CWPPRA

PPL 33 Regional Planning Team (RPT) Meetings

Region 4 - Final Proposal Package

Coastal Wetlands Planning Protection & Restoration Act

33rd Priority Project List

Region 4

Regional Planning Team Meeting

Lead:
Kevin Roy, USFWS

February 7, 2023

Program Updates

- **Great News! -** 2022 budget reconciliation, return of funds, and annual Sport Fish Trust Fund accruals resulted in approximately **$212M** available for Phase 1 and 2 authorizations in December/January
  - CWPPRA Agencies worked collaboratively to identify the **most impactful projects** and reduce project backlog
- In January, the CWPPRA Task Force approved:
  - 4 projects for Phase 2
    - Bayou Cane Marsh Creation (PO-181)
    - East Delacroix Marsh Creation and Terracing (BS-37)
    - Grand Bayou Ridge and Marsh Restoration (BA-217)
    - Island Road Marsh Creation and Nourishment (TE-117)
  - 2 projects for Phase 1
    - Yscloskey Marsh Creation
    - Northwest Little Lake Marsh Creation
  - A portion of the total available funds were retained for future priority projects and consideration of potential bid overruns to construct Phase 2-approved projects

Program Updates

- Criteria Considered for Selecting Impactful Projects:
  - **Cost Effectiveness** - benefit/cost
  - **Synergy** - interaction with other restoration projects
  - **Critical Area of Need** - land loss (current, synoptic, historic)
  - **Landbridge Function or Structural Framework**
  - **Critical Infrastructure**
  - Geography - Basin, Political Boundary, Distribution
  - Borrow Area
  - Threatened or Endangered Species
  - Willing Landowners and Stakeholder Support
  - Partnerships
  - Other considerations - e.g., Oysters, Pipelines/Utilities, O&M, etc.

Announcements

- PPL 33 RPT meetings to accept project nominees:
  - Region IV - Feb. 7, 2023, 9:30 am
  - Region III - Feb. 8, 2023, 9:30 am
  - Regions II and I - Feb. 9, 2023, 9:30 am

Region 4 Parishes

- Eligible parishes for basins in Region 4 include:

- Calcasieu-Sabine Basin
  - **Cameron Parish**
  - **Calcasieu Parish**

- Mermentau Basin
  - **Cameron Parish**
  - **Vermilion Parish**

RPT Meetings

- Project proposals should be consistent with the state's **2017 and/or 2023 (draft) Coastal Master Plan**.
- A project can only be nominated in one basin (except for coastwide projects)
  - Proposals that cross multiple basins shall be nominated in the basin with majority area of project influence.
- If similar projects are proposed within the same area, the RPT Lead will call for a break for RPT representatives to discuss and determine the best path forward.

RPT Meetings

- All proposals submitted in advance will go in the order indicated on the agenda.
- A request for other proposals will occur after presentations for proposals submitted in advance.
- Limit project proposal presentations to 5 minutes.
- Public comments on project proposals will be accepted verbally during the RPT meetings and in writing by **February 16, 2023**.
- Limit comments and questions today to PPL 33 proposals and process.

Coastwide Projects

- Proposes a proven technique applicable across the coast (e.g., vegetative planting)
- Can be nominated at any RPT meeting
- Engineering/Environmental Workgroups will validate that projects fit CWPPRA SOP criteria
- All coastal parishes & agencies will vote on selection of up to one coastwide nominee

Demonstration Projects

- Demonstrate a restoration technique or material that can be transferred to other areas of the coastal zone
- Engineering/Environmental Workgroups will validate that demos fit CWPPRA SOP criteria
- All coastal parishes & agencies will vote on selection of up to 6 demonstration projects
- Previous candidates must be ***re-nominated*** for PPL 33

Coastwide Vote

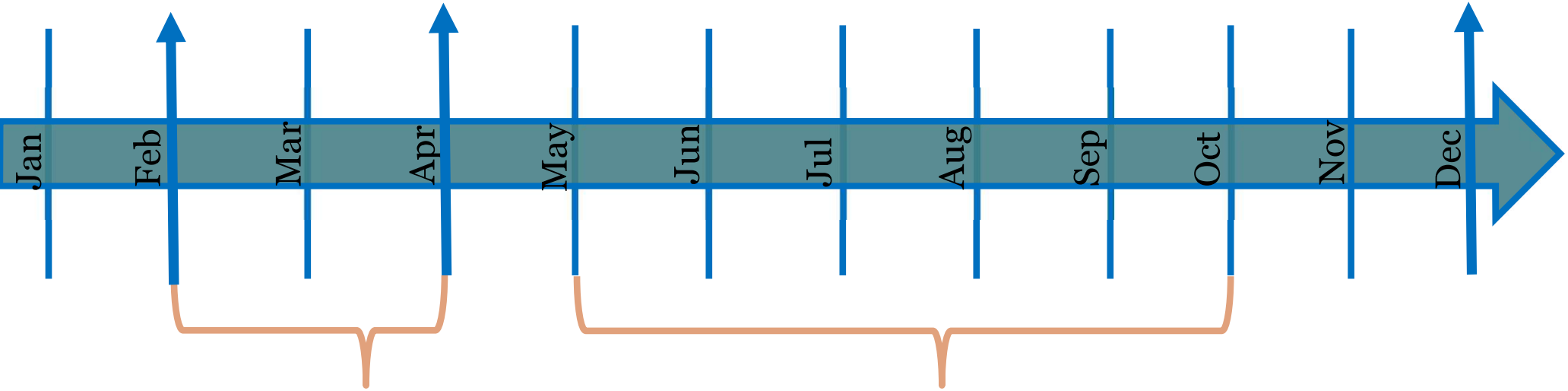
- An electronic vote will be held **23 February** to select projects, with the number of projects per basin determined by loss rate (i.e., basins with the highest loss have the most projects):
  - Barataria: 4
  - Terrebonne: 4
  - Breton Sound: 3
  - Pontchartrain: 3
  - Mermentau: 2
  - Calcasieu/Sabine: 2
  - Teche/Vermilion: 2
  - Atchafalaya: 1
  - Coastwide: 1
  - **22 total nominees** (plus up to 6 demo projects)

PPL Timeline

Coastwide Vote (Feb)
- 22 nominees, up to 6 demos

TC Mtg (April)
- 10 candidates
- up to 3 demos

TC Mtg (December)
- Recommend up to 4 projects for Phase 1 funding



March - April
- Agencies assigned to projects
- Fact sheets developed
- Workgroup review
- Workgroups may recommend no demos move forward

May - October
- Site visits
- Workgroup evaluations

Written Comments

Send written comments on proposals presented today to the CWPPRA program manager by **16 February 2023**

Kaitlyn Richard
U.S. Army Corps of Engineers
CEMVN-PM-R, RM 331
7400 Leake Avenue
New Orleans, LA 70118

Email: Kaitlyn.M.Carriere@usace.army.mil

(this information has been provided via CWPPRA Newsflash and posted on the USACE CWPPRA webpage)

For more info, please visit lacoast.gov or contact Elizabeth Jarrell at Elizabeth.Jarrell@usace.army.mil

Region 4

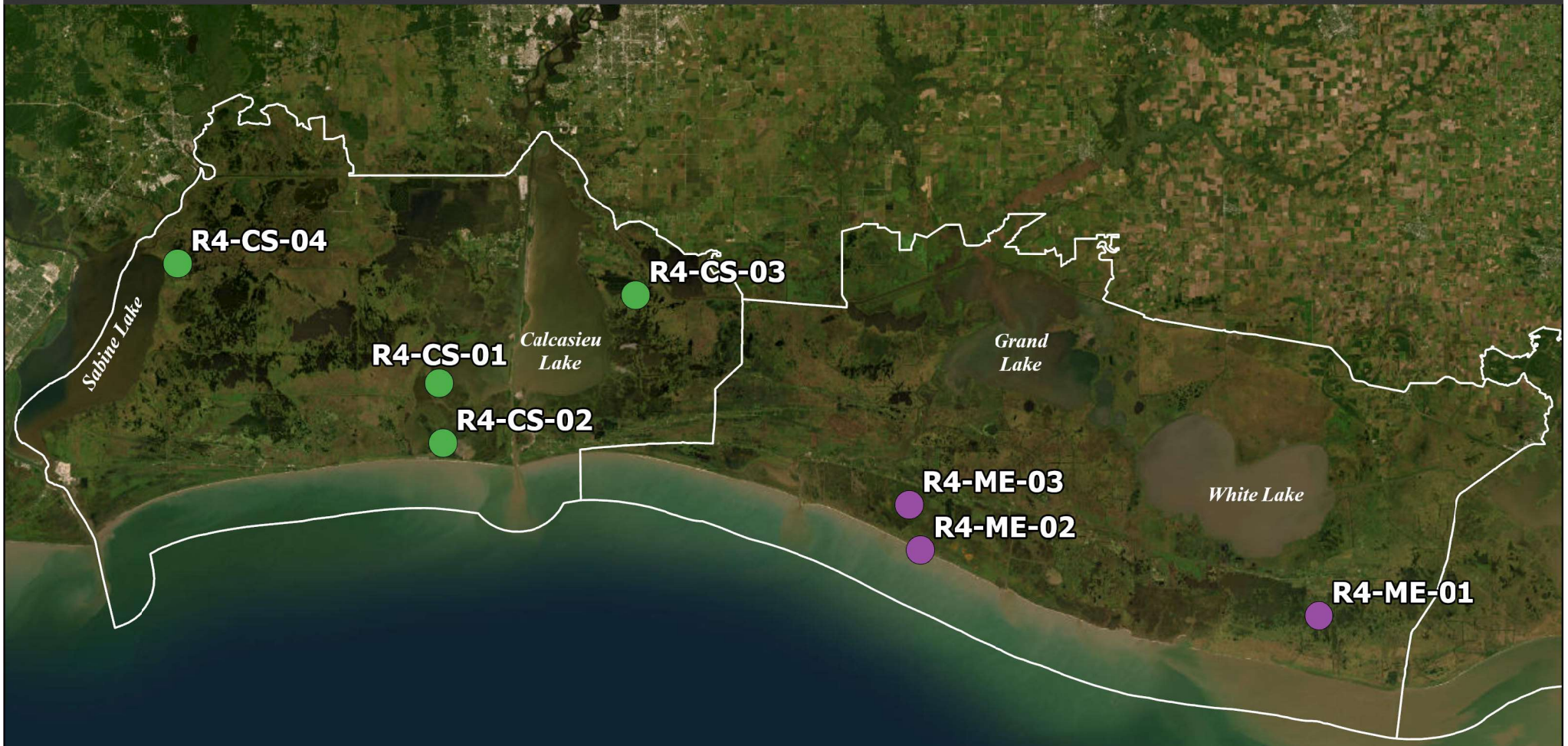
Calcasieu-Sabine Basin

Project ID	Agency	Project Name
R4, CS-01	EPA	West Cove South Marsh Creation
R4, CS-02	EPA	Mud Lake South Marsh Creation
R4, CS-03	NMFS	Sweet Lake Canal Marsh Creation
R4, CS-04	USACE	Sabine Lake Hydrologic Restoration and Marsh Creation

