CWPPRA

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
TECHNICAL COMMITTEE MEETING

AGENDA

September 2, 2021, 9:30 a.m.

Location:
Virtual-WebEx

Documentation of Technical Committee meetings (including minutes, attendance records, PowerPoint Presentations, and meeting binders) may be found at:
http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA.aspx

Tab Number	Agenda Item

1. **Meeting Initiation 9:30 a.m. to 9:40 a.m.**
   - **a.** Introduction of Technical Committee or Alternates
   - **b.** Opening remarks of Technical Committee Members
   - **c.** Request for Agenda Changes/Additional Agenda Items/Adoption of Agenda

2. **Report: Status of CWPPRA Program Funds and Projects (Jernice Cheavis, USACE) 9:40 a.m. to 9:55 a.m.** Ms. Jernice Cheavis will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.

3. **Report/Decision: 2021 CWPPRA Report to Congress (Kaitlyn Carriere, USACE) 9:55 a.m. to 10:00 a.m.** USACE will provide a report on the development of the 2021 Report to Congress and will request a Technical Committee recommendation for Task Force approval of the final draft.

4. **Report: Status of Unconstructed Projects (Kaitlyn Carriere, USACE) 10:00 a.m. to 10:10 a.m.** The P&E Subcommittee will report on the status of unconstructed CWPPRA projects. There were three projects that were considered for "critical watch."
   a. Critical-watch unconstructed projects:
      - South Grand Chenier Marsh Creation (ME-20)
      - North Catfish Lake Marsh Creation (TE-112)
      - Island Road Marsh Creation and Nourishment (TE-117)

5. **Decision: CWPPRA Standard Operating Procedures (SOP) Update/Revisions (Kevin Roy, USFWS) 10:10 a.m. to 10:20 a.m.** USFWS will present the requested changes and revisions to the scope change procedures in the CWPPRA SOP for Technical Committee review and approval.

6. **Report/Decision: Development of the Support Programmatic Project for Signage (Kent Bollfrass, CPRA) 10:20 a.m. to 10:45 a.m.** Mr. Kent Bollfrass will provide an update on the development of a support programmatic project for signage. The Technical Committee will consider recommending approval of the project to the Task Force.
    a. CPRA and NRCS request the Technical Committee recommend approval of the Ten-Year Support Programmatic Project for Signage; $2,767,206.00
    b. CPRA and NRCS request the Technical Committee recommend approval of the first three years of incremental funding for Support Programmatic Project for Signage; $703,878.00

7. **Decision: Request for a 20-Year Project Life Extension for Replace Sabine Refuge Water Control Structures at Hog Island Gully, West Cove, and Headquarters Canal (CS-23) Project (Kevin Roy, USFWS) 10:45 a.m. to 10:55 a.m.** USFWS and CPRA propose a 20-year project life extension for CS-23. A formal assessment of costs and benefits has been completed and the results will be presented. The Technical Committee will consider a vote to make a recommendation to the Task Force to approve a project life extension.

8. **Decision: Request for a Change in Scope for the PPL23 – Island Road Marsh Creation and Nourishment (TE-117) Project (Patrick Williams, NMFS) 10:55 a.m. to 11:05 a.m.** NMFS and CPRA request approval of a change in scope for the Island Road Marsh Creation and Nourishment (TE-117) Project. A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate.

9. **Decision: Request for a Transfer of Approved O&M to Approved Monitoring for Four Mile Canal Terracing and Sediment Trapping (TV-18) Project (Cece Linder, NMFS or Leigh Anne Sharp, CPRA) 11:05 a.m. to 11:15 a.m.** NMFS and CPRA request Technical Committee recommendation of approval to transfer $19,354 from the approved Operations and Maintenance budget to the approved Monitoring budget for the Four Mile Marsh Creation and Terracing (TV-18) Project. Funds are needed for two years of CRMS photography analysis deemed important for final reporting for this project. Incremental funding approval for the final monitoring increment will be made in a motion later in this agenda. This action does not represent an overall budget increase to the Project. It would reduce the Project's Operations and Maintenance budget to $1,654,507 and increase the Project's Monitoring budget to $198,634.

10. **Decision: Request for the Monitoring and O&M Budget Increases for Brady Canal Hydrologic Restoration (TE-28) Project (Todd Folse, CPRA) 11:15 a.m. to 11:20 a.m.** NRCS and CPRA request a $114,024.21 Monitoring budget increase and a $43,789.00 Operations and Maintenance budget increase to reconcile past expenditures in advance of financial closeout.

11. **Decision: Request for a One-Year Time Extension and O&M Budget Increase for Bayou Chevee Shoreline Protection (PO-22) Project (Barry Richard, CPRA) 11:20 a.m. to 11:25 a.m.** USACE and CPRA request a one-year time extension and

$81,786.00 budget increase to install 15 navigation warning signs with lights along the length of the project as recommended by USCG and to complete project closeout.

12. **Decision: Annual Request for Incremental Funding for FY24 Administrative Costs for Cash Flow Projects (Jernice Cheavis, USACE) 11:25 a.m. to 11:30 a.m.** The U.S. Army Corps of Engineers will request funding approval in the amount of $80,954 for administrative costs for cash flow projects beyond Increment 1. The Technical Committee will consider and vote to make a recommendation to the Task Force on the request for funds.

13. **Decision: Request for Funding for the CWPPRA Program's Technical Services (Michelle Fischer, USGS) 11:30 a.m. to 11:35 a.m.** The U.S. Geological Survey (USGS) and CPRA are requesting funding for technical services for the CWPPRA program in the amount of $216,546. The Technical Committee will consider and vote to make a recommendation to the Task Force to approve the request for budget increase and funding for technical services in the amount of $216,546.

14. **Decision: Request for Operation and Maintenance (O&M) Incremental Funding (Kent Bollfrass, CPRA) 11:35 a.m. to 11:55 a.m.** The Technical Committee will consider and vote to make a recommendation to the Task Force to approve requests for total FY24 O&M incremental funding in the amount of $4,607,388.00 and O&M budget increases in the total amount of $124,797.00

    a. PPL 9+ Projects requesting approval for FY24 O&M incremental funding in the total amount of $2,486,543.00 for the following projects:
        - Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
            Incremental Funding Request: $114,958.00
        - Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
            Incremental Funding Request: $6,272.00
        - Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake (BA-37)
            Incremental Funding Request: $4,064.00
        - Pelican Island and Pas La Mer to Chaland Pass (BA-38)
            Incremental Funding Request: $14,842.00
        - Bayou Dupont Sediment Delivery System (BA-39)
            Incremental Funding Request: $8,342.00
        - Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
            Incremental Funding Request: $7,968.00
        - Cameron-Creole Grand Bayou Marsh Creation (CS-54)
            Incremental Funding Request: $25,382.00
        - Coastwide Nutria Control Program (LA-03b)
            Incremental Funding Request: $2,091,073.00
        - Coastwide Vegetative Planting Project (LA-39)
            Incremental Funding Request: $5,278
        - Freshwater Introduction South of Highway 82 (ME-16)

Incremental Funding Request: $16,297.00
- Rockefeller Refuge Gulf Shoreline Protection (ME-18)
  Incremental Funding Request: $29,899.00
- Grand Lake Shoreline Protection (ME-21)
  Incremental Funding Request: $8,744.00
- South Grand Chenier Marsh Creation (ME-22)
  Incremental Funding Request: $9,364.00
- Bayou Bonfuca Marsh Creation (PO-104)
  Incremental Funding Request: $67,839.00
- West Bell Pass Barrier Headland Restoration (TE-52)
  Incremental Funding Request: $4,202.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
  Incremental Funding Request: $12,604.00
- Cole's Bayou Marsh Restoration (TV-63)
  Incremental Funding Request: $42,120.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
  Incremental Funding Request: $5,424.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
  Incremental Funding Request: $11,871.00

b. PPL 1-8 Project requesting approval for FY24 O&M incremental funding in the total amount of $2,120,845.00 and budget increases in the total amount of $124,797.00 for the following projects:
- Naomi Outfall Management (BA-03c)
  Budget Increase Amount: $88,636.00
  Incremental Funding Request: $88,636.00
- Barataria Waterway West Bank Protection (BA-23)
  Budget Increase Amount: $36,161.00
  Incremental Funding Request: $36,161.00
- Cameron Creole Maintenance (CS-04a)
  Incremental Funding Request: $1,848,047.00
- Black Bayou Hydrologic Restoration (CS-27)
  Incremental Funding Request: $22,426.00
- Bayou Chevee Shoreline Protection (PO-22)
  Incremental Funding Request: $81,786.00
- Brady Canal Hydrologic Restoration (TE-28)
  Incremental Funding Request: $43,789.00

15. Decision: Request for Monitoring Incremental Funding (Kent Bollfrass, CPRA) 11:55 a.m. to 12:15 p.m. The Technical Committee will consider and vote to make a recommendation to the Task Force to approve FY24 incremental funding in the total amount of $11,768,859.21.

a. PPL 9+ Projects requesting approval for FY24 incremental funding in the total amount of $1,454,590.00 for the following projects:

- Barataria Basin Landbridge Shoreline Protection (BA-27c)
  Incremental Funding Request: $19,038.00
- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
  Incremental Funding Request: $218,434.00
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
  Incremental Funding Request: $105,378.00
- Pelican Island and Pas La Mer to Chaland Pass (BA-38)
  Incremental Funding Request: $143,088.00
- Bayou Dupont Sediment Delivery System (BA-39)
  Incremental Funding Request: $3,714.00
- Lake Hermitage Marsh Creation (BA-42)
  Incremental Funding Request: $2,207.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
  Incremental Funding Request: $28,937.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
  Incremental Funding Request: $188,168.00
- Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
  Incremental Funding Request: $3,597.00
- Delta Management at Fort St. Phillip (BS-11)
  Incremental Funding Request: $119,461.00
- Black Bayou Culverts Hydrologic Restoration (CS-29)
  Incremental Funding Request: $41,730.00
- Coastwide Nutria Control Program (LA-03b)
  Incremental Funding Request: $118,922.00
- Coastwide Vegetative Planting Project (LA-39)
  Incremental Funding Request: $67,565
- Bayou Bonfuca Marsh Creation (PO-104)
  Incremental Funding Request: $2,005.00
- Raccoon Island Shoreline Protection and Marsh Creation (TE-48)
  Incremental Funding Request: $62,936.00
- Whiskey Island Back Barrier Marsh Creation (TE-50)
  Incremental Funding Request: $86,772.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
  Incremental Funding Request: $19,729.00
- Cole's Bayou Marsh Restoration (TV-63)
  Incremental Funding Request: $222,909.00

b. PPL 1-8 Project requesting approval for FY24 incremental funding in the total amount of $314,269.21 for the following projects:

- Cameron Creole Maintenance (CS-04a)
  Incremental Funding Request: $108,631.00
- Sabine Refuge Marsh Creation, Increment 4 and 5 (CS-28-4)
  Incremental Funding Request: $91,614.00
- Brady Canal Hydrologic Restoration (TE-28)

Incremental Funding Request: $114,024.21

c. Coastwide Reference Monitoring System (CRMS) requesting approval for FY24 incremental funding in the total amount of $10,000,000.00

- Coastwide Reference Monitoring System (LA-30)
  Incremental Funding Request: $10,000,000.00

16. Additional Agenda Items (Sarah Bradley, USACE) 12:15 p.m. to 12:20 p.m.

17. Request for Public Comments (Sarah Bradley, USACE) 12:20 p.m. to 12:25 p.m.

18. Announcement: Dates of Upcoming CWPPRA Program Meeting (Sarah Bradley, USACE) 12:25 p.m. to 12:30 p.m. The Task Force meeting will be held October 7, 2021 at 9:30 a.m.

19. Announcement: Scheduled Dates of Future Program Meetings (Sarah Bradley, USACE) 12:30 p.m. to 12:35 p.m.

October 7, 2021	9:30 a.m.	Task Force	TBD
December 9, 2021	9:30 a.m.	Technical Committee	TBD
January 2022	9:30 a.m.	Task Force	TBD

*Dates are subject to change. Please check back with lacoast.gov for the latest calendar.

20. Decision: Adjourn

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

MEETING INITIATION

a. Introduction of Technical Committee or Alternates
b. Opening remarks of Technical Committee Members
c. Request for Agenda Changes/Additional Agenda Items/Adoption of Agenda

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

STATUS OF CWPPRA PROGRAM FUNDS AND PROJECTS

For Report:

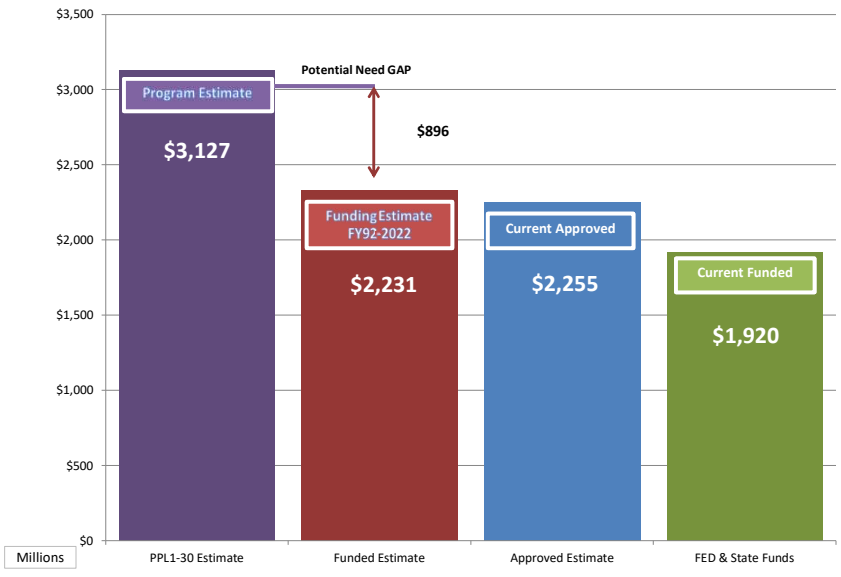
Ms. Jernice Cheavis will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.

Status of CWPPRA Program Funds & Projects

Jernice P. Cheavis

2 September 2021

CWPPRA CONSTRUCTION PROGRAM



CWPPRA PROGRAM BUDGET INCREASES

Program Estimate (PPL 1-30) **$3,127,089,636**

Support Projects	
Construction Program Technical Services	$216,546
TOTAL:	**$216,546**

Project Budget Increases	
Programmatic Signage Support Project	$2,767,206
Sabine Refuge Water Control Structures Replacement (CS-23)	$9,142,079
Brady Canal Hydrologic Restoration (TE-28)	$157,813
Bayou Chevee (PO-22)	$82,504
FY23 O&M Requests	$124,797
FY23 Monitoring Requests	$0
TOTAL:	**$12,274,399**

NEW PROGRAM ESTIMATE: $3,139,580,581

CONSTRUCTION PROGRAM FUNDING REQUESTS

Available Funds	
Carried in From May 2021 Task Force Meeting	$12,054,416
FY21 DOI Funds Estimate (Construction)	$85,826,062
TOTAL:	**$97,880,478**

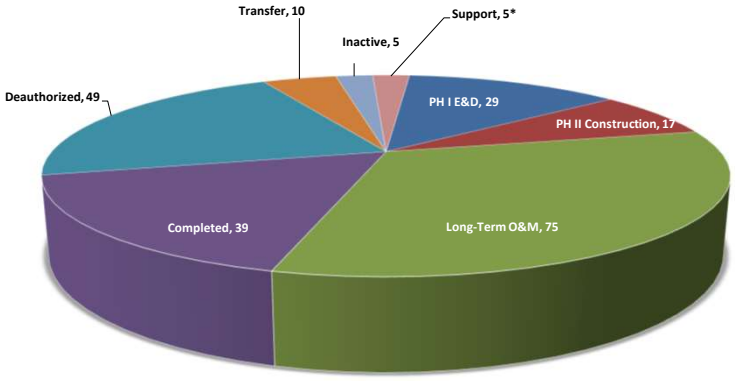
Total Requests	
Programmatic Signage Support Project	($703,878)
COE Administrative Funding Requests	($80,954)
Construction Program Technical Services	($216,546)
FY24 Operation & Maintenance	($4,607,388)
FY24 Monitoring	($11,768,859)
TOTAL:	**($17,377,625)**

REMAINING BALANCE: $80,502,853

CWPPRA PROJECT STATUS

TOTAL CWPPRA PROJECTS: 229

ACTIVE PROJECTS: 126



*(1) CRMS (2) Monitoring Contingency Fund (3) Storm Recovery Procedures (4) Construction Program Technical Services (5) Wetland Conservation Plan

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

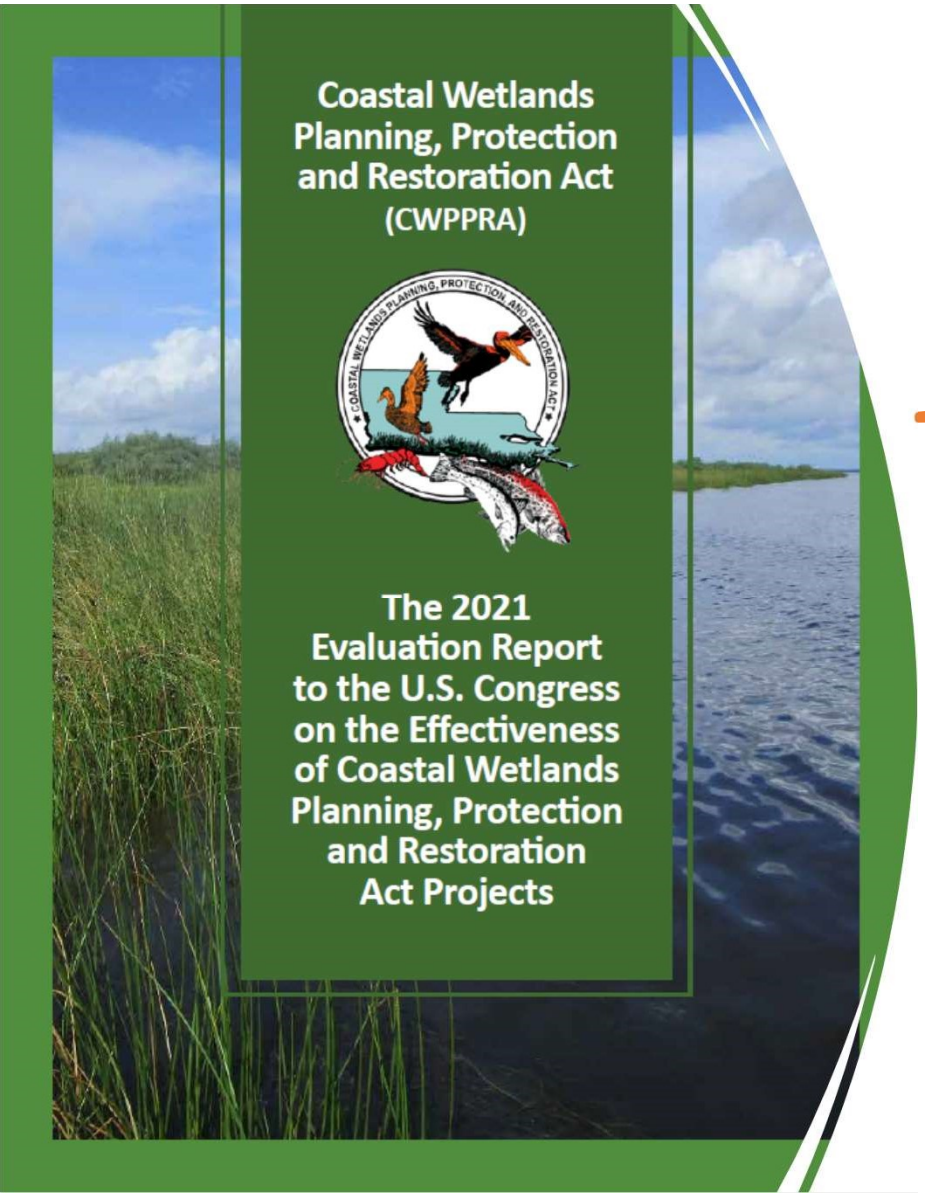
TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

2021 CWPPRA REPORT TO CONGRESS

For Report/Decision:

USACE will provide a report on the development of the 2021 Report to Congress and will request a Technical Committee recommendation for Task Force approval of the final draft.



CWPPRA Report to the U.S. Congress

- 2021 Report
  - 24 Pages
  - USACE: Main Author
  - EPA: Graphic Design
- Final Review and Comment
  - Technical Committee: Requested August 11th
  - Task Force: September 16th

2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection, and Restoration Act Projects

1. **Report/Decision**

The final draft has been developed and sent out to the Technical Committee for review on 11 August 2021. Several comments have been incorporated and the document is provided in the binder materials. USACE will request a Technical Committee recommendation for the Task Force to approve the final report.

2. Roles and Responsibilities

- **USACE:** Main Author and Technical Editor
- **EPA:** Graphic Designer, Support – Project Info
- **USGS:** Support - Project and Basin Level Info
- **NRCS:** Printer, Support – Project Info
- **NMFS:** Support – Project Info
- **FWS:** Support – Project Info
- **CPRA:** Support – Project Info

3. Planning Budget

Task No. 31300 Prepare 2021 Evaluation Report (Report to Congress)

Approved in May 2020

USACE	$5,500
USFWS	$4,500
NWRC	$75,000
CPRA	$2,100
EPA	$2,100
NRCS	$2,500
NMFS	$2,500
Other	$800
Total	$95,000

Allocated in April 2021

USACE	$20,000
USFWS	$1,500
USGS	$10,657
CPRA	$1,500
EPA	$15,000
NRCS	$6,600
NMFS	$2,500
Remaining	$37,243
Total	$95,000

4. **Timeline**

~~**Kickoff Mtg**~~	~~**November 2020**~~
~~**First draft development**~~	~~**November 2020 – March 2021**~~
~~-Select projects to highlight~~	~~November – February 2021~~
~~-Basin write-ups~~	~~November – February 2021~~
~~-Draft Intro, Benefits, Resiliency, Conclusion~~	~~November – December 2020~~
~~-Reach out to P&E for project info/pics~~	~~February 2021 (two weeks)~~
~~-Consolidate into 1st draft~~	~~February 2021 (one week)~~
~~**Review #1**~~	~~**March 2021**~~
~~-P&E Committee Review~~	~~(one week)~~
~~-Address Comments~~	~~(two weeks)~~
~~**Present first draft at TC meeting**~~	~~**April 2021**~~
~~**Review #2**~~	~~**April 2021**~~
~~-TF Review~~	~~(two weeks)~~
~~-Address Comments~~	~~(two weeks)~~
~~**Present first draft at TF meeting**~~	~~**May 2021**~~
~~**Technical Editing**~~	~~**May 2021**~~
~~**Graphic Design/Layout**~~	~~**June – July 2021**~~
~~**Review #3**~~	~~**August 2021**~~
~~-TC Review~~	~~(two weeks)~~
~~-Edits~~	~~(two weeks)~~
Present final draft at TC meeting	**September 2021**
Review #4	September - October 2021
-TF Review	(two weeks)
-Edits	(two weeks)
TF Approval of final draft	**October 2021**
Submittal for Print	**October 2021**

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)

The 2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection and Restoration Act Projects

Louisiana Coastal Wetlands Conservation and Restoration Task Force. 2021. The 2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands, Planning, Protection and Restoration Act Projects.

Map images provided by the U.S. Geological Survey Wetland and Aquatic Research Center.

Cover image by U.S. Fish and Wildlife Service - CWPPRA South Lake Lery Shoreline and Marsh Restoration (BS-16) Project

CWPPRA Mission Statement

Louisiana continues to face an unprecedented collapse of its entire coastal ecosystem and the vital economic activity and unique culture that it supports. Over the past 30 years, the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) has fulfilled its role under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) by implementing a science and engineering based program that extensively engages stakeholders and the public and serves as the Nation's model for effective and efficient coastal restoration. To secure the future of Louisiana's coast, the Task Force and stakeholders must share a common vision, one that aligns with State and national priorities.

Documentation

This report is submitted by the Task Force in accordance with CWPPRA, Title III of Public Law 101–646. This report fulfills the CWPPRA mandate, which requires a report to the U.S. Congress every 3 years on the effectiveness of Louisiana's coastal wetland restoration projects.

Acknowledgements

The Task Force wishes to thank Governor of Louisiana, John Bel Edwards, the Louisiana Legislature, the Federal Louisiana Delegation, and the U.S. Congress for their support of this crucial program.

USGS

CWPPRA at work. Members of the CWPPRA workgroups set out on their annual visits in the field to collect valuable data necessary to develop successful wetland restoration projects.

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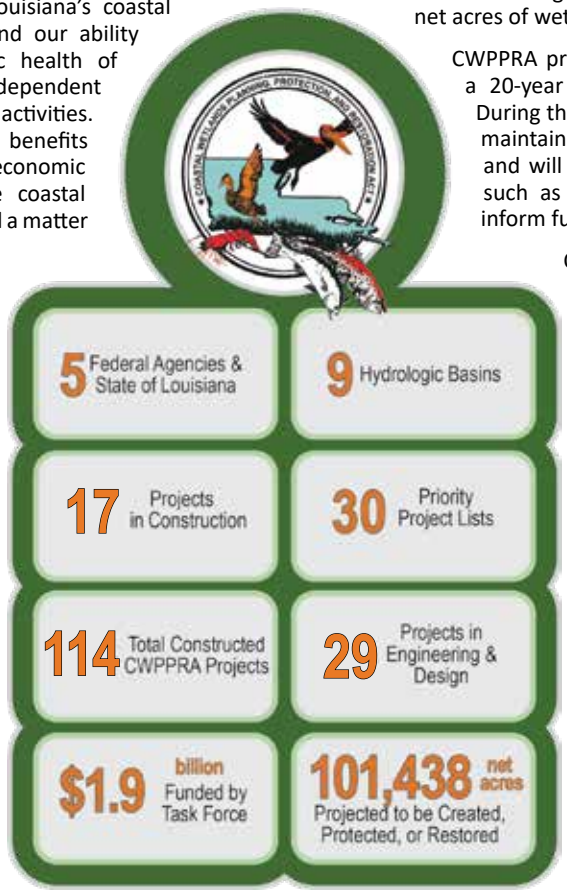
Introduction

Louisiana's coastal zone is home to approximately 37 percent of all coastal marshes and 45 percent of all intertidal coastal marshes in the lower 48 States, but annually, Louisiana is losing 80 percent of the entire nation's coastal wetlands. Since the 1930s, coastal Louisiana has lost more than 1,860 square miles (1.2 million acres), an area more than 25 times larger than Washington, D.C (Couvillion and others, 2017).

The dire need to restore and protect Louisiana's coastal wetlands has been clearly established and our ability to sustain the ecological and economic health of the Louisiana coastal zone is largely dependent upon coastal restoration and protection activities. Louisiana's wetlands provide a variety of benefits that serve the Nation across an array of economic sectors. Because of these benefits, the coastal wetland loss crisis in Louisiana is considered a matter of national concern.

Congress recognized the ongoing severe coastal wetland losses in Louisiana and the increasing impacts on locally, regionally, and nationally important resources when it established the CWPPRA in 1990 (Public Law 101-646, Title III). As part of CWPPRA, Congress established and directed the Task Force to prepare, annually update, and implement a list of Louisiana coastal wetland restoration projects. Consistent with Louisiana's Comprehensive Coastal Master Plan, which charts Louisiana's coastal restoration over 50 years, these projects provide for the long-term conservation of wetlands and dependent fish and wildlife populations.

Between 1990 and 2021, CWPPRA has constructed, or funded for construction, projects to protect and restore close to 101,438 net acres (158 square miles) of Louisiana's coastal wetlands. As of August 2021, 114 projects have been constructed, 17 are currently under construction, and 29 are in engineering and design. Between 2019 and 2021, the Task Force approved 11 new projects for Phase 1 – Engineering and Design. During that same period, the Task Force authorized six projects for Phase 2 – Construction, which are expected to result in 2,643 net acres of wetlands. Several projects have also completed construction during that time frame, restoring and creating 2,115 net acres of wetlands in total (Table 1, page 3).



CWPPRA projects are typically planned and designed for a 20-year lifespan following construction completion. During that timeframe, the project will be operated and maintained to ensure effectiveness and overall success and will be monitored for environmental parameters, such as land change and emergent vegetation, and inform future operation and maintenance activities.

CWPPRA monitoring data provide vital information to evaluate not only the CWPPRA projects, but also other restoration programs and the state of the coast in general. The monitoring data collected through the CWPPRA Program are used to select, prioritize, and design nearly all coastal restoration projects. Since 2007, the Coastwide Reference Monitoring System (CRMS), primarily funded by CWPPRA and the State of Louisiana, has provided critical baseline ecological data to inform coastal restoration and disaster response activities throughout Louisiana's four ecologic regions. These regions cover nine hydrologic basins: Calcasieu-Sabine, Mermentau, Teche-Vermilion, Atchafalaya, Terrebonne, Barataria, Mississippi River Delta, Breton Sound, and Pontchartrain. The following sections provide net acres benefitted and an example of a constructed project in these basins, demonstrating the effectiveness of CWPPRA to address land loss in Louisiana's coastal wetlands.

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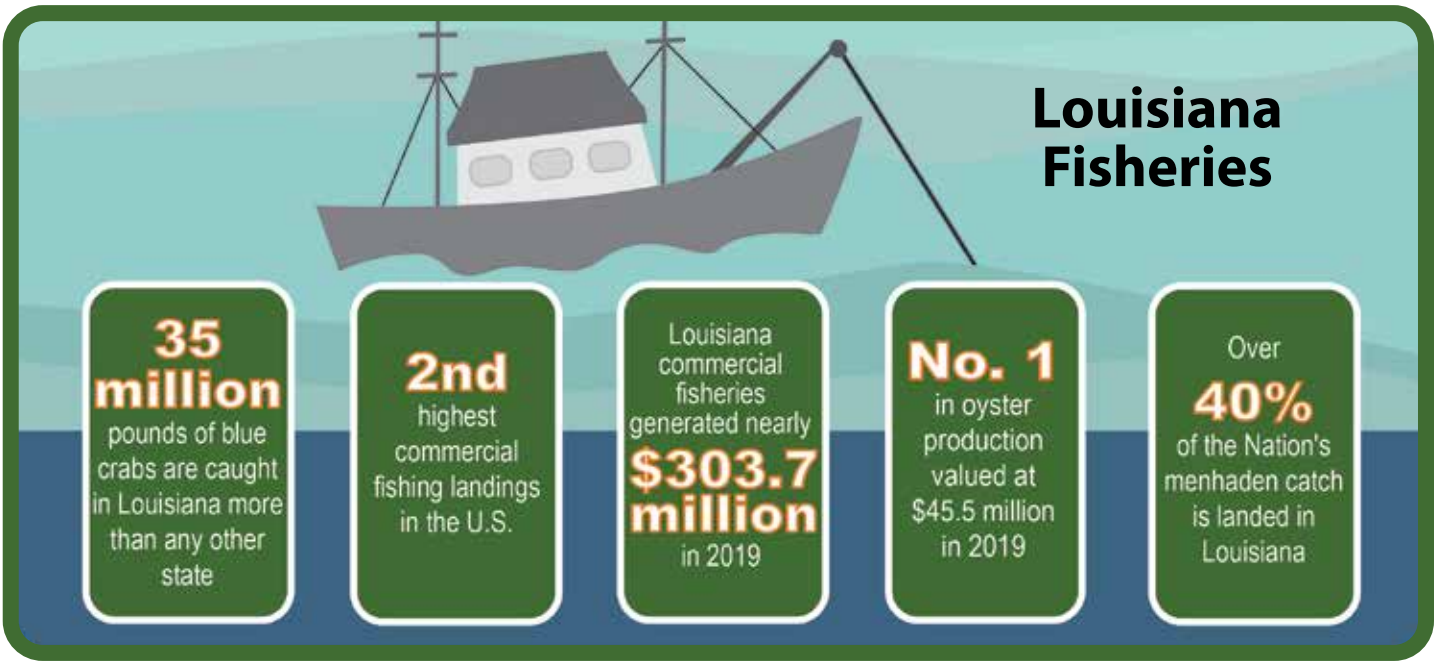


2019 Statistics NOAA Fisheries, Fisheries Statistics Division Accessed 02-08-21

Table 1. Total net acres projected to be created, protected, or restored for projects in engineering and design, construction, and projects constructed from 2019 to 2021*. Total net acres for engineering and design: 3,617; construction: 2,643; constructed: 2,115. (CWPPRA Environmental Workgroup, 2021)

Project Name	Project Number	Priority Project List	Acres
Breton Landbridge Marsh Creation (West)	BS -38	28	372
East Delacroix Marsh Creation and Terracing	BS-37	28	314
Grand Bayou Ridge and Marsh Restoration	BA-217	28	336
Long Point Bayou Marsh Creation	CS-85	28	332
Bay Raccourci Marsh Creation and Ridge Restoration	TE-156	29	343
East Catfish Lake Marsh Creation and Shoreline Protection	TE-157	29	248
Phoenix Marsh Creation - East Increment	BS-42	29	297
North Delacroix Marsh Creation and Terracing	BS-41	29	294
Reggio Marsh Creation and Hydrologic Restoration	BS-43	30	484
Bay Raccourci Marsh Creation Increment II	TE-146	30	290
Phoenix Marsh Creation – West Increment	BS-44	30	307
New Orleans Landbridge Shoreline Stabilization and Marsh Creation	PO-169	24	167
Bayou Decade Ridge Restoration and Marsh Creation	TE-138	26	378
Labranche East Marsh Creation	PO-75	19	715
West Fourchon Marsh Creation and Nourishment	TE-134	24	304
Labranche Central Marsh Creation	PO-133	21	668
Mid Breton Landbridge Marsh Creation and Terracing	BS-32	27	411
Lost Lake Marsh Creation and Hydrologic Restoration	TE-72	19	452
Cameron Creole Watershed- Grand Bayou Marsh Creation	CS-54	20	476
Oyster Bayou Marsh Restoration	CS-59	21	433
Cole's Bayou Marsh Restoration	TV-63	21	340
Rockefeller Refuge Gulf Shoreline Stabilization	ME-20	11	414

Projects authorized for Phase 1 Engineering and Design from 2019-2021

Projects authorized for Phase 2 Construction from 2019-2021

Projects constructed from 2019-2021

*The CWPPRA Environmental Workgroup uses Wetland Value Assessments (WVA) to analyze and determine potential benefit acres for a CWPPRA project over the length of its 20-year life span. It is important to distinguish between WVAs acres of benefit, which can include multiple types of benefit, and reported land area benefit acreages. The land change dynamics acreage numbers for each basin in this report are derived from a comparison between pre-construction and post-construction land change rates assessed via satellite imagery.

CWPPRA Benefits to Fish and Wildlife

Benefits analyses developed by the CWPPRA Environmental Workgroup estimate that 101,438 acres of protected and created coastal wetlands can be attributed to CWPPRA in its first 30 years. Those restored swamps, marshes, and barrier islands/headlands and associated open-water habitats provide foraging, nesting, breeding, wintering, refuge, and nursery habitat for a myriad of coastal fish and wildlife. This includes threatened and endangered, at-risk, and rare species, as well as commercially and recreationally valuable species and State and national fish and wildlife trust resources.

Habitats restored through CWPPRA have aided in the delisting of our national symbol, the bald eagle, and the Louisiana State bird, the brown pelican, from the endangered species list. Located along the Mississippi and Central Flyways, coastal Louisiana provides wintering habitat for more than 5 million waterfowl and habitat for Neotropical migrant birds. Appendix 2 lists some of the threated and endangered, and at-risk/rare species found in the Louisiana coastal zone. The appendix also contains the waterfowl, mammals, reptiles, amphibians, and commercially and recreationally important fisheries benefitted by CWPPRA projects.

Many economically important saltwater fishes and crustaceans spawn in nearshore and offshore waters of the Gulf of Mexico (e.g., blue crab, red drum, Gulf menhaden, shrimp, and spotted seatrout) but post-larval species and juveniles depend on natural and restored estuarine habitats in Louisiana for foraging and nursery areas. The estuarine-dependent, post-larval, and juvenile fisheries species contribute to the estuarine food web and some serve as prey for predators and highly migratory species (such as jacks, tuna, billfishes and sharks).

Louisiana's coastal wetlands also provide habitat for the commercial trapping of the American alligator and furbearers (e.g., muskrat, mink, and otter) and natural areas for tourist activities, such as bird watching, boating, swimming, and hiking.

CPRA

CPRA

Saving Wetlands *Helps Threatened & Endangered Species*

CWPPRA is rebuilding wetlands to protect these species. Beach and marsh habitat are created with dredged material. New plants in these wetlands take root and provide food and shelter for fish and wildlife.

Louisiana is home to threatened or endangered species. **32**

16 species reside in coastal zone habitats.

101,438 acres of wetlands are projected to be protected, created, or restored. More than 351,000 acres are projected to be enhanced by CWPPRA projects.

CWPPRA Supports Coastal Resiliency

Our national economy benefits greatly from Louisiana's coastal wetlands. Economic activity in Louisiana's coastal zone includes oil and gas production, shipping commerce, commercial fisheries, oyster production, and fur harvesting. Coastal Louisiana employs 939,000 people annually, earning almost $46 billion (NOAA OCM 2018). This equates to over $120 billion on gross domestic product (NOAA OCM 2018). Due to wetland loss, however, coastal Louisiana and the economic activity it produces is vulnerable to subsidence, sea level rise, and storm impacts.

Louisiana experienced a record-breaking hurricane season in 2020. Five named storms made landfall in the State, of which, three were hurricanes. Hurricanes Laura and Delta arrived in southwestern Louisiana six weeks apart. Laura, the strongest category four hurricane to make landfall in Louisiana since 1956, is one of the strongest hurricanes on record to make landfall in the U.S. At category two strength, Hurricane Delta made landfall in nearly the same location as Hurricane Laura. Hurricane Zeta then impacted southeastern Louisiana less than three weeks later as a category two hurricane. Collectively, over $20 billion in estimated damages resulted due to the impacts of the five named storms (NOAA NCEI 2021). According to post-storm assessments, CWPPRA marsh creation sites, terraces, and shoreline protection features fared well, while some water control features sustained some storm damage.

Coastal restoration projects, such as those constructed through the CWPPRA Program, provide a buffer to coastal communities and critical infrastructure that are of national economic importance. Continued wetland loss without further action will impact the Louisiana coastal region's ability to recover quickly after future devastating storm events. The CWPPRA Program not only restores the coast but strengthens and supports economic and coastal resiliency by identifying coastal areas with increasing land loss rates and executing land building projects in those areas.

NOAA/NESDIS/STAR

GOES-16 geocolor visible image of Hurricane Laura nearing peak intensity on August 26, 2020.

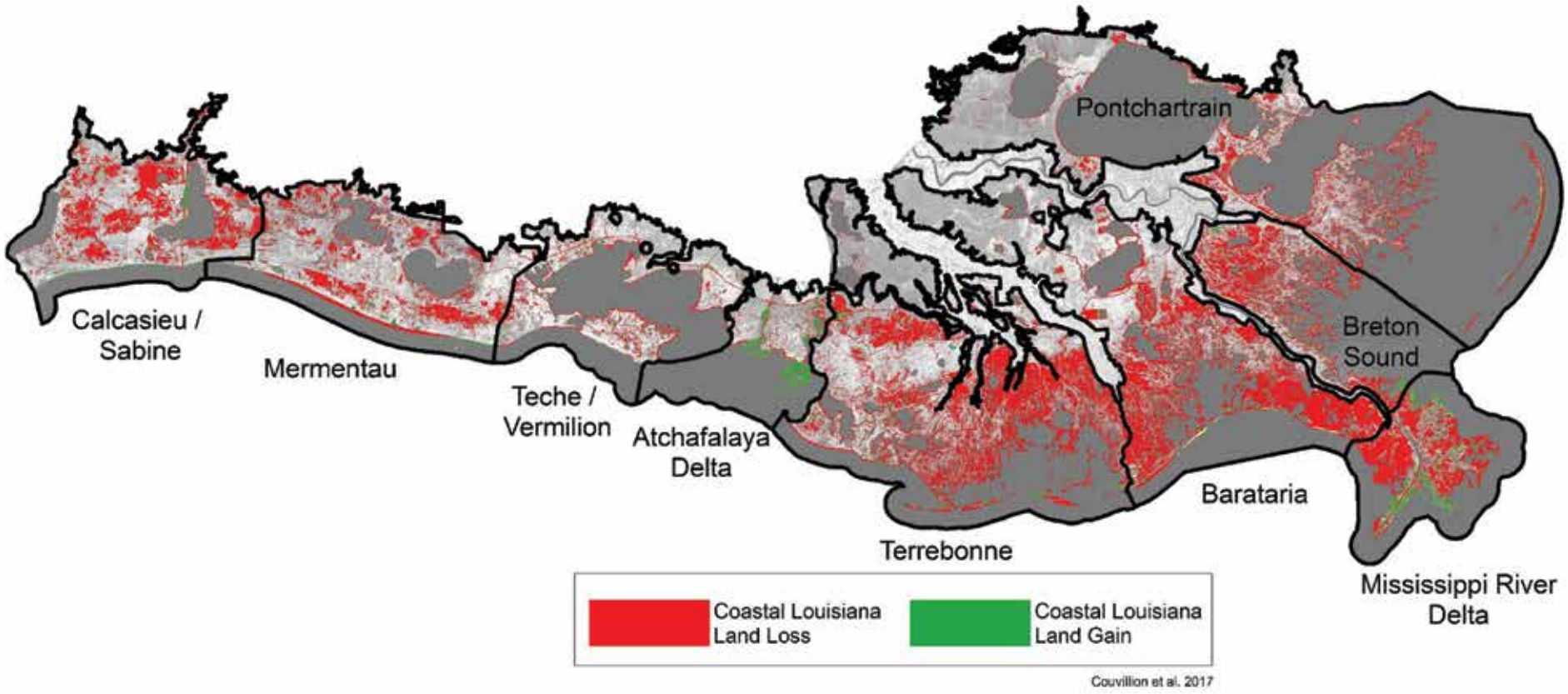
Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA. USGS, AeroGRID, IGN, and the GIS User Community.

CWPPRA projects provide protection to critical infrastructure. LaBranche Central Marsh Creation (PO-133) was recently combined with LaBranche East Marsh Creation (PO-75) and approved for construction in early 2020. The combined project will provide a protective buffer to Interstate 10, the region's primary hurricane evacuation route.

Gulf Coast Air Photo & Coastal Dredging Company, Inc.

CWPPRA projects provide protection to coastal communities. The Northwest Turtle Bay Marsh Creation (BA-125) project consists of approximately 700 acres of marsh created with dredged material from Turtle Bay or Little Lake. Roughly six to seven miles to the northeast are the towns of Lafitte and Jean Lafitte, fishing communities rich in culture and located in the middle of the Barataria estuary.

Coastal Louisiana Land Loss



CALCASIEU-SABINE BASIN

Land Change Dynamics

Calcasieu-Sabine Basin is the western most basin in Louisiana. It is bordered on the west by Texas and extends eastward to Grand Lake. It contains vast expanses of coastal marshes spanning from saline to freshwater environments. Major water bodies include Calcasieu and Sabine Lakes and navigation channels important to the local economy, such as the Calcasieu Ship Channel and the Gulf Intracoastal Waterway (GIWW).

The Calcasieu-Sabine Basin experienced the highest rates of wetland loss prior to the 1970s (average -2,348 acres/year, -9.5 km2/year); however, rates have slowly decreased since that time, except for hurricane-induced losses in 2005 and 2008. Rates of wetland loss have ranged from a net loss of 2,470 acres/year (~10 km2/year) at the peak of wetland loss rates, to an estimate of 494 acres/year (~2 km2/year) most recently (Couvillion et al. 2017). The major causes of land loss in this basin are saltwater intrusion, subsidence, and storms. Calcasieu-Sabine Basin was in the direct path of two hurricanes in 2020. The wetland impacts of land change and wetland health are still under investigation.

In the Calcasieu-Sabine Basin, constructed marsh creation, terracing, and shoreline protection features, similar to the project highlighted below, have contributed approximately 7,788 acres (+/- 1230 acres) of net land area benefit, either from new land built or land sustained from project inception through 2020. The land area benefits from CWPPRA projects in this basin have continued to increase through time. This increasing benefit includes land building as additional projects have been constructed, but the land sustaining effects of CWPPRA projects in this basin have been significant. Land sustained (land that would have been lost in the absence of restoration activities), accounts for approximately half of the land area benefit in this basin (Figure 1).

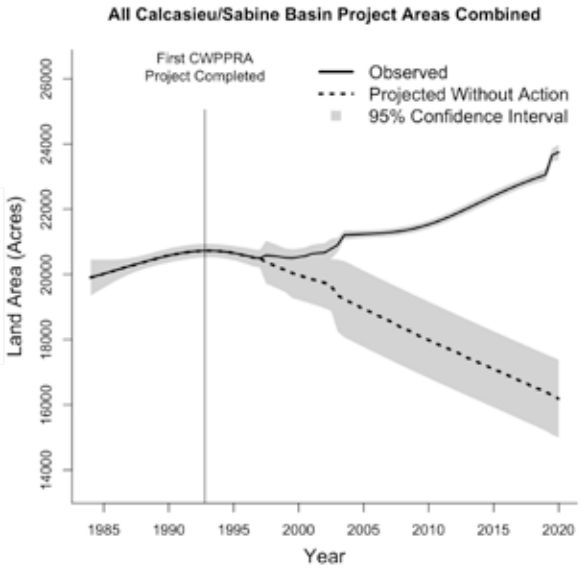


Figure 1. Cumulative land area change analyses for all constructed CWPPRA projects in Calcasieu-Sabine basin.

$149 Million Expended

21 Projects Constructed

4 Projects in Engineering & Design

3 Projects in Construction

USACE

Figure 2. An aerial image of the CS-22 project along the GIWW

Clear Marais Bank Protection (CS-22) Project

Constructed in 1997, the CS-22 project extends along the north bank of the GIWW between the Alkali Ditch and Goose Lake (Figure 2). The freshwater marshes of the project area are threatened by saltwater intrusion and marsh loss from breaches in the GIWW shoreline due to increased tidal action and boat wakes. Approximately 35,375 linear feet of rock dike was constructed along the north bank of the GIWW as a shoreline protection feature to protect and hydrologically isolate the Clear Marais freshwater wetlands north of the GIWW.

Overall, from 1997-2015, the project shoreline gained an average of 3.97 feet/year (Miller and Guidry 2016). The reference area, in comparison, was losing an average of -1.13 feet/year prior to 2013 when Calcasieu Parish constructed a rock dike using Coastal Impact Assistance Program funding that tied into the western end of the CS-22 project. Visual observation indicates vertical accretion of the wetland area at many locations between the foreshore rock dike and the shoreline, especially where the vegetation has grown contiguous with the rock dike.

Land/water analysis data shows the project is gaining land in recent years after remaining stable from 2000 to 2010. The project has been gaining land at a rate of nearly three acres/year, on average, since construction. Prior to construction, the trend was negative, reflecting the loss of shoreline without the protection of the rock dike.

MERMENTAU BASIN

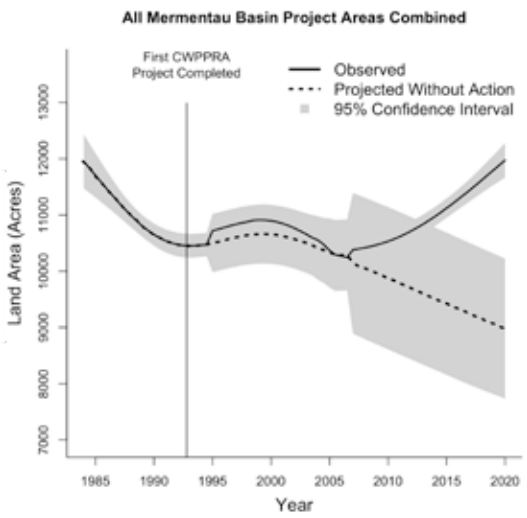


Figure 3. Cumulative land area change analyses for all constructed CWPPRA projects in Mermentau basin.

Land Change Dynamics

Mermentau Basin is located in the eastern portion of the Chenier Plain between Calcasieu-Sabine and Teche-Vermilion Basins. The Mermentau Basin can be divided into two sub-basins. The Lakes sub-basin is between two transportation features - the GIWW to the north and Louisiana Highway (LA Hwy) 82 to the south. LA Hwy 82 runs atop and between the Grand Chenier-Pecan Island ridge complex. The Chenier sub-basin lies between this ridge complex and the Gulf of Mexico. About 18 percent (128,200 acres) of the basin lands are publicly owned as Federal refuges and State wildlife management areas (Mouledous and Sharp 2016).

