

# CWPPRA RPT Region 1

Pontchartrain Basin

**PPL36 PROJECT NOMINEE FACT SHEET**  
**February 5, 2026**

**Project Name**

New Orleans East Living Shorelines

**Project Location**

Region 1, Pontchartrain Basin, Orleans Parish

**Problem**

Over the last hundred years, the south shore of Lake Pontchartrain has been transformed from cypress/tupelo swamp/marsh interface to almost total armoring with rocks, seawall and marinas. Stormwater from the greater New Orleans area is pumped directly into the lake as fast as possible. Once common intermediate/brackish marsh and submerged aquatic vegetation (SAV) are virtually non-existent along the south shore. Outfalls of drainage canals discharge stormwater runoff along these modified shores, adding insult to ecological injury. Increased turbidity due to increased wave energy produced by the hardened shoreline has decreased once abundant SAV beds. Closure of the MRGO has stabilized salinity levels back to their historic levels, and eliminated hypoxic events associated with the channel.

**Goals**

The project goal develop a strategy to soften the southern shoreline of Lake Pontchartrain, by incorporating natural and nature-based designs to increase the habitat complexity of this highly altered shoreline. Recycled concrete, engineered structures, and other suitable materials of opportunity will be evaluated and utilized as appropriate, and ideally can form a model for expansion to other areas along the hardened shoreline. Machine learning will be incorporated to evaluate best performing configurations modifications to increase effectiveness. The protective structures will be coordinated with USACE to provide needed access corridors for add material to existing foreshore protection, and afford opportunities to beneficially utilize materials from access dredging. Increased SAV beds will help decrease the impact from stormwater discharge that is now discharged directly into Lake Pontchartrain. The project would serve to strengthen conservation relationships with surrounding parishes and governmental organizations, as well as with local stakeholders involved in living shoreline construction programs. Additionally, the proximity of the project to the New Orleans area will provide abundant recreational opportunities, as well as a living laboratory to support outreach and educational activities to increase stakeholder engagement, facilitate volunteer events, and train workforce development groups.

**Proposed Solution**

The proposed solution will restore lost estuarine habitat by constructing approximately 3.5 miles of living shorelines between the South Shore Harbor Marina to Lincoln Beach, adjacent to New Orleans East. The first layer would consist of low and wide subtidal breakwater reefs to absorb wave energy. Dredged material will be utilized to create approximately 134 acres of intersecting marsh island platforms on the protected side of the living shoreline reefs. Additionally, through these efforts, 96 acres of would be made more suitable (shallowed quiescent zone) for SAV colonization to enhance aquatic diversity, productivity, and filtration capacity.

## **Project Features**

Living Shoreline Reef – 3.5 miles/18,000 linear feet/20 acres

Marsh Mound Creation – 134 acres

SAV Habitat – 96 acres

## **Preliminary Project Benefits**

1) *What is the project's estimated total net acres after 20 years?*

Net Acres – 100-150 acres

2) *What is the estimated construction cost plus 25% contingency and the estimated fully funded cost?*

The estimated construction cost (CC) plus 25% contingency is \$25-30M. The fully funded cost (FFC) is \$38,437,500.

3) *What is the project cost effectiveness using fully funded cost/net acres?*

Cost effectiveness - \$380,570 FFC/net acre

FFC (\$38,437,500) / Total Net Acres (101 ac) = Cost effectiveness (\$380,570 FFC/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)*

The proposed project will have synergistic effects with multiple restoration and mitigation projects around Lake Pontchartrain. Specifically, it mirrors the approach used for the Bucktown Living Shoreline foreshore protection project, located 7.1 miles to the west. The Bucktown project is the first example of using living shorelines to add resiliency to the USACE Hurricane Storm Damage Risk Reduction System (HSDRRS) that protects the greater New Orleans area. The closest marsh creation project is the USACE constructed Turtle Bayou HSDRRS mitigation site located 5.2 miles to the northeast in the Bayou Sauvage National Wildlife Refuge. Also nearby is the Lake Front inshore artificial reef site, located 0.5 miles to the north of the proposed project, which was most recently enhanced through funding from the Louisiana Trustees Implementation Group.

5) *What is the interior loss rate and/or shoreline loss rate? And what is the source of the data?*

The project area is currently open water.

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?*

Yes, the living shoreline will recreate once existing conditions along the southern shoreline of Lake Pontchartrain, including tidal marsh and SAV habitat. The project would utilize nature-based solutions, thereby providing both ecosystem services and shoreline protection for the lake rim.

- 7) *Does the project result in net positive and direct benefits on critical infrastructure?*  
The project may have minor net positive impact to non-critical infrastructure by providing foreshore protection of the levees and the Northern Pacific Railroad line that is outside protection of HSDRRS.

**Other Considerations**

Gulf sturgeon critical habitat and land ownership.

**Preparer(s) of Fact Sheet and Contact Information**

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Jennifer Smith, Coastal Environment, Inc., (225) 383-7455, jsmith@coastalenv.com



Figure 1. Project Map.



**NOAA**  
**FISHERIES**

# **New Orleans East** *Living Shorelines*

## **REGION 1: Pontchartrain Basin**

*Presenter: Craig Gothreaux, Fisheries Biologist, NOAA*

### **Special Thanks**

*Flood Protection Authority – East  
Orleans Parish & City of New Orleans  
Coastal Environments, Inc. (CEI)*



**PPL36 CWPPRA Regional Planning Team Meeting**

**February 5, 2026**

# Project Vicinity

# New Orleans East LS



# Project Vicinity

# New Orleans East LS

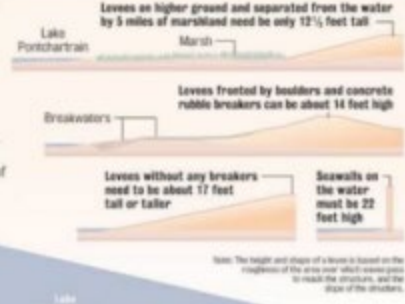
## The South Pontchartrain Levee System

### BARRIERS OF EARTH AND CONCRETE

Levees and floodwalls that protect against flooding from both the Mississippi River and hurricanes are built by the Army Corps of Engineers and are maintained by local levee districts. The corps and the local districts share the construction cost of hurricane levees, while the Mississippi River levees are a federal project. Local levee districts also build and maintain nonfederal, lower-elevation levees with construction money from each district's share of property taxes and state financing.

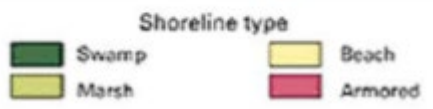
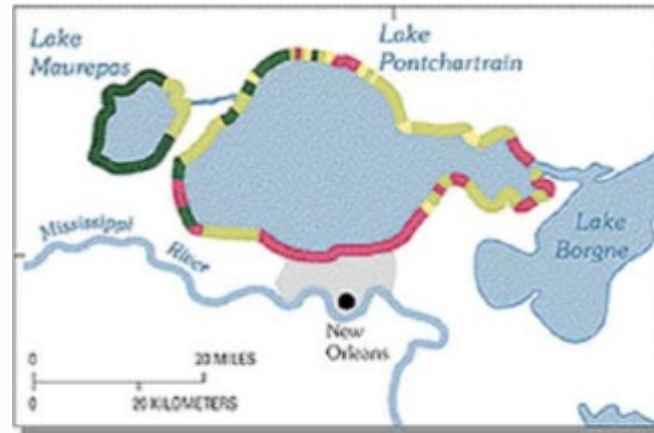
### HEIGHT ISN'T EVERYTHING

Different factors permit Lake Pontchartrain levees of varying elevations to withstand an 11½-foot storm surge plus several feet of waves.



**LEVEES AND FLOODWALLS**  
 Mississippi River  
 Hurricane protection  
 Interior parish

Note: Levees and floodwall elevations are of earth with an 11½-foot storm surge plus several feet of waves. Height is in feet above sea level.



### THE LEVEE SYSTEM:



### FARTHER SOUTH

Residents and businesses in developed areas along bayous and the Mississippi River have successfully argued that the benefits of building levees around their communities outweigh the costs of construction.

#### LARGO TO GOLDEN MEADOW LEVEE

This 40-mile ring levee encircles residential and commercial developments along Bayou Lafourche. Parts of the levee are being raised to counteract subsidence.



#### NEW ORLEANS TO VENICE LEVEES

There are 37 miles of levees in this project on both sides of the Mississippi River between Phoenix and St. Jude to the north and Bohemia and Venice at the southern end of the river. Different pieces of the levee are 60 percent to 99 percent complete.



