



**State of Louisiana**

**Coastal Protection and Restoration  
Authority of Louisiana (CPRA)**

## **2022/2023 Annual Inspection Report**

for

### **SABINE REFUGE MARSH CREATION PROJECT (CS-28-2) Permanent Pipeline**



State Project Number CS-28-2  
Priority Project List 8

October 19, 2022  
Cameron Parish

Prepared by:

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## **I. Introduction**

The Sabine Refuge Marsh Creation Cycle-2 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 and approved on the first Priority Project List. The Sabine Refuge Protection Project has a twenty-year (20 year) project life, which began in April 2010.

The location of the pipeline is immediately south of the Hackberry community in Cameron Parish and runs perpendicular to LA State Highway 27, commencing near Mile 13.3 of the Calcasieu River Ship Channel and terminating at the northeastern corner of the Sabine National Wildlife Refuge. (See Appendix A). The pipeline corridor is approximately 30 feet wide.

The Sabine Refuge Marsh Creation Project Cycle II consists of approximately 3.54 miles (19,000 lft) of 29in. ID permanent pipeline, along with two fenced in temporary booster pump connections. Each temporary booster pump facility consists of an above ground 29in. ID flanged pipe spool with concrete saddle supports, six foot chain link fence with three strands of barbed wire (dimensions 80 feet by 20 feet), warning signs, and 12 foot double gate with padlock. Each pipeline terminus consists of a 29 inch ID long radius elbow extending above ground with a blind flange connection.

## **II. Inspection Purpose and Procedures**

The purpose of the annual inspection of the Sabine Refuge Marsh Creation Cycle-2 Project (CS-28-2) 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 . The annual inspection report also contains a summary of maintenance projects which were completed since completion of constructed project features 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 Sabine Refuge Marsh Creation Cycle-2 Project (CS-28-2) are outlined in Section IV.

An inspection of the Sabine Refuge Marsh Creation Cycle-2 Project (CS-28-2) was held on October 19, 2022 under sunny skies and mild temperatures. In attendance were Jody White, Mark Mouldous and Phillip Parker from CPRA Operations, Terri Von Hoven and Matt Barbier from the US Army Corps of Engineers (USACE), Chris Simon and Blake Boatwright from Simon and Delany, LLC, (current maintenance Contractor) and T-Pat Murphy, airboat services. The inspection began at the East end riser.

The field inspection included an inspection of all of the project features. Photographs were taken (see Appendix B) and Field Inspection notes were completed in the field to record observations and deficiencies (see Appendix D).

### **III. Project Description and History**

The purpose of the permanent pipeline is to transport dredged material from dedicated maintenance dredging within the vicinity of the pipeline to be beneficially used as marsh creation and marsh nourishment. The pipeline has previously been used in conjunction with the USACE maintenance dredging of the Calcasieu River Ship Channel for disposal as marsh creation on the Sabine National Wildlife Refuge. Future cycles on the Sabine Refuge are expected. The marsh creation projects proposed in the vicinity of the pipeline re-create brackish marsh habitat in the open water areas of interior marsh primarily caused by saltwater intrusion and freshwater loss.

Use of the pipeline is not restricted to marsh creation on the Refuge; future CWPPRA projects may be proposed outside of the Refuge. The current O&M Budget accounts for the USACE dredging cycles occurring approximately every two years. In addition, the cost for pipeline testing and potential pipeline maintenance prior to and during an executed CWPPRA or USACE related contract are accounted for in the O&M budget; private projects are not included. Therefore, testing costs would need to be addressed should private entities be authorized to use the pipeline. Use of the pipeline by private entities would need to be discussed with the Federal Sponsors prior to approval.

The Coastal Protection and Restoration Authority (CPRA) along with the U.S. Dept. of Interior, Fish and Wildlife Service (FWS) and the U.S. Army, Corps of Engineers (USACE) are providing financial and technical support for operating the Sabine Refuge Marsh Creation Project (CS-28-2) Cycle II Permanent Pipeline.

The project goals and objectives are to assist with marsh creation within the Sabine National Wildlife Refuge through beneficial use of dredged materials.