In terms of total area, Mermentau Basin experienced approximately 120,000 acres (~488 km2) of wetland loss from 1932 to 2016, and a change rate averaging -1,470 acres/year (-5.95 km2/year) (Couvillion et al. 2017). The two sub-basins suffer from distinctly different hydrologic problems. The most critical wetland problem in the Lakes sub-basin is excessive flooding due to numerous blockages of drainage outlets that increase water levels and prolong flooding. The higher water levels may also be responsible for shoreline erosion in this area (Mouledous and Sharp 2016). The same blockages to the north also reduce freshwater inputs into the Chenier sub-basin in the south, facilitating saltwater intrusion.

Shoreline protection features, like those in the project highlighted below, have effectively reduced or halted shoreline erosion in their project locations. Shoreline protection and terracing projects in Mermentau Basin have attributed to approximately 3,166 acres (+/- 1319 acres) of net land area benefit via new land built or land sustained from project inception through 2020. In this basin, much of the land area benefits attained prior to 2005 were, at least ephemerally, lost due to Hurricane Rita. However, many of those project areas recovered, and as new projects were built, land area benefit has continued to increase. Additionally, land sustained accounts for a large portion of the land area benefit in this basin (Figure 3).

$74 Million Expended

10 Projects Constructed

2 Projects in Engineering & Design

1 Project in Construction

Freshwater Bayou Canal Bank Stabilization (ME-13) Project

The ME-13 project area encompasses 1,169 acres of intermediate and brackish marsh along the west bank of Freshwater Bayou Canal (FBC) between its confluence with North Prong Belle Isle Bayou Canal and Six-mile Canal in Vermilion Parish, Louisiana. The marshes of the project area are adversely affected from the west by the influence of prolonged periods of elevated water levels from the Grand/ White Lake system, and from the east by tidal scour and saltwater intrusion associated with erosion of the spoil banks along the west bank of FBC. In 1998, approximately 23,193 linear feet of rock dike was constructed as a shoreline protection feature to protect surrounding marshes.

CPRA

Figure 4. The shoreline protection provided by the rock dike in the ME-13 project area has been effective in reducing shoreline erosion and has increased overall land acreage since construction.

The shoreline protection provided by the rock dike in the project area has been effective in reducing shoreline erosion where crown elevation is maintained. While there is evidence of erosion in the project area, the rates are very low. Overall from 1998-2014, the project shoreline erosion rates were around -0.61 feet/year (Barrilleaux and Guidry 2010). The unprotected reference area, in comparison, lost an average of -9.03 feet/year of shoreline. The ME-13 project area has increased in overall land acreage since construction.

TECHE-VERMILION BASIN

Land Change Dynamics

The Teche-Vermilion Basin contains roughly 300,000 acres (1,214.1 km2) of wetlands and is located in the central coastal zone. East Cote Blanche Bay, West Cote Blanche Bay, and Vermilion Bay are dominant features in the basin that influence the hydrology of the area. Marsh Island, another important feature on the landscape, serves as a barrier to reduce the influence of the more saline waters of the gulf on the marshes to the north. This barrier helps maintain the marshes in Teche-Vermilion as mostly fresh, intermediate, and brackish, with few saline marshes near the gulf.

The Teche-Vermilion Basin experienced one of the smaller net wetland area losses of the nine coastal basins with approximately 36,800 acres (149 km2) lost between 1932 and 2016 (Couvillion et al. 2017). Factors affecting wetland change in this basin include shoreline erosion, change in hydrologic conditions, storm impacts, and herbivory. Teche-Vermilion Basin follows a similar pattern to that of the coastwide trend of loss rates increasing to a peak in the late 1970s, followed by a reduction in loss rates since that time. The most recently published analyses indicate the wetland area change rate in Teche-Vermilion has turned positive in recent years. However, the impacts of the 2020 hurricane season may impact these trends.

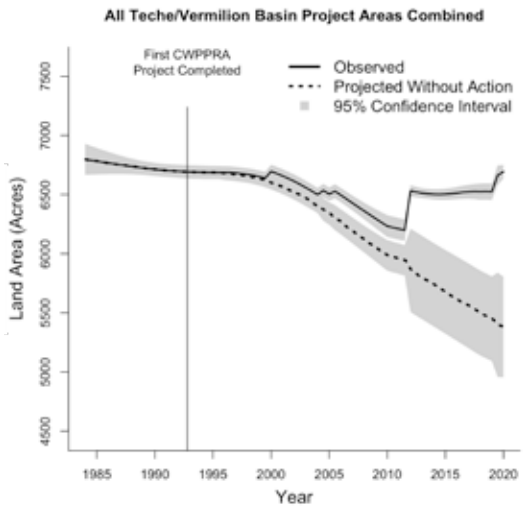


Figure 5. Cumulative land area change analyses for all constructed CWPPRA projects in Teche-Vermilion basin.

Terracing, hydrologic restoration, marsh creation, and shoreline protection projects have had positive impacts on the landscape of the Teche-Vermilion Basin. Excluding hydrologic restorations, CWPPRA projects in this basin have collectively contributed approximately 1,388 acres (+/- 435 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Though land area in the collective project areas in Teche-Vermilion Basin is relatively unchanged from the construction of the first CWPPRA project, the land sustaining effect of CWPPRA projects is evident (Figure 5). In the absence of these projects, projections indicate substantially more wetland loss would have been observed in these portions of Teche-Vermilion Basin.

$52.7 Million Expended **11 Projects Constructed**

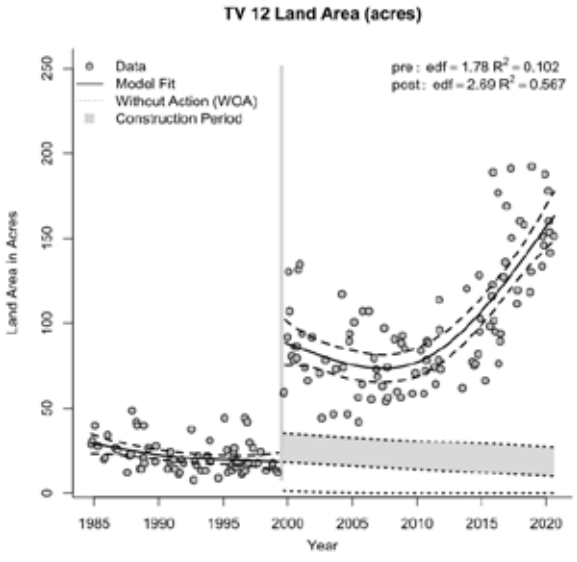


Figure 6. TV-12 land area change analyses.

[1]Little Vermilion Bay Sediment Trapping (TV-12) Project

Constructed in 1999, this project was designed to enhance the amount of wetlands created by natural deposition of sediments being carried by the GIWW and FBC into Little Vermilion Bay. The objectives were to enhance the amount of wetlands created by natural sediment deposition through the dredging of distributary channels, protect the existing wetlands by reducing wave energy by the creation of terraces, create emergent marsh on terrace and on newly deposited soils, and to encourage colonization by submerged aquatic vegetation between and around terraces.

The constructed terraces were very effective at creating emergent marsh habitat, starting below 20 acres in 1998 and nearing or surpassing 200 acres as of 2020 with continued growth expected (Figure 6). The terraces quickly vegetated, through plantings and natural recruitment, and the rate of sedimentation increased post construction. Most of the inter-terrace areas transitioned from distributary channels and shallow bay bottom (≤ -6 ft to -2 ft NAVD) to intermittently exposed tidal flat soon after construction (Wood et al 2016). Leveraging synergies, tidal flats created by sediments trapped by the terrace field were planted by CWPPRA's Coastwide Vegetation Planting Project (LA-39) and since transitioned to marsh. As of 2020, the combined efforts of both projects in the one location have resulted in an emergent marsh area that is double the original area of terrace construction.

[1]Data points in Figure 6 and other similar graphs through this report represent observed land area on specific dates. In the figure, construction completion is shown with a vertical grey bar. The model fit represents a pre-and post-construction period of land area change with a 95 percent confidence interval shown by dashed lines. In the case of Figure 6, if TV-12 wasn't constructed, the projected conditions of land area change would have followed a negative trend, as shown by the dotted line with grey shading.

ATCHAFALAYA BASIN

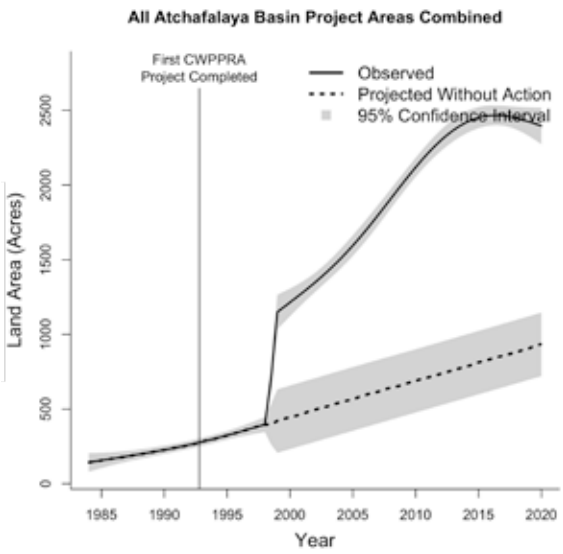


Figure 7. Cumulative land area change analyses for all constructed CWPPRA projects in Atchafalaya basin.

Land Change Dynamics

The Atchafalaya Basin is located in the central part of the coastal zone, west of the Terrebonne Basin (Figure 7). Major water features in the basin include the Lower Atchafalaya River, Wax Lake Outlet, and Atchafalaya Bay. Fresh marsh, wetland scrub-shrub, and forested wetlands are the dominant wetland habitats. The most distinct geomorphologic feature of the Atchafalaya Basin are the two rapidly prograding deltas - the Atchafalaya River Delta and the Wax Lake Outlet Delta. Subaerial delta growth in the Atchafalaya Bay began in the early 1970s and subsequent spring floods have supported continued delta expansion (Falcini et al. 2012, Carle et al. 2015, Gasparini and Yuill 2020).

The Atchafalaya Basin is unique among the coastal basins because it has a growing delta system with nearly stable wetlands. Wetland loss is minor in the areas north of Atchafalaya Bay when compared to the other basins. According to Couvillion et al. (2017), the basin experienced more than 4,000 acres (~16 km2) of net wetland gain since 1932. Annual land change rates early in the study period showed a negative trajectory. However, following the opening of the Wax Lake Outlet in 1942, sediment deposition increased, and a subaerial active delta emerged after the flood of 1973. These factors positively influenced the Atchafalaya Basin's land change rates. Atchafalaya Basin wetlands are likely to be sustainable into the future due to the high rates of river sedimentation that they receive during flooding events.

Because this basin has experienced net wetland gain for the last 50 years, it has not been a major focus for wetland restoration projects. However, two CWPPRA projects in this basin (AT-02 and AT-03) have contributed approximately 1,421 acres (+/- 258 acres) of wetlands to the area collectively via new land built or land sustained from project inception through 2020. These projects consist of beneficial use of dredge material (BUDMAT). In these restoration projects, the material from dredging to maintain navigation in the Atchafalaya River channel was used to create wetlands in the Atchafalaya Delta. Project benefits have continued to increase through time as a result of recurring BUDMAT activities, as well as natural sedimentation contributing to the land building effects of these projects.

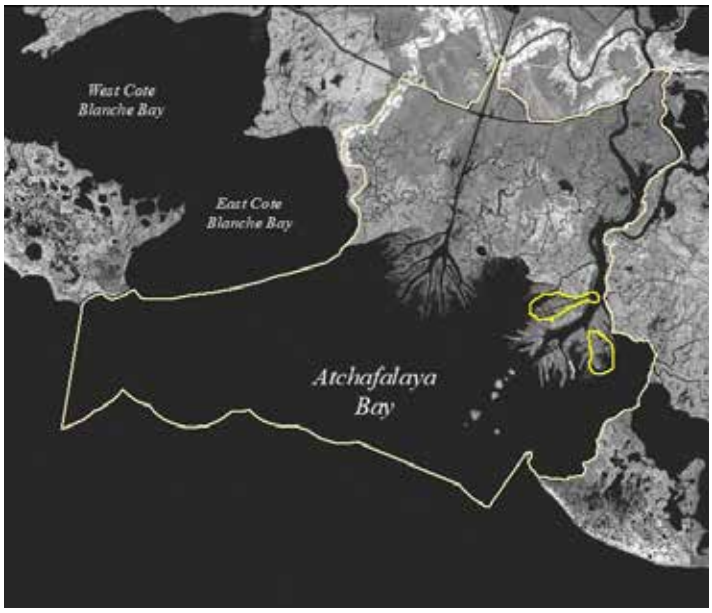


Figure 8. Atchafalaya Sediment Delivery (AT-02) and the Big Island Mining (AT-03) Projects.

CPRA

Figure 9. Fresh marsh, wetland scrub-shrub, and forested wetlands are the dominant wetland habitats in the Atchafalaya Basin.

$10.9 Million Expended

2 Projects Constructed

Land Change Dynamics

The Terrebonne Basin consists of marshes and a network of old distributary ridges left by an abandoned delta complex. It experiences high subsidence due to the unconsolidated sediments that are dewatering and compacting. The basin is also known for the series of narrow, low-lying barrier islands at its border with the Gulf of Mexico. These islands serve as the first line of defense against tropical storms. The Terrebonne Basin is dominated by marsh (approximately 574,000 acres;2,322.9 km2), but also supports swamp habitat (approximately 155,000 acres;627.3 km2).

Terrebonne Basin has experienced the greatest decrease in wetland area, with approximately 321,730 acres (1,302 km2) of net loss since 1932 (Couvillion et al. 2017). The basin experienced higher annual change rates in the late 1970s to early 1980s, with gradually decreasing loss rates since that time. Land change in the Terrebonne Basin is attributed to subsidence, sediment deficit, saltwater intrusion along navigation canals, historic oil and gas activity, habitat switching due to prolonged high water levels (swamp/fresh marshes) and natural deterioration of barrier islands.

Restoration activities in the Terrebonne Basin include marsh creation, shoreline protection, hydrologic restoration and barrier island restoration. Excluding hydrologic restorations, CWPPRA projects in the Terrebonne Basin have collectively contributed approximately 5,494 acres (+/- 1636 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Both land building and land sustaining effects of CWPPRA projects in this basin have continued to increase through time (Figure 10).

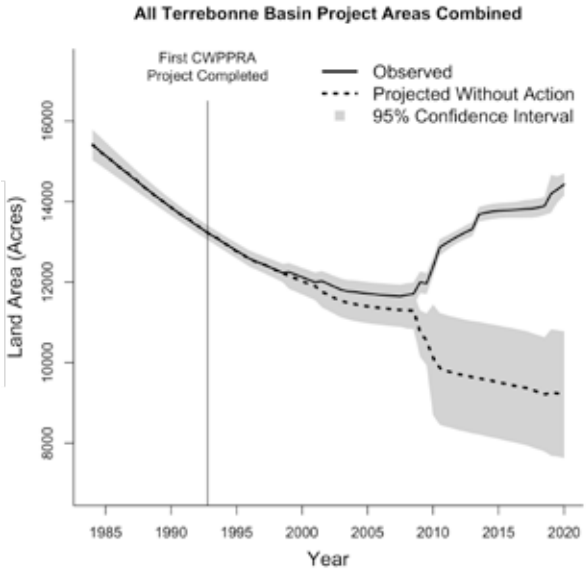


Figure 10. Cumulative land area change analyses for all constructed CWPPRA projects in Terrebonne basin.

$301 Million Expended

26 Projects Constructed

5 Projects in Engineering & Design

2 Projects in Construction

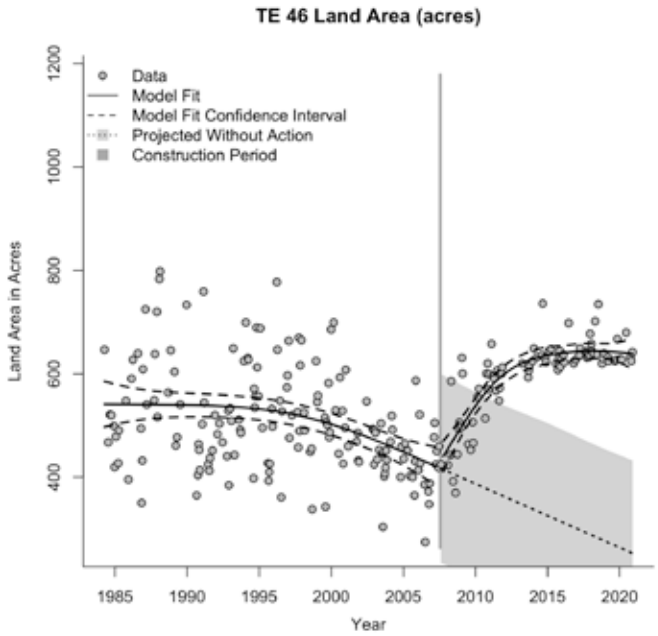


Figure 11. TE-46 land area change analyses.

West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46) Project

The TE-46 project was completed in fall 2009. The project consists of three segments of foreshore rock dike with corresponding marsh creation areas that parallel the northwestern rim of Lake Boudreaux. Land loss in this area is due to a combination of natural processes and anthropogenic alterations, including sediment starvation from the construction of a dam across the head of Bayou Lafourche at Donaldsonville in 1904, subsidence, saltwater intrusion, and shoreline exposure to wind-generated wave energy, most notably from major hurricanes.

The project features were designed to reduce shoreline erosion and to create additional marsh along the northwest shoreline of Lake Boudreaux while protecting shallow aquatic grass beds adjacent to the shoreline. Approximately 12,447 linear feet of rock dike, 220 acres of marsh creation, one 150 linear foot choke-down structure, and 24,553 linear feet of earthen containment were constructed.

Land/water analysis using aerial imagery indicates that the project has been successful at reducing shoreline erosion and increasing land area. The shoreline behind the foreshore rock dike slightly prograded one-year post-construction at a rate of 0.03 feet/year (0.01 m/year). Based upon the 2012 post-construction land/water analysis, there were 484 acres of land inside the project boundary, while the creation cells contained a total of 215 acres of land (USGS/NWRC 2013). The decreasing land area between 2005 and 2008 is likely due to the impacts from several powerful tropical systems. A marked upward trend occurred when project construction was completed in 2009. Since 2011, the land area within the project has been relatively stable.

BARATARIA BASIN

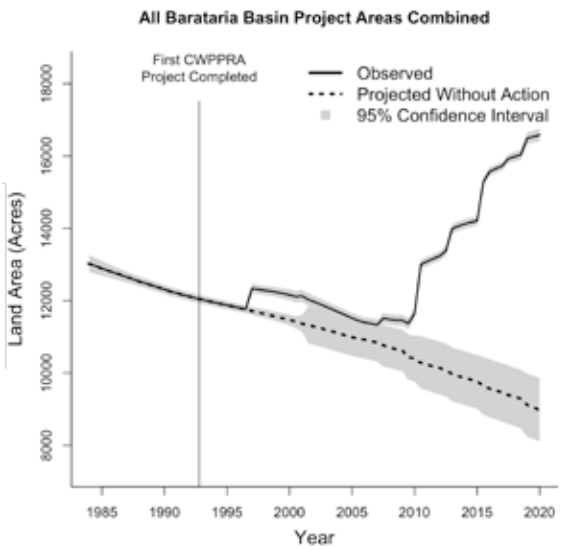


Figure 12. Cumulative land area change analyses for all constructed CWPPRA projects in Barataria basin.

Land Change Dynamics

Barataria Basin is located to the south-southwest of New Orleans. The eastern border of the basin is the Mississippi River and the western border is near Bayou LaFourche. It contains vast expanses of forested and herbaceous wetlands spanning from saline to freshwater environments.

Barataria Basin has experienced the second greatest land loss of the nine basins in coastal Louisiana, with a net loss of approximately 277,000 acres (1,120.0 km2) of wetlands since 1932. Rates of wetland loss have ranged from a net loss of approximately 6,178 acres/year (25.0 km2/year) at the peak of wetland loss rates, to a loss of 210 acres/year (0.8 km2/year) most recently (Couvillion et al. 2017). Wetland loss within the basin is attributed to a combination of natural and anthropogenically-influenced factors, including sea level rise, subsidence, shoreline erosion, herbivory, and human development, such as channelization and levee construction. Tropical storm impacts are also a major contributor to wetland loss in the basin. The wetland impacts of the record breaking 2020 season are still under investigation.

Excluding hydrologic restorations, CWPPRA projects have collectively contributed to approximately 7,866 acres (+/- 914 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Projects in Barataria consist of marsh creation, shoreline protection, and barrier island restoration projects. The benefits from these projects have continued to increase through time. This increasing benefit is the result of additional project construction and the land-sustaining effects of projects such as shoreline protections, which continue to reap rewards (Figure 12).

$444 Million Expended

21 Projects Constructed

4 Projects in Engineering & Design

2 Projects in Construction

Bayou Dupont Sediment Delivery Marsh Creation #3 and Terracing (BA-164) Project

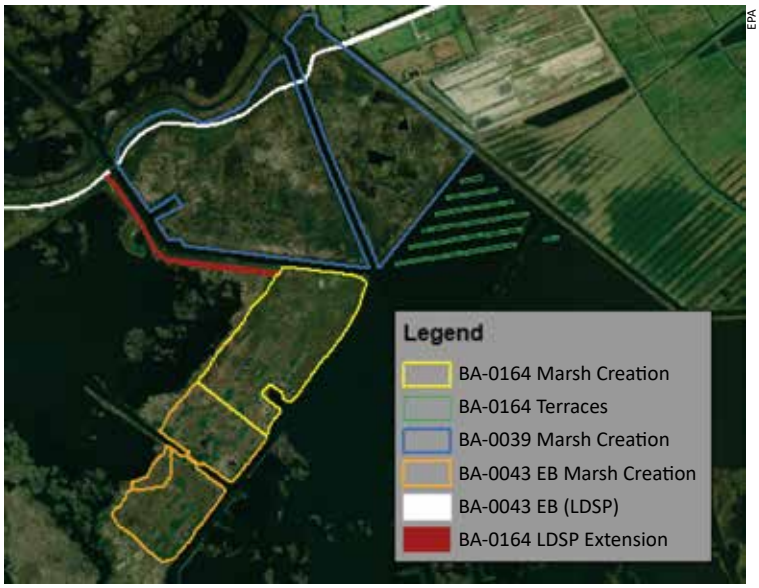


Figure 13. BA-164 Project Area.

The BA-164 project is the third in a series of neighboring marsh creation projects that are increasing coastal resiliency in a region that has suffered from significant marsh loss. The project is located on the west bank of the Mississippi River in the Barataria Basin; it is adjacent to the first CWPPRA Bayou Dupont project (BA-39) and also synergistic with the nearby hurricane protection levee system. Construction of the BA-39 project was completed in May 2010, and this project has since demonstrated how Mississippi River sediment can be used to create sustainable marsh habitat. The BA-164 project has two components, a 144-acre marsh creation area that was constructed using sediment dredged from the river and 14 terraces totaling 9,679 linear feet that were constructed using sediment dredged from within the project area (Figure 13). Successful construction of these components and development of an emergent, intermediate marsh habitat are the primary goals of the project. An additional 128 acres of marsh were constructed adjacent to the BA-164 marsh creation area using the Coastal Impact Assistance Program and state surplus contingency funds from the Long Distance Sediment Pipeline (LDSP) project (BA-0043-EB), (Figure 13). The LDSP was used to deliver sediment dredged from the Mississippi River to the shallow, primarily open water project sites for marsh construction. Construction of the marsh creation areas was completed in September 2016, while construction of the terraces was completed in June 2017.

Intermediate and freshwater emergent marsh and scrub-shrub vegetation species have rapidly colonized the BA-164 marsh creation area. While the marsh creation area was allowed to completely self-vegetate, the terraces were planted to enhance early natural stabilization and protection. While early in its project life, vegetation data indicate that BA-164 can be expected to continue development into a mature, stable marsh habitat that will provide ecological benefits well into the future.

Land Change Dynamics

The Mississippi River Delta Basin is located in the southeast of Louisiana's coastal zone on the edge of the Gulf of Mexico's continental shelf. Major water bodies include the mainstem Mississippi River, South Pass, and Pass a Loutre, all of which are directly connected to the Gulf of Mexico. Water and sediment from 32 states and 2 Canadian Provinces pass through the Mississippi River Delta. Its bird's foot configuration is characteristic of alluvial deposition in deep water. In this configuration large volumes of sediment are required to create land area; consequently, land is being lost in this delta more rapidly than it is being created. However, the basin contains expanses of fresh and intermediate marshes.

Similar to other hydrologic basins, the Mississippi River Basin has experienced a net decrease in wetland area from 1932 to 2016. The total wetland area of the basin has decreased by 92,665 acres (375.0 km2). As a percentage of the 1932 area, the basin has experienced the greatest percentage decrease in wetland area of approximately -55 percent of total area (Couvillion et al. 2017). The Mississippi River Delta Basin has experienced a reduction in wetland loss rate since the 1960s, reaching a point of wetland gain for portions of the 1990s, only to be followed by a negative trend due to the effects of Hurricane Katrina in 2005 (Barras, 2006). The major causes of land loss in this basin are subsidence and compaction. Unlike other areas of coastal Louisiana, the Mississippi River Delta has a relative abundance of inflowing fresh water and sediments. Despite the availability of these resources, the overall growth of emergent delta has been truncated. In the present position, the Mississippi River deposits sediments into much deeper water than has been the case historically. These unconsolidated sediments are highly susceptible to compaction, reducing the life span of emergent wetlands.

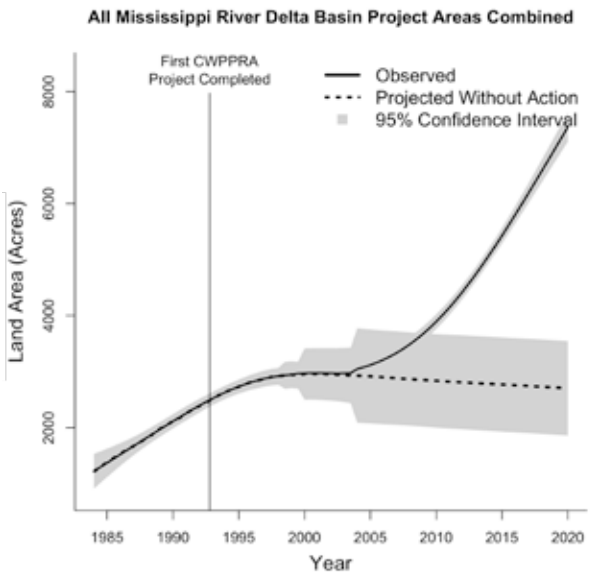


Figure 14. Cumulative land area change analyses for all constructed CWPPRA projects in Barataria basin.

This basin contains three hydrologic restoration/crevasse management projects and one marsh creation demonstration project. Restoration projects in the Mississippi River Delta Basin are thought to have contributed to an estimate of approximately 4,971 acres (+/- 873 acres) of net land area benefit collectively via new land built or land sustained from project inception through 2020. Project areas were projected to remain relatively stable in the absence of project construction in this basin, due in large part to the sediment deposition provided by the Mississippi River. However, the crevasse management projects, which operate in some ways similar to sediment diversions, have led to increasing land building in these areas (Figure 14).

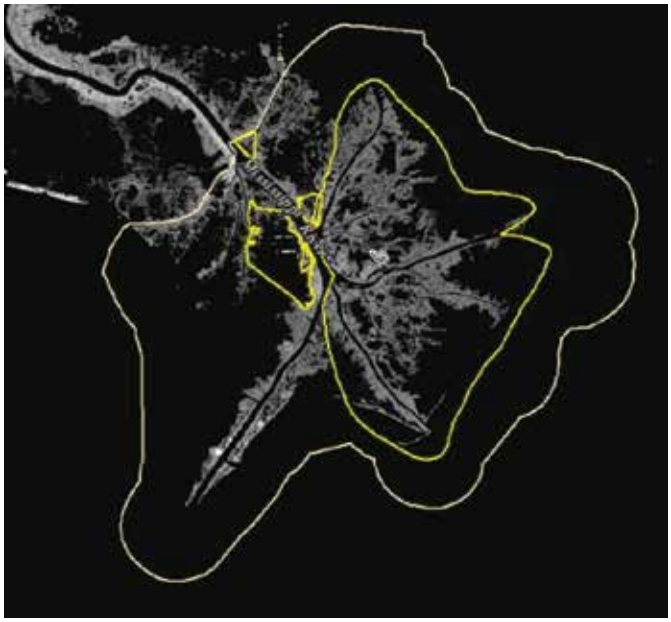


Figure 15. There are four CWPPRA projects in the Mississippi River Delta.

Figure 16. A view towards the southwest at the entrance of the West Bay Sediment Diversion (MR-03). A mature network of distributary channels weaves through naturally formed and engineered features in West Bay that are no longer distinguishable. Equipment staged at the diversion's entrance prepares to distribute dredged material to various parts of the system.

$53.3 Million Expended

4 Projects Constructed

BRETON SOUND BASIN

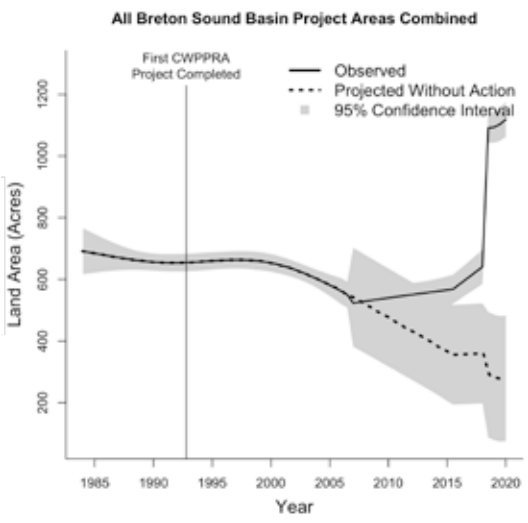


Figure 17. Cumulative land area change analyses for all constructed CWPPRA projects in Breton Sound basin.

Land Change Dynamics

Breton Sound Basin is located in the southeast of Louisiana's coastal zone, east of New Orleans. Major water bodies that influence the Breton Sound are the Mississippi River, Bayou Terre aux Boeufs, and Lake Lery. The southern portion of the basin is directly connected to the Gulf of Mexico. The marshes in the basin transition from saline near the gulf, to fresh north of Lake Lery.

Breton Sound Basin experienced a net decrease of 105,267 acres (426.0 km2) in wetland area from 1932 to 2016. In the basin, loss rates have increased since the late 1970s, but in recent years, the rate of land loss is decreasing (Couvillion et al. 2017). The major causes of land loss in this basin are sediment deprivation, saltwater intrusion, and shoreline erosion. Hurricane Katrina, 2005, was a major source of land loss in the basin. However, excluding those hurricane effects, CWPPRA marsh creation and terracing projects have contributed to an estimated net land area benefit of approximately 860 acres (+/- 212 acres) either from new land built or land sustained, from project inception through 2020. This benefit is the result of two constructed projects, (1) Delta Management at Fort St. Philip (BS-11), which consists of terracing and crevasse management and (2) South Lake Lery Shoreline and Marsh Restoration (BS-16), a shoreline protection and marsh creation project. While land-area benefit was initially slow to be realized after the construction of BS-11 in 2006, the eventual land building and sustaining effects of the crevasse management and terraces has led to approximately 260 acres of benefit by 2020. The marsh creation benefits of BS-16, beginning in 2016, are much more evident as a dramatic spike in land area in Figure 17.

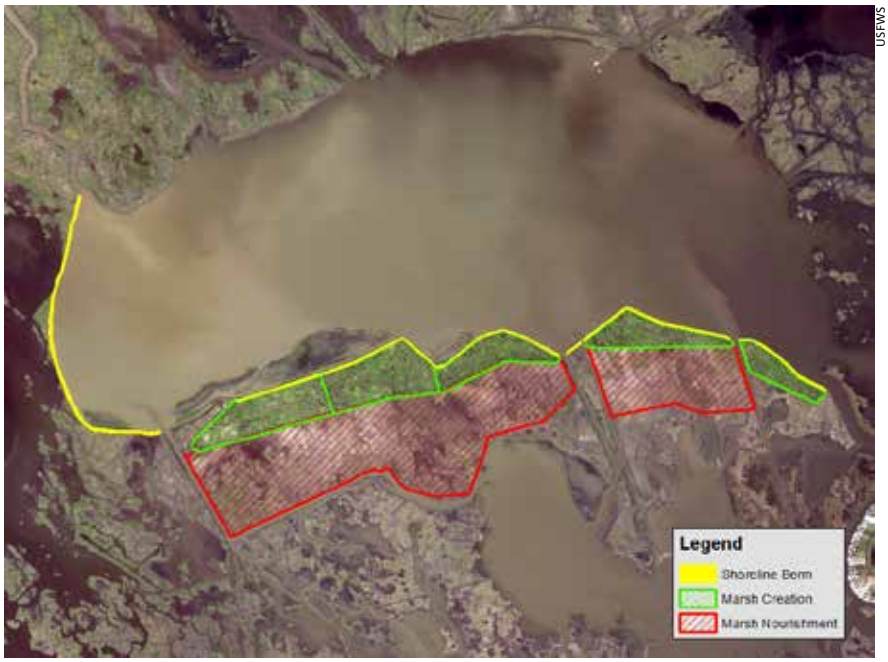
Recent planning efforts to address the basin's wetland loss include the approval of seven marsh restoration projects that, once built, will create a land bridge across the upper basin. While these are still in engineering and design, they demonstrate the synergistic approach to restoration that CWPPRA strives to accomplish.

$37.7 Million Expended	7 Projects in Engineering & Design
3 Projects Constructed	1 Project in Construction

South Lake Lery Shoreline and Marsh Restoration (BS-16) Project

Completed in 2017, the BS-16 project is located within the Breton Sound hydrologic basin. Prior to construction, the project area had experienced tremendous loss of emergent wetlands, which was exacerbated by Hurricane Katrina in 2005. The purpose of the BS-16 project was to restore historic marsh conditions by re-establishing the shoreline of Lake Lery and by creating new emergent wetlands.

Mechanically dredged material was excavated from near shore water bottoms and used to restore 35,831 linear feet of the Lake Lery shoreline through the creation of a shoreline berm, resulting in the creation of approximately 55 acres of wetlands. Additionally, hydraulically dredged bottom sediments from Lake Lery were pumped into shallow open water and fragmented marsh areas to create approximately 496 acres of intermediate marsh in five marsh creation areas. Additional dredged material was deposited in several shallow, open water areas behind the marsh creation areas, creating and nourishing additional marsh. Final acreages will be quantified after land/water analysis of aerial photography takes place. Immediately following construction, the shoreline berm was planted with smooth cordgrass and California bulrush to help prevent erosion. Additional plantings are planned to address ongoing erosion concerns for portions of the project area.



USFWS

Figure 18. BS-16 Project Area.

PONTCHARTRAIN BASIN

Land Change Dynamics

The Pontchartrain Basin is an abandoned delta bordered by the Pleistocene Terrace on the north and west, Mississippi River on the south and the Chandeleur Islands on the east. Three major lakes, Maurepas, Pontchartrain, and Borgne, cover approximately 55 percent of the basin and are separated by associated land bridges. New Orleans is located within the basin adjacent to the southern shore of Lake Pontchartrain. Forested wetlands cover the western portion of the basin, transitioning to a gradient of fresh, intermediate, brackish, and saline marshes from west to east toward the Gulf of Mexico.

Pontchartrain Basin has experienced a decrease in wetland area, with approximately 116,634 acres (472 km2) of net loss since 1932 (Couvillion et al. 2017). The rate of land change in the Pontchartrain Basin did not change significantly from 1932 to 2016. Wetland loss in this basin is attributed to limited riverine input, erosion, and deteriorating land bridges on the east and west sides of Lake Pontchartrain.

Restoration activities in the Pontchartrain Basin include marsh creation, shoreline protection, hydrologic restoration and barrier island restoration. Excluding hydrologic restoration projects, CWPPRA projects in the Pontchartrain Basin have contributed approximately 1,745 acres (+/- 251 acres) of net land area benefit to the landscape collectively via new land built or land sustained from project inception through 2020. Episodic increases in land area benefit in this basin are evident, as three large marsh creation projects were successively constructed. In addition to the land built, each of the CWPPRA projects in this basin have contributed to a land sustaining effect, as evident in the divergence of the observed land area and without action projections (Figure 19).

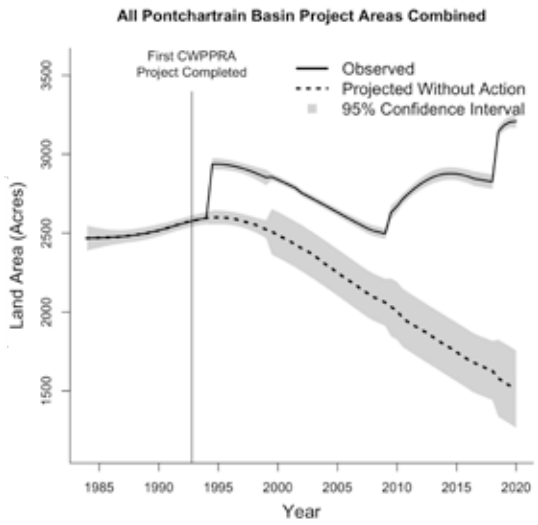


Figure 19. Cumulative land area change analyses for all constructed CWPPRA projects in Pontchartrain basin.

$94 Million Expended

11 Projects Constructed

4 Projects in Engineering & Design

3 Projects In Construction

Bayou Bonfouca Marsh Creation Project (PO-104)

Constructed in 2017, the PO-104 project is located on the Big Branch Marsh National Wildlife Refuge along the northeastern corner of Lake Pontchartrain. Prior to construction, the poor condition of this marsh was due to a combination of subsidence, hurricane-induced interior ponding, and shoreline erosion. Several breaches existed along the shoreline and, in places, only a narrow strip of shoreline existed between Lake Pontchartrain and the interior ponds. Should shoreline breaching and enlargement of tidal channels have been allowed to extend, high tidal energy would have intruded into the interior ponds of the project area. This would have caused the interior marshes to experience accelerated loss rates.

Figure 20. PO-104 Project Area.

The goal of the PO-104 project was to re-create and nourish approximately 639 acres of low salinity brackish marsh in open waters adjacent to Bayou Bonfouca using sediment dredged from Lake Pontchartrain. Four marsh creation areas comprising 605 acres were filled with hydraulically dredged material. After material placement was complete in the marsh creation areas, additional dredged material was deposited outside of containment, creating an additional 281 acres of marsh in adjacent open water areas and nourishing many more. Final acreages will be quantified after land/water analysis of aerial photography takes place. In October of 2018, native marsh plants were planted to supplement the natural colonization of vegetation within the marsh creation areas. In late 2021, tidal creeks were constructed in the marsh creation areas to ensure hydrologic connection with the surrounding area, thus improving fish and wildlife habitat, and creating access for recreation.

Non-Rock Alternatives to Shoreline Protection Demonstration (LA-16)

Approved: 2009
Constructed: February 2014

The CWPPRA Program encourages the assessment and use of new technology in coastal restoration to adapt to changing conditions through demonstration projects. As shorelines erode inland, the typical berm setting suited for high exposure to wind and waves thins, exposing the more fragile marsh edge to hydrologic forces. Shoreline protection becomes more complicated as former marsh platforms have a low weight-bearing capacity and require lower-density or pile-supported structures.

LA-16 assessed four commercially available structures appropriate for such shorelines along northeast Vermilion Bay. Wave Attenuation Devices (WADs) and Wave Screen System (WSS) were porous to allow water and sediment to pass through, while Buoyancy Compensated Erosion Control Modular System and EcoSystem Units were full water-column wave barriers (McGinnis 2018). While the reference area eroded 51 feet/year from 2014 to 2017, all structures attenuated waves by at least 60 percent and reduced shoreline erosion by at least 70 percent. The more porous structures gained soil volume along the shoreline, and the WSS, which was suspended a couple feet above the bay bottom, also gained soil volume on the bayside of the structure (Figure 21). LA-16 data was prominent in a Louisiana coast-wide synthesis of 12 shoreline protection structures that revealed a positive relationship between structure porosity up to 35 percent and soil volume change (Shows 2018; Figure 23).

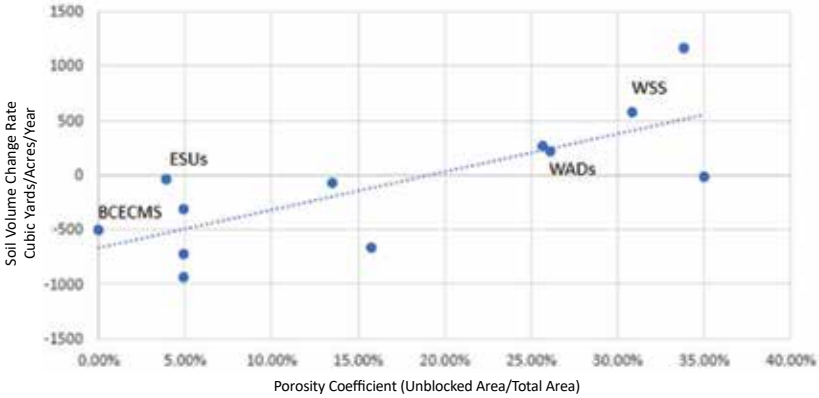


Figure 21. Left. Relationship between structure porosity and soil volume change behind shoreline protection structures across coastal Louisiana featuring LA-16 structures (adapted with permission from Shows 2019).

Figure 22. CWPPRA provides opportunities to assess new wetland restoration techniques. Demonstration projects can be proposed at Regional Planning Team Meetings like the one pictured here from 2018 in Morgan City.

Figure 23. Aerial imagery during low water levels about 3 years after installation of LA-16 structures. Note mudflat formation behind the porous WADs and WSS.

Figure 24. A close up image of each section of structures shows a better view of mudflat formation behind the WADs and WSS.

Coastwide Reference Monitoring System (CRMS)

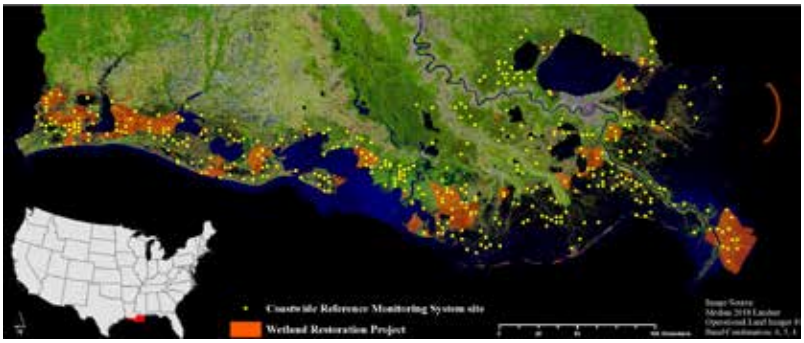
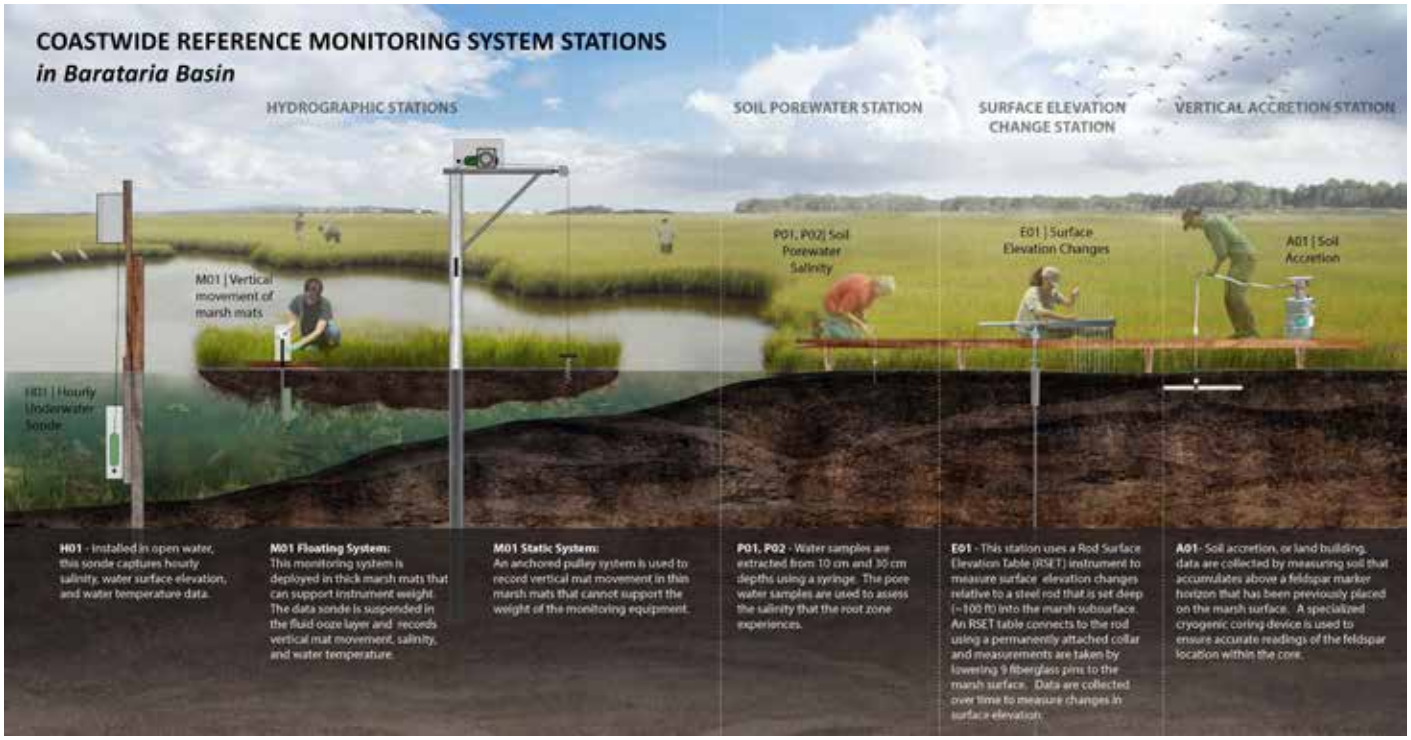


Figure 25. Distribution of CRMS sites and CWPPRA projects across the Louisiana coast.

In response to the need for enhanced evaluation and monitoring of Louisiana's growing coastal restoration program, CWPPRA developed the Coastwide Reference Monitoring System-Wetlands (CRMS-Wetlands) to provide a pool of reference sites by which to evaluate the effectiveness of individual restoration projects, as well as the overall program, and to provide a means to assess landscape change (Steyer et al., 2003a). The CRMS network of sites is comprised of approximately 390 ecological monitoring locations distributed across Louisiana's nine coastal basins within and outside of project boundaries (Figure 25). The sites encompass a range of ecological conditions, including fresh, intermediate, brackish, and salt marsh and swamp habitat, and are monitored using standardized data collection techniques at fixed sampling schedules. The reference network approach enables multiple scale evaluations of project conditions by habitat, basin or coast-wide. Construction of most CRMS sites occurred from 2005-2007 with continuous data collection since that time.

Data variables collected at each CRMS site include water level, salinity, sediment accretion, surface elevation change, composition and abundance of vegetation, and soil characteristics within a 200 m2 sampling area (Figure 25). The ratio of land to water is determined within a larger 1 km2 area encompassing the sampling area to monitor land change through time. After the data undergo quality assurance and control procedures, data are approved and entered into the CPRA's Coastal Information Management System database (https://cims.coastal.louisiana.gov/). CRMS data feed into interpretable tools that can be used to assess the condition of individual CRMS sites, restoration projects, hydrologic basins, and the entire Louisiana coast. Calculated or derived data (e.g., averages, marsh classification, elevations, elevation change rates, and CRMS indices) are hosted on the CRMS website (https://www.lacoast.gov/crms/Home.aspx). Information is analyzed and summarized in maps, charts, tables, graphs, and indices, and lastly incorporated into interactive report cards. The CRMS program is as dynamic as the coastal habitats it monitors. Continuously evolving, the program continues to develop new products and analysis tools to improve project planning and implementation, and to support the evaluation of restoration actions planned and implemented by not only the CWPPRA Program but other coastal restoration programs across the State as well. In addition to the integral role CRMS data play for CWPPRA project planning and evaluation, CRMS data are leveraged to support adaptive management, future scenario modeling, and scientific research.



