



**State of Louisiana**

**Coastal Protection and Restoration  
Authority of Louisiana**

**Operations, Maintenance, and  
Rehabilitation Plan**

for

**LONG POINT BAYOU MARSH  
CREATION PROJECT (CS-0085)**

State Project Number CS-85  
Priority Project List 28

August 2021  
Cameron Parish

Prepared by:

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## **OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE LONG POINT BAYOU MARSH CREATION PROJECT (CS-0085)**

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

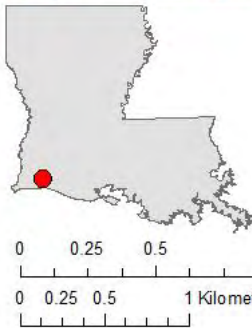
The project features covered by this plan are inclusive of and are identified as the Long Point Bayou Marsh Creation Project (CS-0085). The intention of the provisions of this plan is to maintain this project throughout its 20 year life in a condition that will generally provide the anticipated benefits upon which the project was based. Reports will be generated and recommendations made to adaptively manage the project. There is no requirement that this project function to any standard beyond the twenty-year (20 year) economic life which will began **FUTURE DATE (TBD)**.

Construction of the Long Point Bayou Marsh Creation Project 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 Priority Project List 28.


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

#### **Description:**

The Long Point Bayou Marsh Creation Project is located in Cameron Parish, LA, east of of LA Hwy 27 and west of the Calcasieu Ship Channel, and approximately 4 miles south of the community of Hackberry, Louisiana. The project area encompasses approximately 395 acres (Figure 1). Project features consist of marsh constructed to varying elevations with a target construction fill elevation of +2.75 (NAVD88). Land owner/Property Rights information is included in Attachment 2 in the appendix to this document.



Data Source:  
 Coastal Protection & Restoration Authority  
 Lafayette Regional Office  
 2018 DOQQ Imagery  
 Map Produced: 12/11/2020  
 Map ID: 2020-LRO-CS85-01

 CS-85 Marsh Creation



**Figure 1 – Long Point Bayou Marsh Creation (CS-0085) project area Purpose:**

As directly stated in the EPA Project Fact Sheet for Wetland Value Assessment: The project area is in an area that has been influenced by saltwater intrusion, increased water fluctuations and erosion. Human alterations have disrupted the hydrologic processes which contributed to wetland building and maintenance, while subsidence and sea level rise continues. Almost all fresh marsh was converted to intermediate and brackish by the late 1970s as a result of saltwater intrusion and increased tidal influence. Land loss rates within the project area now show a positive trend; the experimental land change analysis conducted by USGS for the extended project boundary shows a land gain of +0.21% per year (1985 to 2017) in the project area. Historical topographic maps show that the area was nearly all land in 1955.

The purpose of the project is to create/nourish 395 acres of marsh near Long Point Bayou and just north of the Sabine National Wildlife Refuge through the beneficial use of dredged materials from the Calcasieu Ship Channel (CSC) placed in shallow open water areas within the project area. The dredged beneficial use fill material will be obtained in conjunction with the USACE 2023 maintenance dredging event for the lower CSC.

### **Goals:**

The specific project goals were:

1. Hydraulically dredge and transport at least 1.4 Million cubic yards of sediment to the project area from the Calcasieu Ship Channel (CSC).
2. Create 318 acres of saline marsh in recently formed shallow open water.
3. Construct the marsh platform to an elevation that is intertidal throughout the design life of the project.
4. Nourish 77 acres of existing saline marsh.
5. Strategically degrade/Gap approximately 2000 linear feet of Earthen Containment Dike at TY3.
6. Create approximately 8 acres of tidal creeks at TY3 to facilitate tidal exchange in conjunction with gaps in the earthen containment dikes. These tidal creeks will benefit the saltmarsh topminnow and black rail, two species petitioned or proposed for listing on the Federal Endangered Species List.
7. Install approximately 26,000 vegetative plantings along earthen containment dike crowns and edges at TY3.
8. Conduct elevation surveys of the project area at TY 1,3,10 and 18

## 2. CONSTRUCTION COMPLETION

The Long Point Bayou Marsh Creation Project (CS-0085) completion report and “As Built” drawings will be included as an attachment to this plan upon completion of construction. This completion report will include a summary of pertinent project information and significant events including: project personnel, final as-built project features and benefitted acreage; final dimensions/bathymetry of the borrow site, construction cost and CWPPRA project estimates, construction administration and oversight costs, construction activities and change orders, pipeline and utility crossing owner information, permit documents and other significant milestone dates and comments.