### **IV. Summary of Past Operation and Maintenance Projects**

Below is a summary of completed maintenance projects and operation tasks performed since April 2010, the construction completion date of the Sabine Refuge Marsh Creation Cycle-2 Project (CS-28-2). Proper maintenance is essential in achieving the long-term benefits envisioned and prescribed in the Operation and Maintenance Agreement. Expected maintenance activities over the life of the project include grass cutting along the pipeline corridor, paint repairs on the above ground features, pipe thickness and deformation testing prior to each use, pipeline repairs, and pipe maintenance during pumping.

## **General Maintenance:**

**Maintenance Contract (2021-2022)** - CPRA is contracted with Simon and Delany Resource Management, LLC for ROW and pipeline maintenance. The current cost annually is \$25,500.00. This contract is structured such that CPRA has the option to renew at the same price, terms and conditions for two (2) additional twelve (12) month periods not to exceed a total of thirty-six (36) months. The Contract is currently in its first renewal and will be re-advertised at the end of 2023.

**Maintenance Contract (2018-2020)** - CPRA contracted with The Farm Nursery for ROW and pipeline maintenance. The cost annually was \$62,600. (2018-2020 Contract)

**Maintenance Contract (2015-2017)** - CPRA contracted with Simon and Delany Resource Management for ROW and pipeline maintenance. The cost annually was \$69,000. (2015-2017 Contract)

**March 2015** – The Permanent pipeline was used in the construction of Sabine Refuge Marsh Creation Cycles 4 & 5 and Unit 1A. The dredging began November 2014 and ended March 2015. Additional PE and Pontoon pipe were installed to make up the length needed to dredge the Calcasieu Ship Channel Mile 10.5 to 15.0 and transport the material to the marsh creation areas. The pipeline was flushed and filled with water, and paint repairs were performed upon completion. The marsh creation project was in conjunction with the USACE routine dredging cycle and a joint effort between the USACE, USFWS, and CPRA.

