Coastal Wetlands Planning Protection & Restoration Act

32nd Priority Project List

Region 2

Regional Planning Team Meeting

Lead:
Sarah Bradley, USACE

February 10, 2022

Announcements

- PPL 32 RPT meetings to accept project nominees:
  - Region IV, Feb. 8, 2022, 9:30 am
  - Region III, Feb. 9, 2022, 9:30 am
  - Region II, Feb. 10, 2022, 9:30 am
  - Region I, immediately following Region II

Region 2 Parishes

- Eligible parishes for basins in Region 2 include:
- Barataria Basin
  - **Plaquemines Parish**
  - **Jefferson Parish**
  - **Orleans Parish**
  - **Ascension Parish**
  - **Assumption Parish**
  - **St. James Parish**
  - **St. Charles Parish**
  - **Lafourche Parish**
  - **St. John the Baptist Parish**
- Breton Sound Basin
  - **Plaquemines Parish**
  - **St. Bernard Parish**

RPT Meetings

- Project proposals should be consistent with the 2017 State Master Plan.
- A project can only be nominated in one basin except for coastwide projects
- Proposals that cross multiple basins shall be nominated in one basin only, based on the majority area of project influence.
- If similar projects are proposed within the same area:
  - RPT Lead will call for a break
  - RPT representatives will then participate in a “breakout session” via WebEx to determine the path forward

RPT Meetings

- All proposals submitted in advance will go in the order indicated on the agenda.
- A request for all other proposals will occur after advance submissions.
- Limit project proposals to 5 minutes.
- Public comments on project proposals will be accepted verbally during the RPT meetings and in writing by February 17, 2022.
- Limit comments/questions during meeting to PPL 32 subject proposals and processes.

Coastwide Projects

- Proposes a proven technique applicable across the coast (e.g. vegetative planting)
- Nominated at any RPT meeting
- Engineering/Environmental Workgroups will validate that coastwide projects fit CWPPRA Standard Operating Procedures criteria
- All coastal parishes & agencies will vote on selection of one coastwide nominee

Demonstration Projects

- Demonstrates a coastal wetlands restoration technique or material that can be transferred to other areas of the coastal zone
- Engineering/Environmental Workgroups will validate that demos fit CWPPRA Standard Operating Procedures criteria
- All coastal parishes & agencies will vote on selection of up to 6 demos.
- Previous demo candidates must be ***re-nominated*** for PPL 32.

Coastwide Electronic Vote (Feb. 24th) to select:

Projects per Basin

(Determined by loss rates, the highest loss rates have the most projects)

4 Barataria
4 Terrebonne
3 Breton Sound
3 Pontchartrain
2 Mermentau
2 Calcasieu/Sabine
2 Teche/Vermilion
1 Atchafalaya
1 Coastwide
22 Total

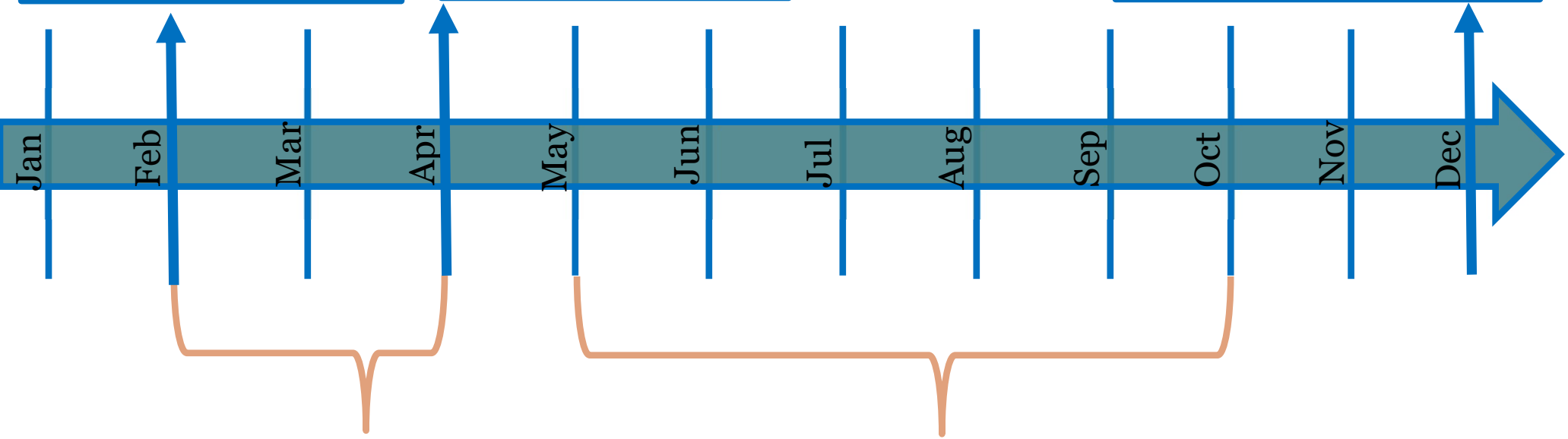
& up to 6 demos

PPL 32 Timeline

Coastwide Electronic Vote (24 Feb)
- 21 Basin
- 1 coastwide
- Up to 6 demos

April Technical Committee Mtg
- 10 candidates
- Up to 3 demos

December Technical Committee Mtg
- Recommend up to 4 projects for Phase 1 funding



March – April 2022
- Agencies assigned to projects
- Fact sheets developed
- Workgroup review
- Workgroups may recommend that no demos move forward

May – October 2022
- Site visits
- Workgroup evaluations

Written Comments

- Send written comments on projects & demos proposed today to the CWPPRA program manager
- **Deadline: February 17, 2022**

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

Email: Sarah.C.Bradley@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 Alice Kerl at Alice.P.Kerl@usace.army.mil