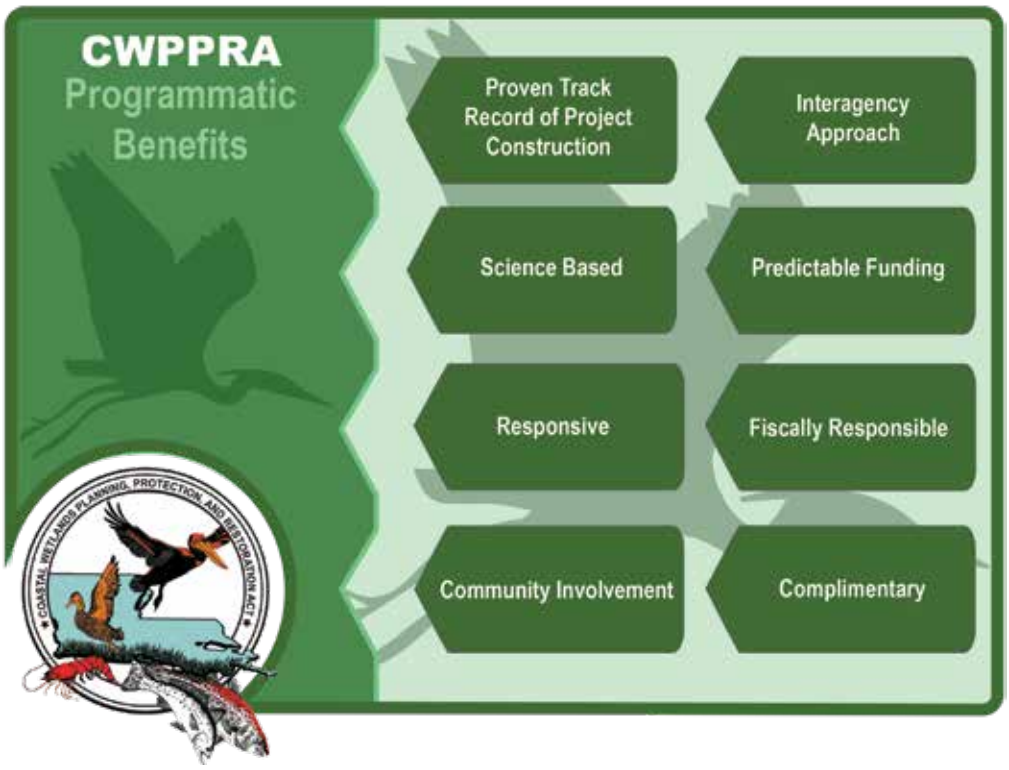
CPRA, USGS

Conclusion

The CWPPRA Program has been actively rebuilding wetlands and helping address coastal land loss for over 30 years. Projects that have rebuilt the barrier islands, improved coastal and interior marshes, and restored natural hydrologic regimes have all improved the coastal landscape.

Capitalizing on CWPPRA's public planning process, which includes local government and citizen contribution to project nomination and development, several comprehensive restoration plans have been developed and widely accepted. CWPPRA has laid the foundation on which subsequent restoration initiatives have been modeled. In fact, several projects that have been designed through CWPPRA have been adopted and constructed through these other programs and initiatives. This type of synergy between funding vehicles supports efficiencies in project implementation.

A diverse, interdisciplinary team of academics, scientists, and engineers collects and analyzes data from CWPPRA projects using the CRMS and project-specific monitoring to evaluate the ecologic response from within the project footprint to the entire ecosystem. This helps guide the program to develop projects with a science-driven process. Using technological advances, the program supports successful restoration while monitoring and evaluating the success of projects to produce low cost restoration techniques for realistic future application.



CWPPRA's funding source, the Sport Fish Restoration and Boating Safety Trust Fund, authorized through Fiscal Year 2021 by the Fixing America's Surface Transportation Act of 2015, is supported by excise taxes on fishing equipment, and small engine and motorboat fuel taxes. The fund contributes 18.673 percent of its annual revenues to CWPPRA appropriations, 70 percent of which supports the Louisiana CWPPRA Program. With predictable funding through the Federal Sport Fish and Boating Safety Trust Fund and the experienced interagency team of coastal scientists and engineers, CWPPRA is, and will continue to be, uniquely able to quickly construct cost effective priority projects, typically within 3 to 5 years.

With a project selection process that funnels new projects into planning, engineering and design, and construction phases every year, the restoration of coastal Louisiana through the CWPPRA Program is only limited by funding. Shovel-ready projects are always in the queue and additional funding could be executed quickly to advance project implementation.

Overall, CWPPRA is meeting an otherwise unfilled niche by building near-term projects in acute, and often highly strategic, areas of need. This continues to be CWPPRA's greatest asset and contribution to turning the tide on Louisiana's land loss.

USGS

References

Barras, J.A., 2006, Land area change in coastal Louisiana after the 2005 hurricanes—A series of three maps: U.S. Geological Survey Open-File Report 2006–1274

Barrilleaux, T. and M. Guidry. 2010. 2010 Operations, Maintenance, and Monitoring Report for Freshwater Bayou Canal Bank Stabilization (ME-13), Coastal Protection and Restoration Authority of Louisiana, Office of Coastal Protection and Restoration, Lafayette, Louisiana. 22pp.

Carle, M. V., C. E. Sasser, and H. H. Roberts. 2015. Accretion and Vegetation Community Change in the Wax Lake Delta Following the Historic 2011 Mississippi River Flood. Journal of Coastal Research 39: 406–422

Couvillion, B.R., Beck, Holly, Schoolmaster, Donald, and Fischer, Michelle, 2017, Land area change in coastal Louisiana 1932 to 2016: U.S. Geological Survey Scientific Investigations Map 3381, 16 p. pamphlet, https://doi.org/10.3133/sim3381

Curole, G. P. and B. J. Hartman. 2018a. 2018 Operations, Maintenance, and Monitoring Report for Atchafalaya Sediment Delivery (AT-02), Coastal Protection and Restoration Authority of Louisiana, Thibodaux, Louisiana. 46 pp.

Curole, G. P. and B. J. Hartman. 2018b. 2018 Operations, Maintenance, and Monitoring Report for Big Island Mining (AT-03), Coastal Protection and Restoration Authority of Louisiana, Thibodaux, Louisiana. 46 pp.

Falcini, F., N. S. Khan, L. Macelloni, B. P. Horton, C. B. Lutken, K. L. McKee, R. Santoleri, S. Colella, C. Li, G. Volpe, M. D'emidio, A. Salusti, and D. J. Jerolmack. 2012. Linking the Historic 2011 Mississippi River Flood to Coastal Wetland Sedimentation. Nature Geoscience 5 (11): 803-807.

Gasparini, N. M., and B. Yuill. 2020. High Water: Prolonged Flooding on the Deltaic Mississippi River. Eos 101: 14 pp., https://doi.org/10.1029/2020EO141465.

Lear, E. J., G. Curole, A. Ledet and J. Curole 2013. Operations, Maintenance, and Monitoring Report for West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46), Coastal Protection and Restoration Authority of Louisiana, Thibodaux, Louisiana 45 pp. and Appendices.

McGinnis, II, T. E. 2018. 2018 Operations, Maintenance, and Monitoring Report for Non-rock Alternatives to Shoreline Protection Demonstration Project (LA-0016): Final Closeout Report. Coastal Protection and Restoration Authority of Louisiana; Lafayette, Louisiana. 41 pp plus Appendices.

Miller, M. and Guidry, M. 2016. 2016 Operations, Maintenance, and Monitoring Report for Clear Maris Shoreline Protection (CS-22), Coastal Protection and Restoration Authority, Lafayette, Louisiana. 25pp.

Mouledous, M, Wood, W.B. and Sharp, L.A. 2016. 2016 Basin Summary Report for the Mermentau Basin, Coastal Protection and Restoration Authority of Louisiana, Lafayette, Louisiana. 57 pp. https://cims.coastal.louisiana.gov/RecordDetail.aspx?Root=0&sid=21149

National Marine Fisheries Service (NMFS) 1998. Little Vermilion Bay Sediment Trapping Project, Vermilion Parish, La. Environmental Assessment. U.S. Department of Commerce (USDC), National Marine Fisheries Service. 36 pp.

NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021). https://www.ncdc.noaa.gov/billions/, DOI: 10.25921/stkw-7w73.

NOAA Office for Coastal Management. Fast Facts Louisiana (2018). https://coast.noaa.gov/states/louisiana.html.

Shows, H. 2019. Living Shorelines as Alternative Methods of Shoreline Protection. Louisiana State University Master's Thesis: 4954. https//digitalcommons.lsu.edu/gradschool_theses/4954.

U. S. Geological Survey/National Wetland Research Center Coastal Restoration Field Station and Louisiana Department of Natural Resources. 2013. West Lake Boudreaux Shoreline Protection Project 2012 Land-Water Classification (USGS-NWRC 2013-02-006).

Wood, B., and S. Aucoin 2016. 2016 Operations, Maintenance, and Monitoring Report for Little Vermilion Bay Sediment Trapping (TV-12), Coastal Protection and Restoration Authority of Louisiana, Lafayette, Louisiana. 45pp and Appendices.

Appendices

Appendix 1. Useful Links

http://www.lacoast.gov/new/Projects/List.aspx

Complete list of authorized projects under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) since its implementation in 1990

https://www.lacoast.gov/crms/Home.aspx

Monitoring data at 390 Coastwide Reference Monitoring System (CRMS) sites

http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA/Meeting-Documents/

CWPPRA Public Meeting Documents

http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA/Priority-Project-Lists/

CWPPRA Priority Project List Documents and Process

https://www.lacoast.gov/calendar/

CWPPRA Meeting Calendar

http://coastal.la.gov/our-plan/2017-coastal-master-plan/

2017 Coastal Master Plan

Task Force Member Agencies:

https://www.fws.gov/southeast/lafayette; **http://www.fws.gov/coastal/CoastalGrants/**

U.S. Department of the Interior (represented by the U.S. Fish and Wildlife Service)

https://www.nrcs.usda.gov/wps/portal/nrcs/site/la/home/

U.S. Department of Agriculture (represented by the Natural Resources Conservation Service)

http://habitat.noaa.gov/restoration/index.html

U.S. Department of Commerce (represented by the National Oceanic and Atmospheric Administration National Marine Fisheries Service)

https://www.epa.gov/la/water-louisiana

U.S. Environmental Protection Agency (represented by the Water Quality Protection Division of EPA Region 6)

http://www.coastal.la.gov/

Louisiana's Governor's Office (represented by the Coastal Protection and Restoration Chairman)

http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA

U.S. Army Corps of Engineers (represented by the New Orleans District)

Appendix 2.

Table 1. Louisiana waterfowl, other migratory and resident birds, and mammals, reptiles, and amphibians benefited by CWPPRA projects.

Dabbling ducks	Diving ducks	Geese	Other migratory and resident birds	Mammals, reptiles, and amphibians
Mallard, mottled duck, gadwall, American widgeon, pintail, northern shoveler, green-winged teal, and blue-winged teal.	Lesser scaup, ring-necked duck, and several merganser species.	White-fronted geese, Canada geese, and snow geese	Brown and white pelicans cormorants and anhingas. Herons: great blue heron,little blue heron, bitterns, green-backed heron, yellow-crowned night heron, black-crowned night heron, great egret, snowy egret, glossy ibis, white-faced ibis, and white ibis. Others: American coots, rails, gallinules, shorebirds, terns, boat-tailed grackle, red-winged blackbird, eastern kingbird, northern harrier, belted kingfisher, and songbirds.	Mammals: Louisiana black bear, nutria, muskrat, mink, river otter, raccoon, swamp rabbit, coyote, and white-tailed deer Reptiles: American alligator, western cottonmouth, red-eared turtle, common snapping turtle, and soft-shell turtle Amphibians: tree frogs, bullfrog, pig frog, leopard frogs, and salamanders

Table 2. Commercially and recreationally important fisheries species benefited by CWPPRA projects.

Freshwater fisheries	Commercially important fisheries	Recreationally important estuarine species
Largemouth bass, crappie, bluegill, gar, blue catfish, and shad. Crawfish and river and grass shrimp	Gulf menhaden, striped mullet, catfishes, gars, and freshwater drum. Brown and white shrimp, blue crab, Gulf stone crab, and the American oyster	Spotted sea trout, white trout, red drum, black drum, Atlantic croaker, spot, southern flounder, snappers, mackerel, groupers, and sharks.

The 2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Projects

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

STATUS OF UNCONSTRUCTED PROJECTS

For Report:

The P&E Subcommittee will report on the status of unconstructed CWPPRA projects. There were three projects that were considered for "critical watch."

a. Critical-watch unconstructed projects:
   - South Grand Chenier Marsh Creation (ME-20)
   - North Catfish Lake Marsh Creation (TE-112)
   - Island Road Marsh Creation and Nourishment (TE-117)

2021 SOUP - Status of Unconstructed Projects - PPL 1 - 26

Project No.	Project Name	Agency	PPL	Authorized Date/Phase I Approval	Construction/ Phase II Approval	30% Design Review Date*	95% Design Review Date*	Current Approved Economic Analsyis Date (Budget Estimate on Books)	Construct Start*	Construct Complete*	Current Approved Budget	Current Funded Budget	Expenditures	1st cost Unexpended	Monitoring Unexpended	O&M Unexpended	TOTAL Unexpended	TOTAL Unobligated	Current Total FF Cost Est . On Books	Critical Watch	On Schedule	Waiting on Phase II Funds	Project Issue Delays	Programmatic Issue Delays	Recommend Transfer	Recommend Deauthorization	Recommend Inactivation	Inactive Projects	> $50 M
ME-20	South Grand Chenier Marsh Creation	FWS	11	16-Jan-02	22-Jan-14	6-Aug-09	3-Nov-09	16-Jan-14	Fall 2020		$22,623,346	$22,282,940	$2,546,131	$18,980,354	$61,606	$659,066	$19,701,025	$1,130,496	$22,623,346	X										
TE-112	North Catfish Lake Marsh Creation	NRCS	22	24-Jan-13	30-Jan-22	22-Feb-21	Fall 2021				$3,216,194	$3,216,194	$2,124,489	$1,091,705	$0	$0	$1,091,705	$583,586	$30,385,887	X										
TE-117	Island Road Marsh Creation and Nourishment	NMFS	23	16-Jan-14		23-Oct-19	15-Oct-21				$3,721,447	$3,721,447	$2,450,436	$1,271,011	$0	$0	$1,271,011	$128,039	$39,185,267	X										
PO-75	LaBranche East Marsh Creation	NRCS	19	20-Jan-10	29-Jan-20	3-Mar-18	15-Oct-18	28-Oct-19	Fall 2021		$55,340,981	$54,307,857	$2,478,820	$50,571,808	$322,414	$934,815	$51,829,037	$21,397,406	$54,307,857		X									
PO-133	LaBranche Central Marsh Creation	NRCS	21	19-Jan-12	22-Jan-21	15-Oct-18	23-Sep-20		Fall 2021		$3,885,298	$3,885,298	$2,747,952	$1,137,346	$0	$0	$1,137,346	$126,598	$42,159,208		X									
PO-169	New Orleans Landbridge Shoreline Stabilization and Marsh Creation	FWS	24	22-Jan-15	12-Feb-19	1-Aug-20	1-Oct-16	1-Feb-19			$25,446,124	$23,098,518	$1,988,143	$20,768,399	$146,265	$195,711	$21,110,375	$20,992,410	$25,446,124		X									
TE-134	West Fourchon Marsh Creation & Marsh Nourishment	NMFS	24	22-Jan-15	29-Jan-20	10-Jul-18	24-Oct-18	23-Oct-19			$30,494,148	$29,521,927	$2,031,346	$26,289,306	$256,658	$944,617	$27,490,581	$3,864,695	$30,494,148		X									
TE-138	Bayou Decade Ridge Restoration and Marsh Creation	NMFS	26	12-Jan-17	12-Feb-19	7-Aug-18	24-Oct-18	15-Nov-18	15-Nov-20		$27,268,025	$25,851,017	$2,193,467	$22,587,655	$0	$0	$22,587,655	$3,105,055	$27,268,025		X									
PO-179	St. Catherine Island Marsh Creation and Shoreline Protection	FWS	26	12-Jan-17		1-Mar-22	1-Jun-22				$2,389,308	$2,389,308	$1,216,625	$1,172,683	$0	$0	$1,172,683	$1,109,104	$35,996,522		X									
ME-31	Freshwater Bayou Marsh Creation	NRCS	19	20-Jan-10	30-Jan-22	10-Jun-20	20-Oct-21				$2,425,997	$2,425,997	$2,245,973	$180,024	$0	$0	$180,024	$155,593	$25,523,755			X								
BS-24	Terracing & Marsh Creation South of Big Mar	FWS	22	24-Jan-13	01-Jan-21	7-Jul-16	27-Oct-16				$2,308,599	$2,308,599	$1,427,096	$881,503	$0	$0	$881,503	$812,787	$38,679,147			X								
CS-78	No Name Bayou Marsh Creation & Nourishment	NMFS	24	22-Jan-15		28-Jul-20	1-Oct-20	23-Oct-20			$2,724,524	$2,724,524	$2,311,159	$2,493,365	$0	$0	$2,493,365	$43,797	$28,253,136			X								
BA-195	Barataria Bay Rim Marsh Creation	NRCS	25	14-Jan-16	30-Jan-22	14-Mar-19	24-Oct-19				$2,693,708	$2,693,708	$2,330,084	$363,624	$0	$0	$363,624	$103,554	$23,838,905			X								
CS-79	Oyster Lake Marsh Creation and Nourishment	NMFS	25	14-Jan-16		23-Jun-20	23-Jun-20	21-Oct-20			$3,608,939	$3,608,939	$1,256,789	$2,352,150	$0	$0	$2,352,150	$242,405	$38,073,046			X								
BA-194	East Leeville Marsh Creation and Nourishment	NMFS	25	14-Jan-16		23-Oct-20	23-Oct-19	11-Aug-20			$4,026,090	$4,026,090	$2,293,225	$1,732,865	$0	$0	$1,732,865	$177,045	$35,066,972			X								
PO-178	Bayou La Loutre Ridge Restoration and Marsh Creation	NRCS	26	12-Jan-17	30-Jan-22	16-Jun-20	22-Oct-20				$3,236,952	$3,236,952	$1,122,926	$2,114,026	$0	$0	$2,114,026	$1,982,159	$29,762,138			X								
PO-173	Fritchie Marsh Creation and Terracing	NMFS	25	14-Jan-16							$3,033,294	$3,033,294	$359,655	$2,673,639	$0	$0	$2,673,639	$820,128	$27,944,102				X							
ME-32	South Grand Chenier Marsh Creation - Baker Tract	NRCS	23	16-Jan-14							$2,653,242	$2,653,242	$595,220	$2,058,022	$0	$0	$2,058,022	$824,744	$25,441,833				X							
TV-11b	Freshwater Bayou Bank Stab - Belle Isle Canal to Lock	COE	9	11-Jan-00		17-Jun-02	22-Jan-04	11-Jan-00			$1,498,967	$1,498,967	$1,101,738	$283,328	$113,901	$0	$397,229		$35,634,067										Jun-13	
MR-15	Venice Ponds Marsh Creation & Crevasses	EPA	15	08-Feb-06		29-Jun-11	25-Oct-11	8-Feb-06			$1,074,522	$1,074,522	$611,222	$463,300	$0	$0	$463,300		$22,156,292										Jan-14	
PO-34	Alligator Bend Marsh Restoration and Shoreline Protection	NRCS	16	18-Oct-06		18-Aug-11	16-Nov-11	12-Nov-13			$1,660,985	$1,660,985	$1,364,230	$296,755	$0	$0	$296,755		$40,326,244										Oct-14	
TE-51	Madison Bay Marsh Creation and Terracing	NMFS	16	18-Oct-06		23-Jul-13	24-Oct-13	18-Oct-06			*$3,002,171*	*$3,002,171*	*$1,731,039*	$1,271,132	$0	$0	$1,271,132		$38,798,788										Oct-15	
TE-32a	North Lake Boudreaux Basin Freshwater Intro and Hydro Mgt	FWS	6	D		4-Aug-09	29-Jun-10	28-Oct-10			$25,766,765	$20,048,152	$4,274,707	$14,980,690	$363,872	$428,883	$15,773,445		$25,766,765										Oct-16	

*Use actual or current schedule date for design review and construction schedules

**CRITICAL WATCH LIST PROJECT

***Preliminary Analysis of Consistency

na= Not applicable (Cash Flow, Complex, or PENDING DEAUTH)

Agency Key:

FWS
NMFS
EPA
COE
NRCS
Inactive Projects

	Current Approved Budget	Current Approved Funded Budget	Expenditures	1st cost Unexpended	Monitoring Unexpended	O&M Unexpended	TOTAL Unexpended	TOTAL Unobligated	Current Total FF Cost Est . On Books
Critical Watch	$29,560,987	$29,220,581	$7,121,057	$21,343,070	$61,606	$659,066	$22,063,741	$1,842,121	$92,194,500
On Schedule	$144,823,884	$139,053,925	$12,656,353	$122,527,197	$725,337	$2,075,143	$125,327,677	$50,595,270	$215,671,884
Waiting on Phase II $	$21,024,809	$21,024,809	$12,987,251	$10,117,558	$0	$0	$10,117,558	$3,517,339	$219,197,099
Project Issue Delays	$5,686,536	$5,686,536	$954,874	$4,731,662	$0	$0	$4,731,662	$1,644,872	$53,385,935
Program Issue Delays									
Rec. Transfer									
Rec. Deauthorization									
Inactivated									
Over $50 million									

Critical Watch List

Note: All projects on this tab will give a status report at the fall Technical Committee Meeting

Project Name	Project No.	Agency	PPL	Project Issue Delays	Near-term Milestones	Current Phase
South Grand Chenier Marsh Creation	ME-20	FWS	11	Two previous bid advertisements results in bids over the construction budget	This project has been advertised for bids twice. Both times, bids were significantly over budget. Since the last advertisement (2018) the project team has modified the project to alleviate some of the bidder's concerns. A third bid advertisement is scheduled for July 2021.	II
North Catfish Lake Marsh Creation	TE-112	NRCS	22	NA	30% Design Review Meeting completed March 30, 2021, with 95% Design Review Meeting anticipated in Fall 2021 and Phase II funding request anticipated in December 2021.	I
Island Road Marsh Creation and Nourishment	TE-117	NMFS	23	NA	The 95% design review meeting will be held by October 15, 2021. A scope change request will be made to the Technical Committee and Task Force prior to a Phase 2 request.	I

Status Review - Unconstructed CWPPRA Projects
August 10, 2021

1. Project Name (and number): South Grand Chenier Marsh Creation (ME-20)

2. SOUP Category: Critical Watch List

3. PPL: 11

4. Federal Agency: USFWS

5. Date of Construction Approval / Phase Two Approval: January 2014

6. Approved Total Budget (Current): $22,623,346

7. Fully-Funded Cost: $22,623,346

8. Expenditures: $

9. Unexpended Funds: $

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

1/2002	Phase I E & D Task Force approval
8/6/2009	Successful 30% Design Review Meeting
10/28/2009	Scope change to increase costs 33% to $27.9 M and remove Area A; approved by Task Force
11/3/2009	95% Design Review meeting
10/27/2010	Corps Section 404 Permit Issued
1-20-2010	Initial Phase II construction funding approval
5/16/2011	NEPA completed: Final EA and FONSI
1/2012	Returned construction funding due to landrights
11/26/2012	Scope/name change, removed FW features, reduced costs & benefits
9/2012	All landrights secured for the project
1/16/2014	Task Force Phase II 2nd Funding Approval
6/2015	Permit Modification Received 6-16-2015
4/2016	Semi-Final Design PMT Review Meeting
4/6/2017	Unsuccessful 1st bid opening. One over-budget bid rejected.
8/14/2018	Second unsuccessful bid opening. Three bids submitted; all over the project construction budget.
12-2018 to 3-2019	Discussions with contractors for project modification ideas.

3 to 8-2019	Modify plans and specifications to alleviate contractor concerns.
04/2020	Permit Approval
07/2020	Final Modifications to Plans
07/2021	Post Solicitation (7/8/2021)

Issues affecting implementation: Unsuccessful bid process. Two bid advertisements resulted in no bids within the construction budget. Hurricane Laura passed over the project area in August 2020 and Hurricane Delta in October 2020. These two storms caused a significant amount of shoreline erosion in the area where the dredge pipeline would cross the shoreline. Engineers had to assess the damage and decide on a solution to address the problem. This added cost had to be offset with a reduction in the acreage being proposed within the two marsh creation sites. The acreage was reduced from 453 to 386, which is a change of 15%. This corresponds to an increase in the ratio of total cost to acres benefitted by around 17.5%. Because both of these variances are below 25%, a scope change is not necessary.

13. Current status/remaining issues:

Modifications to reduce project costs and address contractor issues from the first two bid advertisements.

- Fill quantity was reduced by using a lower elevation on the settlement curve to calculate the fill quantity.
- Reduction in fill quantity allowed avoidance of stiff clay layer at the bottom of borrow site. All bidders expressed concerns with dredging stiff clay material.
- Removed cost for rebuilding Price Lake Road. Road can be used for access, but not for dredge pipe delivery.
- Removed restrictions for borrow site access and dredging "pattern". Restrictions were placed on how the borrow site was to be dredged. All bidders raised concerns about that issue.
- Dredge pipe access route from Gulf is in the borrow channel on the west side of the Price Lake levee. Required a permit modification.
- Due to hurricane damage during 2020, some shoreline protection (ACM) will need to be placed along the gulf shoreline where the dredge pipeline comes on shore.

A new Section 404 permit has been received.

14. Projected schedule:

7/8/2021	Post Solicitation
8/2021	Receive Bids
9/2021	Award Bid

15. Preparer: Robert Dubois, USFWS (337-291-3127)

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. Project Name: North Catfish Lake Marsh Creation Project (TE-112)

2. SOUP Category: Critical Watch List

3**. PPL: 22**

4. Federal Agency: NRCS

5. Date of Construction Approval / Phase Two Approval: January 2020

6. Approved Total Budget: $3,216,194

7. Fully Funded Cost Estimate: $30,385, 887

8. Expenditures: $2,124,489

9. Unexpended Funds: $1,091,705

10. Estimate of anticipated funding increase, including O&M: No funding increases anticipated.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

2013 – 2017	The project was approved for Phase I funding at the January 2013 Task Force meeting. NRCS has coordinated with LDWF and pipeline companies and completed a magnetometer survey of Catfish Lake to identify borrow site location and access route(s) that would minimize conflicts with oyster leases and pipelines. NRCS established a secondary monument to provide survey control for the project area. NRCS prepared a Scope of Services for Engineering Services to complete the data collection and design of the project.
2018	Agreement in place to conduct Engineering Services. Geotechnical investigation and supplemental survey data collection to be initiated by October.
2019	Agreement for Engineering Services had been delayed, but it became active in 2019. Notice to Proceed for data collection was issued.
2020	Data collection has been completed. Preliminary Design is ongoing.
2021	30% Design Review Meeting completed March 30, 2021, with 95% Design Review Meeting anticipated in Fall 2021 and Phase II funding request anticipated in December 2021.

13. Current milestones/remaining issues:

95% Design Review anticipated in Fall 2021and Phase II funding request anticipated in December 2021.

14. Projected schedule:

Request Phase II funding in December 2021.

15. Preparer: (6/8/2017) (7/27/18) (5/31/19) (6/15/20) (7/16/21) Quin Kinler, NRCS (225) 271-2403

Status Review - Unconstructed CWPPRA Projects
July 2021

1. Project Name (and number): Island Road Marsh Creation and Nourishment (TE-117)

2. SOUP Category: Critical Watch List

3. PPL: 23

4. Federal Agency: NMFS

5. Date of Construction Approval / Phase Two Approval:

6. Approved Total Budget: $3,721,447

7. Fully Funded Estimate: $39,185,267

8. Expenditures: $2,450,436

9. Unexpended Funds: $1,271,011

10. Estimate of anticipated funding increases, including O&M: to be determined

11. Potential changes to project benefits: Based on 30% design level data, there is a decrease from 383 acres to 292 acres (-24%) in the project area and from 312 to 205 net acres (-34%).

12. Brief chronology of project development and issues affecting implementation:

- January 2014 – Phase 1 Approval
- 2015 to early 2017 – evaluated 4 alternative fill area layouts and 8 different alternatives for borrow areas based on infrastructure, water depths, and exploratory geotechnical surveys
- February, July, and October 2017, met with landowners and Ducks Unlimited discussing alternatives analysis and dual claims
- May 2018 – draft borrow area geotechnical investigations and borrow area modeling
- October 23, 2019 – 30% design review
- December 11, 2019 – responded to agency comments on the 30% design
- January 2020 – project delivery team meetings were suspended for a change in scope analysis
- April 2020 –
    - CPRA concurrence letter to proceed to 95% design
    - NMFS concluded a draft scope change analysis and concluded to proceed to a scope change request and 95% design
- October, 2020 – An initial 95% design package and WVA project information sheet was drafted, but completion was postponed to refine the design.
- January – March 2021, additional step-wise geotechnical analyses were conducted refining the duration for fill placement and mudline elevations to further inform the design and performance.
- June 2021 – Revised draft 95% design package provided by CPRA to NMFS for review.

13. Current status/remaining issues: Sponsors are delivering a constructible design by completing due diligence via stepwise and exploratory analyses given project vicinity challenges. The draft 95% design package is under review and concurrently the benefits analysis is being updated. The 95% design review meeting is scheduled no later than October 15, 2021. The revised benefit to cost ratio will be evaluated to determine the path forward: 1) seek scope change, and, if approved, a Phase 2 request, or potentially 2) recommend inactivation depending on environmental justice considerations and a revised benefit to cost ratio in comparison to other projects among other considerations.

14. Projected schedule and milestones: Fall of 2021 a scope change request will be made to the Technical Committee and Task Force. The 95% design review meeting will be held in October 2021.

15. Preparer: Patrick Williams, NOAA Fisheries; 225-329-9268; patrick.williams@noaa.gov

Initial draft June 2021

Projects On Schedule

Project Name	Project No.	Agency	PPL	Project Status & Critical Milestone(s)	Current Phase
LaBranche East Marsh Creation	PO-75	NRCS	19	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-75 permit issued. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.	I
LaBranche Central Marsh Creation	PO-133	NRCS	21	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.	I
New Orleans Landbridge Shoreline Stabilization and Marsh Creation	PO-169	FWS	24	Approved for construction in February 2019. A 404 permit has been received. NOAA Fisheries concurrence on Biological Opinion for Atlantic Sturgeon critical habitiat has been received. Consultation with SHPO on cultural resources has been completed. Bid advertisement on June 18, 2021.	II
West Fourchon Marsh Creation & Marsh Nourishment	TE-134	NMFS	24	Port approached project team for potential use of Belle Pass/Bayou Lafourche borrow area. The port is collecting additional design-level data in order in order to confirm that the project goals can be met with this borrow source. Drafting final design 2022; construction permit application submittal by Spring 2022; anticipated bid advertisement Winter 2022/Summer 2023	II
Bayou Decade Ridge Restoration and Marsh Creation	TE-138	NMFS	26	Approved for construction in February 2019. Containment started November 2020. Active hydraulic dredging started May 2021. Estimated construction completion January 2022.	II
St. Catherine Island Marsh Creation and Shoreline Protection	PO-179	FWS	26	Findings from the cultural resources survey and geotechnical investigation have resulted in the need to reconfigure the project footprint. Waiting on results of supplemental cultural resources survey. Consultation with NOAA Fisheries for Atlantic sturgeon critical habitat to begin soon. 30% design scheduled for March 2022 and 95% design in June 2022.	I

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. **Project Name (and number):** LaBranche East Project (PO-75)

2. **SOUP Category:** On Schedule

3. **PPL:** 19

4. **Federal Agency:** NRCS

5. **Date of Construction Approval / Phase Two Approval:** n/a

6. **Approved Total Budget:** $55,340,981

7. **Fully Funded Cost Estimate:** $54,307,857

8. **Expenditures:** $2,478,820

9. **Unexpended Funds:** $51,829,037

10. **Estimate of anticipated funding increases, including O&M:** Scope change with 34% cost increase was approved in 2018.

11. **Potential changes to project benefits**: Scope change with 10% cost decrease in net acres was approved in 2018.

12. **Brief chronology of project development and issues affecting implementation:**

2010	Approved (Phase I)
2010 – 2011	Planning and Design began in August 2010 after CSA signed. Geotechnical Investigation of Marsh Creation Areas completed in January 2011. Results indicated areas with high organic content resulting in decision to analyze various methods of containment and dredge material placement to verify the proposed design.
2012	A pilot study was developed to analyze design alternatives. Permit or pilot study was drafted and submitted.
2013	USACE issued permit for pilot study. Work began on June 1, 2013.
2014	Pilot Study completed in April 2014. Project Team will monitor results through August 2014 and develop report with findings and recommend preferred alternative for design.
2015-2016	Continued observation and re-survey of pilot project settlement.
2017	Geotechnical re-evaluation based on results of pilot study yielded determination that project is constructible. Project Team is actively pursuing design.
2018	30% Design and 95% Design completed. Phase II funding request was submitted, but project was not selected.

2019	Cost estimate will be updated, and project will be re-submitted for Phase II request. Consideration is being given to combining this project with PO-133.
2020	Phase II request approved. CSA amendment and Construction MIPR complete. Landrights assignment and certification, COE permit, and final design / contracting package are nearing completion.
2021	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-75 permit issued. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.

13. Current status/remaining issues: No issues at this time.

14. Projected schedule: Contract expected to go out for bid September / October 2021.

15. Preparer: Updated (6/18/14): John Jurgensen, NRCS (318) 473-7694
Updated (6/19/15): John Jurgensen, NRCS (318) 473-7694
Updated (6/15/16); (6/9/17); (7/27/18); (6/6/19); (6/10/20); (7/16/21): Quin Kinler, NRCS (225) 271-2403.

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. **Project Name (and number):** LaBranche Central Marsh Creation Project (PO-133)

2. **SOUP Category:** On Schedule

3. **PPL:** 21

4. **Federal Agency:** NRCS

5. **Date of Construction Approval / Phase Two Approval:** n/a

6. **Approved Total Budget:** $3,885,298

7. **Fully Funded Cost Estimate:** $42,159,208

8. **Expenditures:** $2,747,952

9. **Unexpended Funds:** 1,137,346

10. **Estimate of anticipated funding increases, including O&M:** None at this time.

11. **Potential changes to project benefits:** None at this time.

12. **Brief chronology of project development and issues affecting implementation:**

2012	Approved (Phase I)
2012 – 2014	Planning and Design began in July 2012 after CSA signed. Design Surveys completed October 2012. Magnetometer Survey Report completed June 2013. Geotechnical Investigation completed in April 2014.
2015-2016	Continued observation and re-survey of PO-75 pilot project settlement for potential application to PO-133.
2017	Geotechnical re-evaluation based on results of pilot study yielded determination that project is constructible.
2018	Project Team actively pursued design. 30% Design Review was delayed to 2019.
2019	30% Design Review completed.
2020	95% Design Review completed September 23, 2020. Phase II funding request submitted and recommended for approval by Technical Committee.
2021	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.

13. **Current status/remaining issues:** No issues at this time.

14. **Projected schedule:** Contract expected to go out for bid September / October 2021.

15. **Preparer:** (6/15/2016) (6/8/2017) (7/27/18) (5/31/19) (6/15/20) (7/16/21): Quin Kinler, NRCS (225) 271-2403

Status Review - Unconstructed CWPPRA Projects
August 10, 2021

1. Project Name (and number): New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PO-169)

2. SOUP Category: On Schedule

3. PPL: 24

4. Federal Agency: FWS

5. Date of Construction Approval / Phase Two Approval: 2/12/2019

6. Approved Total Budget:

7. Fully-Funded Cost:

8. Expenditures:

9. Unexpended Funds:

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None

12. Brief chronology of project development and issues affecting implementation:

January 2015	Phase I Approval
August 2016	30% Design Approval
October 2016	95% Design Approval
February 2019	Phase II Approval
May 2019	Section 404 Permit Received
July 2020	Consultation with NOAA Fisheries Complete
May 2021	Land Rights Completed
June 2021	Bid Package Advertised (6/18/2021)
July 22, 2021	Bid Opening

Issues affecting implementation: None

13. Current status/remaining issues:
Project has been advertised. Awaiting bids.

14. Projected schedule:
Sept 2021 - Award Bid

15. Preparer: Robert Dubois, FWS (337-291-3127) Robert_Dubois@fws.gov

Status Review - Unconstructed CWPPRA Projects
June 2021

1. Project Name (and number): West Fourchon Marsh Creation & Nourishment (TE-134)

2. SOUP Category: On Schedule

3. PPL: 24

4. Federal Agency: NMFS

5. Date of Construction Approval / Phase Two Approval: January 2020

6. Approved Total Budget: $30,494,148

7. Fully Funded Estimate: $30,494,148

8. Expenditures: $2,031,346

9. Unexpended Funds: $27,490,581

10. Estimate of anticipated funding increases, including O&M: N/A

11. Potential changes to project benefits: Project acreage decreased from 614 to 537 acres (12.5% decrease) because the single Phase 0 marsh creation area was split into two marsh creation areas to avoid two active natural gas pipelines that bisect the project area and also to optimize the dike construction of the marsh creation areas.

12. Brief chronology of project development and issues affecting implementation:

- 2015 – Phase 1 Approval
- July 2018 – 30% Design Meeting
- October 2018 – 95% Design Meeting
- December 2018 – competed for Phase II funding
- December 2019 –Phase II Approval by Technical Committee
- July 2020 – Greater Lafourche Port Commission (GLPC) approached the project team to consider using Belle Pass/Bayou Lafourche as a borrow source

13. Current status/remaining issues: Phase 2 funding approved by Task Force in January 2020/July 2020, the GLPC approached the project team to consider using Belle Pass/Bayou Lafourche as a borrow source. Additional design-level data is being collected by the GLPC and is needed in order to consider this borrow source in order to confirm that the project goals can be met with this borrow source. Depending on the outcome of this investigation, we will come back to the CWPPRA community for a brief out.

14. Projected schedule and milestones: Additional design-level data collection and analysis expected by December 2021; Drafting final design Spring 2022; construction permit application submittal by Spring 2022; anticipated bid advertisement Winter 2022/Spring 2023.

15. Preparer: Donna Rogers (NMFS); (225) 316-8958; donna.rogers@noaa.gov

Initial Draft June 2021 (DRR)

Status Review - Unconstructed CWPPRA Projects
July 2021

1. **Project Name (and number):** Bayou De Cade Ridge and Marsh Creation Project (TE-138)

2. **SOUP Category:** On Schedule/Under Construction

3. **PPL:** 26

4. **Federal Agency:** NMFS

5. **Date of Construction Approval / Phase Two Approval:** February 2019

6. **Approved Total Budget:** $27,268,025

7. **Fully Funded Estimate:** $27,268,025

8. **Expenditures:** $2,193,467

9. **Unexpended Funds:** $22,587,655

10. **Estimate of anticipated funding increases, including O&M:** None.

11. **Potential changes to project benefits:** None

12. **Brief chronology of project development and issues affecting implementation:**
    January 2017 – Phase I Approval
    February 2019 – Phase II Approval
    September 2020 – construction contract awarded to Apollo Environmental Strategies, Inc.
    November 2020 – Earthen containment dikes and earthen ridge started.
    May 2021 – Earthen containment dikes and earthen ridge completed.
    May 2021 – Active pumping began.

13. **Current status/remaining issues:** The project is currently under construction.

14. **Projected schedule and milestones:** Earthen containment dikes and earthen ridge have been constructed. Active pumping began May 2021. Project completion expected January 2022.

15. **Preparer:** Jennifer Smith, NOAA Fisheries, jennifer.smith@noaa.gov

Initial draft: June 2021

Status Review - Unconstructed CWPPRA Projects
June 22, 2021

1. Project Name (and number): St. Catherine Island Shoreline Protection and Marsh Creation (PO-179)

2. SOUP Category: On Schedule

3. PPL: 26

4. Federal Agency: FWS

5. Date of Construction Approval / Phase Two Approval: NA

6. Approved Total Budget: $2,389,308

7. Fully-Funded Cost: $35,996,522

8. Expenditures: $1,216,625

9. Unexpended Funds: $1,172,683

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None

12. Brief chronology of project development and issues affecting implementation:

January 2017	Phase I Approval
February 2019	Borrow Area Sand Survey Results
August 2020	Final Geotech Report
July 2021	Supplemental Cultural Resources Survey

Issues affecting implementation: Several issues concerning Cultural Resources Phase I surveys and project geotechnical investigations have surfaced. The team is working through reconfiguring the project footprint with no foreseeable critical issues. Currently, awaiting results of final Cultural Resources Phase I survey and concurrence from SHPO.

13. Current status/remaining issues:
In the process of finishing E&D to proceed to 30% design which is expected in early 2022. A supplemental consultation with the SHPO is ongoing due to reconfiguring the marsh creation cells. Consultation with NOAA Fisheries for Atlantic sturgeon is expected to begin shortly.

14. Projected schedule:

March 2022	30% Design Review Meeting
June 2022	95% Design Meeting
December 2022	Request for Phase 2 Funding

15. Preparer: Robert Dubois, FWS (337-291-3127) Robert_Dubois@fws.gov

Projects Waiting on Phase II Funding

Project Name	Project No.	Agency	PPL	Near-term Milestones	# of Phase II Requests	Current Phase
Freshwater Bayou Marsh Creation	ME-31	NRCS	19	Continued coordination with pipeline companies and with COE regarding the dredge pipe crossing of FWB. Phase II request to be resubmitted in Fall 2021.	1	I
Terracing and Marsh Creation South of Big Mar	BS-24	FWS	22	Project team has been working to re-design some of the project features to reduce project costs. Currently undergoing a Phase 1 cultural resources survey. The goal is to compete for Phase 2 funds in December 2021.	2	I
No Name Bayou Marsh Creation & Nourishment	CS-78	NMFS	24	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	1	I
Barataria Bay Rim Marsh Creation	BA-195	NRCS	25	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	2	I
Oyster Lake Marsh Creation and Nourishment Project	CS-79	NMFS	25	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	1	I
East Leeville Marsh Creation and Nourishment	BA-194	NMFS	25	Design is complete. Assessing whether to pursue Phase II funding request in December 2021.	1	I
Bayou La Loutre Ridge Restoration and Marsh Creation	PO-178	NRCS	26	CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted in Fall 2021.	1	I

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. Project Name: Freshwater Bayou Marsh Creation (ME-31)

2. SOUP Category: Waiting on Phase II Funding

3**. PPL: 19**

4. Federal Agency: NRCS

5. Date of Construction Approval / Phase Two Approval:

6. Approved Total Budget: $2,425,997

7. Fully Funded Cost Estimate: $25,523,755

8. Expenditures: $2,245,973

9. Unexpended Funds: $180,024

10. Estimate of anticipated funding increase, including O&M: No funding increases anticipated.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

2010– 2014	The project was approved for Phase I funding at the January 2010 Task Force meeting. NRCS has completed initial surveys, but geotechnical investigation of the project area and borrow site have not been completed. Additionally, a wave analysis model will be completed once the borrow site is finalized. NRCS and ExxonMobil (landowner) are investigating contaminant testing protocol to ensure that borrow material is safe to use for marsh creation. That protocol was accepted on April 28th, 2014 and implementation of testing is expected to begin this summer/fall.
2015	Contaminant investigation completed. No further issues pending. Design has resumed.
2016	Cultural resources clearance completed; supplemental design surveys, including that needed to adjust project due to construction work by Ducks Unlimited; pipeline coordination.
2017	Marsh creation cells reconfigured due to pipelines and DU construction work; draft Scopes of work for bathymetric surveys, magnetometer survey, and geotechnical investigation.

2018	Bathymetric surveys, magnetometer surveys, new secondary monument, and geotechnical investigation have been completed. Proceeding with project design.
2019	Preliminary design nearly complete. Draft 30% Design Report and Drawings going thru NRCS in-house review. Anticipate 30% Design Review Meeting in November 2019, with Phase II request in 2020.
2020	30% Design Review Meeting completed June 10, 2020, 95% Design Review Meeting completed October 20, 2020, and Phase II funding request submitted November 2020. Phase II was not funded.
2021	Continued coordination with pipeline companies and with COE regarding the dredge pipe crossing of FWB. Phase II request is anticipated in December 2021

13. Current milestones/remaining issues:

No pending issues. Phase II funding request is anticipated in December 2021.

14. Projected schedule:

Phase II funding request is anticipated in December 2021.

15. Preparer: Updated (6/17/14): Troy Mallach, NRCS, (337) 291-3064 and John Jurgensen, NRCS, (318) 473-7694
Updated (6/22/15): John Jurgensen, NRCS, (318) 473-7694
Updated (6/15/16); (6/9/17); (7/27/18); (6/6/19); (6/15/20); (7/16/21): Quin Kinler, NRCS (225) 271-2403

Status Review - Unconstructed CWPPRA Projects
August 10, 2021

1. Project Name (and number): Terracing and Marsh Creation South of Big Mar (BS-24)

2. SOUP Category: Waiting on Phase II Funding

3. PPL: 22

4. Federal Agency: FWS

5. Date of Construction Approval / Phase Two Approval: N/A

6. Approved Total Budget: $2,308,599

7. Fully-Funded Cost: $38,679,147

8. Expenditures: $

9. Unexpended Funds: $

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

January 2013	Phase I Approval
August 2016	30% Design Approval
October 2016	95% Design Approval
March 2021	Cultural Resources Phase I Survey Began
May 2021	Additional Mag and Topo/Bathy Surveys
Dec 2021	Request Phase II Funding

Issues affecting implementation: None at this time.

13. Current status/remaining issues:
New design is underway. Construction costs have been reduced. Undergoing Phase I Cultural Resources Survey. On schedule to compete for Phase 2 funds in December 2021. Construction cost has been lowered due to the following actions: 1) decrease in the cut-to-fill ratio, 2) recalculating marsh fill volumes, 3) reducing terrace size, and 4) modifying terrace configuration to increase constructability and eliminate access dredging. The CPRA design engineer is drafting an updated design memo that will outline all of the additional data collection, analysis, and design changes that were made. A reduction in benefits is not anticipated due to these changes. The updated design memo will be sent to the EngWG as part of the cost estimate review prior to the Phase 2 request.

14. Projected schedule:
The goal is to prepare this project for a Phase 2 request in December 2021.

15. Preparer: Robert Dubois, FWS (337-291-3127) Robert_Dubois@fws.gov

Status Review - Unconstructed CWPPRA Projects
June 2021

1. Project Name (and number): No Name Marsh Creation (CS-78)

2. SOUP Category: Waiting on Phase II Funds

3. PPL: 24

4. Federal Agency: NMFS

5. Date of Construction Approval / Phase Two Approval: N/A

6. Approved Total Budget: $2,724,524

7. Fully Funded Estimate: $28,253,136

8. Expenditures: $2,311,159

9. Unexpended Funds: $2,493,365

10. Estimate of anticipated funding increases, including O&M: N/A

11. Potential changes to project benefits: N/A

12. Brief chronology of project development and issues affecting implementation:

- 2015 – Phase 1 Approval
- September 2015 – began investigating proposed marsh creation area; surveying and geotechnical investigations in marsh creation area subsequently completed
- September 2015 – began investigating CDF M as a potential borrow source
- October 2016 – determined CDF M was not suitable as a borrow source due to required access to a depth of approximately -12' NAVD88 that will have to be dredged into natural ground to obtain sufficient material, creating a lake, and potential land rights issues.
- October 2016 – began evaluating nearshore as a potential borrow source
- October 2016 – began investigating Calcasieu Lake as a potential borrow source
- November 2016– determined nearshore borrow area would require a minimum pump distance of 11 miles and a cost in excess of $7 per cubic yard
- August 2017 – began investigating Cameron Loop around Monkey Island as a potential borrow source
- February 2018 – determined Cameron Loop was not suitable as a borrow area due to material quality, insufficient quantity, and potential impacts to infrastructure.
- June 2018 – continued coordinating with LDWF on Calcasieu Lake borrow area
- March 2019 – oyster surveys in Calcasieu Lake conducted
- June 2019 - continued coordination with LDWF on Calcasieu Lake borrow area
- November 2019 - borrow area geotechnical investigation fieldwork complete
- April 2020 - borrow area survey fieldwork complete
- July 2020 - 30% design review meeting held
- October 2020 - 95% design review meeting held
- December 2020 – Phase 2 request

13. Current status/remaining issues: Design is complete to 95%; Phase 2 request resubmittal.

14. Projected schedule and milestones: 30% design review meeting held on July 28, 2020; 95% design review meeting held on October 23, 2020; Phase 2 Request December 2020; Phase 2 Request resubmittal anticipated December 2021.