The project “As-Built” construction drawings updated with all field changes and modifications which occurred during construction will be included in this Plan upon completion of construction as well.

## 3. PROJECT PERMITS

Project permit applications will be completed and submitted to appropriate agencies and permits are expected to be received prior to construction. These permits and permit applications, as well as permit modifications, will be included in Attachment IV. Provisions for extensions and/or renewal of certain Federal and State Permits may be required.

## 4. ITEMS REQUIRING MAINTENANCE AND REHABILITATION

The following completed structural components and project features jointly accepted by CPRA and EPA will require operation, maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

- A. **Containment Dike:** Sporadic gapping of the containment dikes may be done by the contractor at the end of construction. It’s anticipated that additional gapping in TY3 will be necessary.
- B. **Tidal Creeks:** In conjunction with degrading/gapping containment dikes, it’s anticipated that the creation of approximately 8 acres of tidal creeks will be required in TY3 to provide relief for ponding and provide hydrologic exchange within the marsh creation areas. These tidal creeks will benefit the saltmarsh topminnow and black rail, two species petitioned or proposed for listing on the Federal Endangered Species List. These tidal creeks will be created/restored using the GIS water bottom data layer from the State Land Office. If necessary, additional tidal creeks may be added in lower elevation areas that develop naturally

during the first three years, post- construction, in order to achieve the estimated 8 acres per project goals and objectives.

- C. **Vegetative Plantings:** to assist the natural process of vegetation of the newly created marsh, in TY3 vegetative plantings will be installed along the crown and edges of the earthen containment dikes if necessary.
- D. **Elevation Surveys:** to monitor the magnitude of subsidence of the newly created marsh platform, elevations surveys will be undertaken in TY 1,3,10 and 18.

## 5. **OPERATION, MAINTENANCE, AND REHABILITATION BUDGET**

The cost associated with the Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 of this plan for the twenty (20) year project life is included and summarized in Attachment I.

## 6. **OPERATION OF STRUCTURES**

There are no structures associated with this project requiring operations.

## 7. **RESPONSIBILITIES – MAINTENANCE, AND REHABILITATION**

A: CPRA will:

- 1. Assume all responsibilities for maintenance and rehabilitation of the accepted completed project features identified in Section 4.
- 2. Conduct joint site inspections with EPA of the project site at times as determined.
- 3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by CPRA and EPA. EPA will participate with CPRA, or its appointed representative, in the engineering and design phases of the corrective actions for the project features for which CPRA is responsible. Oversight of engineering and construction of the corrective actions for said project features will be the responsibility of CPRA or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, CPRA or its appointed representative shall provide final copies of all corrective action designs and specifications for review and concurrence by EPA. CPRA shall approve the final design and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with EPA. Any plan and/or specification change both before

and after award of construction contracts shall be approved by CPRA in coordination with EPA.

4. The representatives appointed above shall meet as necessary during the period of construction for corrective actions and shall make such recommendations, as they deem necessary.
5. Provide a total contribution equal to the amount outlined in the CWPPRA Standard Operating Procedures for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project

B. EPA will:

1. Conduct joint site inspections with CPRA of the project site at times as determined.
2. Review preliminary design of any operation and maintenance project, and provide concurrence prior to formal request for construction bids on any corrective actions for the project.
3. Provide a total contribution equal to the amount outlined in the CWPPRA Standard Operating Procedures for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project.
4. Review the reports and provide concurrence on any corrective action for the project.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the [Oyster Lake Long Point Bayou](#) Marsh Creation Project (CS-[7985](#)) according to this document, CWPPRA Standard Operating Procedures, plans, and all applicable permits and laws.