Mermentau Basin

Project ID	Agency	Project Name
R4, ME-01	FWS	South Pecan Island Restoration
R4, ME-02	FWS	Gulf Shoreline Protection West
R4, ME-03	NMFS	North Hog Bayou Marsh Creation and Terracing

PPL33 Region 4 Nominated Projects



Calcasieu-Sabine Basin Project

R4-CS-01 West Cove South Marsh Creation
R4-CS-02 Mud Lake South Marsh Creation
R4-CS-03 Sweet Lake Canal Marsh Creation
R4-CS-04 Sabine Lake Hydrologic Restoration and Marsh Creation

Mermentau Basin Project

R4-ME-01 South Pecan Island Restoration
R4-ME-02 Gulf Shore Protection West
R4-ME-03 North Hog Bayou Marsh Creation and Terracing

Coastwide Project

CW-01 Marsh Creation Containment
CW-02 Coastwide Small/Micro Dredge Project

Demonstration Project

DEMO-01 Louisiana Coastal Restoration 2023 Reefbud Project
DEMO-02 AquaRockBags

0 5 10 15 20 Kilometers
0 5 10 15 20 Miles

Region 4 PPL 33
Regional Planning Team Meeting
Lake Charles, LA
February 07, 2023
Background Image:
ESRI Basemap layer: Earthstar Geographics Imagery

PPL33 PROJECT FACT SHEET
February 7, 2023

Project Name
West Cove South Marsh Creation

Master Plan Strategy
Mud Lake Marsh Creation (2017 Master Plan 004.MC.04): Creation of approximately 5,200 acres of marsh at Mud Lake south of West Cove, Calcasieu Lake to create new wetland habitat and restore degraded marsh. Mud Lake Marsh Creation (2023 Draft Master Plan): Creation of marsh within a footprint of approximately 8,100 acres at Mud Lake south of West Cove Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
Region 4, Calcasieu/Sabine Basin, Cameron Parish

Problem
The project proposed is a fragmented wetland area water located immediately southeast of West Cove, approximately 1 mile north of Mud Lake. The project area is located near the PPL29/PPL31 Candidate Mud Lake South Marsh Creation project (WVA) which shows a land loss rate of -1.05%/yr.

Proposed Solution
The proposed project would create/nourish approximately 724 acres of marsh using sediment dredged from the Calcasieu Ship Channel. The dredged material may be fully contained or partially contained depending upon the borrow sediment characteristics and site conditions. Containment dikes would be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands.

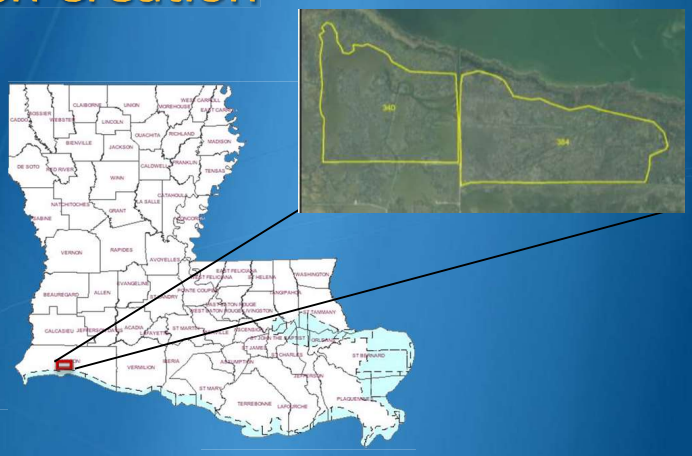
Project Benefits
Create/nourish approximately 724 acres (create 434 acres and nourish 290 acres) of marsh using sediment dredged from the Calcasieu Ship Channel.

Project Costs
The estimated construction cost plus 25% contingency is $20M-25M with USACE credit.
The estimated construction cost plus 25% contingency is $35M-40M w/o USACE credit.

Preparer(s) of Fact Sheet:
Jenny Byrd; EPA; (214) 665-7377; byrd.jennifer@epa.gov
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov
Patty Taylor, Ph.D., P.E.; EPA; (214) 665-6403; taylor.patricia-a@epa.gov


West Cove South MC
340
384
0 0.075 0.15 0.3 0.45 0.6
Miles
N
Marsh Creation Cells
EPA
Basemap: 2021 NAIP DOQQ Cameron Parish
Produced by EPA Region 6, Dallas, TX
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

West Cove South Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

1

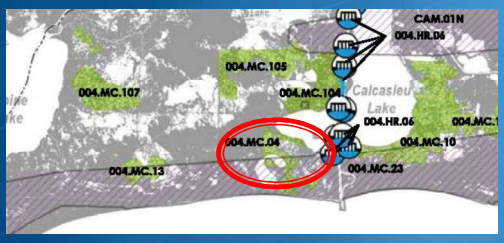
Master Plan Solution

2017

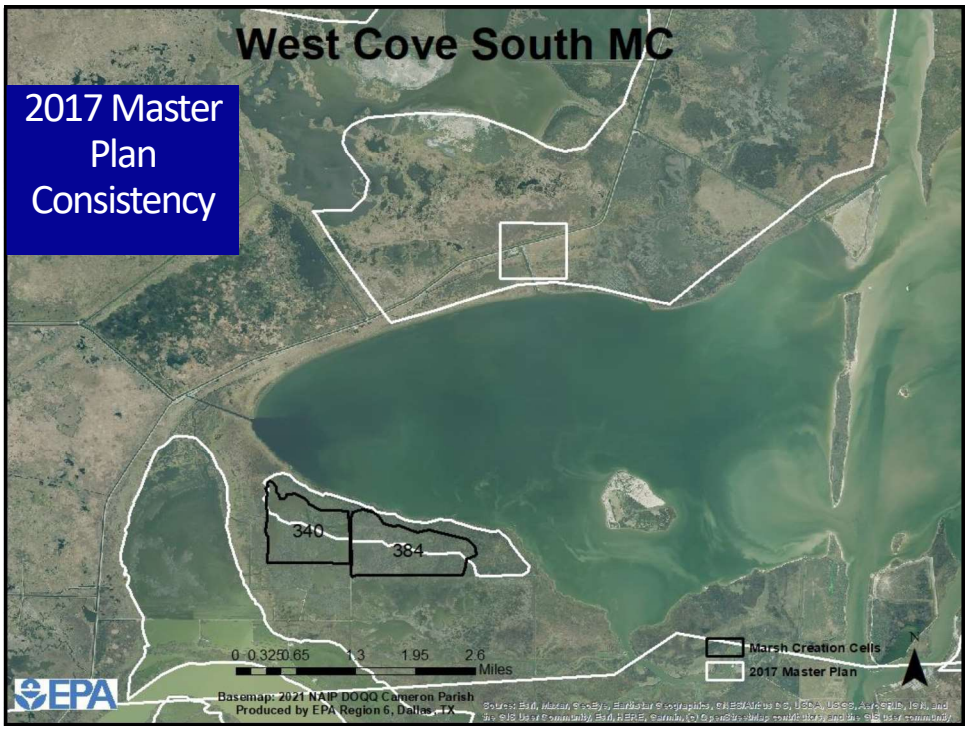
004.MC.04 Mud Lake Marsh Creation: Creation of approximately 5,200 acres of marsh at Mud Lake south of West Cove, Calcasieu Lake to create new wetland habitat and restore degraded marsh.

2023

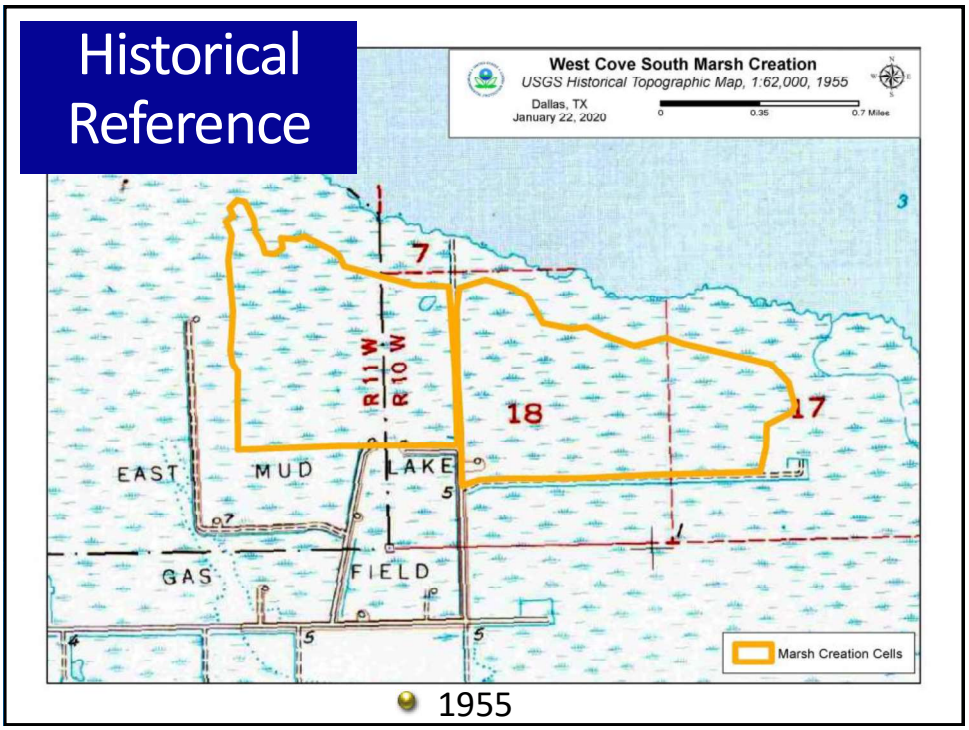
Mud Lake Marsh Creation: Creation of marsh within a footprint of approx. 8,100 acres at Mud Lake south of West Cove Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.