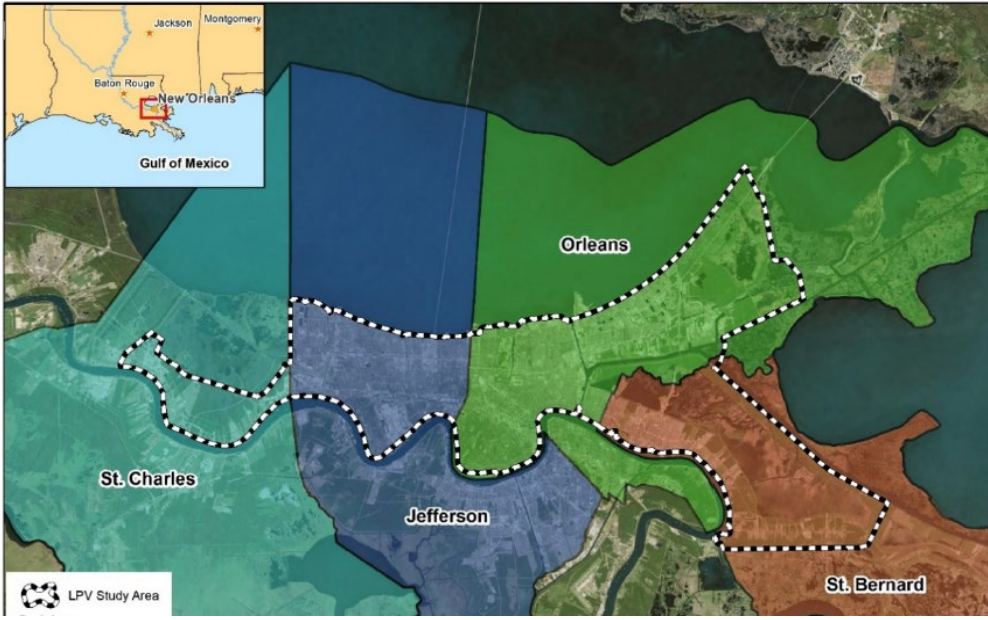
# Highly Altered Landscape

Figure 3-A: A system of levees protects New Orleans

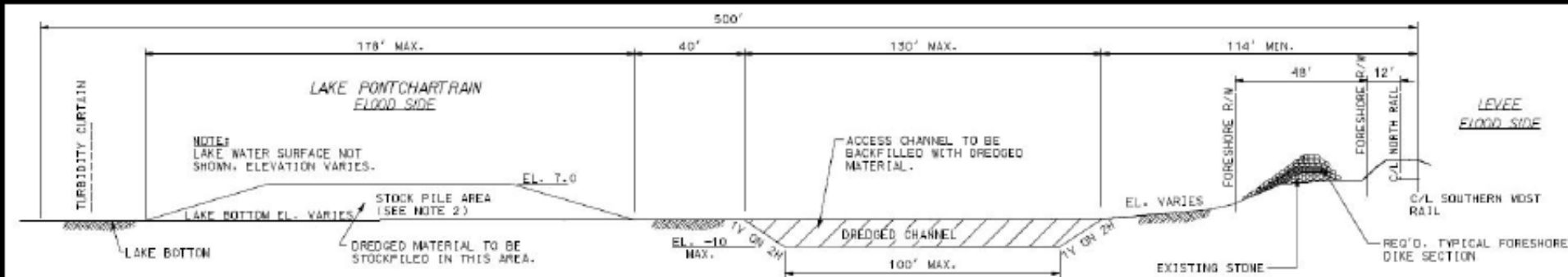
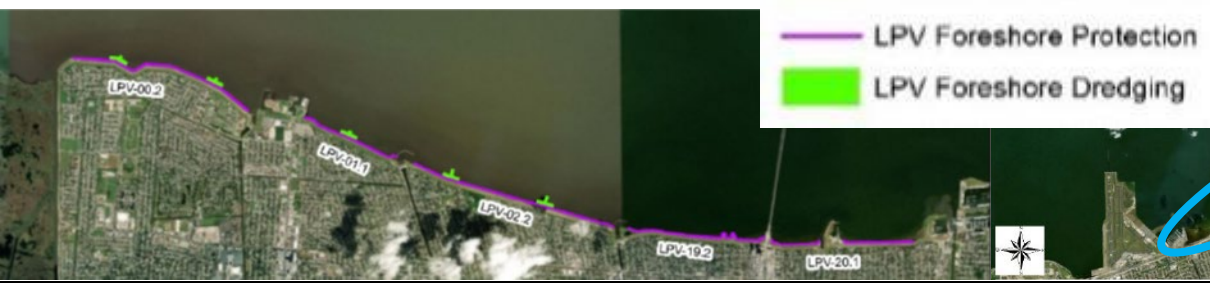
# Lake Pontchartrain and Vicinities (LPV)

## Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS)

### 2021 General Reevaluation Report (Study)



Planning for the future...



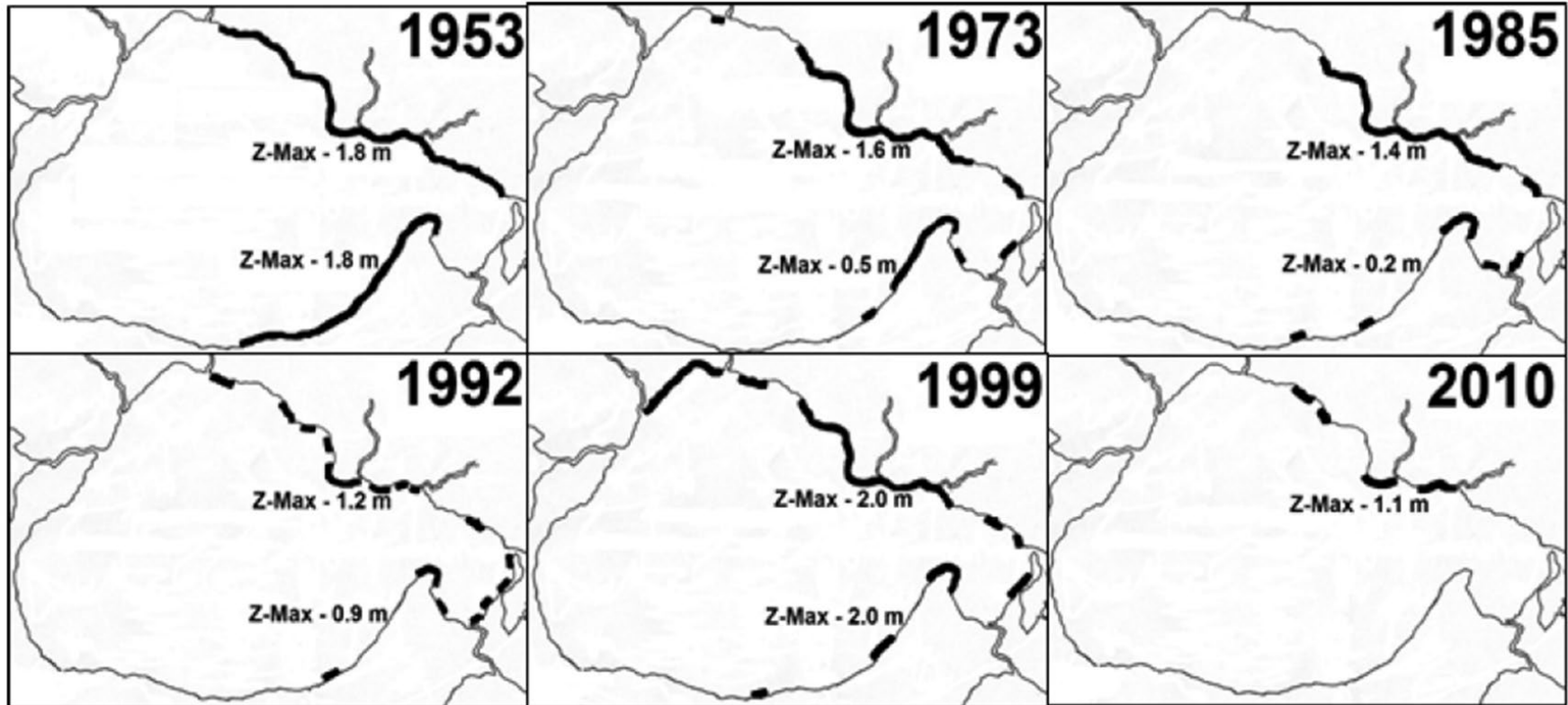


Figure 2. The black line (width arbitrary) indicates the littoral distribution of SAV in Lake Pontchartrain from 1953 to 2010 and the maximum colonization depth (Z-max) along the north and south shores. The south shore was not surveyed in 2010.

**Poirrier et al. 2017**

# Project Area Problems

# New Orleans East LS

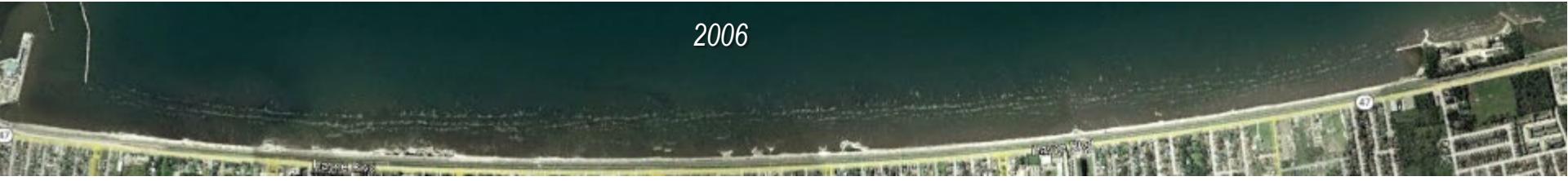
1998



2004



2006



2012



2020



2021



# Project Considerations

# New Orleans East LS

1998



2004



2006



2012



2020

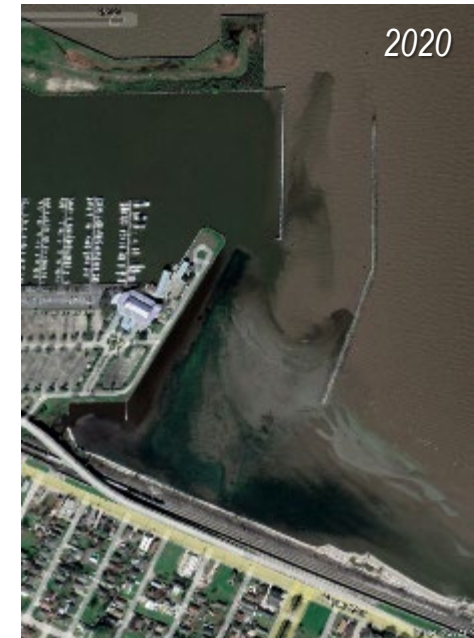
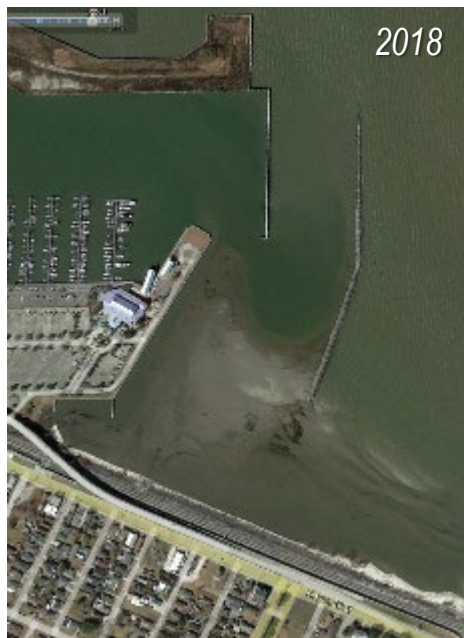