Region 2

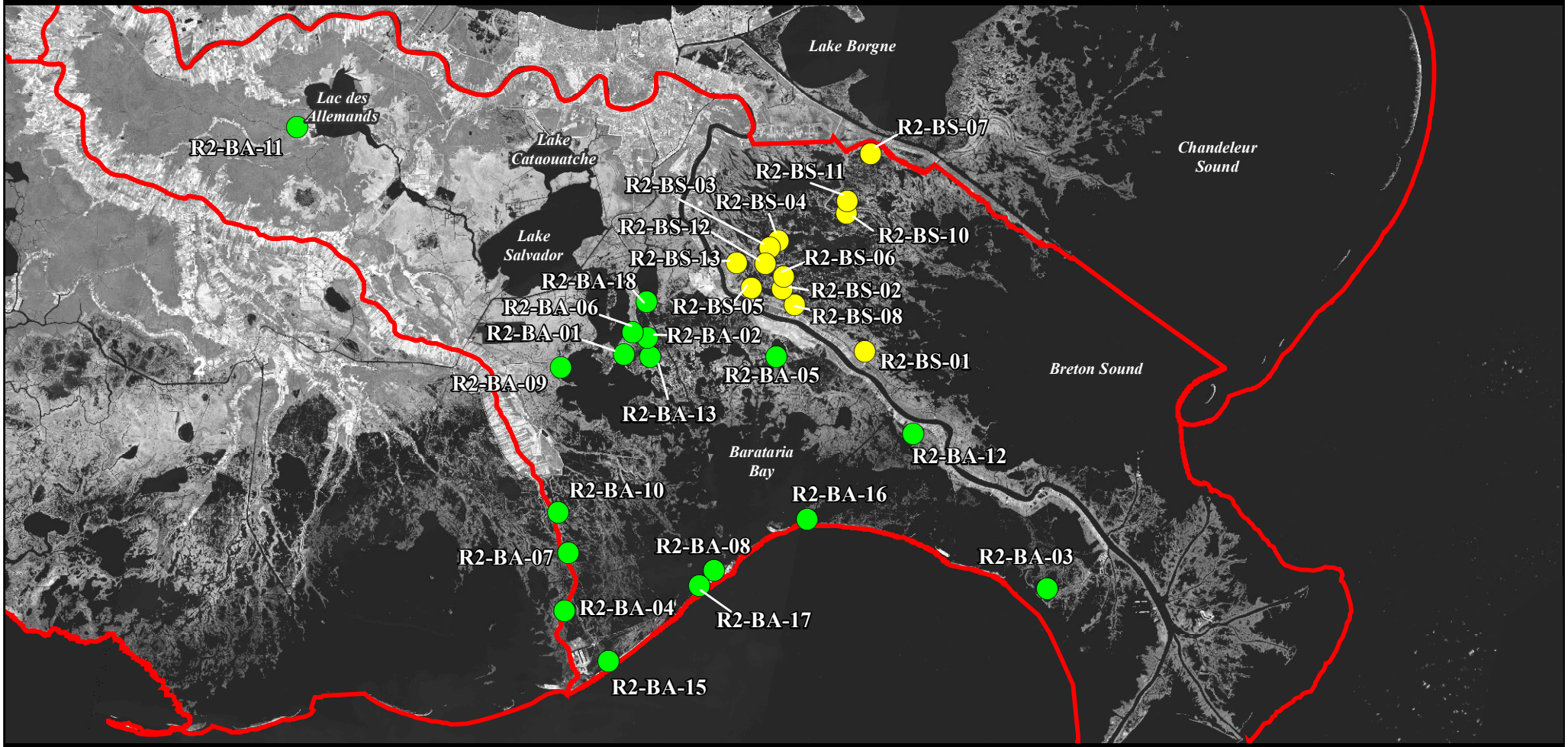
Barataria

Agency	Region	Basin	Project ID	Project Name
NRCS	2	BA	R2, BA-01	North Central Turtle Bay Marsh Creation
NRCS	2	BA	R2, BA-02	West Dupre Cut Marsh Creation
USACE	2	BA	R2, BA-03	Red Pass Ridge and Marsh Restoration
USACE	2	BA	R2, BA-04	Southwest Leeville Marsh Creation
FWS	2	BA	R2, BA-05	Lake Hermitage Shoreline Protection and Marsh Creation
FWS	2	BA	R2, BA-06	Bayou Rigolettes East Marsh Creation
FWS	2	BA	R2, BA-07	East Bayou Lafourche Marsh Creation
FWS	2	BA	R2, BA-08	Fifi Island Marsh Creation
FWS	2	BA	R2, BA-09	Northwest Little Lake Marsh Creation
FWS	2	BA	R2, BA-10	Southeast Golden Meadows Marsh Creation
EPA	2	BA	R2, BA-11	Bayou Chevreuil Hydrologic Restoration and Vegetative Planting
EPA	2	BA	R2, BA-12	Bayou eau Noire Ridge Restoration and Marsh Creation
EPA	2	BA	R2, BA-13	Three Bayou Bay Marsh Creation
NMFS	2	BA	R2, BA-14	Couba Island Living Shoreline
NMFS	2	BA	R2, BA-15	Bayou Moreau March Creation
NMFS	2	BA	R2, BA-16	Grand Pierre Barrier Island Restoration
NMFS	2	BA	R2, BA-17	Grand Isle Bayside Marsh Creation
NMFS	2	BA	R2, BA-18	Southeast Lafitte Marsh Creation
NMFS	2	BA	R2, BA-19	Little Lake Dedicated Dredging near Brusle Lake
NMFS	2	BA	R2, BA-20	East Lake Hermitage Marsh Creation

Breton Sound

Agency	Region	Basin	Project ID	Project Name
NRCS	2	BS	R2, BS-01	Bohemia Spillway Outfall Managment - Lower Grand Bayou
NRCS	2	BS	R2, BS-02	Horsepower Canal Marsh Creation
FWS	2	BS	R2, BS-03	Spanish Lake Shoreline Restoration (Shoreline Berm/Marsh Creation)
FWS	2	BS	R2, BS-04	Spanish Lake- Grand Lake Marsh Creation
FWS	2	BS	R2, BS-05	Carlisle Ridge Restoration and Marsh Creation South
FWS	2	BS	R2, BS-06	River aux Chenes Marsh Creation-South
FWS	2	BS	R2, BS-07	Yscloskey Marsh Creation
EPA	2	BS	R2, BS-08	Davant Marsh Creation (Increment 1)
EPA	2	BS	R2, BS-09	Reggio East Marsh Creation
EPA	2	BS	R2, BS-10	Bayou Terre aux Boeufs Ridge Restoration and Marsh Creation
NMFS	2	BS	R2, BS-11	Bayou Grosbec Marsh Creation
NMFS	2	BS	R2, BS-12	River aux Chenes North Marsh Creation
NMFS	2	BS	R2, BS-13	Carlisle Ridge Restoration and Marsh Creation North
NMFS	2	BS	R2, BS-14	East Lake Lery Marsh Creation
NMFS	2	BS	R2, BS-15	Lake Lery Marsh Creation and Rim Restoration Phase III