15. Preparer: Donna Rogers (NMFS); (225)316-8958; donna.rogers@noaa.gov

Initial Draft June 2021 (DRR)

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. **Project Name (and number):** Barataria Bay Rim Marsh Creation Project (BA-195)

2. **SOUP Category:** Waiting on Phase II Funding

3. **PPL:** 25

4. **Federal Agency:** NRCS

5. **Date of Construction Approval / Phase Two Approval:** n/a

6. **Approved Total Budget:** $2,693,708

7. **Fully Funded Cost Estimate:** $23,838,905

8. **Expenditures:** $2,330,084

9. **Unexpended Funds:** $363,624

10. **Estimate of anticipated funding increases, including O&M:** None at this time.

11. **Potential changes to project benefits:** None at this time.

12. **Brief chronology of project development and issues affecting implementation:**

2016 – 2019	CSA for Phase I completed. Design Surveys, Magnetometer Survey Report, and Geotechnical Investigation completed. 30% Design review meeting completed March 2019; 95% Design review meeting completed October 2019. Phase II funding request submitted.
2020	Repeat Phase II funding request submitted.
2021	Repeat Phase II funding request not approved. Repeat Phase II funding request is anticipated in December 2021.

13. **Current status/remaining issues:** Repeat Phase II funding request is anticipated in December 2021.

14. **Projected schedule:** Repeat Phase II funding is anticipated in December 2021.

15. **Preparer:** (6/15/20) (7/16/21): Quin Kinler, NRCS (225) 271-2403

Status Review - Unconstructed CWPPRA Projects
July 2021

1. Project Name (and number): Oyster Lake Marsh Creation and Nourishment Project (CS-79)

2. SOUP Category: Waiting on Phase II Funds

3. PPL: 25

4. Federal Agency: NMFS

5. Date of Construction Approval / Phase Two Approval: NA

6. Approved Total Budget: $3,608,939

7. Fully Funded Estimate: $38,073,046

8. Expenditures: $1,256,789

9. Unexpended Funds: $2,352,150

10. Estimate of anticipated funding increases, including O&M: NA

11. Potential changes to project benefits: The acres have decreased from 661 to 413 (38% reduction) due to adjustments made to the configuration of the marsh creation area due to the expansion of Oyster Bayou, landowner discord, pipeline discoveries within the fill area, and the need for maintaining hydrologic connectivity within the project area.

12. Brief chronology of project development and issues affecting implementation:

- January 2016 – Phase 1 Approval
- February 2017 – Grant application for Phase 1 executed
- January 2018 – Marsh creation polygons revised due to Oyster Bayou (CS-59) project expansion
- March 2018 – Survey transects conducted
- May 2018 – Marsh creation polygons revised due to landowner dispute
- September 2018 – Geotechnical surveys conducted
- June 2020 – 30% Design Meeting
- October 2020 – 95% Design Meeting
- December 2020 – competed for Phase II funding

13. Current status/remaining issues: The project is currently waiting for approval for Phase II funding.

14. Projected schedule and milestones: The project will compete for Phase II funding in December 2021.

15. Preparer: Dawn Davis, NOAA Fisheries, dawn.davis@noaa.gov

Initial draft June 2021

Status Review - Unconstructed CWPPRA Projects
July 2021

1. **Project Name (and number):** East Leeville Marsh Creation and Nourishment (BA-194)

2. **SOUP Category:** Waiting on Phase II Funding

3. **PPL:** 25

4. **Federal Agency:** NMFS

5. **Date of Construction Approval / Phase Two Approval:** TBD

6. **Approved Total Budget:** $4,026,090

7. **Fully Funded Estimate:** $35,066,972

8. **Expenditures:** $2,293,225

9. **Unexpended Funds:** $1,732,865

10. **Estimate of anticipated funding increases, including O&M:** The construction plus contingency has decreased from the amount authorized for Phase 1. The fully funded cost for the operations, maintenance, and monitoring plan increased substantially from the amount authorized for Phase 1.

11. **Potential changes to project benefits:** The project area has decreased from 484 acres to 275 acres. The TY20 net acres have decreased from 322 to 205. Disposal areas were eliminated, reduced, and refined during Phase 1 due to cultural resources, water depths, pipelines, or combinations thereof.

	Creation + Nourishment Constructed Acres	TY20 Net Acres
Phase 0	484 (358 MC + 124 MN)	322
Phase 1	275 (225 MC + 50 MN)	205

12. **Brief chronology of project development and issues affecting implementation:**
    - January 2016 – Phase 1 Approval
    - October 23, 2019 – 30% Design review
    - December 11, 2019 – responded to agency comments on the 30% design
    - March/April/May 2020 – supplemental geotech deliverables – six additional borings in areas adjacent to some MCAs; evaluated external borrow, slope stability, settlement to refine containment strategies
    - March/April 2020 – co-sponsors concurred to proceed to 95% design and a scope change request
    - April 2020 – NMFS completed a draft scope change analysis based on information at that time
    - August 2020 – 95% Design review

- December 2020/Jan 2021 – Phase 2 request (not authorized)
- January/February 2021 – Stakeholder coordination
- April, 2021 – Consideration of potential cost savings opportunities

13. Current status/remaining issues: Opportunities for potential cost savings are being considered to determine if revisions will be made and interagency review requested. Determination of whether or not this project will be recompeted for Phase 2 funds is pending.

14. Projected schedule and milestones: If the project will be recompeted this year, products will be provided for workgroup review per the due dates in the CWPPRA calendar.

15. Preparer: Patrick Williams, NOAA Fisheries; 225-329-9268; patrick.williams@noaa.gov

Initial draft June 2021

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. Project Name: Bayou La Loutre Ridge Restoration and Marsh Creation (PO-178)

2. SOUP Category: Waiting on Phase II Funding

3. PPL: 26

4. Federal Agency: NRCS

5. Date of Construction Approval / Phase Two Approval:

6. Approved Total Budget: $3,236,952

7. Fully Funded Cost Estimate: $29,762,138

8. Expenditures: $1,122,926

9. Unexpended Funds: $2,114,026

10. Estimate of anticipated funding increase, including O&M: No funding increases anticipated.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

2017– 2019	Design surveys, magnetometer survey, geotechnical investigation, cultural resources, preliminary landrights, preliminary design.
2020	30% Design Review Meeting completed July 16, 2020, 95% Design Review Meeting completed October 22, 2020, and Phase II funding request submitted November 2020. Phase II was not funded.
2021	CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted for December 2021.

13. Current milestones/remaining issues:

No pending issues. CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted for December 2021.

14. Projected schedule:

Phase II funding request may or may not be resubmitted for December 2021.

15. Preparer: Quin Kinler, NRCS (225) 271-2403

Projects Delayed by Project Delivery Team Issues

Project Name	Project No.	Agency	PPL	Project Status & Critical Milestone(s)	Current Phase
Fritchie Marsh Creation and Terracing	PO-173	NMFS	25	The preferred project area was taken by the Plaquemines New Orleans to Venice/Non-Federal (NOV/NFL) levee mitigation project in 2019. The PDT is examining two new alternatives with a change in scope likely in Fall of 2021.	II
South Grand Chenier Marsh Creation - Baker Tract	ME-32	NRCS	23	Pending Landrights - CPRA/NRCS decision of how to proceed with ME-32 will take place after ME-20 which is expected to be complete in September 2021.	I

Status Review - Unconstructed CWPPRA Projects
July 2021

1. **Project Name (and number):** Fritchie Marsh Creation and Terracing (PO-173)
2. **SOUP Category:** Project Issue Delays
3. **PPL:** 25
4. **Federal Agency:** NMFS
5. **Date of Construction Approval / Phase Two Approval:** TBD
6. **Approved Total Budget:** $3,033,294
7. **Fully Funded Estimate:** $27,944,102
8. **Expenditures:** $359,655
9. **Unexpended Funds:** $2,673,639
10. **Estimate of anticipated funding increases, including O&M:** Due to the location of the USACE final mitigation plan for the Plaquemines NOV/NFL levee overlapping with the Phase I alignment, there will be a substantive change to the cost. The project will have to be relocated to the east side of the Fritchie Marsh. Alternatives are currently being formulated to minimize the cost increases.
11. **Potential changes to project benefits:** Alternatives being explored east of the Fritchie Marsh will likely have substantive changes from the Phase 1 project area. There may be more than a 25% reduction in benefits to help offset cost increases with a longer pumping distance.
12. **Brief chronology of project development and issues affecting implementation:**
    - January 2016 – Phase 1 Approval
    - Summer 2016 to Spring 2019 – established agreements for the three-party team (US Army Corps serving as engineering support); pursued several alternatives in design, and finalized a project design concept ready for geotech data gathering.
    - May 8, 2019 – USACE signed the Tentatively Selected Plan memo choosing the CWPPRA project area for the Plaquemines New Orleans to Venice/Non-Federal (NOV/NFL) levee mitigation project
    - 2019/2020 - NMFS and CPRA PDT worked to develop several alternatives for consideration to meet project goals- one on the Refuge and private lands (Las Conchas) on the east side of Fritchie Marsh and others to the north primarily on Refuge lands (longer pump distance)

- Winter 2020 to Spring 2021 - initiated conversations with Las Conchas; NMFS and CPRA revised project design based on the Las Conchas meeting
- Spring 2021 - presented the new concept to Las Conchas for their committed approval

13. **Current status/remaining issues:** The USACE selected a mitigation alternative for the Plaquemines NOV/NFL levee that overlaps the Phase 1 alternative. Due to this, the project options have shifted to the east. Two alternatives are being explored on the east side of the Fritchie Marsh. One on Las Conchas property and one to the north that overlaps the Big Branch Marsh National Wildlife Refuge. The team is waiting to hear back from Las Conchas on the alternative on their property. It is the most cost effective of the two alternatives. The project team will pursue the second alternative should Las Conchas not illustrate sufficient support for our preferred alternative.

14. **Projected schedule and milestones:** Potential reformulation for the CWPPRA project is pending final response from Las Conchas. During the Summer of 2021, we will decide on a path forward for the project. Our plan is to present this path forward along with Change in Scope in 2021.

15. **Preparer:** Brandon Howard; NOAA Fisheries; 225-380-0050; brandon.howard@noaa.gov

Initial draft June 2021

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

1. Project Name: South Grand Chenier Marsh Creation - Baker Tract (ME-32)

2. SOUP Category: Project Issue Delays

3**. PPL: 23**

4. Federal Agency: NRCS

5. Date of Construction Approval / Phase Two Approval:

6. Approved Total Budget: $2,653,242

7. Fully Funded Cost Estimate: $25,441,833

8. Expenditures: $595,220

9. Unexpended Funds: $2,058,022

10. Estimate of anticipated funding increase, including O&M: No funding increases anticipated.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

2014– 2017	Topographic and Magnetometer surveys completed.
2018	Project is on hold pending landrights.
2019	Project is on hold pending landrights.
2020	Project is on hold pending landrights.
2021	Some positive movement with landrights, but CPRA and NRCS are awaiting outcome of ME-20 bid process before deciding how to proceed with ME-32.

13. Current milestones/remaining issues:

CPRA and NRCS are awaiting outcome of ME-20 bid process before deciding how to proceed with ME-32. Some positive movement with landrights, but not full resolution yet.

14. Projected schedule:

CPRA/NRCS decision of how to proceed with ME-32 will take place after ME-20 which is expected to be complete in September 2021.

15. Preparer: Updated (6/6/19) (6/10/20) (6/21/20) (7/16/21) Quin Kinler, NRCS (225) 271-2403

Inactive Projects

Project Name	Project No.	Agency	PPL	# of Phase II Requests	Project Status & Critical Milestone(s)	Current Phase
Freshwater Bayou Bank Stab - Belle Isle Canal to Lock	TV-11b	COE	9		All work was put on hold pending approval of a new Cost Share Agreement. The Task Force voted to inactivate this project at the June 4, 2013 meeting.	I
Venice Ponds Marsh Creation & Crevasses	MR-15	EPA	15	3	The Task Force voted to inactivate this project at the Jan 2014 meeting due to the project having gone through a 95% design review.	I
Alligator Bend Marsh Restoration and Shoreline Protection	PO-34	NRCS	16	2	Project design is complete. Project team has decided not to request funding until CWPPRA is reauthorized or another funding source is available. The Task Force voted to inactivate this project at the October 2014 meeting.	I
Madison Bay Marsh Creation & Terracing	TE-51	NMFS	16	2	Project did not receive funding at January 2014 and January 2015 Task Force meetings. The Task Force voted to inactivate the project at the October 2015 meeting.	I
North Lake Boudreaux Basin Freshwater Intro and Hydro Mgt	TE-32a	FWS	6		Several regulatory issues remain and still need to be resolved. It is estimated that a 404 permit could be issued by August 2017. Landrights for the conveyance channel were voided and could not be obtained by Terrebonne Parish. To pursue an alternate conveyance channel alignment, additional expenditures for engineering, construction, and landrights would be needed. An increase in the project cost must be approved by the Task Force. Project was inactivated in October 2016.	Non-Cash Flow

Projects Removed from SOUP

Project Name	Project No.	Agency	PPL	Yr Removed from SOUP	Reason Removed from SOUP List
South Lake Decade Freshwater Introduction	TE-39	NRCS	9		Construction completed July 12, 2011.
Lake Borgne and MRGO Shoreline Protection	PO-32	COE	12		Project was deauthorized.
South Shore of the Pen	BA-41	NRCS	14		Construction completed June 5, 2012.
East Marsh Island Marsh Creation	TV-21	EPA/NRCS	14		Construction completed February 2011.
Penchant Basin Natural Resources Plan, Incr 1	TE-34	NRCS	6		Construction completed August 29, 2012.
West Belle Pass Barrier Headland Restoration Project	TE-52	NMFS	16	2011	Construction Completed June 2013.
Barataria Barrier Shoreline, Pelican Island to Chaland Pass (CU2)	BA-38	NMFS	11	2011	Construction completed December 2012.
Fort Jackson Sediment Diversion	na	COE	na	2012	Project was closed out October 2011.
Riverine Sand Mining/Scofield Island Restoration	BA-40	NMFS	14	2012	Project was deauthorized January 2012
Lake Hermitage Marsh Creation	BA-42	FWS	15	2012	Construction completed May 2015.
Barataria Basin Landbridge, Phase 3 CU #7	BA-27c	NRCS	9	2012	Construction Complete.
Barataria Basin Landbridge, Phase 3 CU #8	BA-27c	NRCS	9	2012	Construction Complete.
Raccoon Island Shoreline Protection and Marsh Creation	TE-48	NRCS	11	2012	Construction completed on April 27, 2013.
Little Pecan Bayou Hydrologic Restoration	ME-17	NRCS	9	2013	Project was deauthorized in October 2012.
Benneys Bay Diversion	MR-13	COE	10	2013	Project was deauthorized in October 2012.
Weeks Bay Marsh Creation/Shoreline Protection/Commercial Canal/Freshwater Redirection	TV-19	COE	9	2013	Project was transferred out of the CWPPRA Program to Iberia Parish in June 2013.
Delta Building Diversion North of Fort St. Philip	BS-10	COE	10	2013	Project was deauthorized in June 2013.
Avoca Island Diversion and Land Building	TE-49	COE	12	2013	Project was deauthorized in June 2013.
Spanish Pass Diversion	MR-14	COE	13	2013	Project was deauthorized in June 2013.
White Ditch Resurrection	BS-12	NRCS	14	2013	Project was deauthorized in June 2013.
Bohemia Mississippi River Reintroduction	BS-15	EPA	17	2013	Project was deauthorized in June 2013.
GIWW Bank Rest of Critical Areas in Terrebonne	TE-43	NRCS	10	2013	Constructed 2014
Sediment Containment for Marsh Creation Demonstration	LA-09	NRCS	17	2013	Constructed
River Reintroduction into Maurepas Swamp	PO-29	EPA	11	2014	Transferred to CPRA in 2013.
Bayou Sale Shoreline Protection	TV-20	NRCS	13	2014	Project was deauthorized in May 2014.
Bertrandville Siphon	BS-18	EPA	18	2014	Project was deauthorized in May 2014.
Bayou Dupont Ridge and Marsh Restoration	BA-48	NMFS	17	2014	Constructed 2015
Grand Liard Marsh and Ridge Restoration	BA-68	NMFS	18	2014	Constructed 2015
Southwest LA Gulf Shoreline Nourishment and Protection	ME-24	COE	16	2015	Project was transferred out of the CWPPRA Program to Chenier Plain in Jan 2015
West Pointe a la Hache Outfall Management	BA-04c	NRCS	3	2015	Project was deauthorized in Jan 2015.
South Lake Lery Shoreline & Marsh Restoration	BS-16	FWS	17	2015	Constructed

Sabine Refuge Marsh Creation, Cycles 4 & 5	CS-28-4&5	FWS	8	2015	Constructed 2015
West Pointe a la Hache Marsh Creation	BA-47	NRCS	17	2015	Built under the BA-42 project, then deauthorized
Cheniere Ronquille Barrier Island Restoration	BA-76	NMFS	19	2015	Transferred out of CWPPRA program, then deauthorized
Kelso Bayou Marsh Creation	CS-53	NRCS	20	2016	Project was transferred in May 2016.
Terrebonne Bay Marsh Creation	TE-83	FWS	20	2017	Project was deauthorized January 2017
Central Terrebonne Freshwater Enhancement	TE-66	NRCS	18	2017	Project was transferred in January 2017
Bayou Dupont Sediment Delivery - Marsh Creation #3 and Terracing	BA-164	EPA	22	2017	Constructed
Bayou Bonfouca Marsh Creation	PO-104	FWS	20	2017	Completed
Oyster Bayou Marsh Restoration	CS-59	NMFS	21	2017	Constructed
Lost Lake Marsh Creation and Hydrologic Restoration	TE-72	FWS	19	2017	Constructed 2018
Grand Lake Shoreline Protection, Tebo Point & O&M Only [CIAP]	ME-21	NRCS	11	2017	Constructed
Hydrologic Restoration & Vegetative Planting in the des Allemands Swamp	BA-34-2	EPA	10	2018	Constructed 2018
Cameron Creole Watershed Grand Bayou Marsh Creation	CS-54	FWS	20	2018	Constructed 2019
Rockefeller Refuge Gulf Shoreline Stabilization	ME-18	NMFS	10	2018	In Construction
Shell Beach South Marsh Creation	PO-168	EPA	24	2019	Transferred to RESTORE in 2016
Northwest Turtle Bay Marsh Creation	BA-125	FWS	21	2019	In Construction July 2020
Cole's Bayou Marsh Creation and Nourishment	TV-63	NMFS	21	2019	Constructed
Shoreline Protection, Preservation, & Restoration (SPPR) Panel	LA-280	NMFS	25	2020	Deauthorized
Bayou Grande Chenier Marsh and Ridge Restoration	BA-173	FWS	23	2020	Transferred to CPRA
Cameron-Creole Freshwater Introduction	CS-49	NRCS	18	2020	In Construction
Cameron Meadows Marsh Creation and Restoration	CS-66	NMFS	22	2020	The construction contract was awarded
Caminada Headlands Back Barrier Marsh Creation	BA-171	EPA	23	2020	Notice to Proceed issued to construction contractor April 2020. Heavy construction expected to begin late June/early July 2020.
Caminada Headlands Back Barrier Marsh Creation Increment #2	BA-193	EPA	25	2021	The BA-193 project footprint was added to the BA-171 project in order to increase efficiencies. While the project will be built, this project number is deauthorized.
Ship Shoal: Whiskey West Flank Restoration	TE-47	EPA	11	2021	NFWF project (TE-100) constructed over footprint of this project. TE-47 is deauthorized.

*A project is removed once it is deauthorized, transferred, or the construction contract is awarded.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

CWPPRA STANDARD OPERATING PROCEDURES (SOP) UPDATE/REVISIONS

For Decision:

USFWS will present the requested changes and revisions to the scope change procedures in the CWPPRA SOP for Technical Committee review and approval.

(3) Changes in Project Scope: If a project undergoes a major change in scope or a change in scope resulting in a variance of more than 25% from: (1) the total project cost, (2) the number of net acres created/protected/restored~~benefits~~, (3) net~~total~~ AAHUs, or (4) the ratio of the total cost to the number of net acres created/protected/restored~~benefited~~ or total project cost to total project net AAHUs, then the project sponsors will submit a report to the TC explaining the reason(s) for the scope change, the impact on cost and benefits, and a statement from the local sponsor endorsing the change. Requests to the TC for changes in project scope will occur before the project's 95% Design Review meeting (Section 6.h.(1)). Under certain circumstances, it may be necessary to request a change in scope after a project's 95% Design Review meeting. Project sponsors must clearly indicate to the TC why the delayed request is necessary. The TC will review the report and recommend to the TF approval or rejection of the change. Changes in project scope resulting in an increase in total project cost are discussed in Section 5.d.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

DEVELOPMENT OF THE SUPPORT PROGRAMMATIC PROJECT FOR SIGNAGE

For Report/Decision:

Mr. Kent Bollfrass will provide an update on the development of a support programmatic project for signage. The Technical Committee will consider recommending approval of the project to the Task Force.

a. CPRA and NRCS request the Technical Committee recommend approval of the Ten-Year Support Programmatic Project for Signage; $2,767,206.00

b. CPRA and NRCS request the Technical Committee recommend approval of the first three years of incremental funding for Support Programmatic Project for Signage; $703,878.00

CWPPRA

Report/Decision: Status of Development of the Support Programmatic Project for Signage

Technical Committee Meeting

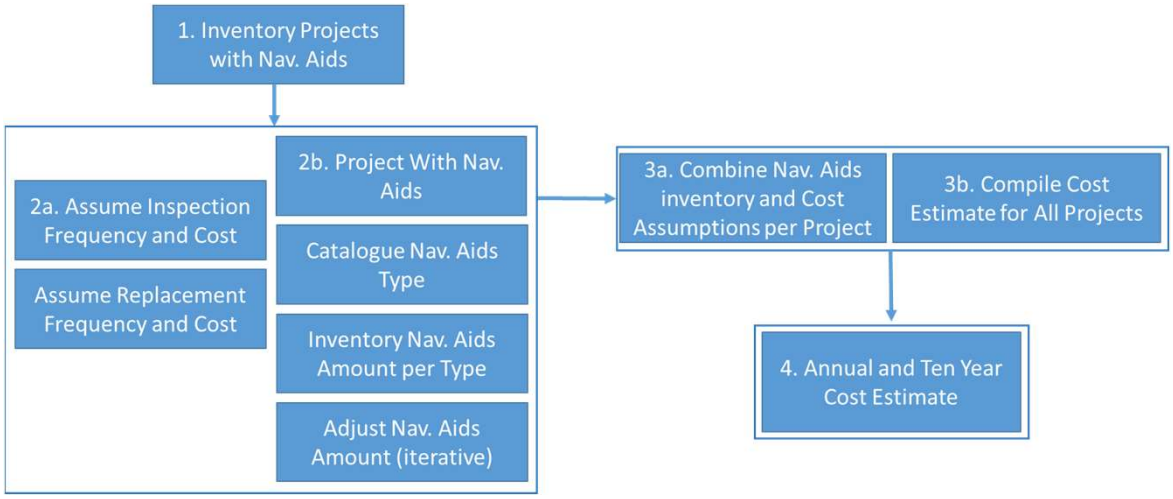
2nd September, 2021

Webex

Nav. Aids Program Development Summary

- Conceptualization of Navigational Aids Maintenance Program
  - Purpose to provide a funding mechanism to maintain previously existing warning signs, lights, buoys, timber piles, and other navigational aids/ infrastructure for CWPPRA projects that have been closed out (post 20 year life)
  - TC/TF tasked P&E to generate information for program consideration
  - P&E requested assistance from CPRA Regional Field Offices to generate cost estimate
- Ten Year Program Cost Estimate
  - 10 years was chosen as balance between short and long term considerations
  - Incudes projects that have or will meet end of life criteria within 10 years
  - Increases as more projects meet end of life criteria over time
- Engineering Work Group Review; subsequent revisions
- Economic Work Group Fully Funded Cost Estimate
- Request the TC recommend approval of ten-year program and three-year incremental funding

Nav. Aids Program Development Summary

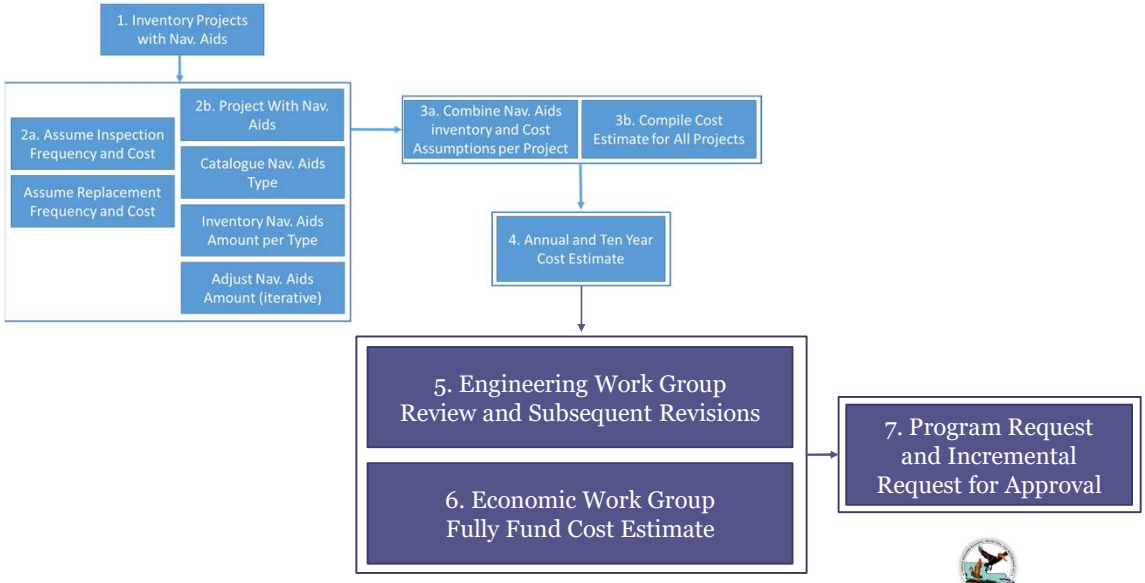


Ten Year Nav. Aids Program Estimate

Year	Annual Request	Projects (#)
2022	$ 178,519.00	10
2023	$ 168,190.00	13
2024	$ 213,037.00	14
2025	$ 144,386.00	15
2026	$ 201,751.00	17
2027	$ 171,622.00	19
2028	$ 208,747.00	19
2029	$ 194,106.00	22
2030	$ 242,979.00	24
2031	$ 255,849.00	26
Total	$ 1,979,186.00	-

- Includes only projects that have previously met or will meet 20 year end of life for each year
- Program-wide, with existing projects there is potential to increase from 26 to 37 existing projects included beyond 2031
- Not fully funded
- Pre-Engineering Work Group Review

Nav. Aids Program Development Summary



Ten Year Nav. Aids Fully Funded Program Estimate

Year	Fully Funded Annual Request	Projects (#)
2022	$ 220,455	10
2023	$ 210,684	13
2024	$ 272,739	14
2025	$ 190,422	15
2026	$ 271,539	17
2027	$ 237,238	19
2028	$ 295,061	19
2029	$ 281,466	22
2030	$ 360,574	24
2031	$ 427,030	26
Total	$ 2,767,206	-

- Updates to costs include State E&D, Closeout Report, State and Fed S&A, Corps Admin, and has now been Fully Funded
- CPRA and NRCS will request the Technical Committee recommend approval of the Ten-Year Support Programmatic Project for Signage; $2,767,206.00

Nav. Aids Three-Year Incremental Request

Year	Fully Funded Annual Request	Projects (#)
2022	$ 220,455	10
2023	$ 210,684	13
2024	$ 272,739	14
Total	$ 703,878	-

- CPRA and NRCS will subsequently request the Technical Committee recommend approval of the first three years of incremental funding for Support Programmatic Project for Signage; $703,878.00
  - Three years to initiate the program
  - Update the request annually
    - Test assumptions; apply lessons learned
    - Program uncertainties; dynamic landscape
    - P&E emphasis on likely need for flexibility

Nav. Aids Program Uncertainties

- Brand new program, assumptions will be tested when put into practice. Expectation is to learn and then adjust as needed over time.
- Additional projects, project extensions, and project/ feature removals
  - Project Extensions for projects w/ nav. aids would reduce scale and cost
  - Project, feature, or nav. aids removals would reduce scale and cost
  - Future approved projects with nav. aids would increase scale and cost
- Land Rights
  - Placeholder amount for inclusion in cost estimate
  - Without specific locations, access routes, descriptions of work, etc. a cost estimate for land rights is difficult to develop
  - Pending program approval CPRA will explore the potential to pursue statutory authority to perform maintenance on nav. aids

Emphasis on Program Flexibility

- Given the uncertainties remaining the P&E emphasizes the need to remain for flexible in out years as CWPPRA implements this program
  - Basic assumptions will be tested as well, refinements may be needed
  - Land Rights
    - Placeholder amount to get program initiated
    - Current amount will be rolled over until expended at which time additional funds may need to be requested to continue program
  - Dynamic landscape; P&E recognizes that there may be scenarios that require reevaluation for inclusion of additional nav. aids in the future
    - Subset of previously closed out projects that never had nav. aids
    - Projects. features determined not to need nav. aids at close out
    - None in either category identified at this time, keep options open

Nav. Aids Program Related Effort

- CWPPRA projects on NOAA Navigational Charts
  - CPRA verified process for adding projects by adding Lake Borgne Shoreline Protection (PO-30)
  - CPRA has completed an inventory to determine previously constructed CWPPRA projects' inclusion on NOAA Navigational Charts
    - Hard structures and rocks prioritized, particularly near navigation channels
  - 13 CWPPRA projects not on charts
    - 13 submitted to NOAA Nautical Data Branch of the Office of Coast Survey for inclusion determination; 2-page write-up in Binder Materials
      - 12 determined as not necessary for inclusion
      - 1 pending survey/review
  - New CWPRPA projects will be submitted post construction by PM's to keep program up to date

Coastal Wetlands Planning, Protection and Restoration Act
Nav Aids Program
Project Priority List 31 (ver.072021)

Project Construction Years:	0	Total Project Years	10
Interest Rate	2.500%	Amortization Factor	0.11426
Fully Funded First Costs	$220,455	Total Fully Funded Costs	$2,767,206

Total Charges	Present Worth	Average Annual
First Costs	$217,275	$24,826
Monitoring (State + Federal)	$0	$0
State O & M Costs	$1,840,178	$210,256
Other Federal Costs	$86,160	$9,844
Average Annual Cost	$244,927	$244,927
Average Annual Habitat Units	0	
Cost Per Habitat Unit	#DIV/0!	
Total Net Acres	0	

Coastal Wetlands Planning, Protection and Restoration Act
Nav Aids Program
Project Priority List 31 (ver.072021)

Project Costs $2,767,206

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost	
Phase I												
2	2021	$0	$0	$0	$0	$0	$0	-	$0		$0	
1	2022		$0	$0	$0	$0	$0	-			$0	
0	2023		$0	$0	$0	$0	$0	-			$0	
-1	2024		$0	$0	$0	$0	$0	-			$0	
-2	2025		$0	$0	$0	$0	$0	-			$0	
-3	2026		$0	$0	$0	$0	$0	-			$0	
-4	2027		$0	$0	$0	$0	$0	-			$0	
-5	2028		$0	$0	$0	$0	$0	-			$0	
-6	2029		$0	$0	$0	$0	$0	-			$0	
-7	2030		$0	$0	$0	$0	$0	-			$0	
-8	2031		$0	$0	$0	$0	$0	-			$0	
-9	2032	$0	$0	$0	$0	$0	$0	-	$0		$0	
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**	$0
Phase II												
1	2022	$14,532	$0	$8,008	$7,141	$3,776	$0	$0	$0	$178,519	211,976.00	
0	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	-	
-1	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	-	
-2	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
-3	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	TOTAL	$14,532	$0	$8,008	$7,141	$3,776	$0	$0	$0	$178,519	$211,976	**$211,976**
Total First Costs		$14,532	$0	$8,008	$7,141	$3,776	$0	$0	$0	$178,519	$211,976	

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin					
0	Discount	2023	$0	$188,677	$0	$7,547	$1,416		$0	$188,677	$0	$7,547
-1	Discount	2024	$0	$238,650	$0	$9,546	$1,416		$0	$238,650	$0	$9,546
-2	Discount	2025	$0	$162,124	$0	$6,485	$1,416		$0	$162,124	$0	$6,485
-3	Discount	2026	$0	$226,080	$0	$9,043	$1,416		$0	$226,080	$0	$9,043
-4	Discount	2027	$0	$192,503	$0	$7,700	$1,416		$0	$192,503	$0	$7,700
-5	Discount	2028	$0	$233,873	$0	$9,355	$1,416		$0	$233,873	$0	$9,355
-6	Discount	2029	$0	$217,562	$0	$8,702	$1,416		$0	$217,562	$0	$8,702
-7	Discount	2030	$0	$271,985	$0	$10,879	$1,416		$0	$271,985	$0	$10,879
-8	Discount	2031	$0	$313,007	$0	$12,520	$2,616		$0	$313,007	$0	$12,520
-9	Discount	2032	$0	$0	$0	$0	$0		$0	$0	$0	$0
-10	Discount	2033	$0	$0	$0	$0	$0		$0	$0	$0	$0
-11	Discount	2034	$0	$0	$0	$0	$0		$0	$0	$0	$0
-12	Discount	2035	$0	$0	$0	$0	$0		$0	$0	$0	$0
-13	Discount	2036	$0	$0	$0	$0	$0		$0	$0	$0	$0
-14	Discount	2037	$0	$0	$0	$0	$0		$0	$0	$0	$0
-15	Discount	2038	$0	$0	$0	$0	$0		$0	$0	$0	$0
-16	Discount	2039	$0	$0	$0	$0	$0		$0	$0	$0	$0
-17	Discount	2040	$0	$0	$0	$0	$0		$0	$0	$0	$0
-18	Discount	2041	$0	$0	$0	$0	$0		$0	$0	$0	$0
-19	Discount	2042	$0	$0	$0	$0	$0		$0	$0	$0	$0
		Total	$0	$2,044,461	$0	$81,777	$13,944		$0	$2,044,461	$0	$81,777

9/7/2021

Coastal Wetlands Planning, Protection and Restoration Act
Nav Aids Program
Project Priority List 31 (ver.072021)

Present Valued Costs | Total Discounted Costs | $2,143,613 | Amortized Costs | $244,927

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
2	1.051	2021	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.025	2022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.000	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	0.976	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	0.952	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	0.929	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-4	0.906	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-5	0.884	2028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-6	0.862	2029	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-7	0.841	2030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-8	0.821	2031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-9	0.801	2032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase II												
1	1.025	2022	$14,895	$0	$8,208	$7,320	$3,870	$0	$0	$0	$182,982	$217,275
0	1.000	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	0.976	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	0.952	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	0.929	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Total	$14,895	$0	$8,208	$7,320	$3,870	$0	$0	$0	$182,982	$217,275
Total First Cost			$14,895	$0	$8,208	$7,320	$3,870	$0	$0	$0	$182,982	$217,275

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin
0	1.000	2023	$0	$188,677	$0	$7,547	$1,416
-1	0.976	2024	$0	$232,829	$0	$9,313	$1,381
-2	0.952	2025	$0	$154,312	$0	$6,173	$1,348
-3	0.929	2026	$0	$209,938	$0	$8,397	$1,315
-4	0.906	2027	$0	$174,398	$0	$6,976	$1,283
-5	0.884	2028	$0	$206,710	$0	$8,268	$1,252
-6	0.862	2029	$0	$187,603	$0	$7,504	$1,221
-7	0.841	2030	$0	$228,812	$0	$9,152	$1,191
-8	0.821	2031	$0	$256,899	$0	$10,276	$2,147
-9	0.801	2032	$0	$0	$0	$0	$0
-10	0.781	2033	$0	$0	$0	$0	$0
-11	0.762	2034	$0	$0	$0	$0	$0
-12	0.744	2035	$0	$0	$0	$0	$0
-13	0.725	2036	$0	$0	$0	$0	$0
-14	0.708	2037	$0	$0	$0	$0	$0
-15	0.690	2038	$0	$0	$0	$0	$0
-16	0.674	2039	$0	$0	$0	$0	$0
-17	0.657	2040	$0	$0	$0	$0	$0
-18	0.641	2041	$0	$0	$0	$0	$0
-19	0.626	2042	$0	$0	$0	$0	$0
		Total	$0	$1,840,178	$0	$73,606	$12,554

Coastal Wetlands Planning, Protection and Restoration Act

Nav Aids Program

Project Priority List 31 (ver.072021)

Fully Funded Costs Total Fully Funded Costs $2,767,206 Amortized Costs $316,178

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
2	1.000	2021	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.040	2022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-4	1.177	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-5	1.206	2028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-6	1.236	2029	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-7	1.268	2030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-8	1.301	2031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-9	1.335	2032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase II												
1	1.040	2022	$15,113	$0	$8,328	$7,427	$3,927	$0	$0	$0	$185,660	$220,455
0	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$15,113	$0	$8,328	$7,427	$3,927	$0	$0	$0	$185,660	$220,455
Total Cost			$15,113	$0	$8,328	$7,427	$3,927	$0	$0	$0	$185,660	$220,455

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin					
0	1.0660	2023	$0	$201,130	$0	$8,045	$1,509		$0	$201,130	$0	$8,045
-1	1.0927	2024	$0	$260,761	$0	$10,430	$1,547		$0	$260,761	$0	$10,430
-2	1.1200	2025	$0	$181,573	$0	$7,263	$1,586		$0	$181,573	$0	$7,263
-3	1.1480	2026	$0	$259,532	$0	$10,381	$1,626		$0	$259,532	$0	$10,381
-4	1.1767	2027	$0	$226,511	$0	$9,060	$1,666		$0	$226,511	$0	$9,060
-5	1.2061	2028	$0	$282,070	$0	$11,283	$1,708		$0	$282,070	$0	$11,283
-6	1.2362	2029	$0	$268,957	$0	$10,758	$1,751		$0	$268,957	$0	$10,758
-7	1.2684	2030	$0	$344,979	$0	$13,799	$1,796		$0	$344,979	$0	$13,799
-8	1.3014	2031	$0	$407,333	$0	$16,293	$3,404		$0	$407,333	$0	$16,293
-9	1.3352	2032	$0	$0	$0	$0	$0		$0	$0	$0	$0
-10	1.3712	2033	$0	$0	$0	$0	$0		$0	$0	$0	$0
-11	1.4083	2034	$0	$0	$0	$0	$0		$0	$0	$0	$0
-12	1.4463	2035	$0	$0	$0	$0	$0		$0	$0	$0	$0
-13	1.4853	2036	$0	$0	$0	$0	$0		$0	$0	$0	$0
-14	1.5254	2037	$0	$0	$0	$0	$0		$0	$0	$0	$0
-15	1.5682	2038	$0	$0	$0	$0	$0		$0	$0	$0	$0
-16	1.6121	2039	$0	$0	$0	$0	$0		$0	$0	$0	$0
-17	1.6572	2040	$0	$0	$0	$0	$0		$0	$0	$0	$0
-18	1.7036	2041	$0	$0	$0	$0	$0		$0	$0	$0	$0
-19	1.7530	2042	$0	$0	$0	$0	$0		$0	$0	$0	$0
		Total	$0	$2,432,846	$0	$97,312	$16,593		$0	$2,432,846	$0	$97,312

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**178,519**
ESTIMATED CONSTRUCTION Incl CONTINGENCY	**178,519**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs

Engineering and Design		SubTotal:		$0
Engineering			$0	
Geotechnical Investigation			$0	
Hydrologic Modeling			$0	
Data Collection (incl ….)			$0	
HTRW			$0	
Cultural Resources			$0	
0			$0	
0			$0	
0			$0	
Supervision and Administration (includes NEPA Compliance)				$0
Corps Administration (for 1 to 3 yr Phase 1 duration; increase if longer)				$0

State Costs

Supervision and Administration		SubTotal:		$0
Project Management			$0	
Monitoring Plan Development			$0	
O&M Plan Development			$0	
Easements and Land Rights		SubTotal:		$0
Oyster Activities - Phase 1			$0	
Land Rights			$0	
Monitoring				
Monitoring Plan Development				$0

* Monitoring is now done through CRMS except on projects that an agency requests project specific monitoring and projects such as Barrier Island projects and Demo projects.

Total Phase I Cost Estimate	**$0**

PHASE II

Estimated Construction Cost + Contingency				$178,519		
Easements and Land Rights				$0		
Oyster Activities - Phase 2 (# of Impacted Acres)			$0			
Land Rights			$0			
Engineering - update Projects:				$14,532		
Supervision and Inspection	0	$2,188.00 per day (10 hrs)		$0		
T&E Entrapment Inspection (if req'd - min 5(	0	$2,188.00 per day (10 hrs)		$0	0	$0

Federal Costs

Supervision and Administration	$8,008
Corps Administration -	$3,776

State Costs

Supervision and Administration	$7,141
Total Phase II Cost Estimate	**$211,976**

TOTAL ESTIMATED PROJECT FIRST COST	**$211,976**

9/7/2021

O&M Data

			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	Year 20
State Annual Inspections			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Annual Cost for Operations			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Preventive Maintenance			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (1)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
State O&M / Construction Items																						
Navigation Aid Program (Yr 2 to 10) incl 10% contg			$168,190	$213,037	$144,386	$201,751	$171,622	$208,747	$194,106	$242,979	$255,849	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Closeout Report YR10			$0	$0	$0	$0	$0	$0	$0	$0	$24,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal	**$168,190**	**$213,037**	**$144,386**	**$201,751**	**$171,622**	**$208,747**	**$194,106**	**$242,979**	**$279,849**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
		Subtotal (2) w/ 0% contingency	**$168,190**	**$213,037**	**$144,386**	**$201,751**	**$171,622**	**$208,747**	**$194,106**	**$242,979**	**$279,849**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Eng Survey	0 days @	3914 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days Veg @	3755 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days Cleanout@	3755 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days FlapGate@	3755 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Inspection (	0 days @	2188 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days Veg @	1952 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days Cleanout@	1952 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	0 days Flapgate @	1952 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (3)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
State Costs - Misc.																						
Engineering and Design Cost (on Subtotal 2,3)			$13,759	$17,092	$11,963	$16,259	$14,016	$16,776	$15,692	$19,287	$21,964	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Administrative Cost (on Subtotal 1,2,3)			$6,728	$8,521	$5,775	$8,070	$6,865	$8,350	$7,764	$9,719	$11,194	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (4)	**$20,487**	**$25,613**	**$17,738**	**$24,329**	**$20,881**	**$25,126**	**$23,456**	**$29,006**	**$33,158**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Monitoring Items (State costs placed in separate "monitoring" acct)																						
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (5)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
		Total State Cost (1-5)	**$188,677**	**$238,650**	**$162,124**	**$226,080**	**$192,503**	**$233,873**	**$217,562**	**$271,985**	**$313,007**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Federal Annual Inspections			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Annual Cost for Operations			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal Preventive Maintenance			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (6)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Federal O&M / Construction Items																						
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
		Subtotal (7) w/ 25% contingency	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Eng Survey																						
	days @	3914 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	days @	3914 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Inspection (10 hrs/day)																						
	days @	2188 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	days @	2188 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	days @	2188 per day	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Subtotal (8)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Federal Costs - Misc																						
Engineering and Design Cost (on Subtotal 7,8)			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Administrative Cost (on Subtotal 6,7,8,10,Total State)			$7,547	$9,546	$6,485	$9,043	$7,700	$9,355	$8,702	$10,879	$12,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

	Subtotal (9)	**$7,547**	**$9,546**	**$6,485**	**$9,043**	**$7,700**	**$9,355**	**$8,702**	**$10,879**	**$12,520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Monitoring Items (Federal costs placed in separate "monitoring" acct)																					
0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Subtotal (10)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Total Federal Cost (6-10)	**$7,547**	**$9,546**	**$6,485**	**$9,043**	**$7,700**	**$9,355**	**$8,702**	**$10,879**	**$12,520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Grand Total	**$196,224**	**$248,196**	**$168,609**	**$235,123**	**$200,203**	**$243,228**	**$226,264**	**$282,864**	**$325,527**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Annual Project Costs:

Corps Administration

$1,416 annually, PLUS add $1,200 in year 10

$3,776 First year (from typical project Phase 1 set-up cost)

Construction Schedule:

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	Total
Plan & Design Start	January-21	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Plan & Design End	August-21																						
Const. Start	September-22																						
Const. End	September-22	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Nav Aids Program

		Price Level		2021		Nominal Budget	$ 2,126,238															
Construction Contingency	0%					Fully Funded Budget	$ 2,530,158															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Year	Rates	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
State Costs																						
State Annual Inspections		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Annual Cost for Operations		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Preventive Maintenance		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
																						-
State Construction Items																						-
Navigation Aid Program (Yr 2 to 10) incl 10% contg		168,190	213,037	144,386	201,751	171,622	208,747	194,106	242,979	255,849	-	-	-	-	-	-	-	-	-	-	-	1,800,667
0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Closeout Report YR10		-	-	-	-	-	-	-	-	24,000		-	-	-	-	-	-	-	-	-	-	24,000
0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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State Construction Items w/ contingency																						-
Navigation Aid Program (Yr 2 to 10) incl 10% contg		168,190	213,037	144,386	201,751	171,622	208,747	194,106	242,979	255,849	-	-	-	-	-	-	-	-	-	-	-	1,800,667
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Project Closeout Report YR10		-	-	-	-	-	-	-	-	24,000	-	-	-	-	-	-	-	-	-	-	-	24,000
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Nav Aids Program

		Price Level		2021		Nominal Budget	$ 2,126,238															
Construction Contingency	0%					Fully Funded Budget	$ 2,530,158															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Year	Rates	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
State Costs - Misc.																						-
Engineering and Design Cost (on Subtotal 2,3)		13,759	17,092	11,963	16,259	14,016	16,776	15,692	19,287	21,964		-	-	-	-	-	-	-	-	-	-	**146,808**
Administrative Cost (on Subtotal 1,2,3)		6,728	8,521	5,775	8,070	6,865	8,350	7,764	9,719	11,194		-	-	-	-	-	-	-	-	-	-	**72,986**
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Federal Annual Cost for Operations		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Nav Aids Program

		Price Level		2021		Nominal Budget	$ 2,126,238															
Construction Contingency	0%					Fully Funded Budget	$ 2,530,158															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Year	Rates	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
Federal Costs - Misc.																						-
Engineering and Design Cost (on Subtotal 7,8)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administrative Cost (on Subtotal 6,7,8,10,Total State)		7,547	9,546	6,485	9,043	7,700	9,355	8,702	10,879	12,520		-	-	-	-	-	-	-	-	-	-	**81,777**
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State Nominal Total	**2,044,461**	188,677	238,650	162,124	226,080	192,503	233,873	217,562	271,985	313,007	-	-	-	-	-	-	-	-	-	-	-	**2,044,461**
Federal Nominal Total	**81,777**	7,547	9,546	6,485	9,043	7,700	9,355	8,702	10,879	12,520	-	-	-	-	-	-	-	-	-	-	-	**81,777**
State Monitoring Only	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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State Costs																						-
State Annual Inspections		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Annual Cost for Operations		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Preventive Maintenance		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Nav Aids Program

		Price Level		2021		Nominal Budget	$ 2,126,238															
Construction Contingency	0%					Fully Funded Budget	$ 2,530,158															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Year	Rates	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
State Construction Items w/ contingency																						
Navigation Aid Program (Yr 2 to 10) incl 10% contg		179,291	232,775	161,707	231,603	201,942	251,766	239,960	308,189	332,950	-	-	-	-	-	-	-	-	-	-	-	**2,140,182**
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Project Closeout Report YR10		-	-	-	-	-	-	-	-	31,232	-	-	-	-	-	-	-	-	-	-	-	**31,232**
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State Costs - Misc.																						
Engineering and Design Cost (on Subtotal 2,3)		14,667	18,676	13,398	18,665	16,492	20,233	19,399	24,463	28,583	-	-	-	-	-	-	-	-	-	-	-	**174,576**
Administrative Cost (on Subtotal 1,2,3)		7,172	9,310	6,468	9,264	8,078	10,071	9,598	12,327	14,567	-	-	-	-	-	-	-	-	-	-	-	**86,856**
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State Monitoring Items																						
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Federal Costs																						
Federal Annual Inspections		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal Annual Cost for Operations		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal Preventive Maintenance		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal Construction Items w/ contingency																						
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Nav Aids Program																						
		Price Level		2021		Nominal Budget	$ 2,126,238															
Construction Contingency	0%					Fully Funded Budget	$ 2,530,158															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Year	Rates	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
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Federal Costs - Misc.																						
Engineering and Design Cost (on Subtotal 7,8)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administrative Cost (on Subtotal 6,7,8,10,Total State)		8,045	10,430	7,263	10,381	9,060	11,283	10,758	13,799	16,293	-	-	-	-	-	-	-	-	-	-	-	97,312
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State Fully Funded Total	2,432,846	201,130	260,761	181,573	259,532	226,511	282,070	268,957	344,979	407,333	-	-	-	-	-	-	-	-	-	-	-	2,432,846
Federal Fully Funded Total	97,312	8,045	10,430	7,263	10,381	9,060	11,283	10,758	13,799	16,293	-	-	-	-	-	-	-	-	-	-	-	97,312
State Fully Funded Total Monitoring Only	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal Fully Funded Total Monitoring Only	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Constr w/Contingency		168,190	213,037	144,386	201,751	171,622	208,747	194,106	242,979	279,849	-	-	-	-	-	-	-	-	-	-	-	1,824,667
State Monitoring		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Surveys, Insp, and Misc.		20,487	25,613	17,738	24,329	20,881	25,126	23,456	29,006	33,158	-	-	-	-	-	-	-	-	-	-	-	219,794
Fed Surveys, Insp, and Misc.		7,547	9,546	6,485	9,043	7,700	9,355	8,702	10,879	12,520	-	-	-	-	-	-	-	-	-	-	-	81,777
Federal Monitoring		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Fed and State		196,224	248,196	168,609	235,123	200,203	243,228	226,264	282,864	325,527	-	-	-	-	-	-	-	-	-	-	-	2,126,238

Nav Aids Program
Operation & Maintenance and Monitoring
Project Priority List 31 (ver.072021)

16-Aug-21

O&M Cost Considerations:

NOTE: Items shown below are an example, actual project features and years should be used.

