# CWPPRA

## PPL 34 Regional Planning Team (RPT) Meetings

## Final Package Region 3

7 February 2024

# Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)
# Priority Project List 34
# Regional Planning Team Meetings

**Region 4 – Lake Charles – January 30, 2024, 9:30 am**
**Region 3 – Morgan City – January 31, 2024, 9:30 am**
**Region 1 & 2 – Lacombe – February 1, 2024, 9:00 am**

## AGENDA

**Meeting Purpose:** The Regional Planning Teams (RPTs) will accept project and demonstration project nominations for developing the 34th Priority Project List (PPL34). Public comments are welcomed. RPTs will select PPL 34 nominees via electronic voting on February 23, 2024.

1. **Welcome and Introductions**
   RPT Team Leader, Louisiana Coastal Protection and Restoration Authority (CPRA), U.S. Army Corps of Engineers (USACE), CWPPRA Representatives, Parish Representatives, State Representatives, RPT members

2. **Review of CWPPRA Strategy and Criteria for Project Selection (Kaitlyn Richard, USACE)**
   Overview of selection criteria and other considerations utilized to determine most impactful projects.

3. **PPL 34 Selection Process Brief Overview and Ground Rules for Today's PPL 34 Nomination Meeting (RPT Leader)**

4. **Explanation of Coastwide Voting Process (RPT Leader)***

5. **PPL 34 Project Nominations (Entire RPT)**
   Nominees must be consistent with and support the state's 2017 and/or draft 2023 Coastal Master Plan.

6. **Announcements of upcoming PPL 34, Task Force, Technical Committee and Other Program Meetings**

7. **Adjourn**

**Parishes within each basin will be asked to identify who will vote during the coastwide electronic vote by January 29th.*

**No additional projects will be nominated after the RPT meetings, nor will any significant changes to projects proposed at these meetings be allowed. Public comments will be heard during the meeting and additional written comments may be forwarded to CWPPRA Project Manager, Terri Von Hoven, by February 16, 2024 for dissemination to the CWPPRA agencies.**

# Coastal Wetlands Planning Protection & Restoration Act

# 34th Priority Project List


## Region 3

## Regional Planning Team Meeting

## Lead:
## Ron Boustany, NRCS

**January 31, 2024**

Kaitlyn Richard, USACE

# Strategy and Criteria for Project Selection

Scan Barcode to Access Strategy and Criteria for Project Selection

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

# Selection Criteria

- Cost Effectiveness
- Synergy
- Critical Area of Need
- Critical Landscape Feature
- Critical Infrastructure Protection
- Other Considerations

# Other Considerations

- Sustainable Borrow Source
- Sustainability of Specific Project Site
- Water Quality
- Excessive Maintenance
- Liability
- Ease of Construction
- Geography - Basin, Political Boundary, Distribution
- Willing Landowners and Stakeholder Support
- Partnerships
- Oysters
- Pipelines/Utilities
- Operations and Maintenance
- Number of Previous Phase 2 (Construction and Operations, Maintenance, and Monitoring) Requests

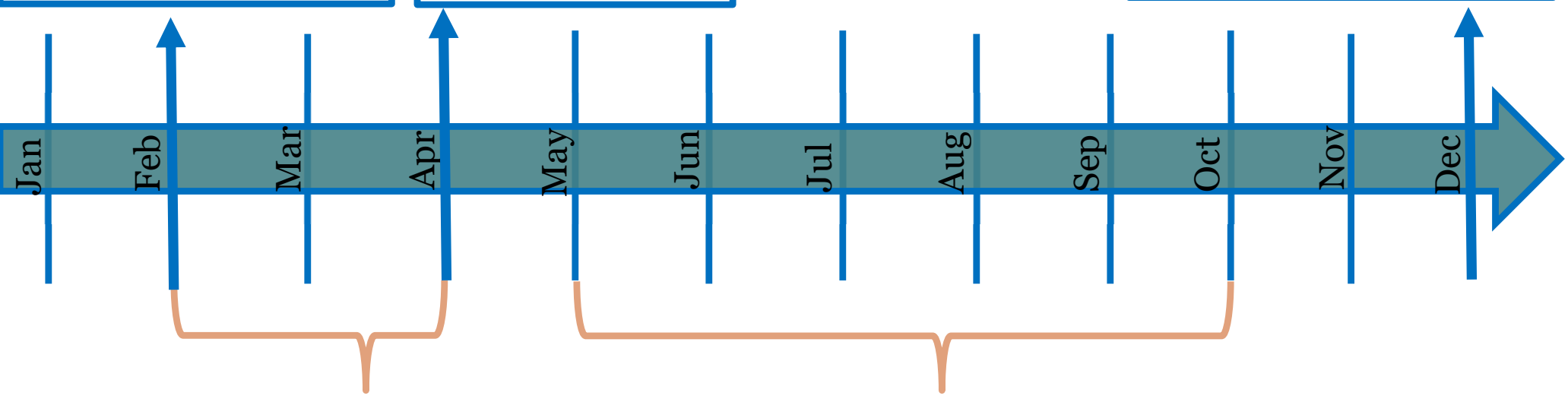
**Not all inclusive**

# PPL Timeline

**Coastwide Vote (Feb)**
- 21 basin nominees, 1 coastwide, up to 6 demos

**TC Mtg (Apr)**
- Up to 10 candidates
- up to 3 demos

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




**Mar - Apr**
- Agencies assigned to projects
- Fact sheets developed
- Workgroup review
- Workgroups may recommend no demos move forward

**May - Oct**
- Site visits
- Workgroup evaluations

# REGION 3

Ron Boustany, NRCS

- PPL 34 RPT meetings to accept project nominees:
  - Region IV - Jan. 30, 2024, 9:30 am
  - Region III – Jan. 31, 2024, 9:30 am
  - Regions II and I - Feb. 1, 2024, 9:00 am

# Region 3 Parishes

- Eligible parishes for basins in Region 3 include:

- Terrebonne Basin
  - **St. Mary**
  - **Terrebonne**
  - **Assumption**
  - **Lafourche**
  - **Iberia**
  - **St. Martin**
- Atchafalaya Basin
  - **St. Mary**
  - **Iberia**
  - **Terrebonne**
- Teche-Vermilion Basin
  - **St. Mary**
  - **Iberia**
  - **Vermilion**

# RPT Meetings

- Project proposals should be consistent with the state's **2023 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, 2024**.
- Limit comments and questions today to PPL 34 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 34.

# Coastwide Vote

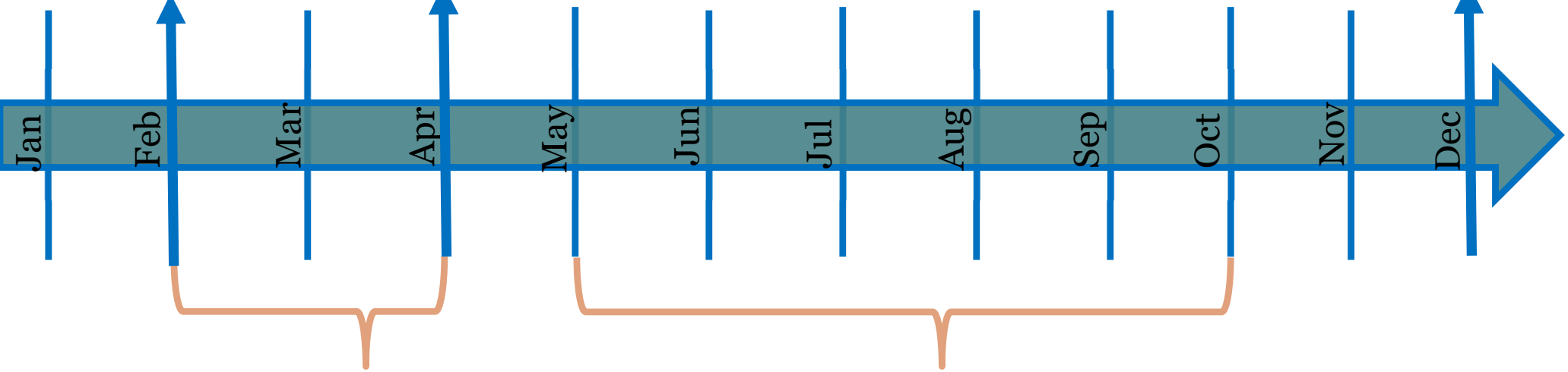
- An electronic vote will be held **23 February** to select projects, with the number of projects per basin determined by loss rate (i.e., basins with the highest loss have the most projects):
  - Barataria: 4
  - Terrebonne: 4
  - Breton Sound: 3
  - Pontchartrain: 3
  - Mermentau: 2
  - Calcasieu/Sabine: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

# PPL Timeline

**Coastwide Vote (Feb)**
- 21 nominees, 1 coastwide, up to 6 demos

**TC Mtg (April)**
- Up to 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 USACE by **16 February 2024**

**Terri Von Hoven**
**U.S. Army Corps of Engineers**
**CEMVN-PMR, RM 331**
**7400 Leake Avenue**
**New Orleans, LA 70118**

**Email: Terri.m.vonhoven@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 Terri Von Hoven at Terri.m.vonhoven@usace.army.mil

Explore more on CPRA's website. https://coastal.la.gov/our-plan/2023-coastal-master-plan/

>>> The Terrebonne barrier island system is a critical part of the landscape. It provides a variety of ecosystem services, such as habitat, storm-surge buffering, and plays a role in maintaining marine and estuarine gradients in eastern Terrebonne. Louisiana recently invested over $160M in constructing the Terrebonne Basin Barrier Island and Beach Nourishment project (TE-0143) which includes approximately 1,100 acres of beach, dune, and marsh habitat and plans to continue to invest in rebuilding these features. See **Chapter 7: Beyond the Master Plan** for more information on barrier island programs.

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Map 6.11: Terrebonne 2023 Coastal Master Plan Projects.

# TERREBONNE PROJECTS

## REGIONAL 2023 PROJECTS MAP

For the 2023 Coastal Master Plan, 17 projects were selected for the Terrebonne region. These projects include a variety of restoration measures, such as marsh creation, riverine diversions, ridge restoration, and the cross-basin Eastern Terrebonne Landbridge project. The Central Terrebonne Hydrologic Restoration project was selected to prevent saltwater intrusion from Caillou Lake into Lake Mechant and support the ecosystems and habitat in the area. Several structural risk reduction projects were selected to reduce the impact of storm surge-based flooding to coastal communities across the region, such as Houma, Dulac, Larose, and Amelia. These projects, along with nonstructural risk reduction measures, can help reduce risk to residents and communities in the Terrebonne region.

>>> Shoreline protection is considered consistent with the master plan and can be evaluated on a case-by-case basis through programs like CWPPRA, RESTORE Parish Matching, and Restoration Partnership Fund. Shoreline protection is, of course, most effective in areas with acutely high erosion rates, like the north side of Marsh Island, or when applied to maintain critical landscape features, such as Southwest Point. See **Chapter 4: Evaluate** for more information on programmatic restoration.

P 55 and P 64

>>> The Atchafalaya Basin is deeply tied to the Central Coast and western Terrebonne coastal basins; however, it is a distinctive river swamp system with unique goals and solutions for restoration and enhancement. The Atchafalaya Basin Program, which is administered by CPRA, has been established to help meet these specific challenges. See **Chapter 7: Beyond the Master Plan** for more.

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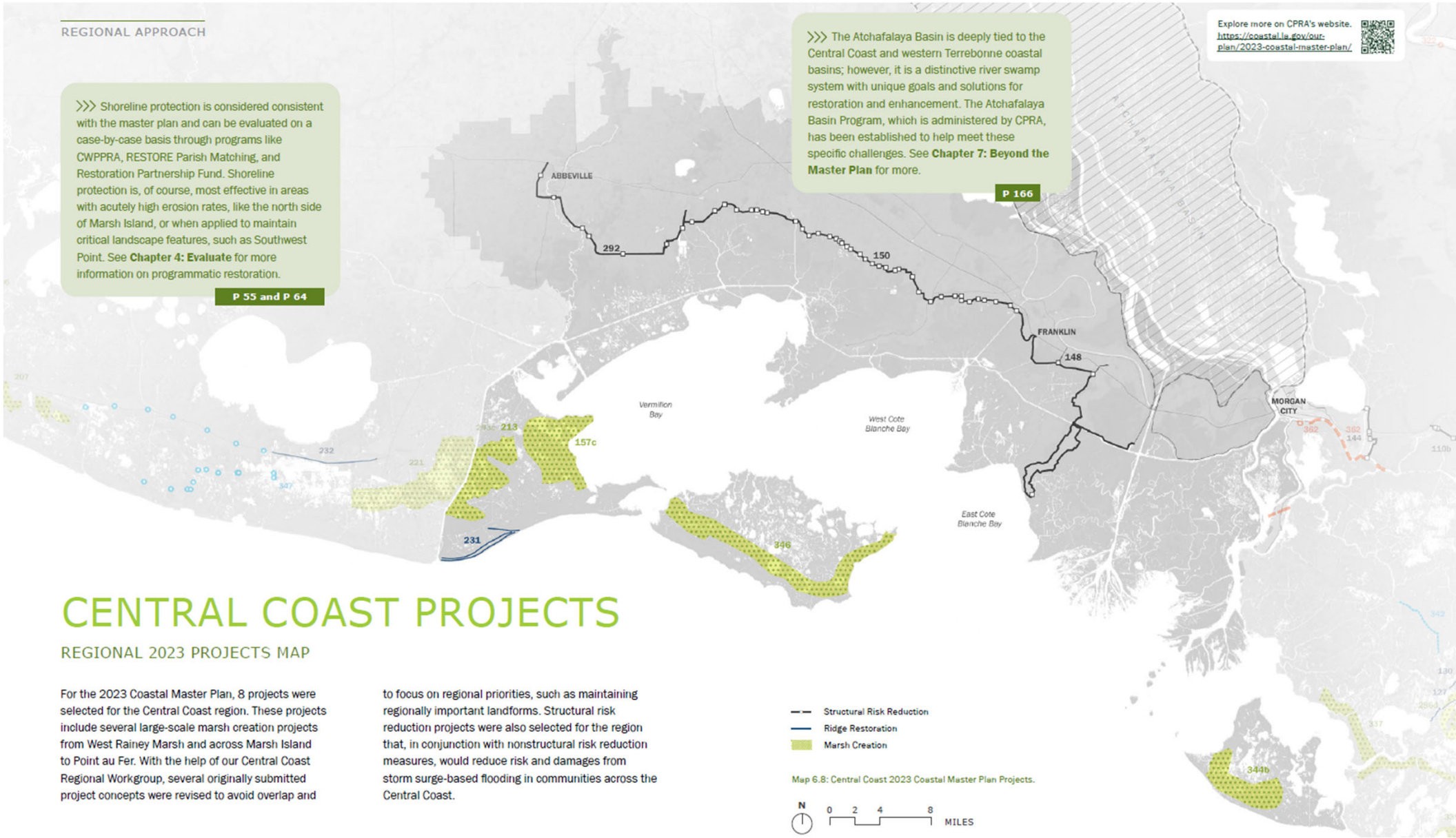
Explore more on CPRA's website. https://coastal.la.gov/our-plan/2023-coastal-master-plan/




# CENTRAL COAST PROJECTS

## REGIONAL 2023 PROJECTS MAP

For the 2023 Coastal Master Plan, 8 projects were selected for the Central Coast region. These projects include several large-scale marsh creation projects from West Rainey Marsh and across Marsh Island to Point au Fer. With the help of our Central Coast Regional Workgroup, several originally submitted project concepts were revised to avoid overlap and to focus on regional priorities, such as maintaining regionally important landforms. Structural risk reduction projects were also selected for the region that, in conjunction with nonstructural risk reduction measures, would reduce risk and damages from storm surge-based flooding in communities across the Central Coast.

Map 6.8: Central Coast 2023 Coastal Master Plan Projects.

# Region 3

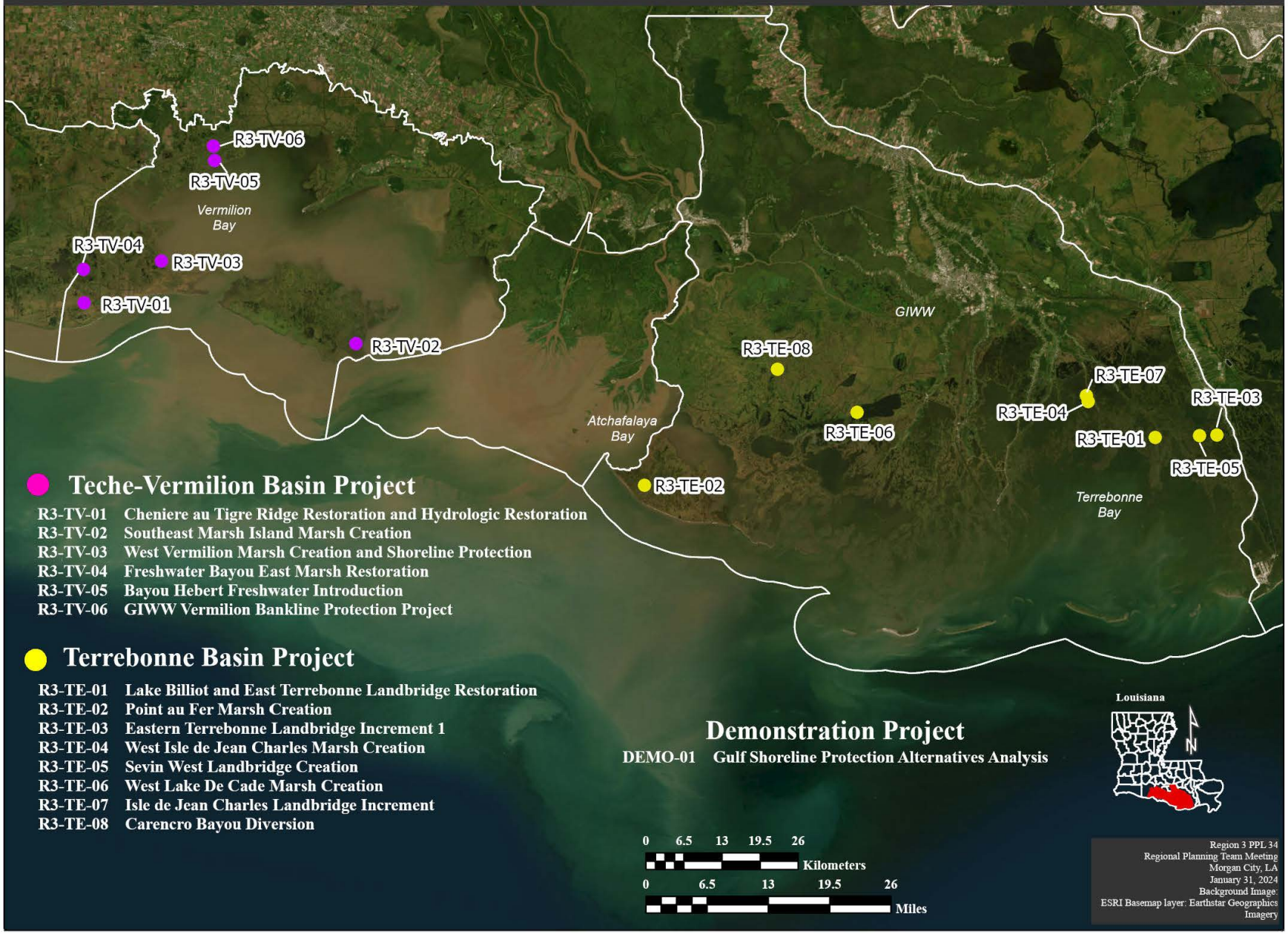
## Teche-Vermilion Basin

| Project ID | Agency | Project Name |
|---|---|---|
| R3, TV-01 | EPA | Cheniere au Tigre Ridge Restoration and Hydrologic Restoration |
| R3, TV-02 | EPA | Southeast Marsh Island Marsh Creation |
| R3, TV-03 | EPA | West Vermilion Marsh Creation and Shoreline Protection |
| R3, TV-04 | NRCS | Freshwater Bayou  East Marsh Restoration |
| R3, TV-05 | Vermilion | Bayou Hebert Freshwater Introduction |
| R3, TV-06 | NRCS | NE Vermilion Bay Shoreline Protection (formerly South Avery) |

## Terrebonne Basin

| Project ID | Agency | Project Name |
|---|---|---|
| R3, TE-01 | EPA | Lake Billiot and East Terrebonne Landbridge Restoration, Marsh Creation and Terracing |
| R3, TE-02 | EPA | Point au Fer Marsh Creation |
| *R3, TE-03* | *FWS* | *Bayou Barre Marsh Creation WITHDRAWN* |
| R3, TE-04 | FWS | Eastern Terrebonne Landbridge Increment 1 |
| R3, TE-05 | FWS | West Isle de Jean Charles Marsh Creation |
| R3, TE-06 | NOAA | Sevin West Landbridge Creation |
| R3, TE-07 | NOAA | West Lake De Cade Marsh Creation |
| R3, TE-08 | NRCS | South Isle de Jean Charles Landbridge Increment (formerly Isle de Jean Charles Landbridge Increment) |
| R3, TE-09 | NRCS | Carencro Bayou Diversion |

# PPL34 Region 3 Nominated Projects




## Teche-Vermilion Basin Project

- R3-TV-01 Cheniere au Tigre Ridge Restoration and Hydrologic Restoration
- R3-TV-02 Southeast Marsh Island Marsh Creation
- R3-TV-03 West Vermilion Marsh Creation and Shoreline Protection
- R3-TV-04 Freshwater Bayou East Marsh Restoration
- R3-TV-05 Bayou Hebert Freshwater Introduction
- R3-TV-06 GIWW Vermilion Bankline Protection Project

## Terrebonne Basin Project

- R3-TE-01 Lake Billiot and East Terrebonne Landbridge Restoration
- R3-TE-02 Point au Fer Marsh Creation
- R3-TE-03 Eastern Terrebonne Landbridge Increment 1
- R3-TE-04 West Isle de Jean Charles Marsh Creation
- R3-TE-05 Sevin West Landbridge Creation
- R3-TE-06 West Lake De Cade Marsh Creation
- R3-TE-07 Isle de Jean Charles Landbridge Increment
- R3-TE-08 Carencro Bayou Diversion

## Demonstration Project

DEMO-01 Gulf Shoreline Protection Alternatives Analysis

Louisiana



0 6.5 13 19.5 26 Kilometers

0 6.5 13 19.5 26 Miles

Region 3 PPL 34
Regional Planning Team Meeting
Morgan City, LA
January 31, 2024
Background Image:
ESRI Basemap layer: Earthstar Geographics Imagery

# CWPPRA RPT Region 3

Teche-Vermilion Basin

# PPL34 PROJECT FACT SHEET
**January 31, 2024**

**Project Name**
Cheniere Au Tigre Ridge Restoration and Hydrologic Restoration

**Master Plan Strategy**
Cheniere au Tigre Ridge Restoration (2023 Master Plan ID: 231): Restoration of approximately 78,000 feet of Bill and Cheniere au Tigre Ridges to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.

**Project Location**
Region 3, Teche-Vermilion Basin, Vermilion Parish

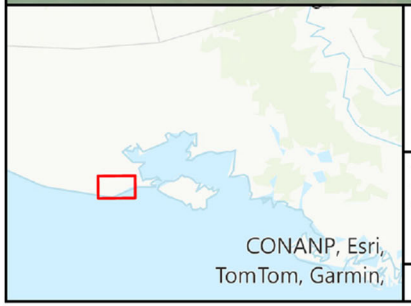
**Problem**
Ridges only aggrade or build up when they are being formed along the banks of active distributaries or as active gulf beaches. Surface elevations of all relict natural levee ridges, chenier ridges, artificial ridges, embankments, levees, and uplands become lower through time in response to subsidence. As a result, both the Deltaic and Chenier Plain systems are badly degraded. The salinity gradients within the estuarine basins support the diversity of habitats essential to the function of these systems. These gradients are maintained by the skeletal distributary ridges, cheniers, and barrier shorelines at the gulf. If these vital components of the systems are allowed to disappear, the essential character of the estuarine basins will change drastically. If breaches occur in the skeletal framework of natural levee ridges and lake rims which hold the fresh and intermediate marshes together, a tidal pumping process quickly removes the fluid and semi-fluid soils, and the barren mud flats are converted to ponds, lakes, and bays (Coast 2050: Toward a Sustainable Coastal Louisiana). The land loss rate for the nearby E. Freshwater Bayou/Cheniere au Tigre subunit is -0.24%/yr.

**Proposed Solution**
The project would restore nearly 78,000 linear feet of historical Bill and Cheniere au Tigre ridges and include planting woody and herbaceous species. Additionally, the project would promote hydrologic connectivity to facilitate drainage of the north side of the ridges into East Freshwater Bayou. This project would have synergistic effects with Marsh Creation near Freshwater Bayou (ME-025), Cheniere au Tigre Shoreline Protection (TV-064), and Cheniere au Tigre Sediment Trapping Demonstration (TV-016).

**Project Benefits**
Restore approximately 78,000LF of historic ridges to 5 ft NAVD88, and restore hydrologic connectivity to East Freshwater Bayou. This project would have direct benefits to maintaining historic cheniers, and further protect the Gulf of Mexico shoreline from further retreat. Additionally, this project would provide indirect benefits to the protection of the freshwater bayou navigable waterway.

**Project Costs**
The estimated construction cost, including 25% contingency, is $25M - $30M.

**Preparer(s) of Fact Sheet**
Jenny Byrd, EPA; (214) 665-7377; byrd.jennifer@epa.gov
John Foret, Rainey Conservation Alliance; (337) 237-2200x1109; jdforet@fenstermaker.com


# PPL 34 Cheniere au Tigre Ridge Restoration and Hydrologic Restoration

Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX

2024

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

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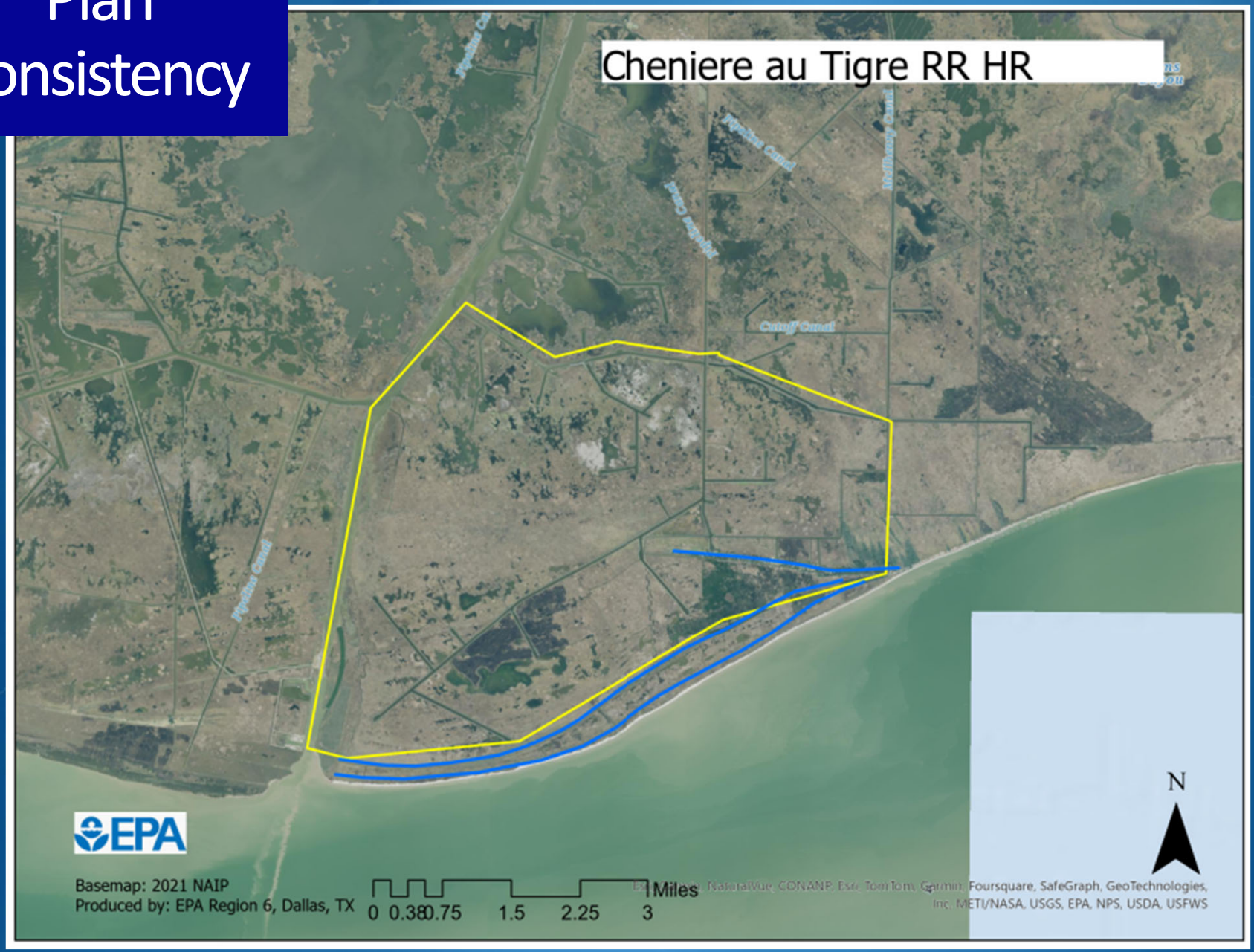
# Cheniere au Tigre
# Ridge Restoration and Hydrologic Restoration


Coastal Wetlands Planning, Protection and Restoration Act

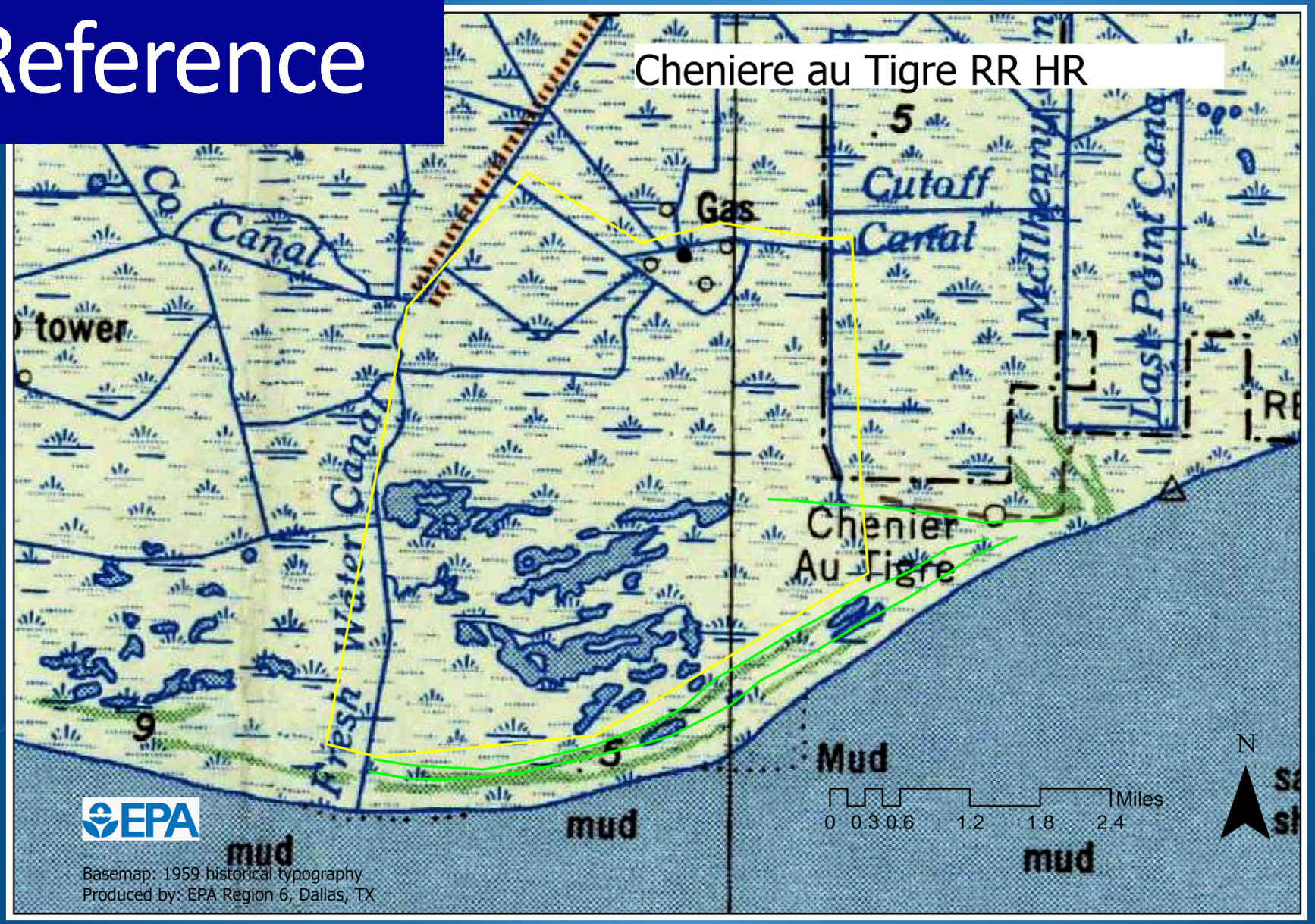
# 2023 Master Plan Strategy

Cheniere au Tigre Ridge Restoration (2023 Master Plan ID: 231): Restoration of approximately 78,000 feet of Bill and Cheniere au Tigre Ridges to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.