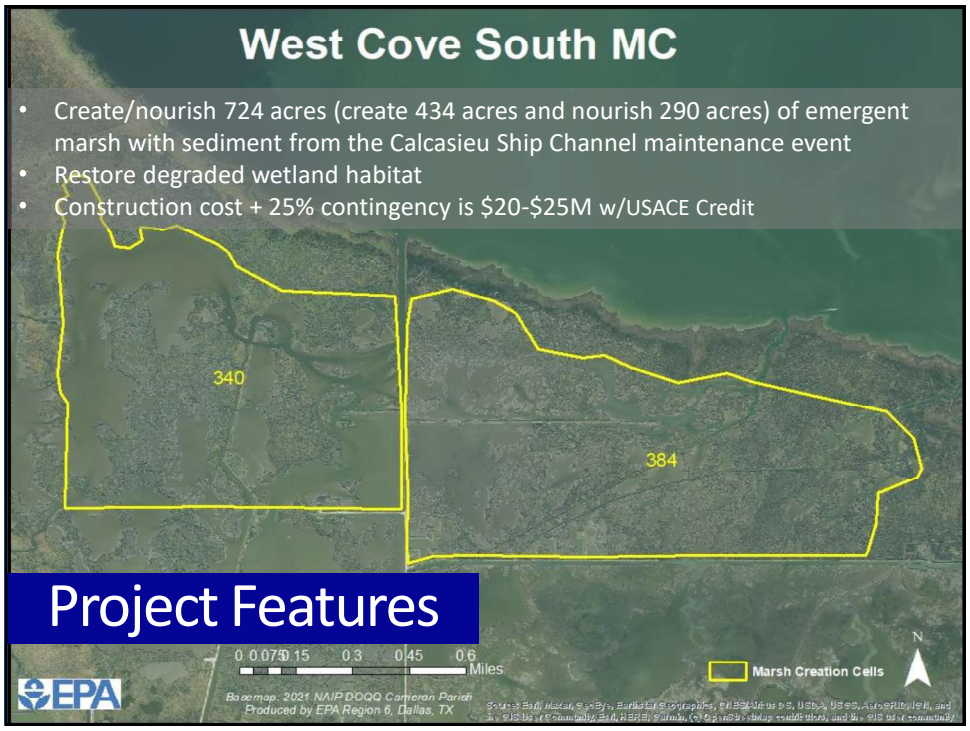
2


West Cove South MC
2017 Master Plan Consistency
340
384
0 0.325 0.65 1.3 1.95 2.6
Miles
Marsh Creation Cells
2017 Master Plan
EPA
Basemap: 2021 NAIP DOQQ Cameron Parish
Produced by EPA Region 6, Dallas, TX

3


Historical Reference
West Cove South Marsh Creation
USGS Historical Topographic Map, 1:62,000, 1955
Dallas, TX
January 22, 2020
0 0.35 0.7 Miles
7
18
17
R11W
R10W
EAST
MUD
LAKE
GAS
FIELD
Marsh Creation Cells
1955

4


West Cove South MC
• Create/nourish 724 acres (create 434 acres and nourish 290 acres) of emergent marsh with sediment from the Calcasieu Ship Channel maintenance event
• Restore degraded wetland habitat
• Construction cost + 25% contingency is $20-$25M w/USACE Credit
340
384
Project Features
0 0.075 0.15 0.3 0.45 0.6
Miles
Marsh Creation Cells
N
EPA
Basemap: 2021 NAIP DOQQ Cameron Parish
Produced by EPA Region 6, Dallas, TX

5

PPL33 PROJECT FACT SHEET
February 7, 2023

Project Name
Mud Lake South Marsh Creation

Master Plan Strategy
Mud Lake Marsh Creation (2017 Master Plan 004.MC.04): Creation of approximately 5,200 acres of marsh at Mud Lake south of West Cove, Calcasieu Lake to create new wetland habitat and restore degraded marsh. Mud Lake Marsh Creation (2023 Draft Master Plan): Creation of marsh within a footprint of approximately 8,100 acres at Mud Lake south of West Cove Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
Region 4, Calcasieu/Sabine Basin, Cameron Parish

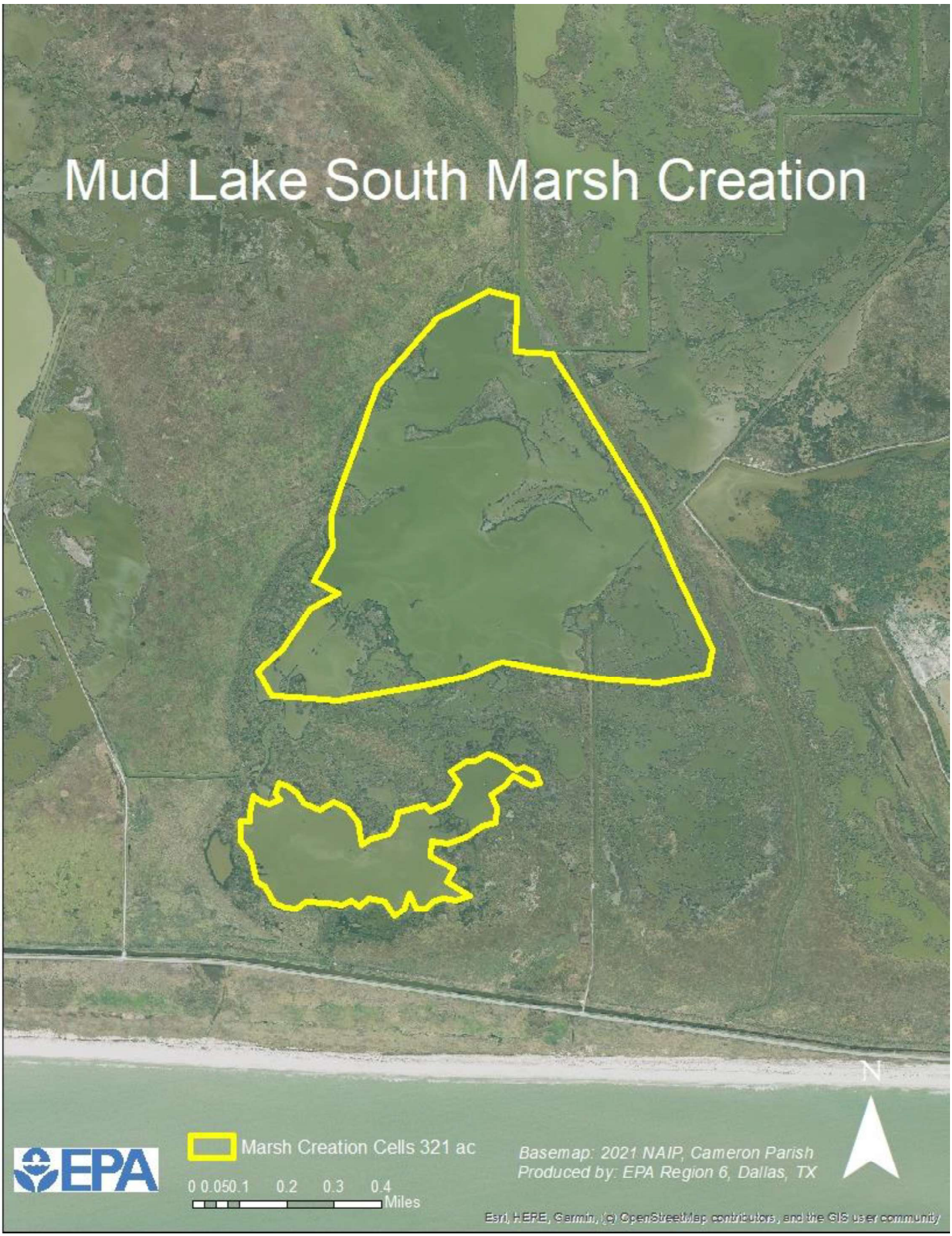
Problem
The project proposed is a fragmented wetland area water located immediately west of Mud Lake, just north of LA Hwy 27. The project area has experienced substantial wetland loss due to subsidence, oil and gas activity, saltwater intrusion, construction of the Calcasieu Ship Channel, LA Highway 27 and storm damage. In August of 2020, Hurricane Laura made landfall in Cameron Parish as a Category 4 hurricane and decimated the town of Holly Beach, LA. The land loss rate for the area as determined for the PPL31 WVA is -1.05%/yr.

Proposed Solution
The proposed project would create/nourish approximately 321 acres of marsh using sediment dredged from the Gulf of Mexico. The dredged material may be fully contained or partially contained depending upon the borrow sediment characteristics and site conditions and containment dikes would be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands. The proposed project would be synergistic with Oyster Bayou Marsh Creation and Terracing (CS-59), Oyster Lake Marsh Creation and Nourishment (CS-79), East Mud Lake Marsh Management (CS-20) to the northwest, and Holly Beach Sand Management (CS-31).

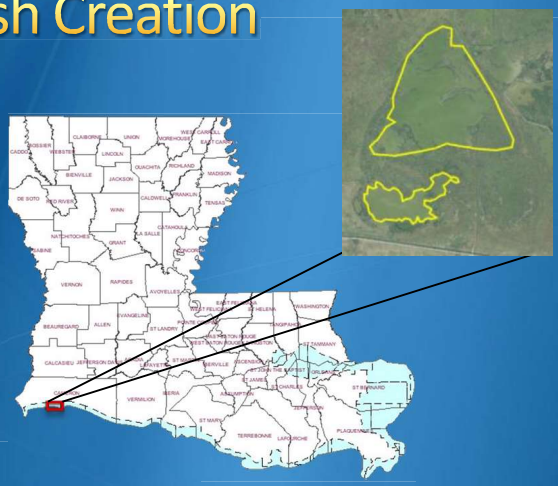
Project Benefits
This project would create 267 acres of marsh and nourish at least 54 acres of existing fragmented emergent marsh near Mud Lake in areas that were historically marshland but are now largely open water. The proposed project features will help maintain the marshes adjacent to and separating Mud Lake and Mud Pass and will provide support as a barrier marsh to the Gulf of Mexico shoreline. Nearby infrastructure would benefit from this project.

