



Coastal Protection and  
Restoration Authority of Louisiana

State of Louisiana

Coastal Protection and Restoration  
Authority of Louisiana

## 2021 Monitoring Plan for 95% Design

for

### Long Point Bayou Marsh Creation (CS-85)

State Project Number CS-0085  
Priority Project List #28

August 2021  
Cameron Parish



Prepared by:  
Margaret Daigle  
Coastal Protection and Restoration Authority  
Operations Division  
Lafayette Regional Office  
635 Cajundome Boulevard  
Lafayette, LA 70506

## **MONITORING PLAN LONG POINT BAYOU MARSH CREATION PROJECT CS-0085**

The Coastal Protection and Restoration Authority (CPRA) and the U.S. Environmental Protection Agency (US EPA) agree to carry out the terms of this Operation, Maintenance, Monitoring and Rehabilitation Plan (hereinafter referred to as the “Plan”) of the accepted, completed project features.

The project features covered by this plan are inclusive of and are identified as the Long Point Bayou Marsh Creation Project (CS-0085). This plan outlines the provisions to monitor the project using standardized data collection techniques and to analyze that data to determine whether the project is achieving the anticipated benefits.

Construction of CS-0085 was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. This project was approved on the 28 Priority Project List.

The construction components associated with this project are located in Cameron Parish near Long Point Bayou north of Sabine National Wildlife Refuge.