# 2023 Master Plan Consistency



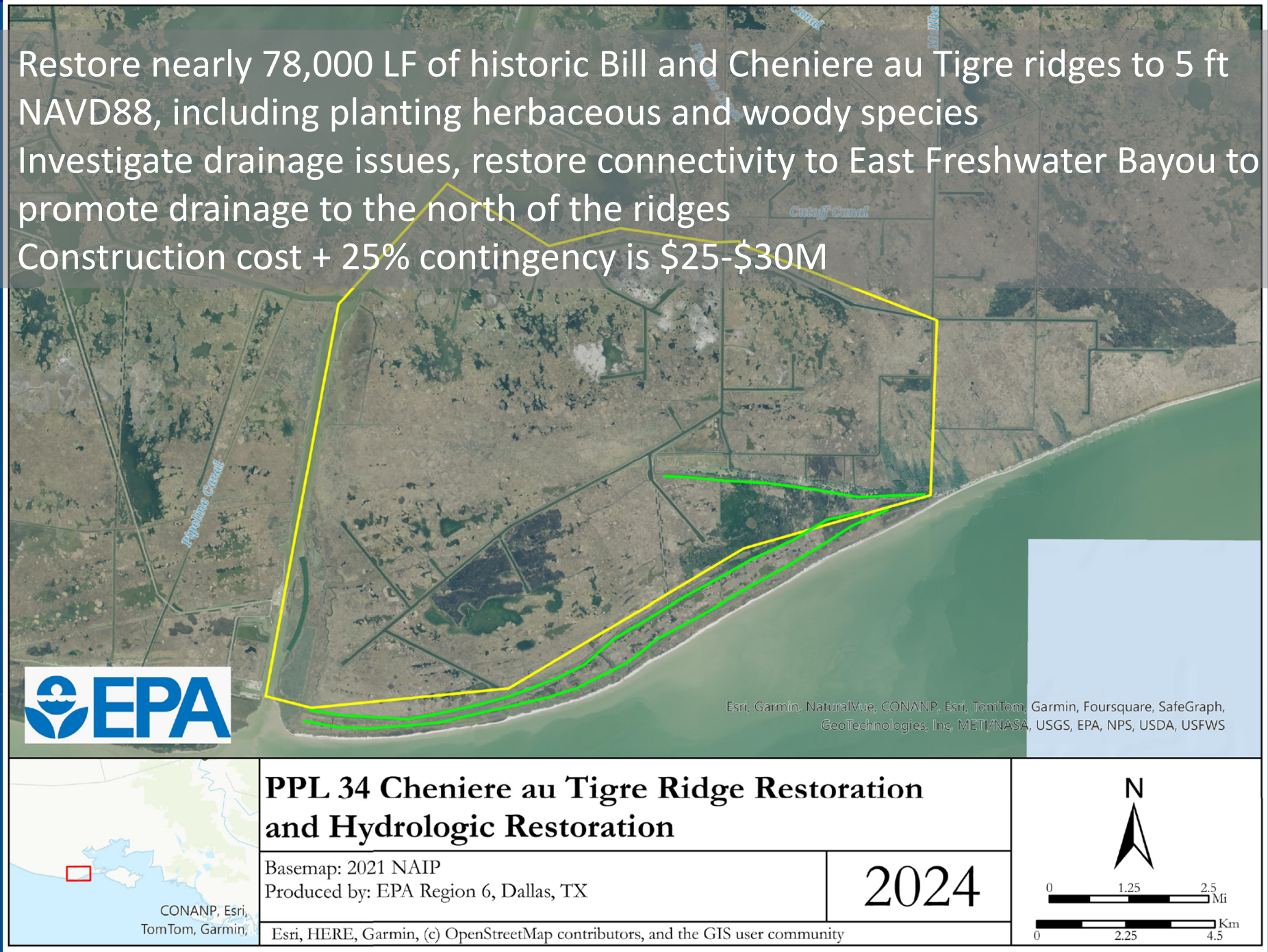
# Historical Reference



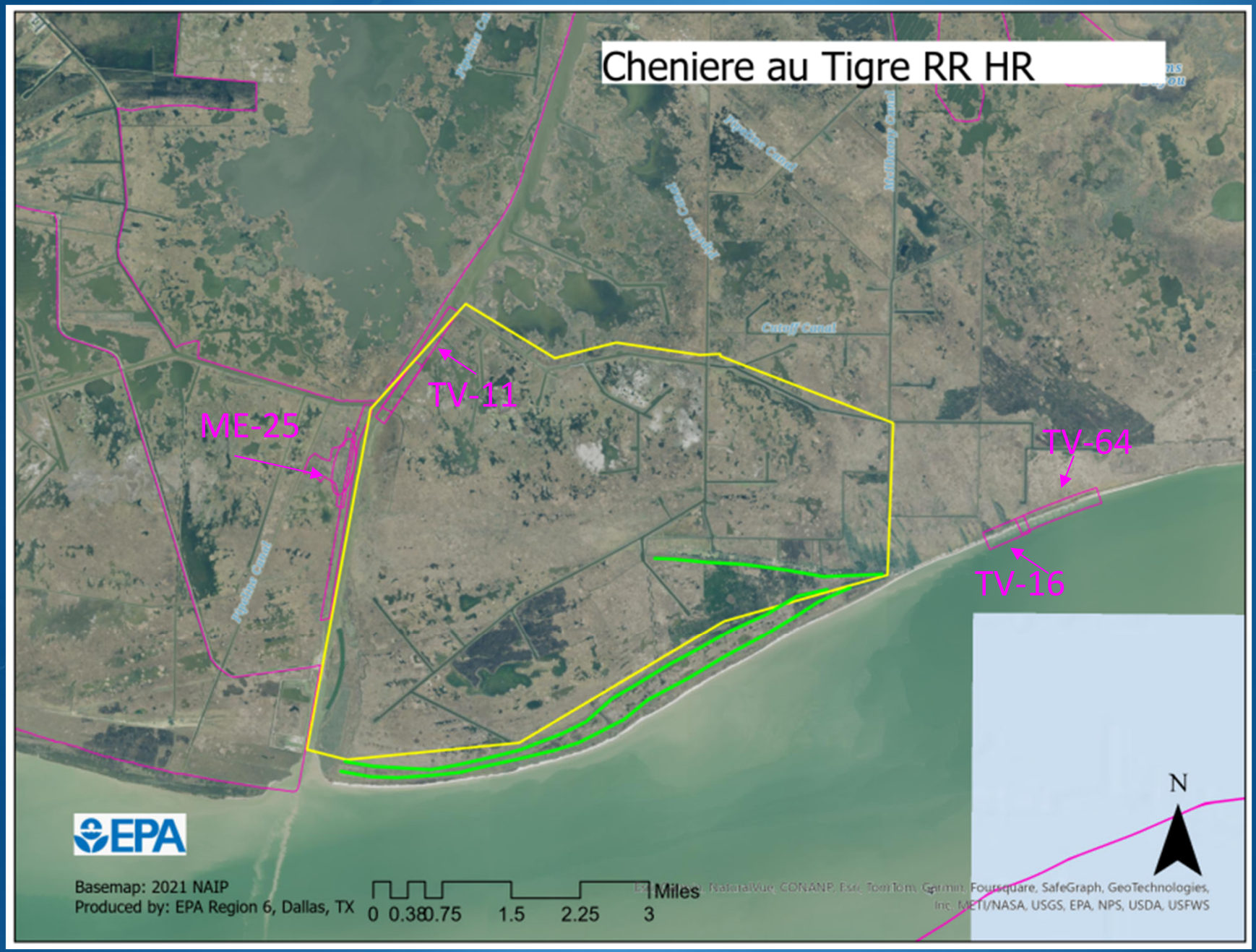

- 1959

# Project Features

- Restore nearly 78,000 LF of historic Bill and Cheniere au Tigre ridges to 5 ft NAVD88, including planting herbaceous and woody species
- Investigate drainage issues, restore connectivity to East Freshwater Bayou to promote drainage to the north of the ridges
- Construction cost + 25% contingency is $25-$30M



# Synergy


Cheniere au Tigre RR HR
TV-11
ME-25
TV-64
TV-16
Pipeline Canal
Cutoff Canal
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Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
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Miles
Esri, NASA, NGA, USGS, FEMA, Intermap, NaturalVue, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

# PPL34 PROJECT FACT SHEET
**January 31, 2024**

**Project Name**
Southeast Marsh Island Marsh Creation and Nourishment

**Master Plan Strategy**
Marsh Island Barrier Marsh Creation (ID #346): Creation of marsh within a footprint of approximately 16,000 acres on Marsh Island to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

**Project Location**
Region 3, Teche-Vermilion Basin, Iberia Parish, Southeast end of Marsh Island Wildlife Refuge.

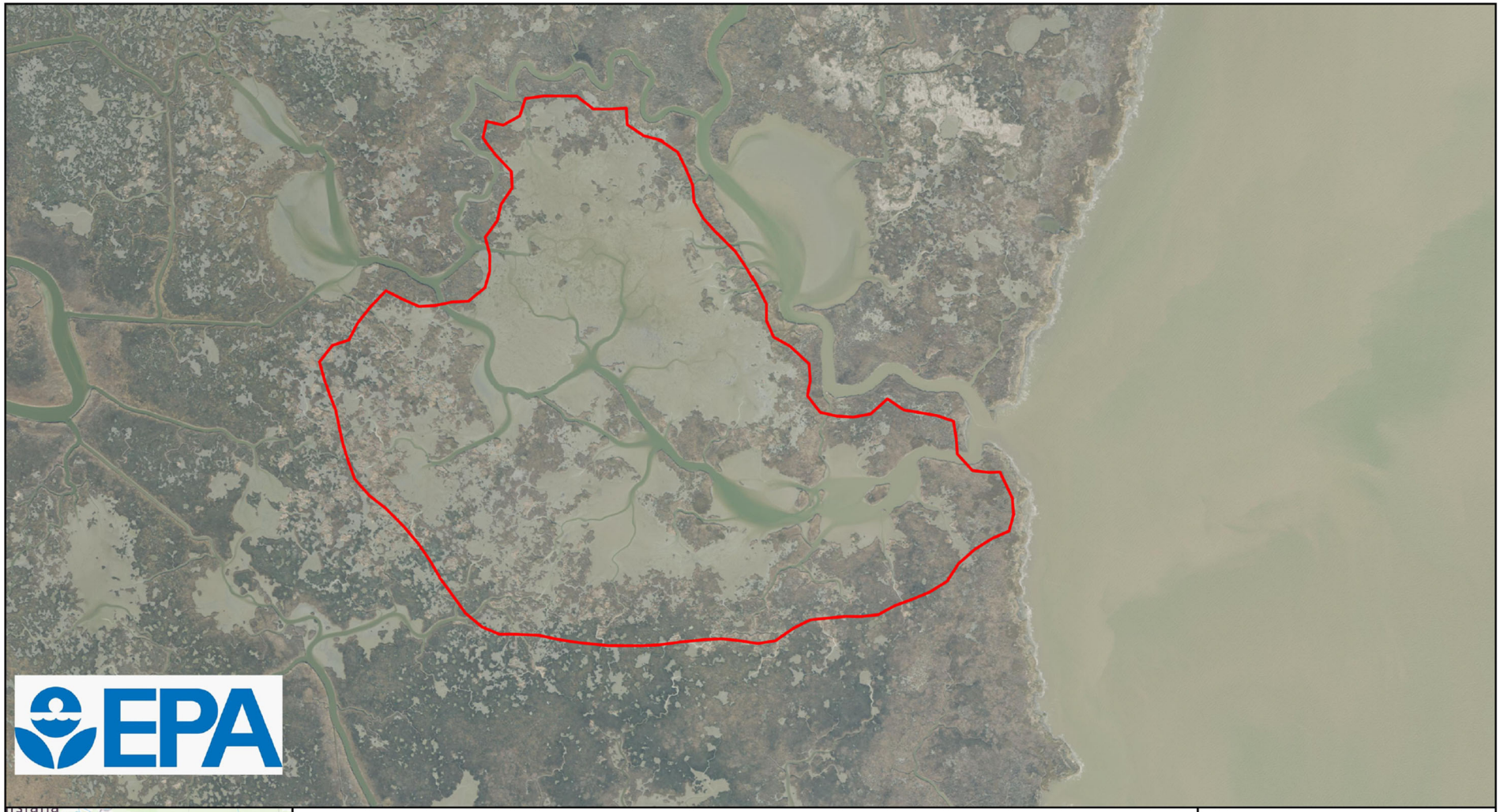
**Problem**
Areas of emergent marsh in the interior of Marsh Island have been converted to open water, primarily due to hurricane activity and subsidence. Marsh Island provides protection to tens of thousands of wetland acres and over 75 miles of shorelines on the mainland to the north, west and east of the island (Iberia, Vermilion and St. Mary parishes). It provides crucial protection to over 10,000 acres of susceptible/fragile marsh to the west and northwest of the project. Marsh Island has been projected to lose 12.9% of its marsh habitat through 2050. Areas targeted by this project are those with the greatest historic land loss and are proximal to East Cote Blanche Bay. The marsh creation cell is located near the West Branch MC Candidate (WVA) which shows a land loss rate of -0.58%/yr.

**Proposed Solution**
The project would use hydraulic dredging from Cote Blanche Bay to create/nourish approximately 485 acres of emergent marsh by filling in open water and deteriorated areas. Beneficial use of dredged material from the port of Morgan City is also being investigated as a potential sediment source. Unconfined or limited confinement techniques will be used allowing finer material to flow through the interior marsh areas and provide nourishment. Efforts will be made to limit water quality impacts and minimize impacts to potential oyster bed areas. This project has synergistic effects the constructed Marsh Island Hydrologic Restoration (TV-014), the East Marsh Island Marsh Creation (TV-021) projects on the east-end of Marsh Island, Marsh Island Repairs (TV-073, FEMA) and Marsh Island Control Structures Hydrologic Restoration (TV-006).

**Project Benefits**
Create/nourish approximately 485 acres of emergent marsh (435 acres created, 50 acres nourished) using dredged sediment. This project would directly contribute to the restoration of a critical landscape feature, Marsh Island.

**Project Costs**
The estimated construction cost including 25% contingency is $25-$30M.

**Preparer(s) of Fact Sheet:**
Jenny Byrd; EPA; (214) 665-7377; byrd.jennifer@epa.gov
Tyson Crouch, LDWF; tcrouch@wlf.la.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




# PPL34 SE Marsh Island Marsh Creation

Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX

2024

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

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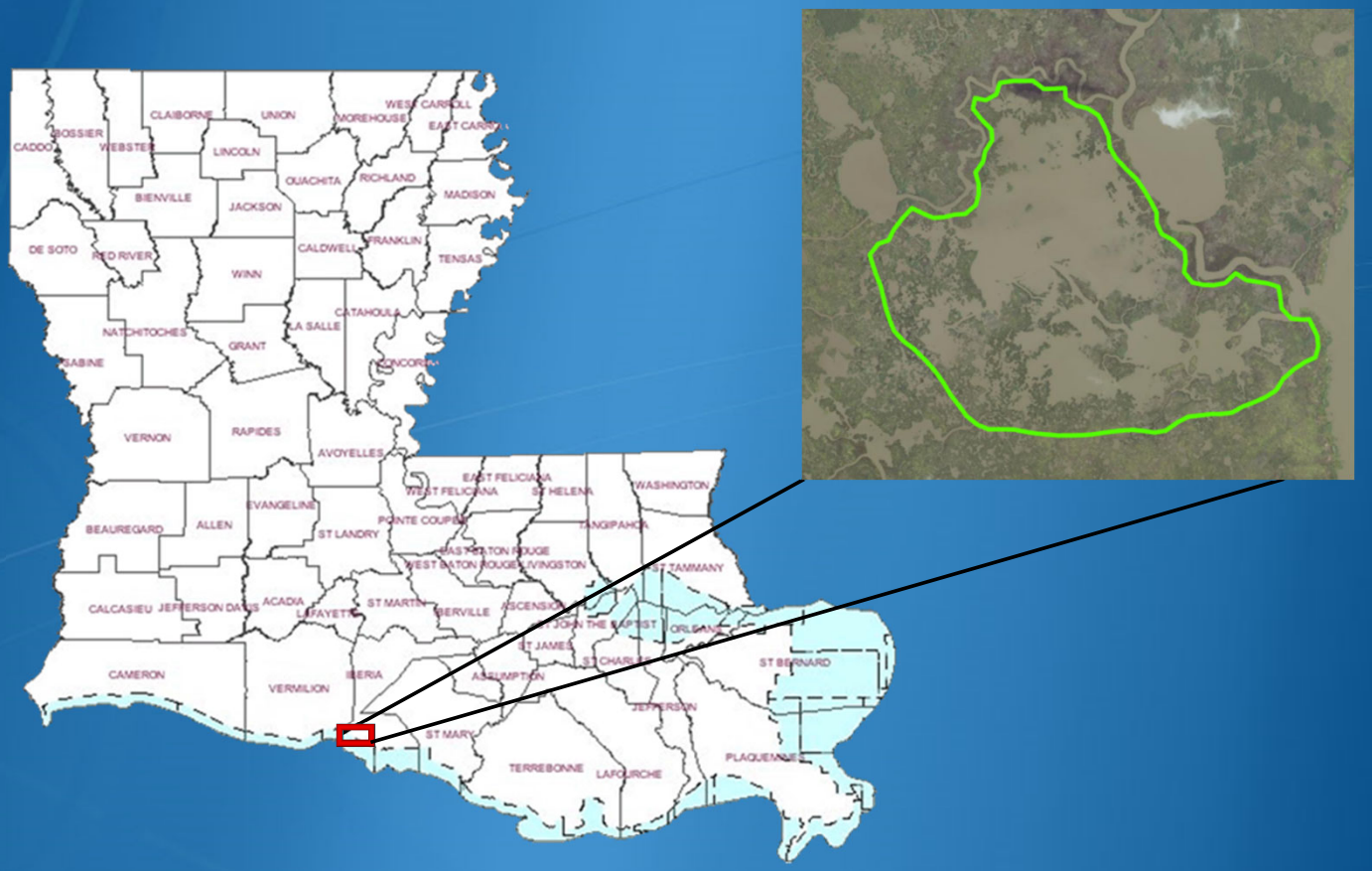
0 2.25 4.5 Km

# SE Marsh Island Marsh Creation




Coastal Wetlands Planning, Protection and Restoration Act

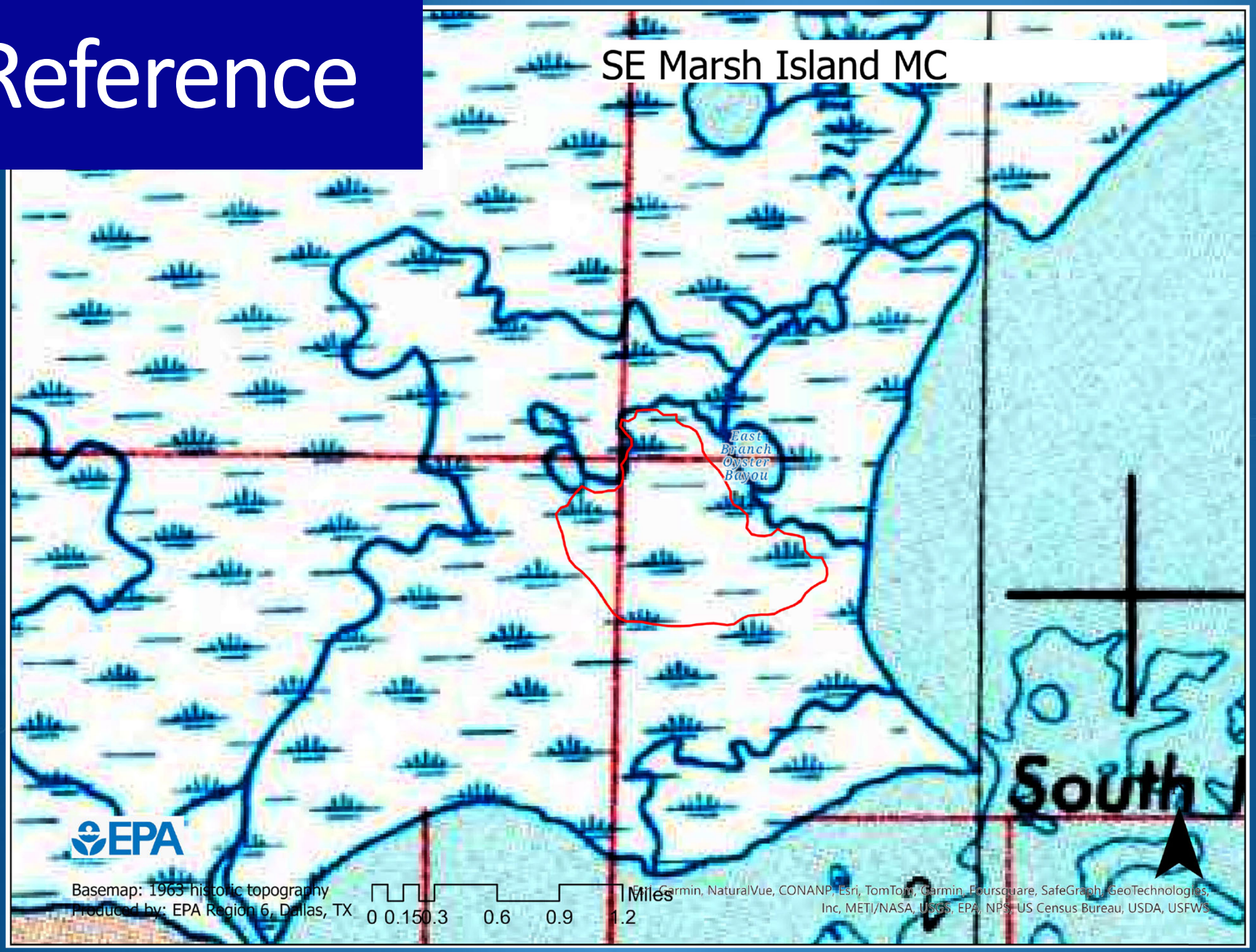
# 2023 Master Plan Strategy

**Marsh Island Barrier Marsh Creation (ID #346):** Creation of marsh within a footprint of approximately 16,000 acres on Marsh Island to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

# 2023 Master Plan Consistency

# Historical Reference

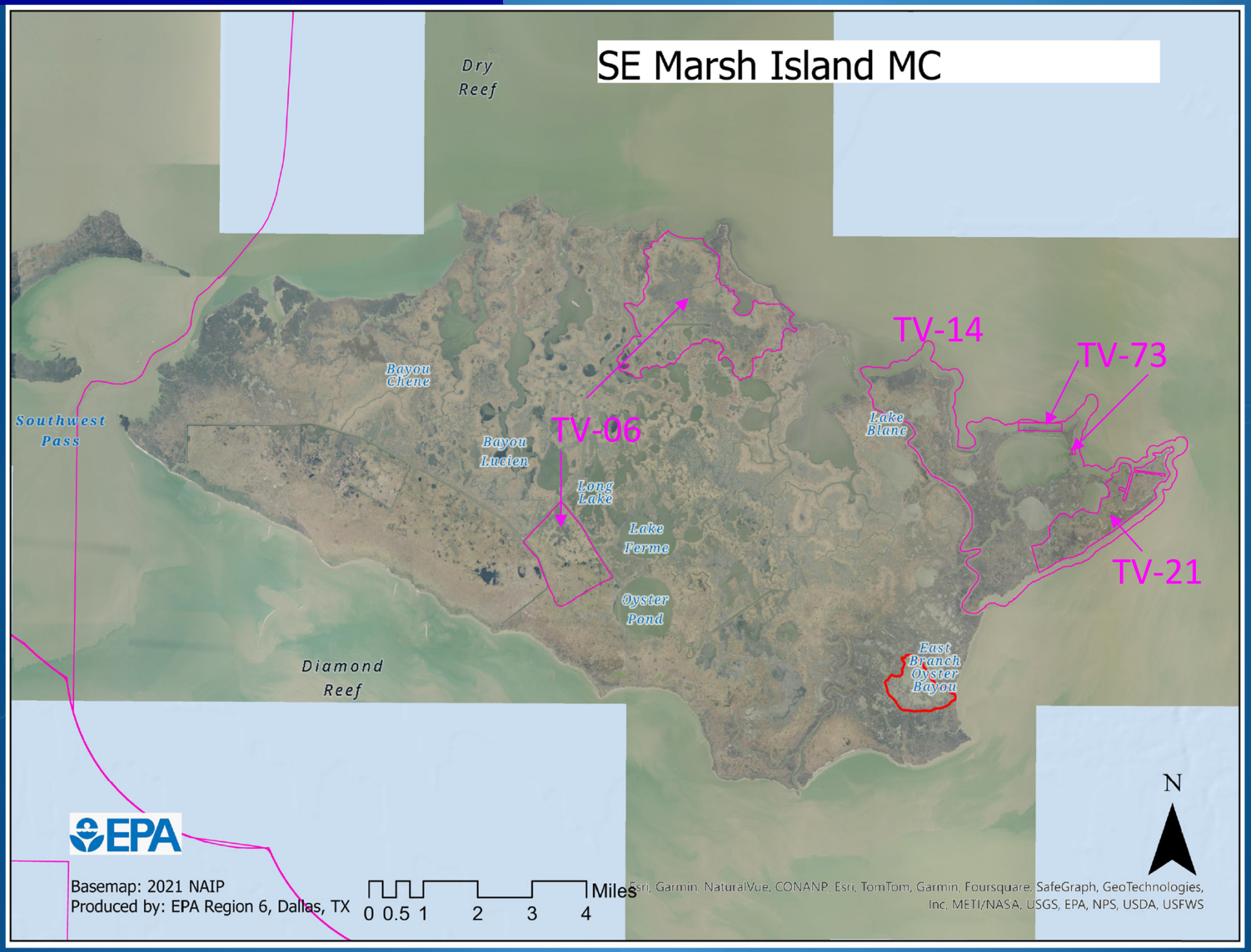
1963



# Project Features

- Create/nourish 485 acres emergent marsh
- Restore degraded wetland habitat and provide increased protection from storm surge and flooding
- Marsh Island serves to protect more inland areas in Iberia, Vermilion and St. Mary parishes
- Construction + 25% = $25 to $30M

# Synergy


SE Marsh Island MC
Dry Reef
Bayou Chene
Southwest Pass
Bayou Lucien
Long Lake
Lake Ferme
Oyster Pond
Diamond Reef
Lake Blanc
East Branch Oyster Bayou
TV-14
TV-73
TV-06
TV-21
EPA
Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
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# PPL34 PROJECT FACT SHEET
**January 31, 2024**

**Project Name**
West Vermilion Marsh Creation and Shoreline Protection

**Master Plan Strategy**
East Rainey Marsh Creation (ID: #157c): Creation of marsh in the northern portion of Rainey Marsh to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

**Project Location**
Region 3, Teche-Vermilion Basin, Vermilion Parish

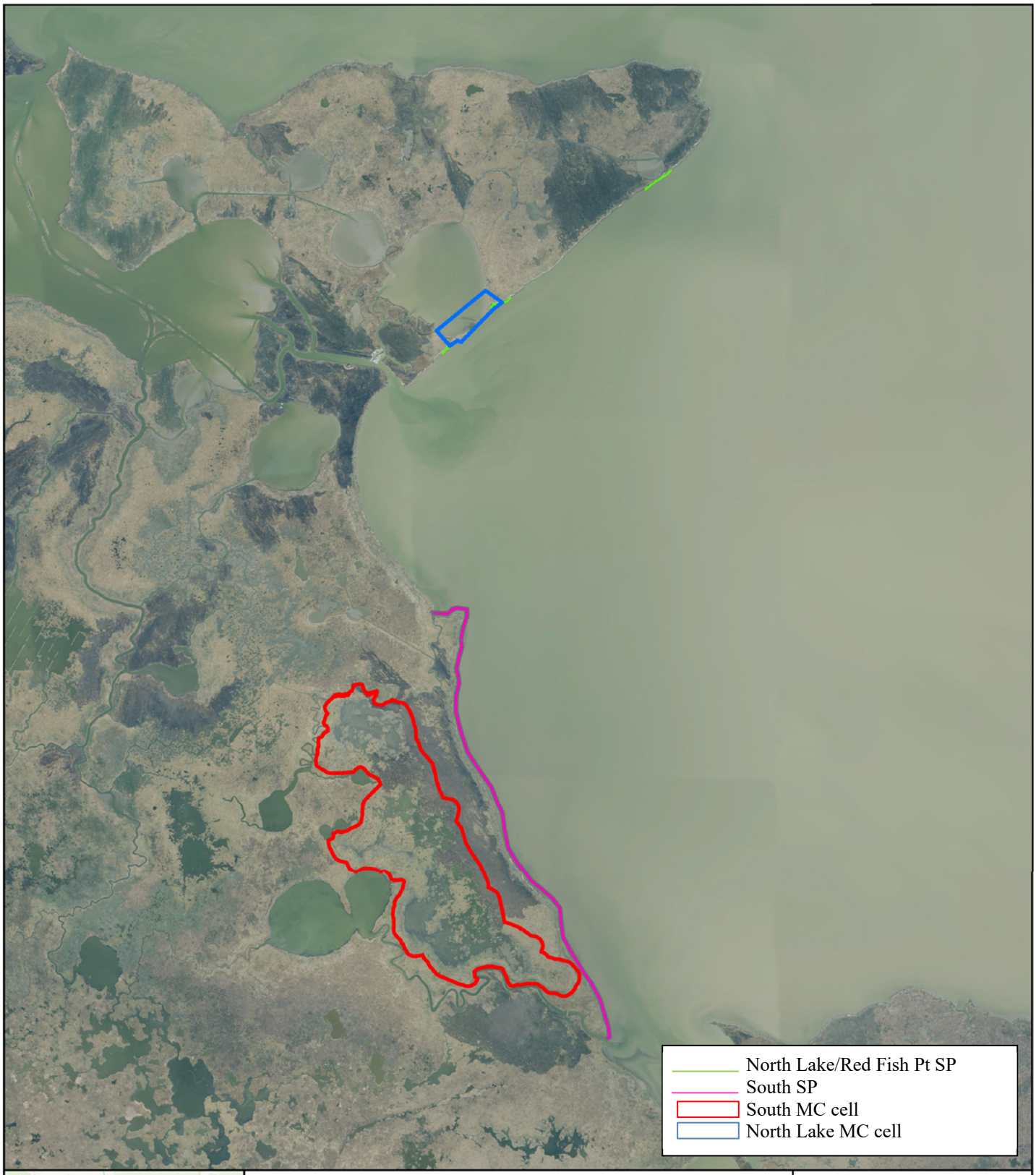
**Problem**
Over the past decades, the project area has experienced altered geomorphologic and hydrologic conditions, shoreline erosion and wetland loss due to damage from storms; dredging of navigation and petroleum access canals, construction of spoil banks and levees, and natural wave energy. Wave energy in the Bay has gradually increased over the centuries because the bay is naturally getting deeper due to a slight yet constant subsidence and global sea-level rise. The land loss rate for the Rainey Marsh Subunit it -0.05%. Shoreline erosion rate was calculated at 5.5 ft/yr.

**Proposed Solution**
The project proposes to create/nourish a total of 706 acres of marsh in an area east of Hog Lake between Bayou Prien and Hog Bayou. The project would restore marsh along the remnant shoreline between North Lake and Vermilion Bay (29 acres) and stabilize the shoreline in three areas: between North Lake and Vermilion Bay, between the small lake near Redfish Point and Vermilion Bay, and along the western shoreline of Vermilion Bay between Bayou Prien and Hog Bayou (92 acres, 18,352 ft). This project would have synergistic effects with Lake Portage Land Bridge (TV-017), Chenier au Tigre Shoreline Protection (TV-064), and Rainey Audubon Wildlife Sanctuary Earthen Terraces (TV – 065).

**Project Benefits**
The goals of this project are to: 1) Create and/or nourish 677 acres of marsh, by pumping sediment from Vermilion Bay into an unconfined area (calculated with a 300 ft buffer); 2) Protect/armor approximately 18,352 ft (92 acres) of the western shoreline of Vermilion Bay between Bayou Prien and Hog Bayou and the Vermilion Bay shoreline adjacent to the proposed marsh creation cell (29 acres) near North Lake. Assuming some natural vegetative recruitment, vegetative plantings are planned at a 50% density at project year one. Containment dikes will be degraded or gapped by year three to allow access for estuarine organisms. This project would provide direct restoration and protection to the Vermilion Bay rim.