Project Costs
The estimated construction cost including 25% contingency is $20M - $25M.

Preparer(s) of Fact Sheet:
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov
Jenny Byrd; EPA; (214) 665-7377; byrd.jennifer@epa.gov
Patty Taylor, Ph.D., P.E.; EPA; (214) 665-6403; taylor.patricia-a@epa.gov


Mud Lake South Marsh Creation
Marsh Creation Cells 321 ac
0 0.050.1 0.2 0.3 0.4
Miles
Basemap: 2021 NAIP, Cameron Parish
Produced by: EPA Region 6, Dallas, TX
N
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Mud Lake South Marsh Creation



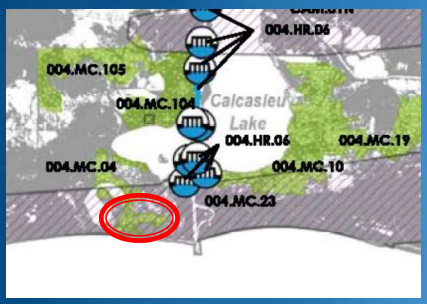
Coastal Wetlands Planning, Protection and Restoration Act

1

Master Plan Solution

2017

004.MC.04 Mud Lake Marsh Creation: Creation of approximately 5,200 acres of marsh at Mud Lake south of West Cove, Calcasieu Lake to create new wetland habitat and restore degraded marsh.



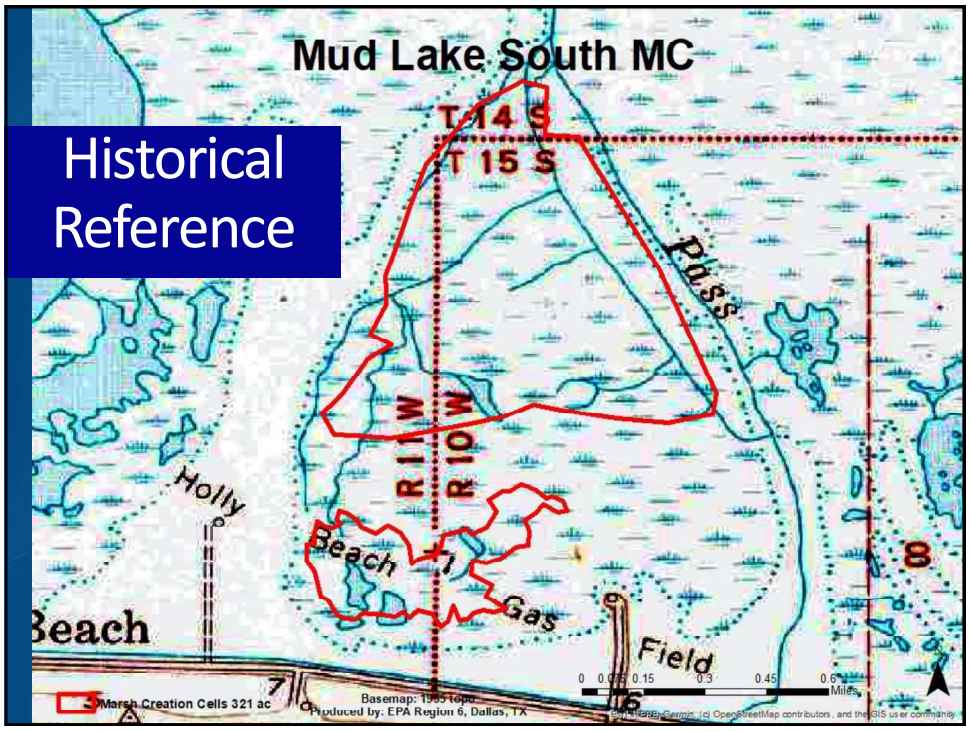
2023

#210 Mud Lake Marsh Creation (year 7): Creation of marsh within a footprint of approx. 8,100 acres at Mud Lake south of West Cove Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

2


2017 Master Plan Consistency & Project Synergy
Mud Lake South MC
Marsh Creation Cells 321 ac
2017MP: Mud Lake MC
Basemap: 2021 NAIP, Cameron Parish
Produced by: EPA Region 6, Dallas, TX
0 0.125 0.25 0.5 0.75 1 Miles
N

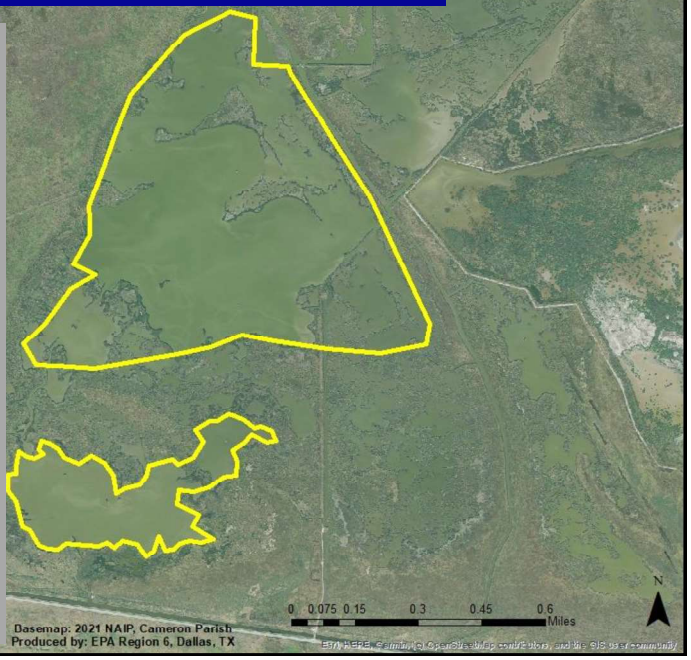
3


Mud Lake South MC
Historical Reference
T 14 S
T 15 S
R 11 W
R 10 W
Pass
Holly
Beach
Gas
Field
Marsh Creation Cells 321 ac
Basemap: 1955 topo
Produced by: EPA Region 6, Dallas, TX
0 0.075 0.15 0.3 0.45 0.6 Miles

4

Project Features

- Create/nourish 321 acres (create 267 acres and nourish 54 acres) of emergent marsh with sediment from the Gulf of Mexico
- Provide increased protection from storm surge and flooding
- Restore wetland habitat, Provide increased protection for nearby infrastructure
- Construction cost + 25% contingency is $20M - $25M.



5

PPL33 PROJECT RPT NOMINEE FACT SHEET
February 7, 2023

Project Name
Sweet Lake Canal Marsh Creation

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
Wetland loss in the Calcasieu-Sabine Basin is due to altered hydrology, drought and inundation stress, subsidence, and hurricane-induced damage. The USGS land change trend from 1985 to 2020 for the Sweet Lake Canal subunit (046) is 0.14% gain per year. However, the current condition of the project area is predominately open water, with eroding and relic terraces from a previously constructed restoration project.

Goals
The project goal is to restore approximately 410 acres of tidal marsh in the Cameron Creole Watershed east of Calcasieu Lake.

Proposed Solution
The proposed solution would be to create approximately 410 acres of tidal marsh, restore hydrologic patterns and historic flow paths, and includes two tidal creeks along a salinity gradient to restore a northern portion of the Cameron Creole Watershed. Sediment will be hydraulically pumped from Calcasieu Lake into a fully contained marsh creation cell. Temporary earthen containment dikes will be constructed using a combination of internal and external borrow, and will be gapped within three years of construction. Additionally, tidal creeks will be included elements to allow greater tidal exchange and estuarine organism access.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   The total project area is approximately 410 acres.

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is 350-400 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation cells.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
   No.

5) *What is the net impact of the project on critical and non-critical infrastructure?*

The project may have minor net positive impact to non-critical infrastructure comprised of pipelines.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have synergistic effects with: 1) CS-04a Cameron-Creole Maintenance, 2) CS-49 Cameron-Creole Freshwater Introduction, 3) CS-54 Cameron-Creole Watershed Grand Bayou Marsh Creation, 4) Ducks Unlimited terraces, and 5) CS-87 Calcasieu-Sabine Large Scale Marsh and Hydrologic Restoration.

Considerations
Calcasieu Lake public oyster seed grounds and pipelines.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $25M-$30M.

Preparer(s) of Fact Sheet:
Patrick Williams, NOAA Fisheries, 225-329-9268, patrick.williams@noaa.gov
Craig Gothreaux, NOAA Fisheries, 337-280-0544, craig.gothreaux@noaa.gov