### **PROJECT DESCRIPTION, PURPOSE, LOCATION, AND GOALS**

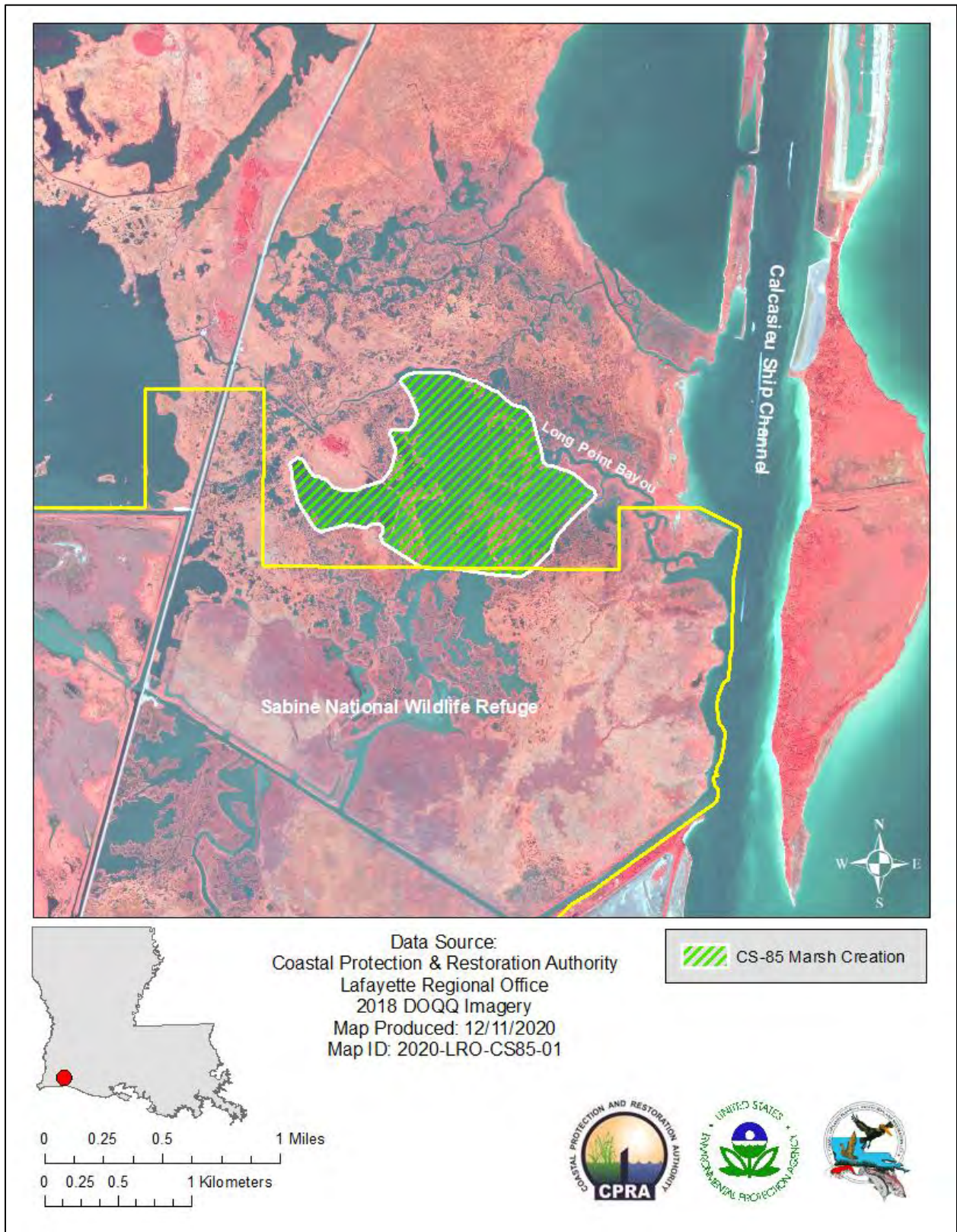
#### **Description:**

The Long Point Bayou Marsh Creation Project is 395 acres in the Calcasieu-Sabine Basin. Approximately 395 acres of marsh will be created/nourished using beneficial dredge material from the Calcasieu Ship Channel, which will be placed in areas of shallow open water. Eight acres of tidal creeks and approximately 26,240 vegetative plantings will also be included. The proposed location of the project is 4 miles south of Hackberry, north of Sabine National Wildlife Refuge, east of Highway LA 27, and west of the Calcasieu Ship Channel near Mile 11 (Figure 1).

#### **Purpose:**

The project is in an area affected by saltwater intrusion, increased water fluctuations and erosion. Human alterations have disrupted the hydrologic processes that contribute to wetland building and maintenance, while subsidence and sea level rise continues. What was once fresh marsh in the 1970’s is now intermediate and brackish marsh. This is the result of the aforementioned saltwater intrusion and increased tidal influence.

The purpose of this project is to create and/or nourish sustainable marsh areas near Long Point Bayou with beneficial dredge material from the nearby Calcasieu Ship Channel. Both tidal creeks and vegetative plantings will aid in restoring habitat.



**Figure 1.** Long Point Bayou Marsh Creation (CS-0085) project area and features.

**Goals:**

The specific project goals are:

1. Create 319 acres of brackish marsh from shallow open water areas.
2. Nourish 76 acres of existing fragmented brackish marsh.

**Features:**

Beneficial use dredge material will be sourced from the nearby Calcasieu Ship Channel and placed into shallow open water areas within the project boundary. Constructed containment dikes will be breached/gapped as needed to allow for tidal exchange after fill materials settle. A target fill elevation of +2.75 feet (NAVD88) should enhance the longevity of this landform. In addition, approximately 26,240 vegetative plantings will be installed along with 8 acres of tidal creeks.

**ITEMS REQUIRING MONITORING**

The Coastwide Reference Monitoring System (CRMS) - Wetlands is a network of 392 monitoring sites distributed throughout the coastal zone of Louisiana. Hydrographic, vertical accretion, elevation change, vegetation, soils, and aerial photography data are collected at each CRMS site. Although no CRMS monitoring stations are located within the CS-85 project area, there is a CRMS station located nearby (CRMS0687) which can be used as a reference to determine project effectiveness.

The following monitoring strategies will provide the information necessary to evaluate the specific goals of creating approximately 319 acres and nourishing approximately 76 acres of emergent marsh.

- A. Aerial Photography** – In order to evaluate land/water ratios in the fill area, land/water will be obtained from digital imagery with 1-meter resolution. The photography will be georectified using standard operating procedures described in Steyer et al. (1995, revised 2000), and land/water ratios will be determined. Aerial photography will be captured using the nearest CRMS coastwide flights to Y0 (preconstruction) and post construction when coastwide imagery becomes available near Y5, Y10 and Y19.
- B. Emergent Vegetation** – To document the condition of the natural as well as the planted emergent vegetation in the project area over the life of the project, vegetation at 20 sampling stations will be monitored using a modified Braun Blanquet sampling method as outlined in Folse et al. 2020. Stations will be established uniformly across the created marsh and the location of the stations will be such that they coincide with at least some of the elevation transects within the containment area. Percent cover, dominant plant heights, and species composition will be documents in 2m x 2m sampling plots marked with a corner pole to allow for revisiting the sites over time. Vegetation data from the relevant CRMS site nearby

will be used as a reference station to compare species composition over time. Vegetation will be monitored post construction in Y1, Y3, Y5, Y10, Y15 and Y18.

**C. Fill Area Surveys** - Fill area surveys will be conducted during the O&M phases. Post-construction elevation surveys will occur at Y1, Y3, Y10 and Y18.

### **MONITORING BUDGET**

The costs associated with the monitoring of the features outlined above in this plan for the 20 year project life is approximately \$508,748 (Appendix A, Table 1).

### **RESPONSIBILITIES – MONITORING**

A: CPRA will:

1. Conduct joint site inspections with US EPA after major storm events if determined to be necessary by CPRA and/or US EPA. CPRA will submit to US EPA, a report detailing the condition of the project features.
2. Provide a total contribution equal to the amount outlined in the Memoranda of Agreement for the 20 year life of the project.
3. Coordinate and oversee all monitoring data collection.
4. Ensure that all data goes through quality control procedures.
5. Analyze the data and report on the status of the project.
6. The federal and state representatives appointed above shall meet as necessary to review the reports and discuss the project status.

