



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

2017 Annual Inspection Report

for

**Lake Borgne Shoreline Protection
Project**

State Project Number PO-30
Priority Project List 10

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St. Bernard Parish

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**2017 Annual Inspection Report
for
Lake Borgne Shoreline Protection Project
(PO-30)**

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I. Introduction

Construction of the Lake Borgne Shoreline Protection 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. The Lake Borgne Shoreline Protection project was approved on the 10th Priority Project List. A second Lake Borgne Project was approved on the 11th Priority Project List and was subsequently combined with the previously approved Lake Borgne project.

A site map showing the project boundary is shown in Appendix A along with a map identifying all of the project features within the project area.

II. Project Description and History

The initial project provided lakeside protection only to the Old Shell Beach area. In April 2002, the Task Force combined the original project and funding with the Lake Borgne Shoreline Protection at Bayou Dupre (PO-31) from Priority Project List 11. The combined project (PO-30) is divided into two sections, Bayou Dupre and Shell Beach. The section at Shell Beach extends approximately 3.4 miles between Fort Bayou and Doulluts Canal, and the section at Bayou Dupre extends approximately 1.5 miles to the west and 0.8 miles to the east of Bayou Dupre (Appendix A).

The principal project features include a rock breakwater along the designated shoreline sections of Lake Borgne at Bayou Dupre and Shell Beach. At the mouth of Bayou Dupre, maintenance dredging within the MRGO has created an unnatural water depth. Therefore, a sheet pile structure ties in the shoreline breakwater into the existing offshore USACE rock breakwater along the MRGO. At Shell Beach, the rock breakwater ties in to the existing rock breakwater which surrounds the perimeter of Fort Beauregard and the only openings in the breakwater will occur along the mouth of Bayou Yscloskey and across the Tennessee Gas Pipeline right-of-way. Reach 1, extending to the north of Bayou Dupre, and the portion of Reach 3 between Fort Bayou and Bayou Yscloskey, were identified during design as having relatively weak soil foundation conditions compared to the rest of the project. These “weak” areas were designed to be placed in two (2) lifts during the initial construction contract followed by a maintenance lift approximately one (1) year later.

Construction began on August 1, 2007. The breakwater alignment was realigned in the field to conform more closely to the new shoreline location that resulted from the land losses that were accelerated by Hurricane Katrina. The second lifts were placed on the weak sections in August 2008 however, before the Access and Flotation channels could be backfilled, storm surges from Hurricanes Ike and Gustaf inundated the area and resulted in the sinking a large portion of the Reach 1 rock breakwater. Two (2) short sections of Reach 3 “weak” were also affected. It was decided to address the issue during the planned maintenance lift after an effective solution could be worked out. The project was accepted on March 11, 2009. Additional funding was first requested September 23, 2010 and authorized by the CWPPRA Task Force on May 5, 2011 A Permit modification



and extension was applied for January 5, 2012 and was received from USACE May 22, 2012. The Maintenance Lift project was constructed with Notice-to- Proceed issued June 4, 2013 and the Notice-of-Acceptance issued September 11, 2014. The maintenance project consisted of placing a rock lift in Reaches 1 and 3(weak) and installing a composite sheetpile wall in the areas where rock had sunk in those reaches.

Annual project inspections are planned. The Project has twenty-year (20 year) economic life, which began in 2009.

III. Inspection Purpose and Procedures

The purpose of the annual inspection of the Lake Borgne Shoreline Protection Project (PO-30) 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, 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 (O&M Plan). 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 projects completed since completion of the project are outlined in Section II.

An inspection of the Lake Borgne Shoreline Protection Project (PO-30) was conducted on November 16, 2017, by Barry Richard and Clay Worley of CPRA, and Patty Taylor of EPA. There was a light wind and partly cloudy skies. Photographs of that inspection are included in Appendix B of this report.

IV. Inspection Results

Rock Breakwater

Reach 1 – Shortly after construction and the passage of Hurricanes Ike and Gustav the rock breakwater settled below the mudline for much of its length. The 2013 maintenance project placed a rock lift in reach 1 and installed a composite sheetpile wall in the areas where rock had settled below the mudline. There is significant deterioration of this feature for which a follow up trip will be conducted with the project engineer to determine how to repair.

Reaches 2, & 3(strong) - The breakwater reaches appear to be in good condition, except for limited areas that have settled and should be monitored for possible future action.

Reach 3 Weak –The rock breakwater received a lift during the 2013 maintenance project and appeared to be on good condition. The 2013 maintenance project installed a composite sheetpile wall in the two areas where rock had settled below the mudline. These composite sheetpile walls were in good condition.

Reach 4 - The breakwater reach appears to be in good condition.