**Structure Operations:** There are no active operations associated with this project.

## **V. Inspection Results**

### **30 Inch Permanent Pipeline**

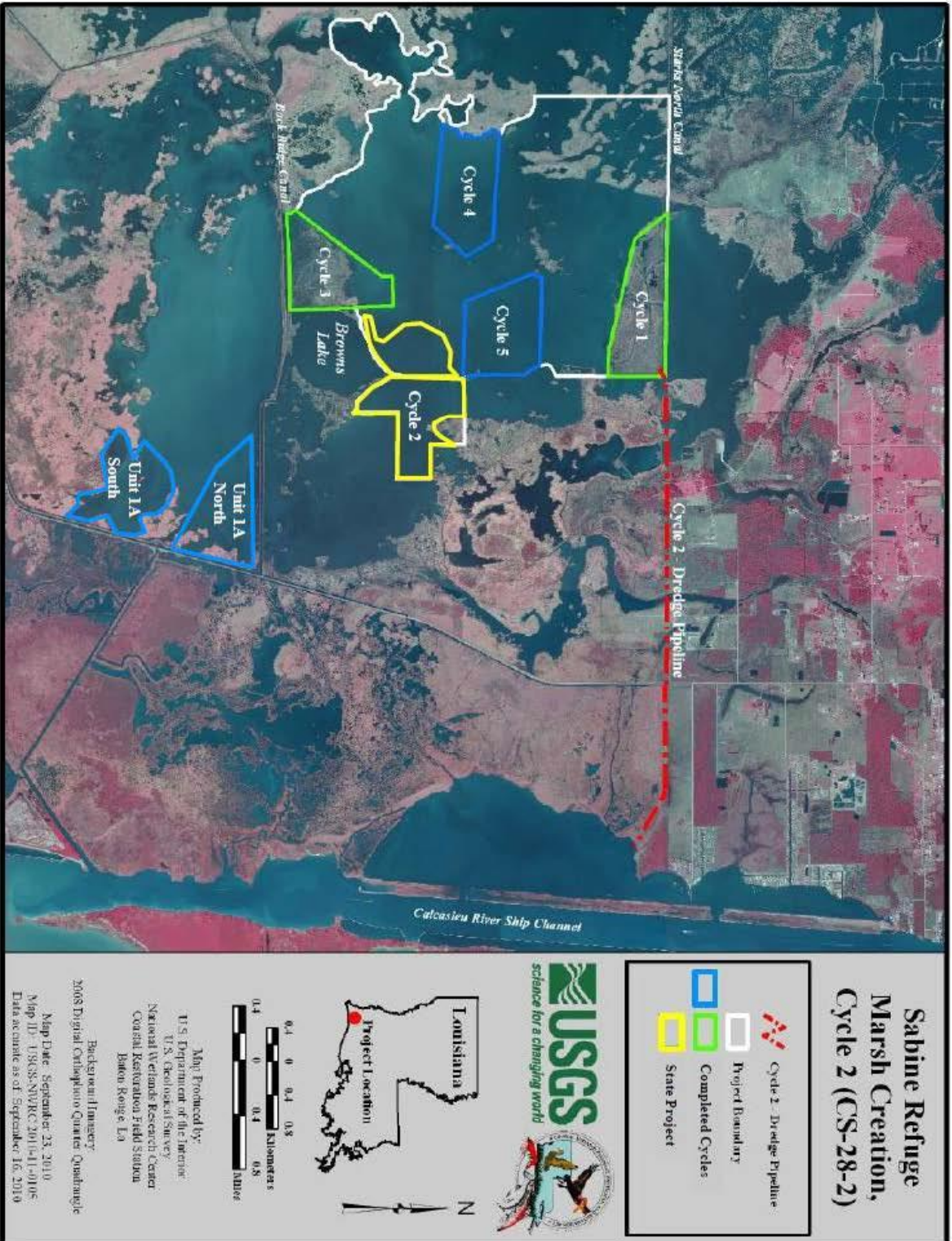
The blind flange risers on each end of the pipeline are in good condition. There a few chips which can be addressed in the 2022 maintenance year. Scraping and painting the localized areas of rust should remediate this damage. The above ground booster locations (east and west) are in good condition as well, and the grass and vegetation are well maintained within the fenced areas. Due to dry conditions only a portion of the pipeline corridor (buried pipe) was inspected via airboat. No visible signs of erosion or leakage of the observed portion of the underground pipeline were apparent from the ground surface at the time of the inspection. Note that as part of the yearly maintenance contract, the Contracting Party is responsible for reporting instances of erosion and/or pipeline leakage observed during performance of pipeline corridor maintenance. There have been no reported instances of erosion and/or leakage along the length of the buried pipeline by the maintenance Contractor (Simon and Delany, L.L.C.), during the 2022 maintenance year. Other than the need to paint localized areas of rust/chipping, there is no need for any other additional maintenance at this time. (Photos: Appendix B, Photos 1 - 22)

## **VI. Conclusions and Recommendations**

Overall, the Sabine Refuge Marsh Creation Cycle-2 Project (CS-28-2) is in excellent condition with the permanent pipeline functioning as designed. The USACE reported that during the 2015 event, the contractor encountered no problems while using the permanent pipeline and all went well during the work.

The pipeline is proposed for use in an upcoming marsh creation effort for Cycles 6 and 7 within the Sabine National Wildlife Refuge and per the O&M plan established at completion of construction, will need to be inspected for soundness/suitability at least 180 day prior to advertisement of any project for which it is intended to be utilized.