Region 2 PPL32 Nominated Projects



Barataria Basin Project

R2-BA-01	North Central Turtle Bay Marsh Creation
R2-BA-02	West Dupre Cut Marsh Creation
R2-BA-03	Red Pass Ridge and Marsh Restoration
R2-BA-04	Southwest Leeville Marsh Creation
R2-BA-05	Lake Hermitage Shoreline Protection and Marsh Creation
R2-BA-06	Bayou Rigolettes East Marsh Creation
R2-BA-07	East Bayou Lafourche Marsh Creation
R2-BA-08	Fifi Island Marsh Creation
R2-BA-09	Northwest Little Lake Marsh Creation
R2-BA-10	Southeast Golden Meadow Marsh Creation
R2-BA-11	Bayou Chevreuil Hydrologic Restoration and Vegetative Planting
R2-BA-12	Bayou eau Noire Ridge Restoration and Marsh Creation
R2-BA-13	Three Bayou Bay Marsh Creation
R2-BA-15	Bayou Moreau Marsh Creation
R2-BA-16	Grand Pierre Barrier Island Restoration
R2-BA-17	Grand Isle Bayside Marsh Creation
R2-BA-18	Southeast Lafitte Marsh Creation

Breton Sound Basin Project

R2-BS-01	Bohemia Spillway Outfall Management
R2-BS-02	Horsepower Canal Marsh Creation
R2-BS-03	Spanish Lake Shoreline Restoration
R2-BS-04	Spanish Lake - Grand Lake Marsh Creation
R2-BS-05	Carlisle Ridge Restoration and Marsh Creation South
R2-BS-06	River aux Chene Marsh Creation - South
R2-BS-07	Yscloskey Marsh Creation
R2-BS-08	Davant Marsh Creation (Increment 1)
R2-BS-10	Bayou Terre aux Boeufs Ridge Restoration and Marsh Creation
R2-BS-11	Bayou Grosbec Marsh Creation
R2-BS-12	River aux Chenes North Marsh Creation
R2-BS-13	Carlisle Ridge Restoration and Marsh Creation North

Coastwide Project

None

Demonstration Project

DEMO-01	Reefbud: Pursuit of Happiness Farms

Region 2 PPL 32
Regional Planning Team Meeting
Virtual Meeting
February 10, 2022
Background Image:
2014 Landsat OLI 8 Mosaic

5 0 5 10 Kilometers

5 0 5 10 Miles

CWPPRA RPT Region 2

Barataria

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
North Central Turtle Bay Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish, Central North of Turtle Bay

Problem
Historic wetland loss in the Perot/Rigolettes mapping unit of the Barataria Basin has been caused by subsidence, sediment deprivation, and construction of access and pipeline canals. The Barataria Waterway has also allowed salt water and higher tidal energies to enter the area causing marsh loss. Interior ponds have expanded and coalesced as a result of subsidence and increased tidal energies. As ponds expand increased wave fetch exacerbates interior shoreline erosion. Recently the proposed area has been further compromised by Hurricane Ida. Based on analysis conducted by USGS, loss rates in the project's extended boundary are estimated to be -0.76% per year for the period 1984 to 2019.

Goal/Proposed Solution
The goal of the project is to create and nourish approximately 458 acres of intermediate to low salinity brackish marsh in the area north of Turtle Bay. The area will be contained employing a combination of 1) re-furbished BA-125 dikes for full containment on the north and west, 2) semi-containment on south, and 3) new dike for full containment on the east. Containment dikes will be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands. In case the area does not re-vegetate on its own, the maintenance cost estimate includes funds to plant 25% of the created marsh at Year 3.

Considerations

This project would contribute to protection of the Central Barataria Basin Landbridge. This project would work in sync with BA-27, BA-20, BA-23, BA-03a, BA-26, BA-36 (and associated CIAP project), BA-125, BA-206, BA-41, and Northeast Turtle Bay Marsh Creation Extension contributing to protection of the Central Barataria Basin Landbridge.

There are active pipelines running near and through the project area. Turtle Bay is part of an oyster seed ground. No other issues known at this time.

Preliminary Construction Costs
The estimated construction cost with 25% contingency is $20-25M.