B. US EPA will:

1. Conduct joint site inspections with CPRA after major storm events if determined to be necessary by CPRA or US EPA.

2. Provide a total contribution equal to the amount outlined in the Memoranda of Agreement for the 20 year life of the project.
3. Review reports submitted by CPRA and provide comments.

**NOTES**

- A. Implementation
- B. US EPA Project Manager                      Brad Crawford                      214-665-7255
- C. CPRA Project Manager                      Renee Bennett                      225-342-4592
- D. CPRA Project Engineer                      Kazi Sadid                      225-342-4626
- E. CPRA Monitoring Manager                      Margaret Daigle                      337-482-0657
- F. CPRA Operations Manager                      Phillip Parker                      337-482-0683
- G. Landowners
- I. This is the Monitoring Plan for the 95% Design and is subject to change to fit adaptations made during construction.

## REFERENCES

- Todd M. Folse, Thomas E. McGinnis, Leigh A. Sharp, Jonathan L. West, Melissa K. Hymel, John P. Troutman, Dona Weifenbach, William M. Boshart, Laurie B. Rodrigue, Danielle C. Richardi, W. Bernard Wood, C. Mike Miller, Elizabeth M. Robinson, Angelina M. Freeman, Camille L. Stagg, Brady R. Couvillion, and Holly J. Beck. 2020. A Standard Operating Procedures Manual for the Coastwide Reference Monitoring System-*Wetlands* and the System-Wide Assessment and Monitoring Program: Methods for Site Establishment, Data Collection, and Quality Assurance/Quality Control. Louisiana Coastal Protection and Restoration Authority. Baton Rouge, LA. 252 pp.
- Steyer, G.D., R.C. Raynie, D.L. Steller, D. Fuller, and E. Swenson. 1995 (revised 2000). Quality management plan for the Coastal Wetlands Planning, Protection, and Restoration Act monitoring program. Open-file series no. 95-01 (Revised June 2000). Baton Rouge: Louisiana Department of Natural Resources, Coastal Restoration Division. 97 pp.

**Appendix I**  
Project Monitoring Budget

DRAFT





<b>Monitoring Cost Estimate CS-85</b>	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Total
<b>Emergent Vegetation Surveys</b> <i>includes 20 hours planning, 30 hours data collection (1 day; 3 people; 10 hrs/day), 20 hours data management</i>	\$ 4,260		\$ 4,260		\$ 4,260					\$ 4,260				\$ 4,260				\$ 4,260			
<b>OM&amp;M Reports</b> <i>Includes 6 wks of CPRA staff time at \$60.86/hr</i>				\$ 14,605		\$ 14,605				\$ 14,605				\$ 14,605				\$ 14,605			
<b>Soils</b> <i>includes 10 hours planning, 30 hours data collection (1 day; 3 people; 10 hrs/day), 15 hours data management</i>																					
<b>Monitoring Project Administration</b> <i>Includes 40 hours of CPRA staff time per year at \$60.86/hr + 20 hours during Spatial Analysis years + 40 hours during Elevation Survey years</i>	\$ 3,652	\$ 2,434	\$ 3,652	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 3,652	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 2,434	\$ 3,652	\$ 2,434	\$ 2,434	
<b>IDC Charges (based on FY22; 212.65%)</b>	\$ 16,824	\$ 5,177	\$ 16,824	\$ 36,235	\$ 14,235	\$ 36,235	\$ 5,177	\$ 5,177	\$ 5,177	\$ 16,824	\$ 36,235	\$ 5,177	\$ 5,177	\$ 14,235	\$ 36,235	\$ 5,177	\$ 5,177	\$ 16,824	\$ 36,235	\$ 5,177	
<b>Spatial Analysis</b> <i>USGS will analyze CRMS funded coastwide flights or equivalent satellite imagery. Currently an estimate.</i>	\$ 6,633		\$ 7,217							\$ 8,468								\$ 10,763			
<b>Elevation Surveys</b> <i>To be performed with O&amp;M funds</i>																					
<b>TOTAL Projected Monitoring Costs</b>	\$ 31,368	\$ 7,611	\$ 31,952	\$ 53,274	\$ 20,930	\$ 53,274	\$ 7,611	\$ 7,611	\$ 7,611	\$ 33,203	\$ 53,274	\$ 7,611	\$ 7,611	\$ 20,930	\$ 53,274	\$ 7,611	\$ 7,611	\$ 35,498	\$ 53,274	\$ 7,611	<b>\$ 508,753</b>

**Table 1.** 20 year Monitoring cost estimate for the Long Point Bayou Marsh Creation Project (CS-0085).