2021



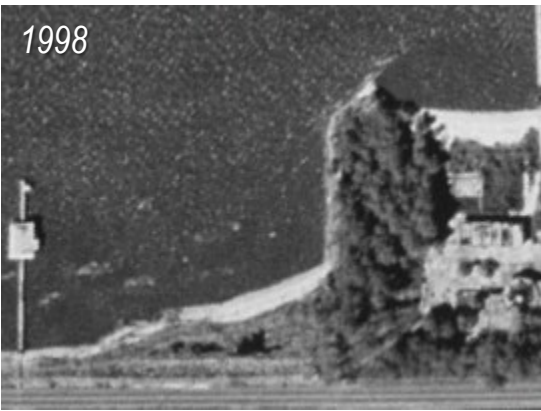
# Project Considerations

# New Orleans East LS



# Project Considerations

# New Orleans East LS





**HSDRRS Outfall Structures**

**LPV *Future* Lift Access Dredging**

**Practicable designs incorporating future maintenance activities, including lifts to flood protection system identified in 2021 LPV Study**

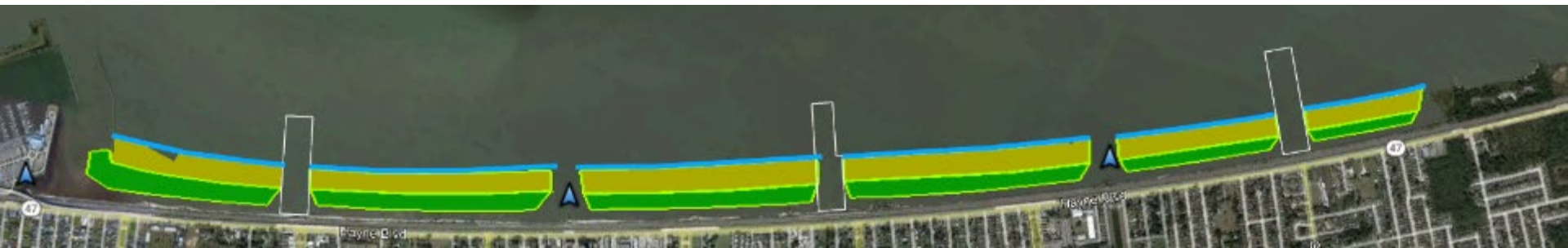
**Nature-based, green infrastructure concepts to compliment HSDRRS**

**Soften a hardened shoreline by re-establishing natural habitats**

Example Project:  
**Project GreenShores**  
Pensacola Bay, Florida

Image © 2026 Airbus

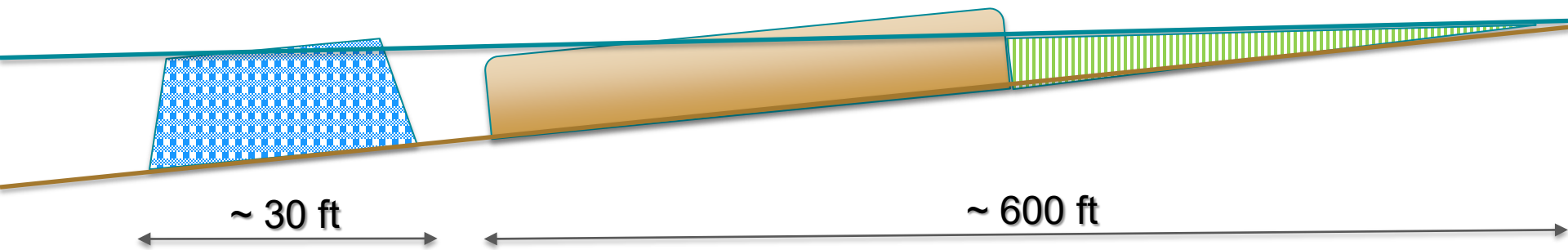
Google Earth



**Low and Wide  
Reef Breakwaters**  
30' crown @ +1' height  
~3.5 miles  
*20 acres reef habitat*

**Marsh Terrace Platforms**  
Dredged material for  
marsh creation  
Overlapping marsh  
mounds  
*134 acres created*

**Enhance SAV Habitat**  
Reduce wave energy  
Enhance ecosystem services  
*96 acres SAV*



## Bucktown Marsh Living Shoreline

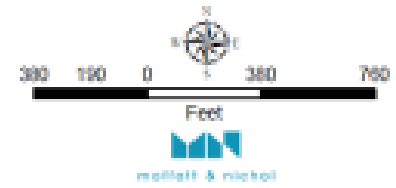
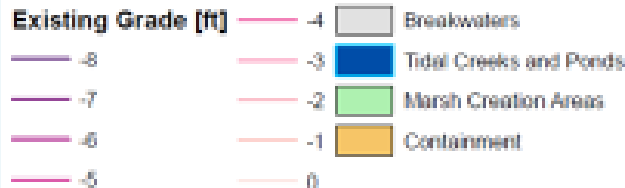
Create marsh and tidal creek habitat to serve as a nursery and refuge for fish, crab, shrimp, and other wetland species

Attenuate wave energy and protect the existing shoreline and levee from erosion

Increase opportunities for community recreation such as kayaking, stand up paddle boarding, and fishing

Rebuild natural first line of defense against storm surge and rising sea levels

Increase the resilience of the levee system



Bucktown Living Shoreline

# Summary

## New Orleans East *Living Shorelines Project*

- ❖ **250 Total Project Acres**
  - ~134 Acres Marsh Created
    - *Overlapping marsh mounds for ecosystem restoration*
  - ~20 Acres of Living Shoreline Reefs (~3.5 miles)
    - *Additional foreshore protection and habitat complexity*
  - ~96 Acres of Improved Habitat for SAV Colonization
    - *Enhanced aquatic diversity and filtration capacity*
  - Improved Recreational User Interface
- ❖ **Construction Cost + 25% Contingency: \$25M – \$30M**
- ❖ **Net Benefits: 100 – 150 Acres**

*Contact information:*

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**PPL36 PROJECT NOMINEE FACT SHEET**  
**February 5, 2026**

**Project Name**

North Rigolets Marsh Creation

**Project Location**

Region 1, Pontchartrain Basin, St. Tammany Parish

**Problem**

Wetland loss in the Pontchartrain Basin is due to erosion of wetlands, saltwater intrusion, subsidence, and hurricane-induced damage. Data from the nearby CRMS 3784 station show an average marsh elevation of +0.56 ft NAVD88 GEOID 12B, whereas the 5-year average water elevation is +0.77 ft NAVD88 GEOID 12B. Additionally, deep subsidence from the GEOTIFF Raster file is 2.20 mm/yr or 0.14 ft over 20 years. The USGS land change trend from 1985 to 2020 for the Pearl River Marshes subunit (244) is -0.14% per year, and the areas within the project footprint are converting to open water according to recent aerial imagery.

**Proposed Solution**

The proposed solution would be to create and nourish approximately 431 acres of tidal marsh, maintain hydrologic patterns and historic flow paths, along the northern shoreline of the Rigolets. Sediment will be hydraulically pumped from Lake St. Catherine into four fully contained marsh creation cells. Temporary earthen containment dikes will be constructed using internal borrow, and will be gapped within three years of construction to allow tidal exchange and access for estuarine organisms. Living shoreline structures will be added to the Rigolets-facing sides of three marsh creation cells to reduce shoreline erosion and enhance aquatic habitat.

**Goals**

The project goal is to restore approximately 431 acres of brackish tidal marsh, along the northern shoreline of the Rigolets and adjacent to Geoghegan Canal, that remains intertidal for as much of the 20 year project life as possible (Figure 1).

**Project Features**

Marsh Creation – 303 acres

Marsh Nourishment – 128 acres

Living Shoreline – 4,137 linear feet

**Preliminary Project Benefits**

- 1) *What is the project's estimated total net acres after 20 years?*  
Net Acres – 300-350 acres
  
- 2) *What is the estimated construction cost plus 25% contingency and the estimated fully funded cost?*  
The estimated construction cost (CC) plus 25% contingency is \$35-40M. The fully funded cost (FFC) is \$51,261,936.
  
- 3) *What is the project cost effectiveness using fully funded cost/net acres?*

Cost effectiveness - \$170,305 FFC/net acre

FFC (\$51,261,936) / Total Net Acres (301 ac) = Cost effectiveness (\$170,305 FFC/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)*

The project is a critical component of a comprehensive strategy, specifically rebuilding the 2023 Coastal Master Plan's New Orleans East Marsh Creation Polygon. Along with the following projects, the proposed project will fortify the structural integrity of the northern Rigolets Pass and would have multiple synergistic effects (Figure 2): 1) PO-179 St. Catherine Island Marsh Creation and Shoreline Protection (7.0 miles to the southwest, funded for E&D), 2) PO-169 N.O. Land Bridge Shoreline Stabilization and March Creation (0.9 miles to the southwest, constructed), 3) PO-22 Bayou Chevee Shoreline Protection (8.3 miles to the southwest, constructed), 4) PO-173 Fritchie Marsh Restoration (1.9 miles to the north, funded for E&D), 5) New Zydeco USACE mitigation project in the Fritchie Marsh (1.7 miles to the north, constructed), 6) New Orleans to Venice – Non-Federal Levees (NOV-NFL) USACE mitigation project in the Fritchie Marsh (1.6 miles to the northwest, constructed), and 7) East Orleans Landbridge Restoration (PO-191) Louisiana Trustee Implementation Group (LA TIG) restoration project (0.9 miles to the southeast, funded for E&D).

- 5) *What is the interior loss rate and/or shoreline loss rate? And what is the source of the data?*

The USGS land change trend from 1985 to 2020 for the Pearl River Marshes subunit (244) is -0.14% per year.