Preparer of Fact Sheet
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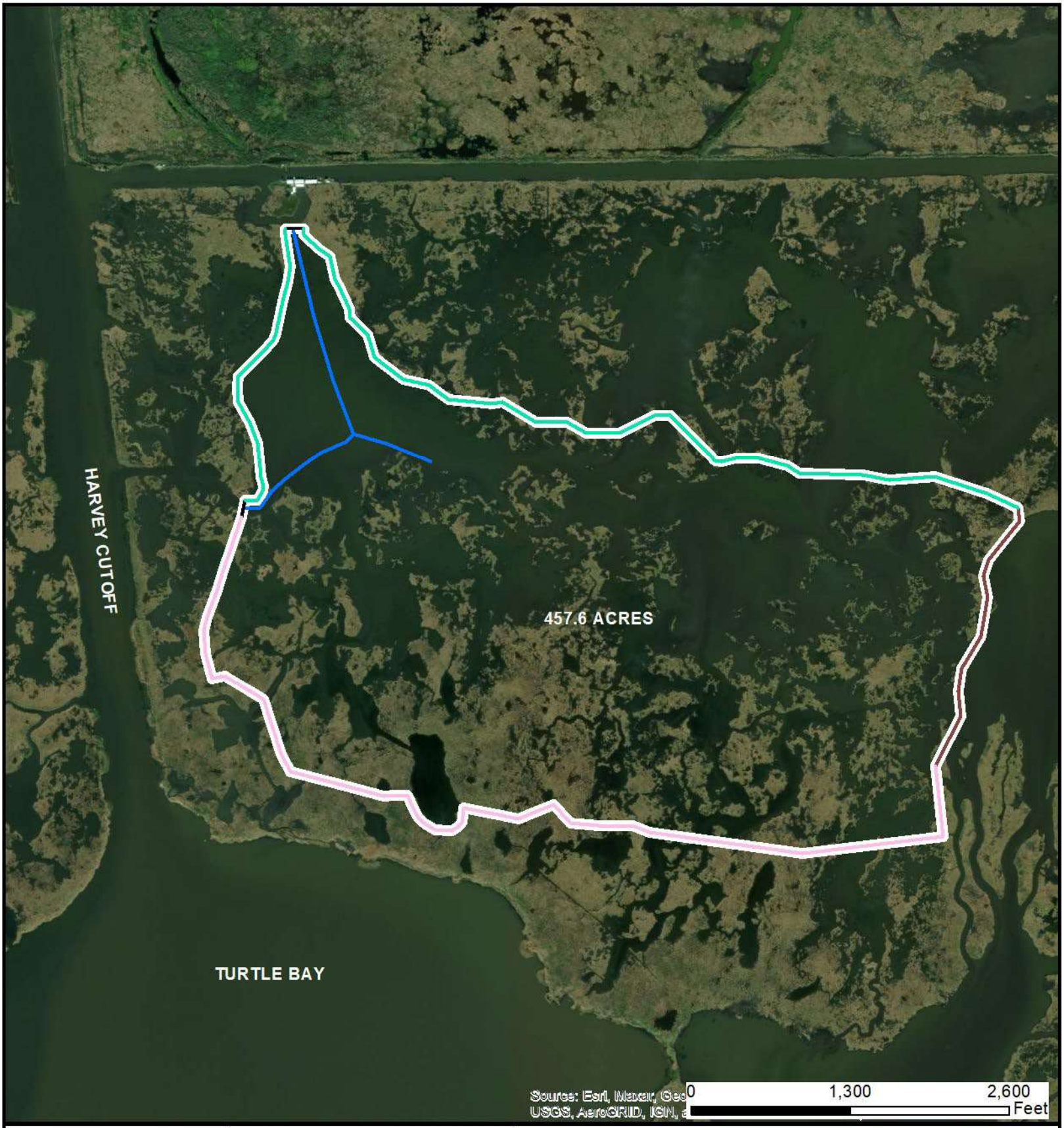
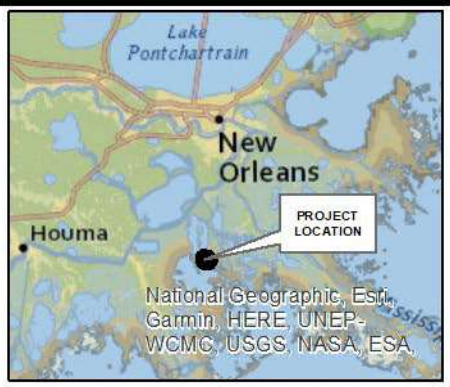


USDA

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

Data Source: ESRI - JANUARY 2019 IMAGERY

Map Date: JANUARY 26, 2022



PPL 32 NORTH CENTRAL TURTLE BAY MARSH CREATION JEFFERSON PARISH, LA

N
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Legend

- EXISTING_CONTAINMENT_DIKE_BA_125 = 9483.6 LF
- EXISTING_SEMI_CONTAINED_MARSH_REMNANT_BA_125 = 8857.93 LF
- NEW_CONTAINMENT_DIKE = 2309.19 LF
- TEMPORARY_SHEETPILE = 291.11 LF
- POSSIBLE_TIDAL_CREEKS_POST_MARSH_CREATION_CONSTRUCTION
- MARSH_CREATION_BOUNDARY = 20,941.8 LF