State Costs

			Unit Cost	Year 1 FY23	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	Year 20		
State Annual Inspections	(Specify schedule - years to include)		$17,000																					$0	
State Annual Cost for Operations			$0																					$0	
State Preventive Maintenance			$0																					$0	
	Subtotal (1)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0	
State O&M / Construction Items		**Unit**	**Quantity**	**Unit Cost**																					
Navigation Aid Program (Yr 2 to 10) incl 10% contg		LS			$168,190	$213,037	$144,386	$201,751	$171,622	$208,747	$194,106	$242,979	$255,849											$1,800,667	
																								$0	
																								$0	
Project Closeout Report YR10		LS										$24,000												$24,000	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0	
	Subtotal				**168,190**	**213,037**	**144,386**	**201,751**	**171,622**	**208,747**	**194,106**	**242,979**	**279,849**	-	-	-	-	-	-	-	-	-	-	-	$1,824,667	
	Subtotal (2) w/ 0% contingency				**168,190**	**213,037**	**144,386**	**201,751**	**171,622**	**208,747**	**194,106**	**242,979**	**279,849**	-	-	-	-	-	-	-	-	-	-	-	$1,824,667	$1,824,667
Eng Survey																									
	days @	$3,914	per day																					$0	
	days Veg @	$3,755	per day																					$0	
	days Cleanout@	$3,755	per day																					$0	
	days FlapGate@	$3,755	per day																					$0	
Inspection (10 hrs/day)																								$0	
	days @	$2,188	per day																					$0	
	days Veg @	$1,952	per day																					$0	
	days Cleanout@	$1,952	per day																					$0	
	days Flapgate @	$1,952	per day																					$0	
	Subtotal (3)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0	
State Costs - Misc.																									
Engineering and Design Cost (on Subtotal 2,3)					$13,759	$17,092	$11,963	$16,259	$14,016	$16,776	$15,692	$19,287	$21,964		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$146,808	
Administrative Cost (on Subtotal 1,2,3)					$6,728	$8,521	$5,775	$8,070	$6,865	$8,350	$7,764	$9,719	$11,194		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$72,986	
																								$0	
																								$0	
	Subtotal (4)				**20,487**	**25,613**	**17,738**	**24,329**	**20,881**	**25,126**	**23,456**	**29,006**	**33,158**	-	-	-	-	-	-	-	-	-	-	-	$219,794	$219,794
	State O&M / Construction / Inspection / Misc Subtotal (1-4)				**188,677**	**238,650**	**162,124**	**226,080**	**192,503**	**233,873**	**217,562**	**271,985**	**313,007**	-	-	-	-	-	-	-	-	-	-	-	$2,044,461	
Monitoring Items (State costs placed in separate "monitoring" acct)																									
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
																								$0	
	Subtotal (5)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0	
	Total State Cost (1-5)				**188,677**	**238,650**	**162,124**	**226,080**	**192,503**	**233,873**	**217,562**	**271,985**	**313,007**	-	-	-	-	-	-	-	-	-	-	-	$2,044,461	

Federal Costs

			Unit Cost																				
Federal Annual Inspections			$4,900																				$0
Federal Annual Cost for Operations																							$0
Federal Preventive Maintenance																							$0
		Subtotal (6)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
Federal O&M / Construction Items	**Unit**	**Quantity**	**Unit Cost**																				
																							$0
																							$0
																							$0
																							$0
																							$0
	Ea	1	$0																				$0
	Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
	Subtotal (7) w/ 25% contingency			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
Eng Survey																							
days @	$3,914 per day																						$0
days @	$3,914 per day																						$0
Inspection (10 hrs/day)																							$0
days @	$2,188 per day																						$0
days @	$2,188 per day																						$0
days @	$2,188 per day																						$0
	Subtotal (8)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
Federal Costs - Misc																							
Engineering and Design Cost (on Subtotal 7,8)				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Administrative Cost (on Subtotal 6,7,8,10,Total State)				$7,547	$9,546	$6,485	$9,043	$7,700	$9,355	$8,702	$10,879	$12,520		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$81,777
																								$0
																								$0
	Subtotal (9)			**7,547**	**9,546**	**6,485**	**9,043**	**7,700**	**9,355**	**8,702**	**10,879**	**12,520**	-	-	-	-	-	-	-	-	-	-	-	$81,777
	Federal O&M / Construction / Inspection / Misc Subtotal (6-9)			**7,547**	**9,546**	**6,485**	**9,043**	**7,700**	**9,355**	**8,702**	**10,879**	**12,520**	-	-	-	-	-	-	-	-	-	-	-	$81,777
Monitoring Items (Federal costs placed in separate "monitoring" acct)																							
																								$0
																								$0
																								$0
																								$0
	Subtotal (10)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
	Total Federal Cost (6-10)			**7,547**	**9,546**	**6,485**	**9,043**	**7,700**	**9,355**	**8,702**	**10,879**	**12,520**	-	-	-	-	-	-	-	-	-	-	-	$81,777
	Total State and Federal Cost			**196,224**	**248,196**	**168,609**	**235,123**	**200,203**	**243,228**	**226,264**	**282,864**	**325,527**	-	-	-	-	-	-	-	-	-	-	-	$2,126,238

Annual Project Costs:

Corps Administration **$1,416** **annually, PLUS add** **$1,200** **in year 10**

$3,776 First year (from typical project Phase 1 set-up cost)

O&M items/events and qtys suggestions:

- Gabion mattress/baskets 10% at yr 10
- Containment Dike gapping - yr 3
- Vegetative Plantings - Terrace / Ridge - yr 1

Construction Schedule:

Planning & Design Start **January-21**
Planning & Design End **August-21**
Const. Start **September-22**
Const. End **September-22**

(Minimum of two years to complete this phase, unless modeling is required)

(Constr Funding approval in Jan., requires 6 months for contracting and advertising plus 2 months for cost share agreement)

when determining construction period, consider endangered species or other issues that affect available work/start times.

date represents 1st of month; so for anything past 1st, enter the next month.

	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total State and Fed Cost	**196,224**	**248,196**	**168,609**	**235,123**	**200,203**	**243,228**	**226,264**	**282,864**	**325,527**	-	-	-	-	-	-	-	-	-	-	-	-	**2,126,238**
	196,224	**248,196**	**168,609**	**235,123**	**200,203**	**243,228**	**226,264**	**282,864**	**325,527**	-	-	-	-	-	-	-	-	-	-	-	-	**2,126,238**
	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**	**Year 20**		
Check Sums State O&M and Insp.	188,677	238,650	162,124	226,080	192,503	233,873	217,562	271,985	313,007	-	-	-	-	-	-	-	-	-	-	-	-	**2,044,461**
Federal O&M and Insp.	7,547	9,546	6,485	9,043	7,700	9,355	8,702	10,879	12,520	-	-	-	-	-	-	-	-	-	-	-	-	**81,777**
State Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Fed Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	196,224	**248,196**	**168,609**	**235,123**	**200,203**	**243,228**	**226,264**	**282,864**	**325,527**	-	-	-	-	-	-	-	-	-	-	-	-	**2,126,238**
	188,677	238,650	162,124	226,080	192,503	233,873	217,562	271,985	313,007	-	-	-	-	-	-	-	-	-	-	-	-	**2,044,461**
	7,547	9,546	6,485	9,043	7,700	9,355	8,702	10,879	12,520	-	-	-	-	-	-	-	-	-	-	-	-	**81,777**

Year		Request	Projects (#)
2022	$	178,519.00	10
2023	$	168,190.00	13
2024	$	213,037.00	14
2025	$	144,386.00	15
2026	$	201,751.00	17
2027	$	171,622.00	19
2028	$	208,747.00	19
2029	$	194,106.00	22
2030	$	242,979.00	24
2031	$	255,849.00	26
Total	$	1,979,186.00	-

entered at construction items column
in Fully Funded estimate;

entered on Base file Project O&M tab to calculate Admin and E&D

Project:	Nav Aids Program	Date:	16-Aug-21	Revised:	16-Aug-21
Computed by:	Kent Bolfrass / Quin Kinler	*Project Priority List 31 (ver.072021)*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1					$0
2	Navigation Aids Program - year 1 (incl 10% contg)	1	LS	$178,519.00	$178,519
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
11					$0

Note:
If assuming or using information from a previous project or information not calculated within template, please include a note in the estimate for future reference - **See Qty and Unit Cost Explanation tab.** Do NOT put as a note on the cell; can't see when

Detailed Phase 1 form NOT required at Nominee Stage

ESTIMATED CONSTRUCTION COST **$178,519**
ESTIMATED CONSTRUCTION Incl CONTINGENCY **$178,519**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs

Engineering and Design: *Notes:*
Engineering
Geotechnical Investigation
Hydrologic Modeling
Data Collection (incl ….)
HTRW
Cultural Resources

SubTotal: $0

	SELECT	USE
Supervision and Administration (includes NEPA Compliance)		
Corps Administration (for 1 to 3 yr Phase 1 duration; increase if longer)		$0

State Costs

Supervision and Administration ***SubTotal:*** $0
Project Management
Monitoring Plan Development
O&M Plan Development

Easements and Land Rights ***SubTotal:*** $0
Oyster Activities - Phase 1 $0
Land Rights $0

Monitoring
Monitoring Plan Development $0
* *Monitoring is now done through CRMS except on projects that an agency requests project specific monitoring and projects such as Barrier Island projects and Demo projects.* ***SubTotal:*** $0

Total Phase I Cost Estimate: **$0**

PHASE II

Estimated Construction Cost + Contingency				$178,519
Easements and Land Rights				$0
Oyster Activities - Phase 2 (# of Impacted Acres)	0 ACR		$0	
Land Rights			$0	
Engineering - update Projects:	$14,532			$14,532
Supervision and Inspection	0 days @	$2,188.00 per day (10 hrs)		$0
T&E Entrapment Inspection (if req'd - min 50% of dike time)	0 days @	$2,188.00 per day (10 hrs)		$0

Federal Costs
Supervision and Administration $8,008
Corps Administration - $3,776

State Costs
Supervision and Administration $7,141

Total Phase II Cost Estimate: **$211,976**

TOTAL ESTIMATED PROJECT FIRST COST **$211,976**

United States Army Corps of Engineers
Operation and Maintenance Data for PPL-12

Year	Inflation Rate	Index Factor
2000	2.2%	0.5424
2001	1.3%	0.5543
2002	2.8%	0.5615
2003	2.4%	0.5772
2004	7.8%	0.5911
2005	6.5%	0.6372
2006	5.5%	0.6786
2007	4.9%	0.7159
2008	6.4%	0.7510
2009	-1.9%	0.7991
2010	3.0%	0.7839
2011	4.5%	0.8074
2012	2.3%	0.8437
2013	1.8%	0.8632
2014	2.1%	0.8787
2015	0.1%	0.8971
2016	0.7%	0.8980
2017	3.0%	0.9043
2018	3.2%	0.9315
2019	3.0%	0.9613
2020	1.0%	0.9901
2021	4.0%	1.0000
2022	2.5%	1.0400
2023	2.5%	1.0660
2024	2.5%	1.0927
2025	2.5%	1.1200
2026	2.5%	1.1480
2027	2.5%	1.1767
2028	2.5%	1.2061
2029	2.6%	1.2362
2030	2.6%	1.2684
2031	2.6%	1.3014
2032	2.7%	1.3352
2033	2.7%	1.3712
2034	2.7%	1.4083
2035	2.7%	1.4463
2036	2.7%	1.4853
2037	2.8%	1.5254
2038	2.8%	1.5682
2039	2.8%	1.6121
2040	2.8%	1.6572
2041	2.9%	1.7036
2042	2.9%	1.7530
2043	2.9%	1.8038
2044	2.9%	1.8562
2045	2.9%	1.9100
2046	2.9%	1.9654
2047	2.9%	2.0224
2048	2.9%	2.0810
2049	2.9%	2.1414
2050	2.9%	2.2035
2051	2.9%	2.2674
2052	2.9%	2.3331
2053	2.9%	2.4008
2054	2.9%	2.4704
2055	2.9%	2.5420
2056	2.9%	2.6158
2057	2.9%	2.6916
2058	2.9%	2.7697
2059	2.9%	2.8500
2060	2.9%	2.9326
2061	2.9%	3.0177
2062	2.9%	3.1052
2063	2.9%	3.1953
2064	2.9%	3.2879
2065	2.9%	3.3833

Price Level: 2021

Interest Rate: 2.500%

Source: CWCCIS
Updated: 3/31/2021

Base Year = 0	
2007	16
2008	15
2009	14
2010	13
2011	12
2012	11
2013	10
2014	9
2015	8
2016	7
2017	6
2018	5
2019	4
2020	3
2021	2
2022	1
2023	0
2024	-1
2025	-2
2026	-3
2027	-4
2028	-5
2029	-6
2030	-7
2031	-8
2032	-9
2033	-10
2034	-11
2035	-12
2036	-13
2037	-14
2038	-15
2039	-16
2040	-17
2041	-18
2042	-19
2043	-20
2044	-21
2045	-22
2046	-23
2047	-24
2048	-25
2049	-26
2050	-27
2051	-28
2052	-29
2053	-30
2054	-31
2055	-32
2056	-33
2057	-34
2058	-35
2059	-36
2060	-37
2061	-38
2062	-39
2063	-40
2064	-41
2065	-42
2066	-43
2067	-44
2068	-45
2069	-46
2070	-47
2071	-48
2072	-49
2073	-50

Base year is year benefits start

Make base year by adding a zero to the year following Construction End date. Ex: if Construction End date is Sept 09, then base year is 2010.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR A 20-YEAR PROJECT LIFE EXTENSION FOR REPLACE SABINE REFUGE WATER CONTROL STRUCTURES AT HEADQUARTERS CANAL, WEST COVE CANAL AND HOG ISLAND GULLY (CS-23) PROJECT

For Decision:

USFWS and CPRA propose a 20-year project life extension for CS-23. A formal assessment of costs and benefits has been completed and the results will be presented. The Technical Committee will consider a vote to make a recommendation to the Task Force to approve a project life extension.

Request for 20-Year Project Life Extension

CS-23 Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal and Hog Island Gully

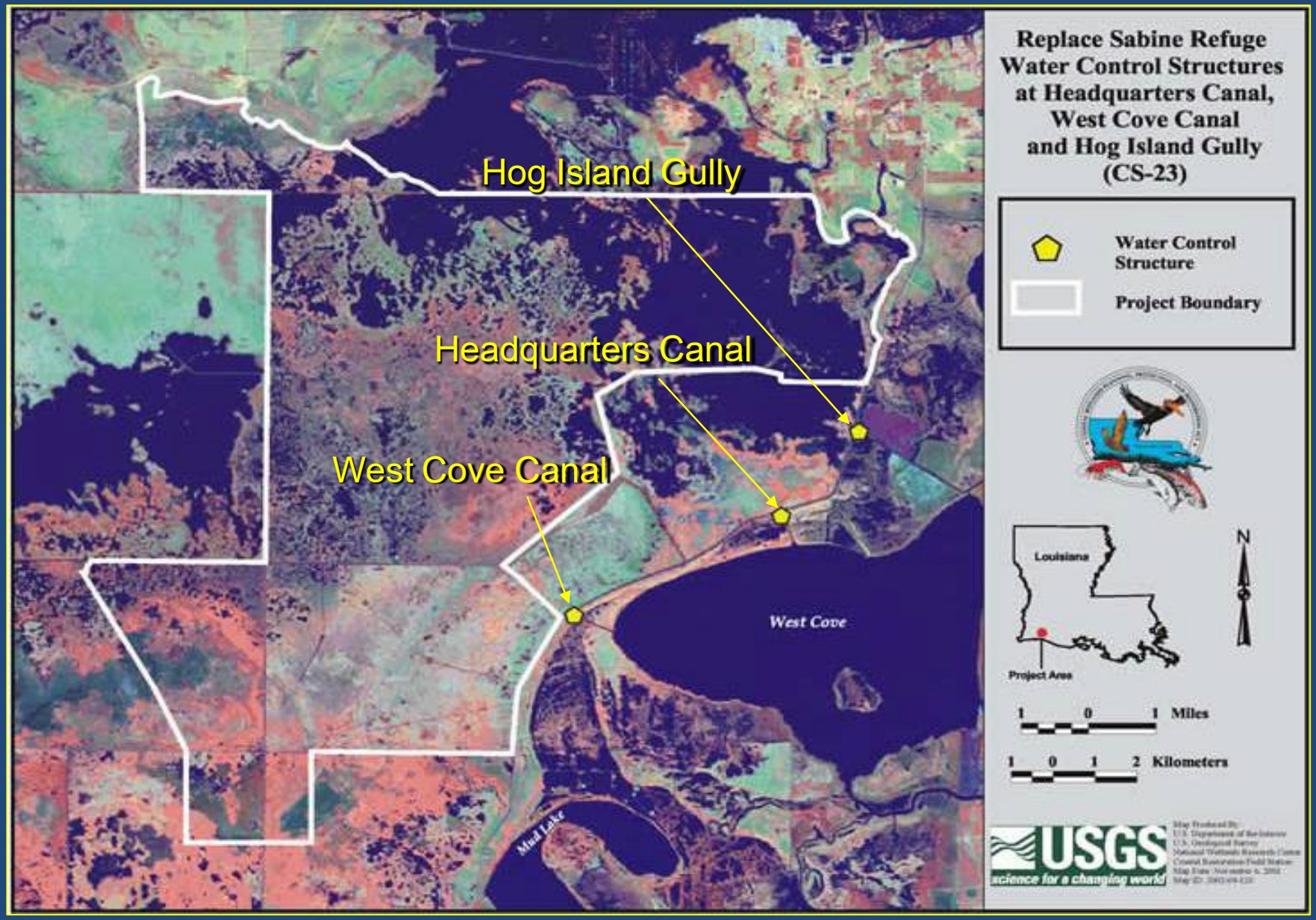
Technical Committee

September 2, 2021

U.S. FISH & WILDLIFE SERVICE

CPRA
Coastal Protection and Restoration Authority of Louisiana

CS-23 Project Features



Project Background

- **Approved on Priority Project List 3 - 1993**
- **Purpose – Provide greater management capability to control salinities and water levels; increase the cross-sectional area to allow better drainage**
- **Construction completed in 2003**
- **Project life expires September 2023**

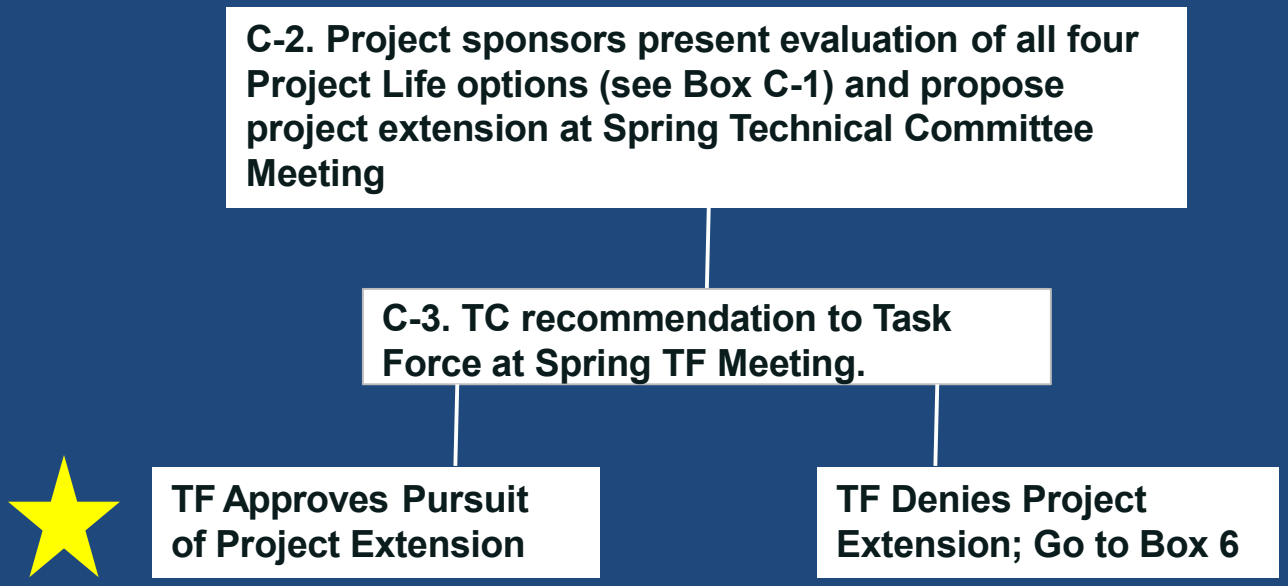
Project Performance and Direction

- **Difficulty Managing Water Levels –** Mean flood depths have only been below the marsh in 2011 (drought) and 2014; Average marsh elevation flooded approximately 78% of the time.

- **O&M Budget Increase Approved in 2020**

  - Operations contract similar to CS-04a (Cameron-Creole Watershed)
  - Canal cleanout to improve water delivery to control structures
  - More intensive management guided by CPRA & Sabine NWR staff
  - The recommended approach is to control water levels while continuing to manage for intermediate to brackish marsh salinities

CWPPRA 20-Year Life Decision Matrix



Spring 2021 - Task Force approved request to proceed with a formal assessment of Project Extension.

CWPPRA 20-Year Life Decision Matrix

C-4. Project Team:

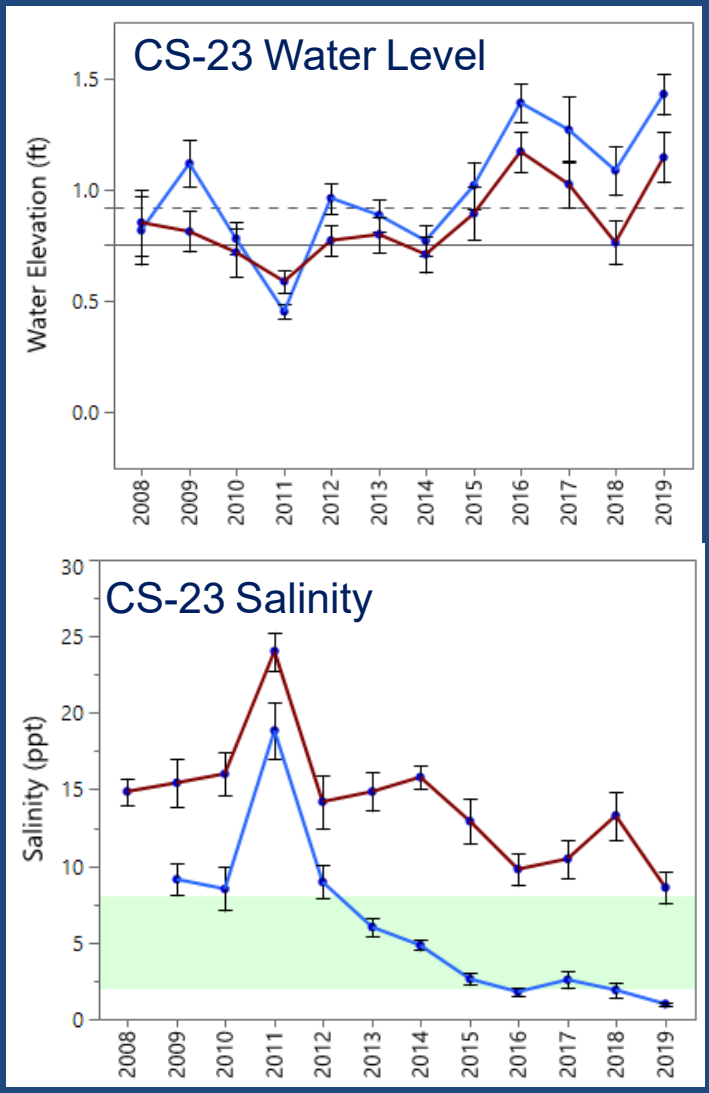
a) Prepares formal assessment of cost/benefit of 20-year project;

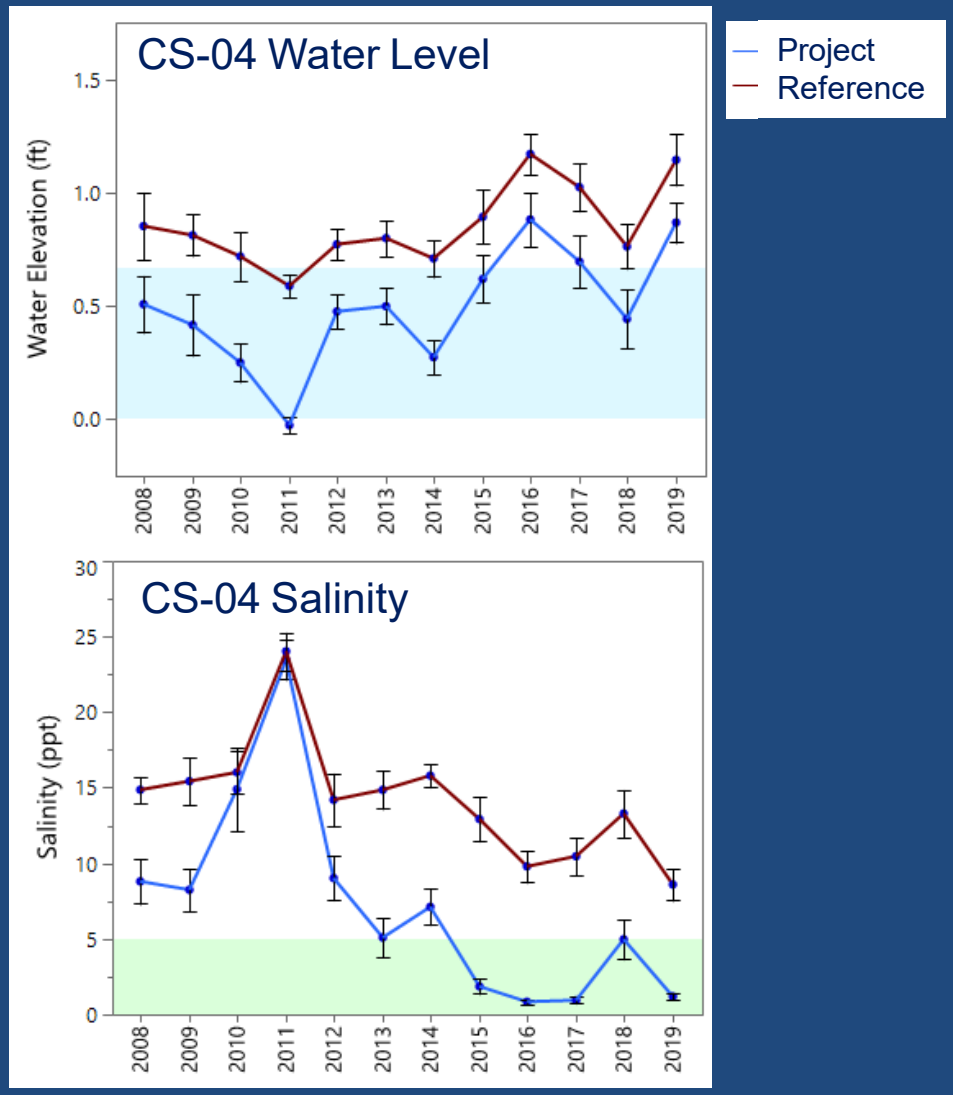
b) Better identifies risk and impacts of extending project, abandoning features in place, and removing features;

c) Prepares formal assessment of cost/benefits of project extension.

CWPPRA Workgroups conduct review of above.

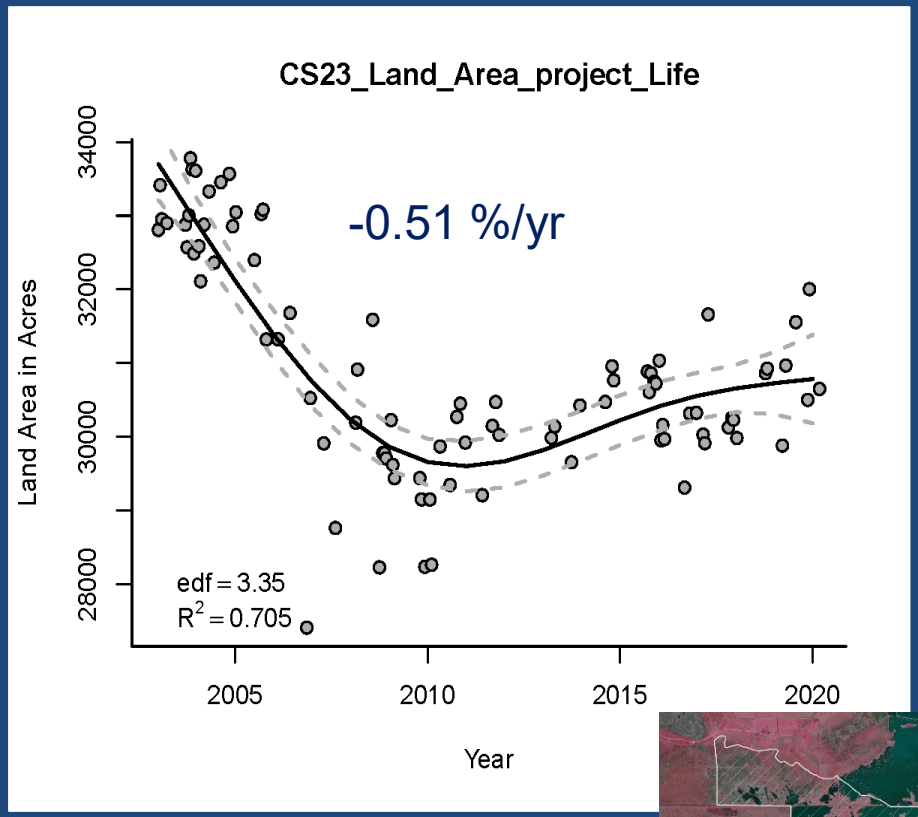
CS-23 and CS-04 Water Level and Salinity

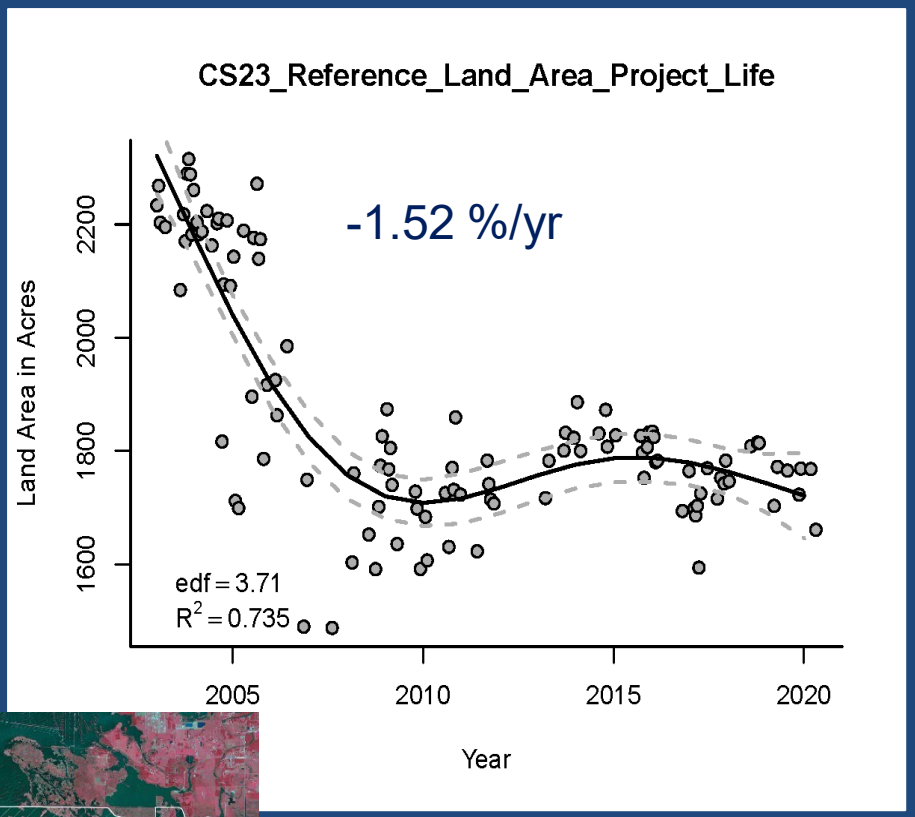




Reference = Calcasieu Lake, CRMS0685; CS-23 Project = CRMS0651; CS-04 Project = CRMS2418

CS-23 Performance





a) Cost/benefit of 20 year project;

	Estimated Loss (acres) Through Year 20	Estimated Net Acres at Year 20	Fully-Funded Cost	Cost/Acre
With Project	-367	953	$7,959,729	$8,352
Without Project	-1,320			

- Based on original estimate of benefits and current fully-funded cost
- Had the original estimate of benefits utilized the observed project area and reference area loss rates, over 5,000 net acres would have been projected

b) Risk and impacts of extending project, abandoning features in place, and removing features;

	Project Extension (Year 21-Year 40)	Abandon Features in Place	Project Removal
Risk	• Very low risk/liability • Structures maintained by CWPPRA program • Structures are not navigable	• Very low risk/liability • Structures are not navigable • Structures would be maintained at a reduced level by FWS	Not a viable option
Impacts	• CWPPRA Program commits to $9.1M over the next 20 years for OM&M	• Significant wetland impacts could result in the 42,000-acre project area • Reduced level of operations, maintenance, and monitoring by FWS • Flooding duration likely to increase along with marsh loss rates	

c) Formal assessment of **costs**/benefits of project extension

OM&M Activity	Estimate
Annual Inspections	$723,657
Annual Operations Contract	$1,467,382
WCS and Monitoring Station Maintenance	$363,939
Canal Cleanout Maintenance Event (includes design surveys, E&D, dredging, inspection, etc)	$2,485,042
Weekly Data Review for Structure Operations	$301,358
Land-Water Analysis	$401,190
SAV Monitoring	$17,905
OM&M Reports	$82,355
State Admin and IDC Charges	$2,714,727
Closeout Report	$54,115
Federal – Annual Inspections and Admin	$488,275
Corps Admin	$42,123

- All estimated costs have been reviewed by the Engineering Work Group
- Costs presented are fully-funded numbers provided by the Economics Work Group

c) Formal assessment of costs/**benefits** of project extension

	Estimated Loss (acres) Through Year 20	Estimated Net Acres at Year 20	Fully-Funded Cost	Cost/Acre
With Project	-2,266	3,628	$9,142,079	$2,520
Without Project	-5,894			

- Under future without-project, assumes loss rate of -0.51 %/yr would linearly increase to the reference area loss rate of -1.52 %/yr
- Under future with-project, assumes a 60% reduction in percent time flooded; based on CS-04a percent inundation elevations
- Reduction in flooding results in increased marsh productivity; a 26% reduction in marsh loss is estimated

CWPPRA Cost Effectiveness 2009-2021

Priority Project List	Average Cost/Net Acre
18	$46,822
19	$88,656
20	$50,682
21	$60,622
22	$89,578
23	$132,661
24	$85,088
25	$101,566
26	$141,160
27	$89,341
28	$107,108
29	$136,946
30	$125,922
Overall Average PPL18-30	**$96,627**
Phase II Approvals	**Average Cost/Net Acre**
2009	$120,303
2010	$140,462
2011	$206,094
2012	$70,429
2013	$67,618
2014	$54,646
2015	$62,095
2016	$104,751
2017	$98,012
2018	$160,370
2019	$94,872
2020	$79,685
2021	$63,615
Overall Average 2009-2021	**$101,766**

Technical Committee Decision

- FWS and CPRA request a Technical Committee vote to recommend to the Task Force a 20-year project life extension for CS-23 at a fully-funded cost of $9,142,079

Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully (CS-23)

Coastal Wetlands Planning, Protection and Restoration Act

Final Formal Assessment of Costs and Benefits for Consideration of Project Life Extension

Prepared by

U.S. Fish and Wildlife Service
and
Louisiana Coastal Protection and Restoration Authority

August 24, 2021

Project Name
Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully (CS-23)

Project Sponsors
U.S. Fish and Wildlife Service and Louisiana Coastal Protection and Restoration Authority

Project Location
Calcasieu-Sabine Basin, Sabine National Wildlife Refuge (NWR), West of Louisiana Highway 27

Project Description / Project Features
The project replaced three water-control structures on Sabine NWR to allow better management of water levels and salinities across the 42,000-ac project area (Figure 1). Construction was completed in 2003. In 2020, an O&M budget increase was approved which will provide funding for an operations contractor during the final years of project life.

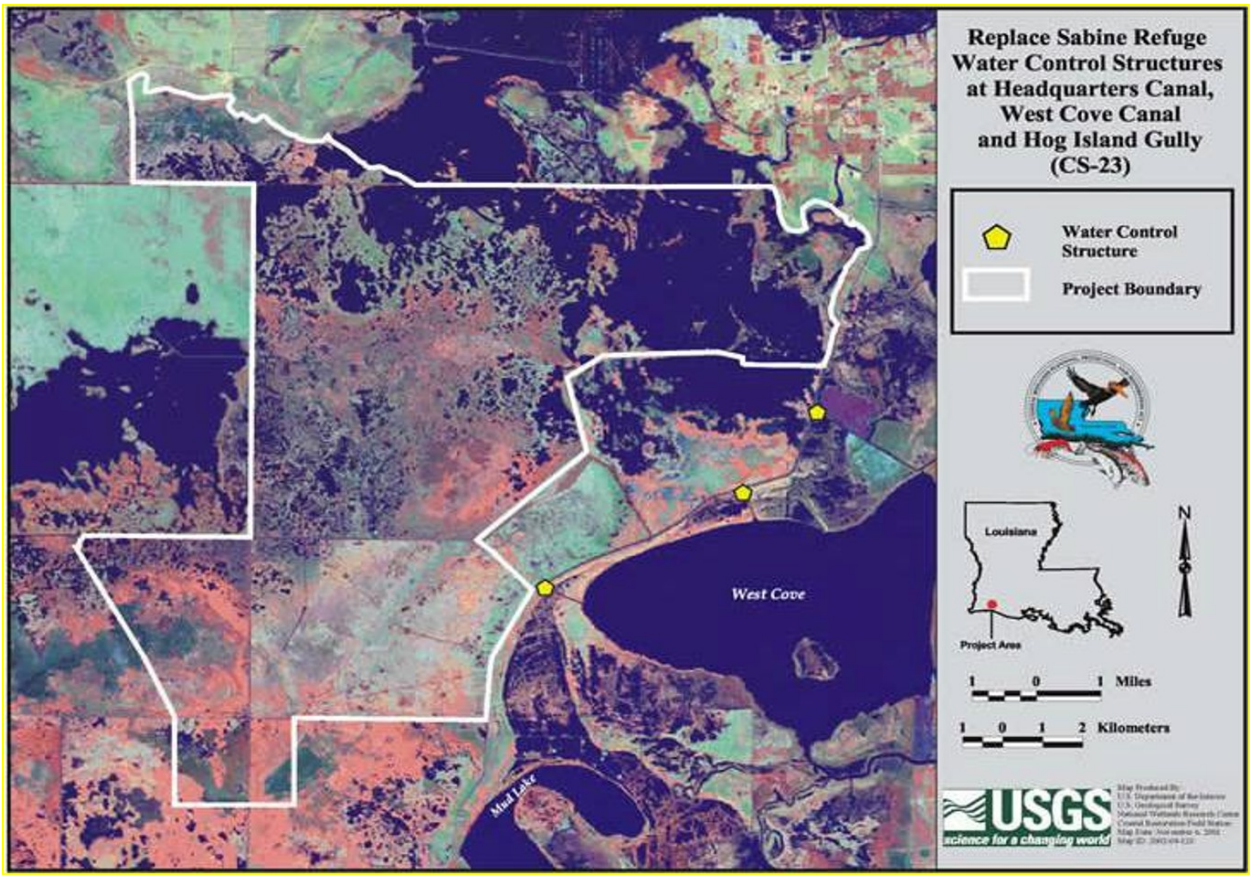


Figure 1. CS-23 Project features.

Current Status
The project is in Year 18 and expires in September 2023. An operations contract is expected to be advertised for bids in Fall 2021. A canal cleanout maintenance event is planned for Spring

2022. In May 2021, the Task Force approved formal evaluation of a 20-year project life extension.

Cost of Initial 20 Year Period
The current fully funded cost is $7,959,729.

Benefits of Initial 20-Year Project
The original Priority Project List 3 Wetland Value Assessment (WVA), projected a loss of 1,320 acres of marsh under the Future Without-Project (FWOP) scenario. A loss of 367 acres was projected under the Future With-Project scenario, resulting in an estimated benefit of 953 net acres. Since project completion, the project area has experienced a land change rate of -0.51 %/yr while the land change rate for the reference area was -1.52 %/yr.

Cost Effectiveness of Initial 20-Year Project
The cost effectiveness of the initial 20-year project is $8,352 per net acre ($7,959,729 / 953 net acres).

Cost of Project Extension
The current estimated fully-funded cost of a 20-year project extension is $9,142,079. A summary of Operations, Maintenance, and Monitoring (OM&M) costs (fully funded) for Years 21-40 is shown in Table 1. See Appendix A for the fully-funded budget and complete breakdown of all costs.

Table 1. OM&M activities and costs.

OM&M Activity	Estimate
Annual Inspections	$723,657
Annual Operations Contract	$1,467,382
WCS and Monitoring Station Maintenance	$363,939
Canal Cleanout Maintenance Event (includes design surveys, E&D, dredging, inspection, etc)	$2,485,042
Weekly Data Review for Structure Operations	$301,358
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SAV Monitoring	$17,905
OM&M Reports	$82,355
State Admin and IDC Charges	$2,714,727
Closeout Report	$54,115
Federal – Annual Inspections and Admin	$488,275
Corps Admin	$42,123

Benefits of Project Extension
In its simplest terms, project performance can be determined with a land change comparison of the project area and reference area (Figure 2). From 2003 (project completion) to 2020, the project area's annual loss rate was -0.51 %/yr while the loss rate for the reference area was -1.52

%/yr (Figure 3). Each area experienced significant loss with the passage of Hurricanes Rita (2005) and Ike (2008) and then began a slow recovery around 2010.

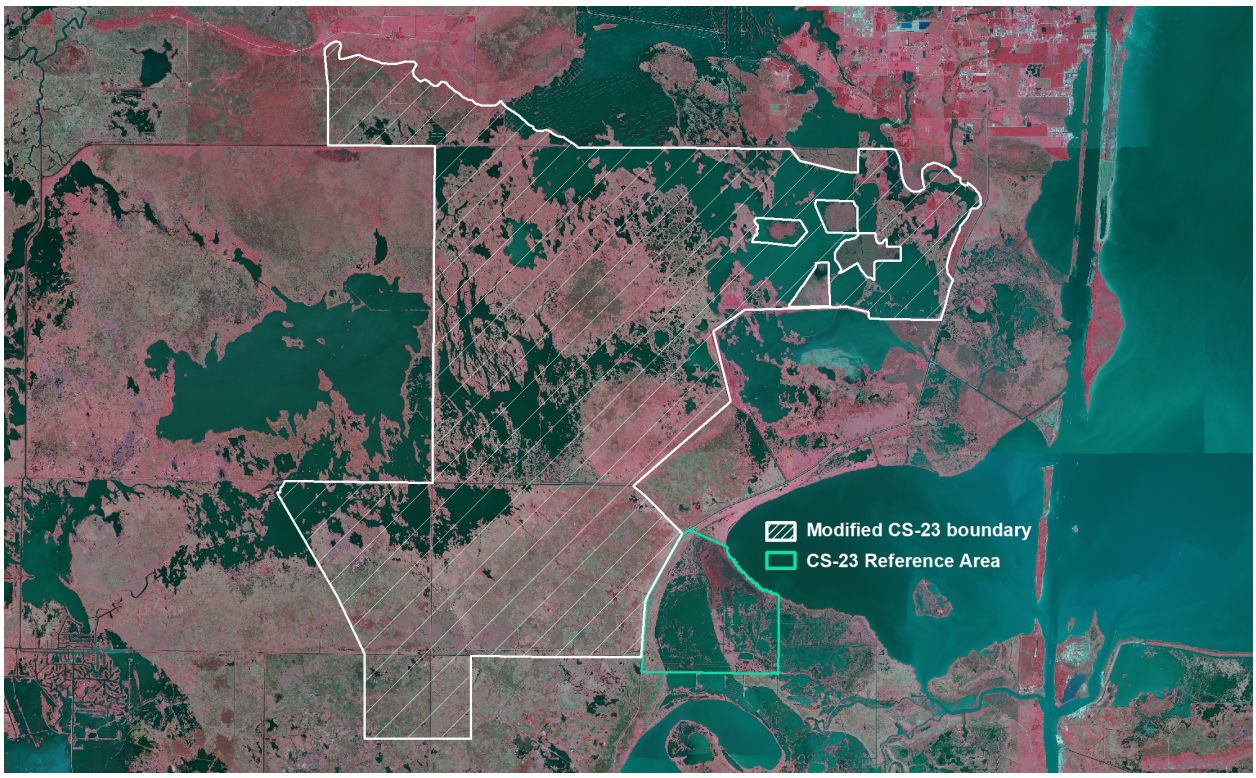


Figure 2. CS-23 project area and reference area.