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

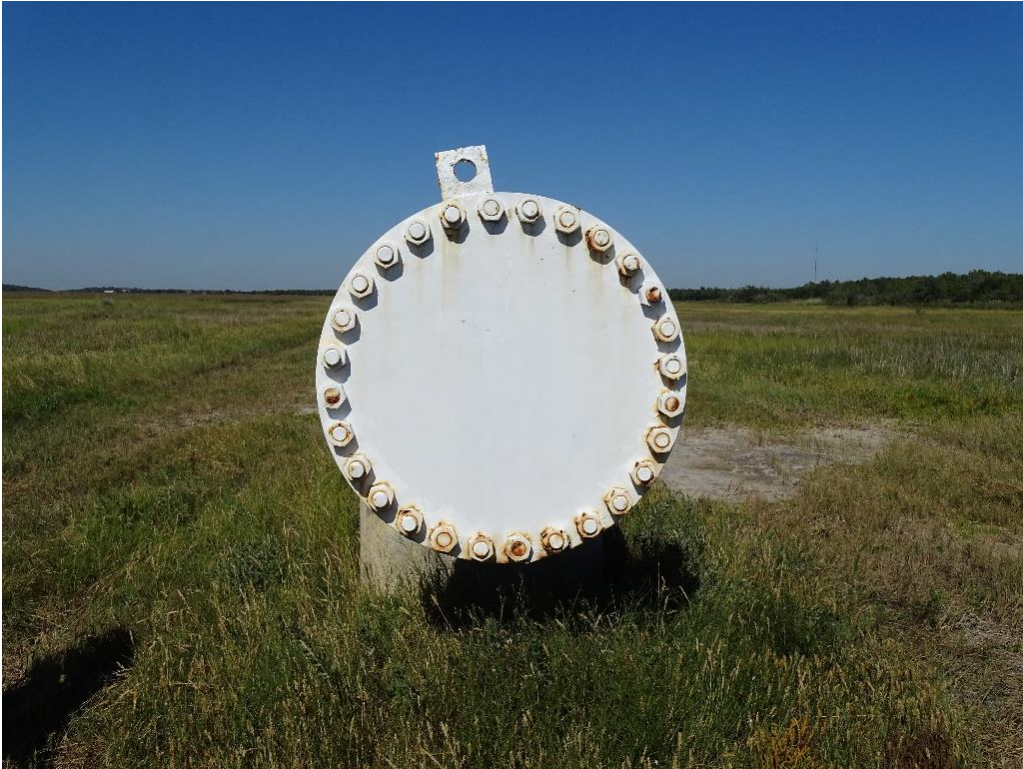




## **Appendix B**

### **Photographs**

<b>Description</b>	<b>Photo Number(s)</b>
East Blind Flange & Riser	1 – 10
East Booster Station	11
West Booster Station	12-15
West Blind Flange & Riser	16-22



**Photo No. 1, East end blind flange and riser (looking West)**



**Photo No. 2, East end blind flange and riser (looking Southwest)**



**Photo No. 3, East end blind flange and riser (looking East)**



**Photo No. 4, East end blind flange and riser (looking Northwest)**



**Photo No. 5, East end blind flange, riser and Pipeline Corridor (looking West)**



**Photo No. 6, East end blind flange/riser, north side of pedestal, saddle and straps (looking Southwest)**



**Photo No. 7, East end blind flange/riser, north side of pedestal, saddle and straps (looking Southeast)**



**Photo No. 8, East end blind flange/riser, south side of pedestal, saddle and straps (looking Northeast)**



**Photo No. 9, East end blind flange/riser, south side of pedestal, saddle and straps (looking North)**



**Photo No. 10, East end blind flange/riser, Backside of Flange Cover**



**Photo No. 11, East Booster Station – looking west**



**Photo No. 12, West Booster Station – looking west**



**Photo No. 13, West Booster Station – looking East**



**Photo No. 14, West Booster Station – looking West**





**Photo No. 15, Pipeline corridor looking West from West Booster Station**



**Photo No. 16, West Blind Flange and Riser looking North East**



**Photo No. 17, West Blind Flange and Riser looking South East**



**Photo No. 18, West Blind Flange and Riser looking West**



**Photo No. 19, West Blind Flange and Riser looking South West**



**Photo No. 20, West Blind Flange and Riser, North Side Saddle Pedestal and Straps – Looking South West**



**Photo No. 21, West Blind Flange and Riser, South Side Saddle Pedestal and Straps – Looking North West**



**Photo No. 22, West Blind Flange and Riser, Vent Looking South**

## **Appendix C**

### **Three Year Budget Projection**

**SABINE REFUGE MARSH CREATION CYCLE 2/ CS-28-2 / C.140069.8/PPL 8**  
**Three-Year Operations & Maintenance Budgets 07/01/2023 - 06/30/2026**

<u>Project Manager</u> Phillip Parker	<u>O &amp; M Manager</u> Phillip Parker	<u>Federal Sponsor</u> USACE	<u>Prepared By</u> Jody White
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	2023/2024 (-14)	2024/2025 (-15)	2025/2026 (-16)
<b>Maintenance Inspection</b>	\$ 16,179.00	\$ 16,664.00	\$ 17,164.00
<b>Structure Operation</b>			
<b>State Administration</b>	\$6,216.00	\$ 6,216.00	\$ 6,216.00
<b>Federal Administration</b>	\$1,000.00	\$ 1,000.00	\$ 1,000.00
<b>Maintenance/Rehabilitation</b>	\$ 38,000.00	\$ 42,000.00	\$ 42,000.00