USDA United States Department of Agriculture

Natural Resources Conservation Service

February 10, 2022

Project Priority List 32

North Central Turtle Bay Marsh Creation

Region II, Barataria Basin
Jefferson Parish

Contacts:
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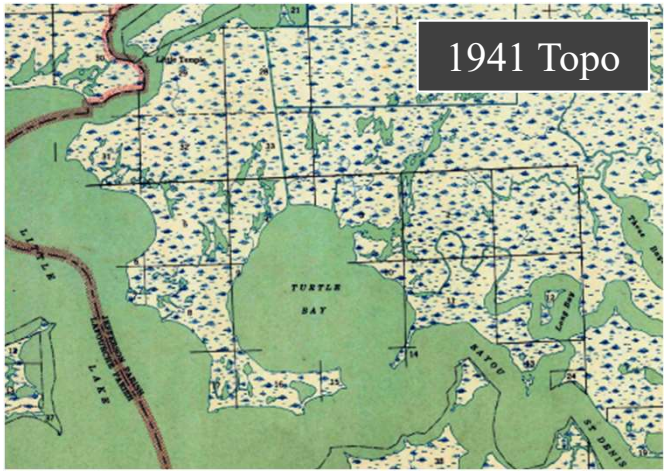
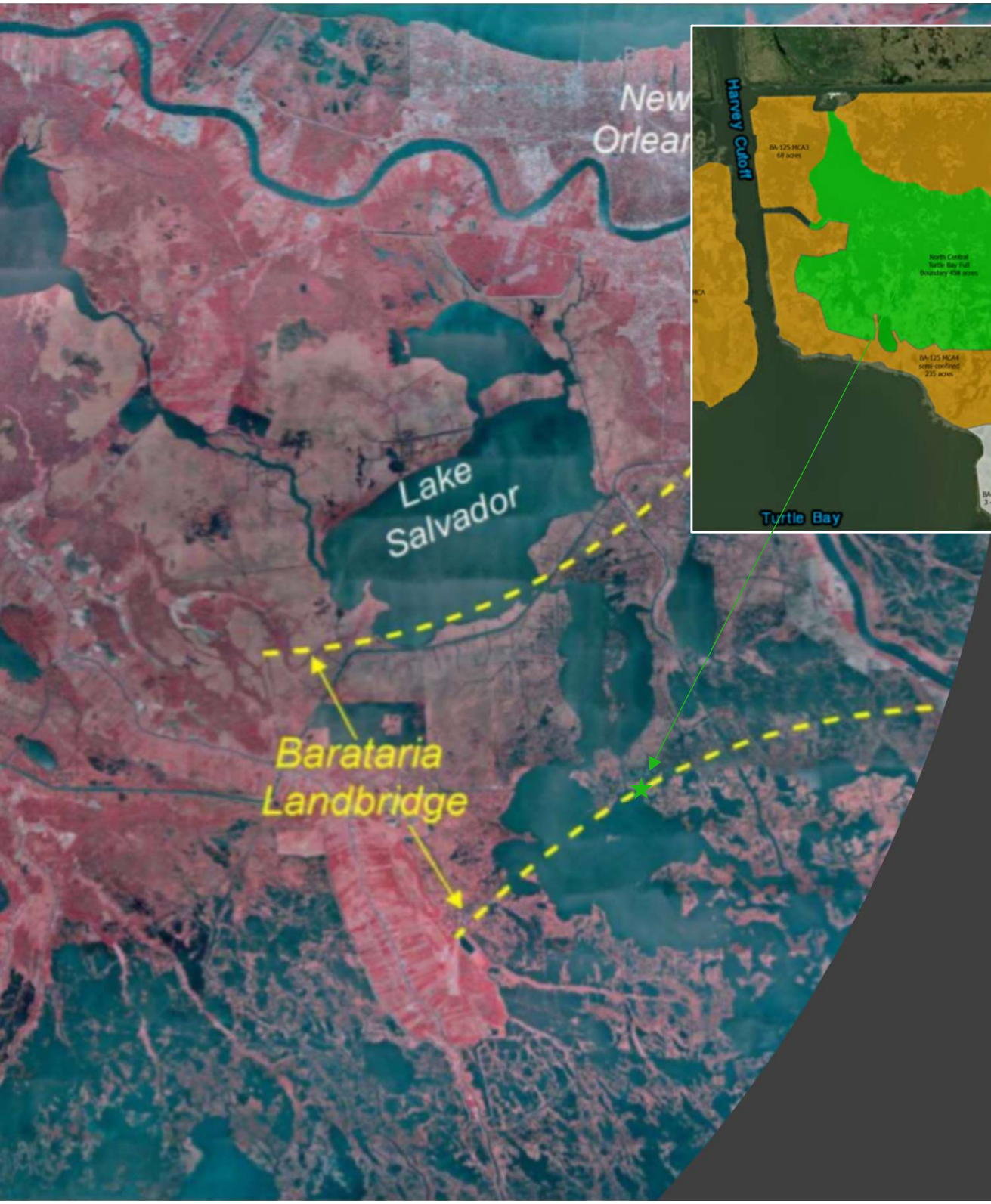
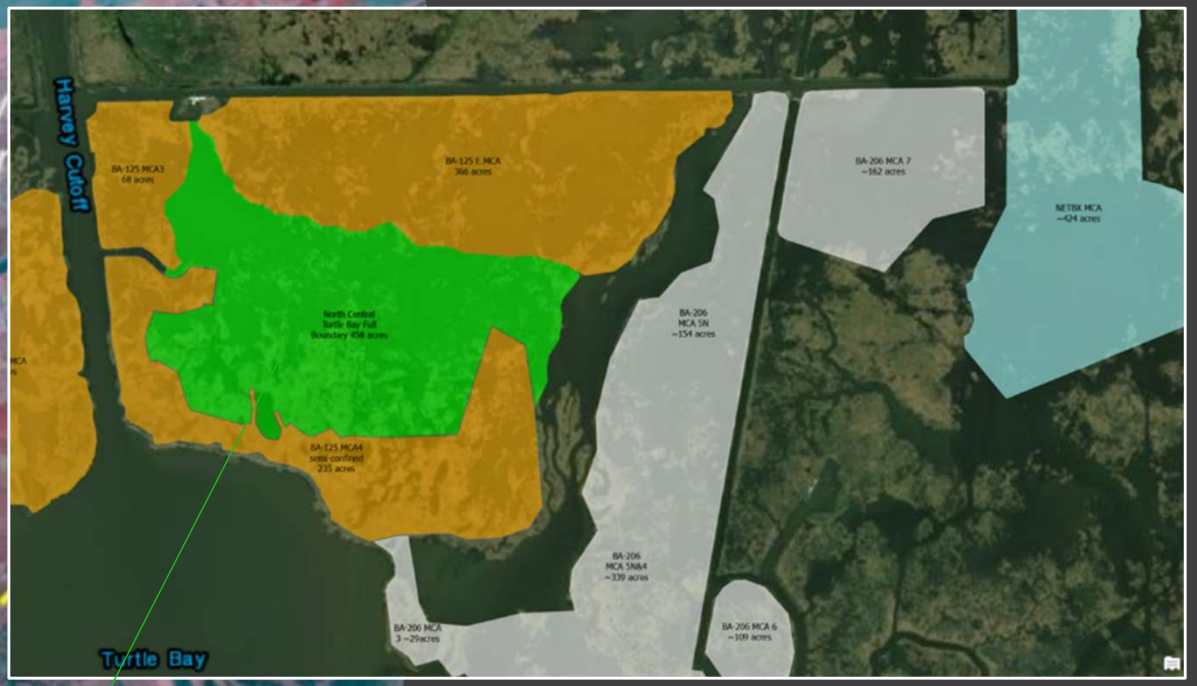


Wetland Loss

USDA United States Department of Agriculture
Natural Resources Conservation Service