- 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 help maintain the integrity of marshes along the northern Rigolets pass.

- 7) *Does the project result in net positive and direct benefits on critical infrastructure?*

The project may have moderate net positive impact to critical infrastructure including residences and businesses along Geoghagen Canal, Hwy 90/Chef Menteur Hwy and the intersection of LA 433/Old Spanish Trail, as well as the greater Slidell area.

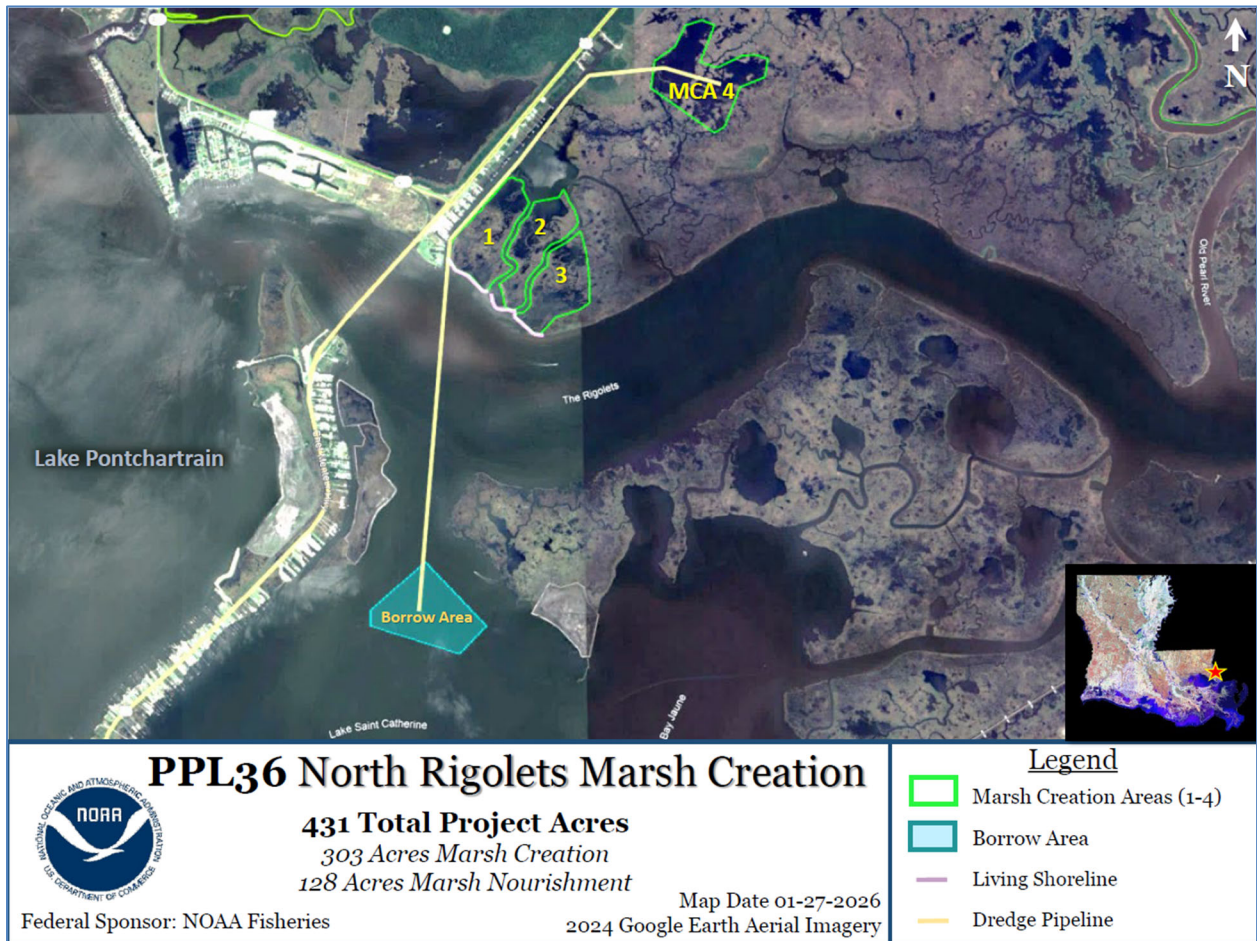
### **Other Considerations**

Gulf sturgeon critical habitat and land ownership.

### **Preparer(s) of Fact Sheet and Contact Information**

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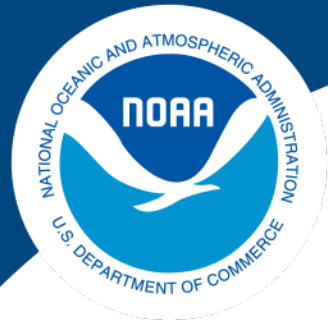
Jason Kroll, NOAA Fisheries, (225) 335-9659, jason.kroll@noaa.gov



**Figure 1.** Project Map.



**Figure 2.** Synergy, Critical Infrastructure, and Critical Landscape Features.



**NOAA**  
**FISHERIES**

# North Rigolets *Marsh Creation Project*

## **REGION 1: Pontchartrain Basin**

*Presenter:* Craig Gothreaux, Fish Biologist, NOAA

*Special Thanks*

*St. Tammany Parish*



**PPL 36 CWPPRA Regional Planning Team Meeting**

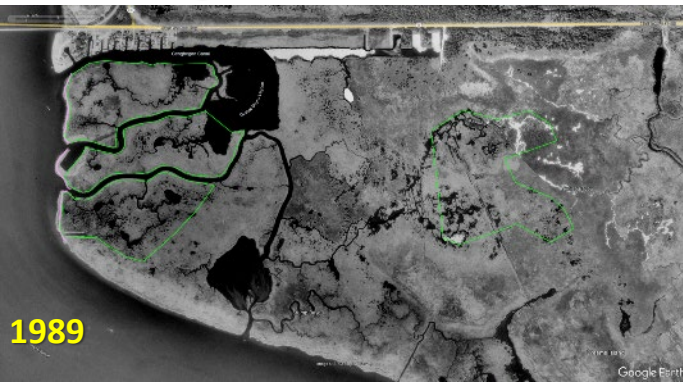
February 5, 2026



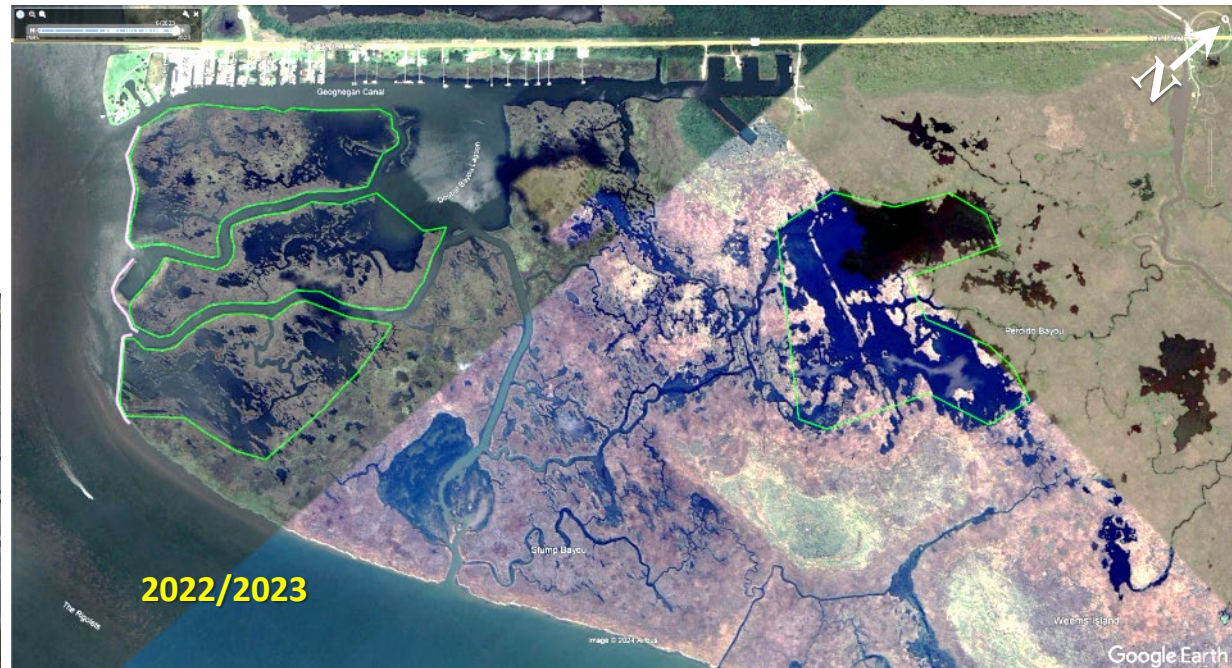
**2023 Coastal Master Plan – New Orleans East Marsh Creation Polygon**

# Project Area Problems

# North Rigolets MC



Land change rate (1985-2020 USGS data) for the Pearl River Marshes subunit (244) is  $-0.14\%/yr$



# Project Elements

# North Rigolets MC



## ❖ 431 Total Project Acres

- Four MCAs
- 303 acres MC
- 128 acres MN
- ❖ 301 Net Acres

## ❖ Lake St. Catherine Borrow Area

- 130 acres
- 4.3 mile dredge pipeline (max)

## ❖ Living Shorelines

- Three MCAs along Rigolets



# Summary

## North Rigolets Marsh Creation Project

### ❖ 431 Total Project Acres

- Four Marsh Creation Areas
  - MCA 1 = 104 ac, MCA 2 = 88 ac, MCA 3 = 92 ac, MCA 4 = 147 ac
- 303 Acres Marsh Creation, 128 Acres Marsh Nourishment

### ❖ Construction Cost + 25% Contingency: **\$35M – \$40M**

### ❖ Net Benefits: **300 – 350 Acres**

Contact information:

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**PPL36 RPT PROJECT FACT SHEET**  
**February 5, 2026**

**Project Name**

Manchac WMA Shoreline Protection

**Project Location**

Region 1, Pontchartrain Basin, St. John the Baptist Parish, Lake Pontchartrain shoreline along the Manchac Wildlife Management Area (2023 CMP: Programmatic Restoration Project – Shoreline Protection)

**Problem**

The Lake Pontchartrain shoreline along this reach has been retreating because of historical logging, soft organic soils, natural subsidence, sea level rise, and wind-driven wave impacts. USGS' shoreline change analysis for the long-term period of record (1998-2023) yielded a shoreline change rate of 15 feet per year (2.4 acres/year). It is estimated that without this shoreline protection project, 48 acres will be lost within 20 years using the USGS rate of change. HDR Engineering, Inc. (HDR) conducted an analysis over a more recent period of record (2010-2019), and the project area is experiencing shoreline loss at a rate of approximately 20 feet/year. The Manchac Landbridge between Lake Pontchartrain and Lake Maurepas is a vital component to the entire Lake Maurepas ecosystem as it limits the amount of brackish water that can enter the lake. The landbridge also plays a critically important role in the Multiple Lines of Defense Strategy to protect surrounding communities against risks from coastal storm impacts.