23/24 Description: Pipeline Inspection

E&D	
Construction	\$600,000.00
Construction Oversight	
<b>Sub Total - Maint. And Rehab.</b>	<b>\$ 600,000.00</b>

24/25 Description:

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

25/26 Description:

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

	2023/2024 (-14)	2024/2025 (-15)	2025/2026 (-16)
<b><u>Total O&amp;M Budgets</u></b>	<b>\$ 661,395.00</b>	<b>\$ 65,880.00</b>	<b>\$ 66,380.00</b>

<b><u>O &amp; M Budget (3 yr Total)</u></b>	<b>\$ 793,655.00</b>
<b><u>Unexpended O &amp; M Budget</u></b>	<b>\$ 2,631,568.02</b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b>\$ 1,837,913.02</b>

**OPERATION AND MAINTENANCE BUDGET WORKSHEET**  
 SABINE REFUGE MARSH CREATION CYCLE 2/ CS-28-2 / C.140069.8 / PPL 8 / 2023-2024

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$16,179.00	\$16,179.00
General Structure Maintenance	LUMP	0	\$0.00	\$0.00
Engineering and Design	LUMP	0	\$0.00	\$0.00
Operations Contract	LUMP	1	\$38,000.00	\$38,000.00
Construction Oversight	LUMP	0	\$0.00	\$0.00

**ADMINISTRATION**

STATE Admin.	LUMP	1	\$6,216.00	\$6,216.00
FEDERAL SPONSOR Admin.	LUMP	1	\$1,000.00	\$1,000.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$7,216.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Pipeline Inspection & Testing				
	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		1	\$600,000.00	\$600,000.00
<b>TOTAL SURVEY COSTS:</b>					<b>\$600,000.00</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	TON / FT	TONS	UNIT PRICE
	Rock Dike	0	0.0	0	\$0.00
	Bank Paving	0	0.0	0	\$0.00
		0	0.0	0	\$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	0	\$0.00	\$0.00
	Materials	LUMP	0	\$0.00	\$0.00
	Mob / Demob	LUMP	0	\$0.00	\$0.00
	Contingency	LUMP	0	\$0.00	\$0.00
	General Structure Maintenance (25%)	LUMP	0	\$0.00	\$0.00
	Vegetative Plantings	LUMP	0	\$0.00	\$0.00
	OTHER	LUMP	0	\$0.00	\$0.00
	OTHER				\$0.00
<b>TOTAL CONSTRUCTION COSTS:</b>					<b>\$0.00</b>

**TOTAL OPERATIONS AND MAINTENANCE BUDGET:** \$661,395.00

**OPERATION AND MAINTENANCE BUDGET WORKSHEET**  
 SABINE REFUGE MARSH CREATION CYCLE 2/ CS-28-2 / C.140069.8 / PPL 8 / 2024-2025

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$16,664.00	\$16,664.00
General Structure Maintenance	LUMP	0	\$0.00	\$0.00
Engineering and Design	LUMP	0	\$0.00	\$0.00
Operations Contract	LUMP	1	\$42,000.00	\$42,000.00
Construction Oversight	LUMP	0	\$0.00	\$0.00

**ADMINISTRATION**

STATE Admin.	LUMP	1	\$6,216.00	\$6,216.00
FEDERAL SPONSOR Admin.	LUMP	1	\$1,000.00	\$1,000.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$7,216.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	Survey project area				
	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:					
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
<b>TOTAL GEOTECHNICAL COSTS:</b>				<b>\$0.00</b>	

**CONSTRUCTION**

CONSTRUCTION DESCRIPTION:	Vegetative plantings, and engineering monitoring.					
	Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	Rock Dike	0	0.0	0	\$0.00	\$0.00
	Bank Paving	0	0.0	0	\$0.00	\$0.00
		0	0.0	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		0	\$0.00	\$0.00
	Materials	LUMP		0	\$0.00	\$0.00
	Mob / Demob	LUMP		0	\$0.00	\$0.00
	Contingency	LUMP		0	\$0.00	\$0.00
	General Structure Maintenance (25%)	LUMP		0	\$0.00	\$0.00
	Vegetative Plantings	LUMP		0	\$0.00	\$0.00
	OTHER	LUMP		0	\$0.00	\$0.00
	OTHER				\$0.00	\$0.00
	<b>TOTAL CONSTRUCTION COSTS:</b>					<b>\$0.00</b>