Double Sheetpile Wall Breakwater

The Double Sheet-pile Wall Breakwater appear to be in good condition. Although there are some sections of settlement and some corrosion of the steel in the splash zone it is performing its function.

Warning Signs

The two (2) warning signs at the Reach 1 Double Sheet-pile Wall Breakwater are present and appear to be in good condition. The Warning Sign at the Reach 2 Double Sheet-pile Wall Breakwater was replaced in the 2013 maintenance project and is in good condition.

V. Conclusions

Except for Reach 1 and isolated sections of Reach 3 Weak, The Lake Borgne shoreline Protection Project (PO-30) is performing as intended.

VI. Recommendations

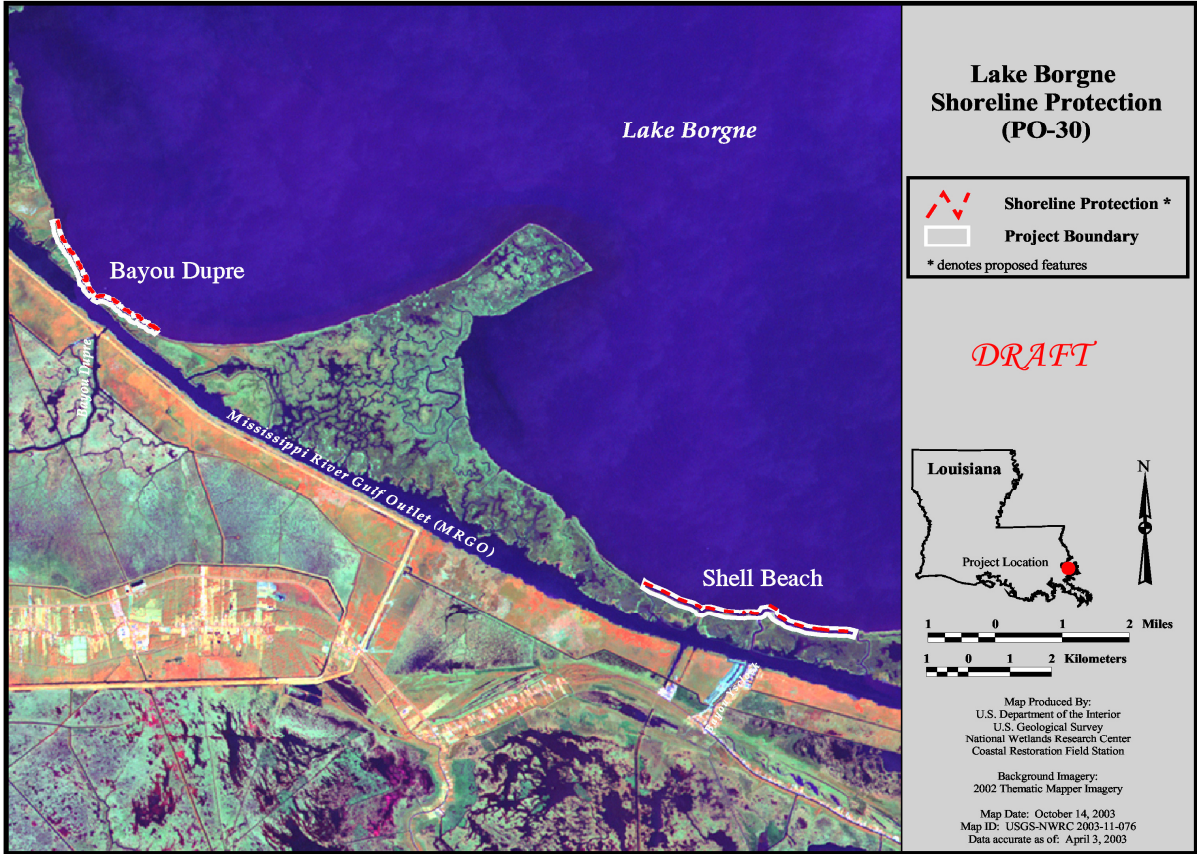
Immediate Repairs

- A maintenance project is scheduled to address the damaged composite sheetpile wall.

Programmed Maintenance

- Continue to monitor the condition of the breakwaters.