**Project Costs**
The estimated construction cost including 25% contingency is $35M - $40M.

**Preparers of Fact Sheet**
Jenny Byrd; EPA; (214) 665-7377; byrd.jennifer@epa.gov
Tyson Crouch, LDWF; tcrouch@wlf.la.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





# PPL34 W Vermilion Marsh Creation and Shoreline Protection

Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX

2024

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

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# West Vermilion MC and SP

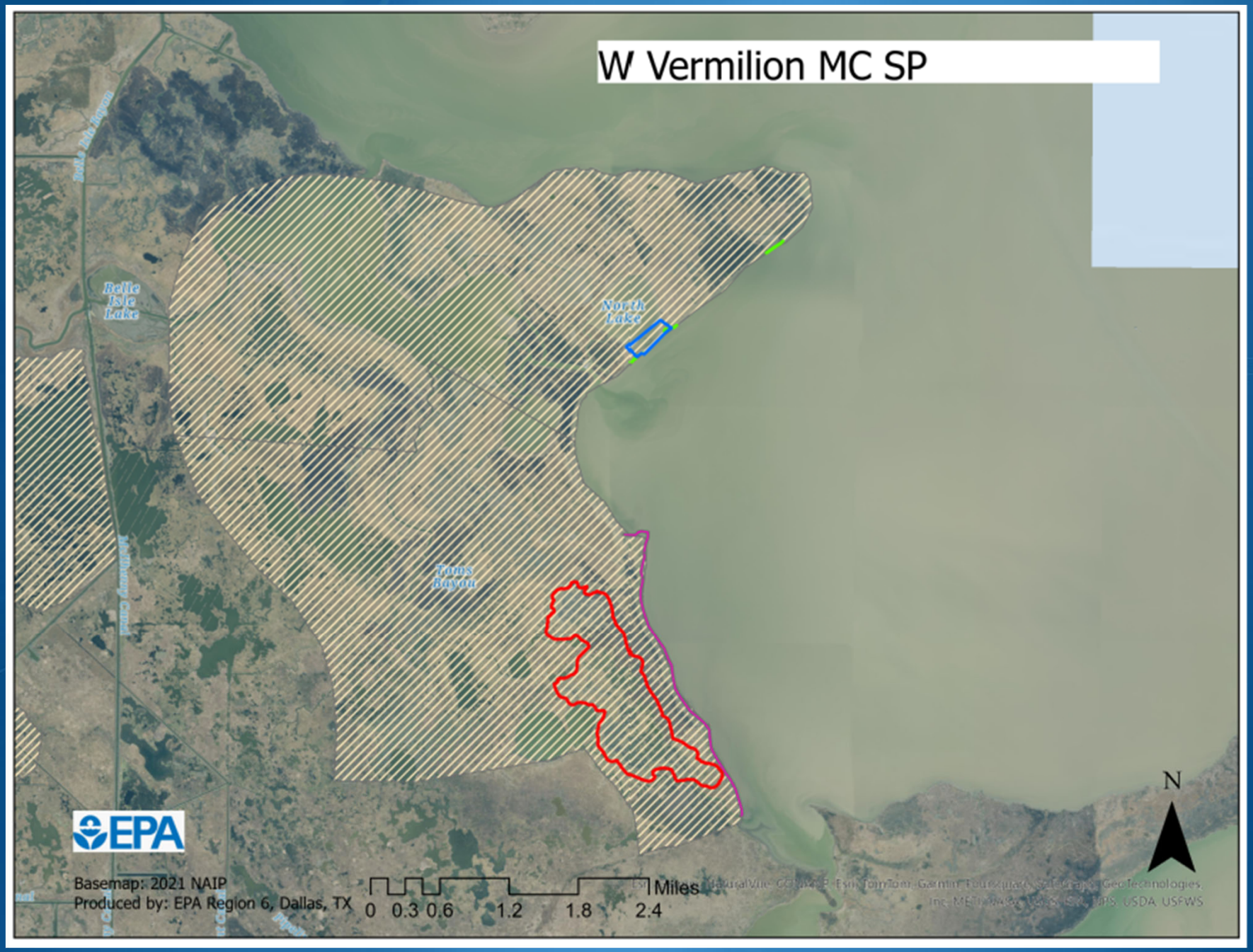


Coastal Wetlands Planning, Protection and Restoration Act

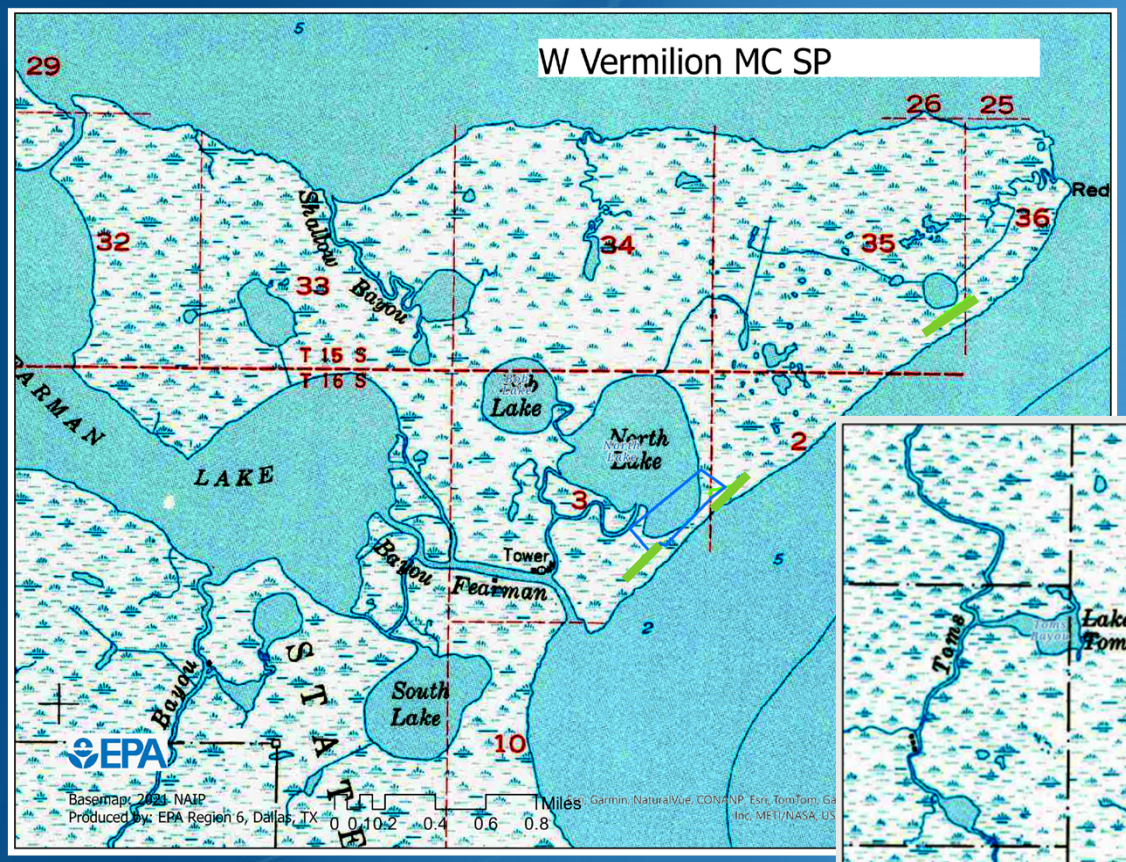
# 2023 Master Plan Strategy

**East Rainey Marsh Creation (ID: #157c):** Creation of marsh in the northern portion of Rainey Marsh to create new wetland habitat, restore degraded marsh, and reduce wave erosion

# 2023 Master Plan Consistency



# Historical Reference

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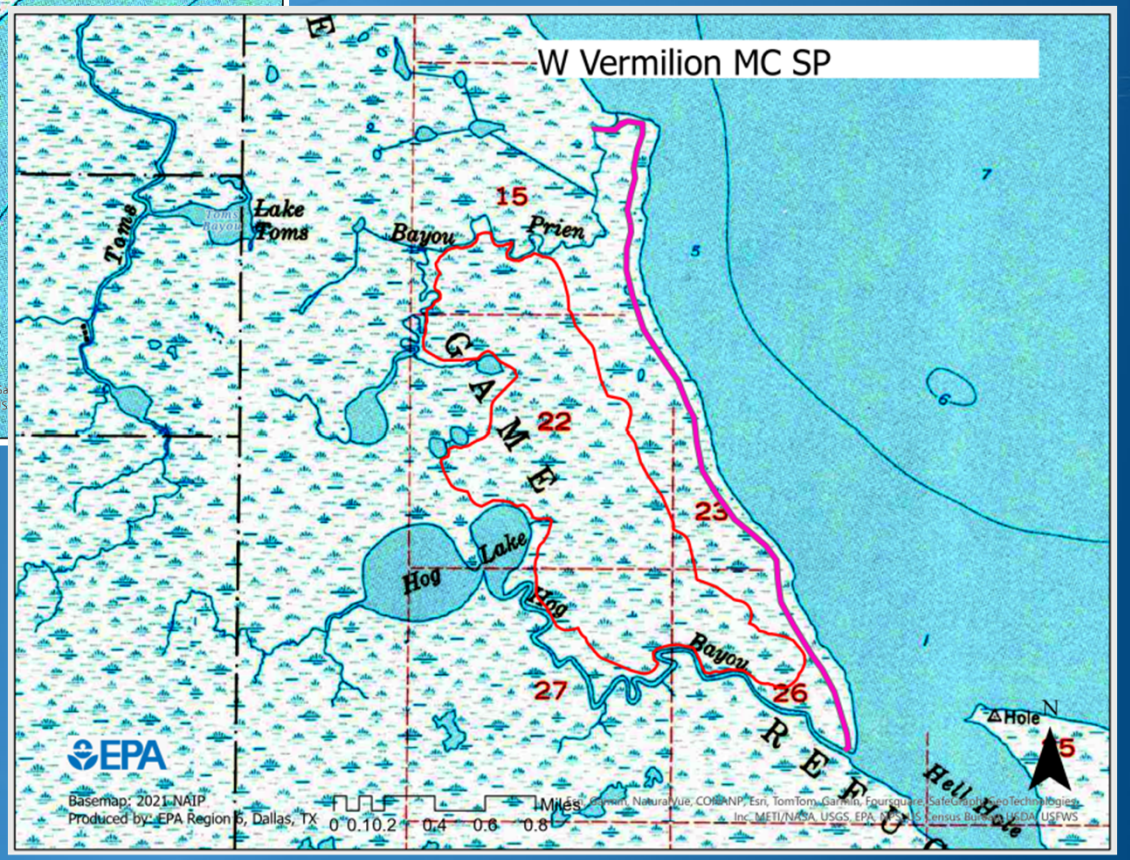
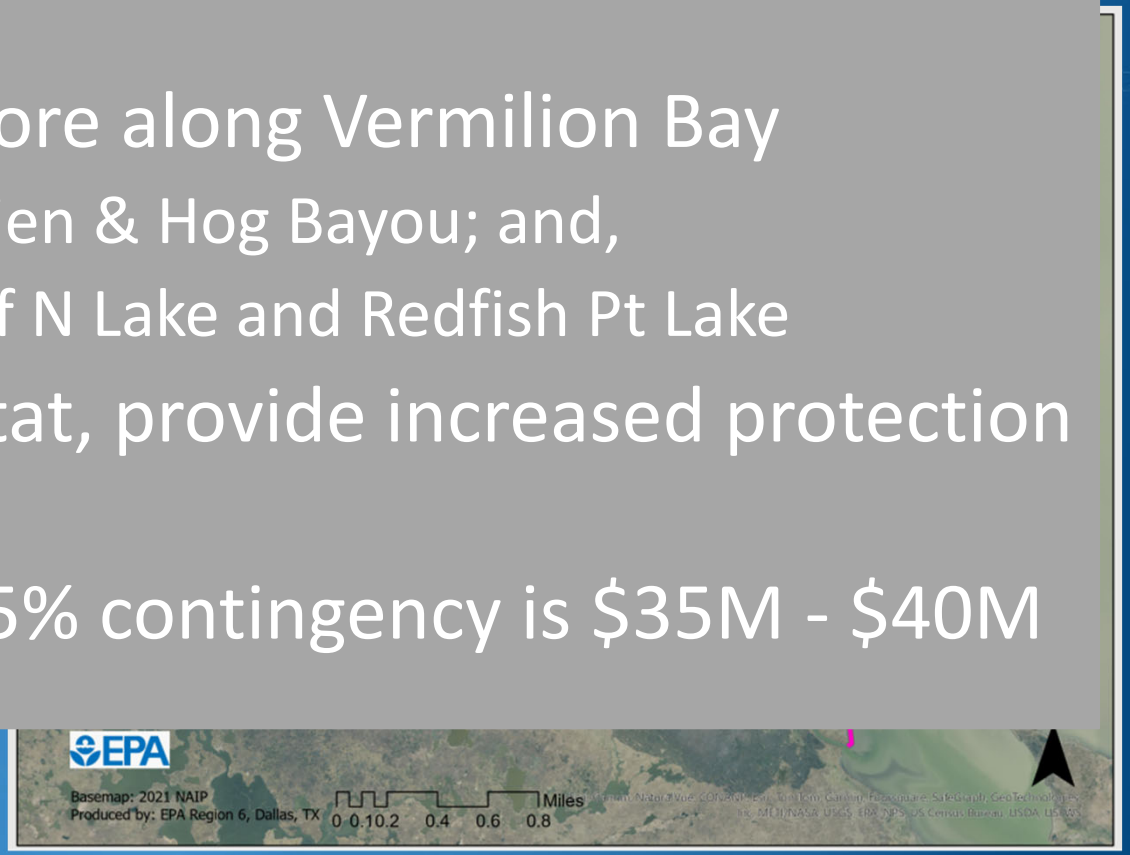
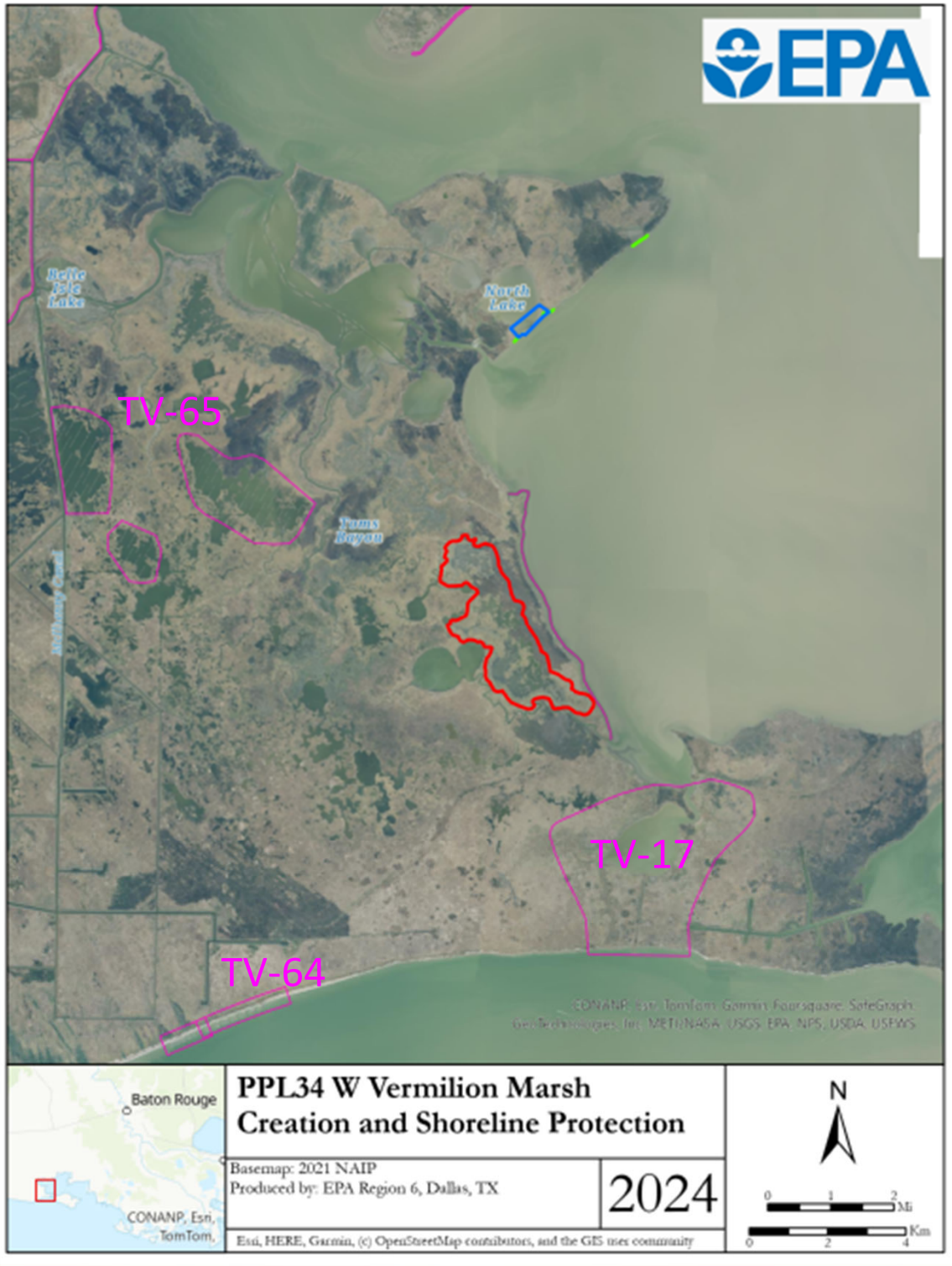


# Project Features

- Nourish 677 acres in the S MC Cell with seds from Vermilion Bay, unconfined (calculated with 300 ft buffer)
- Create 29 acres of marsh to reinforce barrier b/w bay and North Lake
- Armor 18,352 ft of shore along Vermilion Bay
  - 1) between Bayou Prien & Hog Bayou; and,
  - 2) along the shores of N Lake and Redfish Pt Lake
- Restore wetland habitat, provide increased protection for Vermilion Bay Rim
- Construction cost + 25% contingency is $35M - $40M



# Synergy


EPA
TV-65
TV-17
TV-64
Belle Isle Lake
North Lake
Tums Bayou
Hollomay Canal
CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS
Baton Rouge
CONANP, Esri, TomTom,
PPL34 W Vermilion Marsh
Creation and Shoreline Protection
Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
2024
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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**PPL34 PROJECT NOMINEE FACT SHEET**
**Nominated January 31, 2024**
**Revised February 3, 2024 for Master Plan Consistency**

**Project Name**
Freshwater Bayou East Marsh Restoration

**Project Location**
Region 3, Teche/Vermilion Basin, Vermilion Parish, East bank of Freshwater Bayou about 4-6 miles north of the Freshwater Bayou lock system

**Problem**
The marshes adjacent to Freshwater Bayou have degraded significantly by a combination of natural and man-induced conditions. Hurricanes has scoured out large areas very quickly, but numerous anthropogenic activities and alterations have allowed the area to be much more vulnerable. Various restoration measures have been employed in this area with high degree of success including protecting the navigation channel bankline and adjacent marsh creation and terracing. The proposed location for this project is one that has not been addressed and has continued wetland losses. USGS estimates that the area has a loss rate of -0.62 %/y and the state estimates subsidence at about 9 mm/yr. Additionally, the area adjacent to the navigation channel experiences significant bankline erosion (12-15 ft/yr).

**Goals**
The primary goals of this project are to 1) create/restore approximately 167 acres of marsh habitat in the open water areas via marsh creation/nourishment and for that marsh to remain within the MLW to MWH for the maximum duration over 20 years, 2) create edge habitat and reduce fetch and wave energy in open water areas via the construction of terraces.

**Proposed Solution**
The proposed solution for interior shoreline erosion is to create and nourish marsh along the Freshwater Bayou Canal and construct earthen terraces in the marsh interior. Restoring marsh elevations would be achieved by pumping sediment from Freshwater Bayou into disposal areas along the navigation channel. For constructability purposes, enhanced dike sections would be included for reaches of the marsh creation area containment near the Freshwater Bayou Canal. Containment dikes other than the enhanced sections would be gapped or degraded within three years of construction to allow tidal exchange and organism access.

Project features include:
1. Sediment will be hydraulically dredged and pumped via pipeline from a borrow site located in the Freshwater Bayou Canal to create/nourish approximately 167 acres of marsh. Preliminarily, enhanced dikes sections along Freshwater Bayou Canal include a 10 ft crown and articulated concrete mat (ACM) similar to the Cole's Bayou Restoration Project (TV-63). The need for ACM will be re-evaluated for each marsh creation area during the candidacy phase.
2. Approximately 19,880 linear feet of terraces will be constructed.

**Preliminary Project Benefits**
*1) What is the total acreage benefited both directly and indirectly?*
The total project area is approximately 451 acres.

2) *How many acres of wetlands will be protected/created over the project life?*
There are 150 estimated net acres after 20 years suggesting a 150 – 200 net acre benefit range.

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, marsh nourishment, and existing marsh in the terrace fields. A 33% loss rate reduction is assumed for the terraces.

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?*
None identified.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would provide substantial net positive impacts by creating marsh to restore a near continuous bankline corridor along the Freshwater Bayou navigation canal.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* The project has synergy with multiple constructed restoration projects along both sides of the navigation channel. These include the ME-04 (CWPPRA), ME-13 (CWPPRA), Freshwater Bayou NAWCA, TV-25 (2007 surplus), and TV-11 (CIAP) projects.

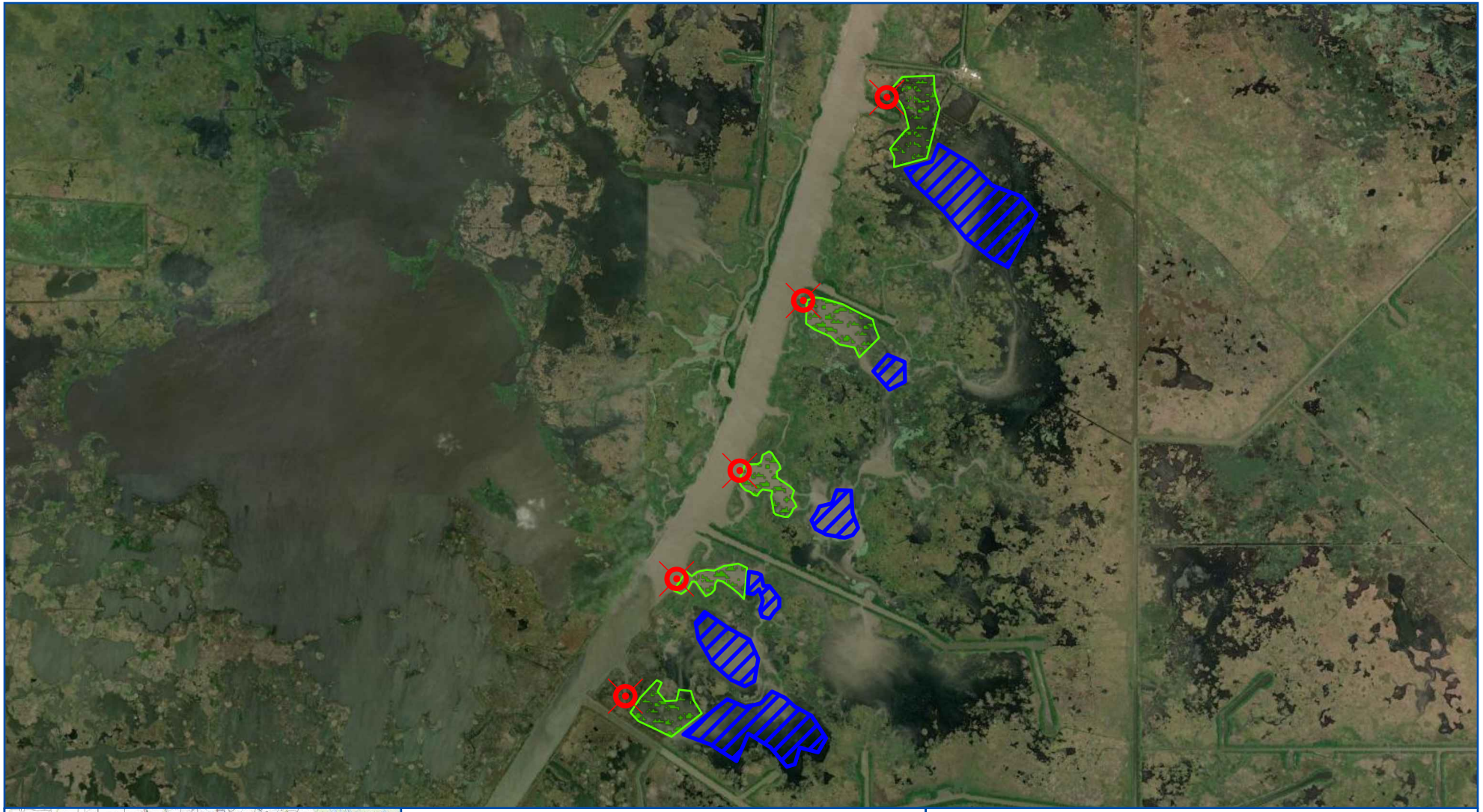
**Considerations**
The project may have issues with land rights and pipeline/utilities.

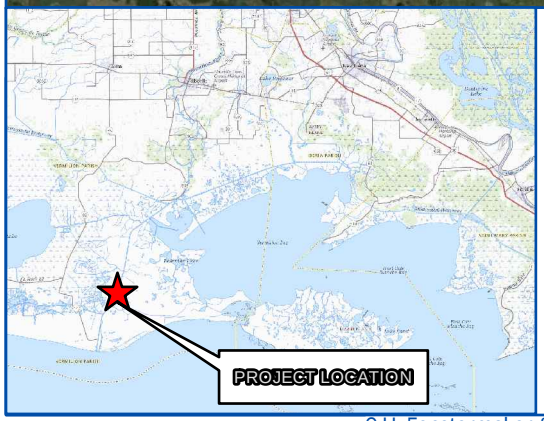
**Preliminary Cost**
Without ACM on the enhanced dike reaches, the estimated construction cost range (including 25% contingency) is $10-$15M and $15-$20M estimated fully funded cost.

With ACM on the enhanced dike sections, the estimated construction cost range (including 25% contingency) is $15-$20M and $20-$25M estimated fully funded cost.

There is approximately a $4.5M difference in the construction (including 25% contingency) between with and without ACM.

**Preparer(s) of Fact Sheet**
Ron Boustany, NRCS, Biologist; (337) 291-3067; ron.boustany@usda.gov
Patrick Williams, NOAA, Biologist, (225)400-5943; patrick.williams@noaa.gov
Jason Kroll, NOAA, Engineer, (225) 335-9659; Jason.kroll@noaa.gov
Eric Whitney, NRCS, Engineer; (337) 291-3069; eric.whitney@usda.gov
John D. Foret, Ph.D., Rainey Conservation Alliance, (337) 322-1701; jdforet@fenstermaker.com



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Marsh Creation Area

Terraces

Enhanced Containment Dike

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# FRESHWATER BAYOU EAST MARSH RESTORATION

IBERIA PARISH, LOUISIANA

REVISED BY: ETB
DATE: 1/31/2023
PROJ. MGR: JDF

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C.H. Fenstermaker & Associates, L.L.C. 135 Regency Sq. Lafaye t e, LA 70508, Ph. 337-237-2200 Fax. 337-232-3299 www.fenstermaker.com

# Freshwater Bayou East Marsh Restoration Project

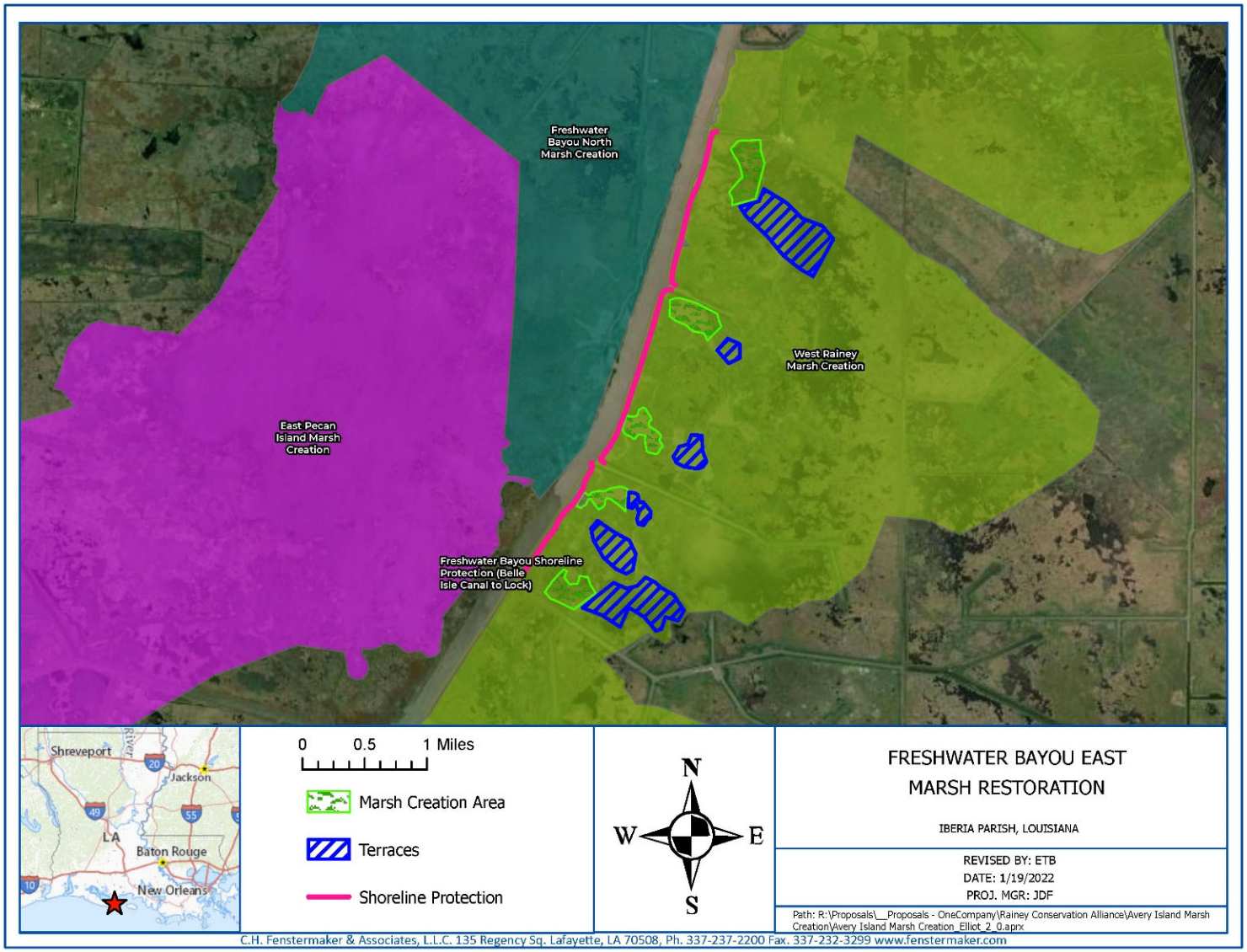
## CWPPRA Project Priority List 34, Region 3 Nomination

January 31, 2024

Freshwater Bayou East Marsh Restoration Project

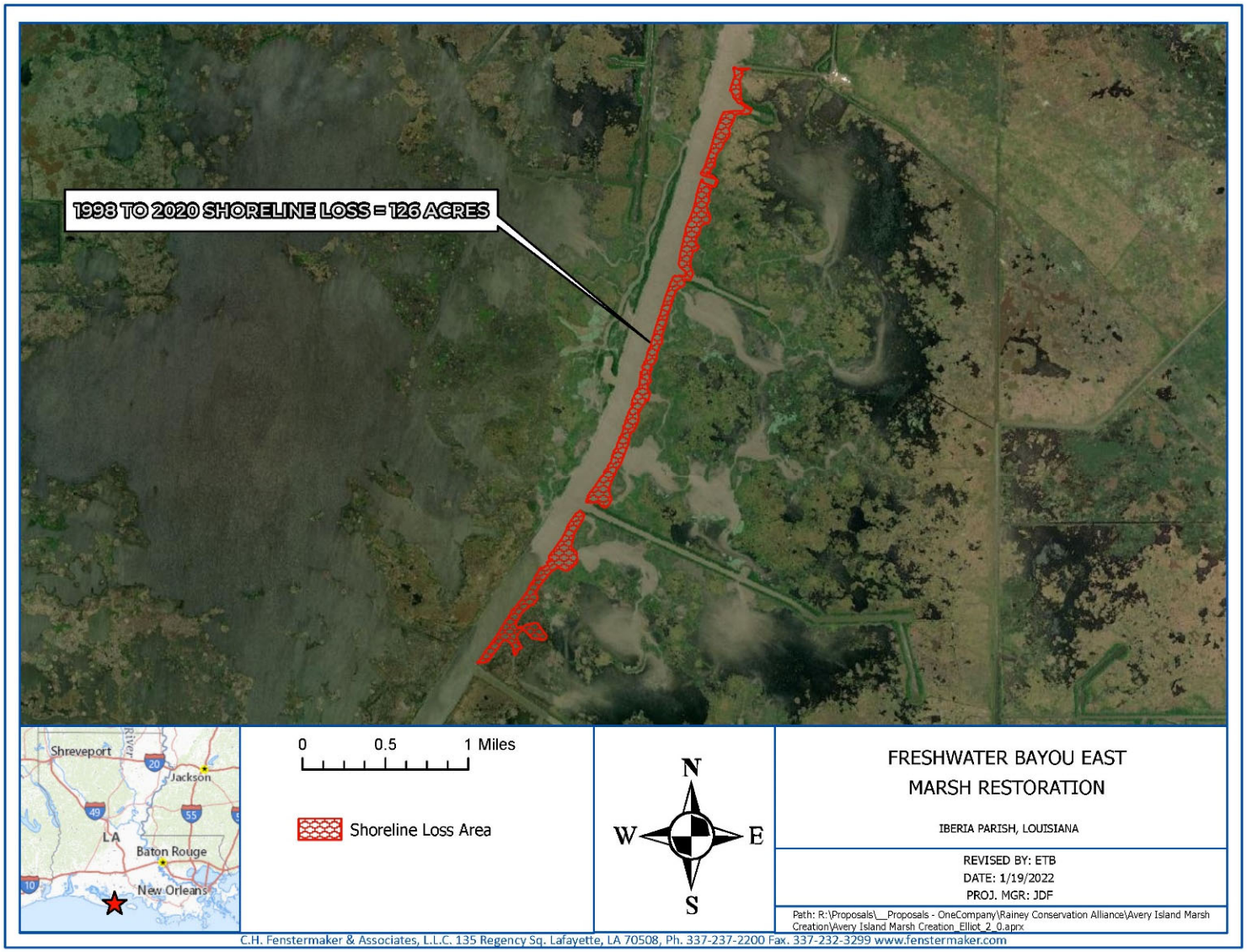
**Consistent with Louisiana's 2023 Coastal Mater Plan**

**Project Location:**
Region 3, Teche-Vermilion Basin, located on East bank of Freshwater Bayou about 4-6 miles north of the Freshwater Bayou lock system



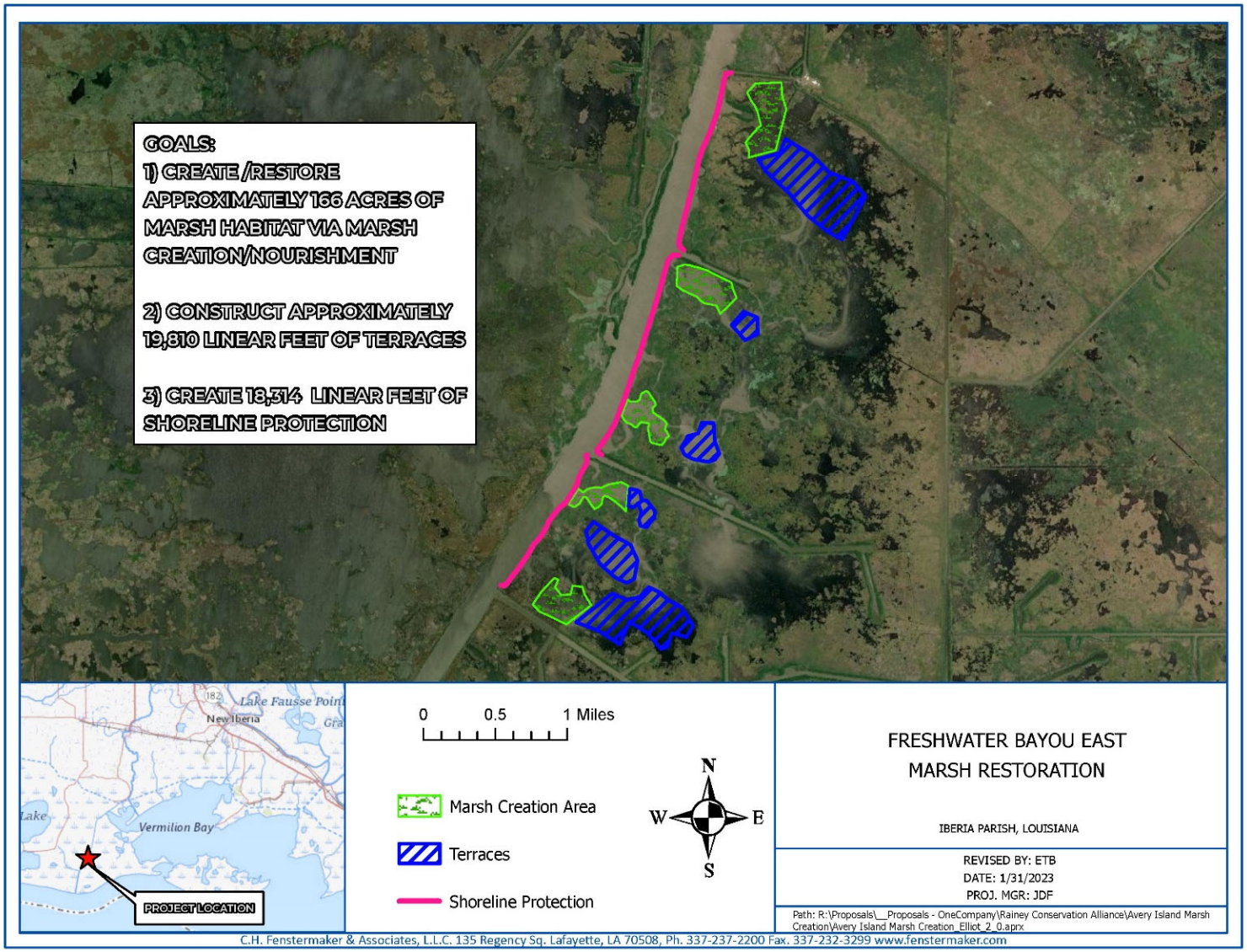
**Problem:**

The marshes adjacent to FWB have degraded significantly by a combination of natural and man-induced conditions. Hurricanes has scoured out large areas very quickly, but numerous anthropogenic activities and alterations have allowed the area to be much more vulnerable. The proposed location for this project is one that has not been addressed by previous restoration measures and continues losses. USGS estimates that the area has a loss rate of about -0.62 %/y and the state estimates subsidence at about 3.8 mm/y. Additionally, that location being adjacent to the navigation channel experiences significant bankline erosion (12-15 ft/y).

