was not impacted by Hurricane Rita storm surge waters. (Photos, Appendix B, Photos 1 & 2).

#### **VI. Conclusions and Recommendations**

The Vermilion River Cut-Off Project is in good condition and functioning as designed and with the recently completed work, should not require any maintenance for some time.

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





**Vermilion River  
Cutoff Bank  
Protection  
(TV-03)**

 **Shoreline Protection**  
 **Project Boundary**

**USGS**  
science for a changing world



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

Background Imagery:  
1998 Digital Orthophoto Quarter Quadrangle

Map Date: August 13, 2002  
Map ID: 2002-11-671  
Data accurate as of: August 13, 2002

## **Appendix B**

### **Photographs**





Photo 1, Typical rock dike along Vermilion River Cutoff



Photo 2, Rock tie-in on southern end of project.

## **Appendix C**

### **Three Year Budget Projection**

**VERMILION RIVER CUT OFF/ TV-03 / PPL 1**  
**Three-Year Operations & Maintenance Budgets 07/01/2005 - 06/30/08**

<u>Project Manager</u> Pat Landry	<u>O &amp; M Manager</u> Herb Juneau	<u>Federal Sponsor</u> COE	<u>Prepared By</u> Herb Juneau
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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>	\$5,625.00	\$ -	\$ -

**Maintenance/Rehabilitation**

05/06 Description: Restore rock dike to original constructed elevations.

E&D	\$1,282.84
Construction	\$130,655.45
Construction Oversight	\$4,593
<i>Sub Total - Maint. And Rehab.</i>	<u>\$ 136,531.19</u>

06/07 Description

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

07/08 Description:

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

	2005/2006	2006/2007	2007/2008
<b><u>Total O&amp;M Budgets</u></b>	<u>\$ 147,111.19</u>	<u>\$ 5,250.00</u>	<u>\$ 5,407.00</u>

<b><u>O &amp; M Budget (3 yr Total)</u></b>	<b><u>\$ 157,768.19</u></b>
<b><u>Existing O &amp; M Budget</u></b>	<b><u>\$ 33,356.00</u></b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b><u>\$ 124,412.19</u></b>

Note: Maintenance Project for 2005/2006 completed, therefore these funds already expended

**OPERATION AND MAINTENANCE BUDGET WORKSHEET**  
**VERMILION RIVER CUTOFF/TV-03/PPL 1**

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$4,955.00	\$4,955.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$1,282.84	\$1,282.84
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$4,593.00	\$4,593.00

**ADMINISTRATION**

LDNR / CRD Admin.	LUMP	1	\$5,625.00	\$5,625.00
FEDERAL SPONSER Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$5,625.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:					
Secondary Monument	EACH	0	\$0.00	\$0.00	
Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00	
Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00	
TBM Installation	EACH	0	\$0.00	\$0.00	
OTHER				\$0.00	
<b>TOTAL SURVEY COSTS:</b>				<b>\$0.00</b>	

**GEOTECHNICAL**

GEOTECH DESCRIPTION:					
Borings	EACH	0	\$0.00	\$0.00	
OTHER				\$0.00	
<b>TOTAL GEOTECHNICAL COSTS:</b>				<b>\$0.00</b>	

**CONSTRUCTION**

CONSTRUCTION DESCRIPTION:						
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE		
	5000	1.1	5,573	\$21.65	\$120,655.45	
	0	0.0	0	\$0.00	\$0.00	
	0	0.0	0	\$0.00	\$0.00	
Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00	\$0.00	
Navigation Aid	EACH	0	\$0.00	\$0.00	\$0.00	
Signage	EACH	0	\$0.00	\$0.00	\$0.00	
General Excavation / Fill	CU YD	0	\$0.00	\$0.00	\$0.00	
Dredging	CU YD	0	\$0.00	\$0.00	\$0.00	
Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00	\$0.00	
Timber Piles (each or lump sum)		0	\$0.00	\$0.00	\$0.00	
Timber Members (each or lump sum)		0	\$0.00	\$0.00	\$0.00	
Hardware	LUMP	1	\$0.00	\$0.00	\$0.00	
Materials	LUMP	1	\$0.00	\$0.00	\$0.00	
Mob / Demob	LUMP	1	\$10,000.00	\$10,000.00	\$10,000.00	
Contingency	LUMP	1	\$0.00	\$0.00	\$0.00	
General Structure Maintenance	LUMP	1	\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
<b>TOTAL CONSTRUCTION COSTS:</b>					<b>\$130,655.45</b>	

**TOTAL OPERATIONS AND MAINTENANCE BUDGET:**

**\$147,111.29**

## **Appendix D**

### **Field Inspection Form**

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: TV-03 Vermilion River Cut-Off

Date of Inspection: October 4, 2005 Time: 12:30pm

Structure No. N/A

Inspector(s): Stan Aucoin, Pat Landry, Herb Juneau,  
Darrell Pontiff, Christine Thibodeaux & Beau Tate(DNR)  
Troy Mallach (NRCS), John Foret (NMFS)

Structure Description: Foreshore Rock Dike

Water Level - +1.7 NAVD88

Type of Inspection: Annual

Weather Conditions: Partly Sunny, mild

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	N/A				
Rip Rap (fill) (foreshore dike)	Good			1 & 2	The foreshore dike was just recently elevated to original permitted height.
Earthen Embankment	N/A				

- 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**