EPA

By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

COASTAL PROTECTION AND RESTORATION AUTHORITY



By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

References:

1. Sadid, Kazi - Long Point Bayou Marsh Creation Project (CS-0085), Coastal Wetland Planning, Protection, and Restoration Act PPL 28, Draft (95%) Design Report, March 2021
2. Daigle, Margaret - 2021 Monitoring Plan for 95% Design, Long Point Bayou Marsh Creation (CS-85), August, 2021

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**ATTACHMENT I**

**OPERATION AND MAINTENANCE BUDGET  
CS-85 LONG POINT BAYOU MARSH CREATION PROJECT  
(95% Design)**

PROJECT FEATURES

- 19,680 linear feet of earthen containment dike with tidal exchange
- 318 acres of marsh creation with 77 (+/-) acres of nourishment, fragmented marsh.

OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

The Operation, Maintenance, and Rehabilitation Budget for the Long Point Bayou Marsh Creation Project (CS-85) is based on the following assumptions:

Annual O&M Administrative costs

Years 1, 4, 7, 10, 13, 16, &19 - Perform project inspection/report every third year

Year 3– Earthen containment dike (ECD) gapping every 500ft (Consider vulnerable areas to remain in place)  
Creation of Tidal Creeks (Approximately 8 Acres) and Vegetative Plantings (2-rows of plants, 3’ on center (O.C) on ECD crown, 2 rows of plants, 3’ O.C. on ECD Exterior)

OPERATION AND MAINTENANCE CONSIDERATIONS

<b>A. O&amp;M ADMINISTRATION</b>	<b>\$ 107,500</b>
Administrative Staff Time for Permit Application and Budget reviews (25 hrs. per year @ \$215.00 per hour, includes IDC rate)	
\$5,375.00 per year x 20 years = <b>\$107,500</b>	
TOTAL Project Life	
<b>B. INSPECTIONS/ REPORT:</b>	<b>\$ 112,147</b>
(1-day field trip including inspection team, boat, equipment, and report – Years 1, 4, 7, 10, 13, 16, 19)	
<u>Inspection:</u>	
CPRA Engineer 4 – 12 hrs. @ \$215/hr.	\$ 2,580
CPRA Engineer 6 – 12 hrs. @ \$272/hr.	\$ 3,264
CPRA Scientist – 12 hrs. @ \$221/hr.	<u>\$ 2,652</u>
	<u>\$ 8,496</u>
<u>Report:</u>	
CPRA Engineer 5 – 35 hrs. @ \$215 /hr.	<u>\$ 7,525</u>
Total CPRA Costs (per inspection):	\$16,021
Total for 7 events (Project Life):	<b>\$112,147</b>
\$16,021 x 7 = \$112,147	
<b>C. MAINTENANCE EVENT (YEAR 3):</b>	<b>\$ 361,153</b>



**(Gapping Containment Dike and Creation of Tidal Creeks)**

Assumptions: Gap Containment Dike every 500ft for a total of forty (40)- 50ft wide gaps at a total of 2,000 LF of excavation (Consider vulnerable areas to remain in place). Create approximately 8 Acres of tidal Creeks

Construction: (20 Day Construction Contract)

1. Mobilization/Demobilization: (Lump Sum: \$30,000)	\$ 30,000
2. Degrade/Gap Earthen Containment Dike: (2,000 L.F. @ \$30/L.F.)	\$ 60,000
3. Tidal Creek Creation (5621 L.F. @ \$21.00/L.F.)	\$ 118,041
4. Construction Surveys:	\$ 10,403
Construction Total:	\$ 218,444
Contingency (25%)	<u>\$ 54,611</u> <b>\$ 273,055</b>

Engineering, Design, Construction Oversight

Assumptions: Construction Admin (Engineer & Inspector): 10 wks. - 8 hrs. /week  
Construction Inspection: 10 days- 10 hr. /day  
Agency Administration (Permitting, E&D, & Construction)  
24 weeks @ 5hrs/week

E&D (15% of Construction):	\$ 40,958
Construction Administration: (64 hrs. @ \$185/hr.)	\$ 11,840
Inspection: (50 Hrs. @ \$95/Hr.)	\$ 9,500
Agency Administration (includes IDC): (120/hrs. @ \$215/hr.)	<u>\$ 25,800</u>
Total E&D, Construction Admin & Oversight:	<b>\$ 88,098</b>

**D. VEGETATIVE PLANTINGS (YEAR 3): \$ 258,022**

Assumptions: Plant 2 rows of plants along containment dike crown, outer edge, staggered, at 3' O.C.