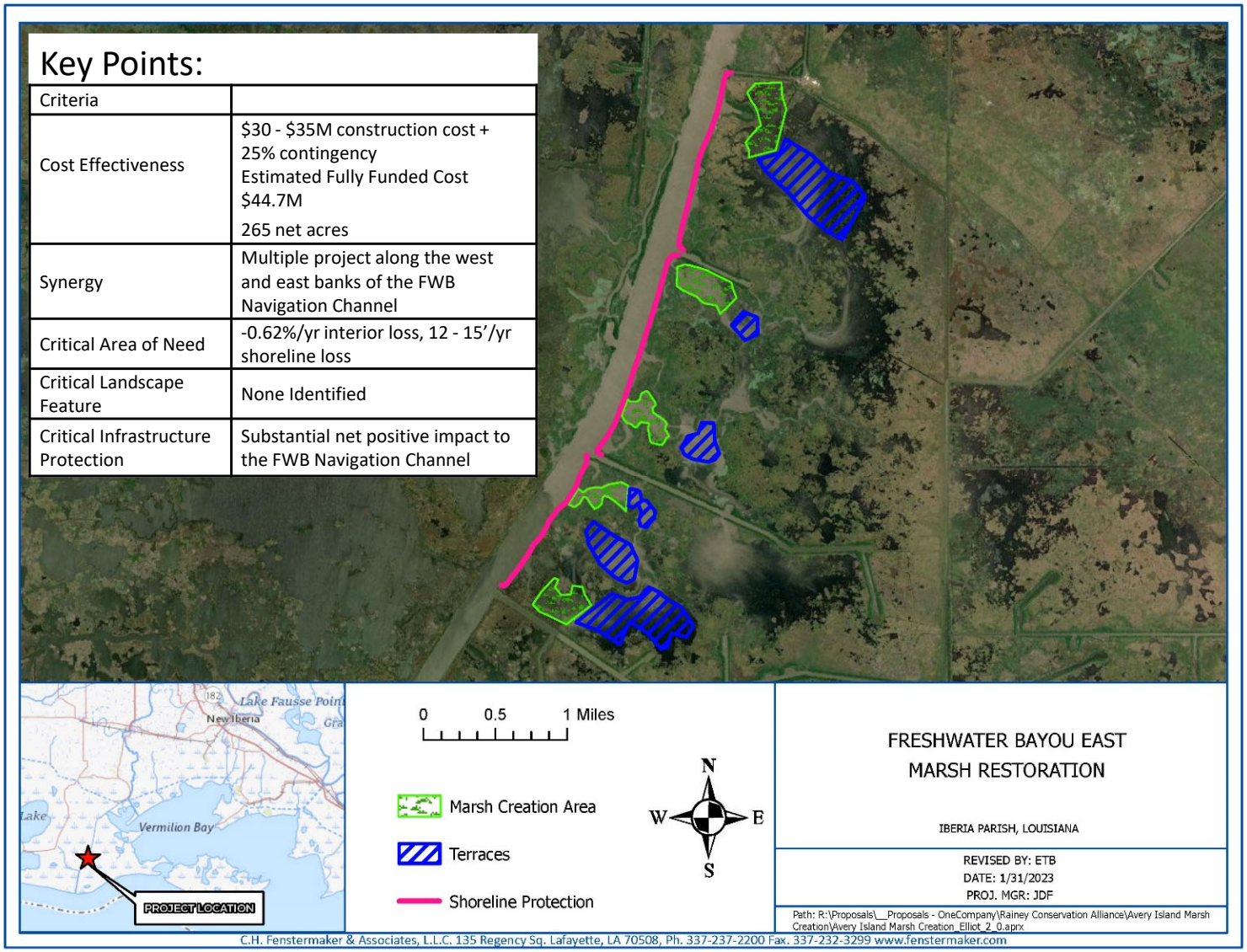


**Goals:** Create/restore approximately 166 acres of marsh habitat in the open water areas via marsh creation/nourishment, reduce fetch and wave energy in open water areas via the construction of terraces, and preserve approximately 106 acres of marsh along the bank of the channel through shoreline protection and help stabilize interior marsh.

**Proposed Solution:** Sediments will be hydraulically dredged and pumped via pipeline from a borrow site located in the Freshwater Bayou Canal to create/nourish approximately 166 acres of marsh. Construct approximately 19,810 linear feet of terraces. Construct 18,314 linear feet of shoreline projection along the Freshwater Bayou Canal.



**Preliminary Construction Costs:**
The cost plus 25% contingency range is $30-$35 million (250-300 acres).




**Preparers of the Fact Sheet:**
John D. Foret, Ph.D., Rainey Conservation Alliance, (337) 322.1701; jdforet@fenstermaker.com

Ron Boustany, NRCS, (337) 291.3067; ron.boustany@usda.gov

Eric Whitney, NRCS Engineer; (337) 291-3069; eric.whitney@usda.gov

Patrick Williams, NOAA, (225) 400-5943; patrick.williams@noaa.gov

# VERMILION PARISH COASTAL MASTER PLAN
# PRIORITY PROJECT FACT SHEETS

## BAYOU HEBERT FRESHWATER INTRODUCTION

Marshes in this area are subject to losses from subsidence, a net sediment deficit, seasonal saltwater intrusion, shoreline erosion, altered hydrology from levees and increased connectivity with the Gulf Intracoastal Waterway (GIWW). The area is immediately adjacent to the GIWW where it is subjected to some of the heaviest boat traffic in the contiguous US. Boat traffic in the GIWW causes erosion within the identified area which results in a net export of material. Although much of the marsh in the area has been fairly stable, this location has been subject to losses due to the constant movement of water in and out of the project area as well as occasional high interior water levels.

The goals of the project will be to reconfigure the hydrology from a net sediment and nutrient export environment to a net import of material to facilitate the natural recovery of the marsh system along with reducing interior water levels.

A combination fixed crest weir with a boat bay and flap-gated culverts will be installed at a large opening to the GIWW to reduce the surge and withdrawal of water from barge traffic in the GIWW and overall volume transfer of water and export of material across the boundary separating the GIWW from the interior marsh. The one-way flap-gated culverts, which will be installed within the fixed-crest weir, will ensure a net positive flow of material into the marsh. Two sets of outlet culverts systems will be installed on the opposite ends of the marsh to pull this water through the system allowing for the trapping and deposition of material as it moves through the marsh. Interior channels will also be addressed by removing drains or plugs which prevent proper conveyance of water through the area as desired. Plugs which are assisting with the proper conveyance of water through the system will be installed or reinforced, if present.

# BAYOU HEBERT

Project Location and Size:

Located in Vermilion Parish and covers 6,008 acres.

Problems:

Interior marsh fragmentation, caused by artificially high interior water levels.

Objective:

Reduce interior water levels.

Project Components:

1) Structure #1 - New
   a) Replace existing culverts with control structures.

2) Structure #3 - New
   a) Plug existing opening and potential site for new structure.

3) Plug #5 - Replace
   a) Repair existing plug.

4) Bayou Hebert Structure - New
   a) Option #1 - Install fixed crest weir with boat bay.
      Plug - small breach in canal.
   b) Option #2 - Install one (1) fixed crest weir with boat bay.
      Plug - Two (2); One small and one large at the end of the canal.

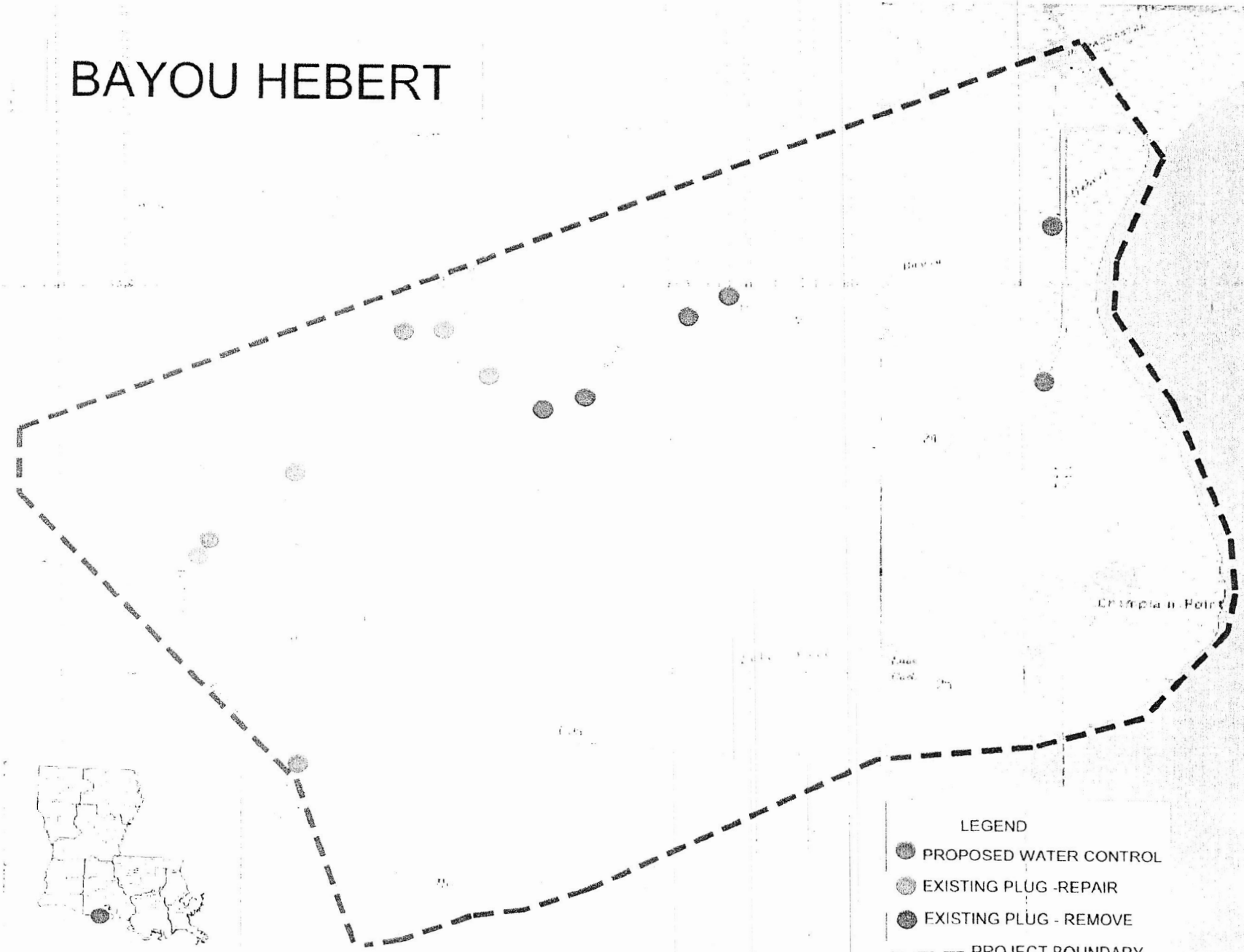
5) Remove existing plugs along Bayou Hebert banks.

6) Remove Bayou Hebert plug near Delcambre Estate/Apache Corporation property line.

7) Delcambre Camp Structure - New
   a) Replace existing structure.

8) Delcambre Canal Structure - New - if necessary
   a) Install control structure in oilfield embankment.

# BAYOU HEBERT

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| ENGINEER | T. VINCENT |
| DRAWN BY | J. FABRE |
| DATE | OCTOBER 2023 |
| SCALE | 1"=3,000' |
| PROJECT | 9560-01 |
| FILE NO. | 9560-01factsheet |

Sellers & Associates, Inc.
ENGINEERS SURVEYORS
148-B Easy Street, Lafayette, LA 70506 (337) 232-0777

BAYOU HEBERT
FRESHWATER INTRODUCTION

AERIAL PHOTOGRAPH OF PROJECT AREA

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|---|---|
| CLIENT | VERMILION PARISH POLICE JURY |
| PROJECT | VERMILION PARISH MASTER PLAN |
| LOCATION | VERMILION PARISH, LOUISIANA |

SHEET NO. 1

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# VERMILION PARISH COASTAL MASTER PLAN
# PRIORITY PROJECT FACT SHEETS

## NORTH VERMILION BAY SHORELINE PROTECTION-PHASE III

The project is located in Vermilion Parish, Louisiana on the north bank of Vermilion Bay, commencing at Champlain Point and extending northeasterly to the Vermilion/Iberia Parish Line, which is at the mouth of Bayou Petite Anse.

### Problem

The shoreline of Vermilion Bay is critical to the protection of interior marshes located around the perimeter of the Bay in Iberia and Vermilion Parishes which serves as an initial defense for inland communities from storm surge. Of particular importance is the north shoreline, which protects the fragile marshlands located between Vermilion Bay and the Gulf Intracoastal Waterway.

Shoreline erosion has created a significant loss of land along the north shore of Vermilion Bay. Shoreline retreat rates of the north shore of Vermilion Bay have been documented to be between 3.3 and 6.3 feet per year, with an average rate of 4 feet per year within the project area.

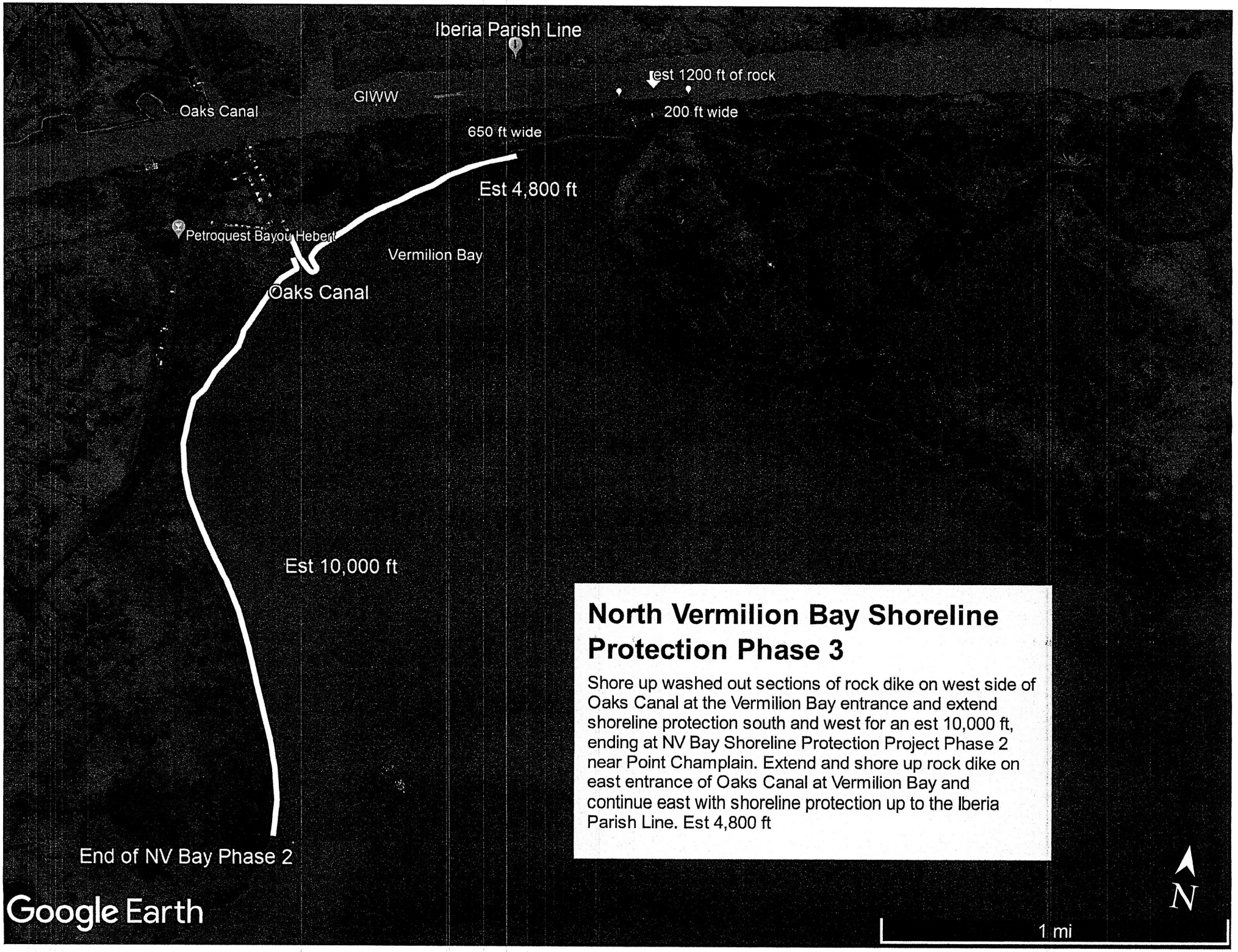
### Restoration Strategy

The objective of this project is to prevent further wetland loss through the reduction of bank erosion, subsequent scour, and further degradation of shoreline marshes.

Approximately 46,500 linear feet is currently included in Phases I and II. Phase III proposes an additional 16,000 linear feet of shoreline protection to prevent further wetland loss. The type of shoreline protection will be evaluated and determined during the design process. Rock dikes, oyster rings and other shoreline protection measures will be considered during the project design phase.

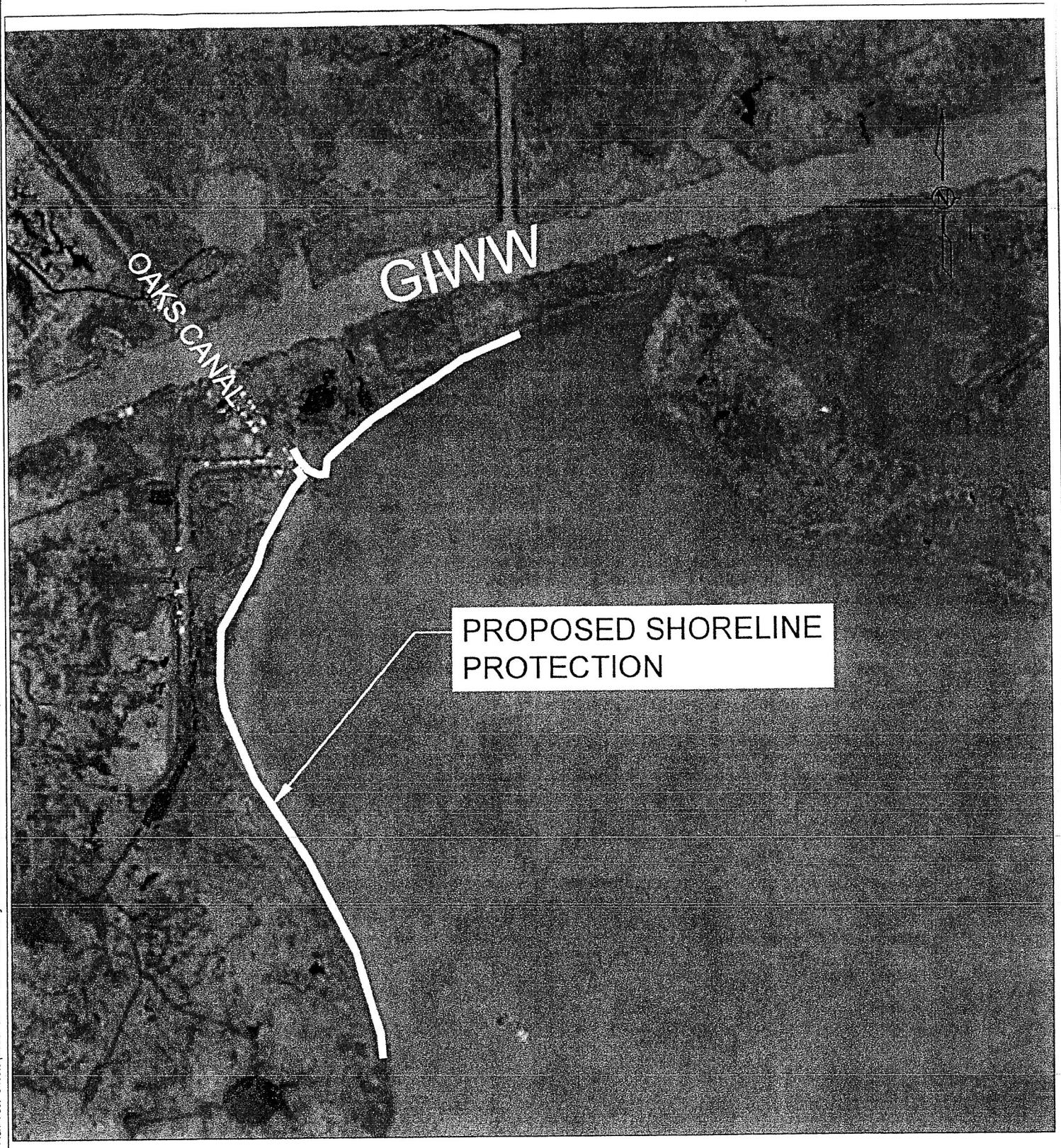
### Project Cost

The Total Estimated Project Budget (Engineering and Construction) is $10,000,000.




## North Vermilion Bay Shoreline Protection Phase 3

Shore up washed out sections of rock dike on west side of Oaks Canal at the Vermilion Bay entrance and extend shoreline protection south and west for an est 10,000 ft, ending at NV Bay Shoreline Protection Project Phase 2 near Point Champlain. Extend and shore up rock dike on east entrance of Oaks Canal at Vermilion Bay and continue east with shoreline protection up to the Iberia Parish Line. Est 4,800 ft

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| ENGINEER | T. VINCENT |
| DRAWN BY | J. FABRE |
| DATE | OCTOBER 2023 |
| SCALE | 1"=3,000' |
| PROJECT | 9560-01 |
| FILE NO. | 9560-01factsheet |

**Sellers & Associates, Inc.**
ENGINEERS SURVEYORS
148-B Easy Street, Lafayette, LA 70506 (337) 232-0777

NORTH VERMILION BAY
SHORELINE PROTECTION PHASE 3

AERIAL PHOTOGRAPH OF PROJECT AREA

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|---|---|
| CLIENT | VERMILION PARISH POLICE JURY |
| PROJECT | VERMILION PARISH MASTER PLAN |
| LOCATION | VERMILION PARISH, LOUISIANA |

SHEET NO. 1

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# CWPPRA RPT Region 3

Terrebonne Basin

# PPL34 PROJECT FACT SHEET
# January 31, 2024

**Project Name**
Lake Billiot and Eastern Terrebonne Landbridge Restoration

**Master Plan Strategy**
**North Terrebonne Bay Marsh Creation (ID: 125):** Creation of marsh within a footprint of approximately 6,200 acres south of Montegut between Bayou St. Jean Charles and Bayou Pointe-aux-Chênes to create new wetland habitat, restore degraded marsh, and reduce wave erosion.
**Eastern Terrebonne Landbridge – East (ID: 335D):** Creation of marsh including filling areas deeper than 2.5 feet, from Bayou Pointe-aux-Chênes to the south Lafourche Levee near Catfish Lake. 30,000 feet of shoreline revetment to limit erosion in exposed areas and channel armoring to maintain channels at current dimensions at Bayou Pointe-aux-Chênes and Bayou Blue to reduce the tidal prism and to create new wetland habitat, restore degraded marsh, and reduce wave erosion. Restoration of approximately 44,000 feet of Bayou Pointe-aux-Chênes Ridge.

**Project Location**
Region 3, Terrebonne Basin, Terrebonne Parish

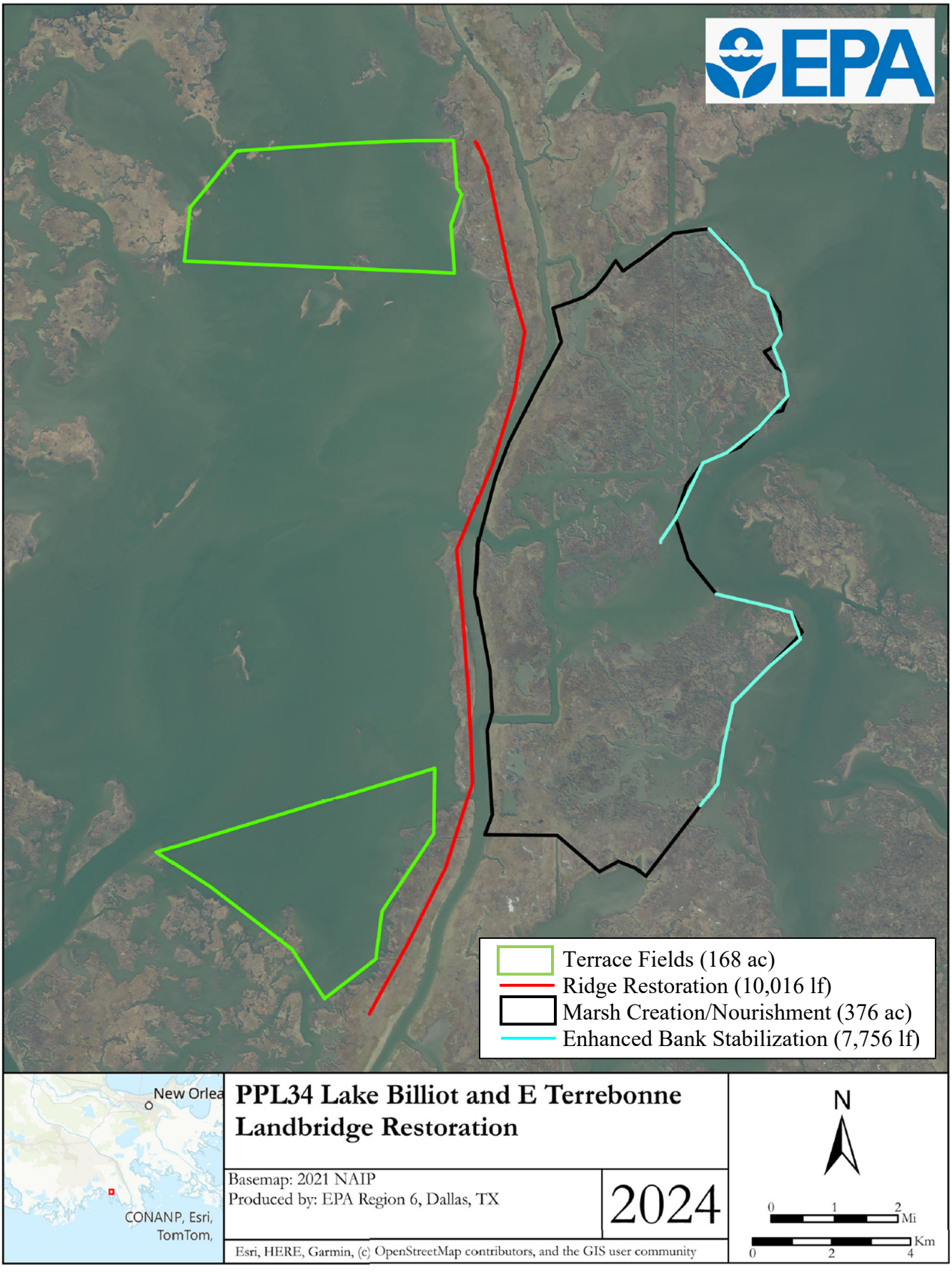
**Problem**
The Terrebonne Basin has experienced rapid interior wetland loss over the years. Between 1956 and 2004, Terrebonne Basin lost 321 square miles of land and an additional 17 square miles of coastal land was lost in 2005 due to the effects of Hurricanes Katrina and Rita. Wetland loss has also been attributed to sediment deficit, high subsidence, sea level rise, saltwater intrusion, historic oil and gas activity, and natural deterioration of barrier islands, which contributes to the inland invasion of marine tidal processes (including erosion, scour, and saltwater intrusion). The land loss rate for SW Golden Meadow PPL33 CWPPRA candidate is -1.37%/yr.

**Proposed Solution**
The proposed solution aims to have a triple impact: 2023 Master Plan N Terrebonne Bay MC area, create ridge/bank stabilization features as support and to add habitat diversity, and to address the E Terrebonne Landbridge-East 2023 Master Plan concept with marsh creation/nourishment. Locations within the larger marsh creation/nourishment area would naturally develop tidal creeks/ponds.

**Project Benefits**
Create 168 ac of terrace areas to address part of the N Terrebonne Bay MC 2023 MP feature (Lake Billiot). Create/nourish 376 acres of marsh to establish part of the Eastern Terrebonne Landbridge (East) 2023 Master Plan feature. Create bank stabilization/ridge as support for the land bridge MC (7756 ft) and Lake Billiot terrace (10016ft) features. This project would directly contribute to the Eastern Terrebonne Landbridge.