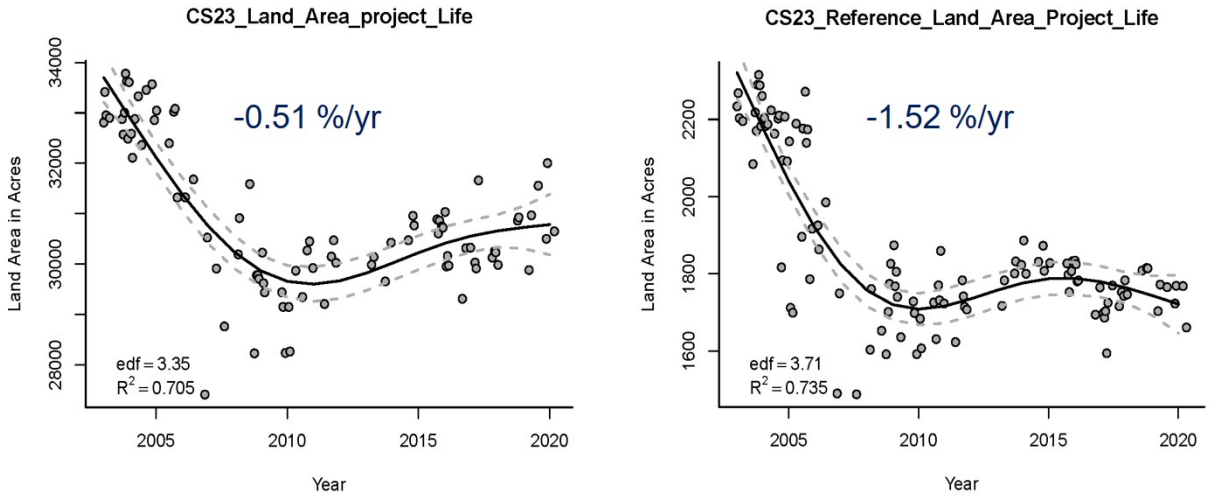


Figure 3. Land change rates for CS-23 project area and reference area.

Future Without Project (FWOP)

For the FWOP scenario, structure operation and maintenance will no longer be funded by the CWPPRA program. The structures would be operated and maintained by the Sabine NWR. However, Sabine NWR lacks the staff and funding to continue intensive management of the structures and adequately maintain them. It is likely that the structures would remain in the "open" position to allow tidal exchange, with little to no management of water levels and salinity. Marshes in the project area would experience increased flooding as there would be no intensive management to reduce water levels or the duration of flooding. Under this scenario, it is proposed that the loss rate of -0.51 %/yr would linearly increase to the reference area loss rate of -1.52%/yr. It is estimated that 5,894 acres would be lost during the 20-year project life.

Future With Project (FWP) – Option 1

For the FWP scenario, OM&M will continue under the CWPPRA program for an extended 20-yr project life (i.e., Years 21-40). Intensive management of water levels and salinities will be carried out by CPRA and Sabine NWR staff via an operations contractor.

This option offers the simplest approach for estimating benefits of the project extension. Under this option, the 2003-2020 loss rate of -0.51 %/yr would continue during the 20-yr project life extension. The loss rate would not increase, as under FWOP, but would remain the same as the initial 17 years of the project's life with active management of water levels and salinities. It is important to note that the 2003-2020 loss rate does not capture a period of intensive management under an operations contract. It is therefore proposed as a conservative estimate for FWP. Under Option 1, it is estimated that 3,035 acres would be lost during the 20-year project life. Therefore, Option 1 would result in 2,859 net acres. The Option 1 land loss spreadsheet can be found in Appendix B.

Future With Project (FWP) – Option 2

Water levels, marsh elevations, and percent flooding were investigated for the CS-23 and CS-04a Cameron-Creole Maintenance (Figure 4) project areas. The CS-23 and CS-04a projects are very similar in that they are both marsh management projects utilizing water control structures to manage water levels and salinities in marshes surrounding Calcasieu Lake. Since January 2012, the CS-04a project has been managed under an operations contract and was approved for a 20-year project life extension in 2016. Intensive water level management under the CS-04a operations contract has allowed water levels to be maintained below that of Calcasieu Lake while the opposite has been observed in the CS-23 project area (Figure 5).

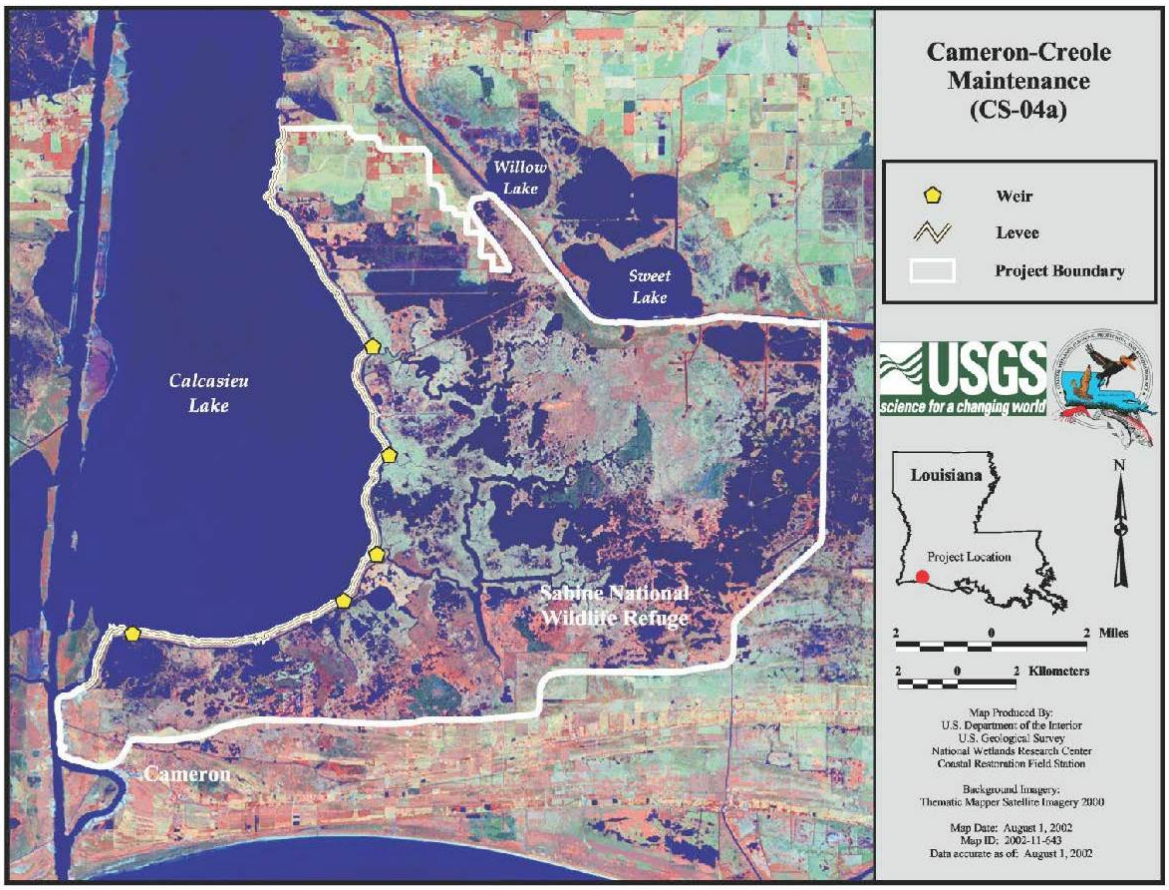


Figure 4. CS-04a Cameron-Creole Maintenance Project Area.

The average marsh elevation (NAVD88; Geoid 12A) is somewhat higher in the CS-23 project area compared to CS-04a (Table 2). However, percent inundation elevations are much higher in the CS-23 marshes and are similar to those found in Calcasieu Lake (Table 3). The average CS-23 marsh elevation of +0.77 ft is flooded approximately 78% of the time based on hourly data (January 2012 to September 2020) for CRMS 0651. By comparison, marsh at that same elevation in the CS-04a project area, is flooded an average of 31% of the time, a 60% reduction in percent time flooded.

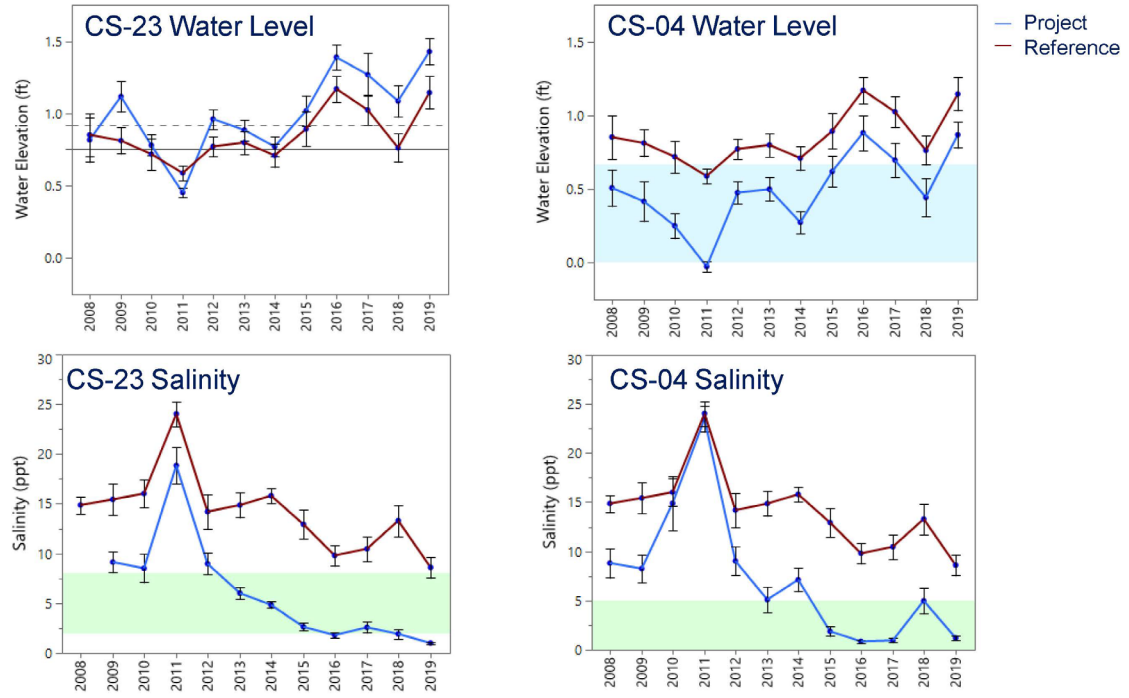


Figure 5. Comparison of water levels and salinities for CS-23, CS-04a, and Calcasieu Lake.

Table 2. Average marsh elevation (ME) in the CS-23 and CS-04a project areas.

CRMS Station	Marsh Elevation (ft) CS-23	Salinity (ppt) CS-23	CRMS Station	Marsh Elevation (ft) CS-04a	Salinity (ppt) CS-04a
0651	0.90	1.6	1743	0.50	8.2
0635	0.47	1.6	1738	0.54	9.1
0639	0.88	8.1	2418	0.33	2.2
0641	0.86	3.3	0645	0.49	7.3
2334	0.73	4.2	0644	0.41	11.9
Mean	**0.77**	**3.8**		**0.45**	**7.7**

Table 3. Percent inundation elevations for CS-23, CS-04a, and Calcasieu Lake.

Percent Inundation	CS-23 Inundation Elevation (ft) (CRMS 0651)	CS-04a Inundation Elevation (ft) (CRMS 2418)	Calcasieu Lake Inundation Elevation (ft) (CRMS 0685)
10	1.66	1.17	1.68
20	1.44	0.91	1.42
30	1.31	0.78	1.25
40	1.20	0.67	1.09
31		0.77 (CS-23 average ME)	
50	1.09	0.57	0.94
60	0.97	0.47	0.78

62		0.45 (average ME)	
70	0.86	0.36	0.61
78	0.77 (average ME)		
80	0.74	0.23	0.40
90	0.59	0.09	0.11

The effects of salinity and inundation on marsh productivity were initially developed for the Louisiana Coastal Area (LCA) Habitat Switching Module (Visser et al., 2003). The productivity algorithms developed for the LCA study were later used as the basis for development of the Hydrologic Index (Snedden and Swenson 2012) reported for each CRMS station. The Hydrologic Index (HI) ranges from 0 to 100 and corresponds to the percent of maximum productivity resulting from a given average annual salinity and percent time flooded. Generally, there is an optimal range of salinity and percent time flooded which allows a given marsh type to achieve maximum productivity. Productivity declines outside of that range.

For purposes of this evaluation, it is assumed that intensive management and operation of the CS-23 water control structures will achieve the same level of success, in terms of reducing marsh flooding, as with the CS-04a project. Based on the average CS-23 marsh elevation of +0.77ft, a 60% reduction in percent time flooded would result under FWP conditions. No change in salinity is assumed. With a reduction in percent time flooded from 78% to 31%, the HI scores improve for the intermediate and brackish marshes found in the project area (Table 4).

Table 4. Hydrologic index scores for intermediate and brackish marsh under FWOP and FWP.

Condition	Average Annual Salinity	Percent Time Flooded	Intermediate Hydrologic Index	Brackish Hydrologic Index
FWOP	3.8	78	0.49	0.44
FWP-Option 2	3.8	31	0.51	0.97
		Percent change	4.1	120.5

It is assumed that the increase in HI scores (i.e, increased marsh productivity) will result in reduced marsh loss. Based on the acreages of fresh/intermediate and brackish marsh (2013 marsh type survey) in the project area, a weighted percent change in the HI was calculated (Table 5). It is proposed that the overall 26% increase in productivity will result in a corresponding 26% reduction in the land loss rate. Under Option 2, it is estimated that 2,266 acres would be lost during the 20-year project life. Therefore, Option 2 would result in 3,628 net acres. The Option 2 land loss spreadsheet can be found in Appendix B.

Table 5. Weighted percent change in Hydrologic Index.

Marsh Type	Acreage	Percent Marsh Type	HI Percent Change	HI Weighted Percent Change
Fresh/Intermediate	25,115	0.81	0.041	0.03
Brackish	5,875	0.19	1.21	0.23
Total	30,990	1.00		**0.26**

Net Acres
Net acres resulting from the FWP-Option 1 scenario are 2,859. Net acres for FWP-Option 2 are 3,628.

Preferred Option To Estimate Benefits
The Environmental Work Group indicated a preference for Option 2 to estimate benefits of the proposed project extension.

Cost Effectiveness of Project Extension
Cost effectiveness (fully-funded cost per net acre) of the project extension ranges from $3,198 per net acre ($9,142,079 / 2,859 net acres) to $2,520 ($9,142,079 / 3,628 net acres) for FWP Options 1 and 2, respectively.

Cost Effectiveness Versus Other Recently Approved CWPPRA Projects
Table 6 presents the cost effectiveness (cost per net acre) of a potential extension of the CS-23 project for the two FWP options and the average cost effectiveness of projects approved in the CWPPRA Program over the past 13 years.

Table 6.

Projects	Cost/ Net Acre
CS-23 Years 1-20	8,352
CS-23 Project Extension Years 21-40 – Option 1	3,198
CS-23 Project Extension Years 21-40 – Option 2	2,520
PPL18 Average	46,822
PPL19 Average	88,656
PPL20 Average	50,682
PPL21 Average	60,622
PPL22 Average	89,578
PPL23 Average	132,661
PPL24 Average	85,088
PPL25 Average	101,566
PPL26 Average	141,160
PPL27 Average	89,341
PPL28 Average	107,108
PPL29 Average	136,946
PPL30 Average	125,922
OVERALL AVG PPL18-30	96,627
2009 Phase II Approvals Average	120,303
2010 Phase II Approvals Average	140,462
2011 Phase II Approvals Average	206,094
2012 Phase II Approvals Average	70,429

2013 Phase II Approvals Average	67,618
2014 Phase II Approvals Average	54,646
2015 Phase II Approvals Average	62,095
2016 Phase II Approvals Average	104,751
2017 Phase II Approvals Average	98,012
2018 Phase II Approvals Average	160,370
2019 Phase II Approvals Average	94,872
2020 Phase II Approvals Average	79,685
2021 Phase II Approvals Average	63,615
OVERALL AVG PHASE II APPROVALS 2009-2021	101,766

Literature Cited

Snedden, G.A., and Swenson, E.M., 2012, Hydrologic index development and application to selected Coastwide Reference Monitoring System sites and Coastal Wetlands Planning, Protection and Restoration Act projects: U.S. Geological Survey Open-File Report 2012–1122, 25 p.

Visser, J.M., G.D. Steyer, G.P. Shaffer, S.S. Hoppner, M.W. Hester, E. Reyes, P. Keddy, I.A. Mendelssohn, C.E. Sasser, and C.M. Swarzenski. 2003. Habitat Switching Module, Chapter 9. In, R.R. Twilley (ed.), Coastal Louisiana Ecosystem Assessment and Restoration (CLEAR) Model of Louisiana Coastal Area (LCA) Comprehensive Ecosystem Restoration Plan. Volume I: Tasks 1-8. Final Report to Department of Natural Resources, Coastal Restoration Division, Baton Rouge, LA. Contract No. 2511-02-24. 319 pp

APPENDIX A

CS-23 Fully-Funded Budget – Years 21-40

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Project Construction Years:	0	Total Project Years	20
Interest Rate	2.500%	Amortization Factor	0.06415
Fully Funded First Costs	$0	Total Fully Funded Costs	$9,142,079

Total Charges	Present Worth	Average Annual
First Costs	$0	$0
Monitoring (State + Federal)	$1,087,767	$69,777
State O & M Costs	$3,486,053	$223,620
Other Federal Costs	$307,277	$19,711
Average Annual Cost	$313,108	$313,108
Average Annual Habitat Units	0	
Cost Per Habitat Unit	#DIV/0!	
Total Net Acres	0	

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Fully Funded Costs Total Fully Funded Costs $9,142,079 Amortized Costs $586,438

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
2	1.040	2022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.177	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-4	1.206	2028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-5	1.236	2029	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-6	1.268	2030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-7	1.301	2031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-8	1.335	2032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-9	1.371	2033	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase II												
1	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.177	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin				
0	1.0927	2024	$138,182	$154,242	$0	$17,265	$1,547	$138,182	$154,241	$0	$17,265
-1	1.1200	2025	$45,919	$158,098	$0	$13,869	$1,586	$45,919	$158,097	$0	$13,869
-2	1.1480	2026	$99,491	$165,494	$0	$16,449	$1,626	$99,491	$165,494	$0	$16,449
-3	1.1767	2027	$48,243	$166,101	$0	$14,571	$1,666	$48,243	$166,101	$0	$14,571
-4	1.2061	2028	$49,449	$170,254	$0	$14,935	$1,708	$49,449	$170,253	$0	$14,935
-5	1.2362	2029	$156,340	$178,219	$0	$19,682	$1,751	$156,341	$178,218	$0	$19,682
-6	1.2684	2030	$52,003	$179,048	$0	$15,706	$1,796	$52,003	$179,047	$0	$15,706
-7	1.3014	2031	$112,784	$183,703	$0	$18,491	$1,843	$112,784	$183,702	$0	$18,491
-8	1.3352	2032	$54,743	$192,485	$0	$16,694	$1,891	$54,743	$192,484	$0	$16,694
-9	1.3712	2033	$56,221	$193,568	$0	$16,980	$1,942	$56,221	$193,567	$0	$16,980
-10	1.4083	2034	$178,096	$198,794	$0	$22,252	$1,994	$178,096	$198,794	$0	$22,252
-11	1.4463	2035	$59,298	$208,501	$0	$18,083	$2,048	$59,298	$208,500	$0	$18,083
-12	1.4853	2036	$128,729	$209,674	$0	$21,105	$2,103	$128,729	$209,674	$0	$21,105
-13	1.5254	2037	$62,543	$538,571	$0	$31,818	$2,160	$62,543	$538,571	$0	$31,818
-14	1.5682	2038	$64,294	$2,580,000	$0	$113,763	$2,221	$64,294	$2,580,000	$0	$113,763
-15	1.6121	2039	$203,869	$227,563	$0	$25,472	$2,283	$203,870	$227,562	$0	$25,472
-16	1.6572	2040	$67,945	$233,935	$0	$20,521	$2,347	$67,945	$233,934	$0	$20,521
-17	1.7036	2041	$147,646	$245,596	$0	$24,411	$2,412	$147,646	$245,595	$0	$24,411
-18	1.7530	2042	$71,873	$247,459	$0	$21,707	$2,482	$71,873	$247,458	$0	$21,707
-19	1.8038	2043	$73,957	$254,635	$0	$78,617	$4,719	$73,957	$254,635	$0	$78,617
		Total	$1,871,626	$6,685,940	$0	$542,390	$42,123	$1,871,627	$6,685,927	$0	$542,391

APPENDIX B

CS-23 Land Loss Spreadsheets – Years 21-40

Land Loss Spreadsheet

7/13/21

Project:	CS-23 Project Life Extension - Option 1				Loss Rate (%/yr)
Total Acres	Year	Marsh Acres	Water Acres		-0.51
41,709	2020	31,701	10,008		
41,709	2023	31,218	10,491		

kroy: USGS 2003-2019 project area loss rate

*Under FWOP, the loss rate is expected to linearly increase to the reference area loss rate of -1.52 %/yr

Loss Rate Annual Increase -0.0505

FWP Land Loss Rate Reduction 0.00

	FWOP*				FWP					
TY	Loss Rate	Marsh (acres)	% Marsh (V1)	Water (acres)	Loss Rate	Marsh (acres)	% Marsh (V1)	Water (acres)	Net Acres of Marsh	Total Acres Check
2020		31,701	76%	10,008						
2021	-0.0051	31,539	76%	10,170						
2022	-0.0051	31,378	75%	10,331						
2023	-0.0051	31,218	75%	10,491						
1	-0.00561	**31,043**	**74%**	**10,666**	-0.0051	**31,059**	**74%**	**10,650**	16	41,709
2	-0.00611	30,854	74%	10,855	-0.0051	30,901	74%	10,808	47	41,709
3	-0.00662	30,650	73%	11,059	-0.0051	30,743	74%	10,966	94	41,709
4	-0.00712	30,431	73%	11,278	-0.0051	30,586	73%	11,123	155	41,709
5	-0.00763	30,199	72%	11,510	-0.0051	30,430	73%	11,279	231	41,709
6	-0.00813	29,954	72%	11,755	-0.0051	30,275	73%	11,434	321	41,709
7	-0.00864	29,695	71%	12,014	-0.0051	30,121	72%	11,588	426	41,709
8	-0.00914	29,424	71%	12,285	-0.0051	29,967	72%	11,742	543	41,709
9	-0.00965	29,140	70%	12,569	-0.0051	29,814	71%	11,895	674	41,709
10	-0.01015	28,844	69%	12,865	-0.0051	29,662	71%	12,047	818	41,709
11	-0.01066	28,537	68%	13,172	-0.0051	29,511	71%	12,198	974	41,709
12	-0.01116	28,218	68%	13,491	-0.0051	29,361	70%	12,348	1,142	41,709
13	-0.01167	27,889	67%	13,820	-0.0051	29,211	70%	12,498	1,322	41,709
14	-0.01217	27,550	66%	14,159	-0.0051	29,062	70%	12,647	1,512	41,709
15	-0.01268	27,201	65%	14,508	-0.0051	28,914	69%	12,795	1,713	41,709
16	-0.01318	26,842	64%	14,867	-0.0051	28,766	69%	12,943	1,924	41,709
17	-0.01369	26,475	63%	15,234	-0.0051	28,619	69%	13,090	2,145	41,709
18	-0.01419	26,099	63%	15,610	-0.0051	28,474	68%	13,235	2,374	41,709
19	-0.0147	25,716	62%	15,993	-0.0051	28,328	68%	13,381	2,613	41,709
20	-0.0152	**25,325**	**61%**	**16,384**	-0.0051	**28,184**	**68%**	**13,525**	2,859	41,709
		5,894				3,035				

Land Loss Spreadsheet

7/13/21

Project:	CS-23 Project Life Extension - Option 2				Loss Rate (%/yr)	kroy: USGS 2003-2019 project area loss rate	Loss Rate Annual Increase	-0.0505
Total Acres	Year	Marsh Acres	Water Acres		-0.51	*Under FWOP, the loss rate is expected to linearly increase to the reference area loss rate of -1.52 %/yr		
41,709	2020	31,701	10,008					
41,709	2023	31,218	10,491		FWP Land Loss Rate Reduction	0.26		

	FWOP*				FWP					
TY	Loss Rate	Marsh (acres)	% Marsh (V1)	Water (acres)	Loss Rate	Marsh (acres)	% Marsh (V1)	Water (acres)	Net Acres of Marsh	Total Acres Check
2020		31,701	76%	10,008						
2021	-0.0051	31,539	76%	10,170						
2022	-0.0051	31,378	75%	10,331						
2023	-0.0051	31,218	75%	10,491						
1	-0.00561	**31,043**	**74%**	**10,666**	-0.003761	**31,101**	**75%**	**10,608**	58	41,709
2	-0.00611	30,854	74%	10,855	-0.003761	30,984	74%	10,725	130	41,709
3	-0.00662	30,650	73%	11,059	-0.003761	30,868	74%	10,841	218	41,709
4	-0.00712	30,431	73%	11,278	-0.003761	30,751	74%	10,958	320	41,709
5	-0.00763	30,199	72%	11,510	-0.003761	30,636	73%	11,073	436	41,709
6	-0.00813	29,954	72%	11,755	-0.003761	30,521	73%	11,188	567	41,709
7	-0.00864	29,695	71%	12,014	-0.003761	30,406	73%	11,303	711	41,709
8	-0.00914	29,424	71%	12,285	-0.003761	30,291	73%	11,418	868	41,709
9	-0.00965	29,140	70%	12,569	-0.003761	30,178	72%	11,531	1,038	41,709
10	-0.01015	28,844	69%	12,865	-0.003761	30,064	72%	11,645	1,220	41,709
11	-0.01066	28,537	68%	13,172	-0.003761	29,951	72%	11,758	1,414	41,709
12	-0.01116	28,218	68%	13,491	-0.003761	29,838	72%	11,871	1,620	41,709
13	-0.01167	27,889	67%	13,820	-0.003761	29,726	71%	11,983	1,837	41,709
14	-0.01217	27,550	66%	14,159	-0.003761	29,614	71%	12,095	2,065	41,709
15	-0.01268	27,201	65%	14,508	-0.003761	29,503	71%	12,206	2,302	41,709
16	-0.01318	26,842	64%	14,867	-0.003761	29,392	70%	12,317	2,550	41,709
17	-0.01369	26,475	63%	15,234	-0.003761	29,282	70%	12,427	2,807	41,709
18	-0.01419	26,099	63%	15,610	-0.003761	29,171	70%	12,538	3,072	41,709
19	-0.0147	25,716	62%	15,993	-0.003761	29,062	70%	12,647	3,346	41,709
20	-0.0152	**25,325**	**61%**	**16,384**	-0.003761	**28,952**	**69%**	**12,757**	3,628	41,709
		5,894				2,266				

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Project Construction Years:	0	Total Project Years	20
Interest Rate	2.500%	Amortization Factor	0.06415
Fully Funded First Costs	$0	Total Fully Funded Costs	$9,142,079

Total Charges	Present Worth	Average Annual
First Costs	$0	$0
Monitoring (State + Federal)	$1,087,767	$69,777
State O & M Costs	$3,486,053	$223,620
Other Federal Costs	$307,277	$19,711
Average Annual Cost	$313,108	$313,108
Average Annual Habitat Units	0	
Cost Per Habitat Unit	#DIV/0!	
Total Net Acres	0	

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Project Costs $9,142,079

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
2	2022	$0	$0	$0	$0	$0	$0	-	$0		$0
1	2023	$0	$0	$0	$0	$0	$0	-	$0		$0
0	2024	$0	$0	$0	$0	$0	$0	-	$0		$0
-1	2025	$0	$0	$0	$0	$0	$0	-	$0		$0
-2	2026	$0	$0	$0	$0	$0	$0	-	$0		$0
-3	2027	$0	$0	$0	$0	$0	$0	-	$0		$0
-4	2028	$0	$0	$0	$0	$0	$0	-	$0		$0
-5	2029	$0	$0	$0	$0	$0	$0	-	$0		$0
-6	2030	$0	$0	$0	$0	$0	$0	-	$0		$0
-7	2031	$0	$0	$0	$0	$0	$0	-	$0		$0
-8	2032	$0	$0	$0	$0	$0	$0	-	$0		$0
-9	2033	$0	$0	$0	$0	$0	$0	-	$0		$0
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
Phase II											
1	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	-
0	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	-
-1	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	-
-2	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total First Costs		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin				
0	Discount	2024	$126,465	$141,163	$0	$15,801	$1,416	$126,465	$141,163	$0	$15,801
-1	Discount	2025	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-2	Discount	2026	$86,667	$144,163	$0	$14,329	$1,416	$86,667	$144,163	$0	$14,329
-3	Discount	2027	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-4	Discount	2028	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-5	Discount	2029	$126,465	$144,163	$0	$15,921	$1,416	$126,465	$144,163	$0	$15,921
-6	Discount	2030	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-7	Discount	2031	$86,667	$141,163	$0	$14,209	$1,416	$86,667	$141,163	$0	$14,209
-8	Discount	2032	$41,000	$144,163	$0	$12,503	$1,416	$41,000	$144,163	$0	$12,503
-9	Discount	2033	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-10	Discount	2034	$126,465	$141,163	$0	$15,801	$1,416	$126,465	$141,163	$0	$15,801
-11	Discount	2035	$41,000	$144,163	$0	$12,503	$1,416	$41,000	$144,163	$0	$12,503
-12	Discount	2036	$86,667	$141,163	$0	$14,209	$1,416	$86,667	$141,163	$0	$14,209
-13	Discount	2037	$41,000	$353,060	$0	$20,858	$1,416	$41,000	$353,060	$0	$20,858
-14	Discount	2038	$41,000	$1,645,250	$0	$72,546	$1,416	$41,000	$1,645,250	$0	$72,546
-15	Discount	2039	$126,465	$141,163	$0	$15,801	$1,416	$126,465	$141,163	$0	$15,801
-16	Discount	2040	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-17	Discount	2041	$86,667	$144,163	$0	$14,329	$1,416	$86,667	$144,163	$0	$14,329
-18	Discount	2042	$41,000	$141,163	$0	$12,383	$1,416	$41,000	$141,163	$0	$12,383
-19	Discount	2043	$41,000	$141,163	$0	$43,583	$2,616	$41,000	$141,163	$0	$43,583
	Total		$1,344,528	$4,554,244	$0	$369,074	$29,520	$1,344,528	$4,554,244	$0	$369,074

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Present Valued Costs Total Discounted Costs $4,881,097 Amortized Costs $313,108

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
2	1.051	2022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.025	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.000	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	0.976	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	0.952	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	0.929	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-4	0.906	2028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-5	0.884	2029	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-6	0.862	2030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-7	0.841	2031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-8	0.821	2032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-9	0.801	2033	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase II												
1	1.025	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.000	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	0.976	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	0.952	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	0.929	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total First Cost			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin
0	1.000	2024	$126,465	$141,163	$0	$15,801	$1,416
-1	0.976	2025	$40,000	$137,720	$0	$12,081	$1,381
-2	0.952	2026	$82,491	$137,216	$0	$13,639	$1,348
-3	0.929	2027	$38,073	$131,084	$0	$11,499	$1,315
-4	0.906	2028	$37,144	$127,887	$0	$11,218	$1,283
-5	0.884	2029	$111,777	$127,419	$0	$14,072	$1,252
-6	0.862	2030	$35,354	$121,724	$0	$10,678	$1,221
-7	0.841	2031	$72,910	$118,756	$0	$11,954	$1,191
-8	0.821	2032	$33,651	$118,321	$0	$10,262	$1,162
-9	0.801	2033	$32,830	$113,033	$0	$9,915	$1,134
-10	0.781	2034	$98,794	$110,276	$0	$12,344	$1,106
-11	0.762	2035	$31,248	$109,873	$0	$9,529	$1,079
-12	0.744	2036	$64,442	$104,963	$0	$10,565	$1,053
-13	0.725	2037	$29,742	$256,117	$0	$15,131	$1,027
-14	0.708	2038	$29,017	$1,164,388	$0	$51,343	$1,002
-15	0.690	2039	$87,320	$97,468	$0	$10,910	$978
-16	0.674	2040	$27,619	$95,091	$0	$8,341	$954
-17	0.657	2041	$56,957	$94,743	$0	$9,417	$931
-18	0.641	2042	$26,288	$90,509	$0	$7,940	$908
-19	0.626	2043	$25,647	$88,301	$0	$27,262	$1,636
		Total	$1,087,767	$3,486,053	$0	$283,900	$23,377

Coastal Wetlands Planning, Protection and Restoration Act

CS-23 Sabine NWR Water Control Structure Replacement

Project Priority List 3 (ver.012421)

Fully Funded Costs Total Fully Funded Costs $9,142,079 Amortized Costs $586,438

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Admin	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
2	1.040	2022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.177	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-4	1.206	2028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-5	1.236	2029	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-6	1.268	2030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-7	1.301	2031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-8	1.335	2032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-9	1.371	2033	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase II												
1	1.066	2023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
0	1.093	2024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-1	1.120	2025	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-2	1.148	2026	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
-3	1.177	2027	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Year		FY	State Monitoring	State O&M & Insp	Fed Monitoring	Fed O&M & Insp	Corps Admin				
0	1.0927	2024	$138,182	$154,242	$0	$17,265	$1,547	$138,182	$154,241	$0	$17,265
-1	1.1200	2025	$45,919	$158,098	$0	$13,869	$1,586	$45,919	$158,097	$0	$13,869
-2	1.1480	2026	$99,491	$165,494	$0	$16,449	$1,626	$99,491	$165,494	$0	$16,449
-3	1.1767	2027	$48,243	$166,101	$0	$14,571	$1,666	$48,243	$166,101	$0	$14,571
-4	1.2061	2028	$49,449	$170,254	$0	$14,935	$1,708	$49,449	$170,253	$0	$14,935
-5	1.2362	2029	$156,340	$178,219	$0	$19,682	$1,751	$156,341	$178,218	$0	$19,682
-6	1.2684	2030	$52,003	$179,048	$0	$15,706	$1,796	$52,003	$179,047	$0	$15,706
-7	1.3014	2031	$112,784	$183,703	$0	$18,491	$1,843	$112,784	$183,702	$0	$18,491
-8	1.3352	2032	$54,743	$192,485	$0	$16,694	$1,891	$54,743	$192,484	$0	$16,694
-9	1.3712	2033	$56,221	$193,568	$0	$16,980	$1,942	$56,221	$193,567	$0	$16,980
-10	1.4083	2034	$178,096	$198,794	$0	$22,252	$1,994	$178,096	$198,794	$0	$22,252
-11	1.4463	2035	$59,298	$208,501	$0	$18,083	$2,048	$59,298	$208,500	$0	$18,083
-12	1.4853	2036	$128,729	$209,674	$0	$21,105	$2,103	$128,729	$209,674	$0	$21,105
-13	1.5254	2037	$62,543	$538,571	$0	$31,818	$2,160	$62,543	$538,571	$0	$31,818
-14	1.5682	2038	$64,294	$2,580,000	$0	$113,763	$2,221	$64,294	$2,580,000	$0	$113,763
-15	1.6121	2039	$203,869	$227,563	$0	$25,472	$2,283	$203,870	$227,562	$0	$25,472
-16	1.6572	2040	$67,945	$233,935	$0	$20,521	$2,347	$67,945	$233,934	$0	$20,521
-17	1.7036	2041	$147,646	$245,596	$0	$24,411	$2,412	$147,646	$245,595	$0	$24,411
-18	1.7530	2042	$71,873	$247,459	$0	$21,707	$2,482	$71,873	$247,458	$0	$21,707
-19	1.8038	2043	$73,957	$254,635	$0	$78,617	$4,719	$73,957	$254,635	$0	$78,617
		Total	$1,871,626	$6,685,940	$0	$542,390	$42,123	$1,871,627	$6,685,927	$0	$542,391

CS-23 Sabine NWR Water Control Structure Replacement
Operation & Maintenance and Monitoring
Project Priority List 3 (ver.012421)

enter Date

O&M Cost Considerations:

NOTE: Items shown below are an example, actual project features and years should be used.

State Costs

	Unit Cost	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	Year 20	
Annual Inspections (includes contract admin, permit review, reports)		$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$24,000	$39,000	$39,000	$24,000	$24,000	$24,000	$24,000	$24,000	$510,000
Annual Cost for Operations (includes structure operations contract)	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$52,000	$1,040,000
Minor WCS and Monitoring Station Maintenance		$12,000	$12,000	$15,000	$12,000	$12,000	$15,000	$12,000	$12,000	$15,000	$12,000	$12,000	$15,000	$12,000	$12,000	$15,000	$12,000	$12,000	$15,000	$12,000	$12,000	$258,000
IDC Charges		$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$53,163	$85,060	$85,060	$53,163	$53,163	$53,163	$53,163	$53,163	$1,127,045
Subtotal (1)		**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**188,060**	**191,060**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	$2,935,054
State O&M / Construction Items	**Unit** **Quantity** **Unit Cost**																					
Engineering and Design	LS 1 $70,000.00														$70,000							$70,000
Canal Cleanout	LS 1 $1,274,190.00															$1,274,190						$1,274,190
Administrative Cost	LS 1 $30,000.00															$30,000						$30,000
Subtotal		-	-	-	-	-	-	-	-	-	-	-	-	-	**70,000**	**1,304,190**	-	-	-	-	-	$1,374,190
Subtotal (2) w/ 0% contingency		-	-	-	-	-	-	-	-	-	-	-	-	-	**70,000**	**1,304,190**	-	-	-	-	-	$1,374,190
Eng Survey																						
LS @ $95,000															$95,000							$95,000
days Veg @ $3,755 per day																						$0
days Cleanout@ $3,755 per day																						$0
days FlapGate@ $3,755 per day																						$0
Inspection (10 hrs/day)																						$0
LS @ $150,000																$150,000						$150,000
days Veg @ $1,952 per day																						$0
days Cleanout@ $1,952 per day																						$0
days Flapgate @ $1,952 per day																						$0
Subtotal (3)		-	-	-	-	-	-	-	-	-	-	-	-	-	**95,000**	**150,000**	-	-	-	-	-	$245,000
State Costs - Misc.																						
																						$0
																						$0
Subtotal (4)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
State O&M / Construction / Inspection / Misc Subtotal (1-4)		**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	**144,163**	**141,163**	**353,060**	**1,645,250**	**141,163**	**141,163**	**144,163**	**141,163**	**141,163**	$4,554,244
Monitoring Items (State costs placed in separate "monitoring" acct)																						
Submerged Aquatic Vegetation		$3,347					$3,347					$3,347					$3,347					$13,389
Weekly Data Review		$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$10,679	$213,586
OM&M Report				$14,606					$14,606					$14,606					$14,606			$58,426
Monitoring Project Administration		$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$2,434	$48,688
Spatial Analysis		$75,000					$75,000					$75,000					$75,000					$300,000
IDC Charges		$35,004	$27,886	$58,947	$27,886	$27,886	$35,004	$27,886	$58,947	$27,886	$27,886	$35,004	$27,886	$58,947	$27,886	$27,886	$35,004	$27,886	$58,947	$27,886	$27,886	$710,440
Subtotal (5)		**126,465**	**41,000**	**86,667**	**41,000**	**41,000**	**126,465**	**41,000**	**86,667**	**41,000**	**41,000**	**126,465**	**41,000**	**86,667**	**41,000**	**41,000**	**126,465**	**41,000**	**86,667**	**41,000**	**41,000**	$1,344,528
Total State Cost (1-5)		**267,628**	**182,163**	**230,830**	**182,163**	**182,163**	**270,628**	**182,163**	**227,830**	**185,163**	**182,163**	**267,628**	**185,163**	**227,830**	**394,060**	**1,686,250**	**267,628**	**182,163**	**230,830**	**182,163**	**182,163**	$5,898,772

Federal Costs

			Unit Cost																			
Federal Annual Inspections			$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$4,900	$98,000
Federal Annual Cost for Operations																						$0
Federal Preventive Maintenance																						$0
		Subtotal (6)		**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	**4,900**	$98,000
Federal O&M / Construction Items	**Unit**	**Quantity**	**Unit Cost**																			
																						$0
Project Closeout Report YR20	Ea	1	$24,000																		24,000	$24,000
	Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24,000**	$24,000
	Subtotal (7) w/ 0% contingency			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**30,000**	$30,000
Eng Survey																						
days @ $3,914 per day																						$0
days @ $3,914 per day																						$0
Inspection (10 hrs/day)																						$0
days @ $2,188 per day																						$0
days @ $2,188 per day																						$0
days @ $2,188 per day																						$0
	Subtotal (8)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
Federal Costs - Misc																						
Engineering and Design Cost (on Subtotal 7,8)				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Administrative Cost (on Subtotal 6,7,8,10,Total State)				$10,901	$7,483	$9,429	$7,483	$7,483	$11,021	$7,483	$9,309	$7,603	$7,483	$10,901	$7,603	$9,309	$15,958	$67,646	$10,901	$7,483	$9,429	$7,483	$8,683	$241,074
																						$0
																						$0
	Subtotal (9)			**10,901**	**7,483**	**9,429**	**7,483**	**7,483**	**11,021**	**7,483**	**9,309**	**7,603**	**7,483**	**10,901**	**7,603**	**9,309**	**15,958**	**67,646**	**10,901**	**7,483**	**9,429**	**7,483**	**8,683**	$241,074
Federal O&M / Construction / Inspection / Misc Subtotal (6-9)				**15,801**	**12,383**	**14,329**	**12,383**	**12,383**	**15,921**	**12,383**	**14,209**	**12,503**	**12,383**	**15,801**	**12,503**	**14,209**	**20,858**	**72,546**	**15,801**	**12,383**	**14,329**	**12,383**	**43,583**	$369,074
Monitoring Items (Federal costs placed in separate "monitoring" acct)																						
																						$0
																						$0
	Subtotal (10)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0
	Total Federal Cost (6-10)			**15,801**	**12,383**	**14,329**	**12,383**	**12,383**	**15,921**	**12,383**	**14,209**	**12,503**	**12,383**	**15,801**	**12,503**	**14,209**	**20,858**	**72,546**	**15,801**	**12,383**	**14,329**	**12,383**	**43,583**	$369,074
	Total State and Federal Cost			**283,429**	**194,546**	**245,159**	**194,546**	**194,546**	**286,549**	**194,546**	**242,039**	**197,666**	**194,546**	**283,429**	**197,666**	**242,039**	**414,918**	**1,758,796**	**283,429**	**194,546**	**245,159**	**194,546**	**225,746**	$6,267,846

Annual Project Costs:

Corps Administration **$1,416** **annually,** **PLUS add** **$1,200** **in year 20**

Construction Schedule:

Planning & Design Start	**April-22**
Planning & Design End	**August-23**
Const. Start	**September-23**
Const. End	**September-23**

(Minimum of two years to complete this phase, unless modeling is required)

(Constr Funding approval in Jan., requires 6 months for contracting and advertising plus 2 months for cost share agreement)

when determining construction period, consider endangered species or other issues that affect available work/start times

O&M items/events and qtys suggestions:

- Gabion mattress/baskets 10% at yr 10
- Containment Dike gapping - yr 3
- Vegetative Plantings - Terrace / Ridge - yr 1

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR A CHANGE IN SCOPE FOR THE PPL23 – ISLAND ROAD MARSH CREATION AND NOURISHMENT (TE-117) PROJECT

For Decision:

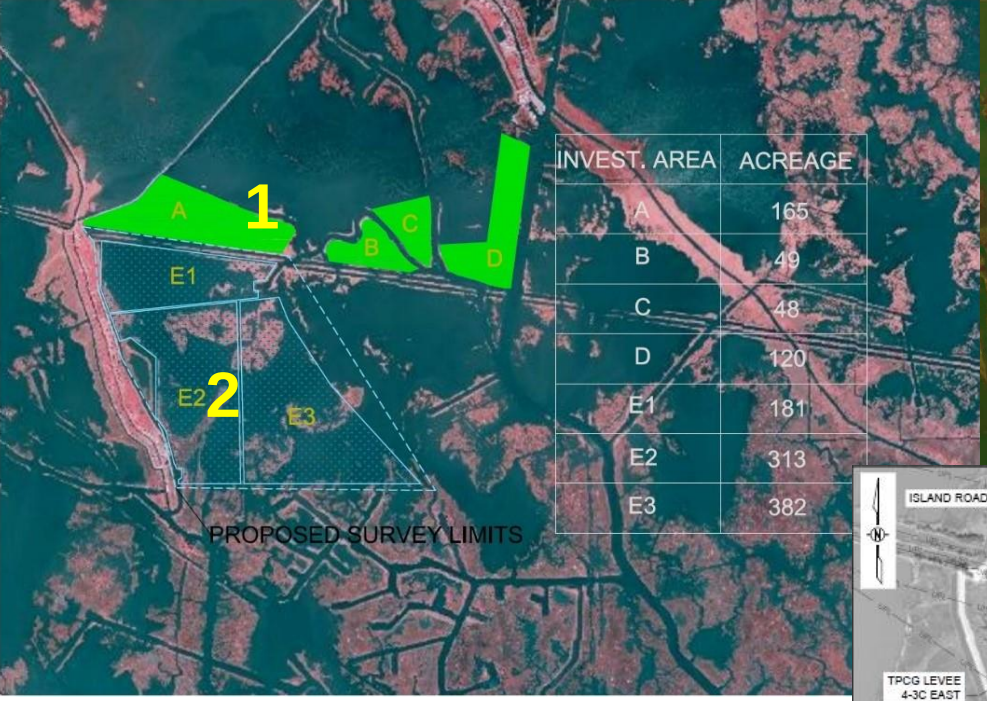
NMFS and CPRA request approval of a change in scope for the Island Road Marsh Creation and Nourishment (TE-117) Project. A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate.