PPL33 Sweet Lake Canal Marsh Creation

410 Total Project Acres

410 Acres Marsh Creation
Hydrologic Restoration
Tidal Creeks

2022 Google Earth Aerial Imagery
Map Date 02-01-2023

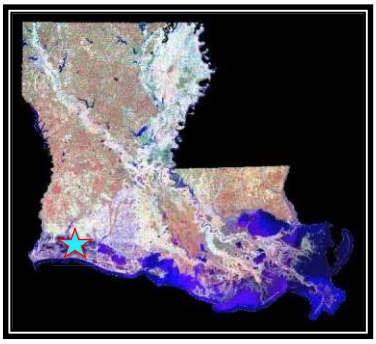
Federal Sponsor: NOAA Fisheries

Legend

- Earthen Containment Dikes
- Marsh Creation Areas
- Tidal Creeks

Sweet Lake Canal
Marsh Creation Project

NOAA FISHERIES



REGION 4: Calcasieu-Sabine Basin

Presenter: Patrick Williams, Fisheries Biologist, NOAA

Special Thanks
Sweet Lake Land
Miami Corporation

PPL33 CWPPRA Regional Planning Team Meeting
February 7, 2023

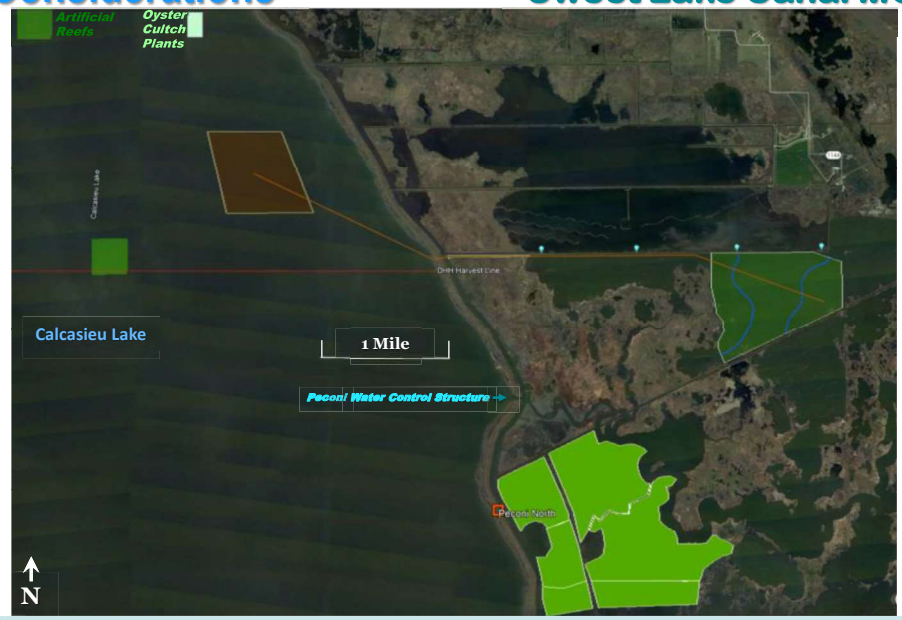
1

Project Vicinity — Sweet Lake Canal MC

2

Considerations

Sweet Lake Canal MC



NOAA FISHERIES

3

Project Area Problems

Sweet Lake Canal MC

Land change rate (1985-2020 USGS data) for the Sweet Lake Canals subunit is **+0.14%/yr**

NOAA FISHERIES

4

Project Elements

Sweet Lake Canal MC

- 263 Acres Calcasieu Lake Dredge Borrow Area
  - North of DHH Harvest Line
  - 2,000+ feet from shore
  - 4,000+ feet from reefs and cultch plants
  - 4.66 mile dredge pipeline
- 410 Total Project Acres
  - 410 acres marsh creation
    - 405-acre cell with tidal creeks
    - 5-acre cell for hydrologic restoration
  - Drainage considerations

5

Summary

Sweet Lake Canal Marsh Creation Project

- 410 Total Project Acres
  - 410 Acres Marsh Creation
  - ~9,000 LF of Tidal Creeks
- Construction Cost + 25% Contingency: $25M – $30M
- Net Benefits: 350 – 400 Acres

Contact information:
Patrick Williams, 225-329-9268
patrick.williams@noaa.gov

Craig Gothreaux, 337-280-0544
craig.gothreaux@noaa.gov

6

PPL33 PROJECT NOMINEE FACT SHEET
February 7, 2023

Project Name
Sabine Lake Hydrologic Restoration and Marsh Creation

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
The area has experienced wetland loss to hurricanes (e.g., Rita 2005, Ike 2008, Laura 2020, and Delta 2020), relative sea level rise, wind erosion, and saltwater intrusion. A major issue in the area is lack of conveyance/drainage and tidal connectivity (McGinnis et.al., 2019). Water entering the area (e.g., from rainfall and/or releases at Toledo Bend) cannot rapidly exit the system, resulting in deterioration of marshes being inundated for long periods of time, sometimes weeks to months (McGinnis et.al., 2019). The USGS estimates land loss rates in the project area at -0.21%/year from 1985 to 2020, and losses are projected to continue (CPRA, 2017 and 2023).

Goals
The project goal is to create and nourish approximately 597 acres of emergent marsh, primarily on the Sabine National Wildlife Refuge, while improving drainage in the area through cleanout of natural conveyance channels in order to sustain marsh creation benefits and nourish surrounding marsh by reducing inundation.

Proposed Solution
The project would create and nourish approximately 597 acres of marsh (281 acres of marsh creation and 316 acres of marsh nourishment). Cost estimates for this proposal assume sediment for marsh creation would be dredged from Sabine Lake and placed via pipeline, but dredging Sabine River north of the project is preferred and opportunities to partner with SWG and the Port of Orange for beneficial use of material dredged from the river would be explored during E&D and could result in significant cost savings. Initial acreage estimates were calculated based on use of traditional marsh creation approaches, but opportunities would also be explored during E&D to decrease cost (and/or increase the total footprint for marsh creation) through shifting to an unconfined approach for marsh creation as well as data collection and modeling to inform prioritization of hydrologic restoration needs.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 665 acres. This includes the marsh creation footprint (597 acres) as well as the area directly impacted by channel cleanout (68 acres) but does not include additional benefits expected to surrounding marsh from reduced inundation.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 250-300 net acres of marsh will be benefited from marsh creation and nourishment over the project life, not including additional acres of surrounding marsh expected to experience benefits from reduced inundation.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
A 50% land loss rate reduction is assumed for marsh creation and nourishment with a loss rate of -0.21%/year based on USGS data from 1985 to 2020 (East Pass).

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
The project will help protect the rim of Sabine Lake.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
By protecting the rim of Sabine Lake, the project would help protect the Port of Orange and related infrastructure to the north. The project could also help protect water control structures and weirs in the nearby Black Bayou Hydrologic Restoration Project (CS-27) and the East Sabine Lake Hydrologic Restoration Project (CS-32).

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with CS-27 to the north and CS-32 as well as with the Hickory Cove Marsh Creation and Living Shoreline project (USACE SWG, Port of Orange) planned to the west and USACE SWG mitigation projects planned to the north and south.

Considerations
Considerations in the area potentially include oil and gas pipelines, navigation in the Sabine River, and oyster seed grounds in Sabine Lake.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $30 – 35 M. Note that this cost estimate was developed conservatively, and opportunities for cost savings (and/or expanding the footprint for marsh creation and nourishment) would be explored during E&D.

Preparer(s)* of Fact Sheet:
Elizabeth Jarrell, USACE, elizabeth.jarrell@usace.army.mil, 504-862-1229,
Tyler Miller, USACE, Tyler.J.Miller@usace.army.mil, (504) 862-1956
Matthew Barbier, USACE, Matthew.P.Barbier@usace.army.mil, (504) 862-2797

**Prepared in coordination with team from NMFS and CPRA*

Sabine Lake Marsh Creation and Hydrologic Restoration

Sheet Legend

- Proposed Marsh Creation/Nourishment Platform
- Proposed Channel Rehabilitation
- Existing Channel

Satellite Imagery: 2017 LA NAIP

US Army Corps
of Engineers
NEW ORLEANS DISTRICT

0 3000' 6000'

SABINE LAKE HYDROLOGIC RESTORATION AND MARSH CREATION

Elizabeth Jarrell
Project Manager

CWPPRA PPL33 RPT Meeting
Regions IV
7 February 2023

US Army Corps of Engineers

1

SIGNIFICANCE AND NEED

Land Loss

- Marsh deterioration from inundation and lack of drainage (McGinnis, et al., 2019)
- Continued loss predicted in the area under future scenarios (CPRA, 2017 and 2023)

Support/Coordination

- NOAA NMFS, CPRA
- landowners (including FWS/Sabine refuge)
- Parish
- SWG
- Port of Orange

2

PROJECT PROPOSAL

Total Acres: 665
- 281 acres marsh creation
- 316 acres marsh nourishment
- 68 acres channel cleanout
- *not including the full area of potential benefit from HR*

Net Acres: 250-300
- *not including benefit from HR*

Estimated Cost: $30-35 M

Borrow Source: Sabine Lake
- Costs developed using lake borrow
- potential partnership for BU with SWG/Port of Orange to be explored during E&D

3

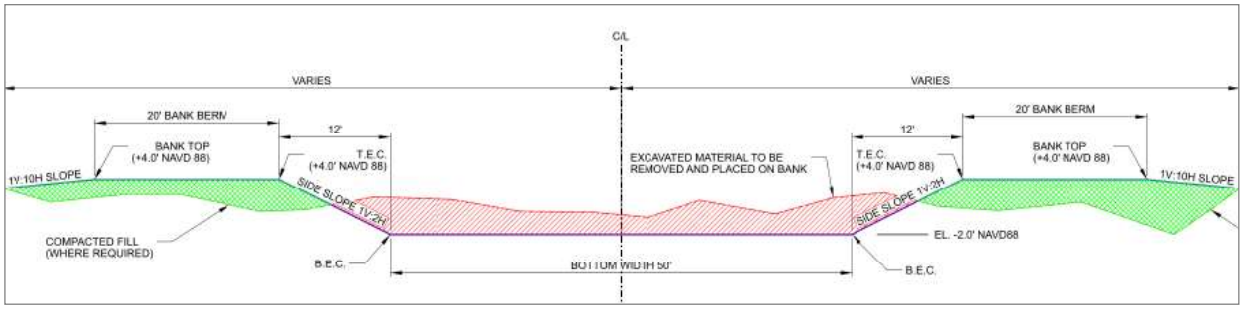
3

APPROACH FOR HYDROLOGIC RESTORATION

Channel cleanout, as needed, to increase conveyance and improve drainage

Data collection and/or modeling during E&D to better understand hydrology and prioritize needs for hydrologic restoration

- Ensure we don't contribute to scour and saltwater intrusion
- Re-examine full network of channels that was simplified/reduced for this proposal
- Avoid hard structures and water control structures that require operation



4

4

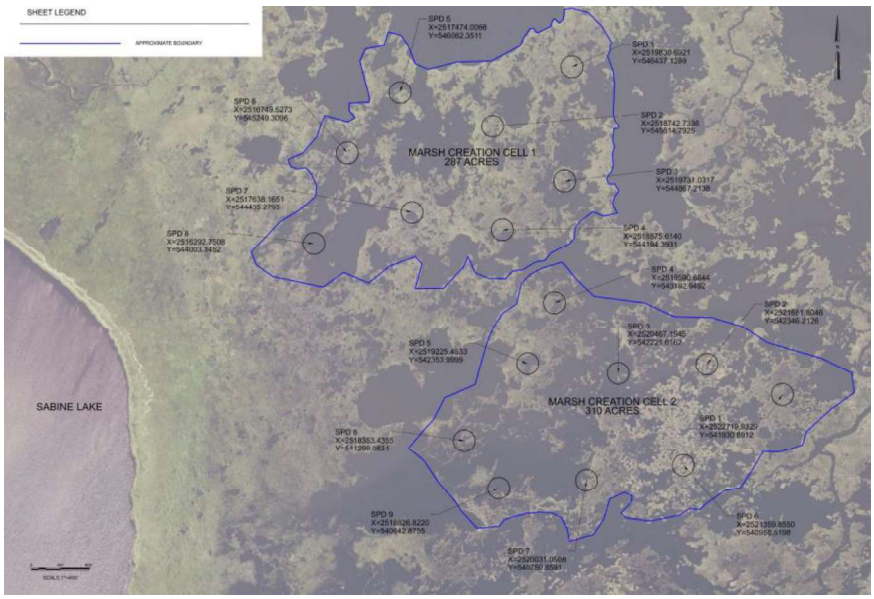
APPROACH FOR MARSH CREATION

Dredged material from Sabine River

- Explore partnerships for BU in E&D

Costed conservatively based on traditional MC approach

- Explore unconfined, SPD approach in E&D (supported by landowner and other stakeholders)



