



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

**2019 Annual Inspection Report**

for

**Naomi Outfall Management**

State Project Number BA-03c  
Priority Project List 5

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Jefferson Parish

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for  
Naomi Outfall Management  
(BA-03c)**

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## I. Introduction

The Naomi Outfall Management Project (BA-03c) is located on the west bank of the Mississippi River, south of Lafitte, Louisiana. Although the project features are located entirely in Jefferson Parish, the project outfall area encompasses 27,135 acres in Jefferson and Plaquemines Parishes. Specific project features are located on two streams – Goose Bayou Canal and Bayou Dupont – which connect the Barataria Bay Waterway to The Pen (see **Appendix A**).

## II. Project Description and History

The Naomi Siphon went into operation in February 1993 and has delivered an average of 997 cfs of fresh river water (when operating) into the marshes and streams east of The Pen. Much of this fresh water eventually exits the project area via Goose Bayou Canal and Bayou Dupont Canal which connect The Pen with the Barataria Waterway. During periods of high tide, reverse flow occurs and high-salinity water from the Barataria Waterway enters The Pen via the two subject canals. Prior to project construction, these two canals provided an avenue for loss of fresh river water from the project area and intrusion of high-salinity water into the project area.

The present project, which consists of fixed crest weirs with boat bays, restricts the hydrologic connections between The Pen and the Barataria Waterway. This restriction holds diverted water and nutrients in the project area, while restricting the high salinity waters from the Barataria Waterway. The weirs are designed to moderate or dampen the interchange of water into and out of The Pen through Goose Bayou Canal and Bayou Dupont Canal. Thus, retention of sediment-rich fresh siphon water in the outfall area is maximized, and intrusion of high-salinity water is minimized.

Project construction began on June 1, 2002, and was completed on August 17, 2002. Project life is estimated to be 20 years. Annual project inspections have been performed throughout the project life and are planned to continue until the project is closed out.

The principal project features include:

1. One stone weir at **Goose Bayou Canal**
  - a. Total length of weir = 458 ft.
  - b. Bottom width of boat bay = 30 ft.
  - c. Boat bay bottom elevation = -5 ft. (NAVD 88)
  - d. Weir crest = +1 ft. (NAVD 88)
  - e. Rock placed directly on geotextile
  - f. Rock rip rap = 3,967 tons
  - g. Geotextile = 2,851 yards



- h. Rock conforms to Rock Type 1 of Material Specification 523 with a gradation of:

Percent Lighter Than	Rock Unit Weight
100	700 lbs
50-100	300 lbs
15-50	150 lbs
0-15	45 lbs

- i. Four (4) - 4-piling clusters with navigation aid lights and warning signs.
- j. Six (6) single pilings with warning signs.
- k. Thirty-two buoys and associated stainless steel cable.

2. One stone weir at **Bayou Dupont Canal**

- a. Total length of weir = 302 ft.
- b. Bottom width of boat bay = 30 ft.
- c. Boat bay bottom elevation = -5 ft. (NAVD 88)
- d. Weir crest +1 ft. (NAVD 88)
- e. Rock placed directly on geotextile
- f. Rock rip rap = 8,505 tons
- g. Geotextile = 3,374 yards
- h. Rock conforms to Rock Type 1 of Material Specification 523 with a gradation of:

Percent Lighter Than	Rock Unit Weight
100	700 lbs
50 -100	300 lbs
15-50	150 lbs
0-15	45 lbs

- i. Four (4) 4-pile clusters with day mark navigation signs and three (3) of the piling clusters have navigation aid lights.
- j. Three (3) single pilings with warning signs (reduced from five (5) in 2006 repair project).
- k. Twenty-two warning buoys with stainless steel cable.
- l. Two (2) marker buoys with warning markings and internal radar reflectors (added during 2006 repair project in place of two (2) single pilings with warning signs).



### Summary of Maintenance Projects

On June 20, 2006, a contract was awarded to place two warning buoys in places where warning signs were damaged and to replace 5 navigation lights. This project was completed on October 4, 2006.

A second maintenance contract was awarded May 27, 2015 for the replacement of the barrier float buoys and navigation signs at the Goose Bayou weir. Repair work was completed August 10, 2015.