◆ Subsidence ◆ Sediment Deprivation
◆ Construction of canals ◆ Hurricane Ida

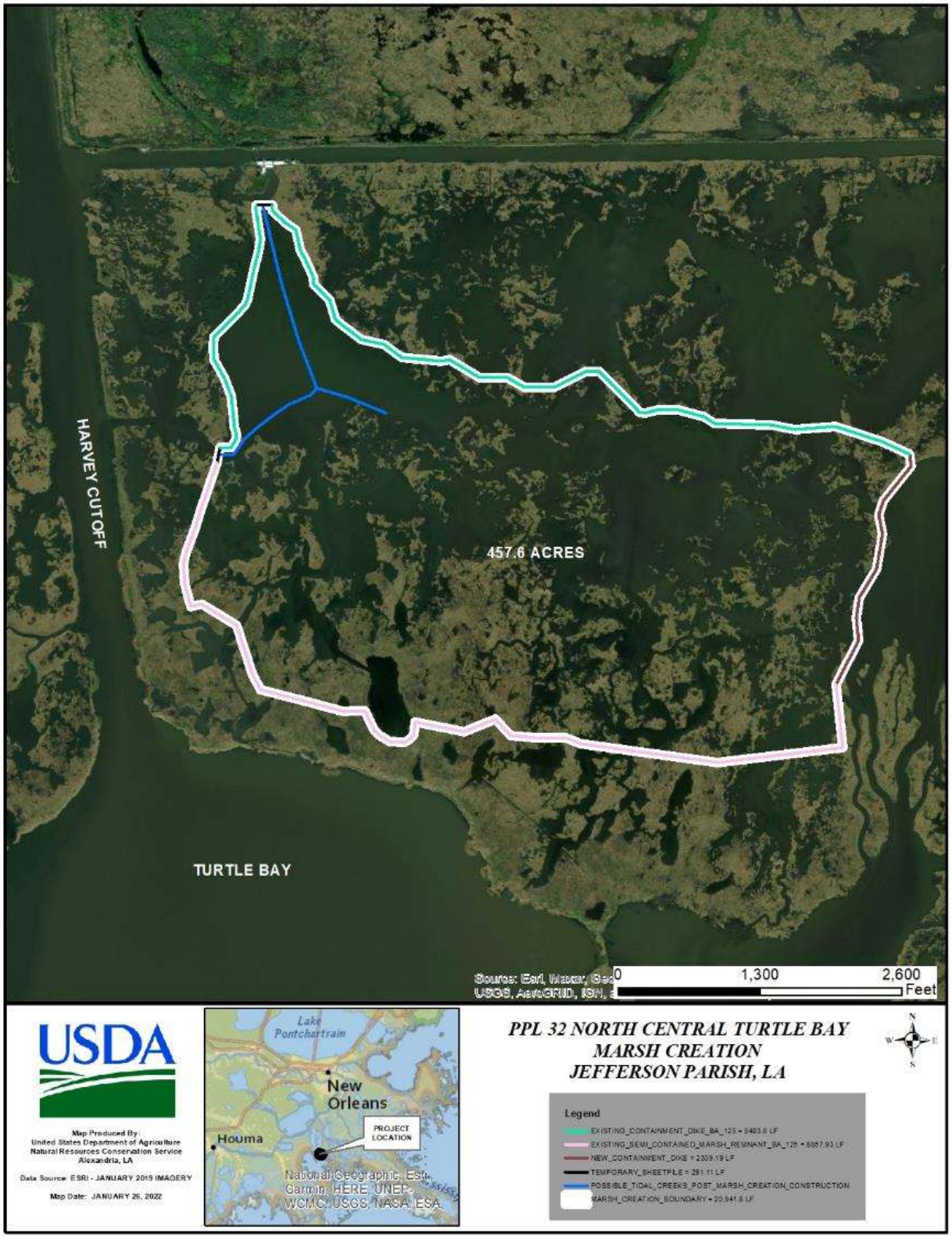




Barataria Landbridge

COASTAL PROTECTION AND RESTORATION AUTHORITY
CPRA

USDA United States Department of Agriculture
Natural Resources Conservation Service



PPL-32
North Central Turtle Bay Marsh Creation

- Approx. **458 acres** Marsh Creation/Nourishment
- (Constr. Cost) + (25% Contingency) = **$20-$25M**
- Turtle Bay Borrow

PPL32 RPT Meeting Project Fact Sheet
February 10, 2022

Project Name
West Dupre Cut Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish, north of Three Bayou Bay and east of Bayou Rigolettes

Problem
Problems facing the basin include sea level rise, subsidence, and effects of channelization and construction of levees. Historical freshwater and sediment sources drastically decreased after building levees on the Mississippi River as well as closing Bayou Lafourche in Donaldsonville. Thus, rain is the most significant source of freshwater. Erosion of barrier islands at the south end of the basin increases and exacerbates tidal effects, high salinity levels, and leads to more rapid rates of land loss. Canals and pipelines altered the area's hydrology and contribute to habitat degradation. The limited freshwater and sediment from natural channels are the most critical problems coupled with the historical and more recent impacts associated with hurricanes. USGS estimated a loss rate of -0.64% per year (1984-2020) for the nearby Northeast Turtle Bay Marsh Creation Extension project.

Goals
The goal is to create or nourish 587 acres of brackish marsh across three cells. Bayou Rigolettes is the proposed borrow site, however Turtle Bay and Bayou Perot will also be considered.

Proposed Solution
Restore 587 acres of marsh using material dredged from Bayou Rigolettes. Approximately 32% of the area is marsh based on July 2021 aerial photography. It is likely that more area is open water due to Hurricane Ida. The area will be fully contained and containment dikes will be degraded as necessary to establish hydrologic connectivity with adjacent wetlands. If the area does not re-vegetate on its own, the maintenance cost estimate includes funds to plant 25% of the created marsh in Year 3. The net restored wetland area over the project life is estimated to be 385 acres.

Considerations
The project is adjacent to the Lafitte Oil and Gas Field and there are associated pipelines and well heads in the area. The project layout has been configured to avoid these features. Should it be selected as the borrow area, Turtle Bay is part of an oyster seed ground.

Preliminary Fully Funded Cost
$25M - $30M

Preparer of Fact Sheet
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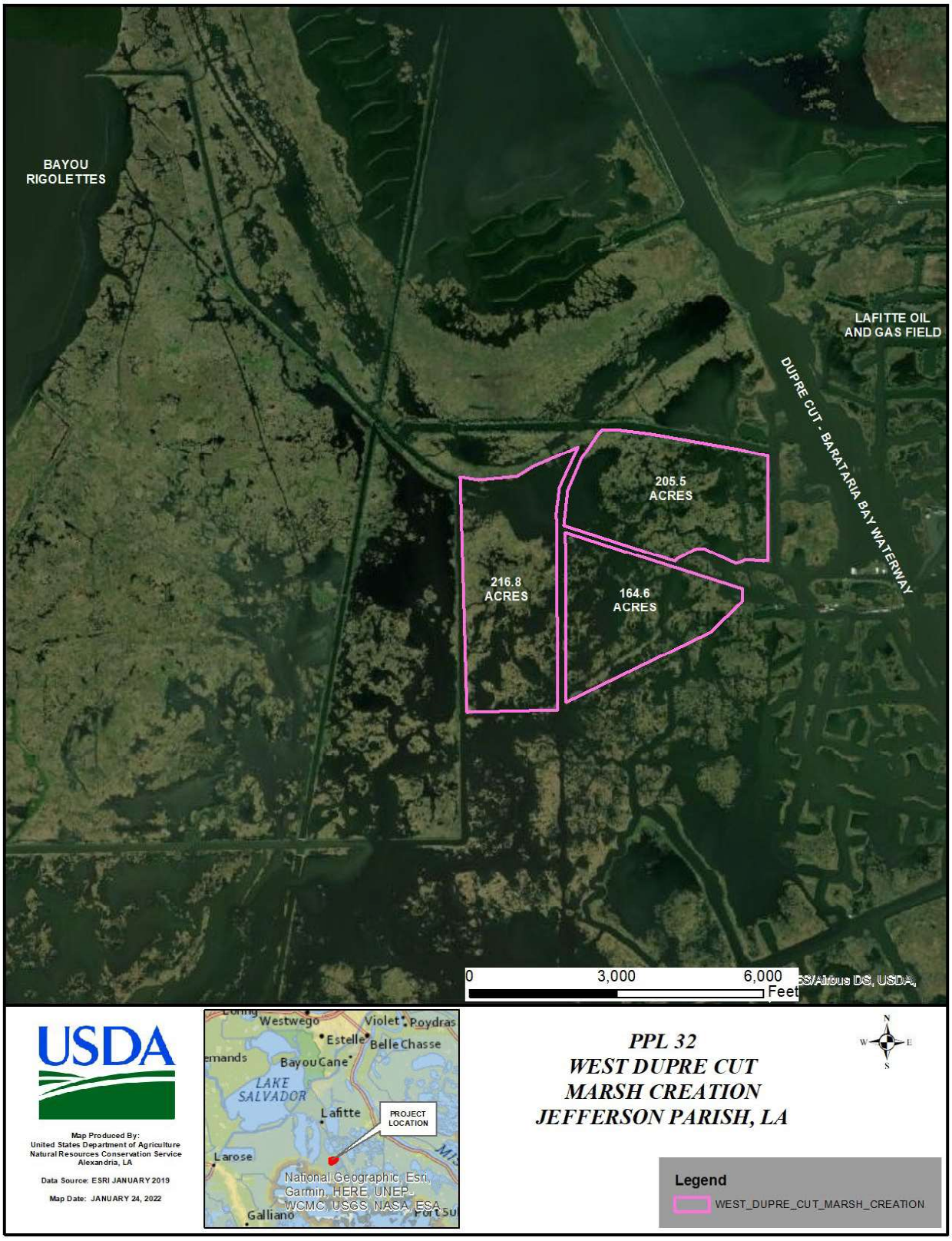
Kyle Cappotto, USDA-NRCS, (318) 473-7737, kyle.cappotto@usda.gov