5

5

OPPORTUNITIES

- Address degradation of marshes due to inundation and lack of drainage and prevent further deterioration
- Foster more natural restored systems through unconfined placement for MC and HR without water control structures
- Work synergistically with existing projects in the area (e.g., CS-27, reaching end of 20-year project life soon), plus planned SWG mitigation and BU projects
- Potential for beneficial use of sediment from maintenance dredging by Port of Orange/SWG
- Partner with willing and supportive landowners and local government

6

6

PPL33 PROJECT NOMINEE FACT SHEET
February 1, 2023

Project Name
South Pecan Island Restoration

Project Location
Region 4, Mermentau Basin, Vermilion Parish, South of Pecan Island

Problem
Wetland loss in the vicinity of the project area has been caused by impoundments, saltwater intrusion, and hurricane/storm events. Twenty-five percent of the 46,370 acres of marsh south of Pecan Island, from Freshwater Bayou Canal to Rollover Bayou, converted to open water from 1932 to 1990 (Coast 2050). Hurricanes Rita (2005) and Ike (2008) are responsible for much of the recent loss in the project area. A land change analysis conducted by USGS for 254 coastal subunits indicates a 1985-2020 land change rate of -0.21 %/yr for the Rockefeller-Pecan Island Subunit. A project-specific land change analysis conducted for the adjacent Southeast Pecan Island Marsh Creation and Terracing Project (PPL31 Candidate) yielded a 1984-2021 loss rate of -0.83 %/yr.

Goals
Create and nourish approximately 250 acres of intermediate to brackish marsh south of Pecan Island. Specific goals include: 1) Create 225 acres and nourish 25 acres of intermediate to low salinity brackish marsh and 2) Create 24,000 LF (13 acres) of terraces.

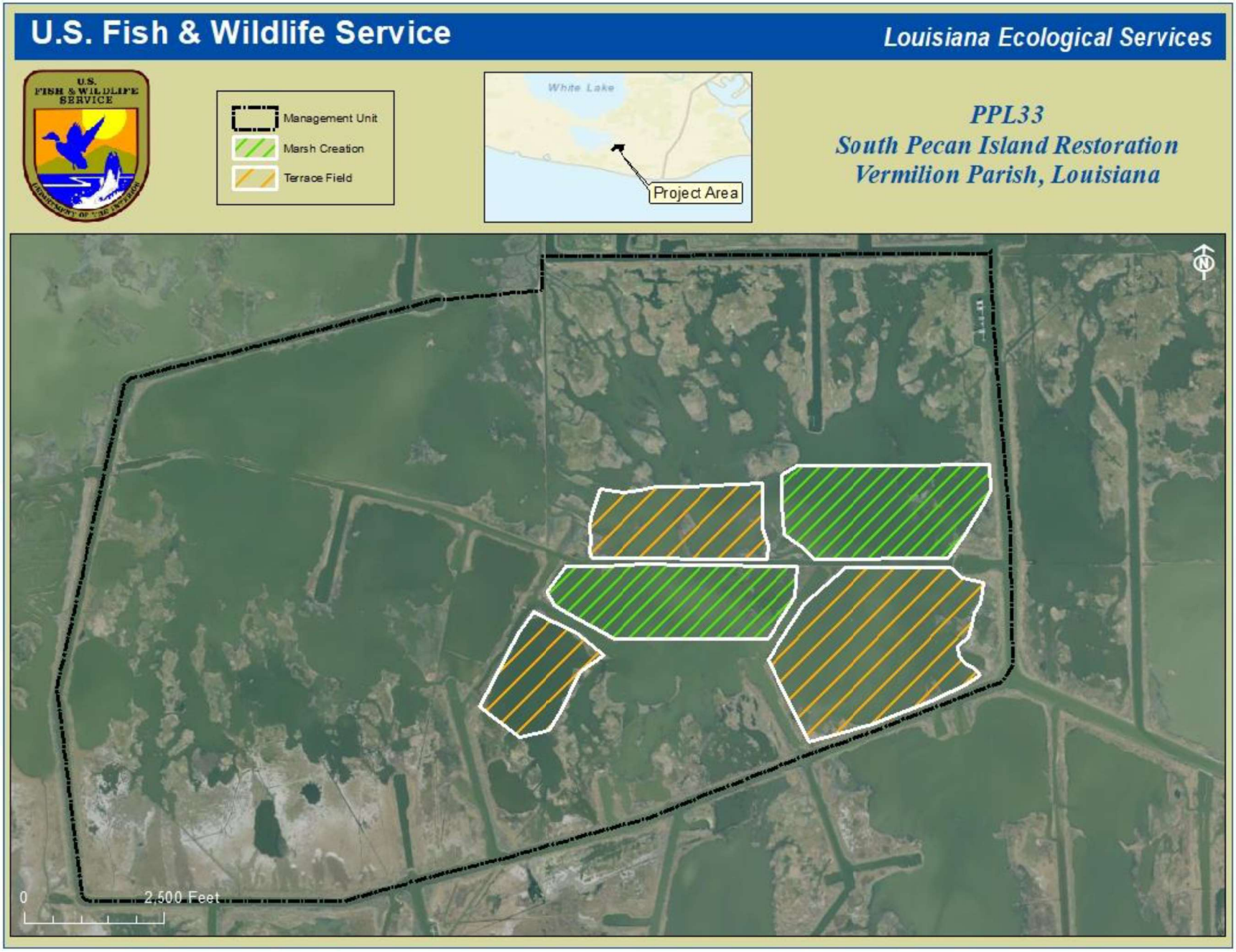
Service goals include restoration/protection of habitat for at-risk species. This project would restore habitat potentially utilized by the threatened black rail and other at-risk species such as the seaside sparrow and saltmarsh topminnow.

Proposed Solution
Sediments will be hydraulically dredged in the Gulf of Mexico and pumped via pipeline to create 225 acres and nourish 25 acres of intermediate to brackish marsh south of Pecan Island. Approximately 24,000 LF (13 acres) of earthen terraces will be constructed in open water areas totaling 263 acres. Containment dikes will be gapped or degraded and tidal creeks and ponds will be constructed post-construction in the marsh creation cells to restore area hydrology, allow fisheries access, and improve wetland productivity.

Project Benefits
The project would result in approximately 200-250 net acres over the 20-year project life.

Project Costs
The estimated construction cost plus 25% contingency is $30M - $35M.

Preparer of Fact Sheet
John Savell, USFWS, john_savell@fws.gov, 337-291-3144
Billy Broussard, Vermilion Corporation, 337-893-0268, vc1958@vermcorp.com


U.S. Fish & Wildlife Service
Louisiana Ecological Services
U.S. FISH & WILDLIFE SERVICE
Management Unit
Marsh Creation
Terrace Field
White Lake
Project Area
PPL33
South Pecan Island Restoration
Vermilion Parish, Louisiana
N
0
2,500 Feet

PPL33

South Pecan Island Restoration

Region 4, Mermentau Basin, Vermilion Parish

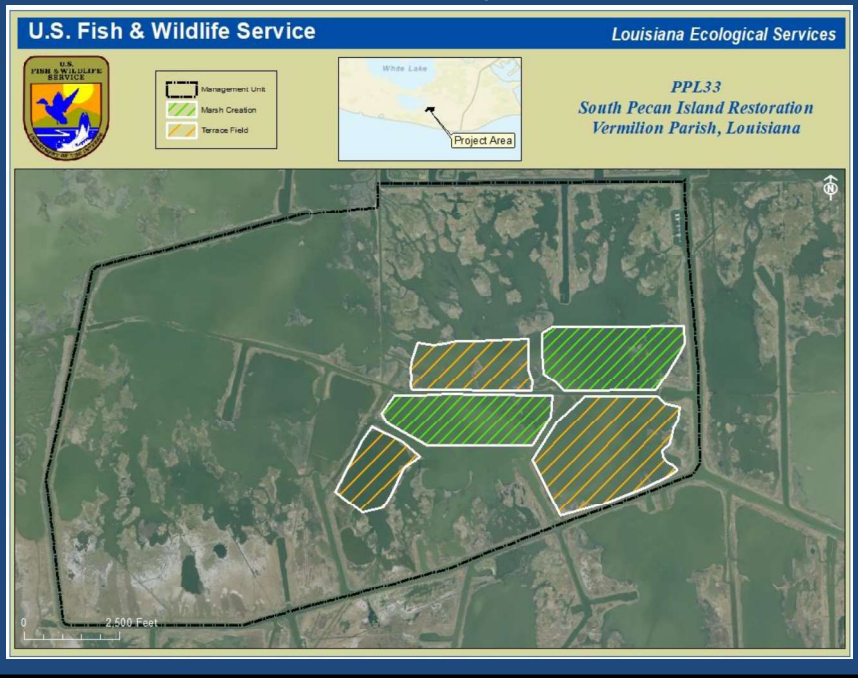
Contacts:
John Savell
Fish and Wildlife Biologist
john.savell@fws.gov
(337) 291-3144