**Preliminary Construction Costs**
The estimated construction cost including 25% contingency is $30M - $35M.

**Preparer 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, P.E., Ph.D.; EPA, (214) 665-6403, taylor.patricia-a@epa.gov


EPA
Terrace Fields (168 ac)
Ridge Restoration (10,016 lf)
Marsh Creation/Nourishment (376 ac)
Enhanced Bank Stabilization (7,756 lf)
New Orlea
CONANP, Esri, TomTom,
PPL34 Lake Billiot and E Terrebonne Landbridge Restoration
Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
2024
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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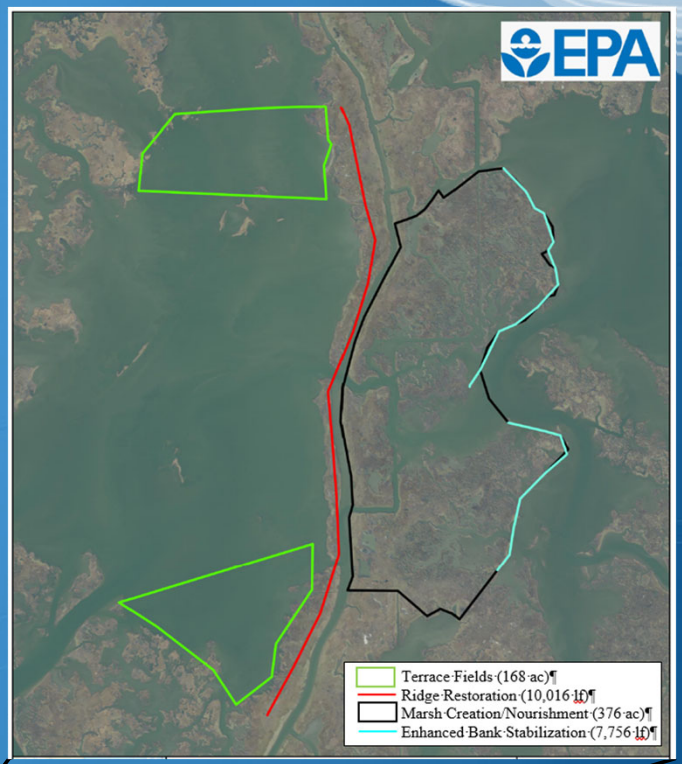
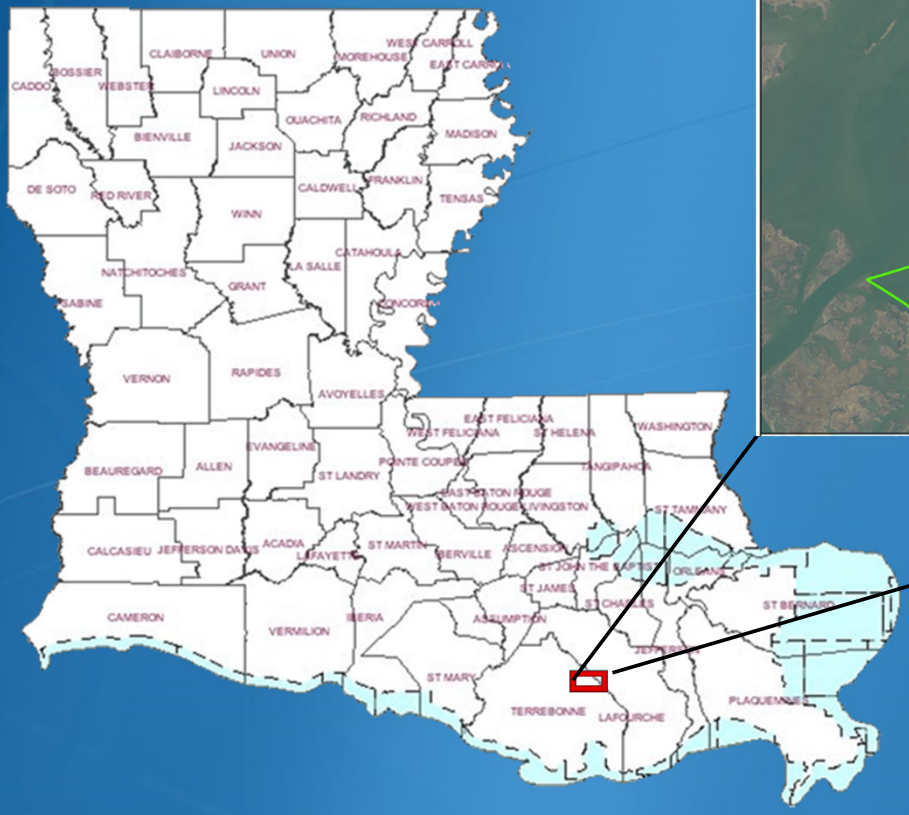
# Lake Billiot & E Terrebonne Landbridge Restoration



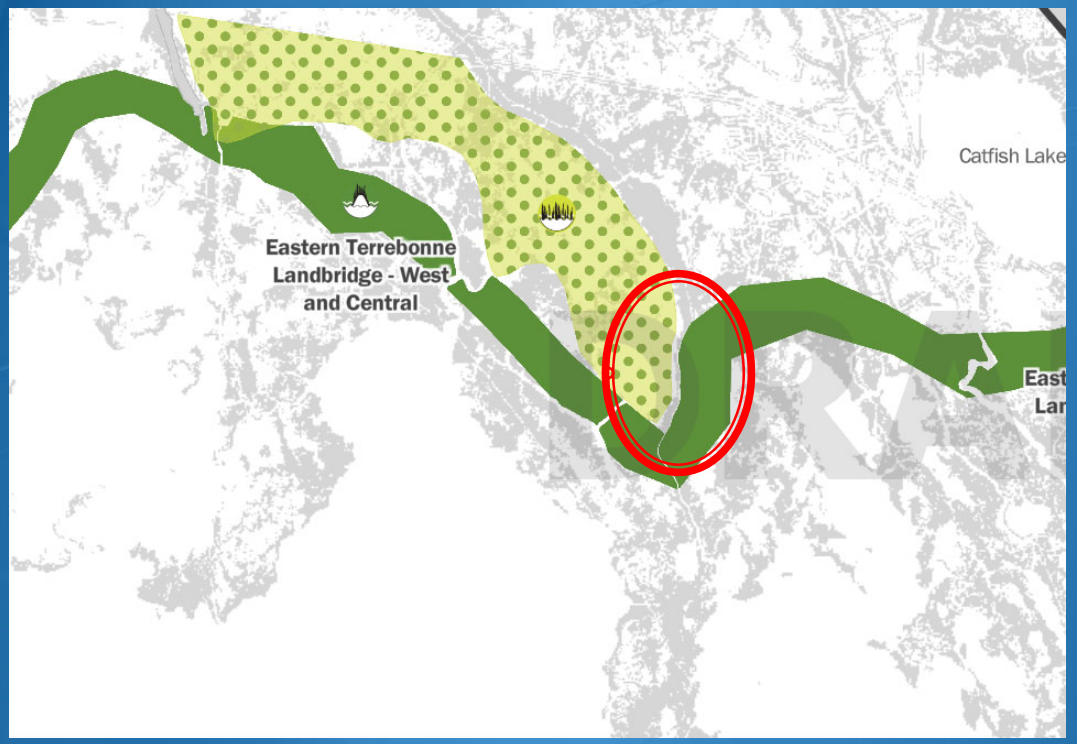




Coastal Wetlands Planning, Protection and Restoration Act

# 2023 Master Plan Strategy

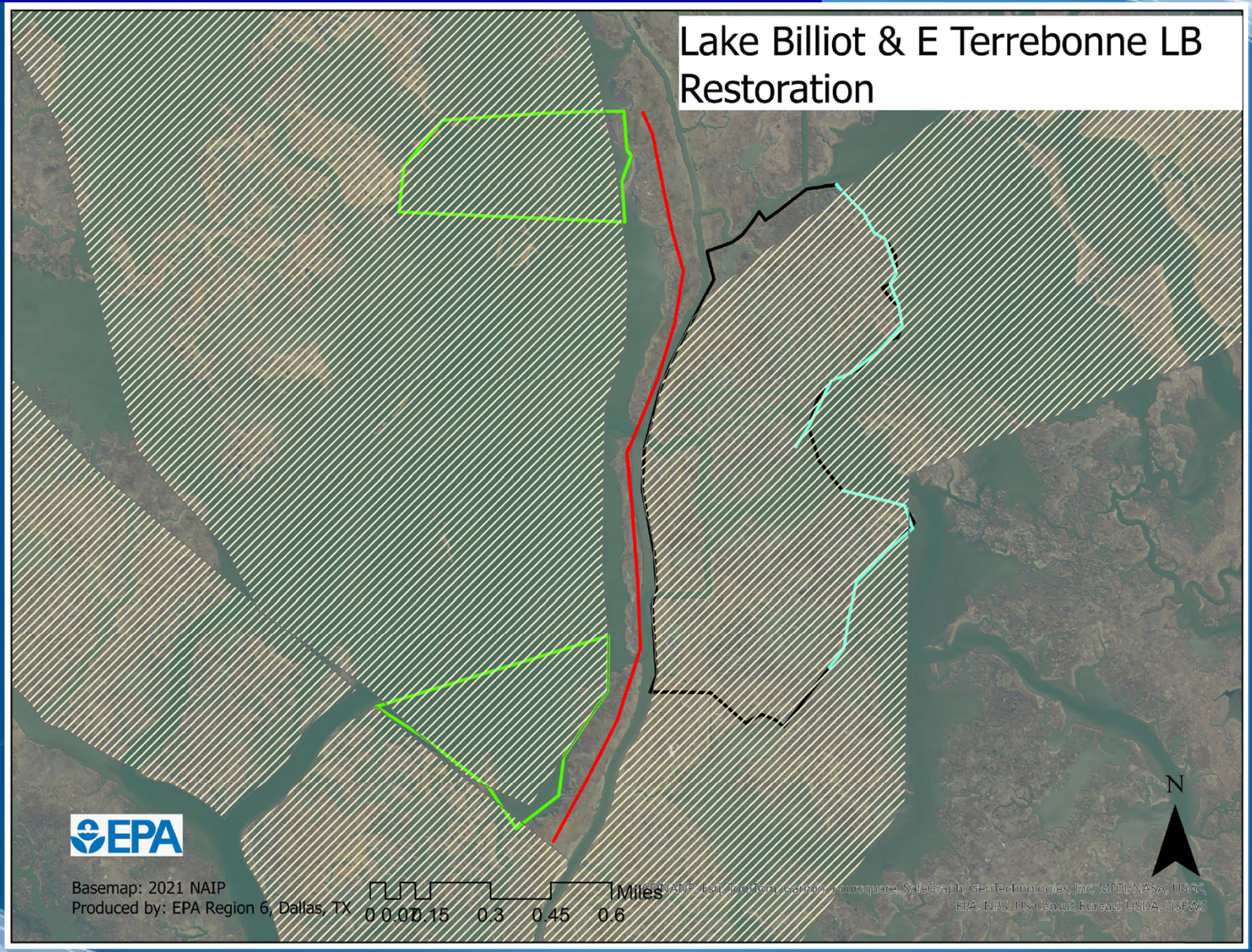
**North Terrebonne Bay Marsh Creation:** Creation of marsh within a footprint of approximately 6,200 acres south of Montegut between Bayou St. Jean Charles and Bayou Pointe-aux-Chênes to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

**Eastern Terrebonne Landbridge – East:** Creation of marsh including filling areas deeper than 2.5 feet, from Bayou Pointe-aux-Chênes to the south Lafourche Levee near Catfish Lake. 30,000 feet of shoreline revetment to limit erosion in exposed areas and channel armoring to maintain channels at current dimensions at Bayou Pointe-aux-Chênes and Bayou Blue to reduce the tidal prism and to create new wetland habitat, restore degraded marsh, and reduce wave erosion. Restoration of approximately 44,000 feet of Bayou Pointe-aux-Chênes Ridge.




Coastal Wetlands Planning, Protection and Restoration Act

# Master Plan Consistency




Coastal Wetlands Planning, Protection and Restoration Act

# Lake Billiot & E Terrebonne Landbridge Restoration

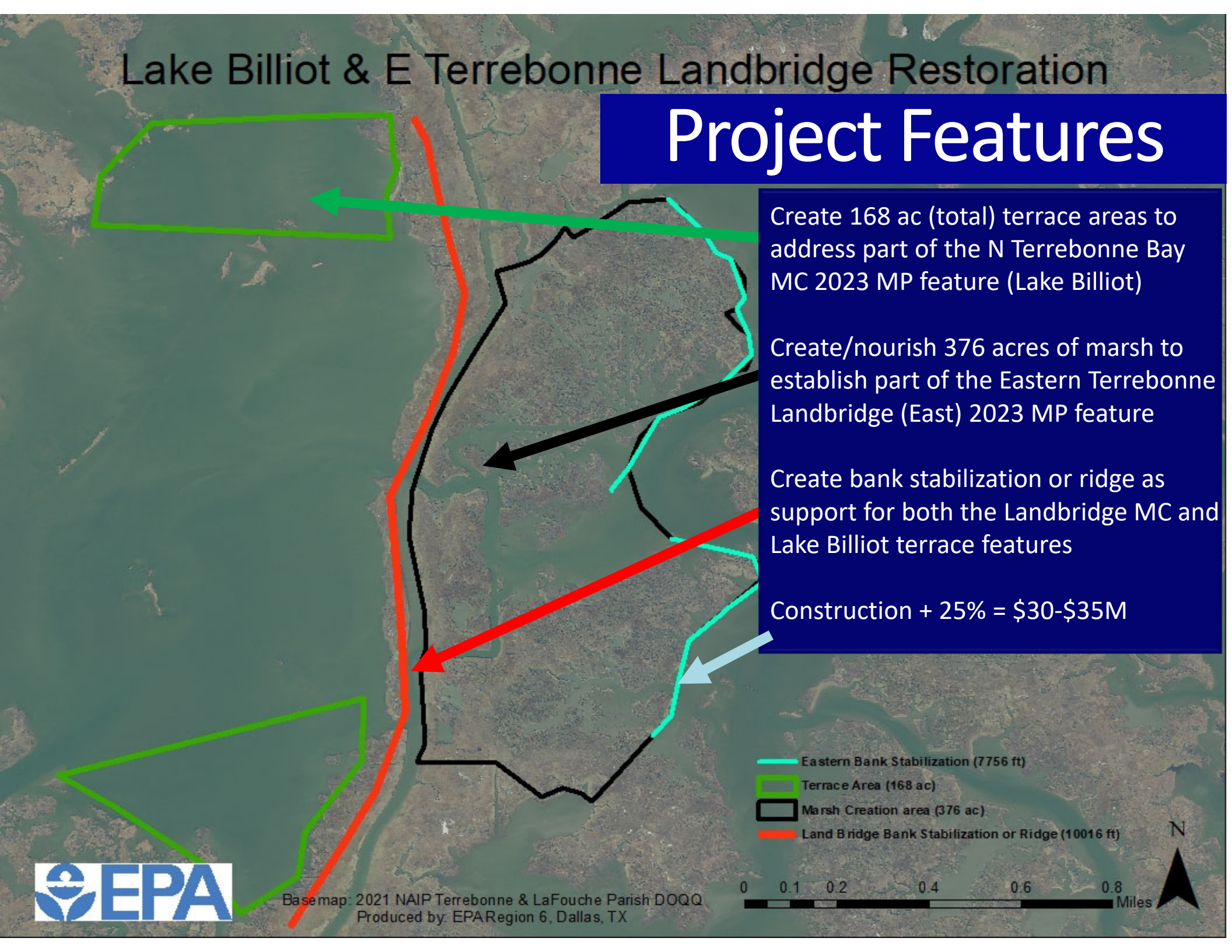
## Project Features

Create 168 ac (total) terrace areas to address part of the N Terrebonne Bay MC 2023 MP feature (Lake Billiot)

Create/nourish 376 acres of marsh to establish part of the Eastern Terrebonne Landbridge (East) 2023 MP feature

Create bank stabilization or ridge as support for both the Landbridge MC and Lake Billiot terrace features

Construction + 25% = $30-$35M



# Synergy

Synergy refers to the collective contribution resulting in restoration benefits greater than the footprints of individual projects. Potential synergy should be considered with…

× other restoration projects in the immediate proximity (adjacent but not necessarily contiguous) of the project, and…

× that have construction funding, but have not started construction, construction in progress, or construction complete.

✓ Middle of the E Terrebonne Landbridge "anchor point"
✓ Addresses multiple master plan strategies in one location

# PPL34 PROJECT FACT SHEET
January 31, 2024

**Project Name**
Point au Fer Marsh Creation and Nourishment

**Master Plan Strategy**
Central Coast Marsh Creation – Point au Fer (ID:344B) – Creation of marsh within a footprint of approximately 8,200 acres on Point au Fer Island to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

**Project Location**
Region 3, Terrebonne Basin, Terrebonne Parish, Point au Fer Island

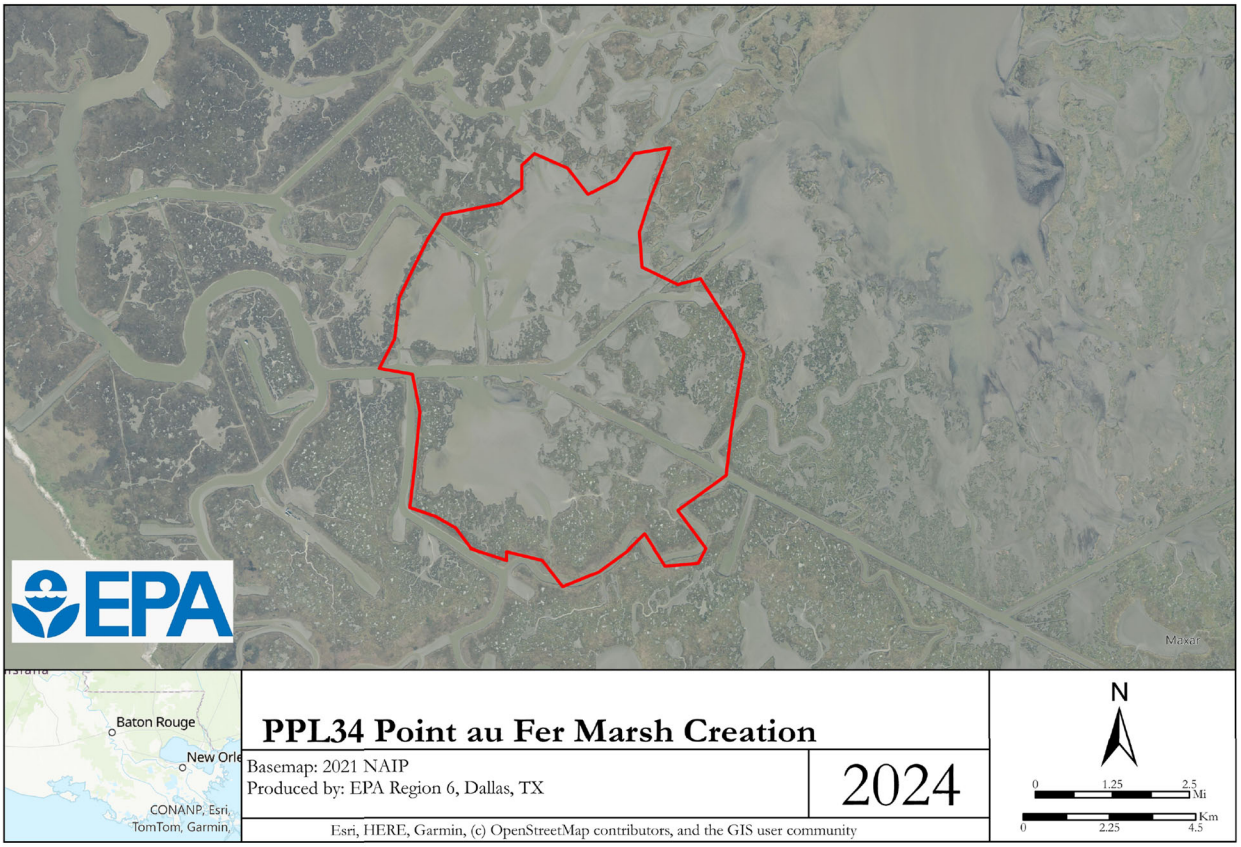
**Problem**
Brackish marshes on Point au Fer Island continue to be lost over time due to a combination of hurricane activity, insufficient accretion and various effects from oil and gas canals. During periods of low river flow in which the input of freshwater declines, the elevated salinity levels cause the breakup of the island's marshes. In addition, storm-induced breaches along sections of the gulf shoreline immediately adjacent to oilfield canals also allow salt water to penetrate the island's interior. Specifically, excessive tidal water exchange has increased erosion, creating a 30% loss of the island's interior marsh over the past 60-70 years. The land loss rate for the Point au Fer subunit is – 0.20%/year.

**Proposed Solution**
This project would create/nourish 891 acres of degraded marshes by using dredged material from the Atchafalaya River Bar Channel. Dredged material would be discharged across the marsh surface without containment. We predict that the material would spread over a very large area, and nourish the marsh similar to other documented effects of placing dredged material on the marsh surface, but perhaps with somewhat less environmental benefit due to the large amounts of water involved. This project will have synergistic effects with Lake Chapeau Sediment Input and Hydrologic Restoration, Point au Fer Island (TE-0026), Point au Fer Canal Plugs (TE-0022), and Dedicated dredging – Point au Fer (CPRA).

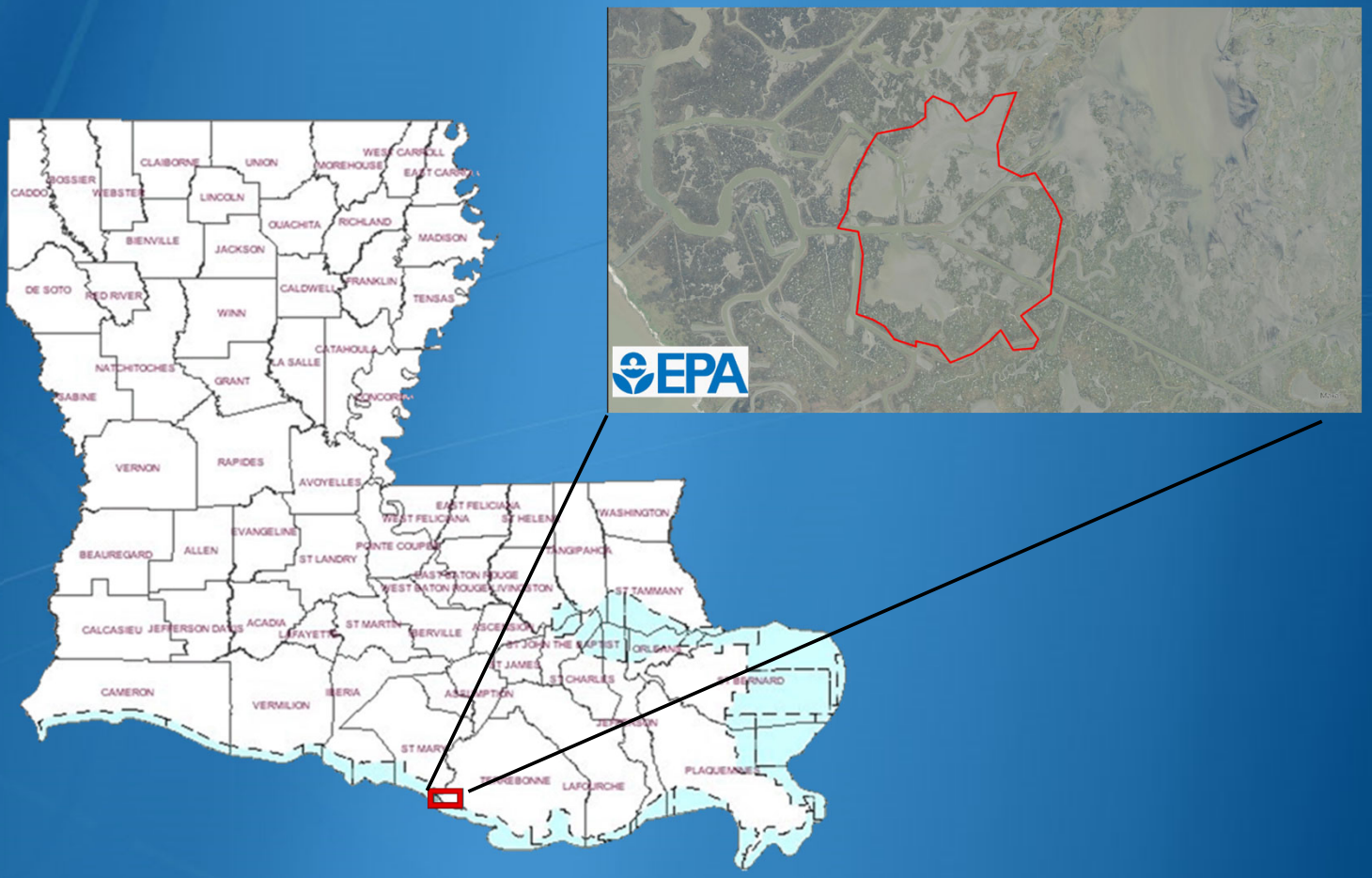
**Project Benefits**
This project would create 579 acres of marsh and nourish 312 acres of existing fragmented emergent marsh on Point au Fer Island, resulting in an estimated of 575 net 20 year acres. This project would directly act to restore and protect a critical landscape feature (Point au Fer Island).

**Project Costs**
The estimated construction cost including 25% contingency is $10M - $15M with sediments from the Port of Morgan City.

**Preparer(s) of Fact Sheet:**
Jenny Byrd; EPA; (214) 665-7377; byrd.jennifer@epa.gov
Raymond “Mac” Wade, CPE, IMPE, Port of Morgan City; (985) 384-0850; mac@portofmc.com
Cindy Cutrera**,** IMPE, CLED, Port of Morgan City; (985) 384-0850; cindy@portofmc.com


EPA
Baton Rouge
New Orle
CONANP, Esri, TomTom, Garmin
PPL34 Point au Fer Marsh Creation
Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
2024
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
N
0 1.25 2.5 Mi
0 2.25 4.5 Km

# Point au Fer Marsh Creation and Nourishment

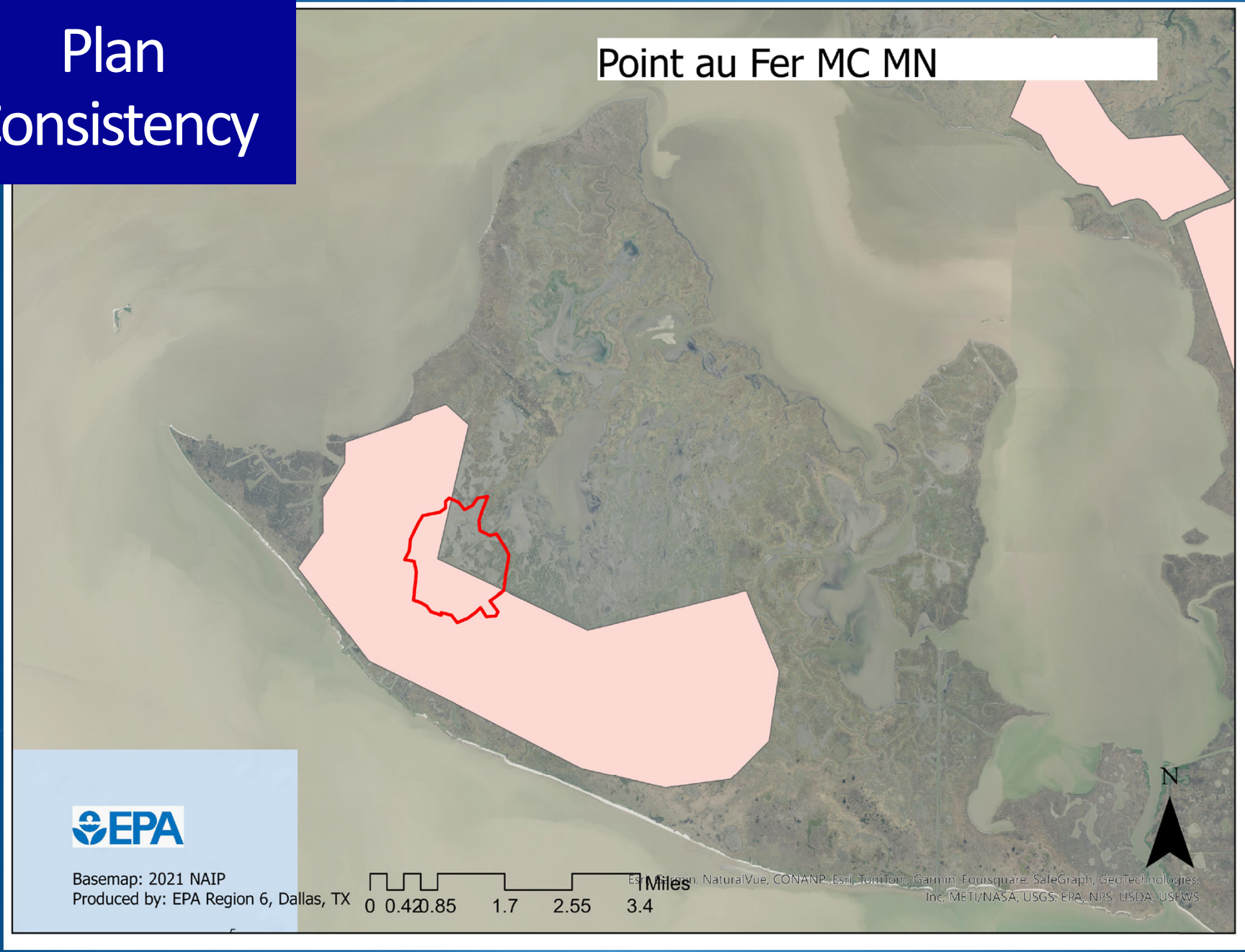



Coastal Wetlands Planning, Protection and Restoration Act

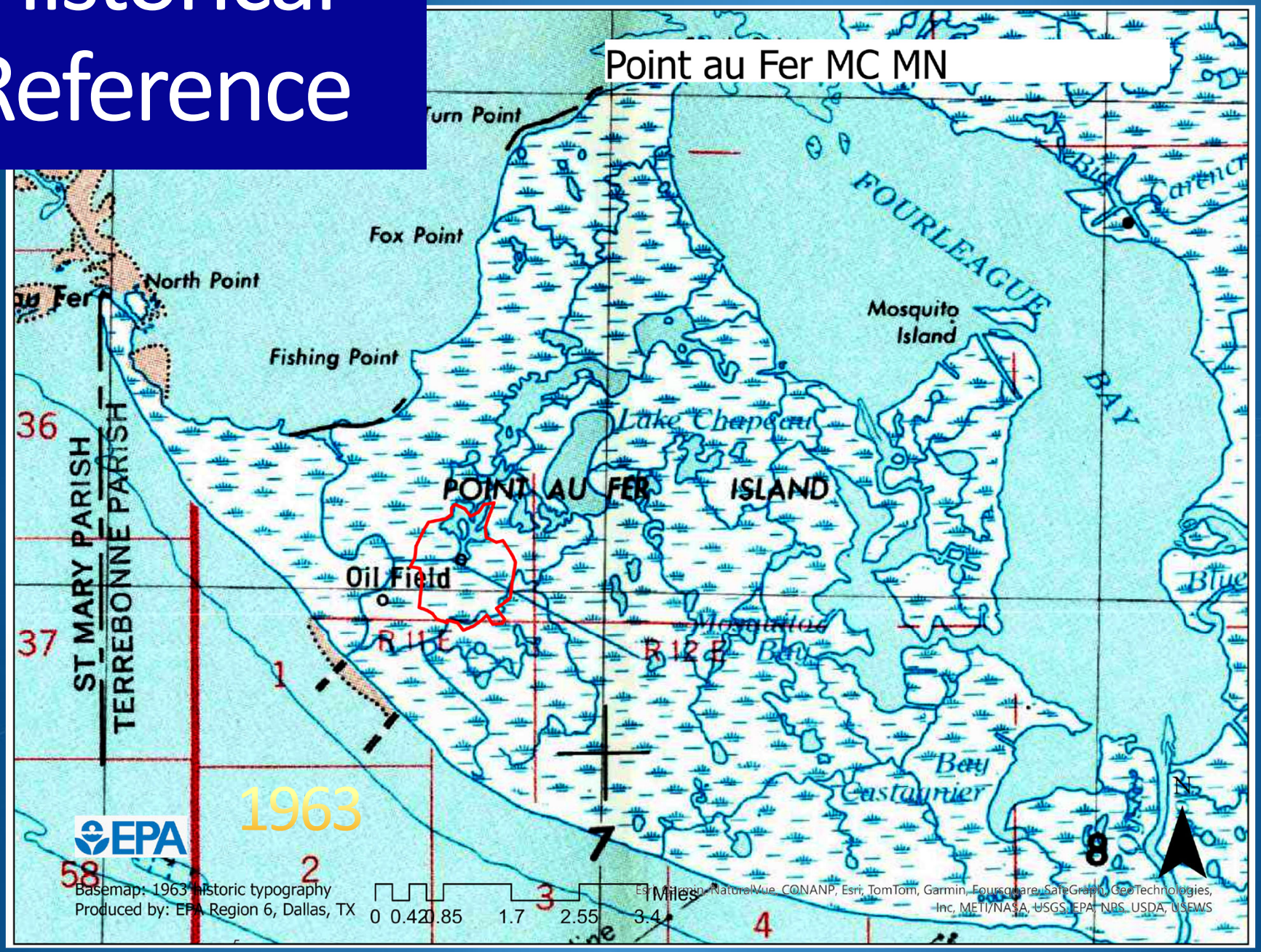
# 2023 Master Plan Strategy

<u>Central Coast Marsh Creation – Point au Fer (ID:344B) –</u> Creation of marsh within a footprint of approximately 8,200 acres on Point au Fer Island to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

# 2023 Master Plan Consistency



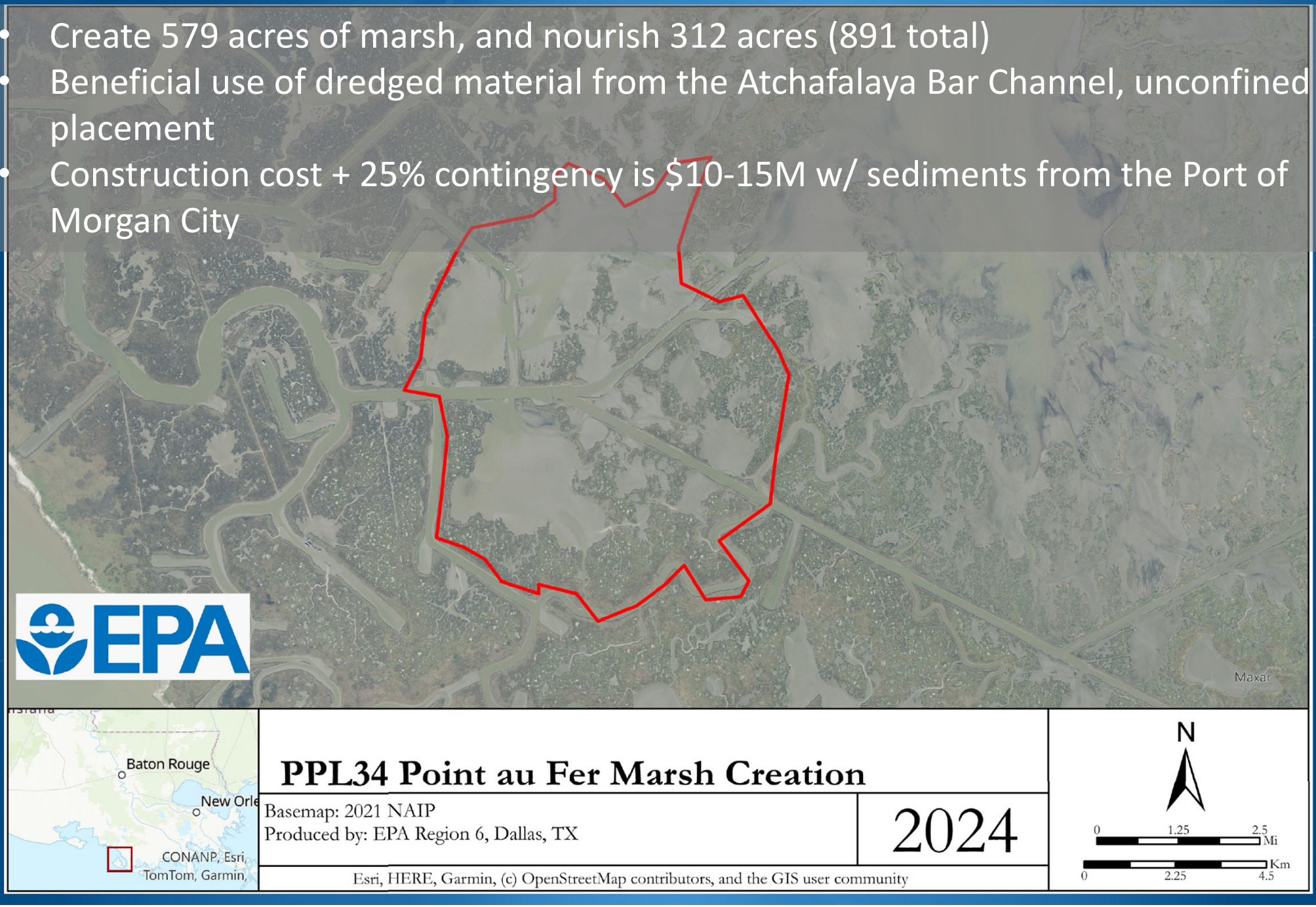
# Historical Reference



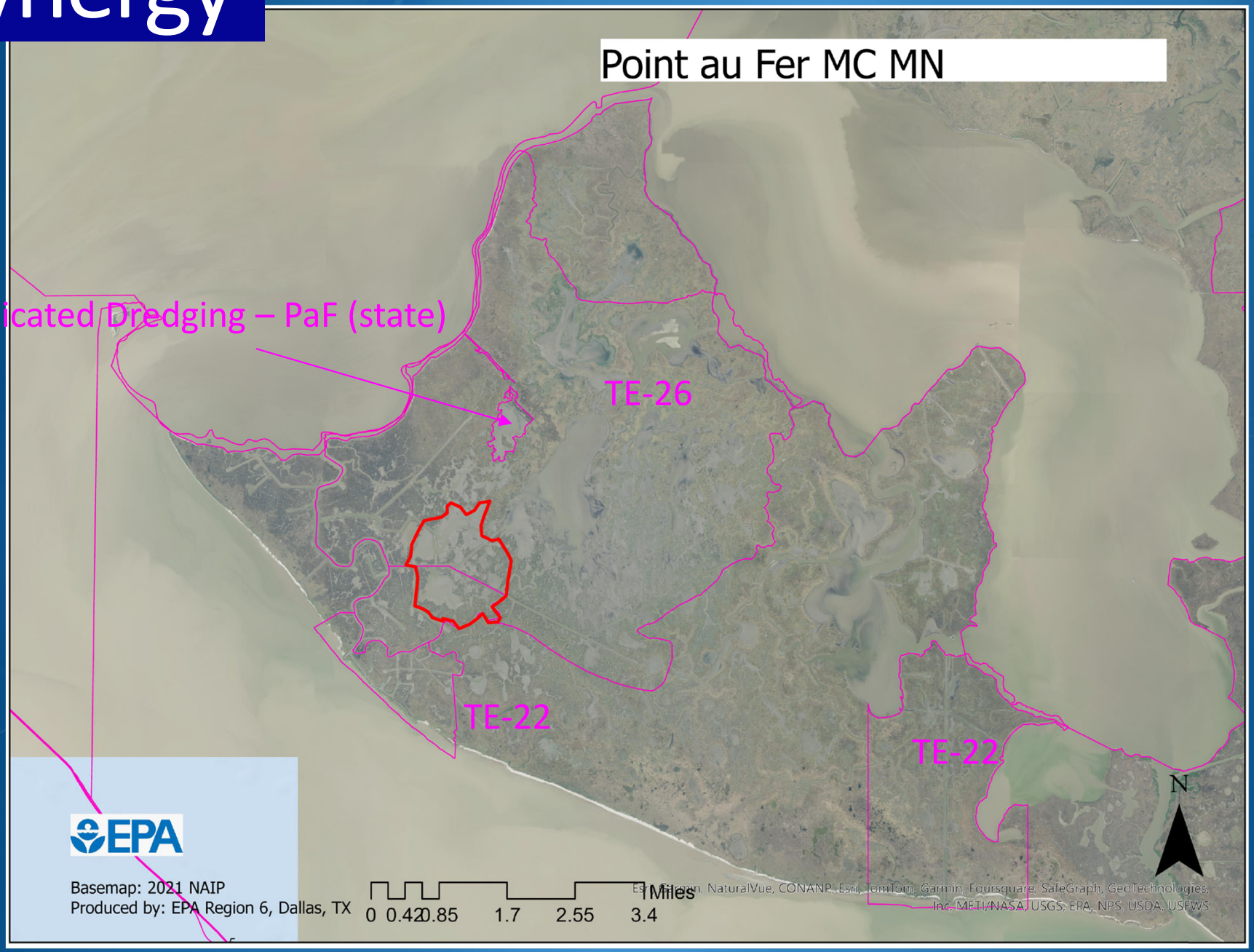

- 1959

# Project Features

- Create 579 acres of marsh, and nourish 312 acres (891 total)
- Beneficial use of dredged material from the Atchafalaya Bar Channel, unconfined placement
- Construction cost + 25% contingency is $10-15M w/ sediments from the Port of Morgan City



# Synergy


Point au Fer MC MN
Dedicated Dredging – PaF (state)
TE-26
TE-22
TE-22
N
EPA
Basemap: 2021 NAIP
Produced by: EPA Region 6, Dallas, TX
0 0.42 0.85 1.7 2.55 3.4
Miles
Esri, Maxar, NaturalVue, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

**PPL34 PROJECT NOMINEE FACT SHEET**
**January 31, 2024**

**Project Name**
Eastern Terrebonne Landbridge Marsh Creation Increment 1

**Project Location**
Region 3, Terrebonne Basin, Lafourche Parish

**Problem**
Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres /year. This loss amounts to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. Historic aerial photography indicates significant marsh loss in the project area west of Golden Meadow near Catfish Lake. Subsidence, canal dredging, saltwater intrusion, and altered hydrology (levees) are all important factors contributing to the loss of marsh habitat within and surrounding the project area. The most recent significant land loss in the area has been the recent hurricanes that have passed directly over or near the project area, including Hurricane Ida. The wetland loss rate for areas near the project area is -1.89%/year based on USGS hyper temporal data from 1984 to 2022.