**Proposed Solution**

After comparing construction costs between graded riprap with lightweight aggregate core (based on a 95% Design Report already completed by HDR for St. John the Baptist Parish) and the Integrated Shoreline Solutions' Wave Screen System (WSS), the less expensive non-rock alternative for protection of this critical shoreline is proposed. The proposed project would construct approximately 6,862 LF (1.3 mi) of wave screen along the western Lake Pontchartrain shoreline at approximately the -6 to -8 ft contour (~200 ft from the shoreline) across an area with a particularly steep nearshore slope and soft organic soils. This is the last component of a comprehensive shoreline protection plan to protect the Manchac Landbridge.

**Goals**

The primary goals of the project are to protect the Lake Pontchartrain shoreline of the Manchac Wildlife Management Area (WMA) by installing a shoreline protection feature along this reach. The specific goals are: 1) protect approximately 6,862 linear feet of critical shoreline, 2) protect approximately 48 acres of highly productive marsh habitat, and 3) protect the landbridge between Lake Pontchartrain and Lake Maurepas.

**Project Features**

Shoreline Protection (i.e. wave screen) – 6,862 linear feet

**Preliminary Ranking Criteria**

- 1) *What is the project's estimated total net acres after 20 years?*  
48 net acres
- 2) *What is the estimated construction cost plus 25% contingency and the estimated fully funded cost?*  
Construction cost plus 25% contingency – \$15M - \$20M  
Estimated fully funded cost – \$44,299,166
- 3) *What is the project cost effectiveness using fully funded cost/net acres?*  
Cost effectiveness – \$44,299,166 / 48 net acre = \$922,899/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).*

This reach of shoreline is the last segment along the western side of Lake Pontchartrain and the eastern side of the Manchac Landbridge in critical need of protection. Three shoreline protection projects are in immediate proximity to the project area, and those projects collectively contribute to an impact greater than their individual footprints. This project would work synergistically with:

1. PO-161 Lake Pontchartrain Hurricane Mitigation – Approximately 5 miles of USACE rock breakwater located immediately to the south of the proposed project area.
  2. Two phases of rock breakwater north of the proposed project area, between Pass Manchac and Tangipahoa River, in Tangipahoa Parish; both complete.
    - a. Phase 1: Approximately 2 miles were completed in 2014 using federal CIAP funds.
    - b. Phase 2 (PO-183): An additional mile of rock breakwater directly north of Pass Manchac was recently completed using CPRA RESTORE Act Parish Matching Program funds.
  3. Approximately 2 miles of rock breakwater from Frenier Park south to nearly the parish line between St. John the Baptist and St. Charles. Construction of this southern reach of shoreline protection within St. John the Baptist Parish is complete and was funded through GOMESA.
- 5) *What is the interior loss rate and/or shoreline loss rate? And what is the source of the data?*

USGS calculated a historical rate of change for the extended boundary (3,754 acres) using an experimental land change analysis. That analysis utilized a total of 324 Landsat Thematic Mapper (TM) satellite scenes to classify land-water for the period 1985 to 2025. The land change rate during that period was +0.03 percent per year (%/yr). USGS' shoreline change analysis for the long-term period of record (1998-2023) yielded a shoreline loss rate of 15 feet per year (2.4 acres/year).

HDR Engineering, Inc. (HDR) conducted an analysis over a more recent period or record (2010-2019), and the project area is experiencing shoreline loss at a rate of approximately 20 feet/year.

- 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 shoreline protection project would maintain the structural integrity of the Manchac Landbridge, a natural feature that directly impedes storm surge and is a vital component of the Multiple Lines of Defense Strategy for this region. It is also the final piece of unprotected shoreline in the vicinity along the rim of Lake Pontchartrain. If left unprotected, this reach would continue to experience shoreline retreat and could eventually undermine the constructed projects that are immediately adjacent and the land they are protecting.

- 7) *Does the project result in net positive and direct benefits on critical infrastructure?*

The proposed project is intended to maintain the swamp and marsh of the Manchac Landbridge, which serves as a protective barrier against storm surge and waves during tropical events to communities west of Lake Pontchartrain.

U.S. Interstate 55 (I-55) is the main thoroughfare that runs north-south directly across the Manchac Landbridge and west of the proposed project, and although it is a raised stretch of interstate, it has been closed during periods of intense smoke and/or fog. When I-55 is closed, Old U.S. 51 (aka, "Low Road 51"), which runs parallel and adjacent to I-55, is the only other access route across this corridor. Both highways also serve as Hurricane Evacuation Routes.

### **Other Considerations:**

- Due to the project being on a Wildlife Management Area owned by the State of Louisiana, Department of Wildlife and Fisheries (LDWF), who has been fully supportive of the project, land rights would not be an issue. St. John the Baptist Parish has also been fully supportive of constructing a shoreline protection feature along this reach.
- Because St. John the Baptist Parish has already funded a 95% Design for this reach of shoreline protection, there may be a cost savings to the CWPPRA program and an ability to expedite this project through the Phase 1 CWPPRA process.
- St. John the Baptist Parish has already obtained coastal use permits through the state and USACE (Permit # MVN-2022-00128-EPP; expiration dates are April 2028 and May 2028, respectively), indicating that much of the environmental work and clearances have been obtained.
- Surveys conducted by HDR indicate that there are no known pipelines or major anomalies within the project area. Additionally, no known cultural resources were found within the proposed reach.
- Access dredging would not be needed for most of the project footprint due to the steep nearshore bathymetry.

**Preparer(s) of Fact Sheet:**

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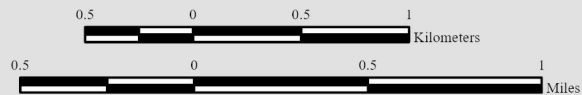
Brett L. Geesey, HDR Engineering, Inc., (337) 347-5598, [brett.geesey@hdrinc.com](mailto:brett.geesey@hdrinc.com)



## Manchac WMA Shoreline Protection (PPL35 Candidate)



Project Area



Scale: 1:35,000

Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
Wetland and Aquatic Research Center  
Lafayette, La.

Image Source:  
ESRI Basemap

Map ID: 2025-11-0016  
Map Date: July 21, 2025

# CWPPRA PPL36

## Manchac WMA Shoreline Protection

### Region 1, Pontchartrain Basin, St. John the Baptist Parish



#### Contacts:

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Angela Trahan, NRCS, (337) 291-3142; [Angela.Trahan@usda.gov](mailto:Angela.Trahan@usda.gov)