USDA

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

Data Source: ESRI JANUARY 2019

Map Date: JANUARY 24, 2022

PPL 32
WEST DUPRE CUT
MARSH CREATION
JEFFERSON PARISH, LA

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Legend

WEST_DUPRE_CUT_MARSH_CREATION

PPL32
West Dupre Cut Marsh Creation
Region II, Barataria Basin

Project Lead: Kyle Cappotto, kyle.cappotto@usda.gov, (318) 473-7737

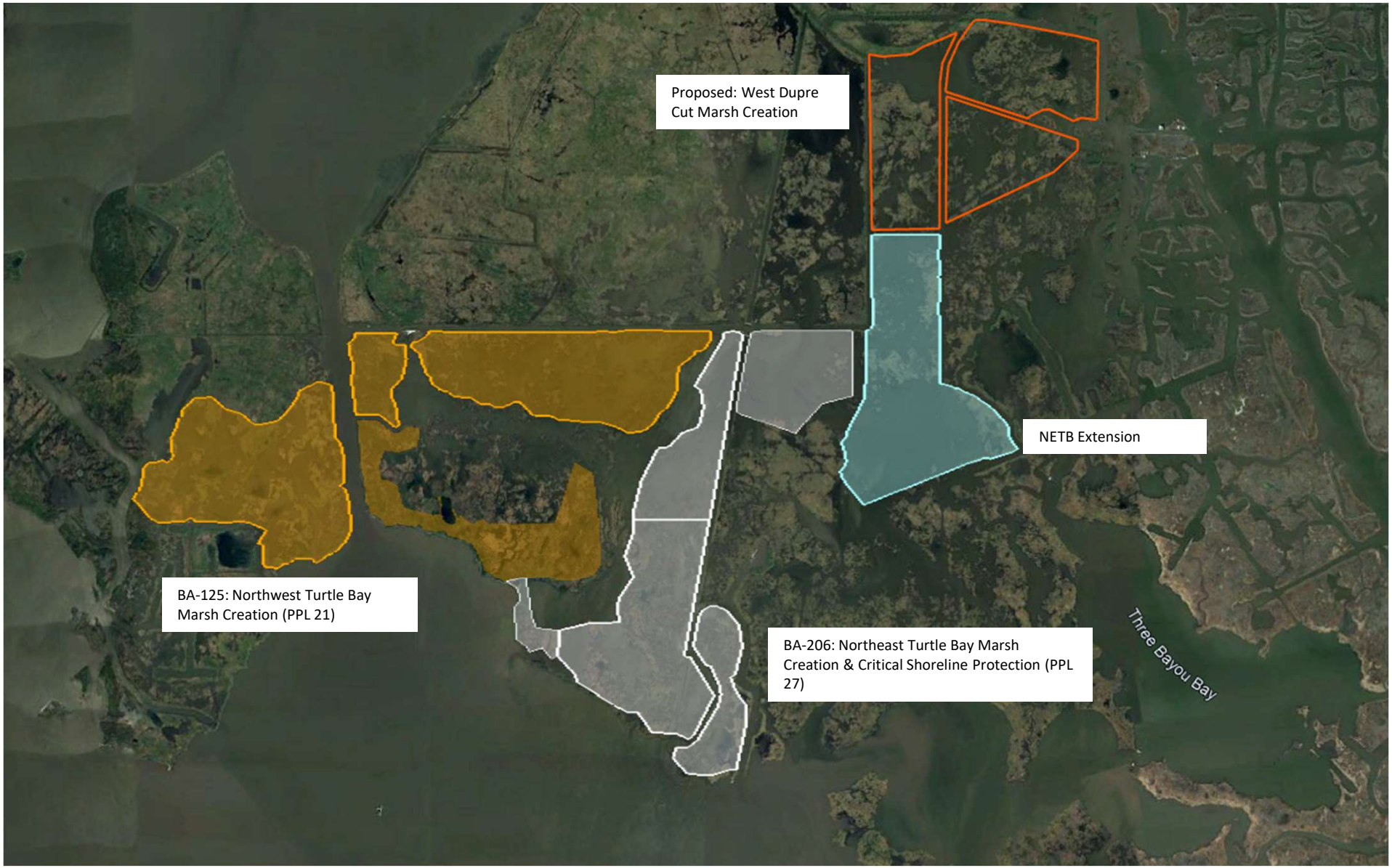
Biologist: Angela Trahan, angela.trahan@usda.gov, (337) 291-3142