**Goals**
The primary goal of this project is to establish a land bridge in the eastern Terrebonne Basin by restoring marsh southwest of Golden Meadow near the alignment of the Larose to Golden Meadow Hurricane Protection Levee.

The specific goals of this project are to; 1) create approximately 440 acres (300 acres of marsh creation and 140 acres of marsh nourishment) of marsh with material dredged from Laurier Bayou and 2) create approximately 10,850 LF of earthen terraces (8 marsh acres).

**Proposed Solution**
The proposed project (Figure 1) would hydraulically pump sediment via pipeline from a large open water area near Laurier Bayou, just south of the proposed marsh creation areas. That sediment will be pumped to a slurry height of between +2.88 and +3.17 ft with a target marsh elevation of +0.98 ft and contained within earthen dikes. The containment dikes will be degraded and/or gapped no later than three years post construction. Earthen terraces will also be constructed (10,850 LF or 8 acres of marsh) south of the marsh creation areas with insitu material to a height of +2.0 ft and with a 15 ft crown width to reduce erosion due to wind induced waves. The project will include planting smooth cordgrass plugs along the terrace side slopes.

**Project Benefits**
1) *What is the total acreage benefited both directly and indirectly?*
   The total project area is approximately 595 acres.

2) *How many acres of wetlands will be protected/created over the project life?*
A total of 279 net acres would be restored over the project life (271 MC/MN and 8 Terracing).

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 and marsh nourishment.

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?*
Project would protect a portion of the Larose to Golden Meadow Hurricane Protection Levee and be the first increment of the Eastern Terrebonne Landbridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will help protect a portion of the Larose to Golden Meadow Hurricane Protection Levee.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
It would work synergistically with a soon to be constructed Ducks Unlimited terracing project near the hurricane protection levee. It is the first increment of the Eastern Terrebonne Landbridge.

**Considerations**
Elevated Hwy 1 alignment, pipeline, and utilities.

**Preliminary Costs**
The estimated construction cost plus contingency is $28.8 million.

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


U.S. Fish & Wildlife Service
Louisiana Ecological Services
Marsh Creation
Terrace Field
Borrow Site
Project Area
PPL34
East Terrebonne Marsh Creation Inc. I
Lafourche, Louisiana
0 0.25 0.5 1 Miles
N

PPL34

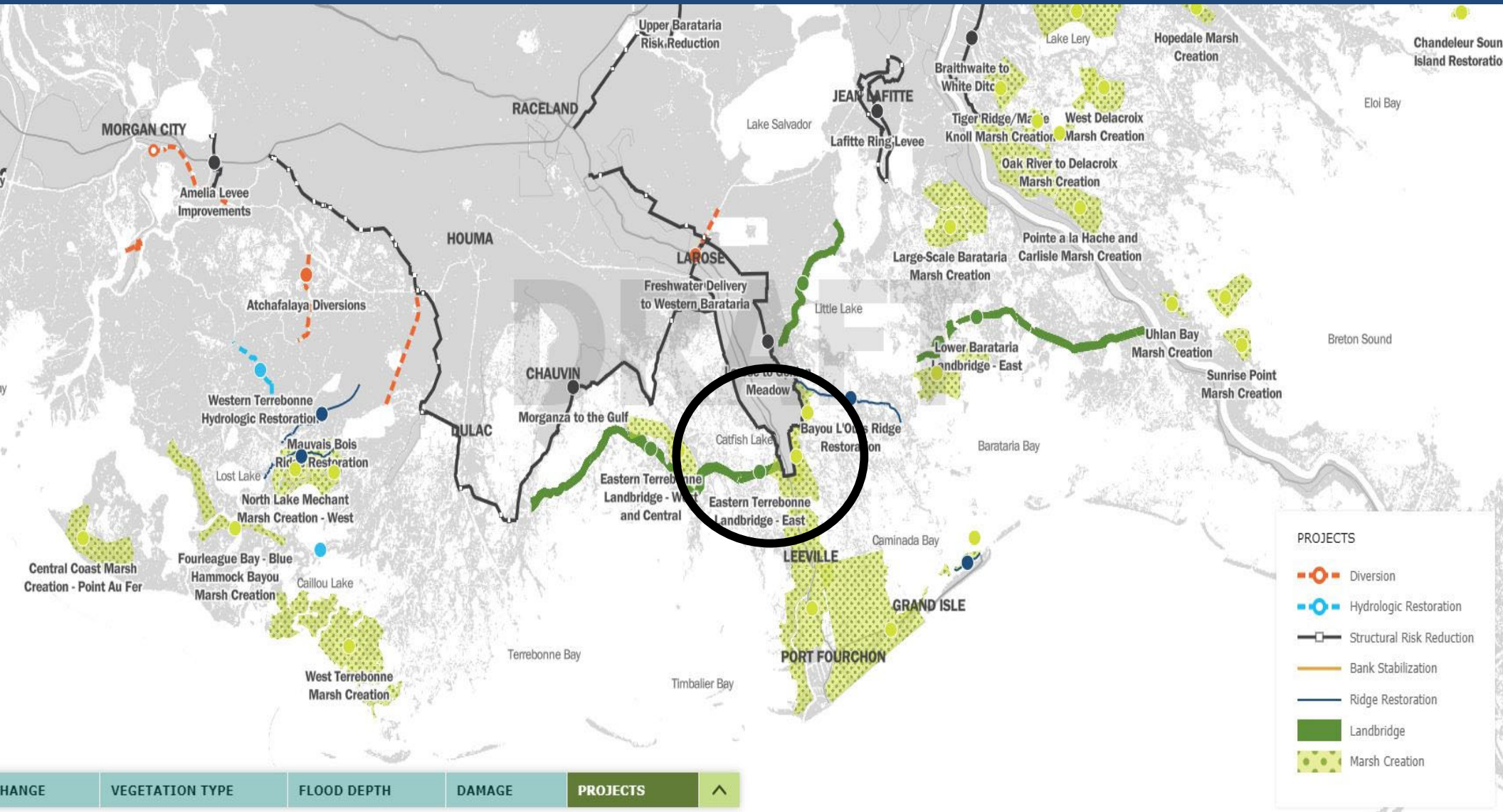
# Eastern Terrebonne Land Bridge Marsh Creation and Terracing

(Increment 1)

Region 3, Terrebonne Basin

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

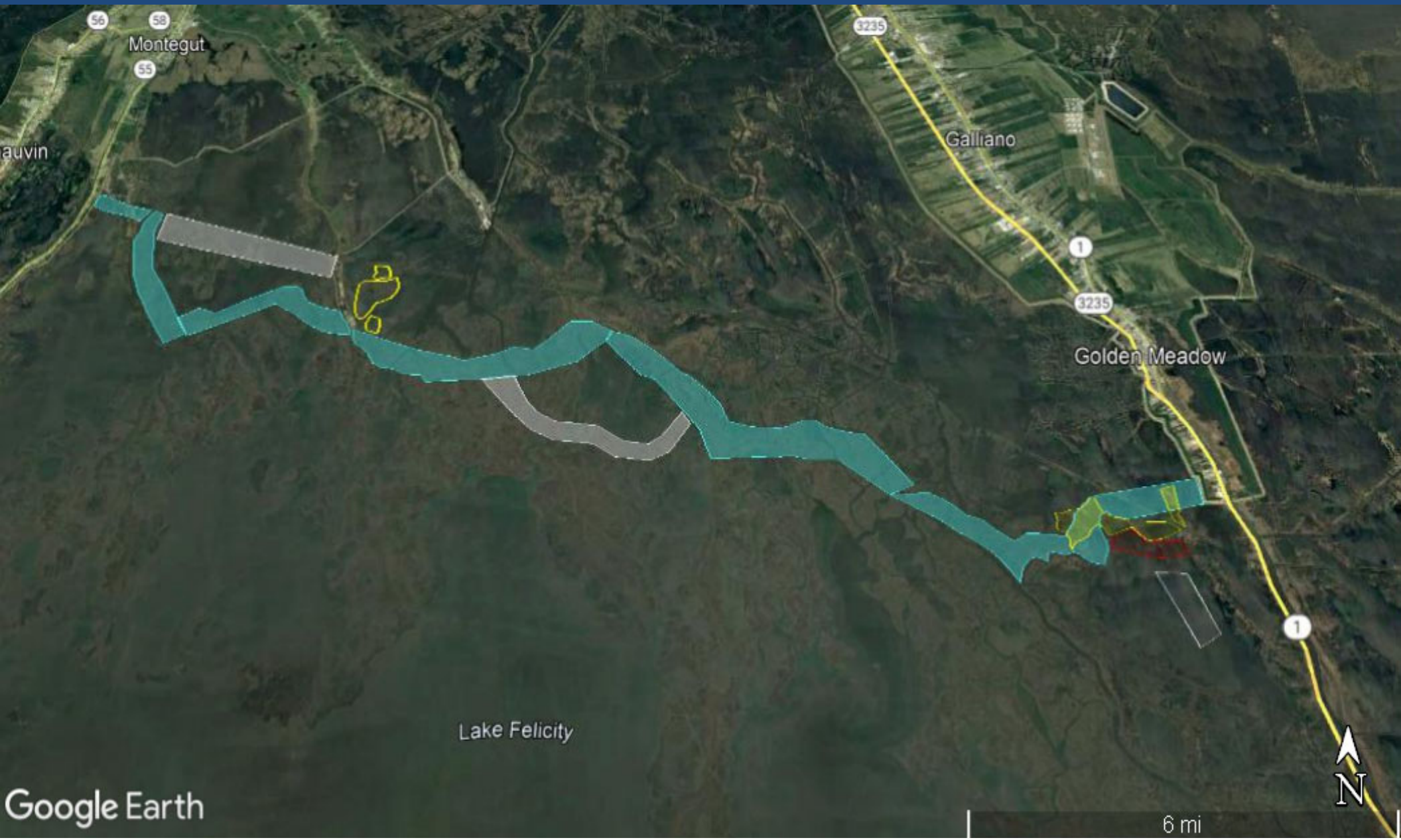
# 2023 State Master Plan
# Eastern Terrebonne Land Bridge – East



# Proposed Alternative of the 23 Masterplan Eastern Terrebonne Landbridge


- Stay in Marsh and Avoid Large Open Water Areas
- Shortest Distance to Connect Ridges
- Avoid Pipelines
- Stay Relatively Close to Borrow Source

# Proposed 1st Increment in the Eastern Terrebonne Landbridge



# U.S. Fish & Wildlife Service

*Louisiana Ecological Services*

Ducks_Unlimited
Marsh Creation
Terrace Field
Borrow Site


## *PPL34*
## *East Terrebonne Marsh Creation Inc. I*
## *Lafourche, Louisiana*

0 0.25 0.5 1 Miles

# Eastern Terrebonne Land Bridge Marsh Creation (Increment 1)


- 300 acres of marsh creation

140 acres marsh nourishment

10,850 LF/155 ac of earthen terraces (8 ac) marsh

Laurier Bayou borrow

Net acres = 279

250 - 300

Construction plus contingency $28.8 M

1st Increment of Eastern Terrebonne Landbridge, Ducks Unlimited Terrace Field

# Species of Concern and Rare Species

- Least Bittern
- Mottled Duck
- King Rail

**PPL34 PROJECT NOMINEE FACT SHEET**
**January 28, 2024**

**Project Name:**
West Isles de Jean Charles Marsh Creation

**Project Location:**
Region 3, Terrebonne Basin, Terrebonne Parish

**Problem:**
The project site contains organic and highly compressible soils with expansive open water areas. Subsidence, lack of sediment input, wind erosion, storms, and canals and pipelines all have contributed to widespread historic and continued rapid land loss within the project site and vicinity. With high wetland loss in the vicinity, the Morganza Hurricane Protection Levee to the north of the project area has become extremely susceptible to high wave energies with the increase in fetch. A land change analysis conducted by USGS for 254 coastal subunits indicates a 1985-2020 land change rate of -1.08% per year for the Wonder Lake Subunit, which encompasses the project site. A land change analysis conducted by USGS for the 2001 Final Phase 2 Wetland Value Assessment of the Island Road Marsh Creation & Nourishment (TE-117) indicates a loss rate of -1.46%/yr (1984 to year 2020) for the extended project boundary.

**Goals:**
The primary goals of the project are to restore approximately 438 acres of marsh west of the community of Isle de Jean Charles. The specific project goals are: 1) create 417 acres of marsh, 2) nourish 21 acres of marsh, and 3) limit erosion through the construction of approximately 13,040 LF (2.5 mi) of large earthen berm along bay-facing containment. Borrow is proposed from Maddison Bay. This project would be the first of several marsh creation projects as part of the Eastern Terrebonne Landbridge (West and Central) and the first of two project that would create marsh bridging the Isle de Jean Charles and Bayou Terrebonne Ridges.

Service goals include the creation of habitat or improvement of habitat for rare species, species of concern, and threatened and endangered species. The creation of brackish intertidal marsh habitat would be beneficial to several species that are currently on the lists of rare species and species of concern. These include, but are not limited to Least Bittern, Black Rail, Mottled Duck, King Rail, Louisiana Eyed Silkmoth and Saltwater topminnow.

**Project Features:**
The project features consist of restoring marsh adjacent to the Twin Pipelines and parallel to the Isle de Jean Charles. General project goals are to rebuild the structural framework of degraded marsh near the Twin Pipelines and restore resilient habitat by marsh creation and nourishment.

Marsh Creation – 417 acres
Marsh Nourishment – 21 acres
Bank Stabilization – 13,040 LF (2.5 mi)

**Proposed Solution**
Sediments from Madison Bay will be hydraulically dredged and pumped via pipeline to create/nourish approximately 439 acres of marsh. A full containment system will be utilized with containment dikes gapped at the end of construction or no later than three years post-construction. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh and within the intertidal range. Bank restoration is also proposed. A large earthen berm will be constructed along 13,040 LF of the bay-facing containment dike.

**Preliminary Ranking Criteria:**

1) *What is the projects total net acres?*
Net Acres- 376 acres

2) *What is the total project construction cost plus 25% contingency?*
Construction cost plus 25% contingency - $30,269,892

3) *What is the project cost effectiveness using total net acres/project construction cost?*
Cost effectiveness - $80,505/net acre

4) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
There is synergy with the Island Road Marsh Creation (TE-117) to the east as well as with constructed DU terraces near the Twin Pipelines. There is also the NRDA funded Point aux Chenes Recreational Use Enhancement Project to the north.

5) *What is the interior loss rate and/or shoreline loss rate?*
A land change analysis conducted by USGS determined that the land change rate for the Wonder Lake Subunit is -1.08% per year (1985-2020).

6) *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 or is part of a land bridge feature?*
The project would be the first installment of the Eastern Terrebonne Landbridge (West and Central) concept. The project goal is to begin restoring an overall landbridge in eastern Terrebonne Parish in the vicinity of the Twin Pipelines generally extending between Isle de Jean Charles and Montegut. The project also provides some indirect, or less substantial, support for the structural framework of Bayou Jean Charles.

7) *Does any project feature directly or indirectly protect any critical and/or non-critical infrastructure?*
The project would result in direct substantial net positive impact on critical infrastructure consisting of the Terrebonne Parish Consolidated Government's (TPCG) Isle de Jean Charles levee and portions of Island Road. This includes protection to the Isle de Jean Charles community. The project would also result in indirect benefits to the Morganza to the Gulf levee.

**Considerations/potential issues?**
This project could have potential pipeline and utility considerations.

**Preparer(s) of Fact Sheet and Contact Information:**
Kristen Ramsey, FWS, (337) 291-3137, Kristen_Ramsey@fws.gov


U.S. Fish & Wildlife Service
Louisiana Ecological Services
Legend
Berm
Marsh Creation
Project Area
PPL34
West Isle de Jean Charles
Marsh Creation
Terrebonne Parish, Louisiana
332 ac
106 ac
Isle de Jean Charles
0
0.275
0.55
1.1 Miles
N

PPL34

# West Isle de Jean Charles Marsh Creation

Region 3, Terrebonne Basin

Contacts:
Kristen Ramsey
Fish and Wildlife Biologist
kristen.ramsey@fws.gov
(337) 291-3137

# 2023 State Master Plan – Eastern Terrebonne Landbridge - West and Central

# Proposed Alternative to the 2023 State Master Plan – Eastern Terrebonne Landbridge


- Stay in Marsh and Avoid Large Open Water Areas
- Shortest Distance to Connect Ridges
- Avoid Pipelines
- Stay Relatively Close to Borrow Source


# West Isle de Jean Charles Marsh Creation

# Synergy with Other Restoration Projects in the Eastern Terrebonne Basin

**PPL34 PROJECT NOMINEE FACT SHEET**
**January 31, 2024**

**Project Name:**
Sevin West Landbridge Creation Project

**Project Location:**
Region 3, Terrebonne Basin, Lafourche Parish, Louisiana

**Problem:**

The project is located southwest of Golden Meadow, LA, south of Catfish Lake, and east of Grand Bayou Blue. The project vicinity contains a combination of low elevation marsh and open water with organic substrates which are highly vulnerable to excessive inundation and erosion. High subsidence rates range from 9.9 to 11.44 mm/year according to 2023 State Master Plan. Subsidence, sea level rise, storms, and canal and pipeline construction all have contributed to widespread historic and continued rapid land loss within the project vicinity. As interior marsh has converted to open water, there is more exposure risk from increased inundation, wave fetch, and tidal and storm surge flooding.

**Proposed Solution**
The proposed solution is to create and nourish marsh by hydraulically dredging and pumping sediment from Bayou Laurier to the eroding and subsiding wetlands identified on the attached map. Temporary containment dikes will be constructed to retain the dredged sediment slurry, and then gapped within three years of construction to allow greater tidal exchange and estuarine organism access. Additionally, an enhanced bayou bank will be constructed on the south side of the marsh creation to increase the resiliency of the marsh creation and nourishment features. Adding elevation by this method is a proven restoration technique and the preferred alternative for restoring the target area.

**Goals:**
The project goal is to create and nourish approximately 437 acres of marsh along the northern banks of Bayou Sevin and Grand Bayou Blue that remains intertidal for as much of the 20 year project life as possible. The goal of enhanced bayou bank features is to provide for increased resilience of the marsh creation and nourishment features as part of the landbridge.

**Project Features:**
Marsh Creation – 219 acres
Marsh Nourishment – 218 acres
Bayou Bank Enhancement 14,255 linear feet

**Preliminary Ranking Criteria:**

1) *What is the project's total net acres?*
   Net Acres- 215

2) *What is estimated fully funded cost?*

The estimated fully funded cost is $32,700,000.

3) *What is the project cost effectiveness using total net acres/fully funded cost?*
Estimated Cost effectiveness - $152,093/net acre

4) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? (Provide details including proximity, funding/project status, and how the projects collectively contribute to restorations benefits larger than their individual footprints)*
- Ducks Unlimited – Marsh Creation has been completed to the north of this area along the flood protection levee.
- Ducks Unlimited – Recently funded terraces along the flood protection levee and southward along LA Highway 1.

The efforts to provide critical infrastructure protection and habitat creation along the Golden Meadow critical infrastructure are synergistic with this project proposal.

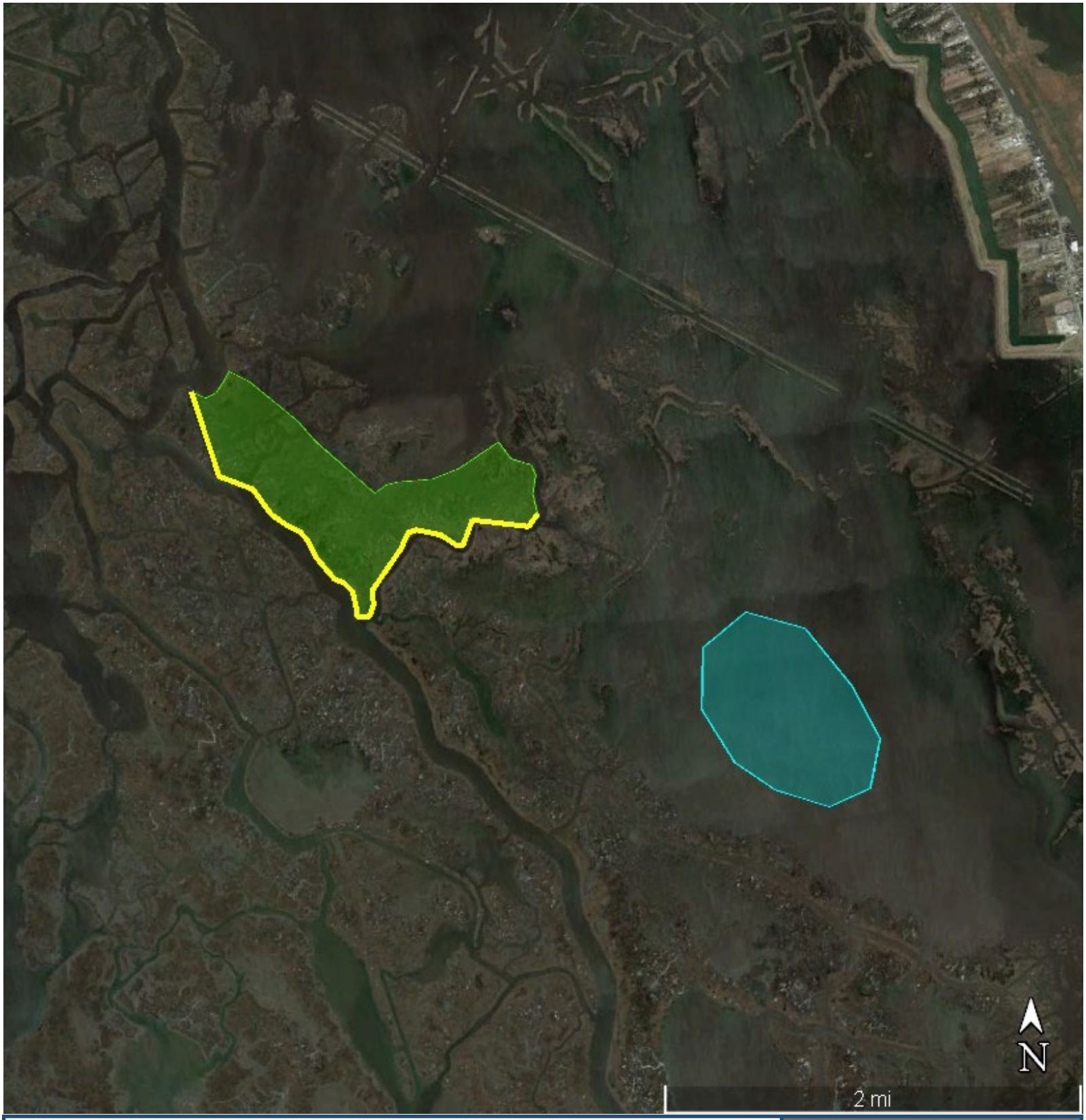
5) *What is the interior loss rate and/or shoreline loss rate? And what is the source of the data?*
An interior loss rate of -1.89%/yr (1984-2022) was calculated by USGS and used in the September 2023 for an adjacent PPL 33 Candidate Final Wetland Value Assessment.

6) *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 or is part of a land bridge feature?*
This project is an increment to contribute to the Eastern Terrebonne Landbridge.

7) *Do any project features directly or indirectly protect any critical and/or non-critical infrastructure?*
This project would work directly with other increments of constructed and proposed projects to provide critical infrastructure protection such as the flood protection levee and future elevated LA Highway 1.

**Other Considerations**
Considerations for this project include pipelines/utilities, oysters, West Indian Manatee, and Eastern Black Rail.

**Preparer(s) of Fact Sheet and Contact Information:**
Jason Kroll, NOAA Fisheries, 225-335-9659, jason.kroll@noaa.gov




# PPL34 Sevin West Landbridge Project

219 Acres Marsh Creation
218 Acres Marsh Nourishment
14,255 LF Bayou Bank Enhancement
*Acreages and lengths are approximate*

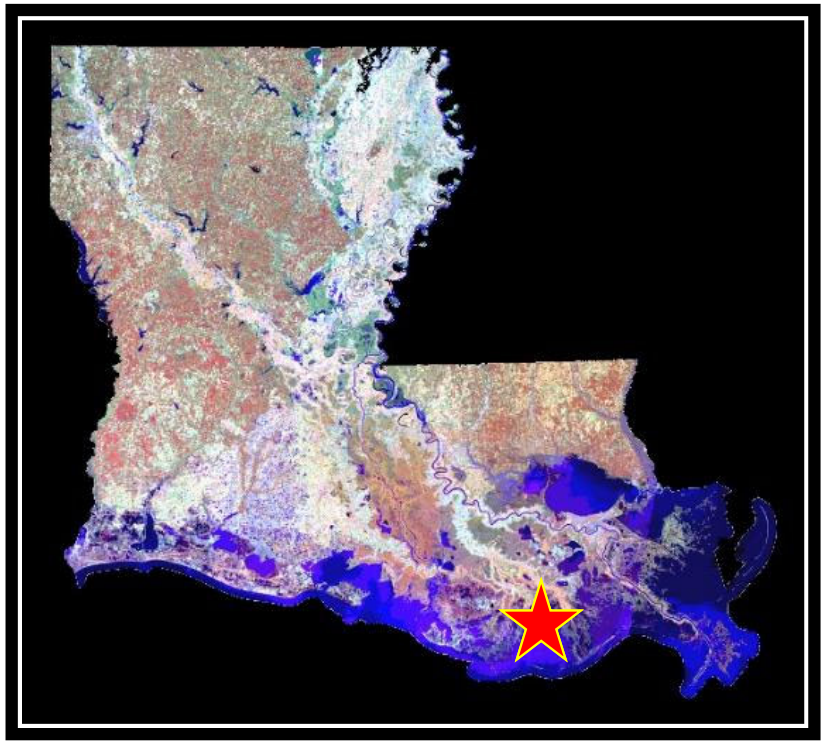
Federal Sponsor: NOAA Fisheries
2022 Aerial Imagery
Map Date 01-26-2024

## Legend

- Marsh Creation
- Borrow Area
- Bayou Bank Enhancement

# PPL34 Sevin West Landbridge Creation Project

NOAA FISHERIES



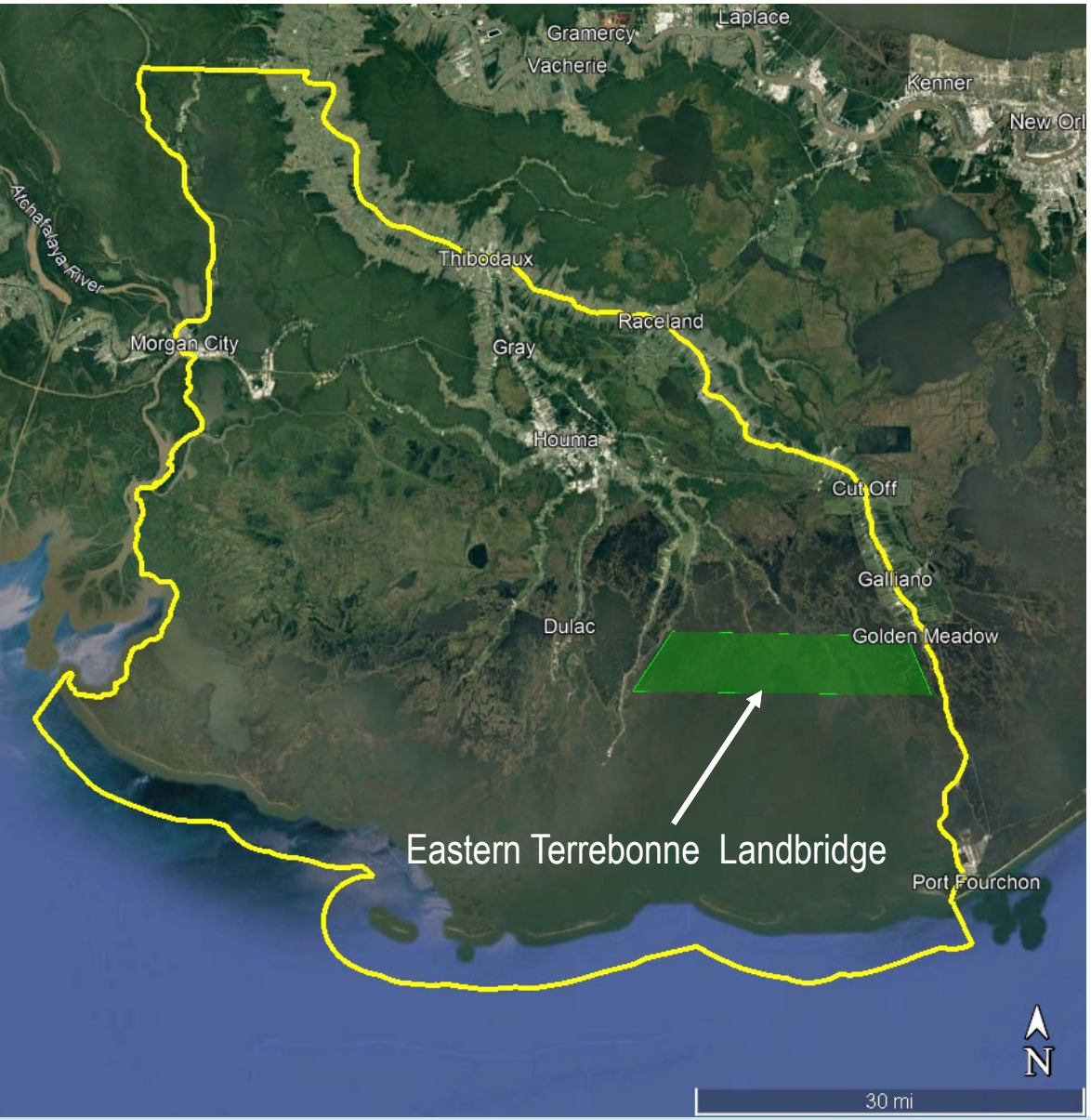
## REGION 3 – Terrebonne Basin

Presenter: Jason Kroll, NOAA

PPL34 CWPPRA Regional Planning Team Meeting

January 31, 2024

# Areas of Need Within Basin



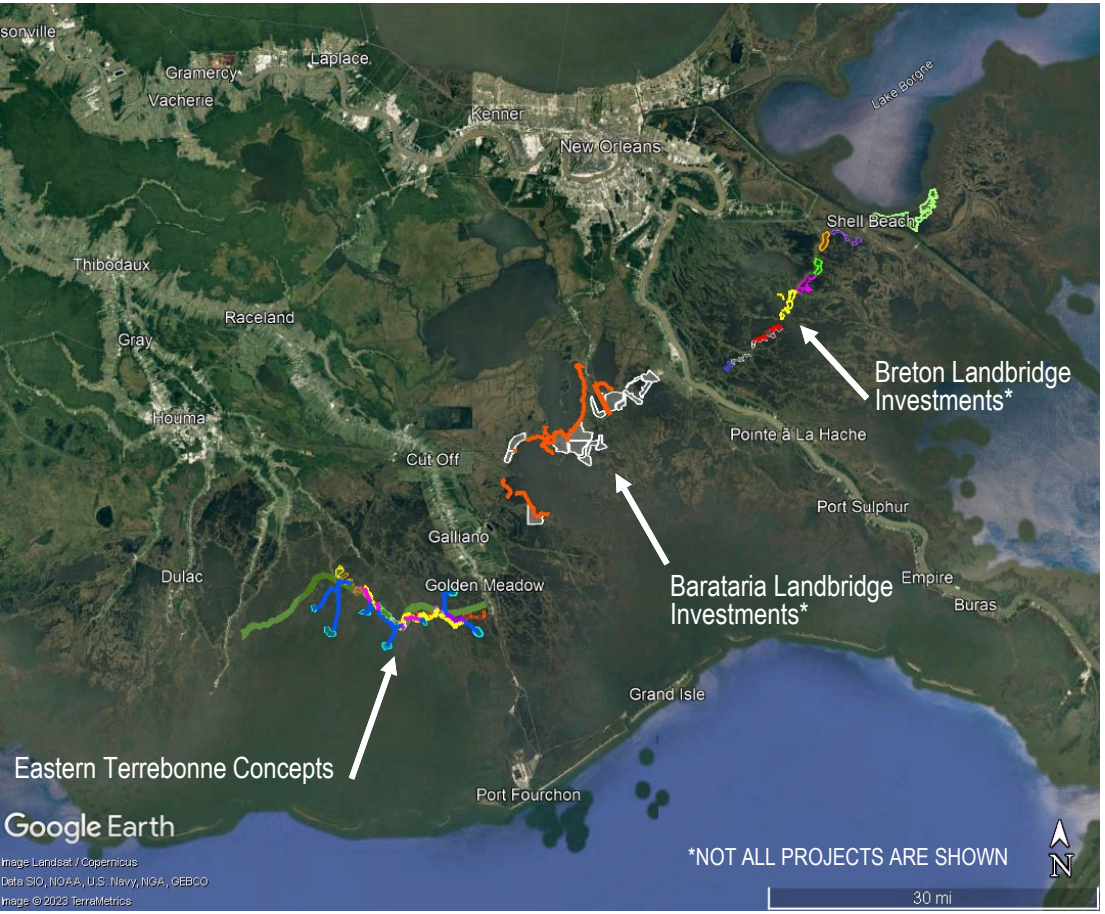

Tough decisions… Many areas across the coast need restoration.