In late 2010 the Bayou Dupont Weir was partially deconstructed to allow access of equipment for construction of the South Shore of The Pen Shoreline Protection and Marsh Creation Project (BA-41). It remained in this state through the construction of the Bayou Dupont Marsh Creation Projects (BA-48 and BA-164) as well as the Long Distance Sediment Pipeline Project (BA-43EB). It was replaced back to as-built specifications in late 2016 at no cost to the project.

CPRA was notified in September 2017 that a company had knocked over one of the lighted pile clusters at the Bayou Dupont Weir. This company agreed to replace as designed at no cost to the government. This repair was completed in November 2017.

### **III. Inspection Purpose and Procedures**

The purpose of the annual inspection of the Naomi Outfall Management Project (BA-03c) is to evaluate the constructed project features, identify any deficiencies, and prepare a report detailing the condition of project features and providing recommended corrective actions if needed. The inspection procedure consists of a site visit by land or water, as appropriate, with a visual inspection of the project features. If corrective actions are required, 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, December 24, 2002). The annual inspection report also contains a summary of maintenance projects (Section II) 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**.

Barry Richard and Zachary Collier of CPRA, along with Quin Kinler of NRCS, held an inspection of the Naomi Outfall Management Project (BA-03c) on March 8, 2019. At the time of the inspection, the weather was mostly sunny with slight wind. The water elevation was observed to be +1.0 feet NAVD88 on the BA01-10 staff gauge located in the Barataria Bay Waterway across from the entrance into Bayou Rigolettes. Photographs of the inspection are included in **Appendix B** of this report.



## **IV. Inspection Results**

### **BAYOU DUPONT CANAL WEIR**

#### Rock Riprap

The rock riprap was clearly visible above the water with no sign of major settlement or damage. (Photos #1, 2, and 3)

#### Pile Clusters

The northeast pile cluster was missing at the time of the inspection. There was no sign of it anywhere near the project area. The remaining pile clusters appeared to be in good condition.

#### Warning Signs and Day Board Navigation Signs

The remaining three navigation signs appear to have been bent. The two red signs are bent in opposite directions and at almost 90 degree angles on the channel side. The remaining green sign is slightly deflected. While the signs are damaged, they should still be functional in combination with the lights (Photos #1, 2, and 3).

#### Navigation Aid Lights

The lights are present on the remaining pile clusters with no defects observed (Photos #1, 2, and 3). Routine navigation light maintenance is performed under a separate state-wide contract.

#### Regulatory Marker Buoys

Neither of these buoys were found near the structure. (Photos #1, 2, and 3)

### **GOOSE BAYOU CANAL WEIR**

#### Rock Riprap

The structure has settled an average of 2 feet since construction, resulting in most of the rock being submerged below the water surface. At this time, no rock maintenance is anticipated.

#### Pilings

Timber pilings were present and in good condition. Reflective tape was replaced as part of the 2015 maintenance event.

#### Warning Signs and Day Board Navigation Signs

Navigation markers and barrier float cable assemblies were replaced in 2015. Warning signs were in good condition.

### Navigation Aid Lights

No defects were observed with the navigation aid lights. Maintenance of these lights is covered under a separate state-wide contract.

## **V. Conclusions**

The main structures (two rock weirs) of the Naomi Outfall Management project are in functional condition. The main issues are with the aforementioned signs at the Bayou Dupont Canal Weir.

## **VI. Recommendations**

Inspection and assessment of project features should continue on an annual basis.

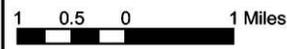
### Immediate Repairs

- None at this time.

### Programmed Maintenance

- Navigation lights are inspected and maintained under state-wide contract.
- Meet with US Coast Guard to determine minimum required navigational aids at each structure.