Island Road Marsh Creation and Nourishment (TE-117)

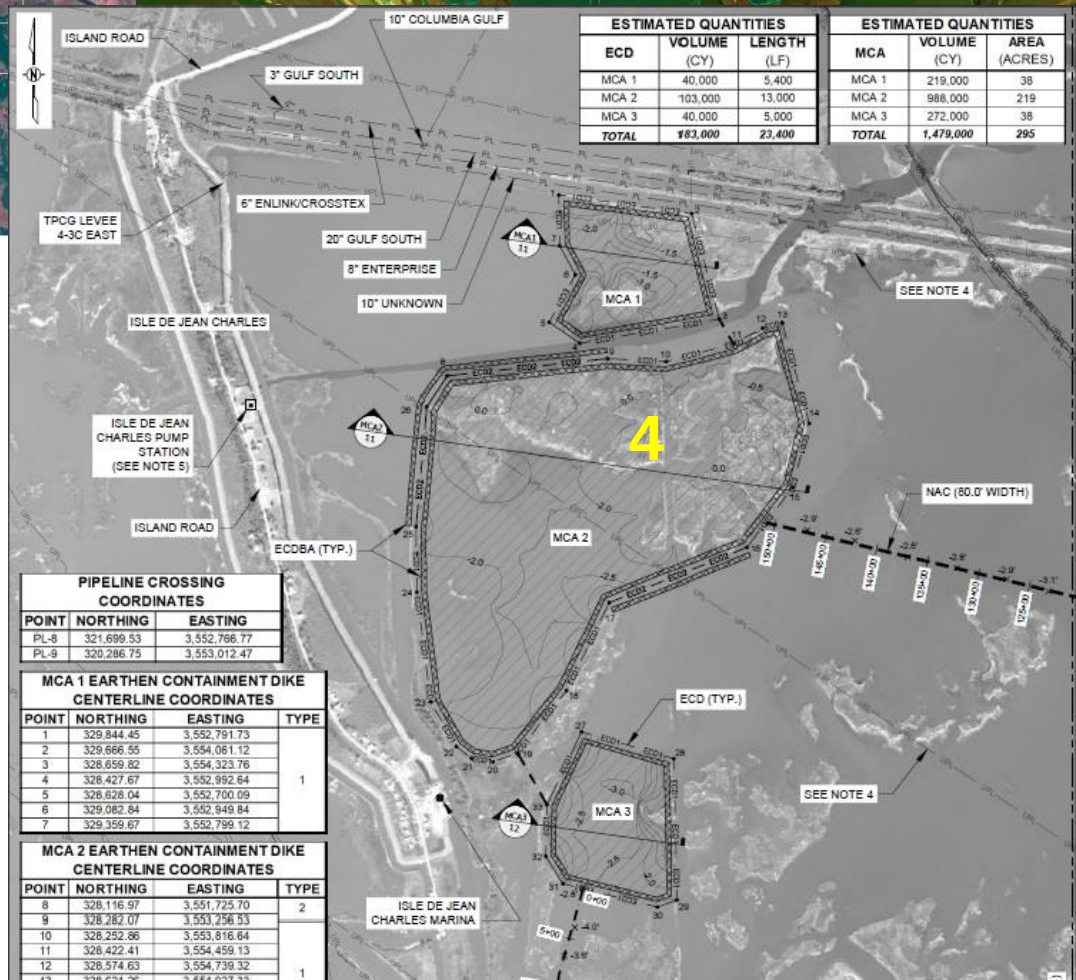
Scope Change Request
Technical Committee
September 2, 2021

Project Background

- Approved for Phase 1 January 2014
- 30% Design Review Meeting October 23, 2019
- 95% Design Review Meeting September 23, 2021



INVEST. AREA	ACREAGE
A	165
B	49
C	48
D	120
E1	181
E2	313
E3	382



ESTIMATED QUANTITIES		
ECD	VOLUME (CY)	LENGTH (LF)
MCA 1	40,000	5,400
MCA 2	103,000	13,000
MCA 3	40,000	5,000
TOTAL	*183,000*	*23,400*

ESTIMATED QUANTITIES		
MCA	VOLUME (CY)	AREA (ACRES)
MCA 1	219,000	38
MCA 2	988,000	219
MCA 3	272,000	38
TOTAL	*1,479,000*	*295*

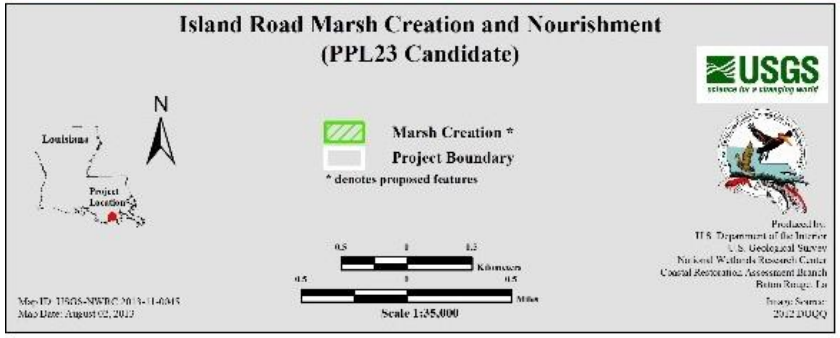
PIPELINE CROSSING COORDINATES		
POINT	NORTHING	EASTING
PL-8	321,699.53	3,552,766.77
PL-9	320,286.75	3,553,012.47

MCA 1 EARTHEN CONTAINMENT DIKE CENTERLINE COORDINATES			
POINT	NORTHING	EASTING	TYPE
1	329,844.45	3,552,791.73	1
2	329,666.55	3,554,061.12	
3	328,659.82	3,554,323.76	
4	328,427.67	3,552,992.64	
5	326,628.04	3,552,700.09	
6	329,082.84	3,552,949.84	
7	329,359.67	3,552,799.12	

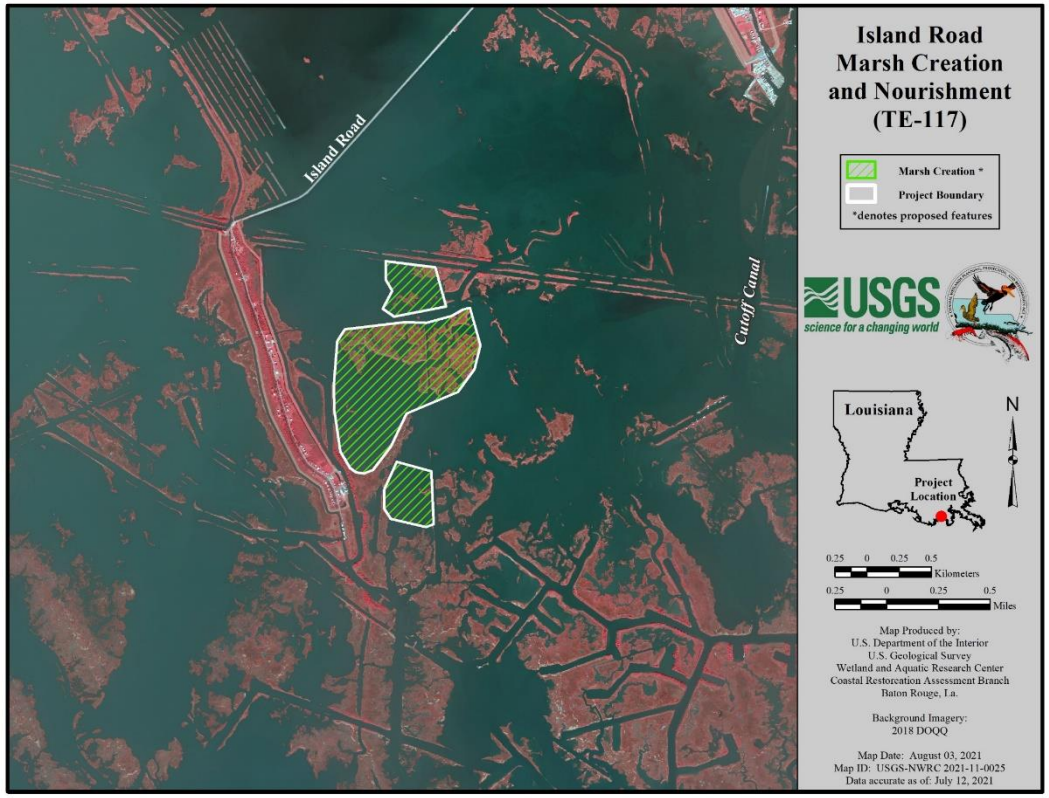
MCA 2 EARTHEN CONTAINMENT DIKE CENTERLINE COORDINATES			
POINT	NORTHING	EASTING	TYPE
8	328,116.97	3,551,725.70	2
9	328,282.07	3,553,256.53	1
10	328,252.86	3,553,816.64	
11	326,422.41	3,554,459.13	
12	326,574.63	3,554,739.32	

- 4 alternative fill configurations were evaluated
- Relocated cells from north of Twin Pipelines to south of Twin Pipelines and parallel to Isle de Jean Charles
- Opitimized acres based on mudline elevations

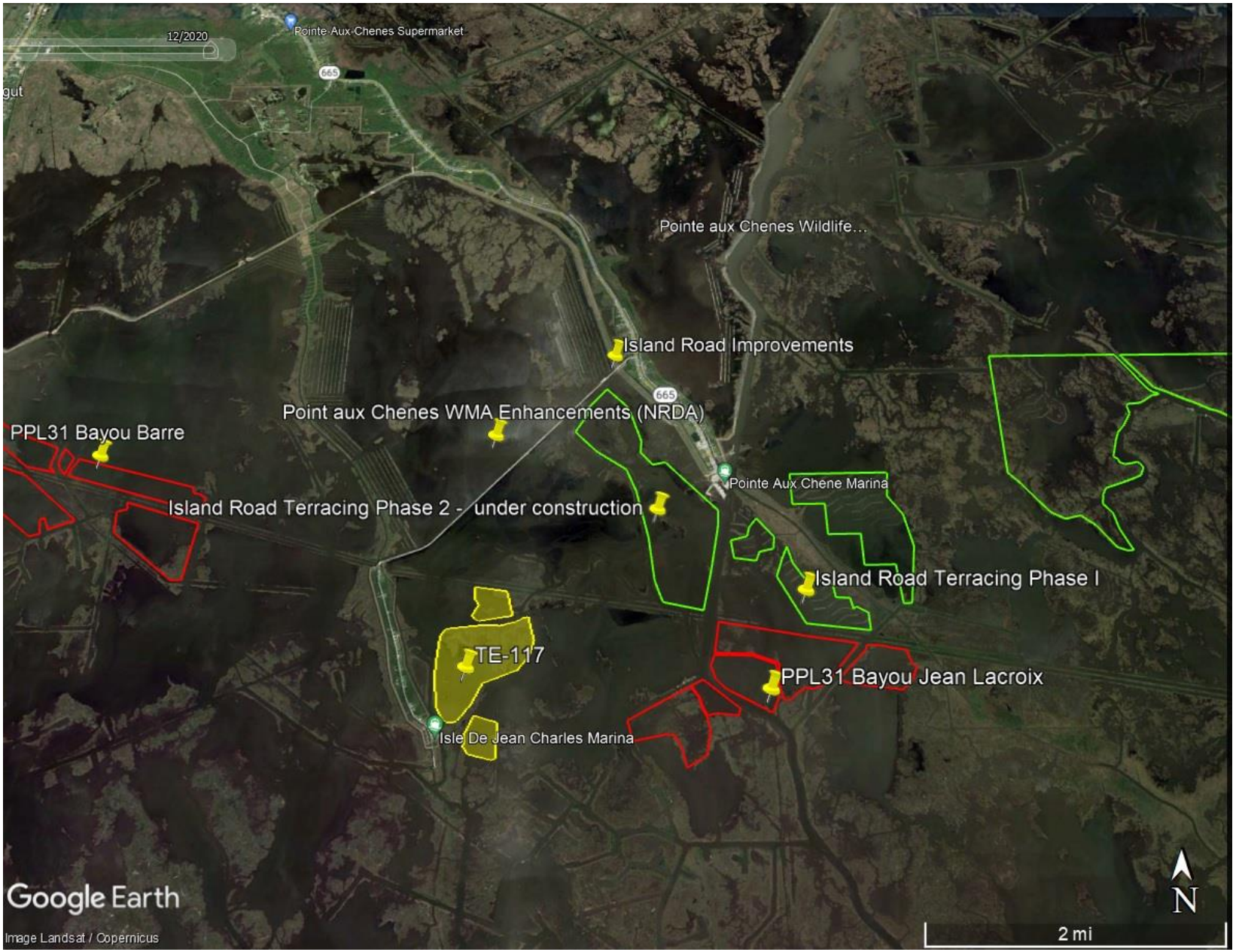
Phase 0 Project Map



Phase 1 95% Design

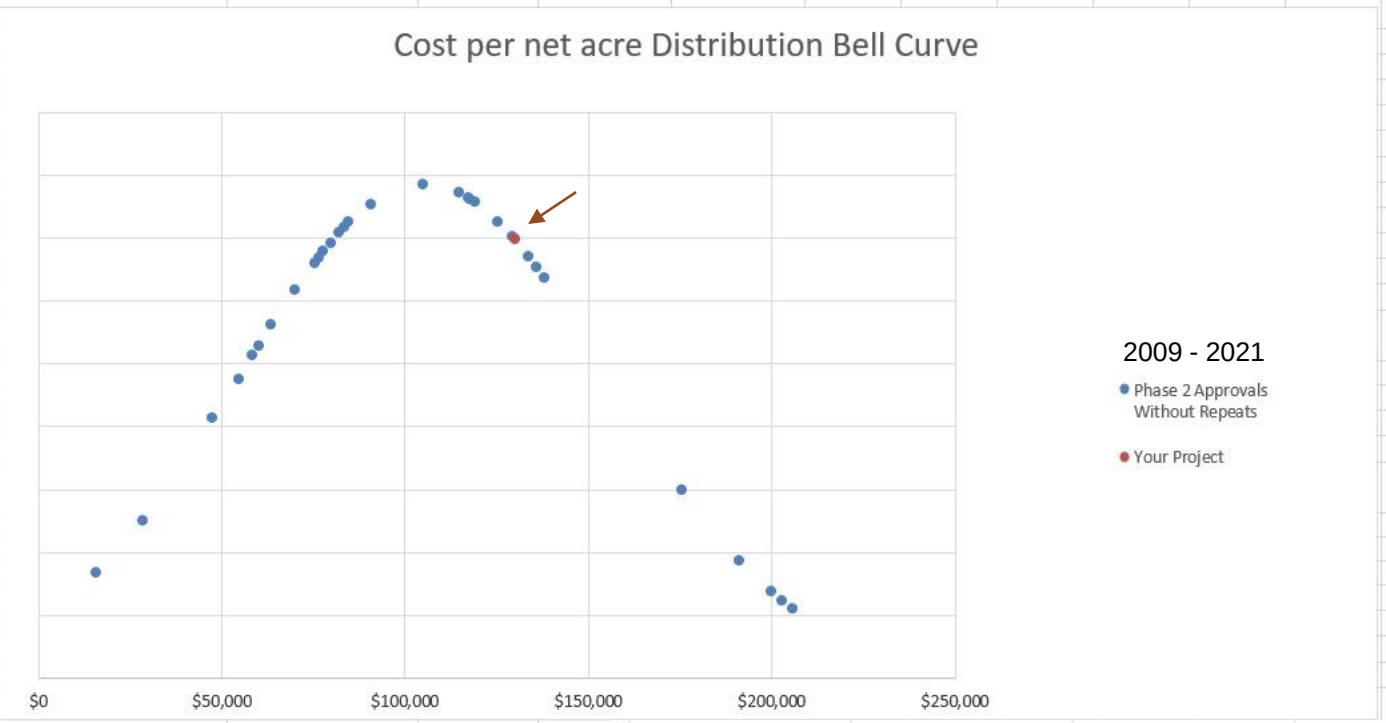


Project Synergies



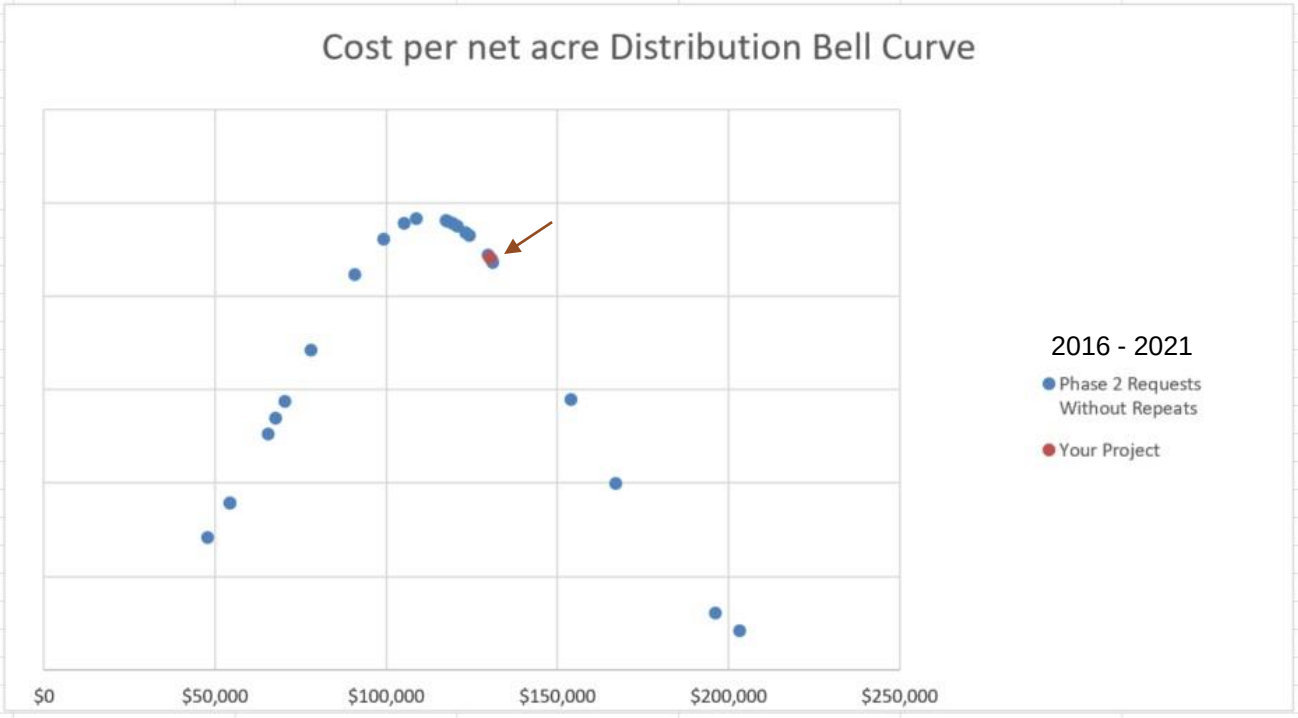
	Phase 0	Phase 1 (95% Design)	Percent Change
Construction Cost	$29,465,016	$19,124,385	-35.1%
Fully-Funded Cost	$39,185,267	$26,774,139	-31.7%
Project Area	383	295	-23.0%
Net Acres	312	206	-34.1%
AAHUs	166		
Construction Cost/Constructed acre	$76,932.16	$64,828.42	-15.7%
Total Cost (FFC)/net	$125,594	$130,229	3.7%

Projects	Total Cost/ Net Acre	Min	Max
TE-117	**130,229**		
PPL18 Phase I Approvals Average	46,822	14,006	109,758
PPL19 Phase I Approvals Average	88,656	30,633	187,300
PPL20 Phase I Approvals Average	50,682	14,905	77,661
PPL21 Phase 1 Approvals Average	60,622	56,999	66,913
PPL22 Phase I Approvals Average	89,578	75,698	104,475
PPL23 Phase I Approvals Average	132,661	113,400	171,459
PPL24 Phase I Approvals Average	85,088	56,847	105,086
PPL25 Phase I Approvals Average	101,566	86,925	120,665
PPL26 Phase I Approvals Average	141,160	91,015	168,208
PPL27 Phase I Approvals Average	89,341	31,016	118,573
PPL28 Phase I Approvals Average	107,108	39,158	138,009
PPL30 Phase I Approvals Average	136,946	116,143	170,472
PPL29 Phase I Approvals Average	128,506	118,863	142,264
OVERALL AVG PPL18-25 PHASE I APPROVALS	96,826	65,047	129,296
2009 Phase II Approvals Average	120,303	83,812	176,053
2010 Phase II Approvals Average	140,462	28,677	200,342
2011 Phase II Approvals Average	206,094	206,094	206,094
2012 Phase II Approvals Average	70,429	16,290	115,080
2013 Phase II Approvals Average	67,618	58,628	76,608
2014 Phase II Approvals Average	54,646	54,646	54,646
2015 Phase II Approvals Average	62,095	60,310	63,879
2016 Phase II Approvals Average	104,751	75,399	134,104
2017 Phase II Approvals Average	98,012	77,927	118,097
2018 Phase II Approvals Average	160,370	117,567	203,173
2019 Phase II Approvals Average	94,872	70,278	119,465
2020 Phase II Approvals Average	120,181	105,152	129,632
2021 Phase II Approvals Average	69,406	47,913	90,898
OVERALL AVG PHASE II APPROVALS 2009-2021	105,326	77,130	129,852
AVG ALL APPROVALS 2009-2021	101,076	69,178	129,066



- 8 Phase 2 *approvals* from 2009 to 2021 more expensive than TE-117

- 7 Phase 2 *requests* from 2016 to 2021 more expensive than TE-117



Island Marsh Creation and Nourishment (TE-117)

Change in Project Scope

Report to the Technical Committee

September 2, 2021

NOAA Fisheries and the Louisiana Coastal Protection and Restoration Authority request the Technical Committee recommend approval of a change in scope for the Island Road Marsh Creation and Nourishment Project (TE-117). A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate. At the 95% design level, a 34% decrease in net acres and 32% decrease in the fully funded cost is estimated. The draft cost estimate and Wetland Value Assessment (WVA) will be provided for interagency review as part of the 95% design review milestone. Therefore, final updated net acres, Average Annual Habitat Units (AAHUs) and a fully-funded cost will be available after the 95% design review meeting scheduled for September 23, 2021.

The TE-117 Project was approved on Priority Project List 23 with a fully-funded cost of $39,285,267. The total cost (FFC) per net acre was $125,594. The Phase 0 project consisted of four confined cells to create and nourish a total of 383 acres of tidal marsh habitat to begin restoring the structural framework of marshes and bayous that have deteriorated along Cutoff Canal and the Twin Pipelines Canal near Island Road in Terrebonne Parish. The 95% design consists of marsh restoration in three confined disposal areas now totaling approximately 295 acres along the Twin Pipelines Canal and the community of Isle de Jean Charles near Island Road. Two of the three new cells were options evaluated during Phase 0. The draft revised FFC is estimated to be $26,774,139. The reasons for modifications since Phase 0 that have resulted in a change in scope greater than 25% are mudline elevations, soils, pipelines and utilities, and inlet/outlet needs for a pumping station. Specific modifications since Phase 0 include relocation of marsh creation areas, relocation of the borrow area, and a revision to equipment access and dredge pipe corridor alignments.

1. Phase 0 MCAs were relocated from north of the Twin Pipelines Canal and adjacent to Cutoff Canal to south of and adjacent to the Twin Pipelines Canal and adjacent to the community of Isle de Jean Charles.
2. Phase 0 borrow area was relocated from Lake Felicity/Chien to Lake Tambour due to pumping distance and oyster lease and seed ground constraints. The new borrow site reduces the pumping distance. A new dredge pipe corridor is associated with the new borrow area.
3. The Phase 0 loss rate was -1.04%/yr and the Phase 1 loss rate is -1.46%/yr.
4. The benefit area delineation was revised to the dike centerline (from the exterior toe of the dike) for consistency in Phase 1 assessment methods.

The 95% Design Review meeting is scheduled for September 23, 2021. The revised cost estimate and benefits (net acres and AAHUs) are pending review by the Engineering and Environmental Workgroups. The Phase 0, Phase 1 (95% Design), and percent change metrics are presented in Table 1. Final preparation of information required in a Phase 2 authorization request is underway. A step-wise data acquisition and design approach was adopted by the project delivery team to deliver a constructible design

that provides restoration for ecological and storm protection synergy important for local stakeholders. There is a cost reduction similar in amount to the net acreage reduction.

Table 1. Comparison of TE-117 Phase 0 to Phase 1 (95% Design). The Phase 1 fully-funded cost is estimated.

	Phase 0	Phase 1 (95% Design)	Percent Change
Construction Cost	$29,465,016	$19,124,385	-35.1%
Fully-Funded Cost	$39,185,267	$26,774,139	-31.7%
Project Area	383	295	-23.0%
Net Acres	312	206	-34.1%
AAHUs	166		
Construction Cost/Constructed acre	$76,932.16	$64,828.42	-15.7%
Total Cost (FFC)/net	$125,594	$130,229	3.7%

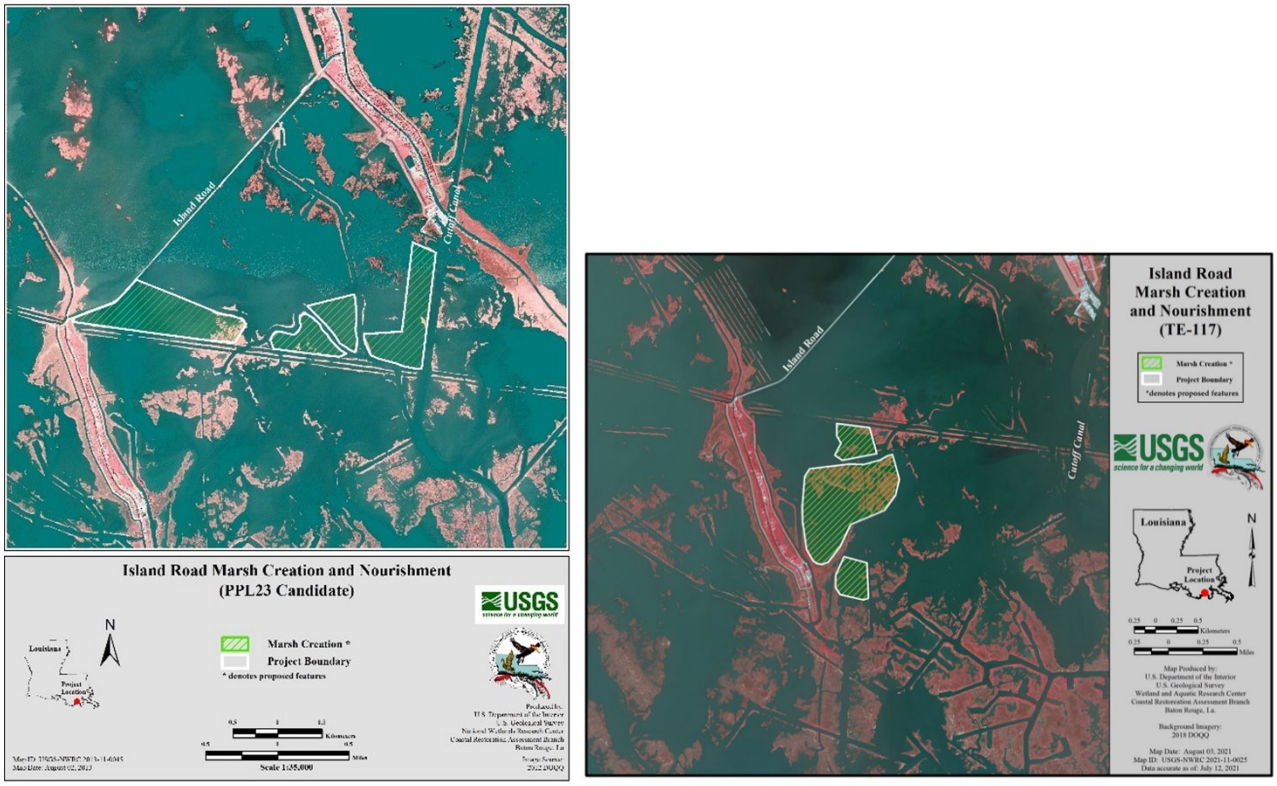


Figure 1. Phase 0 (left) and Phase 1 (right) project maps.

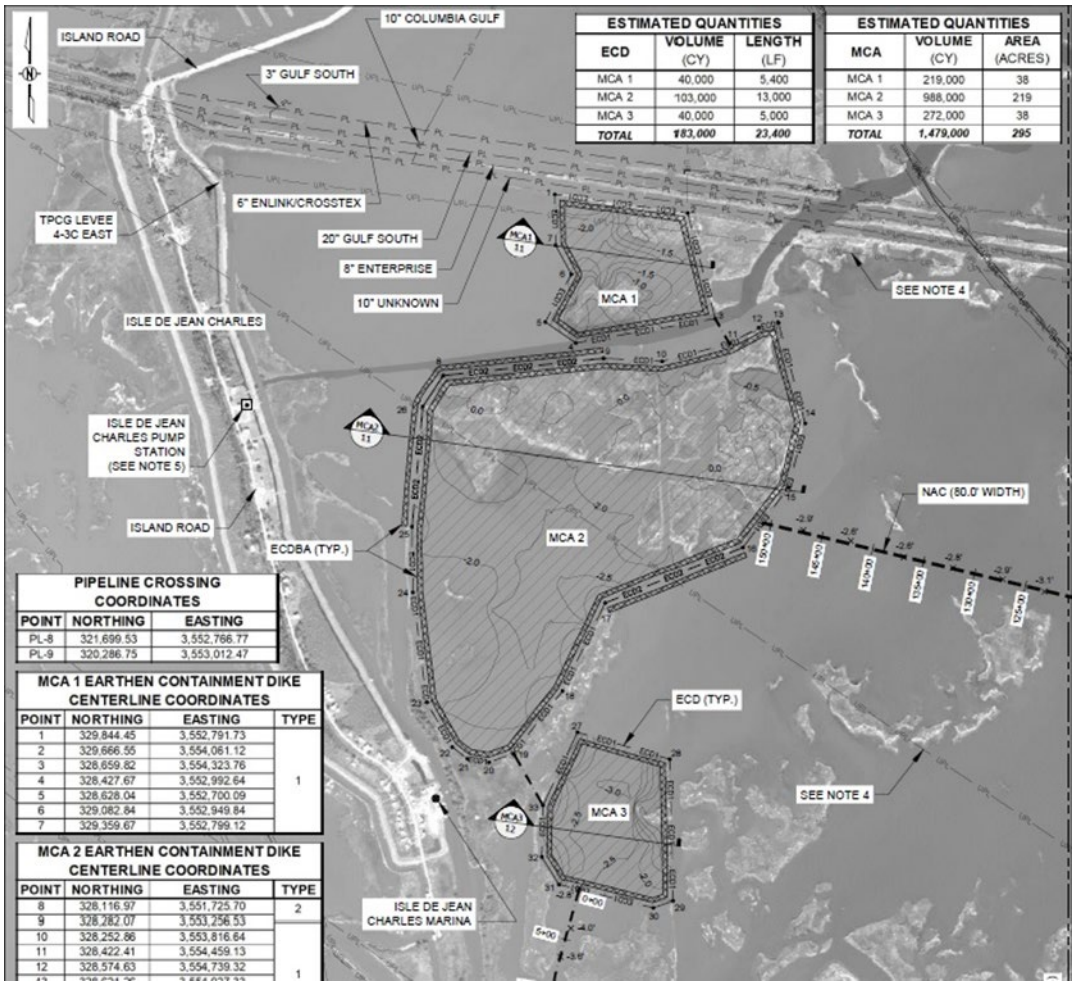


Figure 2. Plan view of Phase 1 95% design restoration features.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR A TRANSFER OF APPROVED O&M TO APPROVED MONITORING FOR FOUR MILE CANAL TERRACING AND SEDIMENT TRAPPING (TV-18) PROJECT

For Decision:

NMFS and CPRA request Technical Committee recommendation of approval to transfer $19,354 from the approved Operations and Maintenance budget to the approved Monitoring budget for the Four Mile Marsh Creation and Terracing (TV-18) Project. Funds are needed for two years of CRMS photography analysis deemed important for final reporting for this project. Incremental funding approval for the final monitoring increment will be made in a motion later in this agenda. This action does not represent an overall budget increase to the Project. It would reduce the Project's Operations and Maintenance budget to $1,654,507 and increase the Project's Monitoring budget to $198,634.

Request for CWPPRA Project Monitoring Funding Increase Project
Performance Synopsis
September 2, 2021

FOUR MILE CANAL TERRACING AND SEDIMENT TRAPPING (TV-18)

1 - Project History

Construction of Four Mile Canal Terracing and Sediment Trapping TV-18 of PPL9 was constructed by May of 2004. The projects consists of earthen terraces meant to reduce the extensive (8ft/yr) shoreline erosion of Little White Lake and Four Mile Canal. Sections of rock dike were added as a maintenance event. Funds that had been approved for a mid-life reconstruction of some terraces have not been requested. The project has performed well despite the heavy terrace erosion along the canal, where reducing the boat-wake energy is most challenging.

2 – Increase Request

This request is to approve the transfer of O&M to Monitoring funds in the amount of $19,354. This will increase the total funded monitoring budget to $198,634, and not increase total project costs. Funds will be used to perform land water analysis of 2012 and 2018 photography to capture results of the project at mid and end years. The currently remaining monitoring funds of $78k (including a $375 incremental request) are sufficient to complete planned shoreline and vegetation surveys in 2022 and a final report in 2023. Funds are requested for the analysis of existing photography.

3 – Increase Justification

The land water analysis for TV-18 is $9,677.09 per year analyzed, and the years available from existing CRMS photography are 2012, 2015, and 2018. We request funds for the analysis of two years (2012 and 2018), to assess the project area change as it has undergone significant storm impacts since the last 2011 OMM report and 2009 photography. Results will be used in project close-out reports and be used in future calculations of sediment trapping rates.

CWPPRA Project Monitoring Budget Adjustment Template

Project Nan Four Mile C
PPL: 9
Project Spo NOAA

Prepared By: Leigh Anne Sharp
Date Prepared: 8/11/2021
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State Monitoring	Corps Admin	Fed Monitoring	FY	State Monitoring	Corps Admin	Fed Monitoring	FY	State Monitoring	Corps Admin	Fed Monitoring
0	2005	$24,511			2005				2005	$24,511		
-1	2006	$5,987			2006				2006	$5,987		
-2	2007	$6,184			2007				2007	$6,184		
-3	2008	$6,388			2008				2008	$6,388		
-4	2009	$6,599			2009				2009	$6,599		
-5	2010	$6,817			2010				2010	$6,817		
-6	2011	$7,042			2011				2011	$7,042		
-7	2012	$7,274			2012				2012	$7,274		
-8	2013	$7,514			2013				2013	$7,514		
-9	2014	$7,762			2014				2014	$7,762		
-10	2015	$8,018			2015				2015	$8,018		
-11	2016	$8,283			2016				2016	$8,283		
-12	2017	$8,556			2017				2017	$8,556		
-13	2018	$8,839			2018				2018	$8,839		
-14	2019	$9,130			2019				2019	$9,130		
-15	2020	$9,432			2020				2020	$9,432		
-16	2021	$9,743			2021				2021	$9,743		
-17	2022	$10,064			2022				2022	$10,064		
-18	2023	$10,396			2023				2023	$10,396		
-19	2024	$10,740			2024				2024	$30,094		
	Total	$179,280	$0	$0		$178,905	$0	$0		$198,634	$0	$0

SUMMARY:
Benefits:

Original Net Acres	Revised Net Acres

Approved Monitoring Budget vs Obligations to Date Increment Years -19

Funding Category	Approved Original Monitoring Baseline	Monitoring Obligations to Date	Difference
State Monitoring			
Corps Admin			
Fed Monitoring			
Totals			

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount

Approved Original Budgeted Monitoring Funds less Monitoring Obligations to Date:

	Total Approved Original Monitoring Baseline	Monitoring Obligations to Date	Remaining Available Monitoring Budget
	$179,280	***$178,905***	***$375***

Original Approved vs Proposed Revised Fully Funde

Approved Fully Funded Baseline Estimate	Additional Monitoring funding required for remaining project life	Requested Revised Fully Funded Estimate
$179,280	***$19,354***	***$198,634***

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State Monitoring	$179,280	$198,634	($19,354)
Corps Admin	$0	$0	$0
Fed Monitoring	$0	$0	$0
Total	***$179,280***	***$198,634***	($19,354)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectivness	Revised Cost Effectiveness
10.80%	***#DIV/0!***	***#DIV/0!***

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR THE MONITORING AND O&M BUDGET INCREASES FOR BRADY CANAL HYDROLOGIC RESTORATION (TE-28) PROJECT

For Decision:

NRCS and CPRA request a $114,024.21 Monitoring budget increase and a $43,789.00 Operations and Maintenance budget increase to reconcile past expenditures in advance of financial closeout.

Request for CWPPRA Project Monitoring and Operations and Maintenance Budget Increases
Project Performance Synopsis
August 11, 2021

Brady Canal Hydrologic Restoration (TE-28)

1 – Project History

The Brady Canal Hydrologic Restoration (TE-28) project involved the installation and maintenance of canal plugs along with the repair, construction, and maintenance of levees, several different types of weirs, rock plugs, earthen and/or rock and earthen embankments, as well as the construction and maintenance of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediment. Project construction began in August 1999 and was completed on July 10, 2000. During this period, the following features were constructed: three fixed crest weirs with variable crest section(s) (Figure 1, structures 14, 21, and 23); a fixed crest weir with barge bay (structure 6); a fixed crest weir (structure 24); two rock armored channel liners (structures 10 and 20); a rock plug (structure 7); and three different embankment types (rock armored earthen embankment, rock dike, and earthen embankment).

Throughout the life of the project six (6) in-kind service efforts took place by the land owners to repair breaches along the project boundary. CPRA conducted three (3) additional maintenance projects (2003, 2012, and 2018).

CPRA collected an extensive array of data throughout the project life. Vegetation data was collected seven (7) times between 1996 and 2016, hourly salinity and water levels were collected from 1996 – 2018 at various locations using between 3 and 9 instruments (of which two instruments were used to calculate marsh mat movement in the northern portion of the project), habitat mapping was conducted four (4) times between 1998 and 2016, submerged aquatic vegetation (SAV) was sampled three (times) between 1996 and 2002, and accretion measurements were obtained twice in 2000/01 and 2006/07.

The following is based on the conclusions found in the 2018 Operations, Maintenance, and Monitoring Close-out Report:

<u>Monitoring:</u>

- The goal for decreasing marsh loss was achieved as both fresh and intermediate marsh acreages have increased inside the project area by ~294 and ~37 acres, respectively. These increases

equate to a project-wide average marsh gain of ~16 acres per year, nearly reversing historical loss rates from 1932-1958.

- The goal to increase or maintain fresh and intermediate marsh vegetation has likewise been successfully achieved over the course of the project. Obligate Wetland and Facultative Wetland species dominate the wetland status of species throughout the project area. Positive trends in important fresh and intermediate marsh indicator species such as *Sagittaria lancifolia*, *Panicum hemitomon*, *Paspalum vaginatum* and *Schoenoplectus americanus* are evident within the project area where they are out-performing their influence in reference areas.
- The goal of decreasing variability in water level within the project area has been achieved, as an examination of water level range revealed statistically different, lower water level variability in CTU 1 and 2 when compared to respective reference areas. The range analysis also revealed lower variability within CTU 3 compared to its reference area, although the difference was not statistically significant.
- Results indicate that the goal of reducing salinity variability inside the project area was not achieved.

Operations and Maintenance

Summary of past maintenance projects include the following:

10/21/2002 - Apache Corporation contracted Frisco Construction Co. to repair and restore the existing levee embankment along Turtle Bayou, Superior Canal, and along the west bank of Jug Lake. This work was completed at a total cost of $5,310,

04/2003 - Brady Canal Breach Repair Project (2003) – This maintenance project was completed on August 13, 2003 and included the installation of approximately 9,667 tons of riprap along the north bank of Bayou Decade, 2,325 linear feet of levee refurbishment and earthen breach repair along Turtle Bayou and Superior Canal, and replacement of a timber pile on the navigational aid structure at Weir 6. The cost associated with the engineering, design and construction of the 2003 Brady Canal Breach totaled $600,430.65

8/15/2003 – ConocoPhillips, formerly Burlington Resources, completed the repair of two (2) large breaches along Little Carencro Bayou following Hurricane Lili. The maintenance project was completed on 8/15/2003 at a total cost of $31,642.57, including construction oversight and administration.

10/31/2003 - Apache Corporation contracted Berry Bros. General Contractors to completed 5,050 linear feet of levee refurbishment along the west bank of Jug Lake. The cost for the levee refurbishment including construction oversight was $34,284.87. Following the levee refurbishment, Shaw Coastal performed an as-built survey of the repairs at a cost of $5,100.60. The total project cost for this maintenance event was $39,385.47.

9/20/2006 - Apache Corporation contracted Frisco Construction Co. Inc. of Houma, La. to repair breaches and refurbish low areas of the spoil banks along the east bank of Jug Lake and embankment tie-ins adjacent to structures #21, #23 and #24. The repairs were completed on 9/20/2006 at a total cost of $9,265.

9/30/2006 – Conoco Phillips contracted Dupre Brothers, Inc. of Houma, La. to repair several breaches along Carencro Bayou, Little Carencro Bayou and Brady Canal using material from adjacent bayous. The total cost for refurbishment and repair of these breaches was $25,890.

7/30/2007 – Apache Corporation contracted Dupre Brothers Construction, Inc. of Houma, La. to repair several breaches along the east bank of Jug Lake and reinforce earthen embankment tie-ins adjacent to variable crest weir structures #21, #23, and #24. The repairs were completed on 7/30/2008 at a total cost of $9,103.12

10/2013 - Brady Canal 2012 Maintenance Project – This maintenance project began in October 2013. It included the refurbishment of 13,900 linear feet of earthen embankment along the perimeter of Jug Lake, rock armoring of the embankment tie-ins adjacent to the three (3) water control structures in Jug Lake, replacement of two (2) timber dolphins at Structure No. 6, replacement of three (3) warming signs at Structure No. 10, and a breach repair/closure adjacent to an existing timber bulkhead at the intersection of Carencro Bayou and Brady Canal. The total project costs associated with surveying, engineering, design, and construction of the 2012 maintenance project totaled $1,693,284.39.

12/2019 – Brady Canal 2019 Maintenance Project – The project was initiated due to routine inspections and damage assessments conducted by CPRA and NRCS to address deficiencies along the earthen embankments along the northern lake rim of Jug Lake. Roughly 3 miles of earthen embankment refurbishment and breach repairs were included in this maintenance project. The total project cost including construction, engineering and design, and construction oversight was $497,203.

In addition to the above maintenance project, navigational aids were diagnostically tested, inspected and repaired quarterly and the three (2) water control structures operated twice a year over the life of the project.

2 – Increase Request

The amount of additional funding for Monitoring being requested is $114,024.21. The amount being requested for O&M is $43,789.

3 – Increase Justification

The monitoring plan was developed in 1996 with adjustments made in 1998 (reduced in scope due to budgetary constraints) and 2003 (evaluation of project specific monitoring as it relates to the implementation of CRMS). Since that time costs increased as a result of Hurricane Katrina/Rita in 2005 and indirect costs applied to the project. Due to these increases to the project, monitoring inadvertently overspent the budget by $114,024.21. This request is being made to balance the monitoring budget and close-out the project. The overage in the O&M budget of $43,789 was mainly due the indirect cost which was not accounted for in the original funding for the project.

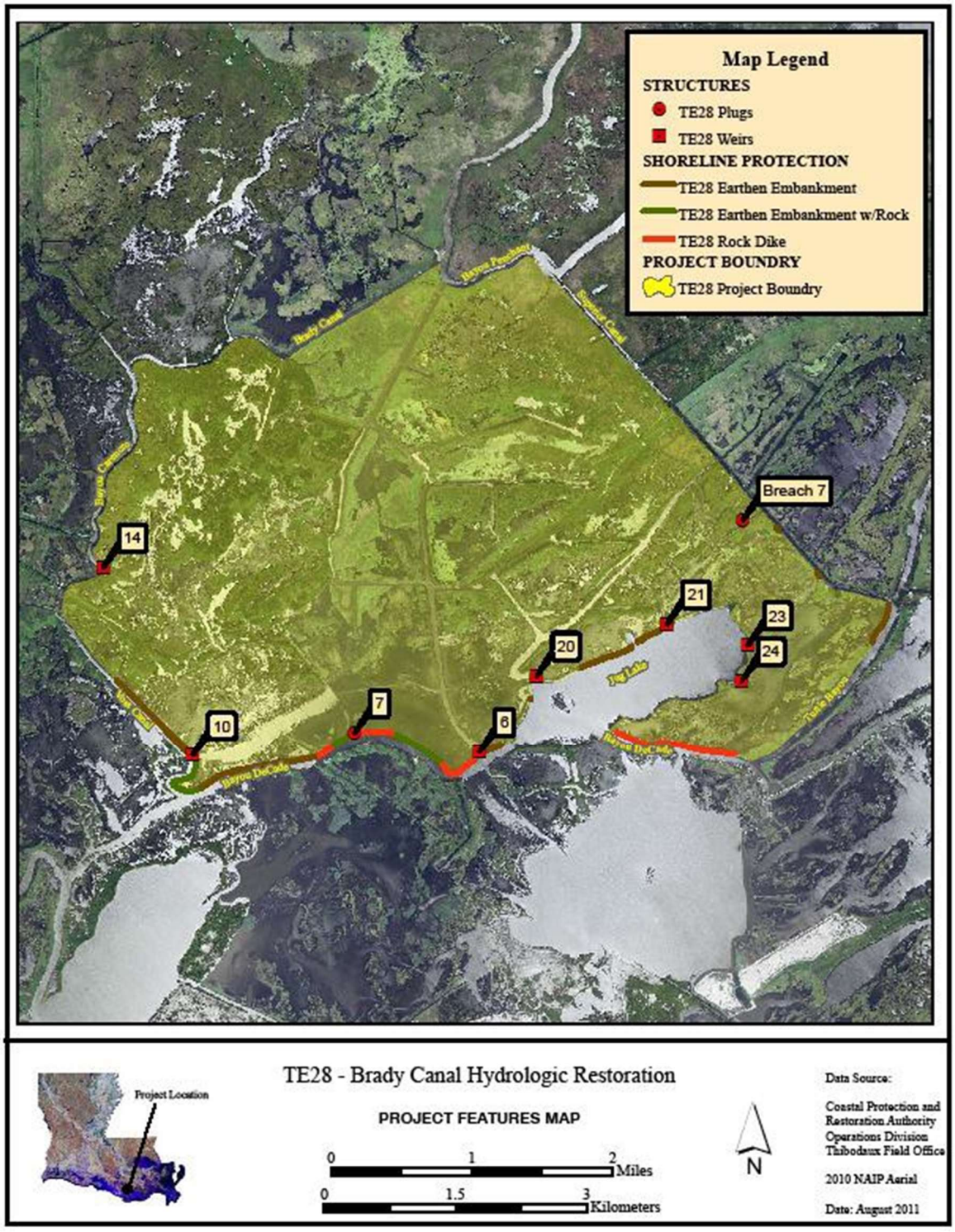


Figure 1. Brady Canal Hydrologic Restoration (TE-28) project features

CWPPRA Project O&M Budget Adjustment Template

Project Name: Brady Canal Hydrologic Restoration TE-28
PPL: 3
Project Sponsor: NRCS

Prepared By: CPRA / NRCS Q Kinler
Date Prepared: 8/11/2021
Date Revised: 8/6/2021

	Approved Original Base Line (Includes TF approved increase from Jan 1999)				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2000	$27,037	$0	$0	2000	$0	$0	$0	2000	$0	$0	$0
-1	2001	$27,740	$0	$0	2001	$0	$0	$0	2001	$0	$0	$0
-2	2002	$28,461	$0	$0	2002	$0	$0	$0	2002	$0	$0	$0
-3	2003	$29,201	$0	$0	2003	$0	$0	$0	2003	$0	$0	$0
-4	2004	$306,979	$0	$0	2004	$0	$0	$0	2004	$0	$0	$0
-5	2005	$30,739	$0	$0	2005	$0	$0	$0	2005	$0	$0	$0
-6	2006	$31,539	$0	$0	2006	$0	$0	$0	2006	$0	$0	$0
-7	2007	$32,359	$0	$0	2007	$0	$0	$0	2007	$0	$0	$0
-8	2008	$33,200	$0	$0	2008	$0	$0	$0	2008	$0	$0	$0
-9	2009	$276,765	$0	$0	2009	$0	$0	$0	2009	$0	$0	$0
-10	2010	$34,949	$0	$0	2010	$0	$0	$0	2010	$0	$0	$0
-11	2011	$35,857	$0	$0	2011	$0	$0	$0	2011	$0	$0	$0
-12	2012	$36,790	$0	$0	2012	$0	$0	$0	2012	$0	$0	$0
-13	2013	$37,746	$0	$0	2013	$0	$0	$0	2013	$0	$0	$0
-14	2014	$165,402	$0	$0	2014	$0	$0	$0	2014	$0	$0	$0
-15	2015	$39,735	$0	$0	2015	$0	$0	$0	2015	$0	$0	$0
-16	2016	$40,768	$0	$0	2016	$0	$0	$0	2016	$0	$0	$0
-17	2017	$41,828	$0	$0	2017	$0	$0	$0	2017	$0	$0	$0
-18	2018	$42,915	$0	$0	2018	$0	$0	$0	2018	$3,593,821	$7,918	$94,083
-19	2019	$44,028	$0	$0	2019	$0	$0		2019	$43,789	$6,199	$0
	Total	$1,344,038				$3,593,821	$7,918	$94,083		$3,637,610	$14,117	$94,083

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
297	297

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -19

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	$1,344,038	$3,593,821	($2,249,783)
Corps Admin	$0	$7,918	($7,918)
Fed S&A & Insp	$0	$94,083	($94,083)
Totals	$1,344,038	***$3,695,822***	($2,351,784)

Approved Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved O&M	O&M Obligations to Date	Remaining Available O&M Budget
1999 App. Budget	***$1,344,038***		
2009 Increase	***$1,845,463***		
2012 Increase	***$468,731***		
Totals	***$3,658,232***	***$3,695,822***	***($37,590)***

Includes $14,117 for COE

Total Approved Budget less Total Proposed Revised Budget

Funding Category	Current Total	Proposed Revised Total	Difference
State O&M & Insp.	$3,550,032	$3,593,821	($43,789)
Corps Admin	$14,117	$14,117	$0
Fed S&A & Insp	$94,083	$94,083	$0
Total	***$3,658,232***	***$3,702,021***	($43,789)

Current Request:

Current Increment Funding Request Year	Proposed Revised O&M Estimate	Remaining Available O&M Budget	Current O&M Funding Request Amount
Year -19	***$49,988***	***$6,199***	***$43,789***
Totals	***$49,988***	***$6,199***	***$43,789***

Total Original Approved O&M vs Proposed Revised Fully Funded O&M Estimates:

Approved O&M Estimate	Previously Approved O&M Increases	Additional O&M Funding Required for Remainder of Project Life	Requested Revised Fully Funded Monitoring Estimate
$1,344,038	$2,314,194	$43,789	$3,702,021

Total Original Approved vs Proposed Revised Fully Funded Estimates:

Total Original Fully Funded Baseline Estimate	Approved Net Budget Change to E&D, Constr., O&M and Monitoring	Pending O&M and Monitoring funding required for remaining project	Requested Revised Fully Funded Estimate
$5,897,400	***$1,696,352***	***$157,813***	***$7,751,565***

Change in Total Cost and Cost Effectiveness:

	Cost Estimate % Change	Cost Effectiveness	Revised Cost Effectiveness
Original Fully Funded Baseline Est.		***$19,857***	
Approved Fully Funded Baseline Est. Plus Net Budget Changes	***31.44%***		***$26,100***

CWPPRA Project Monitoring Budget Adjustment Template

Project Name: Brady Canal Hydrologic Restoration
PPL: 3
Project Sponsor: NRCS

Prepared By: CPRA/TRO and NRCS/Q Kinler
Date Prepared: 8/6/2021
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State Monitoring	Corps Admin	Fed S&A & Insp	FY	State Monitoring	Corps Admin	Fed S&A & Insp	FY	State Monitoring	Corps Admin	Fed S&A & Insp
0												
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18												
-19										$114,024		
	Total	$863,200	$0	$0		$1,198,362	N/A	N/A		$114,024	N/A	N/A

SUMMARY:
Benefits:

Original Net Acres	Revised Net Acres
297	297

Approved Monitoring Budget vs Obligations to Date: Increment Years -0 through -19

Funding Category	Approved Original Monitoring Baseline	Monitoring Obligations to Date	Difference
State Monitoring	$863,200	$1,198,362	($335,162)
Corps Admin	N/A	N/A	N/A
Fed S&A & Insp	N/A	N/A	N/A
Totals	$863,200	***$1,198,362***	($335,162)

Current Request:

Current Monitoring Increment Funding Request Year	Current Monitoring Funding Request Amount
Year -19	***$114,024***

Approved Budgeted Monitoring Funds less Monitoring Obligations to Date:

	Total Approved Monitoring	Monitoring Obligations to Date	Remaining Available Monitoring Budget
Orig Appr Budget	***$863,200***	***$1,198,362***	
Funding Dec. 1996	***($129,107)***		
Funding Inc. 1998	***$350,245***		
Totals	***$1,084,338***	***$1,198,362***	***($114,024)***

Monitoring Original Approved vs Proposed Revised Fully Funded Es

Approved Monitoring Estimate	Additional Monitoring funding required for remaining project life	Requested Revised Fully Funded Monitoring Estimate
$1,084,338	***$114,024***	***$1,198,362***

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Current Total	Proposed Revised Total	Difference
State Monitoring	$1,084,338	$1,198,362	($114,024)
Corps Admin	N/A	N/A	N/A
Fed S&A & Insp	N/A	N/A	N/A
Total	***$1,084,338***	***$1,198,362***	($114,024)

Total Original Approved vs Proposed Revised Fully Funded Estimat

Total Original Fully Funded Baseline Estimate	Approved Net Budget Change to E&D, Constr., O&M and Monitoring	Pending O&M and Monitoring funding required for remaining project life	Requested Revised Fully Funded Monitoring Estimate
$5,897,400	***$1,696,352***	***$157,813***	***$7,751,565***

Change in Total Cost and Cost Effectiveness:

	Cost Estimate % Change	Cost Effectiveness	Revised Cost Effectiveness
Original Fully Funded Baseline Est.		***$19,857***	
Approved Fully Funded Baseline Est. Plus Net Budget Changes	***31.44%***		***$26,100***

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR A ONE-YEAR TIME EXTENSION AND O&M BUDGET INCREASE FOR BAYOU CHEVEE SHORELINE PROTECTION (PO-22) PROJECT

For Decision:

USACE and CPRA request a one-year time extension and $81,786.00 budget increase to install 15 navigation warning signs with lights along the length of the project as recommended by USCG and to complete project closeout.