Repeated messaging from the parish that this is a need and a priority

Eastern Terrebonne is rapidly succumbing to sea level rise, subsidence, and storm impacts. Approximate land loss -1.33%/yr

Focus… on critical landscape features to restore and maintain.

# Synergy With Other Restoration Efforts

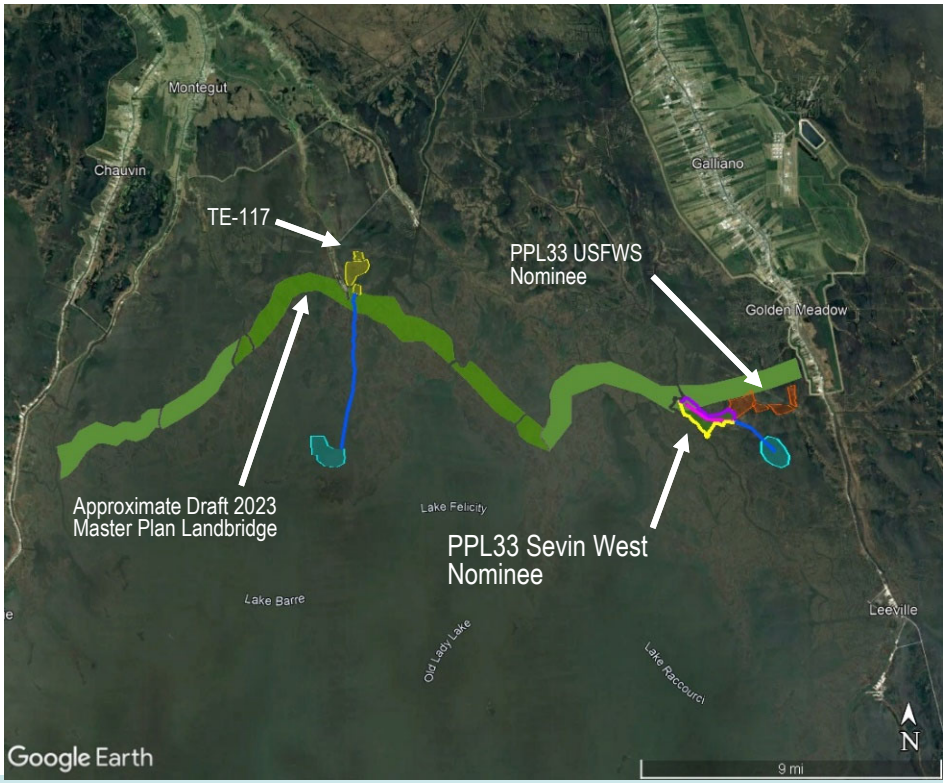



***Synergy at scale!***

Multiple program and multiple agency support for landbridge investments.

# Applicability within the CWPPRA Program

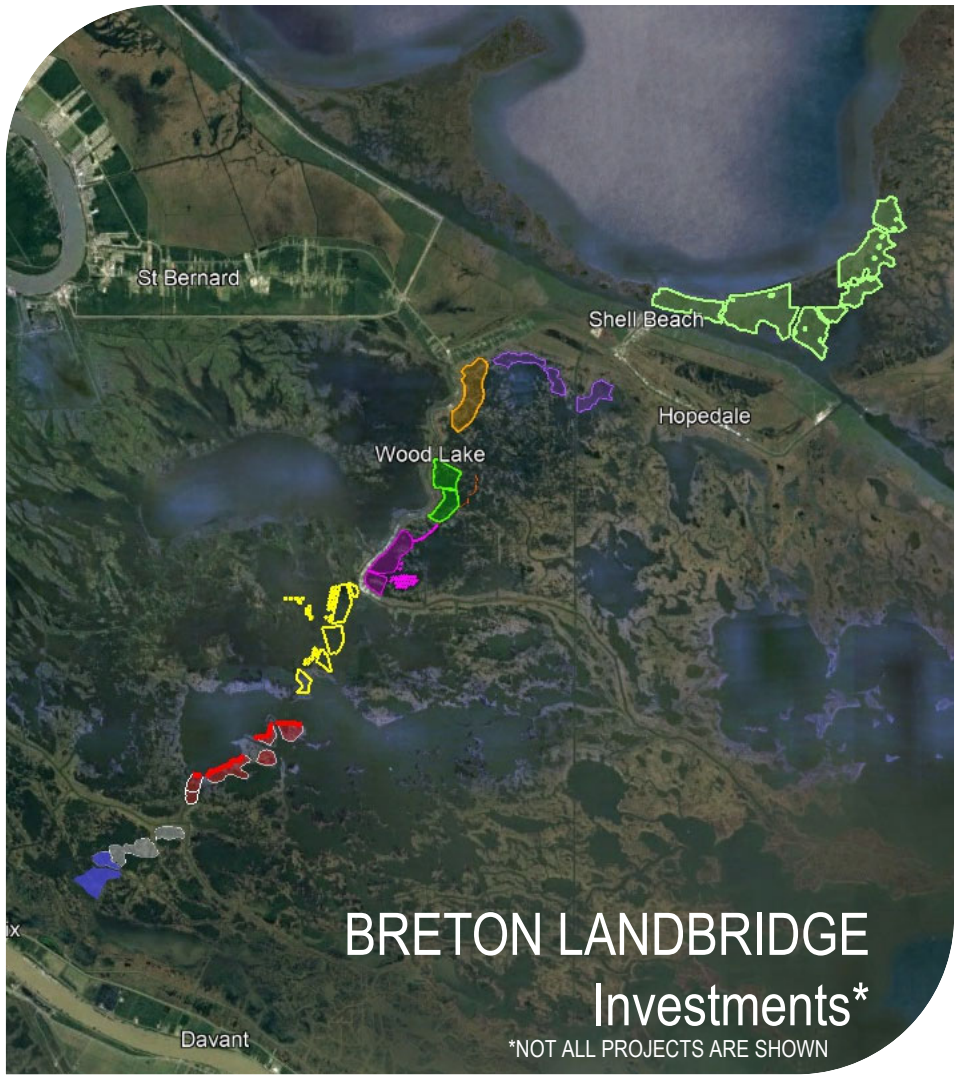
- Plan a project that fits within the program.
- Formulate features that are consistent with what the program has funded.
- Provide project solutions that marry well with adjacent restoration efforts.
- Consider the Selection Criteria

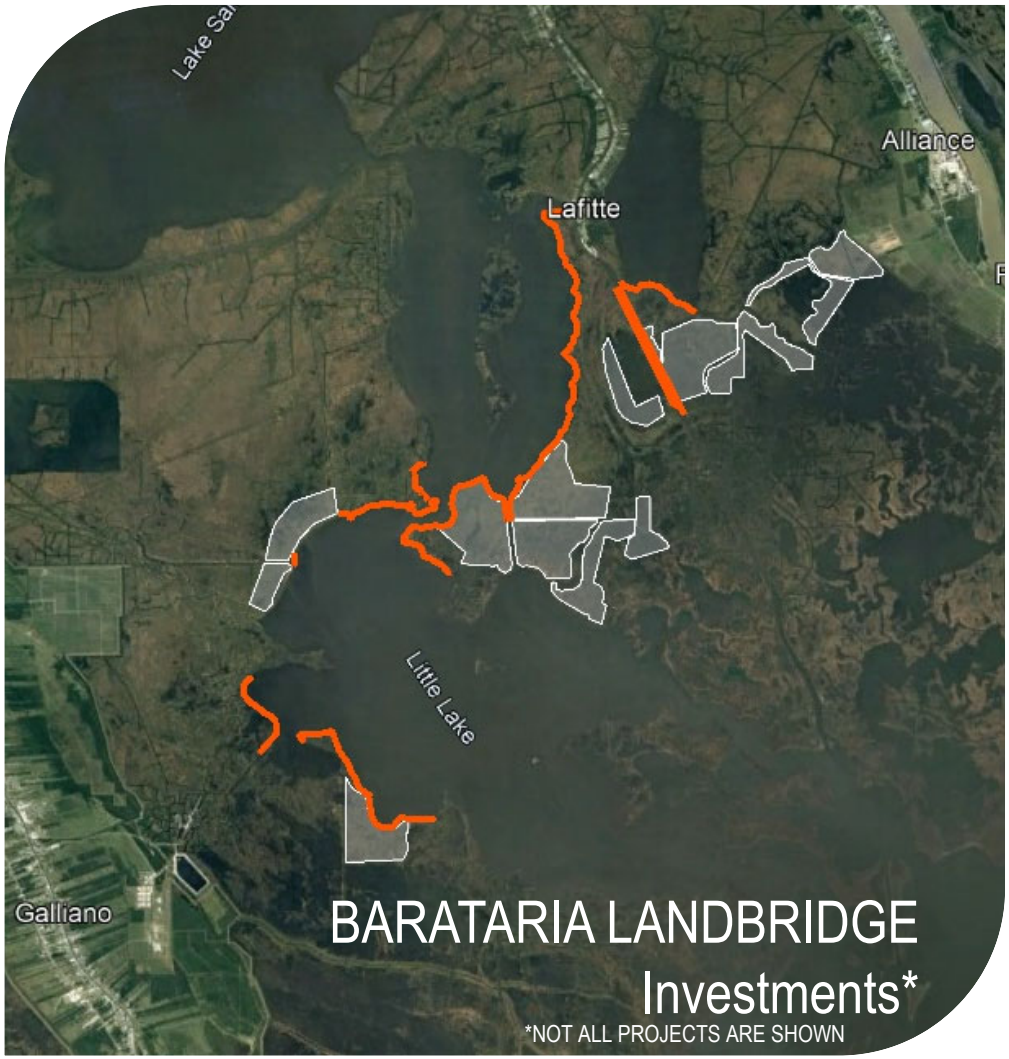


- Areas of Need Within Basin
- Synergy With Other Restoration Efforts
- Applicability within the CWPPRA Program

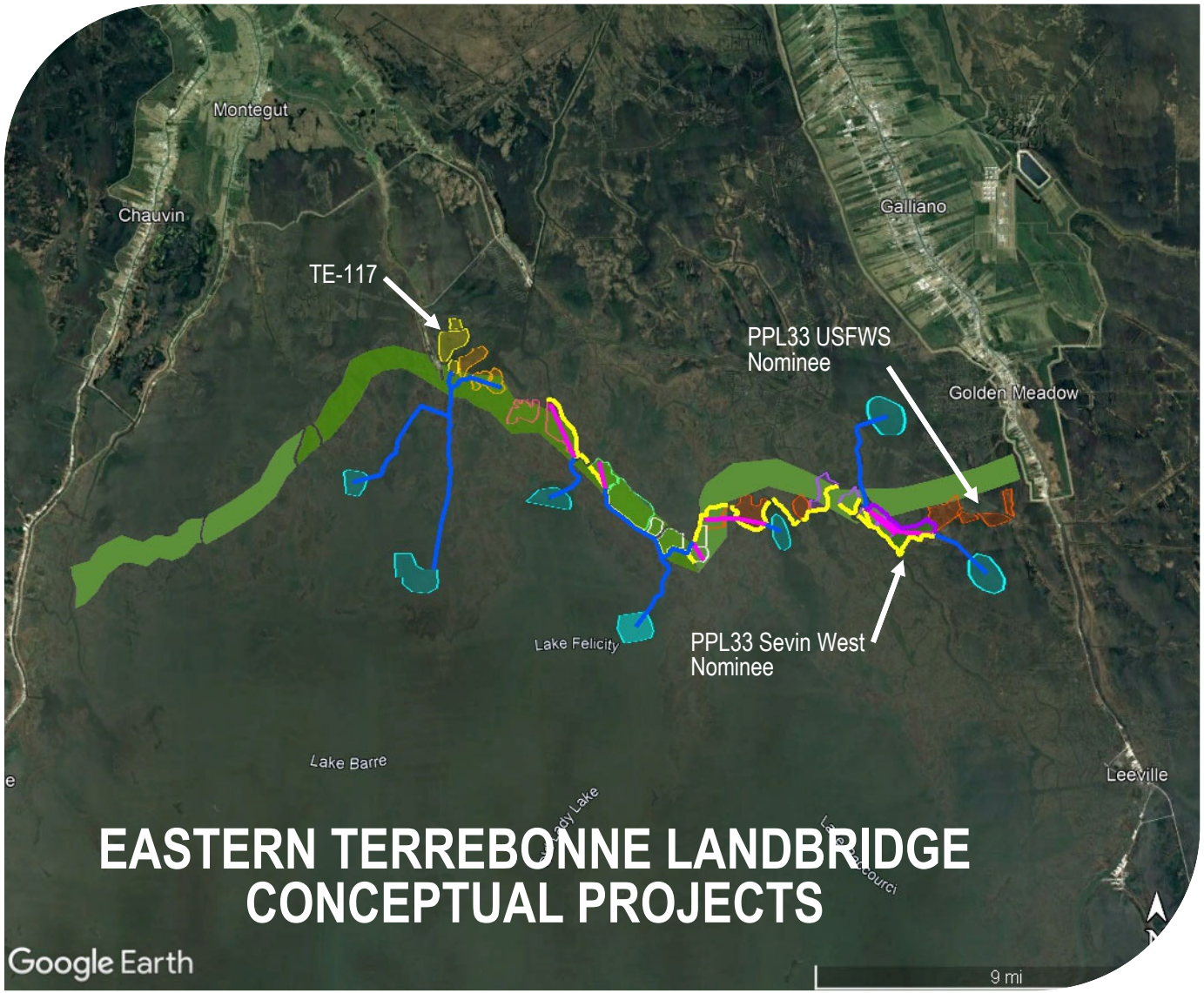
# Develop Solutions with Preferred Project Features

***Model the future with lessons from the past.***



- Areas of Need Within Basin
- Synergy With Other Restoration Efforts
- Applicability within the CWPPRA Program




# Develop Solutions with Preferred Project Features

***Model the future with lessons from the past.***

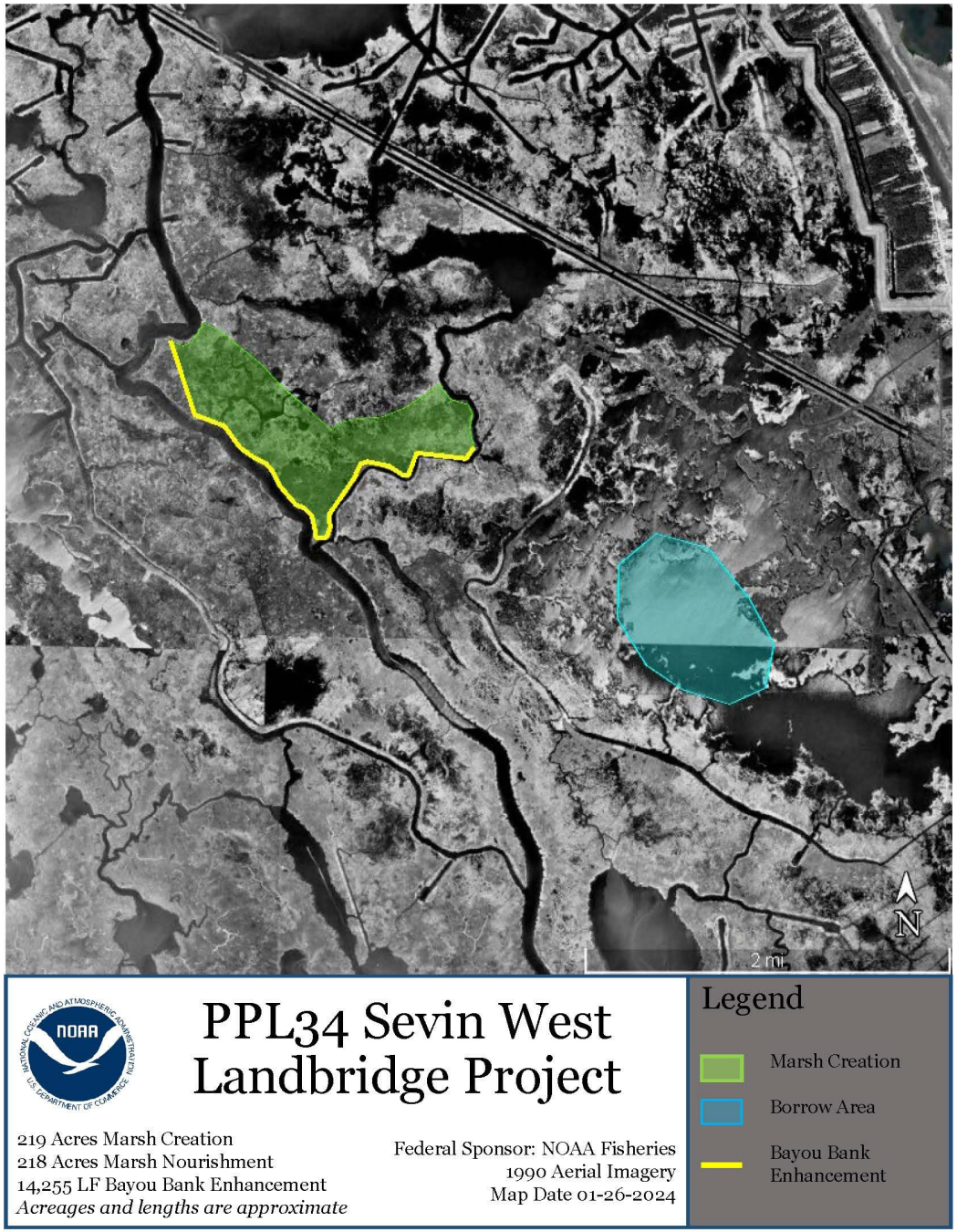
- 8 - 10 CWPPRA sized project increments
- Collaborate with multiple agencies and stakeholders for support and successful implementation.
- Leverage resources and other programs for faster and coordinated implementation

- Areas of Need Within Basin
- Synergy With Other Restoration Efforts
- Applicability within the CWPPRA Program

# Develop Solutions with Preferred Project Features

- Marsh Creation to restore lost wetlands and to combat sea level rise and subsidence.
- Add elevation to existing marsh through Marsh Nourishment to combat sea level rise and subsidence.
- Close borrow source for cost effective construction.
- Bayou Bank Enhancement to ensure resilience of the newly created marsh, and long term resilience of the landbridge.

## Sevin West Landbridge Creation Project



# Key Points

## Sevin West Landbridge Creation Project

**Cost Effective**

Utilizing a close borrow source and shallow fill site.

**Synergy With Other Restoration Efforts**

Location vicinity, project approach, and restoration techniques are broadly supported and being implemented

**Critical Area of Need**

This area has a high land loss rate. USGS calculated -1.89% for this vicinity in PPL33.

**Critical Landscape Feature**

The project area is along the Eastern Terrebonne Landbridge alignment.

**Critical Infrastructure Protection**

The project is located 2.4 miles from the hurricane protection levee and other critical infrastructure near Golden Meadow, LA

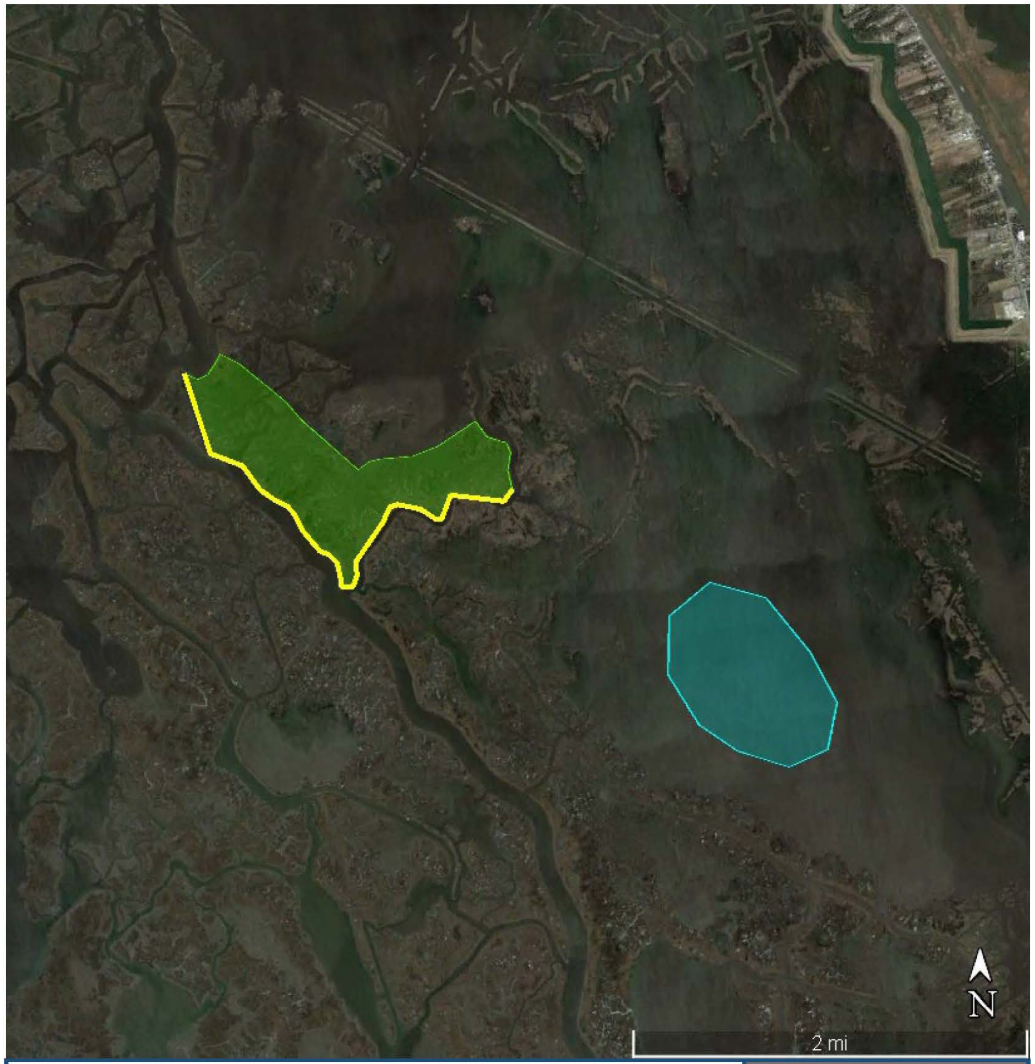
437 acres Marsh Creation and Nourishment

14,255 LF Bayou Bank Enhancement

Borrow from Bayou Laurier

The estimated fully funded cost is $32.7 Million

The estimated net acres are 215 net acres.




PPL34 Sevin West Landbridge Project

219 Acres Marsh Creation
218 Acres Marsh Nourishment
14,255 LF Bayou Bank Enhancement
*Acreages and lengths are approximate*

Federal Sponsor: NOAA Fisheries
2022 Aerial Imagery
Map Date 01-26-2024

Legend

- Marsh Creation
- Borrow Area
- Bayou Bank Enhancement

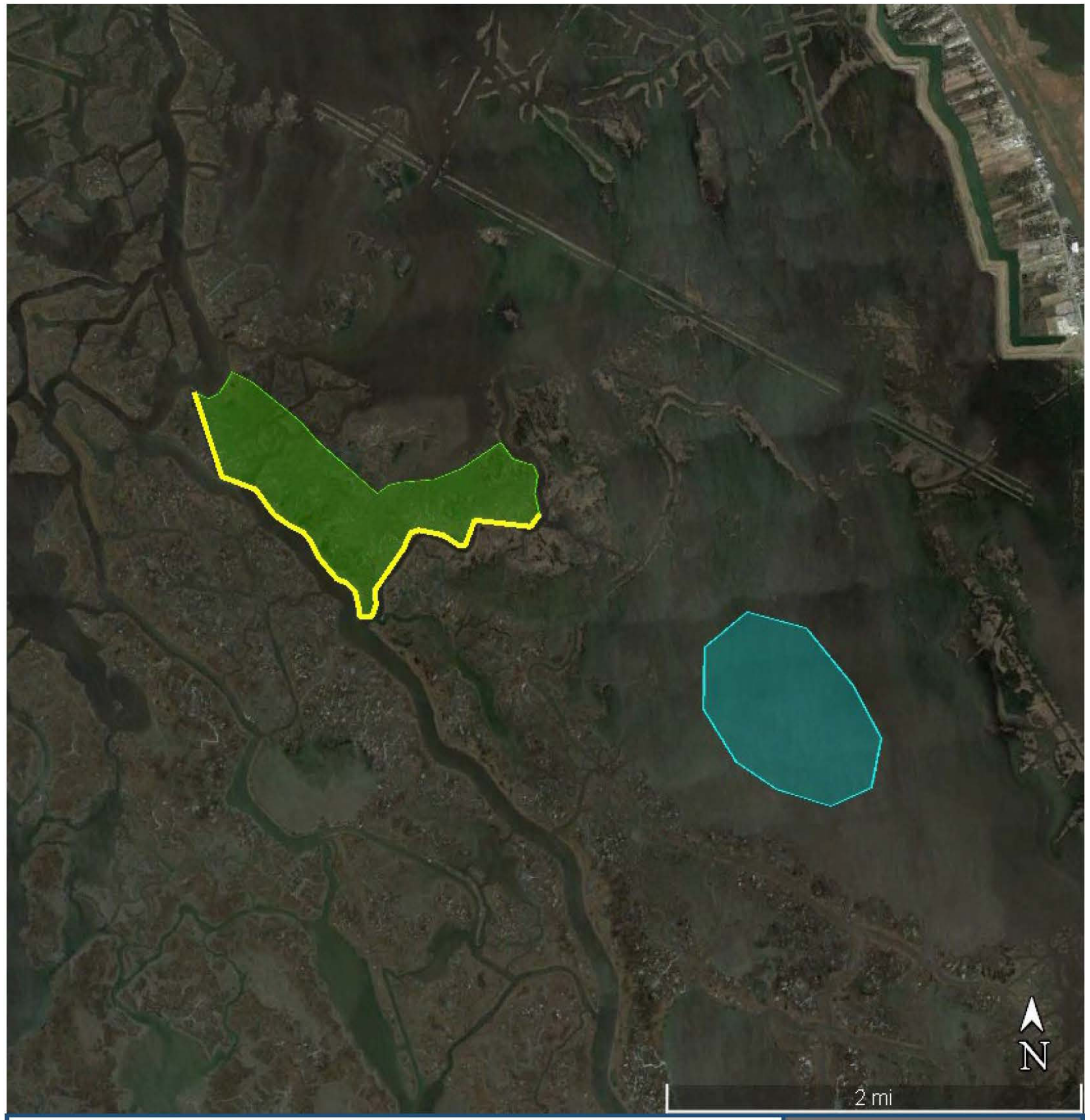
NOAA FISHERIES

# Open Dialogue

Jason Kroll, Civil Engineer, NOAA

jason.kroll@noaa.gov

225-335-9659



**PPL34 PROJECT NOMINEE FACT SHEET**
**January 31st, 2024**

**Project Name**
West Lake De Cade Marsh Creation Project

**Project Location**
Region 3, Terrebonne Basin, Terrebonne Parish, West of Lake De Cade

**Problem**
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering compaction, contributing to high subsidence. Historically, subsidence, saltwater intrusion, hurricanes, and numerous oil and gas pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amounts to approximately 130,000 acres over the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate in the area is -0.32%/year estimated by USGS with a subsidence of at least 3.6mm/y.

**Goals**
The project goals are to create and/or nourish 405 acres of intermediate marsh and armor 8,116 LF of shoreline.

**Proposed Solution**
Sediments from Lake De Cade will be hydraulically dredged and pumped via pipeline to create/nourish 405 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh and within the intertidal range. Containment dikes will be constructed around each marsh creation cell. Where practicable, material will be borrowed from perimeter lakes and bayous. Containment dikes will be gapped at the end of construction or by TY3.

**Preliminary Project Benefits**
1) *What is the total acreage benefited both directly and indirectly*? Approximately 405 acres would be benefited directly and indirectly. Direct benefits include 288 acres of marsh creation and 117 acres of marsh nourishment. Indirect benefits could occur to surrounding marsh and open water areas.

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres protected/created over the project life is approximately 250-300 acres.

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 interior loss rate reduction throughout the area of direct benefit is estimated to be 50%.

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 would help to maintain portions of the Lake De Cade shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect oil and gas infrastructure in the area.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would work synergistically with the North Lake Mechant Landbridge Restoration Project (TE-44), the Lost Lake Project Marsh Creation Hydrologic Restoration (TE-72), the South Lake De Cade Freshwater Introduction Project (TE-39), Coastwide Vegetative Plantings (LA-39), and the Bayou De Cade Marsh Creation Project (TE-138).

**Considerations**

Considerations for this project include pipelines/utilities. Only one cooperative landowner.

**Preliminary Cost**

The estimated construction cost plus 25% contingency range is $25M - $30M.