1. Mobilization/Demobilization	\$ 20,000
2. <u>Spartina Alterniflora (Smooth Cordgrass)</u> (19,681 lin. ft. of ECD, 2 rows along outside, either side @ 3' O.C.) 13,120 plants @ \$3.00/plant:	\$ 39,360
3. <u>Paspalum Vaginatatum (Seashore Paspalum)</u> (19,681 lin. ft. of ECD, 2 rows along crown @ 3' O.C.)	

13,120 plants @ \$3.50/plant:	\$ 45,920
Vegetative Planting Total:	\$ 105,280
Contingency (25%)	\$ 26,320
Total Planting Construction Cost:	<b>\$ 131,600</b>
<u>Engineering, Design, Construction Oversight</u>	

Assumptions: minimum 230 day Construction Contract (include growing/potting time)  
 Planting duration – 50 days - 10 hr. /day  
 Construction Admin (Engineer): 7 hr. /week  
 Construction Inspection: 50 days- 10 hr. /day  
 Agency Administration (E&D & Construction):  
 33 weeks @ 8hrs/week

E&D (7% of Construction):	\$ 9,212
Construction Administration: (70 hrs. @ \$185/hr.)	\$ 12,950
Inspection: (500 hrs. @ \$95/hr.)	\$ 47,500
Agency Administration includes IDC: (264/hrs. @ \$215/hr.)	<u>\$ 56,760</u>

Total E&D, Construction Admin& Oversight **\$ 126,422**

**E. ELEVATION SURVEYS (Yrs. 1, 3, 10 and 18): \$ 376,320**

Topographic Survey (IDIQ Task) \$ 80,000  
 Marsh Creation Area (28 Transects @ 250' Spacing)  
 Earthen Containment Dike (80 Transects at 500'  
 Spacing and Points of Inflection)  
 Survey Report Deliverable

Agency Administration: \$ 14,080  
 (IDIQ Task Coordination)  
 80 hrs. @ \$176/hr.

Total for Survey Effort \$ 94,080

Total for 4 Efforts **\$376,320**  
 \$94,080 X 4 = \$376,000

<b>ESTIMATED 20 YEAR O&amp;M BUDGET:</b>	<b>\$ 1,215,142</b>
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**NOTE: ESTIMATED COST DOES NOT INCLUDE INFLATION.**

By: P.W Parker, P.E. ([Phillip.parker@la.gov](mailto:Phillip.parker@la.gov))



### Long Point Bayou Marsh Creation Project (CS-085)

#### Summary of Estimated Costs for Projected Maintenance Operations - 20 Year Project Life

O&M Tasks		YEAR (TY)																			Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20
A	O&M Administration	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$5,375	\$107,500
B	Inspections/Reports	\$16,021			\$16,021			\$16,021			\$16,021			\$16,021			\$16,021			\$16,021		\$112,147
C	Gapping Containment Dikes/Tidal Creek Creation			\$361,153																		\$361,153
D	Vegetative Plantings			\$258,022																		\$258,022
E	Elevation Surveys	\$94,080		\$94,080							\$94,080								\$94,080			\$376,320
<b>Totals</b>		<b>\$115,476</b>	<b>\$5,375</b>	<b>\$718,630</b>	<b>\$21,396</b>	<b>\$5,375</b>	<b>\$5,375</b>	<b>\$21,396</b>	<b>\$5,375</b>	<b>\$5,375</b>	<b>\$115,476</b>	<b>\$5,375</b>	<b>\$5,375</b>	<b>\$21,396</b>	<b>\$5,375</b>	<b>\$5,375</b>	<b>\$21,396</b>	<b>\$5,375</b>	<b>\$99,455</b>	<b>\$21,396</b>	<b>\$5,375</b>	<b>\$1,215,142</b>



**ATTACHMENT 2**

**LANDOWNER/PROPERTY RIGHTS INFORMATION**  
**(TO BE ADDED)**