**TOTAL OPERATIONS AND MAINTENANCE BUDGET:** \$65,880.00



**OPERATION AND MAINTENANCE BUDGET WORKSHEET**  
 SABINE REFUGE MARSH CREATION CYCLE 2/ CS-28-2 / C.140069.8/PPL 8/ 2025-2026

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$17,164.00	\$17,164.00
General Structure Maintenance	LUMP	0	\$0.00	\$0.00
Engineering and Design	LUMP	0	\$0.00	\$0.00
Operations Contract	LUMP	1	\$42,000.00	\$42,000.00
Construction Oversight	LUMP	0	\$0.00	\$0.00

**ADMINISTRATION**

CPRA Admin.	LUMP	1	\$6,216.00	\$6,216.00
FEDERAL SPONSOR Admin.	LUMP	1	\$1,000.00	\$1,000.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
<b>TOTAL ADMINISTRATION COSTS:</b>				<b>\$7,216.00</b>

**MAINTENANCE / CONSTRUCTION**

**SURVEY**

SURVEY DESCRIPTION:	Pipeline Inspection & Testing				
	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:					
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
<b>TOTAL GEOTECHNICAL COSTS:</b>				<b>\$0.00</b>	

**CONSTRUCTION**

CONSTRUCTION DESCRIPTION:						
	Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	Rock Dike	0	0.0	0	\$0.00	\$0.00
	Bank Paving	0	0.0	0	\$0.00	\$0.00
		0	0.0	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	0	\$0.00	\$0.00	
	Materials	LUMP	0	\$0.00	\$0.00	
	Mob / Demob	LUMP	0	\$0.00	\$0.00	
	Contingency	LUMP	0	\$0.00	\$0.00	
	General Structure Maintenance (25%)	LUMP	0	\$0.00	\$0.00	
	Vegetative Plantings	LUMP	0	\$0.00	\$0.00	
	OTHER	LUMP	0	\$0.00	\$0.00	
	OTHER			\$0.00	\$0.00	
	<b>TOTAL CONSTRUCTION COSTS:</b>				<b>\$0.00</b>	

**TOTAL OPERATIONS AND MAINTENANCE BUDGET:** **\$66,380.00**

## **Appendix D**

### **Field Inspection Form**

2022 – 2023 Annual Inspection Report  
 SABINE REFUGE MARSH CREATION  
 State Project No. CS-28-2

Project No. / Name: CS-28 Sabine Refuge Marsh Creation Cycle 2

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Date of Inspection: October 19, 2022 Time: 10:30 AM

Structure No. N/A

Inspector(s): Jody White, Mark Mouldous and Phillip Parker (CPRA -LAF)

Structure Description: Permanent Pipeline

Terrt Vonhoven and Matt Barber (USACE)  
 Chris Simon & Blake Boatwright (Simon & Delany, LLC)

Type of Inspection: Annual

T-Pat Murphy, Airboat Services  
 Water Level Inside: N/A Outside: N/A

Weather Conditions: Sunny with mild temperatures  
 Weather Conditions: Sunny with mild temperatures

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	N/A				
Steel Grating	N/A				
Stop Logs	N/A				
Hardware	N/A				
Timber Piles	N/A				
Timber Walies	N/A				
ROW	Good			13,4,5,11,12,13 & 15	
Booster Locations	Good			11-14	
Pipeline Connection SNWR (West)	Good			16-22	will need some touch up painting
Pipeline Connection Calcasieu River (East)	Good			1-10	will need some touch up painting
Fencing	Good			11-14	

What are the conditions of the existing levees?  
 Are there any noticeable breaches?  
 Settlement of rock plugs and rock weirs?  
 Position of stoplogs at the time of the inspection?  
 Are there any signs of vandalism?

N/A  
 N/A  
 N/A  
 N/A  
 No