**Preparer of Fact Sheet**

Jennifer Smith, NOAA, (225) 571-9030, jennifer.smith@noaa.gov
Jason Kroll, NOAA, (225) 335-9659, jason.kroll@noaa.gov


# PPL34 West Lake De Cade Marsh Creation Project

2024 Aerial Imagery Federal Sponsor: NOAA Fisheries

288 Acres Marsh Creation

117 Acres Marsh Nourishment

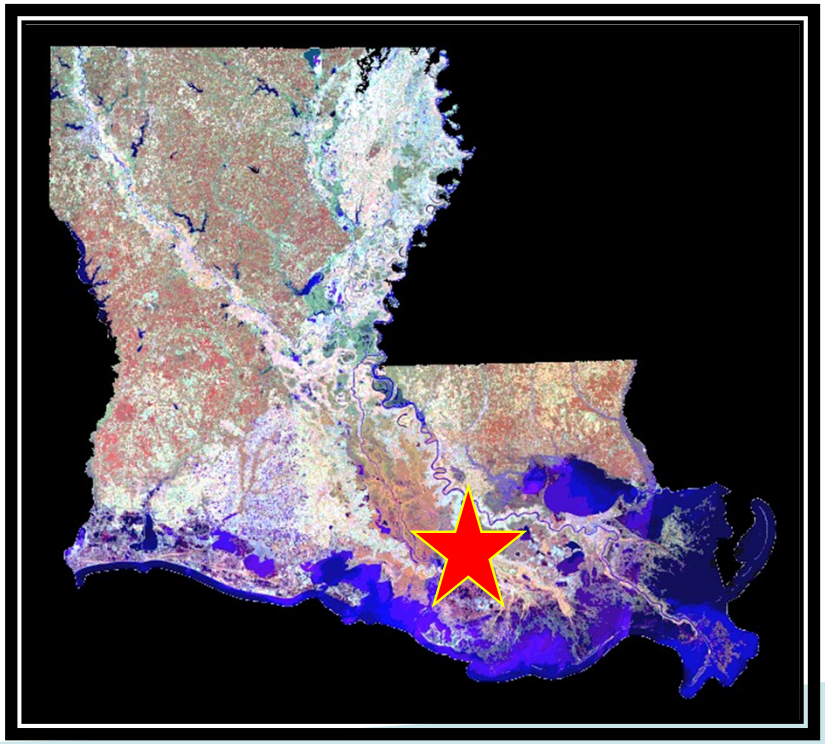
Map Date 01-09-2024

## Legend

- Marsh Creation
- Borrow
- Shoreline Armor

# West Lake De Cade Marsh Creation Project

NOAA FISHERIES



## REGION 3 – Terrebonne Basin

**Presenter:** Jennifer Smith, Project Manager, NOAA

**Special Thanks**:
Apache Louisiana Minerals, LLC
Terrebonne Parish

**PPL 34 CWPPRA Regional Planning Team Meeting**

Morgan City

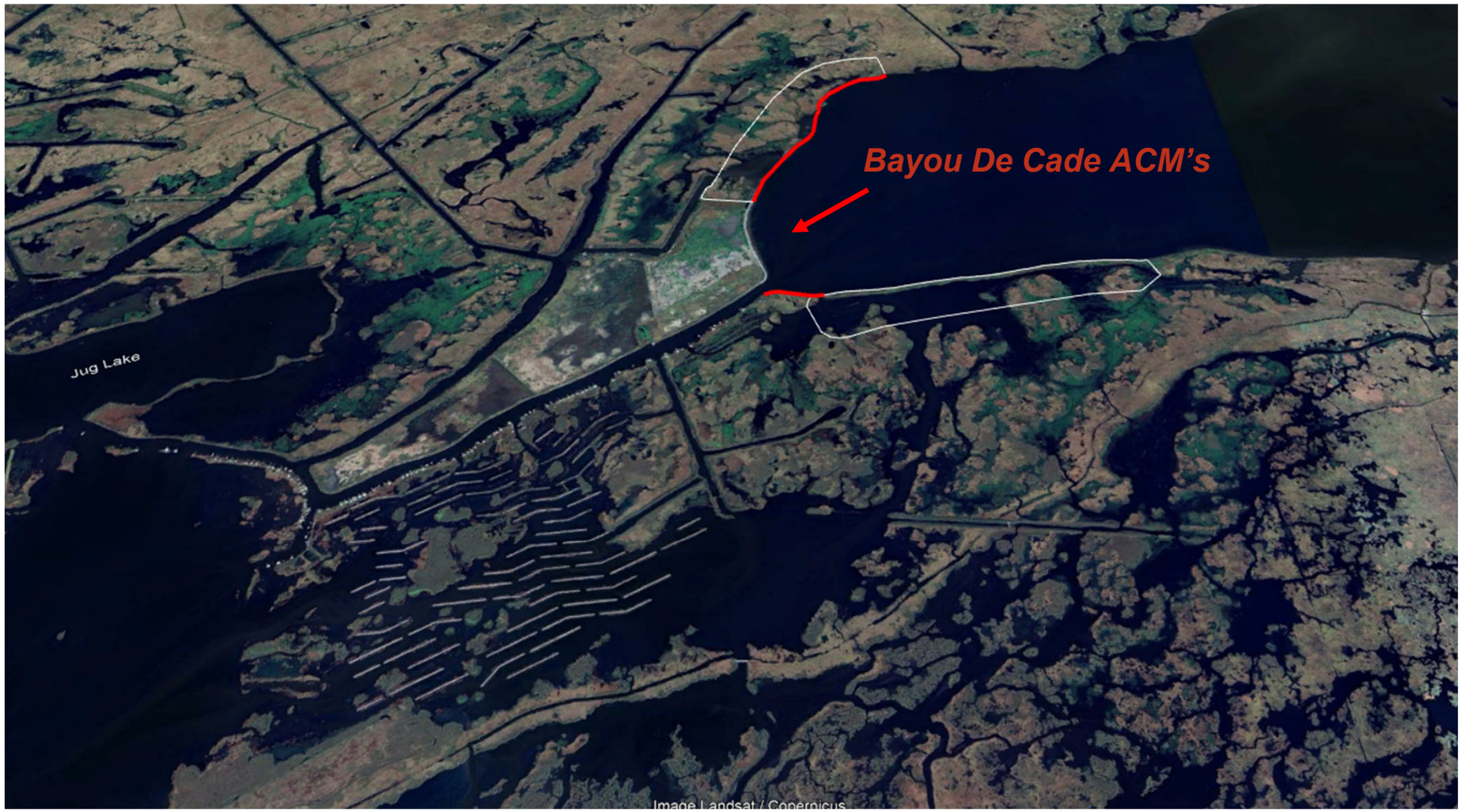
January 31st, 2024

# Priority Project Planning

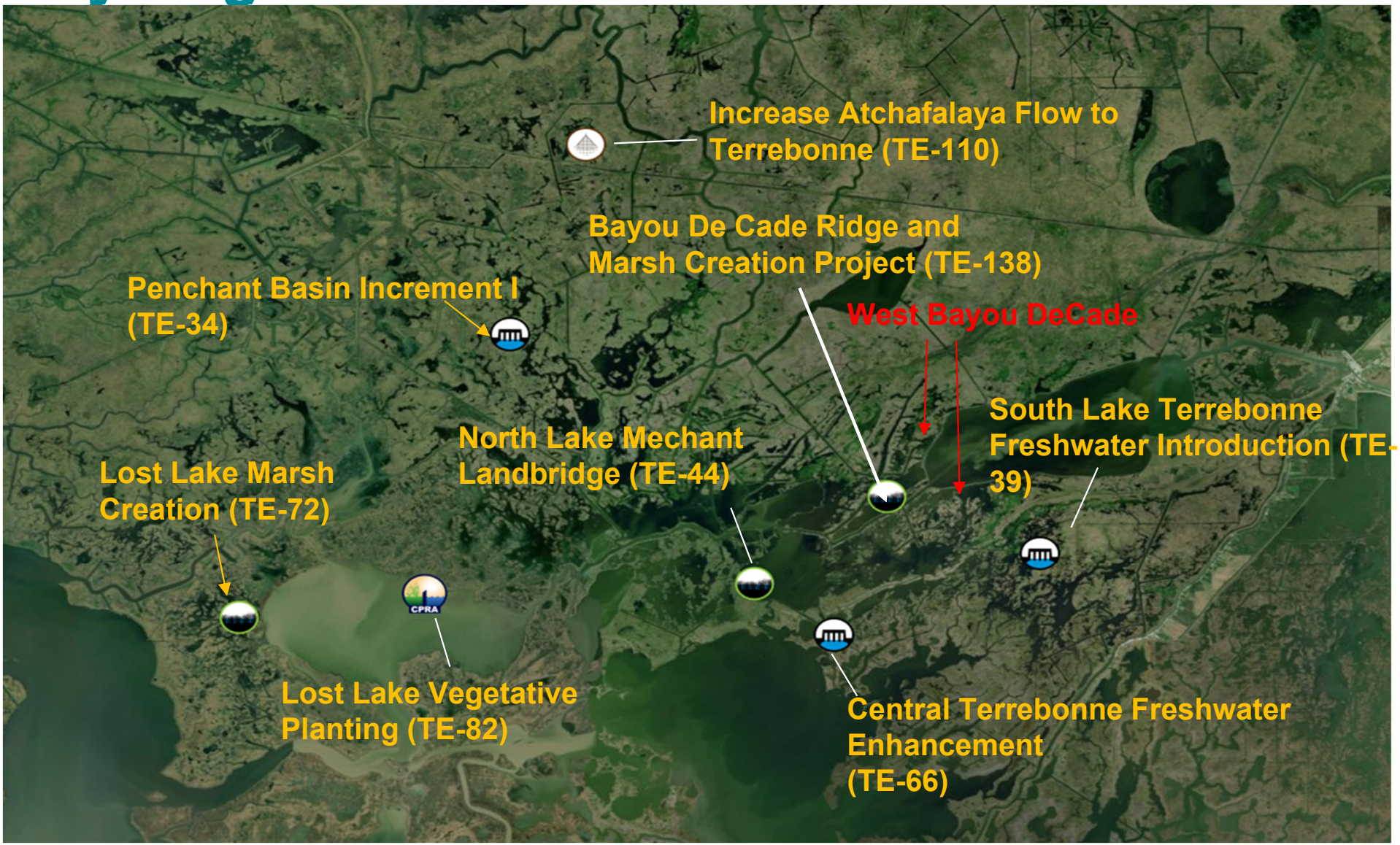
- Areas of Need Within Basin
- Synergy With Other Restoration Efforts
- Applicability Within the CWPPRA Program
- Develop Solutions with Preferred Project Features

# Area of Need

- Northwest rim is breached.
- Southwest rim has rock but needs marsh behind.

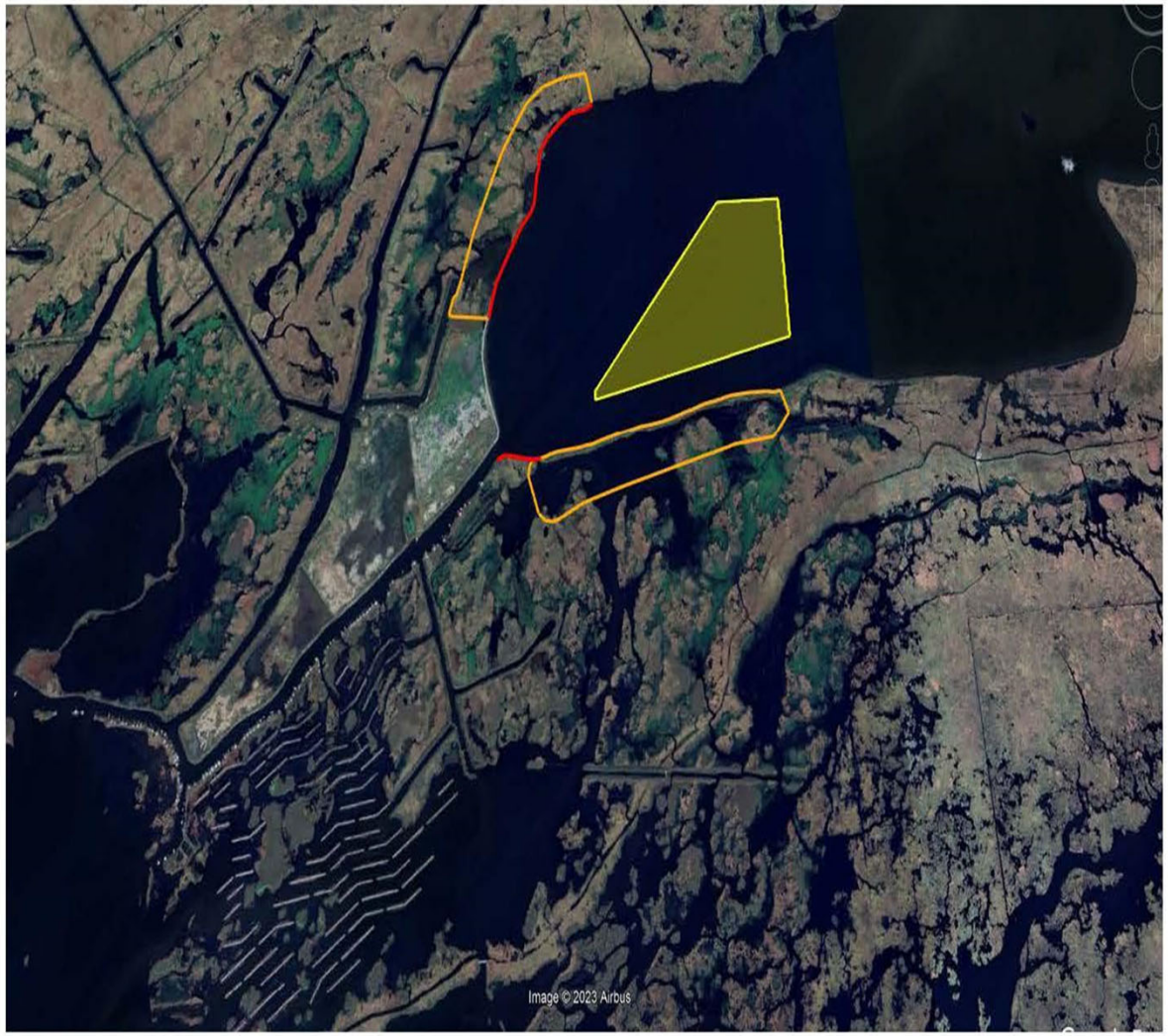


# Synergies


Increase Atchafalaya Flow to Terrebonne (TE-110)
Bayou De Cade Ridge and Marsh Creation Project (TE-138)
Penchant Basin Increment I (TE-34)
West Bayou DeCade
South Lake Terrebonne Freshwater Introduction (TE-39)
North Lake Mechant Landbridge (TE-44)
Lost Lake Marsh Creation (TE-72)
CPRA
Lost Lake Vegetative Planting (TE-82)
Central Terrebonne Freshwater Enhancement (TE-66)

# Preferred Project Features


# Solution




- 2017 State Master Plan Polygon 03a.MC.101
- Lake De Cade Borrow
- 405 Acres of Marsh (288 Created/117 Nourished)
- Approximately 8,116 LF of Shoreline Armor
- $25M - $30M Construction + Contingency
- 250 – 300 Net Acres

PPL34 West Lake De Cade Marsh Creation Project

2024 Aerial Imagery Federal Sponsor: NOAA Fisheries

288 Acres Marsh Creation

117 Acres Marsh Nourishment

Map Date 01-09-2024

Legend

Marsh Creation

Borrow

Shoreline Armor

Jennifer Smith, 225-571-9030
jennifer.smith@noaa.gov
Jason Kroll, 225-335-9659
jason.kroll@noaa.gov

**PPL34 PROJECT NOMINEE FACT SHEET**
**February 1, 2024**

**Project Name**
South Isle de Jean Charles Landbridge Increment

**Project Location**
Region 3, Terrebonne Basin, Terrebonne Parish, South of the Isle de Jean Charles

**Problem**
The marshes of Eastern Terrebonne Parish have suffered extensive damage from subsidence, erosion, salinity intrusion and sea level rise. The area is particularly vulnerable because the area set in a position where waters from the Mississippi and Atchafalaya Rivers have the least amount of influence. Terrebonne Parish has consistently expressed much concern for these marshes because so many of their cultural heritage communities are increasingly threatened and have therefore indicated that restoration in this area is their priority. The regional loss in the area is -1.33% per year with a subsidence rate of 11.4 mm/y (MP2023 Ecoregion Subsidence). The State Master Plan (2023) calls for a landbridge alignment that spans from Bayou Terrebonne to Bayou Lafourche. Much like the other basins of the Deltaic Plain, building synergy with multiple projects in the form of a landbridge will focus restoration efforts to leverage dollars and provide the best protection.

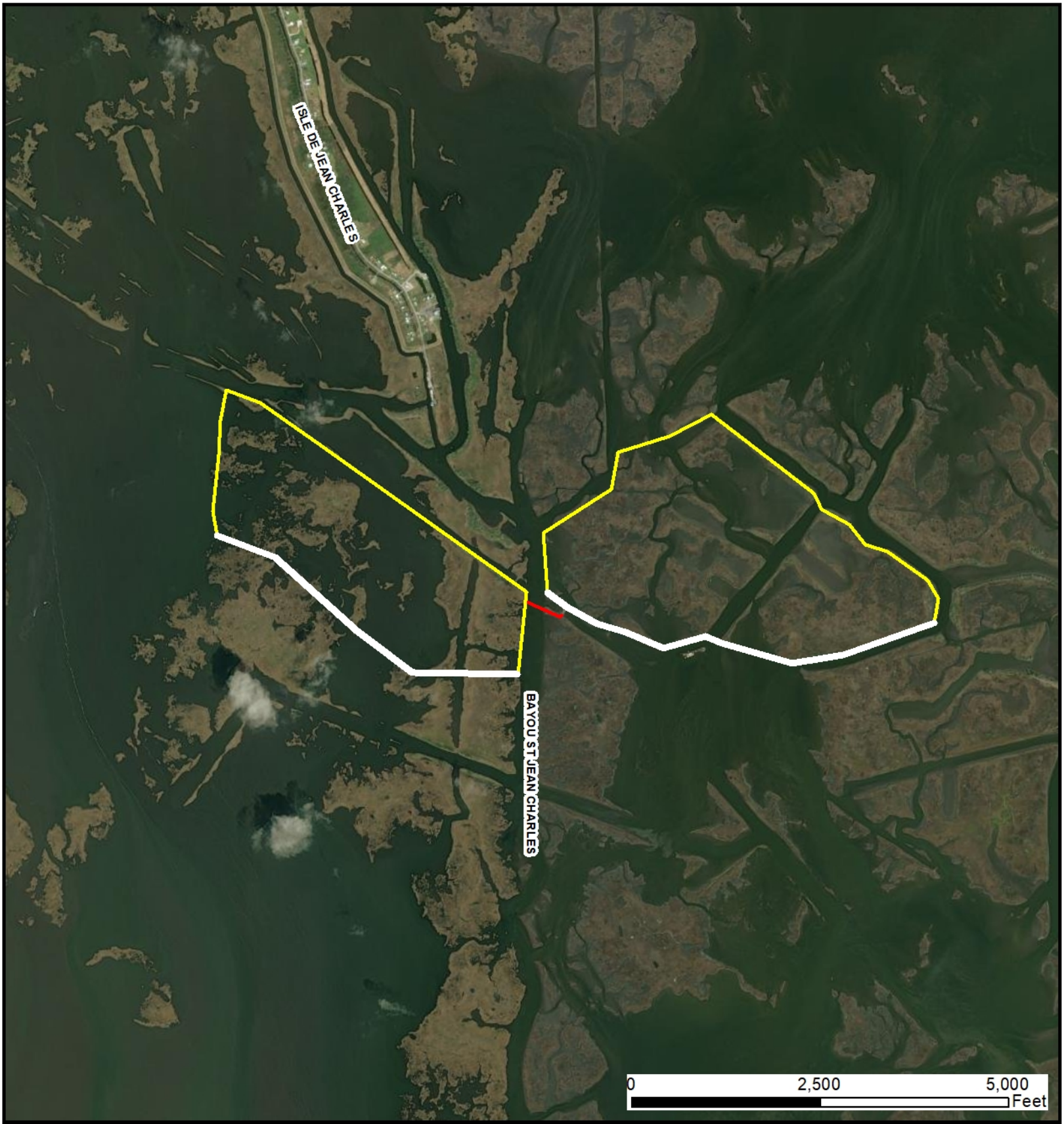
**Goals**
The primary goals of this project are to 1) create/nourish marsh habitat in the degraded marsh and open water to facilitate the landbridge concept for eastern Terrebonne Basin, 2) reduce the intensity of tidal movements through the degraded marsh by restoring a contiguous marsh expanse across areas where channelization has become prevalent and 3) provide synergy with the TE-117 Island Road MC to providing protection to the community of Isle de Jean Charles and marry other future landbridge projects that are in line with the State's Master Plan for a future Eastern Terrebonne landbridge.

**Proposed Solution**
Sediments will be hydraulically dredged from a borrow site located in Lake Tambour to create/nourish marsh. Additionally, the project will facilitate the hydrologic function of reducing tidal intensity and channelization by installing a channel liner in Bayou Isle de Jean Charles and providing form of bank stabilization on the south side of the marsh creation cells.

**Project Benefits**
The project is expected to initially create/nourish approximately 415 acres of marsh.

**Preliminary Cost**
The construction cost range is $25M - $30M (+25% Contingency).

**Preparer of Fact Sheet**
Ron Boustany, NRCS, (337) 291-3067, ron.boustany@.usda.gov
Eric Whitney, NRCS, Engineer, (337) 291-3069, eric.whitney@usda.gov




# PPL 34
# SOUTH ISLE DE JEAN CHARLES LANDBRIDGE INCREMENT
# TERREBONNE PARISH, LA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**Legend**

- MARSH_CREATION
- BANK_STABILIZATION
- CHANNEL_LINER

Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source: ESRI 2022

Map Date: FEBRUARY 1, 2024

# PPL34

# South Isle de Jean Charles Landbridge Increment

## Formerly: Isle de Jean Charles Terrebonne Landbridge Increment

**Ron Boustany, Biologist, NRCS**

**Eric Whitney, Engineer, NRCS**

**USDA**

**Natural Resources Conservation Service**

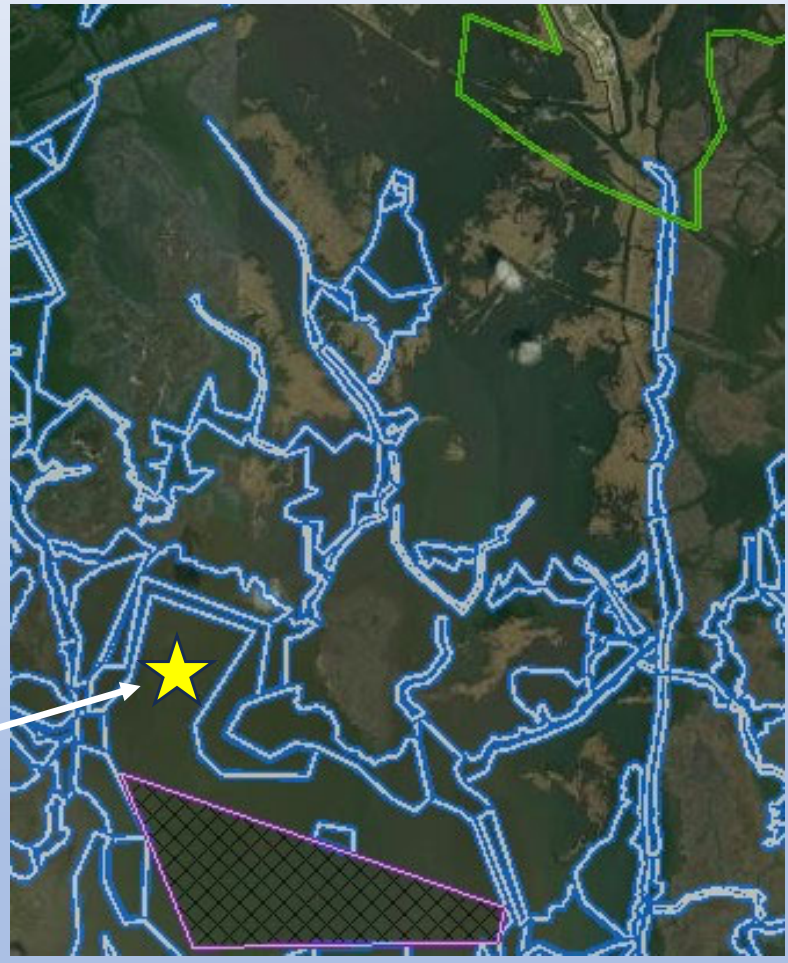
**Regional Planning Team Meeting**

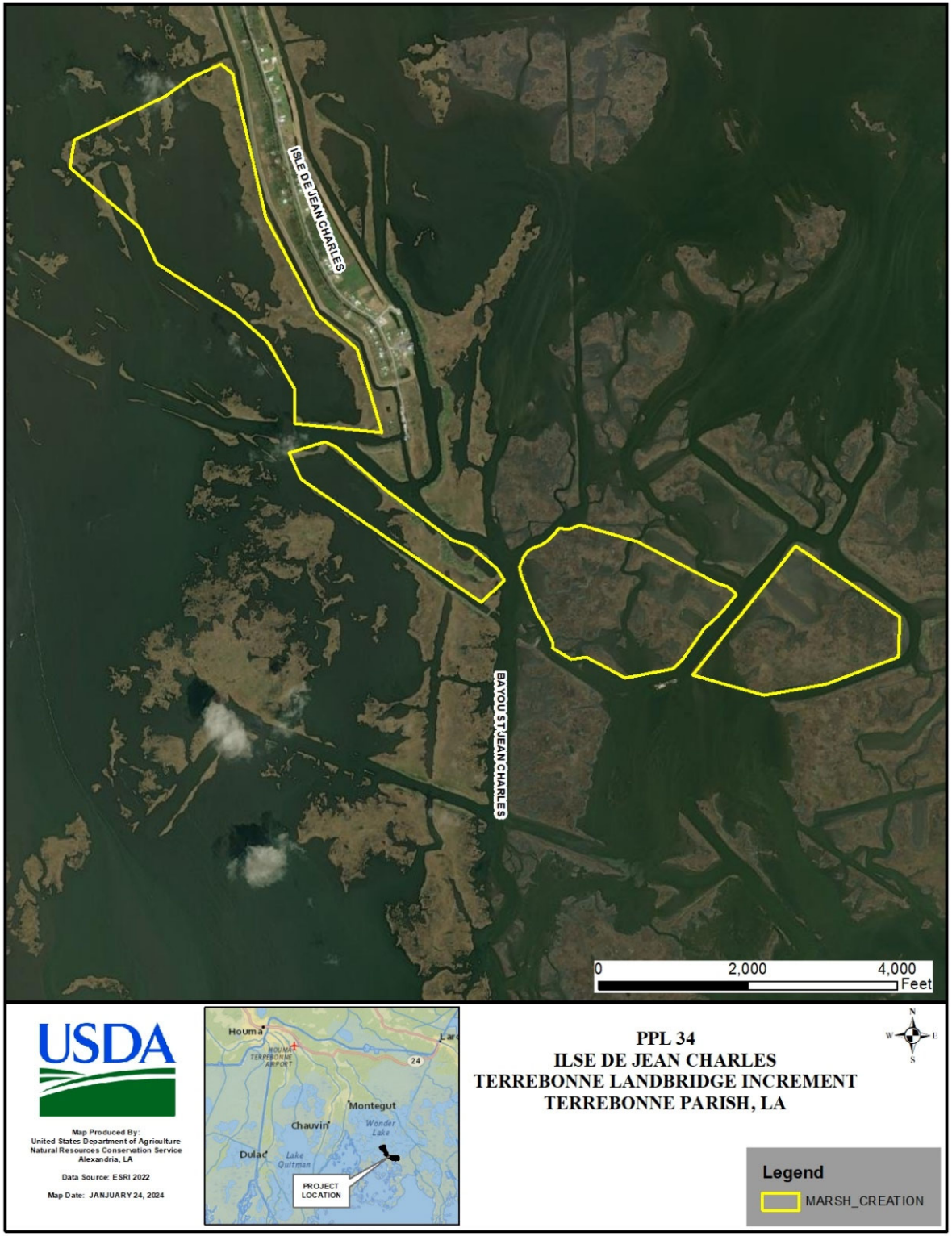
**Region 3**

**February 1, 2024**

# State Master Plan East Terrebonne “Landbridge” alignment and project location

# Pipeline and Oyster Maps




# PPL34
# Isle de Jean Charles Terrebonne Landbridge Increment

**Problem**: The eastern Terrebonne basin has suffered much loss due to subsidence, erosion, salinity intrusion and sea level rise.

**Project Goals**: To create marsh to build resilience around the community of Isle de Jean Charles. Build synergy with "landbridge" projects across Eastern Terrebonne Basin.

**Project Benefits**: The project will create/nourish 365 acres of marsh.

**Preliminary Construction Cost**: $25-30M (const+25%)

# Selection Criteria Considerations

**Cost Effectiveness: 68K-82K per acre (construction +25%)**

**Synergy: TE-117 and protection measures around Isle de Jean Charles**

**Critical Area of Need: High loss rates (1.33%/y) (1985-2020 Regional-Terrebonne Bay)**

**Critical Landscape Feature: Builds an increment of Terrebonne Landbridge**

**Critical Infrastructure Protection: Protection of Isle de Jean Charles**

**PPL34 PROJECT NOMINEE FACT SHEET**
**January 31, 2024**

**Project Name**
Carencro Bayou Diversion

**Project Location**
Region 3, Terrebonne Basin, Terrebonne Parish, Carencro Bayou

**Problem**
Bayou Penchant is the largest bayou flowing across upper Terrebonne, however, where it connects to Carencro Bayou most of the water flow is diverted southwest to the Superior Canal and flows down Palmetto Bayou and back to Atchafalaya Bay. This short-circuits water movement to the east where marshes are deprived of the freshwater, nutrients and sediments of the Atchafalaya River. The State Master Plan calls for diverting Atchafalaya River water to the east through the Gulf Intercoastal Waterway and various other distributaries throughout the Central Terrebonne marsh complex. The reactivation of Carencro Bayou would bring water directly to areas where there have been heavy losses of wetlands caused by saltwater intrusion and sediment deprivation.

**Goals**
The objective of this project is to introduce freshwater, nutrients and sediments from Bayou Penchant into southern Terrebonne marshes to a general area east of Lost Lake to reduce saltwater intrusion and marsh loss in this area.

**Proposed Solution**
The project would: (1) Reduce flow in the Superior Canal near the junction with Carencro Bayou by necking down this canal from 200 feet wide and 20 feet deep to 80 feet wide and 10 feet deep. This would be accomplished by the construction of a rock weir (barge bay); (2) opening historic Carencro Bayou, by dredging, from the point where it is narrower than 100 feet wide and 8 feet deep following the old bayou channel for approx. 21,400 feet southeast to where it intersects a north/south location; and (3) enlarging the north/south location canal and existing DU/ConocoPhillips water control structure to accommodate this increased flow.

**Project Benefits**
These components would re-direct much of the water flowing down Bayou Penchant to the re-opened Carencro Bayou instead of to Superior Canal and Palmetto Bayou then lost back to Atchafalaya Bay. This re-directed water would flow south into southern Terrebonne connecting with Bayou Decade east of Lost Lake.

**Preliminary Cost**
The construction cost range is $5M - $10M (+25% Contingency).

**Preparer of Fact Sheet**
Greg Linscomb, Continental Land and Fur; glinscombe@clf-co.com
Ron Boustany, NRCS, (337) 291-3067; ron.boustany@.usda.gov
Eric Whitney, NRCS, Engineer, (337) 291-3069; eric.whitney@usda.gov

# Bayou Carencro Diversion

Avoca Island Cutoff

Avoca Island Cutoff

**Legend**

- Carencro Bayou Cleanout
- Outfall Replacement Structure
- Superior Canal Structure

Apache LA Minerals, LLC - LaTer

Google Earth

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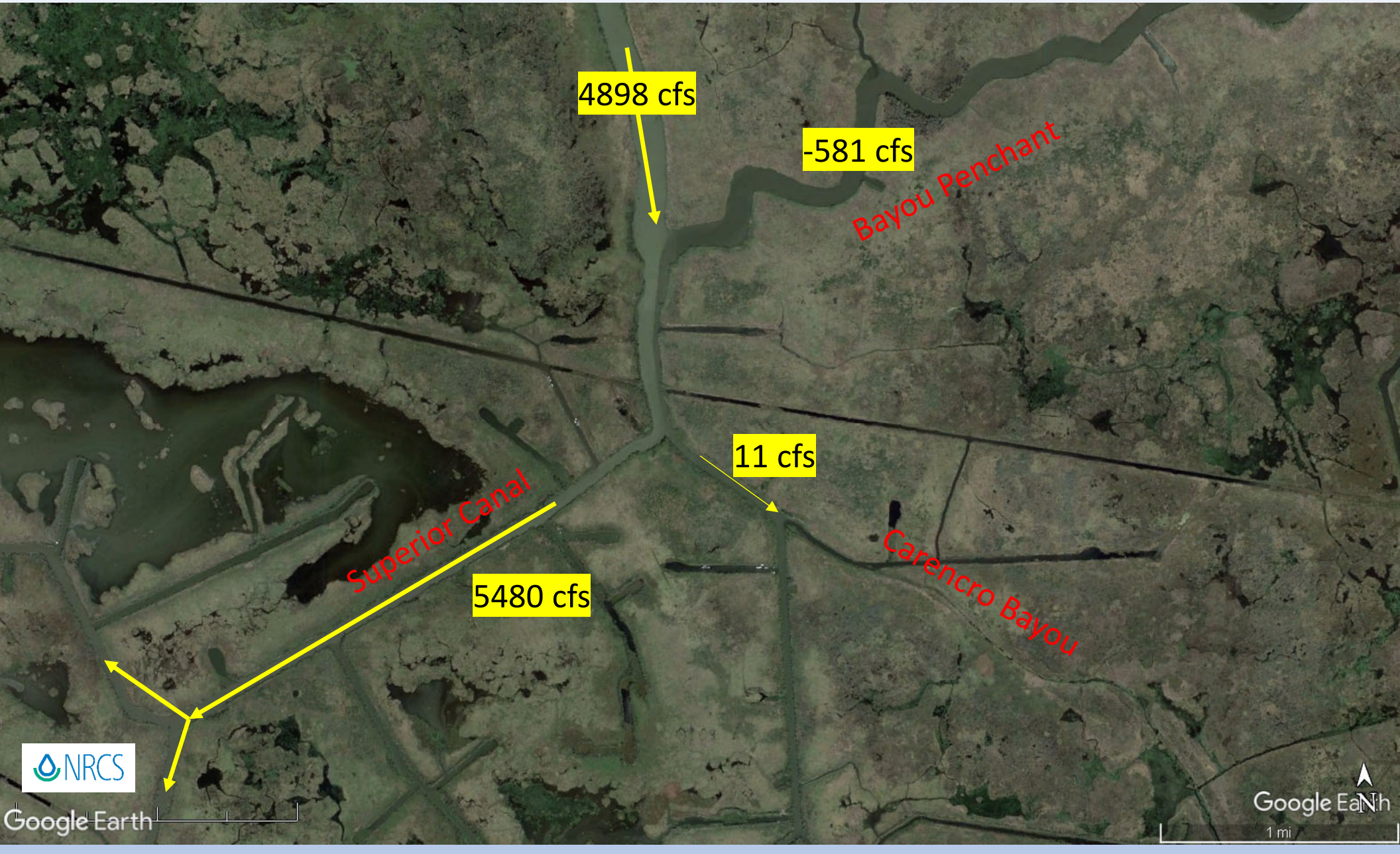
# PPL34 - Carencro Bayou Diversion

## Region 3-Terrebonne Basin

# TE-34 Penchant Basin Natural Resources Plan Model-Existing Conditions



## Objectives

- Reduce flow in Superior Canal by necking down the canal to allow for some flow to divert down the Carencro Bayou
- Dredge out the old Carencro Bayou along its historic canal to reactivate flow through the bayou down into the Central Terrebonne marshes
- Enlarge the north/south location canal and existing DU/ConocoPhillips water control structure to accommodate the increase flow.

## Project Features

- Superior Canal rock weir structure with barge bay.
- Dredging of Carencro Bayou for 21,400 linear ft to reactivate flow down the channel into the north/south canal.
- Replace the water control structure with a larger structure that can accommodate more flow through the channel into the target marshes to the south.

NRCS

# Bayou Carencro Diversion Project

# Cost and Benefits

NRCS did a preliminary itemized cost estimate in 2019 for CLF for a rock weir w/barge bay, channel clean out, and remove and replace the outflow structure for a total of approximately $6.06 million (w/ 25% contingency). Therefore, we would expect the construction cost to be in the $5-10 million range.

Benefits will largely depend upon the flow delivery of freshwater, nutrients, and sediments to the receiving area. We are expecting to increase flow to the area by an average of 300-500 cfs which would result in considerable benefits to the receiving area.

NRCS