



**Coastal Protection and Restoration  
Authority of Louisiana**

**Office of Coastal Protection and  
Restoration**

**2008 Annual Inspection Report**

**Bayou Sauvage Refuge Restoration  
Phase II**

State Project Number PO-18  
Priority Project List 2

July 13, 2009  
Orleans Parish

Prepared by:

Barry Richard, E.I.  
OCPR/Operations Division  
New Orleans District Office  
CERM, Suit 309  
2045 Lakeshore Dr.  
New Orleans, La 70122

## **Table of Contents**

I. Introduction.....	1
II. Project Description and History.....	1
III. Inspection Purpose and Procedures .....	1
IV. Inspection Results .....	2
V. Conclusions.....	2
VI. Recommendations.....	2
Immediate Repairs .....	2
Programmed Maintenance .....	2

## **Appendices**

Appendix A	Project Features Map
Appendix B	Photographs
Appendix C	Three Year Budget Projections
Appendix D	Field Inspection Form

## **I. Introduction**

The Bayou Sauvage Refuge Restoration Phase II Project (PO-18) is located in eastern Orleans Parish approximately 10 miles northeast of Chalmette, LA (Appendix A). It is bordered by Interstate 10 to the north, U.S. Highway 90 to the south, the Lake Pontchartrain Hurricane Protection Levee to the east, and the Maxent Canal levee to the west. The project area includes approximately 6,900 acres of fresh marsh.

## **II. Project Description and History**

The Bayou Sauvage Refuge Restoration Phase II project has two 33-inch-diameter pumps which were installed at the same location. To ensure that the project-area water levels can be independently managed, a hydrologic connection between the project and the reference area was closed with an adjustable weir.

The project's purpose is to regulate water levels in the marshes of both units throughout the year by pumping excess water from the management areas. Such management during the fall and winter enhances emergent fresh marsh habitats in the project area for wintering waterfowl. Annually, the water level is intended to be controlled to the range of 0.0 feet to - 0.5 feet below marsh elevation during the spring and summer and to within 0.0 feet to + 0.5 feet above marsh elevation during the fall and winter. The water level control schedule is also intended to preserve black willow habitat in order to maintain wading bird rookeries.

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

The purpose of the annual inspection of the Bayou Sauvage Refuge Restoration Phase II Project (PO-18) 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, OCPR 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 September 2, 2004). 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.

Pon Dixon with the US Fish and Wildlife Services (USFWS) was contacted by Barry Richard of the OCPR after both Hurricanes Gustav and Ike passed. The information provided will be used as the inspection for this year.

## **IV. Inspection Results**

### **Pump #3**

The pump is working as designed.

### **Pump #4**

The pump is working as designed.

### **Highway 11 Culverts**

While these culverts are not a project feature, they do affect the flow of water into and out of the project area. These culverts have been replaced with concrete culverts. The flow has been improved and there are plans for some additional culverts at other locations as well as some canal dredging within the refuge.

## **V. Conclusions**

Both pump units are showing significant signs of corrosion on the casings and supports. The repair work is currently being taken care of by USFWS. Overall, the pumps are performing very well.

## **VI. Recommendations**

The marsh situation will continue to be monitored.

### **Immediate Repairs**

- None at this time.