#### Partners:

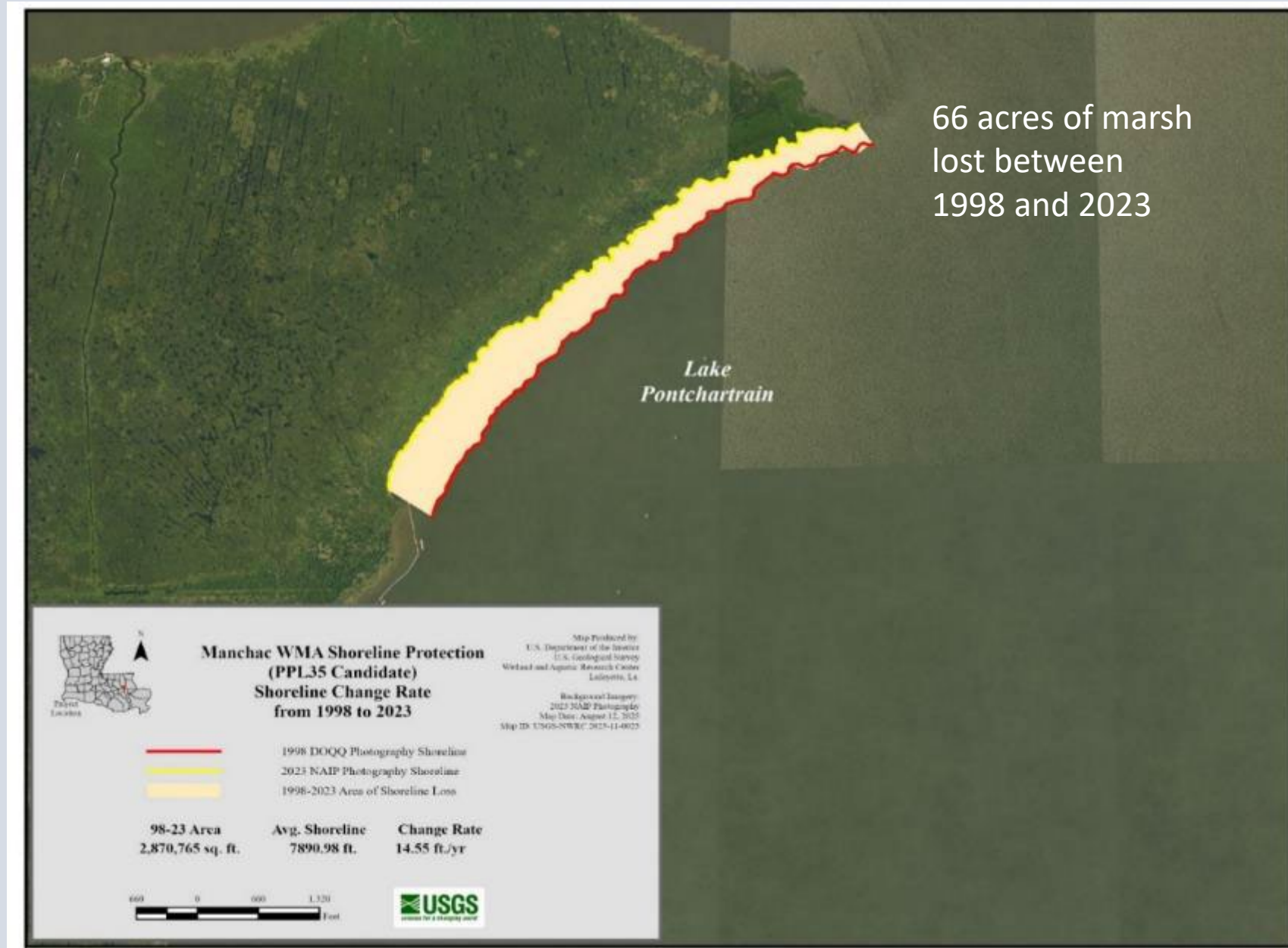
St. John the Baptist Parish

Louisiana Department of Wildlife and Fisheries

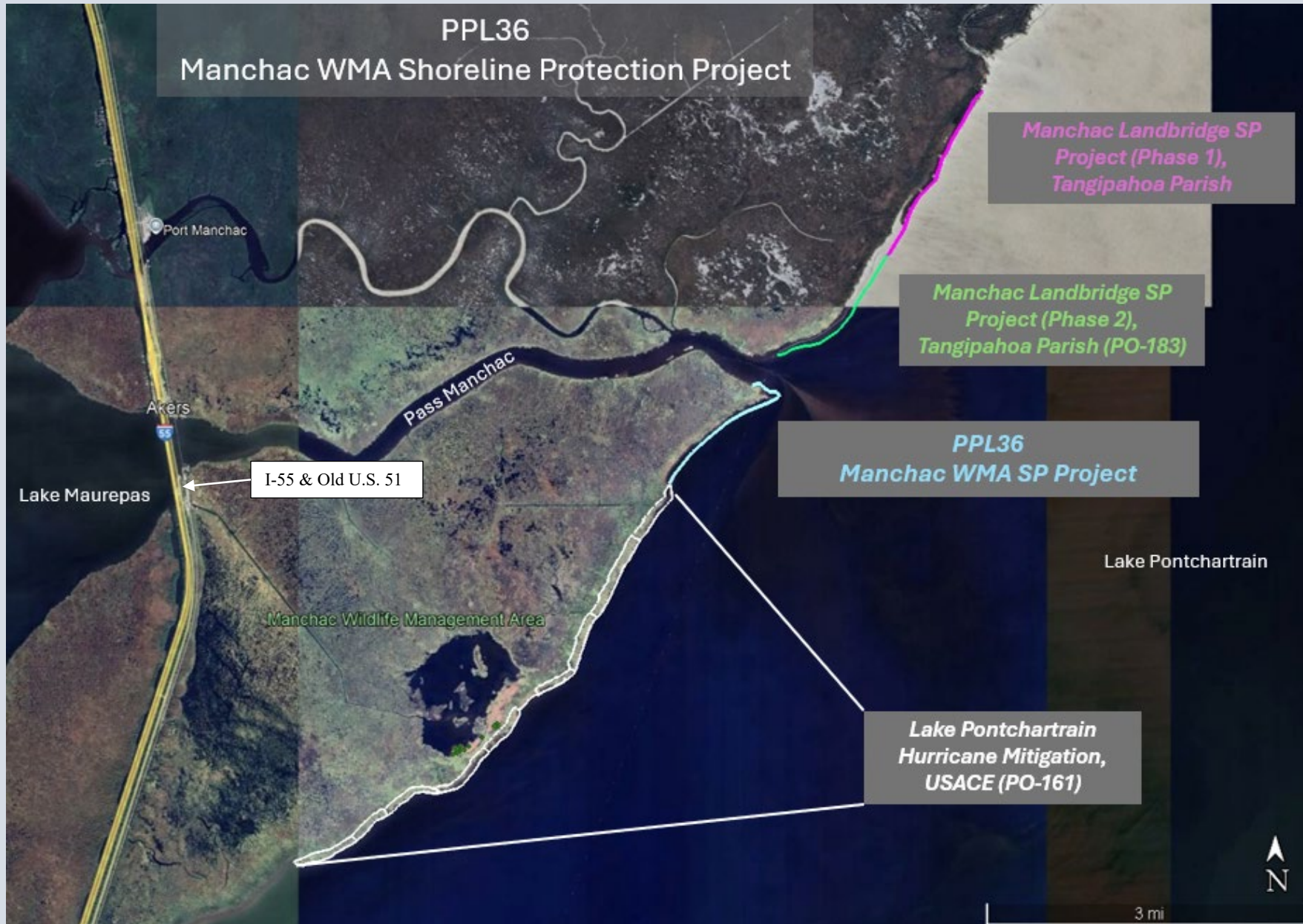
# PPL36 Manchac WMA Shoreline Protection



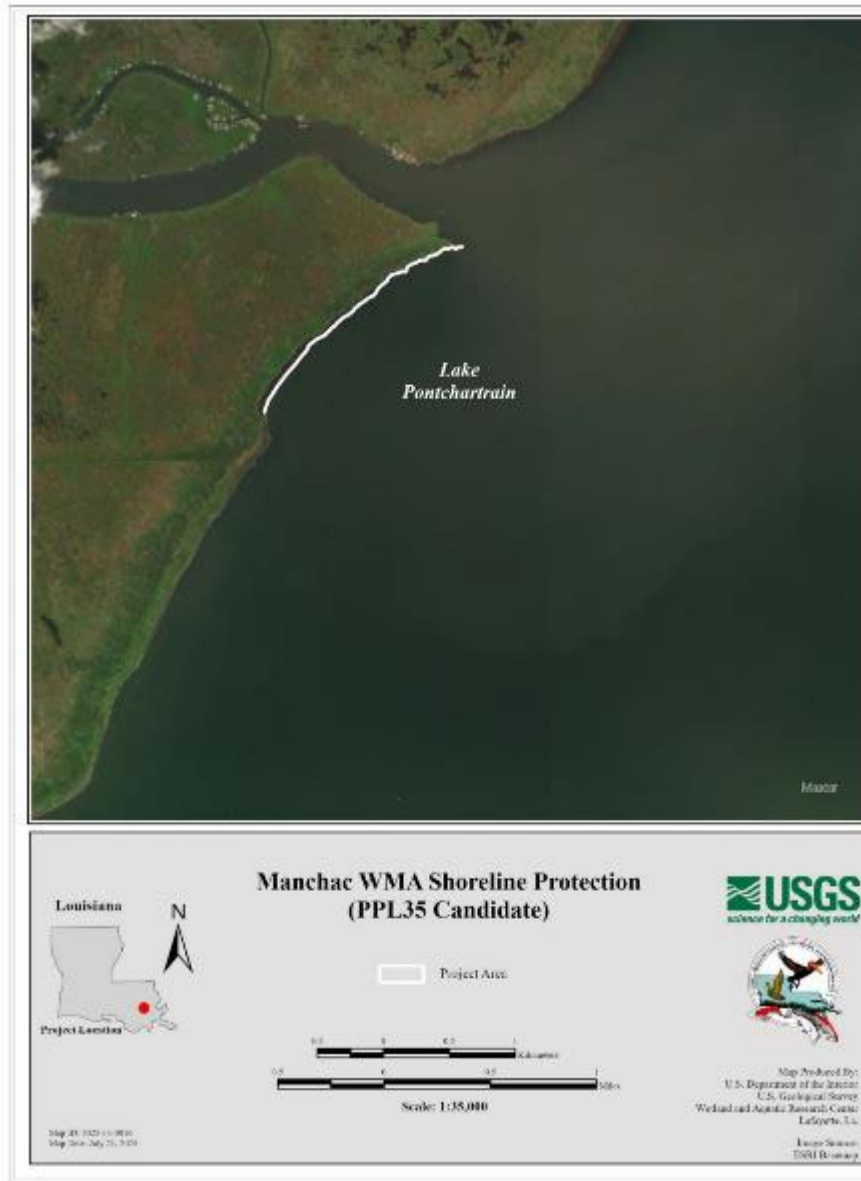
# PPL36 Manchac WMA Shoreline Protection Shoreline Erosion Rate



# PPL36 Manchac WMA Shoreline Protection Synergy and Critical Infrastructure



## Manchac WMA Shoreline Protection



### Problem

- Shoreline retreat along Lake Pontchartrain due to historical logging, soft organic soils, natural subsidence, sea level rise, and wind-driven wave impacts.
- Shoreline loss rate of 15 ft/yr (2.4 acres/yr)

### Proposed Solution and Goals

- Halt or reduce erosion of approximately 6,862 linear feet of critical shoreline by installing a shoreline protection feature
- Protect approximately 48 acres of highly productive marsh habitat
- Protect the landbridge between Lake Pontchartrain and Lake Maurepas

### Other Considerations

- Previous 95% Design completed by HDR consisted of graded riprap with lightweight aggregate core
- PPL36 cost proposal is based on installing Wave Screen System, but other alternatives will be considered.