O&M Funding Increase Request Beyond the Approved O&M Budget
for
Bayou Chevee Shoreline Protection (PO-22) Project

1) Project History

a. Description

Construction of the Bayou Chevee project was completed on December 7, 2001. The project is divided into two areas (see Fig 1). The rock dike protects both areas from shoreline erosion.

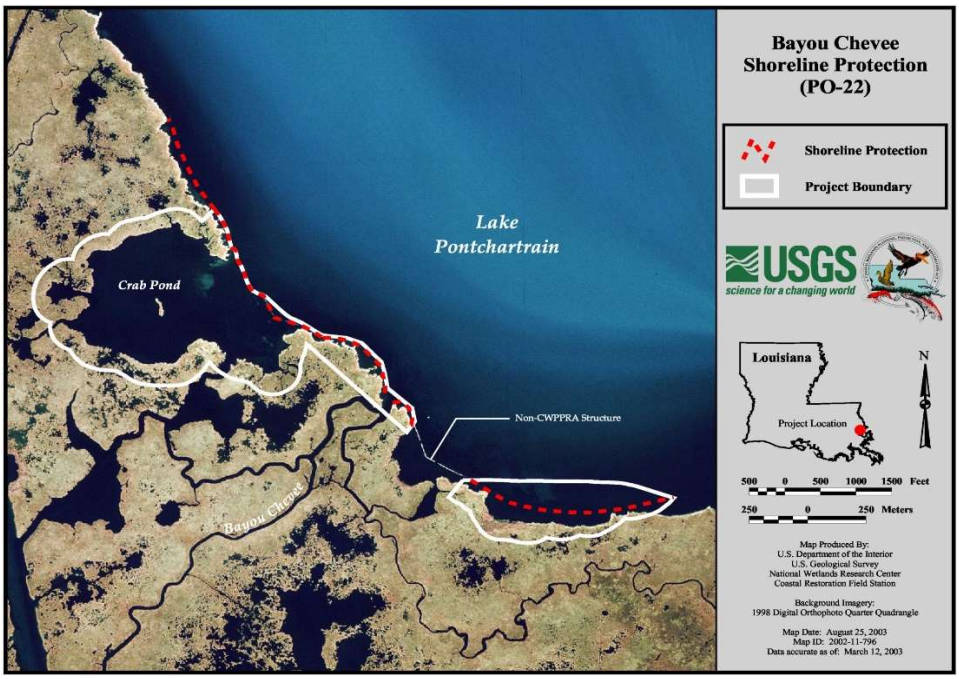


Figure 1: Project Map

High wave energies associated with Lake Pontchartrain and Chef Pass have caused extensive erosion along the southern Lake Pontchartrain shoreline estimated to average 15 feet per year. Thus, without the project, it was estimated that the shoreline erosion would have amounted to 300 feet in 20 years. The project was intended to alleviate this problem through the construction of 8,875 feet (extended from the originally planned 5,690 feet by contract modification) of new rock dike that extends across both the North and South Coves. A pre-existing U.S. Fish and Wildlife Service rock dike located between the North Cove and the South Cove serves to link the dike sections into one continuous rock structure.

The principal project features include:

1. North Cove Rock Dike – 4,825 feet
    a. Elevation – 3.6 feet NGVD29

b. Crown width – 4.9 feet

2. South Cove Rock Dike – 4,050 feet
   a. Elevation – 3.6 feet NGVD29
   b. Crown width – 4.9 feet
3. Fish dips – two on each of the North Cove and South Cove dikes.
4. Settlement plates (4) – placed on east-southeast side of each fish dip.
5. Flotation channels – channels were constructed a minimum of 82 feet from the center of the dike and silted in shortly after construction.

b. O&M Completed to Date

Completed O&M activities to date include performing scheduled project inspections as well as conducting two elevation surveys of the rock dike in 2011 and 2018.

c. Original Project Budget (O&M)

The original approved twenty year CWPPRA O&M budget was $236,693.

d. Previous O&M Funding Increases

An additional $85,000 was requested and approved in 2020 to perform installation of 10 warning signs along the rock dike prior to project close out.

2) Increase Request

a. O&M Increase Being Requested

$81,786 increase to O&M funds

b. Fully Funded Cost Estimate

Previous = $2,675,067.01
New = $2,756,853.01

c. Description of Proposed O&M Events to Be Accomplished With the Requested Funding

The requested funding would be used to install the USCG required 15 warning signs with lights along the length of the rock dike prior to project close out.

3) O&M Fund Increase Justification

a. Summary of Project Performance

For the most part, the project has been effective in achieving the goal of reducing the rate of shoreline erosion in the North and South Cove areas. However, as evidenced by the large amount of shoreline retreat between 2005 and 2008, the capacity of the rock structure to prevent erosion was overcome by the effects of Hurricane Katrina in 2005. For the period of time that included Hurricane Katrina (2005 – 2008), the rates of shoreline retreat in the North and South cove project areas were 4.3 and 10.4 times higher, respectively, than the next highest rates of retreat in any other time period.

The project has clearly been effective in achieving the goal of maintaining SAV abundance in the North Cove and maintaining/increasing abundance in the South Cove project areas. Frequency of occurrence of SAV in both the North Cove project and reference areas has been high since construction of the rock dike. In the South Cove, SAV frequency has been consistently higher behind the shoreline protection in the project area than in the reference area.

Table 1. Rate of shoreline change for north and south cove project and reference areas for 5 time periods of the PO-22 project. Rates shown are the average of all transects for the given area and time period. All values are ft/yr. Negative values indicate shoreline retreat.

Time Period	North Cove Project	North Cove Reference - Pond	North Cove Reference - LP Shoreline	South Cove Project	South Cove Reference
2002 - 2005	-2.2	0.0	-0.3	-4.2	-34.7
2005 - 2008	-26.5	-1.6	-3.0	-74.9	-160.6
2008 - 2011	-6.2	-2.3	-6.7	-7.2	-31.2
2011 - 2014	-1.4	0.3	-3.9	-4.7	-10.2
2002 - 2014	-8.5	-0.9	-3.5	-22.8	-64.8

Table 2. Net shoreline change for north and south cove project and reference areas for 5 time periods of the PO-22 project. Values shown are the average of all transects for the given area and time period. All values are in feet. Negative values indicate shoreline retreat.

Time Period	North Cove Project	North Cove Reference - Pond	North Cove Reference - LP Shoreline	South Cove Project	South Cove Reference
2002 - 2005	-6.6	-0.1	-0.9	-12.7	-104.1
2005 - 2008	-89.2	-5.4	-10.1	-252.0	-540.2
2008 - 2011	-18.8	-6.9	-20.4	-21.8	-94.7
2011 - 2014	-4.8	1.0	-13.0	-15.5	-33.7

2002 - 2014	-108.1	-11.4	-44.3	-289.2	-822.8

b. Summary of Project Deficiency

The installation of 15 warning signs with lights will satisfy the USCG navigation aid requirements, enabling the project features to be left in place after the end of the project life.

c. Reasons for Requested Transfer

The request made in September 2020 was based on an estimate produced using the CWPPRA cost estimate spreadsheet. It was assumed that only warning signs would be installed at 1,000 foot spacing. After consulting the USCG they will require 15 signs with lights to be installed. This change along with State IDC corrections increase the needed funds to perform this maintenance event and proceed with project close out. An additional year of project time is being requested to make sure there is enough time available to properly close the project out.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Bayou Chevee Shoreline Protection
PPL: 5
Project Sponsor: USACE

Prepared By: Barry Richard
Date Prepared: 8/19/2020
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2002	$289,524		$32,169								
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18					2021	$180,263		$32,041				
-19									2022	$165,650		$2,000
-20									2023	$20,525	$2,000	$1,000
	Total	$289,524	$0	$32,169		$180,263	$0	$32,041		$186,175	$2,000	$3,000

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
212	212

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -2

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	$289,524	$180,263	$109,260
Corps Admin	$0	$0	$0
Fed S&A & Insp	$32,169	$32,041	$129
Totals	$321,693	***$212,304***	$109,389

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	$321,693	***$212,304***	***$109,389***

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	$289,524	$366,438	($76,915)
Corps Admin	$0	$2,000	($2,000)
Fed S&A & Insp	$32,169	$35,041	($2,871)
Total	***$321,693***	***$403,479***	($81,786)

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -19	***($81,786)***

Original Approved vs Proposed Revised Fully Funde

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
$2,675,067	***$81,786***	***$2,756,853***

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectivness	Revised Cost Effectiveness
3.06%	***$12,618.24***	***$13,004.02***

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

ANNUAL REQUEST FOR INCREMENTAL FUNDING FOR FY24 ADMINISTRATIVE COSTS FOR CASH FLOW PROJECTS

For Decision:

The U.S. Army Corps of Engineers will request funding approval in the amount of $80,954 for administrative costs for cash flow projects beyond Increment 1. The Task Force will consider the recommendation and vote to approve the request for funds for the following projects:

- Freshwater Bayou Wetland Protection, (ME-04), PPL-2, NRCS
  Incremental Funding amount: $4,070

- Cote Blanche Hydro Rest, (TV-04), PPL-3, NRCS
  Incremental Funding amount: $2,771

- Black Bayou Hydrologic Restoration (CS-27), PPL-6, NOAA
  Incremental Funding amount: $1,501

- Sabine Cycles 4 &5 (CS-28-4-5), PPL-8, FWS
  Incremental Funding amount: $4,341

- Barataria Bain Landbridge Shoreline Protection Phase 3, (BA-27c), PPL-9, NRCS
  Incremental Funding amount: $2,764

- Black Bayou Culverts Hydrologic Restoration (CS-29), PPL-9, NRCS
  Incremental Funding amount: $1,474

- Timbalier Island Dune & Marsh Restoration (TE-40), PPL-9, EPA
  Incremental Funding amount: $2,366

- New Cut Dune (TE-37), PPL-9, EPA
  Incremental Funding amount: $1,448

- Freshwater Intro S. of Hwy 82 (ME-16), PPL-9, FWS
  Incremental Funding amount: $1,001

- Four Mile Canal Terracing & Sediment Trapping (TV-18), PPL-9, NOAA
  Incremental Funding amount: $2,525

- Perry Ridge WB Stabilization (CS-30), PPL-9, NRCS
  Incremental Funding amount: $2,525

- GIWW Bank Restoration (TE-43), PPL-10, NRCS
  Incremental Funding amount: $4,269

- Lake Borgne SP (PO-30), PPL-10, EPA
  Incremental Funding amount: $2,452

- North Lake Mechant (TE-44), PPL-10, FWS
  Incremental Funding amount: $962

- East Sabine Lake (CS-32), PPL-10, FWS
  Incremental Funding amount: $3,745

- Delta Management at Fort St. Philip (BS-11), PPL-10, FWS
  Incremental Funding amount: $2,580

- Grand White Lake (ME-19), PPL-10, FWS
  Incremental Funding amount: $3,630

- Grand Lake SP (ME-21a), PPL-11, NRCS
  Incremental Funding amount: $2,813

- West Lake Boudreaux (TE-46), PPL-11, FWS
  Incremental Funding amount: $2,122

- Coastwide Nutria Control Program, (LA-03b), PPL-11, NRCS
  Incremental Funding amount: $1,532

- Dedicated Dredge BB Landbridge (BA-35), PPL-11, FWS
  Incremental Funding amount: $1,976

- Pass Chaland to Grand Bayou Pass Barrier Shoreline, (BA-37), PPL-11, NOAA
  Incremental Funding amount: $2,037

- Barataria Bain Landbridge Shoreline Protection Phase 4, (BA-27d), PPL-11, NRCS
  Incremental Funding amount: $1,326

- Bayou Dupont Sediment Delivery System (BA-39), PPL-12, EPA
  Incremental Funding amount: $2,053

- South White Lake Shoreline Protection (ME-22), PPL12, COE
  Incremental funding amount: $1,476

- Whiskey Island Back Barrier (TE-50), PPL-13, EPA
  Incremental Funding amount: $1,918

- Goose Point (PO-33), PPL-13, FWS
  Incremental Funding amount: $1,422

- East Marsh Island (TV-21), PPL-14, NRCS
  Incremental Funding amount: $1,635

- Lake Hermitage Marsh Creation, (BA-42), PPL-15, FWS
  Incremental Funding amount: $4,811

- West Belle Pass Barrier Headland Restoration, (TE-52), PPL-16, NOAA
  Incremental Funding amount: $2,976

- Bayou Dupont Marsh, (BA-48), PPL-17, NOAA
  Incremental Funding amount: $2,869

- Grand Liard, (BA-68), PPL-18, NOAA
  Incremental Funding amount: $2,843

- Oyster Bayou, (CS-58), PPL-21, NOAA
  Incremental Funding amount: $1,374

- Bayou Dupont SDS, (BA-164), PPL-22, EPA
  Incremental Funding amount: $1,347

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR FUNDING FOR THE CWPPRA PROGRAM'S TECHNICAL SERVICES

For Decision:

The U.S. Geological Survey (USGS) and CPRA are requesting funding for technical services for the CWPPRA program in the amount of $216,546. The Technical Committee will consider and vote to make a recommendation to the Task Force to approve the request for budget increase and funding for technical services in the amount of $216,546.

United States Department of the Interior
U.S. GEOLOGICAL SURVEY

Wetland and Aquatic Research Center

May 7, 2021
Scope of Work

Technical Services to the CWPPRA Program

Accurate and timely information is critical to large, interagency programs such as CWPPRA for project planning and interacting with the general public. Due to the spatial extent of the CWPPRA program, the number of stakeholders involved, and the amount of Federal and State dollars associated with the program, the continued maintenance of project, GIS, and website data are necessary to ensure the most up to date and accurate data are available. It is the goal of USGS to provide the CWPPRA partners and the public with timely and accurate information about the program and the constructed projects, as well as, aid project managers during project reevaluation.

Project Information Database Maintenance Task Description:

WARC has created and maintains a real-time, interactive, internet-based data management system, which provides consistent, current programmatic information. This system is comprised of several synchronized database components deployed in various locations which serve specific tasks at their respective location ranging from tracking project costs to progress milestones. This information system is currently working with several CWPPRA databases including: Outreach Committee's standardized public project fact sheets, CWPPRA budget analyst reports and databases, the WVA working group spreadsheets, and the USGS CWPPRA project mapping effort. Additionally, the presence of this system allows staff to "database enable" the CWPPRA fact sheets thus allowing the inclusion of real-time information which directly addresses the conflicting information problem.

As security requirements governing federal systems change, there is a need to ensure that the CWPPRA project information database complies with current information exchange policies wherever a database component is deployed.

As the primary mechanism for integrating databases across the five Task Force agencies and the State of Louisiana, this system is critical to ensure consistent, accurate information exchange and dissemination between the many moving parts of CWPPRA and ensures resources are available to address any problems or user needs in a timely manner.

CWPPRA Outreach and Website Content Task Description:

In keeping with CWPPRA goals, the outreach group is tasked with informing stakeholders and the public about the status and accomplishments of the CWPPRA restoration program. Through the development of new and innovative content and products that are focused on 3 general themes: 1) value of coastal wetlands, 2) awareness of the Louisiana coastal land loss problem and the need for ecosystem restoration, and 3) inform both national and local target audiences on the strengths and successes of CWPPRA's wetland restoration projects. To achieve these goals, the outreach group continually fosters CWPPRA's interagency model and collaboration with NGOs, academia, and the public through the creation of innovative and engaging outreach products and materials. One of the main communication tools is the CWPPRA website and other social media platforms that allow partners and the general public to communicate with the program. To foster public awareness of CWPPRA restoration and protection projects, the outreach team is responsible for maintaining and creating new content for the websites and social media platforms including developing public fact sheets and providing status updates on all CWPPRA projects. These informational fact sheets detail each project through every stage of its construction as well as its maintenance and monitoring lifespan within the

CWPPRA program. At any time, the public should be able to search for a CWPPRA project to find its location, a comprehensive description of the wetland-related problem, the restoration strategy and its status. These fact sheets are created by the outreach staff in conjunction with project managers from each federal agency and the State of Louisiana. In addition to fact sheets, CWPPRA outreach staff is responsible for continually creating new outreach content that the public will find educational and noteworthy. Some examples include new website content, videos, and social media updates. Since the CWPPRA program is very active and dynamic, the outreach staff is constantly updating and generating new content. This includes updating materials for 508 accessibility and compliance. This task includes responding to website inquiries for more information and requests for educational materials, as well as daily maintenance and updates of text and links.

CWPPRA Website (www.LACoast.gov) Maintenance Task Description:

The CWPPRA website currently provides a continuous online presence for federal/state partners and the general public to access the latest information on CWPPRA, its projects, partners, and other pertinent information related to Louisiana's coastal wetlands conservation and restoration. The LaCoast.gov website is an interface between the public and the program. WARC utilizes web server hardware and software, and continually performs system management, backup and recovery maintenance, and programming efforts for the www.LaCoast.gov website. The steadily increasing online security threats are minimized by performing frequently scheduled internal and external penetration tests and quickly addressing those security concerns found.

GIS Task Description:

During Phase I of a CWPPRA project it may be necessary to reevaluate that project to facilitate a scope change at 30% or 95% design. Some projects require little geospatial work, while others need evaluations similar to Phase 0 (Candidate phase). This includes historic land change assessments, project specific land water, shoreline change analysis, and project map creation or editing. Typically, three to five projects require this level of evaluation within a fiscal year. In addition, many projects are approaching their end of project life. Post-project analyses that aid in determining a path forward for the project may be needed. WARC provides the project manager with GIS support that consists of spatial data analyses, maps, graphics, and technical support utilizing the most recent spatial data sets available. Providing these products and services to CWPPRA agencies requires a standardized GIS data management environment and a good deal of coordination with those project managers. As these decisions are just beginning for the CWPPRA program, impacts on workload have been minimal. However, more projects are approaching this crossroads, and it is anticipated geospatial analysis in project-life decisions to increase over time.

Technical Services for FY22

Description	Cost
Project Information Database Maintenance	$43,212
CWPPRA Outreach and Website Content	$41,000
CWPPRA Website (www.LACoast.gov) Maintenance	$45,834
GIS Support for CWPPRA Constructed Project Activities	$86,500
TOTAL	$216,546

Deliverables:

Project Information Database Maintenance Task

- Database hosting and regularly scheduled backups (on and offsite)
- Synchronization scripts for multi-agency database communication
- Update project information and figures
- Programming and database administration
- Federal security review

CWPPRA Outreach and Website Content Task

- Public outreach project fact sheet creation and updates
- WaterMarks / Landmarks digital distribution
- Social media development
- Web site content creation and management (articles, pictures, video, etc.)
- Online accessibility as required for 508 ADA compliance
- Website newsflash creation and distribution
- Fulfilling online requests for program information and outreach materials

CWPPRA Website Hardware/Software/Security Maintenance Task

- LaCoast website hosting on a federal server
- Website source code maintained in a version control code repository
- CWPPRA website maintained on daily basis
- Maintain LaCoast SSL Certificate
- Maintain CWPPRA email list
- Maintain users/roles for authenticated LaCoast website access (e.g. Project Managers, LUCC Calendar, Outreach Team)
- Provide summary of CWPPRA website activities
- Maintain compliance with the Dept of Homeland Security policies regarding public facing federal servers
    - Perform, respond, and reconcile internal and external penetration tests
    - Maintain web application firewall configuration settings

GIS Task

- Updated WVA analysis for In Phase projects (Typically 3-5 a year)
- End of project life analysis for constructed projects, as requested
- Fact Sheet maps for In Phase and newly selected PPL projects
- Miscellaneous requests for CWPPRA agencies

Points of Contact:

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR OPERATION AND MAINTENANCE (O&M) INCREMENTAL FUNDING

For Decision:

The Technical Committee will consider and vote to make a recommendation to the Task Force to approve requests for total FY24 O&M incremental funding in the amount of $4,607,388.00 and O&M budget increases in the total amount of $124,797.00

a. PPL 9+ Projects requesting approval for FY24 O&M incremental funding in the total amount of $2,486,543.00 for the following projects:

- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
  Incremental Funding Request: $114,958.00
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
  Incremental Funding Request: $6,272.00
- Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake (BA-37)
  Incremental Funding Request: $4,064.00
- Pelican Island and Pas La Mer to Chaland Pass (BA-38)
  Incremental Funding Request: $14,842.00
- Bayou Dupont Sediment Delivery System (BA-39)
  Incremental Funding Request: $8,342.00
- Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
  Incremental Funding Request: $7,968.00
- Cameron-Creole Grand Bayou Marsh Creation (CS-54)
  Incremental Funding Request: $25,382.00
- Coastwide Nutria Control Program (LA-03b)
  Incremental Funding Request: $2,091,073.00
- Coastwide Vegetative Planting Project (LA-39)
  Incremental Funding Request: $5,278
- Freshwater Introduction South of Highway 82 (ME-16)
  Incremental Funding Request: $16,297.00
- Rockefeller Refuge Gulf Shoreline Protection (ME-18)
  Incremental Funding Request: $29,899.00
- Grand Lake Shoreline Protection (ME-21)
  Incremental Funding Request: $8,744.00
- South Grand Chenier Marsh Creation (ME-22)

Incremental Funding Request: $9,364.00

- Bayou Bonfuca Marsh Creation (PO-104)
  Incremental Funding Request: $67,839.00
- West Bell Pass Barrier Headland Restoration (TE-52)
  Incremental Funding Request: $4,202.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
  Incremental Funding Request: $12,604.00
- Cole's Bayou Marsh Restoration (TV-63)
  Incremental Funding Request: $42,120.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
  Incremental Funding Request: $5,424.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
  Incremental Funding Request: $11,871.00

b. PPL 1-8 Project requesting approval for FY24 O&M incremental funding in the total amount of $2,120,845.00 and budget increases in the total amount of $124,797.00 for the following projects:

- Naomi Outfall Management (BA-03c)
  Budget Increase Amount: $88,636.00
  Incremental Funding Request: $88,636.00
- Barataria Waterway West Bank Protection (BA-23)
  Budget Increase Amount: $36,161.00
  Incremental Funding Request: $36,161.00
- Cameron Creole Maintenance (CS-04a)
  Incremental Funding Request: $1,848,047.00
- Black Bayou Hydrologic Restoration (CS-27)
  Incremental Funding Request: $22,426.00
- Bayou Chevee Shoreline Protection (PO-22)
  Incremental Funding Request: $81,786.00
- Brady Canal Hydrologic Restoration (TE-28)
  Incremental Funding Request: $43,789.00

O&M Funding Increase Request Beyond the Approved O&M Budget
for
Naomi Outfall Management (BA-03c) Project

1) Project History

a. Description

The State of Louisiana and Plaquemines Parish Government (PPG) jointly funded construction of the Naomi Siphon Diversion project (BA-03), a set of eight siphons that was built in 1992 to re-introduce freshwater from the Mississippi River into the adjacent marshes. The re-introduction was intended to restore some of the ecological functions supported by periodic over-bank flooding that occurred prior to the placement of the flood-control levees.

In order to better-manage the freshwater from the siphons and prevent saltwater intrusion, weirs were installed in two canals that connect the project area to the Barataria Bay Waterway. The weirs were constructed in 2002 as part of the Naomi Outfall Management project (BA-03c), which is funded through the federal Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) and sponsored by the National Resource Conservation Service (NRCS). The BA-03c project area encompasses the 13,130-acre BA-03 project area and includes an additional 13,000 + acres.

The BA-03c project area lies within the Barataria Basin in Jefferson and Plaquemines Parishes, Louisiana (Figure 2). The area is bordered by the Barataria Bay Waterway (BBW) and the town of Lafitte on the west and the Mississippi River (MR) back protection levee and the community of Naomi on the east. The area extends to the south of the Pen (a failed agricultural impoundment) and includes the Dupre Cut portion of the BBW. The project comprises ~ 26,956 ac (10,782 ha) of brackish and intermediate marsh.

The BA-03c project consists of two fixed-crest weirs with boat bays that were constructed in the Goose Bayou and Bayou Dupont Canals (see inspection photographs in Appendix A). These canals connect the open-water Pen with the BBW (Figure 1) and can serve as a conduit for freshwater from the Naomi siphons to exit the project area. Additionally, during high tide, higher saline water from the BBW can enter the project area through these canals. The weirs are designed to enhance the retention of freshwater within the project area and discourage saltwater intrusion.

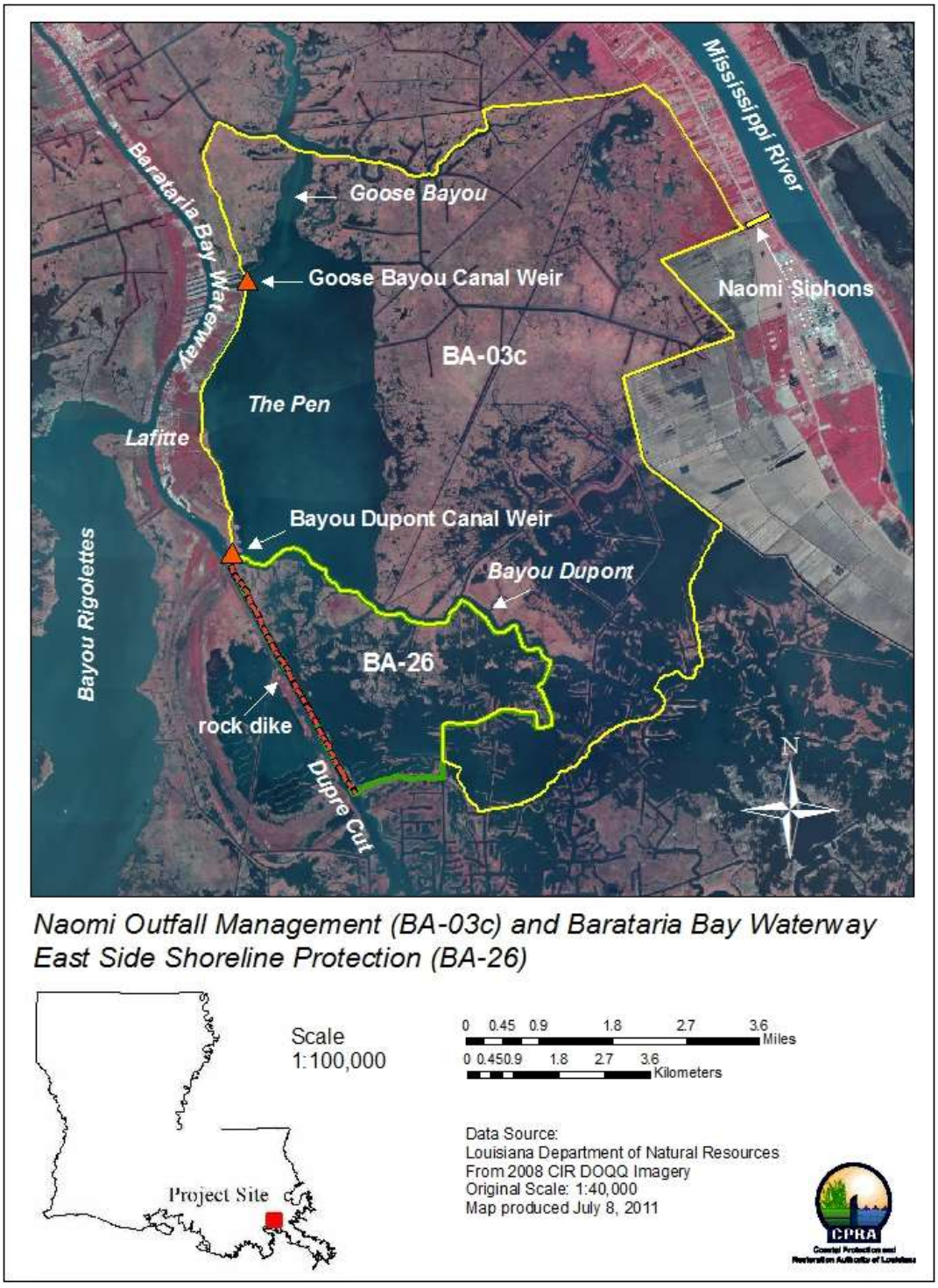

Figure 1: Project Map

b. O&M Completed to Date

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.

c. Original Project Budget (O&M)

The original approved twenty year CWPPRA O&M budget was $488,980.

d. Previous O&M Funding Increases

There have been no previous O&M funding increases.

2) Increase Request

a. O&M Increase Being Requested

$88,984 increase to O&M funds

b. Fully Funded Cost Estimate

Original = $2,309,638
New = $2,398,623

c. Description of Proposed O&M Events to Be Accomplished With the Requested Funding

The requested funding would be used to replace the missing navigational aids at the Bayou Dupont Weir Structure.

3) O&M Fund Increase Justification

a. Summary of Project Performance

The first goal of the Naomi Outfall Management project is to reduce the mean salinity in the project area. Salinity is clearly being reduced as a result of the siphons at stations inside and

near the mouth of the outfall canal. Salinity between May 2008−December 2010 was also reduced during siphon flow at CRMS4103, located in the central project area. With further distance from the outfall canal it becomes more difficult to credit salinity reductions solely to the siphons. Salinity reductions in the project area are often occurring when the river stage is high and the salinity in the project area may be lower due to increased discharge from the mouth of the river and perhaps freshwater from the Davis Pond Diversion. It can be expected that increasing the flow through the siphons would expand the range of freshening in the project area.

The construction of the boat-bay weirs was intended to 1) retain freshwater from the diversion and direct it south and 2) reduce inflow of saltwater from the Barataria Bay Waterway. Since the percent change in salinity pre/post weir construction for the reference site falls within the range of salinity change for the project sites, it is difficult to discern any effect from the weirs on salinity in the project area. Settling of the weirs, in particular the Goose Bayou Canal weir, may have diminished the water control potential from these structures.

The second goal of this project is to improve the growing conditions and increase the relative abundance of fresh-to-intermediate marsh species in the project area. Between the 2000 (pre-weir) and 2003 (post-weir) vegetation surveys, there was a significant increase in the percent cover of fresh-to-intermediate species (30% to 73%). However, 2000 was a drought year and the vegetation community reflected higher salinities in the basin by transitioning to a more salt-dominated community. The abundance of fresh−intermediate and intermediate/brackish−salt species has varied between years, with 1997 having the highest percent cover of fresher species and 2000 having the lowest. Significant events such as drought and hurricanes, especially Hurricane Katrina in 2005, affect the plant community composition and percent cover and demonstrate the response of wetlands to their environmental conditions. From these data, shifts between fresher and saltier plant communities appear to be influenced more by basin-wide environmental factors than by siphon operation or the installation of the weirs. However, if the siphons were run more frequently and at an increased flow rate, the project area could see a transition to a community with a greater abundance of fresh-intermediate species.

Water elevation was monitored as part of this project to ensure that there would not be a negative impact on vegetation from increased flooding due to siphon flow. Water elevation data from continuous recorders in the project area demonstrated that there was no significant increase in water elevation when the siphons were flowing. Two discrete water elevation stations did show an increase in water elevation during flow. These stations are

located in and at the mouth of the outfall canal and represent a highly localized response in elevation to siphon flow. The construction of the weirs may have prompted additional concerns about an increase in water elevation within the project area during siphon flow; however, no significant increase occurred at any of the continuous recorder stations in the project area post-construction.

The third goal—to reduce the rate of conversion of marsh to open water in the project area—was met for the Naomi Siphon Diversion (BA-03) project area. This goal could not be assessed for the BA-03c project area. Land-water analyses for the BA-03 project area show that there has been no loss of land between 1991 and 2009; in fact, there has been an increase from 8,175 acres to 8,289 acres. The 2000 aerial photography included the BA-03, BA-03c, and BA-26 project areas. However, it could not be used for comparison of land-water analyses because it was flown at a different scale than the 1991 and 2009 imagery.

b. Summary of Project Deficiency

Two of the navigation aids at the Bayou Dupont Weir are missing and need to be replaced.

c. Reasons for Requested Transfer

The current budget will not support this maintenance event to replace two navigational aids at the Bayou Dupont Weir structure. These navigational aids are required by the project permit to aid in the navigation thru the structure.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Naomi Outfall Management
PPL: 5
Project Sponsor: NRCS

Prepared By: Barry Richard
Date Prepared: 7/27/2021
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2002	$440,082		$48,898								
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18					2021	$446,594		$49,622				
-19									2022	$75,984	$2,000	$3,765
	Total	$440,082	$0	$48,898		$446,594	$0	$49,622		$75,984	$2,000	$3,765

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
26,130	26,130

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -2

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	$440,082	$446,594	($6,512)
Corps Admin	$0	$0	$0
Fed S&A & Insp	$48,898	$49,622	($724)
Totals	$488,980	***$496,215***	($7,235)

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -20	***$88,984***

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	$488,980	***$496,215***	***($7,235)***

Original Approved vs Proposed Revised Fully Fund

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
$2,309,638	***$88,984***	***$2,398,623***

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	$440,082	$522,578	($82,496)
Corps Admin	$0	$2,000	($2,000)
Fed S&A & Insp	$48,898	$53,387	($4,489)
Total	***$488,980***	***$577,964***	($88,984)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectivness	Revised Cost Effectiveness
3.85%	***$88.39***	***$91.80***

O&M Funding Increase Request Beyond the Approved 20-Year Budget
for
BA-23 Barataria Bay Waterway West Bank Protection Project

1) Project History

a. Description

The Barataria Bay Waterway West Bank Protection Project (BA-23) is located in Jefferson Parish, Louisiana approximately 4.5 mi (7.2 km) south of Lafitte on the west side of the Dupre Cut portion of the Barataria Bay Waterway (BBW). The project area is east of Bayou Rigolettes, north of the Lafitte Oil and Gas Field, and southwest of The Pen. Principal project components include 9,900 linear feet of rock shoreline protection along the west bank of the BBW and a water control structure on an abandoned oilfield access canal which intersects the waterway. The purpose of the foreshore rock dike is to protect the existing adjacent marsh from excessive water exchange, wave action, and subsequent erosion. The water control structure, comprised of a weir and two 48-inch diameter culverts, was intended to manage the water levels in the protected marsh behind the dike for enhancement of wildlife habitat. Construction was completed in November 2000.

b. O&M Completed to Date:

- In 2005, a contract was awarded to cap the rock shoreline protection structure with 5,143 tons of rip-rap on the settled sections to bring them up to design elevation. This work was completed in 2006.
- The access channel leading to the water control structure was dredged in 2007 to improve flow. 4,400 cubic yards of material was excavated and placed beneficially adjacent to the channel.
- Vandalism of the weir in 2015 led to the replacement of several stoplogs and miscellaneous hardware.
- In 2015, 100 sandbags were purchased and installed along eroded areas of the water control structure berm to stabilize the bank line until a maintenance contract could be awarded.
- A contract to repair the water control structure was awarded in 2015. Two 36”-diameter HDPE liners were installed and grouted within the annular space of the deteriorated 48” culverts. Approximately 191 cubic yards of earth fill was placed to repair erosion damage, and 284 square yards of geotextile fabric and riprap were installed to help prevent further erosion on the marsh side of the structure. Work was completed in 2016.

c. Original Project O&M Budget

$746,260

d. Previous O&M Funding Increases

An O&M budget increase of $291,423 was approved in 2015 to enable maintenance repairs to proceed on the water control structure. Another increase of $64,218 was approved in 2016 to perform O&M duties thru the project end of life.

2) **Increase Request**

a. **O&M Increment Increase Being Requested**
$36,161 increase to O&M funds

b. **Fully Funded Cost Estimate**
Current = $1,100,410
New = $1,136,571

c. **Description of Proposed O&M Events to Be Accomplished with the Requested Funding**

The requested funding would be used to fund the project close out related costs.

3) **Increase Justification**

a. **Summary of Project Performance**

The monitoring results indicate that the project has been effective in meeting the objective of re-establishing a hydrologic barrier to protect the marsh and open water in the project area from excessive wave energy, water level fluctuations, and saltwater intrusion from the Barataria Waterway. The water control structure has been effective in retaining water during winter months, increasing available habitat for wintering waterfowl.

b. **Summary of Project Deficiency**

The original fully-funded cost estimate did not account for the indirect labor costs (IDC) associated with CPRA's maintenance activities and twice-yearly structure operations.

c. **Reason for Requested Increase**

CPRA IDC corrections consumed a larger portion of the remaining project budget than anticipated and this request is meant to fund the remainder of the project thru close out.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Barataria Bay Westside Shoreline Protection
PPL: 4
Project Sponsor: NRCS

Prepared By: Barry Richard / Quin Kinler
Date Prepared: 8/10/2021
Date Revised:

	Approved Current Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0												
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18										$1,126,571		
-19		$1,100,410			2020	$1,126,571			2022	$10,000		
	Total	$1,100,410	$0	$0		$1,126,571	$0	$0		$1,136,571	$0	$0

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
232	232

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -19

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	$1,100,410	$1,126,571	($26,161)
Corps Admin	$0	$0	$0
Fed S&A & Insp	$0	$0	$0
Totals	$1,100,410	***$1,126,571***	($26,161)

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -20	***$36,161***

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	$1,100,410	***$1,126,571***	***($26,161)***

Current Approved vs Proposed Revised Fully Funded Estimates:

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
$3,369,006	***$36,161***	***$3,405,167***

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	$1,100,410	$1,136,571	($36,161)
Corps Admin	$0	$0	$0
Fed S&A & Insp	$0	$0	$0
Total	***$1,100,410***	***$1,136,571***	($36,161)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectivness	Revised Cost Effectiveness
1.07%	***$14,521.58***	***$14,677.44***

COASTWIDE NUTRIA CONTROL PROGRAM (LA-03B)

FEDERAL AGENCY: NRCS

	TOTAL	Construction	O & M	Post Const Monitoring	COE Mgt
TASK FORCE APPROVED PHASE II BUDGET (YEARS 1-22)	**$48,855,118**	$1,682,839	$44,884,296	$2,268,214	$19,769
EXPENDED: PROGRAM YR 1 (2002-2003)	$1,797,063	$1,682,839		$113,518	$706
EXPENDED: PROGRAM YR 2 (2003-2004)	$1,770,229		$1,696,217	$73,283	$729
EXPENDED: PROGRAM YR 3 (2004-2005)	$1,580,451		$1,523,412	$56,287	$752
EXPENDED: PROGRAM YR 4 (2005-2006)	$1,059,669		$954,192	$104,701	$776
EXPENDED: PROGRAM YR 5 (2006-2007)	$2,366,367		$2,290,206	$75,361	$801
EXPENDED: PROGRAM YR 6 (2007-2008)	$2,035,557		$1,952,998	$81,732	$827
EXPENDED: PROGRAM YR 7 (2008-2009)	$2,169,608		$2,078,585	$90,170	$853
EXPENDED: PROGRAM YR 8 (2009-2010)	$2,716,422		$2,613,099	$102,442	$881
EXPENDED: PROGRAM YR 9 (2010-2011)	$2,160,461		$2,070,779	$88,774	$909
EXPENDED: PROGRAM YR 10 (2011-2012)	$2,195,268		$2,106,221	$88,109	$938
EXPENDED: PROGRAM YR 11 (2012-2013)	$2,382,174		$2,295,097	$86,109	$968
EXPENDED: PROGRAM YR 12 (2013-2014)	$2,382,581		$2,295,562	$86,019	$999
EXPENDED: PROGRAM YR 13 (2014-2015)	$2,175,303		$2,077,107	$97,166	$1,030
EXPENDED: PROGRAM YR 14 (2015-2016)	$2,217,574		$2,107,368	$109,143	$1,063
EXPENDED: PROGRAM YR 15 (2016-2017)	$1,518,579		$1,425,432	$92,050	$1,097
EXPENDED: PROGRAM YR 16 (2017-2018)	$1,285,755		$1,182,464	$102,159	$1,133
EXPENDED: PROGRAM YR 17 (2018-2019)	$1,571,643		$1,476,678	$93,796	$1,169
EXPENDED: PROGRAM YR 18 (2019-2020)	$1,916,539		$1,815,539	$101,000	$0
ESTIMATED/EXPENDED: PROGRAM YR 19 (2020-2021)	$2,402,330		$2,302,709	$98,414	$1,207
ESTIMATED: PROGRAM YR 20 (2021-2022)	$3,454,552		$3,304,552	$150,000	$0
ESTIMATED: PROGRAM YR 21 (2022-2023)	$3,279,841		$3,117,610	$160,787	$1,444
ESTIMATED: PROGRAM YR 22 (2023-2024)	$3,302,635		$3,135,538	$165,610	$1,487
EXPENDED/ESTIMATED THRU PROGRAM YEAR 22	**$47,740,601**	**$1,682,839**	**$43,821,365**	**$2,216,628**	**$19,769**
PROJECTED AVAILABLE BALANCE AFTER PROGRAM YEAR 22	**$1,114,517**	**$0**	**$1,062,931**	**$51,586**	**$0**
ESTIMATED: PROGRAM YR 23 (2024-2025)	**$3,326,114**	$0	$3,154,004	$170,578	$1,532
2021 OM&M, MONITORING, and MGT REQUEST to Fund LA-03b THRU PROG. YR. 23	**$2,211,597**	**$0**	**$2,091,073**	**$118,992**	**$1,532**

	PROJECTED EXPENDITURES			
	Prog. Yr 20 2021-2022	Prog. Yr 21 2022-2023	Prog. Yr 22 2023-2024	Prog. Yr 23 2024-2025
NRCS S&A[1]	$31,821	$13,782	$14,195	$14,621
DNR S&A[1]	$47,731	$8,039	$8,281	$8,529
DWF Activities				
Monitoring (Survey &Report)	$130,000	$137,817	$141,952	$146,210
General O&M Activities[1]	$625,000	$575,789	$593,062	$610,854
Incentive Payments[2]	$2,000,000	$2,520,000	$2,520,000	$2,520,000
Nutria Survey Report	$20,000	$22,970	$23,659	$24,368
Contingency[3]	$600,000	$0	$0	$0
COE Project Management	$0	$1,444	$1,487	$1,532
TOTAL	$3,454,552	$3,279,841	$3,302,635	$3,326,114

COE opted to not request increment

[1] General Activities include program management, tail collections, etc.

[2] Incentive payments currently $6 per tail.

[3] PY 20 Contingency would allow incentive payment and collection if harvest exceeds 400,000/year and cover other unforseen costs. For PYs 21 - 23, 5% contigency is included in each line item.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR MONITORING INCREMENTAL FUNDING

For Decision:

The Technical Committee will consider and vote to make a recommendation to the Task Force to approve FY24 incremental funding in the total amount of $11,768,859.21.

a. PPL 9+ Projects requesting approval for FY24 incremental funding in the total amount of $1,454,590.00 for the following projects:

- Barataria Basin Landbridge Shoreline Protection (BA-27c)
  Incremental Funding Request: $19,038.00
- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
  Incremental Funding Request: $218,434.00
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
  Incremental Funding Request: $105,378.00
- Pelican Island and Pas La Mer to Chaland Pass (BA-38)
  Incremental Funding Request: $143,088.00
- Bayou Dupont Sediment Delivery System (BA-39)
  Incremental Funding Request: $3,714.00
- Lake Hermitage Marsh Creation (BA-42)
  Incremental Funding Request: $2,207.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
  Incremental Funding Request: $28,937.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
  Incremental Funding Request: $188,168.00
- Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
  Incremental Funding Request: $3,597.00
- Delta Management at Fort St. Phillip (BS-11)
  Incremental Funding Request: $119,461.00
- Black Bayou Culverts Hydrologic Restoration (CS-29)
  Incremental Funding Request: $41,730.00
- Coastwide Nutria Control Program (LA-03b)
  Incremental Funding Request: $118,922.00
- Coastwide Vegetative Planting Project (LA-39)
  Incremental Funding Request: $67,565
- Bayou Bonfuca Marsh Creation (PO-104)
  Incremental Funding Request: $2,005.00

- Raccoon Island Shoreline Protection and Marsh Creation (TE-48)
  Incremental Funding Request: $62,936.00
- Whiskey Island Back Barrier Marsh Creation (TE-50)
  Incremental Funding Request: $86,772.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
  Incremental Funding Request: $19,729.00
- Cole's Bayou Marsh Restoration (TV-63)
  Incremental Funding Request: $222,909.00

b. PPL 1-8 Project requesting approval for FY24 incremental funding in the total amount of $314,269.21 for the following projects:

- Cameron Creole Maintenance (CS-04a)
  Incremental Funding Request: $108,631.00
- Sabine Refuge Marsh Creation, Increment 4 and 5 (CS-28-4)
  Incremental Funding Request: $91,614.00
- Brady Canal Hydrologic Restoration (TE-28)
  Incremental Funding Request: $114,024.21

c. Coastwide Reference Monitoring System (CRMS) requesting approval for FY24 incremental funding in the total amount of $10,000,000.00

- Coastwide Reference Monitoring System (LA-30)
  Incremental Funding Request: $10,000,000.00

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

ADDITIONAL AGENDA ITEMS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

REQUEST FOR PUBLIC COMMENTS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

DATE OF UPCOMING CWPPRA PROGRAM MEETING

For Announcement:

The Task Force meeting will be held October 7, 2021 at 9:30 a.m.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

SEPTEMBER 2, 2021

SCHEDULE DATES OF FUTURE PROGRAM MEETINGS

For Announcement:

October 7, 2021	9:30 a.m.	Task Force	TBD
December 9, 2021	9:30 a.m.	Technical Committee	TBD
January 2021	9:30 a.m.	Task Force	TBD

*Dates are subject to change. Please check back with lacoast.gov for the latest calendar.