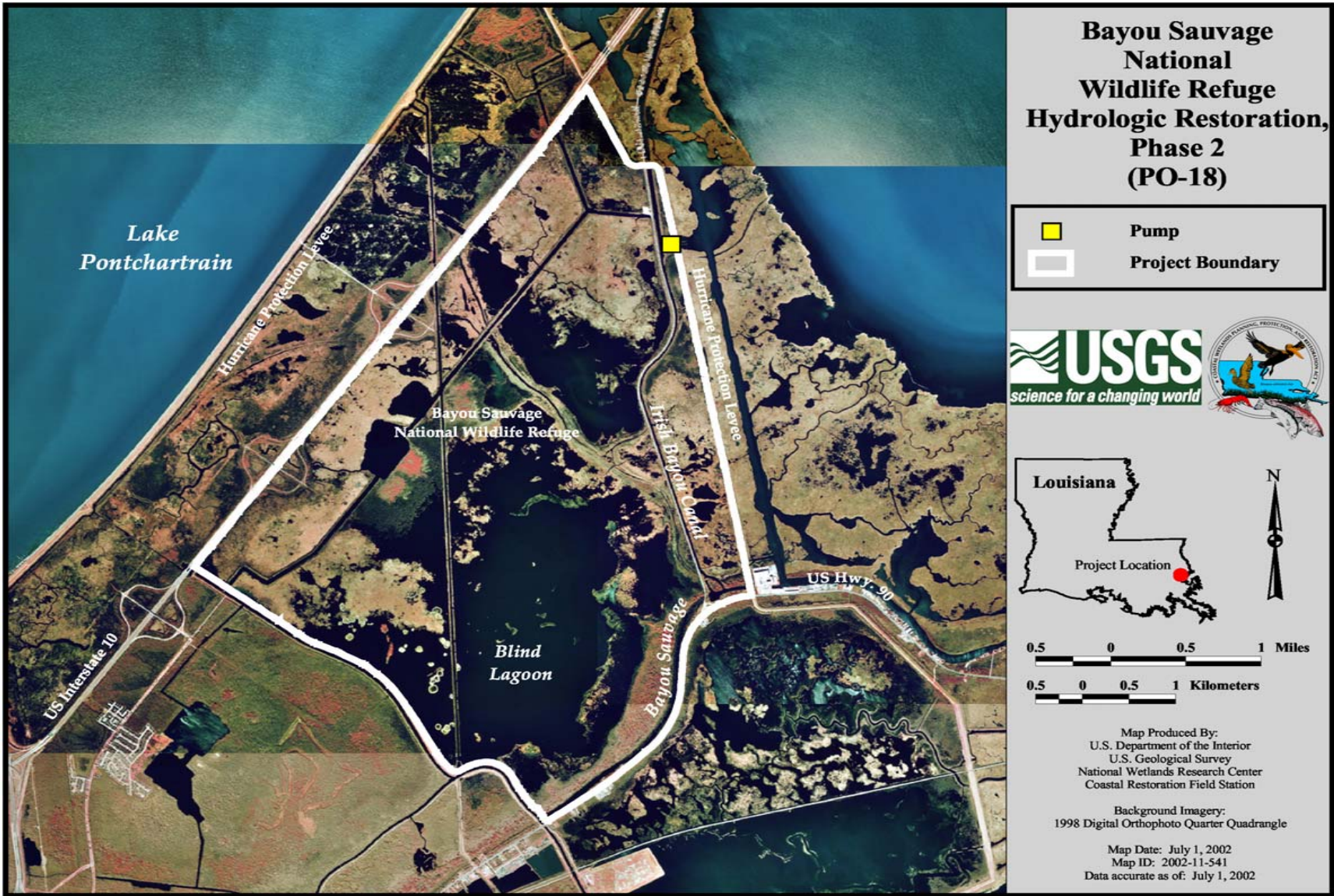
### **Programmed Maintenance**

- Periodically check pump stations for any maintenance needs.

Annual Inspection Report  
Bayou Sauvage Refuge Restoration Phase II  
State Project No. PO-18

## **Appendix A**

### **Project Features Map**



## **Appendix B**

### **Photographs**

**There are no photographs for this inspection report.**

## **Appendix C**

### **Three Year Budget Projection**



**Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2  
 Three-Year Operations & Maintenance Budgets 07/01/2009 - 06/30/2012**

Project Manager  
*Barry Richard*

O & M Manager  
*Barry Richard*

Federal Sponsor  
 USFWS

Prepared By  
*Barry Richard*

	<b>2009/2010</b>	<b>2010/2011</b>	<b>2011/2012</b>
<b>Maintenance Inspection</b>	\$3,609.00	\$3,703.00	\$3,799.00
<b>General Maintenance</b>	\$0.00	\$0.00	\$0.00
<b>Structure Operation</b>	\$12,631.00	\$12,959.00	\$13,296.00
<b>Administration</b>	\$0.00	\$0.00	\$0.00
<b>Maintenance/Rehabilitation</b>			

**09/10 Description:**

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
<i>Sub Total - Maint. And Rehab.</i>	\$ -

**10/11 Description:**

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
<i>Sub Total - Maint. And Rehab.</i>	\$ -

**11/12 Description:**

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
<i>Sub Total - Maint. And Rehab.</i>	\$ -

	<b>2008/2009</b>	<b>2009/2010</b>	<b>2010/2011</b>
<b><u>Total O&amp;M Budgets</u></b>	<b>\$ 16,240.00</b>	<b>\$ 16,662.00</b>	<b>\$ 17,095.00</b>