1

2017 State Master Plan – South Pecan Island Restoration
Component A (004.MC.16)

2

South Pecan Island Restoration and Management Unit



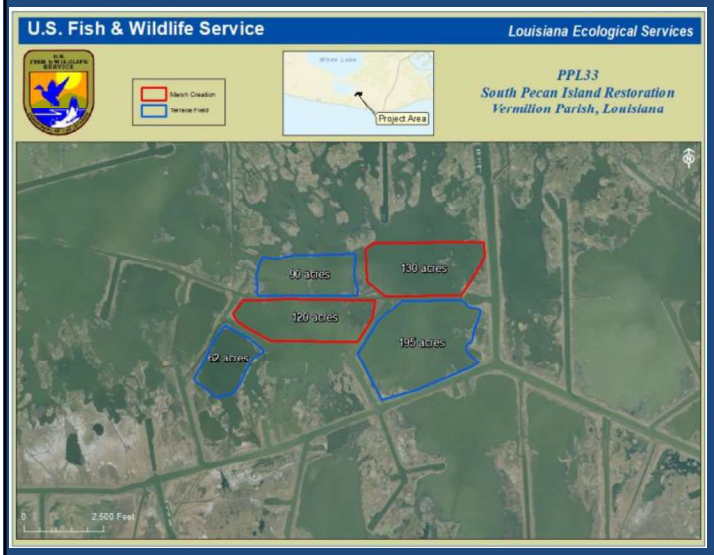
3

Selection Criteria

- Critical Infrastructure Protection
  - US Highway 82
  - ~ 1.6 miles from Management Unit
  - ~ 2.45 miles from project
- Critical Area of Need
  - Medium loss rate of -0.83%
  - Close to being in High Category (≥ -0.91%)
- Establish a foothold

4

South Pecan Island Restoration



- 225 acres of marsh creation
- 25 acres of marsh nourishment
- 24,000 lf (13 acres) of terraces
- GOM borrow
- Net acres = 200- 250
- Construction plus contingency $30M - $35M

5

PPL32 PROJECT NOMINEE FACT SHEET
February 7, 2023

Project Name
Gulf Shoreline Protection West

Project Location
Region 4, Mermentau Basin, Cameron Parish, south of Rockefeller State Wildlife Refuge

Problem
The area along Rockefeller Refuge between Josephs Harbor and Price Lake Road, the Gulf of Mexico shoreline erosion rate has been estimated to be 46 feet per year (1998 to 2010). After recent hurricanes in 2020 the erosion rate is probably even higher. This is the equivalent to approximately 11 acres of shoreline lost per year in the project area. Without protection, the Refuge shoreline will continue to retreat landward, leaving less marsh complex, which could have substantial impacts on the Refuge (including resident endangered species) as well as the surrounding area. Without stabilizing the Gulf shoreline at Rockefeller Refuge, the shoreline may retreat over 900-ft within a 20-year timespan.

Goals
The project goal is to halt erosion of the Gulf shoreline erosion by along a critical 2-mile-long reach where continued erosion will threaten the integrity of Price Lake Road and the watershed within Rockefeller Refuge. A total of 279-ac would be protected by the project.

Service goals include the protection of shoreline beaches designated as critical habitat for the threatened piping plover and beaches used by the threatened red knot. The project would also prevent the loss of back beach marshes which is known occupied habitat for the recently listed black rail.

Proposed Solution
The proposed project is similar to the Rockefeller Refuge Gulf Shoreline Stabilization Project (ME-18). The project would construct a 2-mile-long foreshore breakwater with light weight aggregate core along the -3.5-ft (NAVD88) contour (approximately 150-ft offshore) generally follow the shape of the shoreline. It would extend from the spot where the ME-35 project ends and parallel the shoreline for 2 miles with gaps every 1,500- ft. The project feature may trap sediments from the gulf, which could result in accretion behind the breakwater as has occurred at ME-18.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   The total project area is approximately 223 acres would be benefited directly. Indirect benefits could occur due to land creation between the breakwater and shoreline.

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is 200-250 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)? >75%*
A 93% loss rate reduction is assumed for the Target Years 1-10 and 75% for Target Years 11-20. (Workgroup assumptions for Flat Lake)

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?* Yes. The project would protect marsh and beach shoreline along the Gulf of Mexico and the Refuge.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
None.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have synergistic effects with ME-18, ME-35, ME-37, and the ME-20 projects.

Considerations
Considerations for this project include pipeline/utilities.

Preliminary Costs
The construction cost plus 25% contingency is estimated to be between $35 and $40M. There would be no maintenance cost associated with this project.

Preparer(s) of Fact Sheet:
Robert Dubois, FWS, 337-291-3127, robert_dubois@fws.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Rockefeller Refuge

Shoreline Protection

ME-18, ME-37, ME-35

PPL33
Gulf Shoreline Protection West
Cameron Parish, Louisiana

PPL33

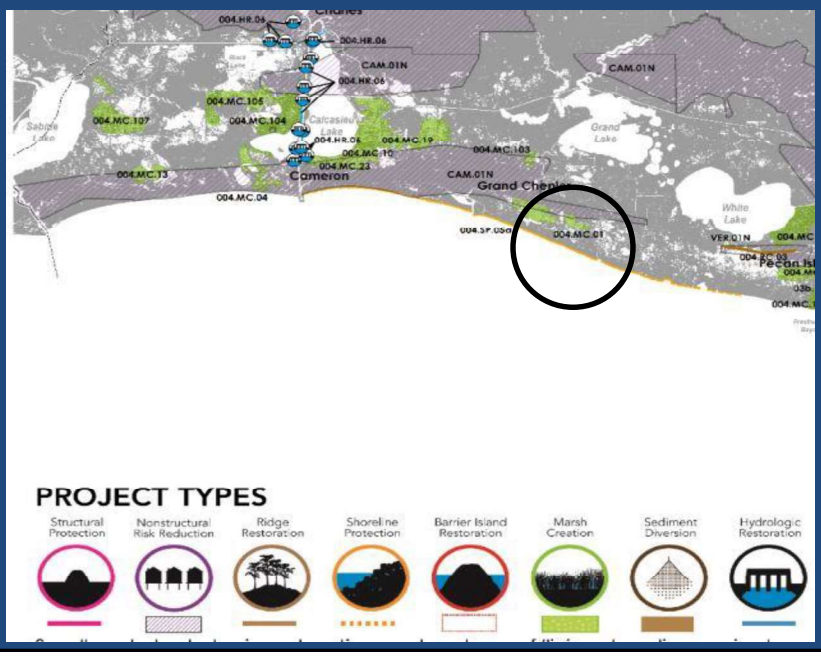
Gulf Shoreline Protection - West

Region 4, Mermentau Basin

Contact:
Robert Dubois
Fish and Wildlife Biologist
robert_dubois@fws.gov
(337) 291-3127

1

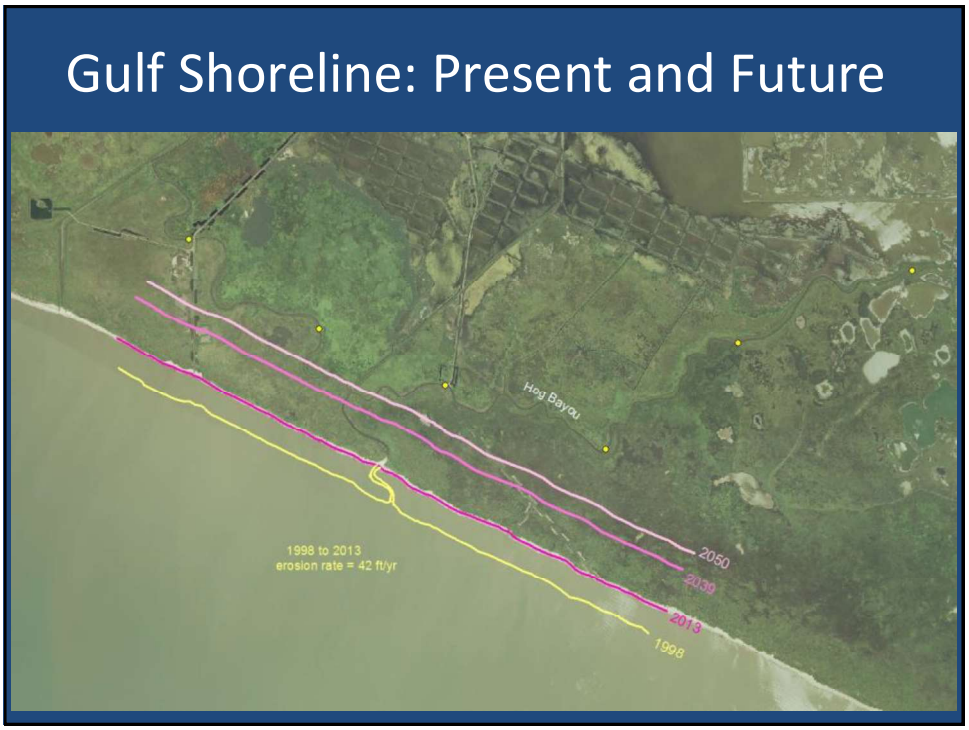
2017 State Master Plan – Gulf Shoreline Protection - West



2


U.S. Fish & Wildlife Service
Louisiana Ecological Services
Rockefeller Refuge
Shoreline Protection
ME-18, ME-37, ME-35
Project Area
PPL33
Gulf Shoreline Protection West
Cameron Parish, Louisiana

3

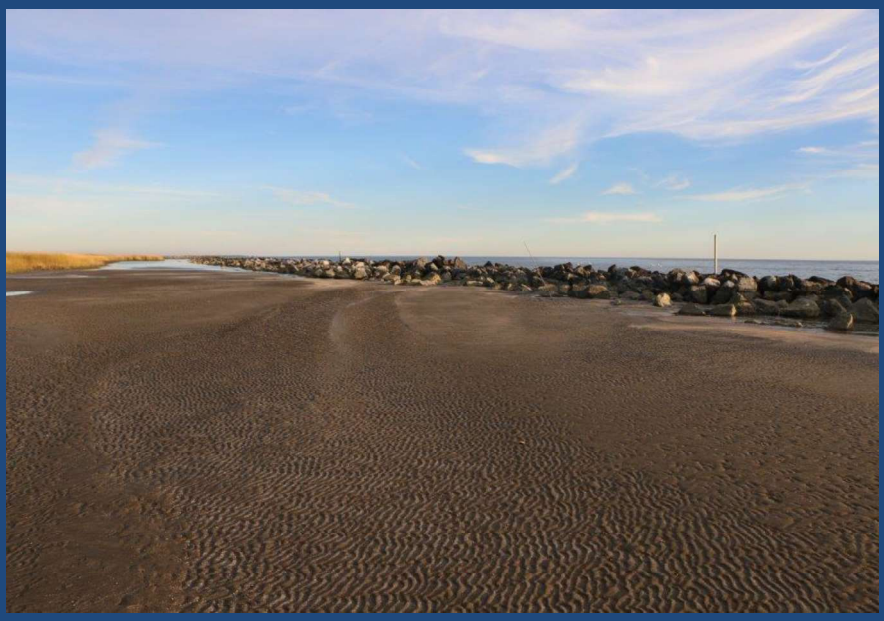

Gulf Shoreline: Present and Future
Hog Bayou
1998 to 2013
erosion rate = 42 ft/yr
2050
2039
2013
1998