Estimated construction cost + 25% contingency:

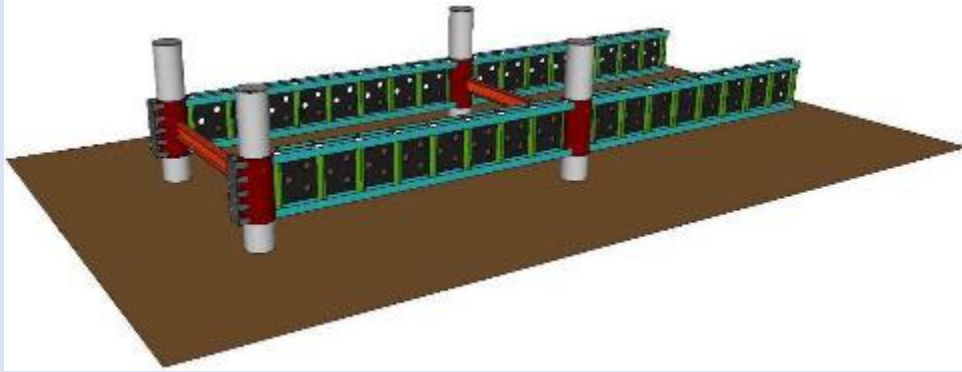
**\$15M - \$20M**

Estimated net benefits after 20 years:

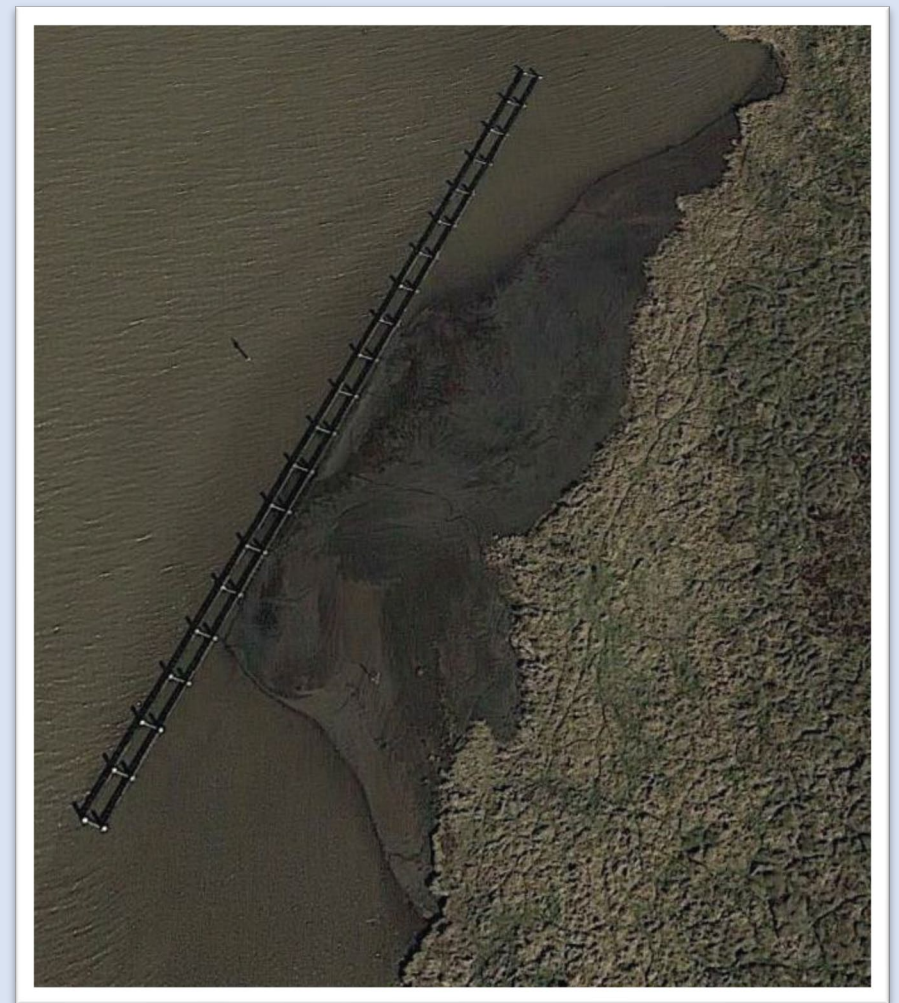
**48 net acres**

## LA-16 Non-Rock Alternatives to Shoreline Protection Demonstration Project:

Wave Screen System(WSS) – Integrated Shoreline Solutions, LLC  
(Designed by Royal Engineers & Consultations)



- Double Wall of HDPE sheets supported by steel pilings and framing, with 6-inch holes
- 125-150 ft from shoreline (~4 ft of water)
- Screens hung down about 4 feet, about 1-1.5 ft above the bay bottom

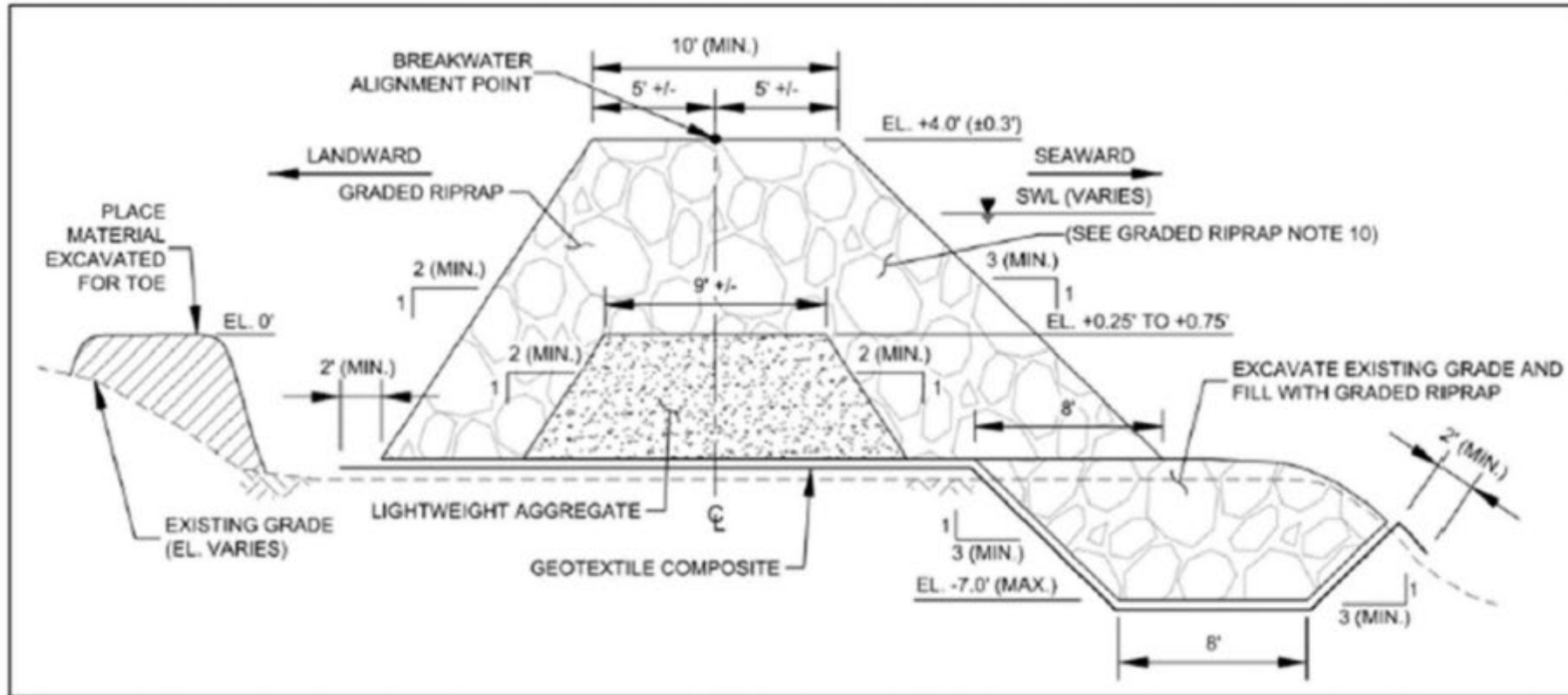


**Shoreline Change = - 1.8 ft/y**  
**~ 98% slower than the Reference Area**

**Positive Soil Elevation Change behind the WSS**  
**Accretion of 0.63ft underneath**

# PPL36 Manchac WMA Shoreline Protection HDR Design - Graded Riprap with Lightweight Aggregate Core

## Manchac WMA Shoreline Protection Proposed Design



HDR

**PPL33 PROJECT NOMINEE FACT SHEET**  
**February 6, 2026**

**Project Name**

Biloxi Marsh Shoreline Protection

**Project Location**

Region 1, Pontchartrain Basin, St. Bernard Parish, Lake Borgne (Biloxi Marsh WMA)  
SMP Programmatic Restoration Project: Shoreline Protection.

**Problem**

Historic wetland loss in the area has been primarily due to shoreline erosion caused by seasonal wave action, sediment deprivation, and sea level rise. Additionally, changing salinity patterns from the Mississippi River Gulf Outlet (MRGO) has resulted in the loss of rangia clams that historically acted as natural shoreline buffers. Based on the hyper-temporal analysis conducted by USGS to detect land change trends from 1984 to 2022, the interior loss rate for the Biloxi Marsh area was calculated to be -0.32%/yr. Using maps from 1998 and 2021, Lake Borgne shoreline erosion rates were calculated along the Biloxi Marshes Wildlife Management Area. A weighted shoreline erosion rate in that area were estimated to be -20 ft/yr with an average loss of coastal shoreline at a rate of 6.3 acres per year. It is estimated that without the project there would be 126 acres lost due to shoreline erosion.

**Proposed Solution**

To reduce costs from PPL33 proposed LWAC foreshore breakwater various shoreline protection alternatives were evaluated, including a revetment and a nearshore breakwater. Based on this assessment we propose utilizing the nearshore breakwater as it will require the least amount of material while accomplishing project goals. The nearshore breakwater will be placed in shallow water close to the bank as possible (-1' contour) and have a crown elevation of +4.0 ft. NAVD 88. In areas where the bank is highly irregular the breakwater will shift landward to maintain a straight alignment. Approximately 15,592LF of Lake Borgne Shoreline would be protected and existing bayous and waterways would be left open for fisheries and boating access

**Goals**

Specific goals of the project are 1) to construct approximately 15,952 LF of foreshore rock dike and 2) protect approximately 126 acres of highly productive brackish and saline marsh habitat over the 20-year project life. The total project footprint is 223 acres.