<b><u>O &amp;M Budget (3 yr Total)</u></b>	<b>\$ 49,997.00</b>
<b><u>Unexpended O &amp; M Budget</u></b>	<b>\$ 161,374.73</b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b>\$ 111,377.73</b>

Annual Inspection Report  
 Bayou Sauvage Refuge Restoration Phase II  
 State Project No. PO-18

**OPERATION AND MAINTENANCE BUDGET WORKSHEET 2009/2010**  
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,609.00	\$3,609.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations	LUMP	1	\$12,631.00	\$12,631.00
Construction Oversight	LUMP	1	\$0.00	\$0.00
<b>ADMINISTRATION</b>				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$0.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
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:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
Borings	EACH	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL GEOTECHNICAL COSTS:</b>				<b>\$0.00</b>

**CONSTRUCTION**

CONSTRUCTION DESCRIPTION:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
Rip Rap	LIN FT	0	\$0.00	\$0.00
	TON / FT	0	\$0.00	\$0.00
	TONS	0	\$0.00	\$0.00
		0	\$0.00	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
Navigation Aid	EACH	0	\$0.00	\$0.00
Signage	EACH	0	\$0.00	\$0.00
General Excavation / Fill	CU YD	0	\$0.00	\$0.00
Dredging	CU YD	0	\$0.00	\$0.00
Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
Timber Piles (each or lump sum)		0	\$0.00	\$0.00
Timber Members (each or lump sum)		0	\$0.00	\$0.00
Hardware	LUMP	1	\$0.00	\$0.00
Materials	LUMP	1	\$0.00	\$0.00
Mob / Demob	LUMP	1	\$0.00	\$0.00
Contingency	LUMP	1	\$0.00	\$0.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
OTHER				\$0.00
OTHER				\$0.00
OTHER				\$0.00
<b>TOTAL CONSTRUCTION COSTS:</b>				<b>\$0.00</b>

**TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$16,240.00**

**OPERATION AND MAINTENANCE BUDGET WORKSHEET 2010/2011**  
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,703.00	<b>\$3,703.00</b>
General Structure Maintenance	LUMP	1	\$0.00	<b>\$0.00</b>
Engineering and Design	LUMP	1	\$0.00	<b>\$0.00</b>
Operations	LUMP	1	\$12,959.00	<b>\$12,959.00</b>
Construction Oversight	LUMP	1	\$0.00	<b>\$0.00</b>
<b>ADMINISTRATION</b>				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$0.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	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:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
<b>TOTAL GEOTECHNICAL COSTS:</b>					<b>\$0.00</b>

**CONSTRUCTION**

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

**TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$16,662.00**

**OPERATION AND MAINTENANCE BUDGET WORKSHEET 2011/2012**  
 Bayou Sauvage refuge Restoration Phase II / PO-18 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,799.00	\$3,799.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations	LUMP	1	\$13,296.00	\$13,296.00
Construction Oversight	LUMP	1	\$0.00	\$0.00

**ADMINISTRATION**

LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00

**TOTAL ADMINISTRATION COSTS: \$0.00**

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	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

**TOTAL SURVEY COSTS: \$0.00**

**GEOTECHNICAL**

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00

**TOTAL GEOTECHNICAL COSTS: \$0.00**

**CONSTRUCTION**

CONSTRUCTION DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Rip Rap	LIN FT	0	\$0.00	\$0.00
		TON / FT	0.0	\$0.00	\$0.00
		TONS	0	\$0.00	\$0.00
			0	\$0.00	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
	Navagation Aid	EACH	0	\$0.00	\$0.00
	Signage	EACH	0	\$0.00	\$0.00
	General Excavation / Fill	CU YD	0	\$0.00	\$0.00
	Dredging	CU YD	0	\$0.00	\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
	Timber Piles (each or lump sum)		0	\$0.00	\$0.00
	Timber Members (each or lump sum)		0	\$0.00	\$0.00
	Hardware	LUMP	1	\$0.00	\$0.00
	Materials	LUMP	1	\$0.00	\$0.00
	Mob / Demob	LUMP	1	\$0.00	\$0.00
	Contingency	LUMP	1	\$0.00	\$0.00
	General Structure Maintenance	LUMP	1	\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00

**TOTAL CONSTRUCTION COSTS: \$0.00**

**TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$17,095.00**

## **Appendix D**

### **Field Inspection Form**

**There are no field inspection forms for this inspection**

Annual Inspection Report  
Bayou Sauvage Refuge Restoration Phase II  
State Project No. PO-18