4

5

6

Accretion behind ME-18



7

Gulf Shoreline Protection - West

- 223 acres of marsh protected
- 10,560 ft (2 miles) of Gulf shoreline protected
- Net acres = 223
  200 - 250
- Construction plus contingency
  $35 M - $40 M
- Synergistic with ME-20, ME-18, ME-37, ME-35
- Protects Rockefeller Refuge (State Refuge)
- Critical Habitat for threatened– Piping Plover, Red Knot

8

9

PPL33 PROJECT NOMINEE FACT SHEET
February 7, 2023

Project Name
North Hog Bayou Marsh Creation and Terracing

Project Location
Region 4, Mermentau Basin, Cameron Parish, Louisiana

Problem
The project is located east of Forest Road between Grand Chenier and Louisiana Highway 82 to the north of Hog Bayou to the south. The project is adjacent and contiguous with ME-20 and ME-32 is between previously constructed earthen terraces. The project is located within the Hog Bayou watershed west of Rockefeller Refuge with hydrologic connectivity to the Gulf through Beach Prong and the Mermentau River. Areas closer to the highway are classified as intermediate marsh (2021) and progress to brackish marsh near Hog Bayou with both brackish and saltmarsh classifications at the adjacent CRMS (0614) station. Non-restored portions of the project vicinity north of Hog Bayou are predominantly shallow open water and remnant fragments of marsh. Impoundment, drainage, saltwater intrusion, subsidence, sea level rise, storms, ring levee and pipeline and construction all have contributed to widespread historic and continued land loss within the project vicinity. The USGS 1985 to 2020 loss rate is -0.27%/yr. for the Hog Bayou/Oak Grove/Lower Mud Lake mapping unit. There is increasing exposure risk to Highway 82 and Grand Chenier from increased wave fetch and tidal and storm surge flooding as interior marsh has converted to open water.

Goals
The project goal is to restore elevations by creating and nourishing approximately 260 acres of marsh and create approximately 355 acres of terrace field consisting of approximately 24,850 linear feet of earthen terraces. The project focus is to restore wetland habitat generally parallel with Hog Bayou, the Gulf Shoreline, Highway 82, and Grand Chenier. The project goal is to create marsh by extending restored areas parallel with and north of Hog Bayou thereby promoting synergy with adjacent areas while maintaining drainage.

Proposed Solution
The proposed solution is to create 260 acres of intermediate to brackish marsh through hydraulic dredging and 355 acres of terrace field from mechanical dredging. Sediment would be mined from the Gulf of Mexico, pumped approximately 4.5 miles, and placed to create and nourish marsh in areas temporarily confined with earthen dikes. Gulf borrow would be sited to avoid adverse impacts to the Gulf shoreline. Containment dikes would be gapped to the constructed marsh fill elevation at the end of construction for dewatering and gapped or degraded no later than year three after construction to establish tidal function. Mechanical dredging would be utilized to construct approximately 24,850 linear feet of earthen terraces. Terraces would be planted with the appropriate vegetation.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? The total acres benefited is 615 acres (260 ac marsh creation + 355 ac terrace field).

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres of marsh protected/created over the project life is approximately 250 - 300 acres (269 net marsh creation and terrace acres after 20 years).

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).* The anticipated loss rate reduction throughout the area of direct benefits is 50-74%.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc. No*. Although the project features do not directly restore structural framework, they provide indirect synergy with the restored portions of Hog Bayou and Second Lake banklines and selection of latitudinal project features will aid in protecting areas to the north.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would have positive net benefits to non-critical infrastructure (pipelines and wells). As a whole with completed restoration, the project may have net benefit to critical infrastructure consisting of Highway 82 and Grand Chenier. However, the project location individually isn't immediately adjacent or contiguous to critical infrastructure.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project has synergy with ME-20, ME-32, and existing terrace fields near Hog Bayou, Second Lake, and Highway 82.

Considerations

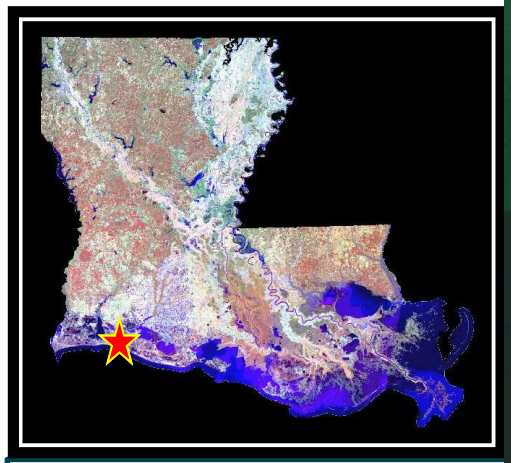
Considerations for this project include pipelines/utilities and Eastern Black Rail.

Preliminary Cost

The estimated constructed cost + 25% contingency range is $30M - $35M.

Preparer of Fact Sheet

Patrick Williams (225) 329-9268 patrick.williams@noaa.gov



North Hog Bayou Marsh Creation and Terracing

260 ac Marsh Creation
355 ac Terrace Field; 24,850 LF Terraces

2021 Aerial Imagery
Map Date 01-31-2023

Legend

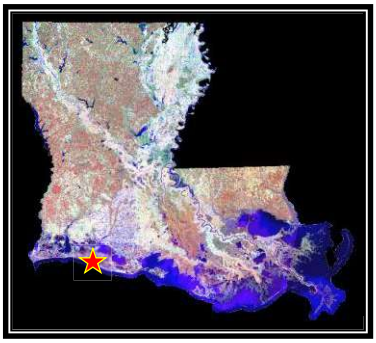
- Marsh Creation
- Terrace Field
- Borrow Area

North Hog Bayou Marsh Creation and Terracing

NOAA FISHERIES

REGION 4 – Mermentau Basin

Presenter: Patrick Williams, NOAA



Special Thanks
Miller Five
Yentzen/McCall
Ducks Unlimited
Rockefeller Refuge

PPL33 CWPPRA Regional Planning Team
February 7, 2023

In Partnership With: USDA Natural Resources Conservation Service

1

Basin Priorities

- South of Pecan Island
- ✓ Hog Bayou Watershed

- Others
  - Gulf Shoreline

2

North Hog Bayou Marsh Creation and Terracing

Priority Vision

Develop the Most Impactful Projects: Two Highway Parallel Projects

- Focus Considerations
  - Collaboration
  - Area need
  - Landscape features
  - Synergies with restoration and Leverage resources
  - Critical Infrastructure
  - Solutions with preferred techniques
  - Cost Compatibility

NOAA FISHERIES

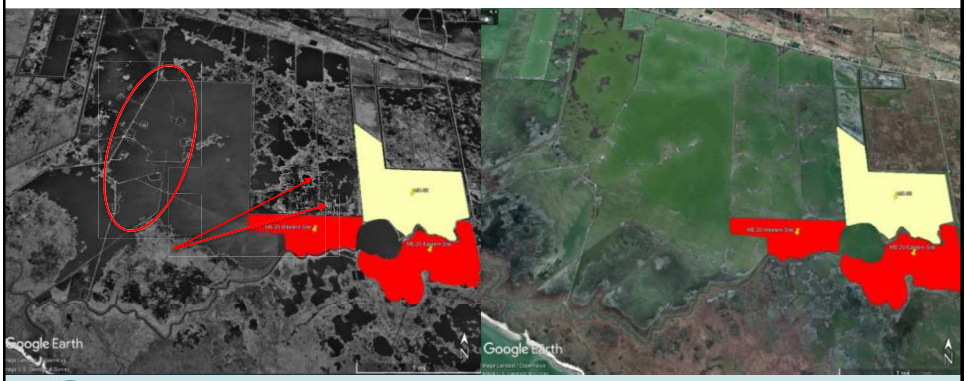
3

North Hog Bayou Marsh Creation and Terracing

Areas of Need

- Determine project area vision
- Historic landscape, infrastructure, and land owner/use considerations to inform layout of features

1998 2021



NOAA FISHERIES

4

Option 1	Option 2
305 ac MC/MN total	260 ac MC total
31,360 LF Terraces	24,850 LF Terraces
302 net ac	269 net ac
$35 - $40M Construction Cost	$30 - $35M Construction Cost

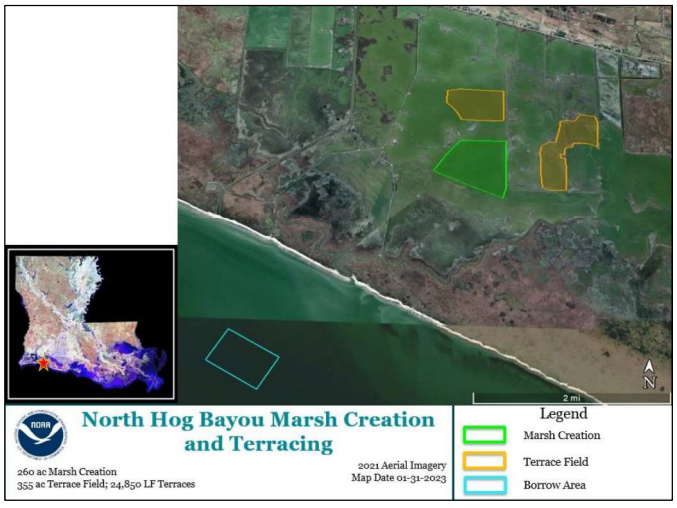
- Synergies with ME-20, ME-32, and existing terrace fields
- Refine layout as more information is obtained

5

Priority Project Planning Summary

- 260 ac Marsh Creation
- 355 ac Terrace Field
- 24,850 LF Terraces
- Net Benefits: 250 - 300 ac
- Construction Cost + 25% Contingency: $30M - 35M

- Contact information:
- Patrick Williams, 225-329-9268
- patrick.Williams@noaa.gov



6