**Project Features**

Shoreline Protection – 15,952 LF of shoreline breakwaters  
Marsh Protected – 118 acres

**Preliminary Ranking Criteria**

- 1) *What is the project's estimated total net acres after 20 years?*  
Net Acres- 118

2) *What is the estimated construction cost plus 25% contingency and the estimated fully funded cost?*

The estimated construction cost plus 25% contingency is \$17,857,335.

The estimated fully funded cost is \$39,286,137.

3) *What is the project cost effectiveness using fully funded cost/net acres?*

Cost effectiveness - \$327,732/acre

Total fully funded cost (\$39.0 M) / Total Net Acres (118 ac) = Cost effectiveness –  
(\$330,508/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)*

- Lake Borgne Marsh Creation Project (PO-180)  
This project will create approximately 1,548 acres of marsh, extending four miles from Shell Beach on the southern rim of Lake Borgne to Lena Lagoon on the east.
- Lake Borgne Shoreline Protection Project (PO-30)  
This project consists of approximately 5 miles of shoreline protection consisting of rock breakwaters.
- MRGO and Lake Borgne (PO-95)  
This project will construct approximately 15,700 linear feet of stone foreshore dike along the southern shoreline of Lake Borgne, west of Shell Beach. CPRA is acquiring portions of the four oyster leases that are impacted by this project.
- Biloxi Marsh Shoreline Protection (PO-72)  
The project goal was to minimize shoreline retreat that helps to protect a portion of the marshes in the Biloxi Wildlife Management Area, thus helping to save an ecosystem that also serves as a protective barrier for the City of New Orleans and surrounding area against surge and waves during tropical events.

5) *What is the interior loss rate and/or shoreline loss rate? And what is the source of the data?*

Based on the hyper-temporal analysis conducted by USGS to detect land change trends from 1984 to 2022, the interior loss rate for the Biloxi Marsh area was calculated to be -0.32%/yr. Using maps from 1998 and 2021, Lake Borgne shoreline erosion rates were calculated along the Biloxi Marshes Wildlife Management Area. A weighted shoreline erosion rate in that area were estimated to be -20 ft/yr

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 would protect a large portion of the Lake Borgne shoreline as well as numerous interior ridges near that shoreline.

7) *Does the project result in net positive and direct benefits on critical infrastructure?*

No.

**Other Considerations**

This project could have potential sturgeon considerations.

**Preparer(s) of Fact Sheet and Contact Information**

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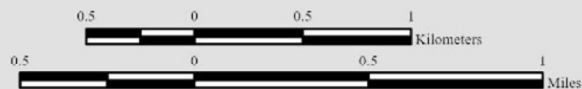


## Biloxi Marsh Shoreline Protection (PPL33 Candidate)



- Shoreline Protection
- Project Boundary

Note: All features are proposed.



Scale: 1:35,000



Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
Wetland and Aquatic Research Center  
Baton Rouge, LA

Image Source:  
2021 NAIP CIR

Map ID: 2023-11-0015  
Map Date: June 23, 2023

PPL36

# Biloxi Marsh Shoreline Protection

Region 1, Pontchartrain Basin



Contacts:

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Fish and Wildlife Biologist

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(337) 291-3127



# 2023 State Master Plan – Biloxi Marsh Shoreline Protection

## PROGRAMMATIC RESTORATION PROJECTS

CPRA implements several types of projects that are not individually identified in the master plan. With the exception of barrier island maintenance, these projects are often smaller scale, designed to address site-specific issues, and typically provide highly localized benefits. While these types of projects are not explicitly listed in the plan, they are consistent with the master plan. More information on programmatic restoration projects can be found on p. 64.



**Barrier Island Maintenance**



**Oyster Reef Restoration**



**Shoreline Protection**



**Bank Stabilization**



**Programmatic Restoration**



Lake Borgne

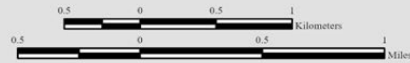
Bayou Grande

### Biloxi Marsh Shoreline Protection (PPL33 Candidate)



- Shoreline Protection
- Project Boundary

Note: All features are proposed.



Scale: 1:35,000

Map ID: 2023-11-0015  
Map Date: June 23, 2023

Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
Wetland and Aquatic Research Center  
Baton Rouge, LA

Image Source:  
2021 NAIP CIR



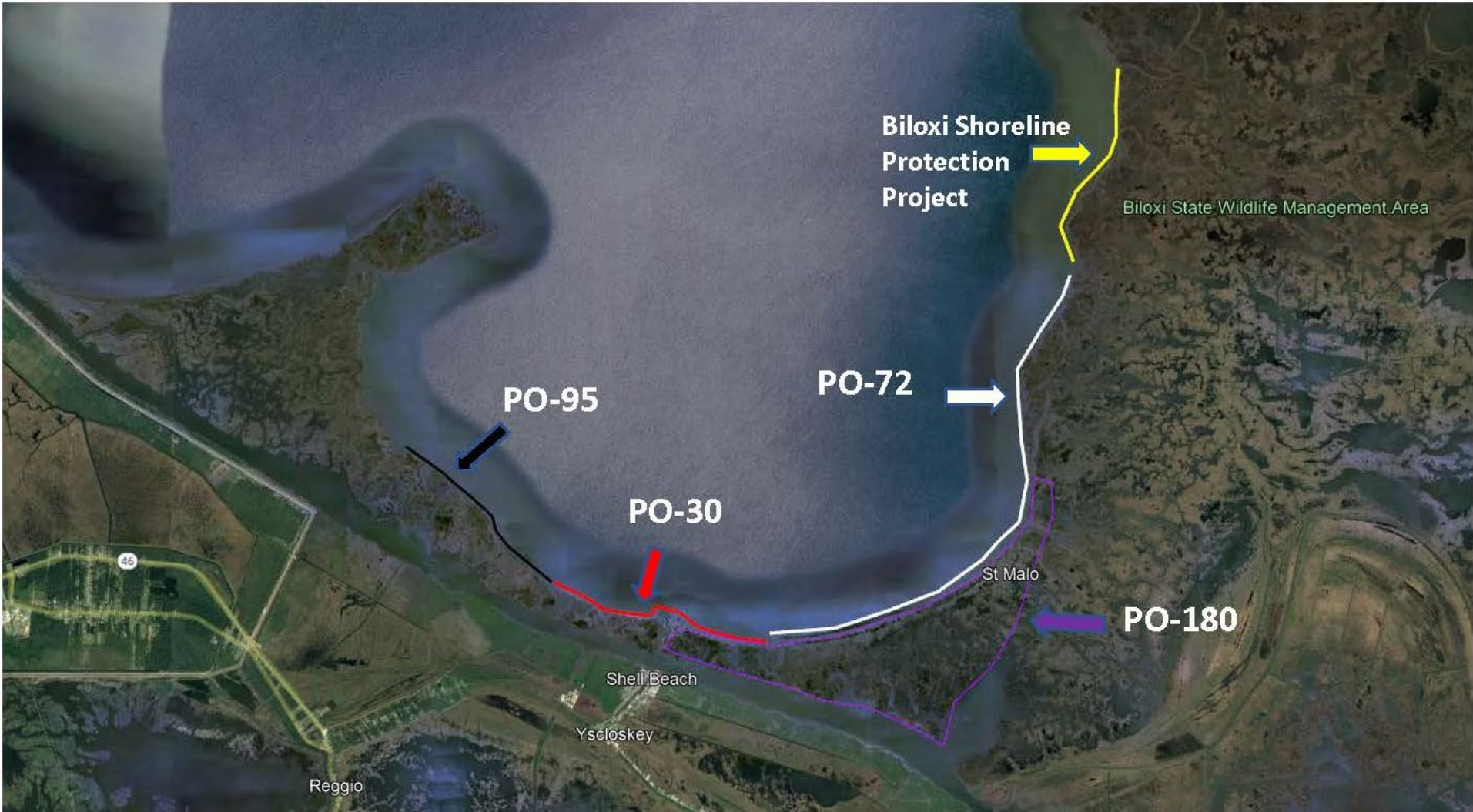
# Biloxi Marsh Shoreline Protection (PPL33 Candidate) Shoreline Change Rate from 1998 to 2021

Map Produced by:  
U.S. Department of the Interior  
U.S. Geological Survey  
Wetland and Aquatic Research Center  
Baton Rouge, La.  
Background Imagery:  
2021 NAIP Photography  
Map Date: June 23, 2023  
Map ID: USGS-NWRC 2023-11-0016

- 1998 DOQQ Photography Shoreline
- 2021 NAIP Photography Shoreline
- 1998-2021 Area of Shoreline Loss

	98-21 Area	Avg. Shoreline	Change Rate
Reach 1	5,432,172 sq. ft.	7,649 ft.	-31 ft./yr
Reach 2	5,962,759 sq. ft.	17,520 ft.	-15 ft./yr







**Biloxi Marsh Shoreline Protection  
(PPL33 Candidate)**



-  Shoreline Protection
-  Project Boundary

Note: All features are proposed.



Scale: 1:35,000



Map Produced By:  
U.S. Department of the Interior  
U.S. Geological Survey  
Wetland and Aquatic Research Center  
Baton Rouge, LA

Image Source:  
2021 NAIP CIR

Map ID: 2023-11-0015  
Map Date: June 23, 2023

- Construct 16,000 LF of Foreshore Rock Dike with Light Weight Agg. Core
- 233 acres of marsh protected
- Net acres = 100 - 150
- Construction plus contingency \$10M - \$15M
- Project synergy – Lake Borgne MC (PO-180), Lake Borgne SP (PO-30), MRGO and Lake Borgne (PO-95), and Biloxi Marsh SP (PO-72).