Appendix A
Project Features Map



Appendix B

Photographs



Photo 1: Reach 1



Photo 2: Reach 1 - Damaged Sheetpile Wall



Photo 3: Reach 2 – Fish Dip

Appendix C

Three Year Budget Projection

Lake Borgne Shoreline Protection - PO-30																										
Federal Sponsor: EPA																										
Construction Completed : April 12, 2010																										
PPL 10																										
Current Approved O&M Budget	Year 0	Year - 1	Year -2	Year -3	Year -4	Year -5	Year -6	Year -7	Year -8	Year -9	Year -10	Year -11	Year -12	Year -13	Year -14	Year -15	Year -16	Year -17	Year -18	Year -19	Project Life	Currently				
	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Budget	Funded				
State O&M	\$0	\$6,646,735	\$5,565	\$5,741	\$4,790	\$4,951	\$88,400	\$5,282	\$5,453	\$5,628	\$5,806	\$5,988	\$6,174	\$6,363	\$88,400	\$6,755	\$6,957	\$7,163	\$7,373	\$7,588	\$6,921,112	\$6,921,112				
Corps Admin	\$729	\$744	\$760	\$776	\$792	\$809	\$826	\$843	\$861	\$879	\$897	\$916	\$935	\$955	\$975	\$996	\$1,017	\$1,038	\$1,060	\$1,082	\$17,890	\$17,890				
Federal S&A	\$1,041	\$132,935	\$1,086	\$1,108	\$1,132	\$1,155	\$1,180	\$1,204	\$1,230	\$1,256	\$1,282	\$1,309	\$1,336	\$1,364	\$1,393	\$1,422	\$1,452	\$1,483	\$1,514	\$1,547	\$157,429	\$157,429				
Total	\$1,770	\$6,780,414	\$7,411	\$7,625	\$6,714	\$6,915	\$90,406	\$7,329	\$7,544	\$7,763	\$7,985	\$8,213	\$8,445	\$8,682	\$90,768	\$9,173	\$9,426	\$9,684	\$9,947	\$10,217	\$7,096,431	\$7,096,431				
Projected O&M Expenditures			1.0317019	1.0316262	0.8343494	1.0336117	1.03353	1.03225	1.03237	1.03209	1.03163	1.0313	1.03106212	1.03061	1.03049	1.0302	1.0299	1.02961	1.02932	1.0291605	Remaining	Current				
																					Project Life	Budget				
Maintenance Inspection	\$0	\$5,394	\$5,565	\$5,741	\$4,790	\$4,951	\$5,117	\$5,282	\$5,453	\$5,628	\$5,806	\$5,988	\$6,174	\$6,363	\$6,557	\$6,755	\$6,957	\$7,163	\$7,373	\$7,588	\$114,645	\$16,887				
General Maintenance																										
Surveys																										
Sign Replacement																										
Federal S&A	\$1,041	\$132,935	\$1,086	\$1,108	\$1,132	\$1,155	\$1,180	\$1,204	\$1,230	\$1,256	\$1,282	\$1,309	\$1,336	\$1,364	\$1,393	\$1,422	\$1,452	\$1,483	\$1,514	\$1,547	\$157,429	\$3,768				
Construction		\$6,641,341																			\$6,641,341	\$0				
Total	\$1,041	\$6,779,670	\$6,651	\$6,849	\$5,922	\$6,106	\$6,297	\$6,486	\$6,683	\$6,884	\$7,088	\$7,297	\$7,510	\$7,727	\$7,950	\$8,177	\$8,409	\$8,646	\$8,887	\$9,135	\$6,913,415	\$20,655				
O&M Expenditures from COE Report				\$7,257																						
State O&M Expenditures not submitted for in-kind credit				\$0																						
Federal Sponsor MIPRs (if applicable)				\$0																						
Total Estimated O&M Expenditures (as of April 2017)				\$7,257																						
													Current O&M Budget less COE Admin							Current Project Life Budget less COE Admin					\$7,078,541	
													Remaining Available O&M Budget							Total Projected Project Life Budget					\$6,920,672	
													Add'l Funding amount needed thru FY18-FY20							Project Life Budget Request Amount					-\$157,869	

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **PO-30 Lake Borgne Shoreline Protection Project**

Date of Inspection: 11/16/2017

Start Time: 9:30 am

Structure No. _____

Inspector(s): Richard. Worley (CPRA); Taylor (EPA)

Structure Description: Shoreline Protection Breakwater

Water Level Inside: N/A Outside: N/A

Type of Inspection: Annual

Weather Conditions: partly cloudy, Light Wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Reach 1 Rock Breakwater	Good	None	N/A	1	
Reach 1 Composite Sheetpile Const. 2013	Poor	Deteriorating Sheetpile Wall	N/A	1,2	Significant damage noted. A maintenance event is being planned to repair this.
Reach 2 Rock Breakwater	Good	None	N/A	3	
Reach 3 Rock Breakwater	Good	None	N/A		
Reach 3 Composite Sheetpile Const. 2013	Good	None	N/A		Approx. 770' of composite sheetpile wall was installed in two segments during 2013 maintenance project. no damage was observed.
Reach 4 Rock Breakwater	Good	none	N/A		
Reaches 1 & 2 Double Sheet-pile	Good	None	light		
Reaches 1 & 2 Warning Signs	Good	None	N/A		