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



Data Source:  
 U.S. Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station  
 Louisiana Department of Natural Resources  
 Coastal Restoration Division  
 2000 TM Satellite Imagery

**Legend**

- Monthly Salinity and Continuous Recorder Stations
- Monthly Salinity Stations
- rock dike
- ⊕ siphon
- △ weirs
- BA-03c and BA-26 Project Boundaries

## **Appendix B**

### **Photographs**



**Photo #1 – Rock riprap, warning signs, and buoys (Bayou Dupont looking East)**



**Photo #2 – Rock riprap, warning signs, and buoys (Bayou Dupont looking West)**



**Photo #3 – Pile cluster bent sign (Bayou Dupont looking West)**



**Photo #4 – Warning Signs and Buoys (Goose Bayou looking West)**

## **Appendix C**

### **Three Year Budget Projection**

**Naomi Outfall Management Project (BA-03c)**

Federal Sponsor: NRCS

Construction Completed : 8/2002

PPL 5

<b>Current Approved O&amp;M Budget</b>	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	
<b>June 2009</b>	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	Budget	
State O&M																					\$488,980	
Corps Admin																						\$0
Federal S&A																						\$0
<b>Total</b>																						<b>\$488,980</b>

<b>Projected O&amp;M Expenditures</b>																Remaining						
																Project Life						
Maintenance Inspection																\$4,000	\$4,104	\$4,211	\$4,320	\$4,432	\$12,963	
General Maintenance																						\$0
Surveys																						\$0
Navigation Aid Maintenance																\$17,173	\$17,619	\$18,077	\$18,547	\$19,030	\$55,654	
Federal S&A																						\$0
Maintenance/Rehabilitation																						\$0
E&D																						\$0
Construction																						\$0
Construction Oversight																						\$0
<b>Total</b>																<b>\$21,173</b>	<b>\$21,723</b>	<b>\$22,288</b>	<b>\$22,867</b>	<b>\$23,462</b>	<b>\$68,617</b>	

O&M Expenditures from COE Lana Report (Feb 2019)	\$352,248	Current O&M Budget	\$488,980	Current Project Life Budget	\$488,980
State O&M Expenditures not submitted for in-kind credit	\$8,173 estimated	Less Expenditures	\$383,913	Total Projected Project Life Budget	\$452,530
Federal Sponsor MIPRs (if applicable)	\$23,491	<b>Remaining Available O&amp;M Budget</b>	<b>\$105,067</b>	<b>Project Life Budget Surplus (Shortfall)</b>	<b>\$36,450</b>
<b>Total Estimated O&amp;M Expenditures (as of Oct 2017)</b>	<b>\$383,913</b>				

**Appendix D**  
**Field Inspection Form**

**FIELD INSPECTION CHECK SHEET**

Project No. / Name: Naomi Outfall Management

Date of Inspection: 3/8/2019 Time: 11:15 AM

Structure No. Bayou Dupont Canal

Inspector(s): Richard, Collier, Kinler

Structure Description: Stone Weir

Water Level: Inside: N/A Outside: +1.0' NAVD88

Type of Inspection: Annual

Weather Conditions: Mostly sunny, light wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Rock Riprap	Good	None	N/A	#1, 2, 3	Good condition
Pile Clusters	Varying	See Remarks	None	#1, 2, 3	One pile cluster was missing.
Warning Signs and Day Board Navigation Signs (Bayou Dupont)	Good	See Remarks	None	#1, 2, 3	All three remaining signs were bent, the two red signs bent at about 90 degree angles while the green sign was less bent.
Navigation Aid Lights	Varying	See Remarks	None	#1, 2, 3	No defects noted. Maintenance of navigation lights is covered under state-wide contract.
Warning Buoys	Varying	See Remarks	None	#1, 2, 3	Both regulatory marker buoys were missing

**FIELD INSPECTION CHECK SHEET**

Project No. / Name: Naomi Outfall Management

Date of Inspection: 3/8/2019 Time: 11:15 AM

Structure No. Goose Bayou Canal

Inspector(s): Richard, Collier, Kinler

Structure Description: Stone Weir

Water Level: Inside: N/A Outside: +1.0' NAVD88

Type of Inspection: Annual

Weather Conditions: Mostly sunny, light wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Rock Riprap	Notable Settlement	None	N/A		Most of rock structure was below water surface elevation.
Creosote Piling	Good	None	N/A	4	No defects noted.
Warning Signs and Day Board Navigation Signs	Good	None	None	4	No defects noted.
Navigation Aid Lights	Good	None	None	4	No defects noted. Maintenance of navigation lights is covered under state-wide contract.
Warning Buoys	Good	None	None	4	No defects noted.