USDA

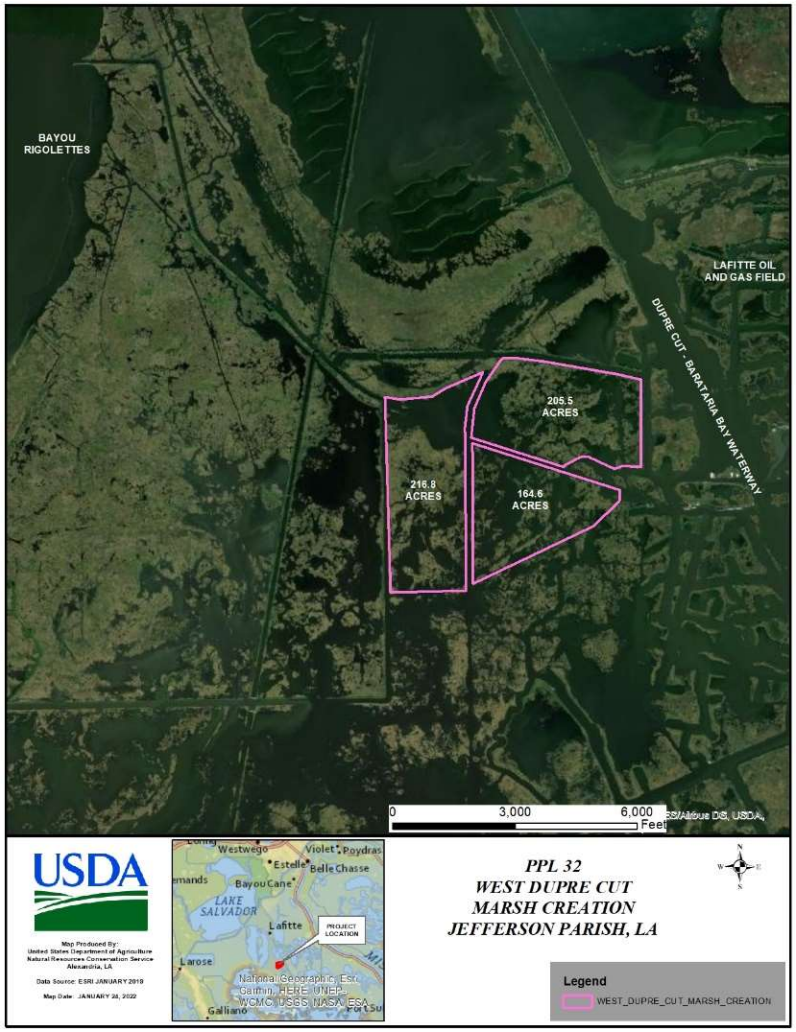
NRCS

Current Conditions

- Reduction of freshwater, sediment input
- Increase tidal effects, salinity
- Lead to vegetation change, die-off of fresher marsh, increased tidal exchange resulting land loss
- 2021 hurricanes created more open water area
- MC targeted approach to restore specific areas


Proposed: West Dupre Cut Marsh Creation
NETB Extension
BA-125: Northwest Turtle Bay Marsh Creation (PPL 21)
BA-206: Northeast Turtle Bay Marsh Creation & Critical Shoreline Protection (PPL 27)
Three Bayou Bay

- Borrow Area: Bayou Rigolettes
- 587 acres marsh creation & nourishment
- Initial estimate: 385 net acres
- Consistent w/ State Master Plan
- Jefferson Parish collecting survey data
- Benefits: Continues theme of land bridge in basin, create/restore marsh habitat, restoring hydrology
- Preliminary Fully Funded Cost: $25M - $30M



PPL32 PROJECT NOMINEE FACT SHEET
10 February 2022

Project Name
Red Pass Ridge and Marsh Restoration

Project Location
Region 2, Barataria Basin, Plaquemines Parish, southwest of Venice.

Problem
With the deterioration of the marshes surrounding Red Pass, the historic ridge has also degraded significantly. Historically high subsidence, lower sediment introduction, increasing frequency of tropical storms, and oil and gas activity have all contributed to the decline, which has in turn contributed to the loss of coastal upland habitat. Recently, the area has seen storm surge impacts from Hurricane's Ida and Zeta during the 2021 and 2020 hurricane seasons including disruptions to vessel traffic located at the nearby port in Venice, LA.

Goals
Approximately 8,647 linear feet of historic ridge will be restored. In addition, approximately 287 acres of marsh will be created and nourished, which will help maintain the integrity of the ridge throughout the project life.

Proposed Solution
Utilizing Gulf of Mexico sediment sources, the Red Pass Ridge will be developed to a +4.5 feet NAVD88 crown height with a 25 feet width. According to the State Master Plan, there are 14 ridge restoration projects recommended, one of which is Red Pass Ridge. There are approximately 23,000 feet of historic ridge at Red Pass that once restored, would "…provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation" (State Master Plan, 2017). Approximately 8,647 linear feet of the western portion of this ridge would be restored. About 177 acres of marsh will be created/nourished behind the ridge and approximately 380 acres of marsh will be created and nourished just south of the ridge which would result in wave attenuation and protection for the ridge behind it.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   The total project area includes 261 acres of marsh creation and 296 acres nourishment.

2) *How many acres of wetlands will be protected/created over the project life?*
   After the 20 year life of the project, a net acre benefit of 285-290 acres will be realized.

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 is assumed based on USGS data from 1984 to 2018 with -1.42%/year (Grand Liard)

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
The project will help restore 8,647 linear feet of Red Pass Ridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project may have minor net positive impact to non-critical infrastructure comprised of pipelines and oil and gas wells and camps.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The proposed project may help reduce storm surge for the nearby Spanish Pass Ridge and Marsh Restoration, BA-191; Barataria Basin Ridge and Marsh Creation – Spanish Pass Increment, BA-203; OPA Mosquito Bay, TE-109; and Grand Liard Marsh and Ridge Restoration, BA-68.

Considerations
Private oyster leases are considerations in the region. Endangered species in the area include the Hawksbill Sea Turtle, the Leatherback Sea Turtle, and the Kemp Ridley's Sea Turtle. Threatened species such as the West Indian Manatee and migratory birds like the Eastern Black Rail, Piping Plover and the Red Knot are considerations in the area.

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

Preparer(s) of Fact Sheet:
Kaitlyn Carriere, USACE, Kaitlyn.M.Carriere@usace.army.mil, 504.862.1798

Red Pass Ridge and Marsh Restoration

Sheet Legend

Proposed Marsh Creation/Nourishment Platform

Proposed Ridge Restoration & Protection

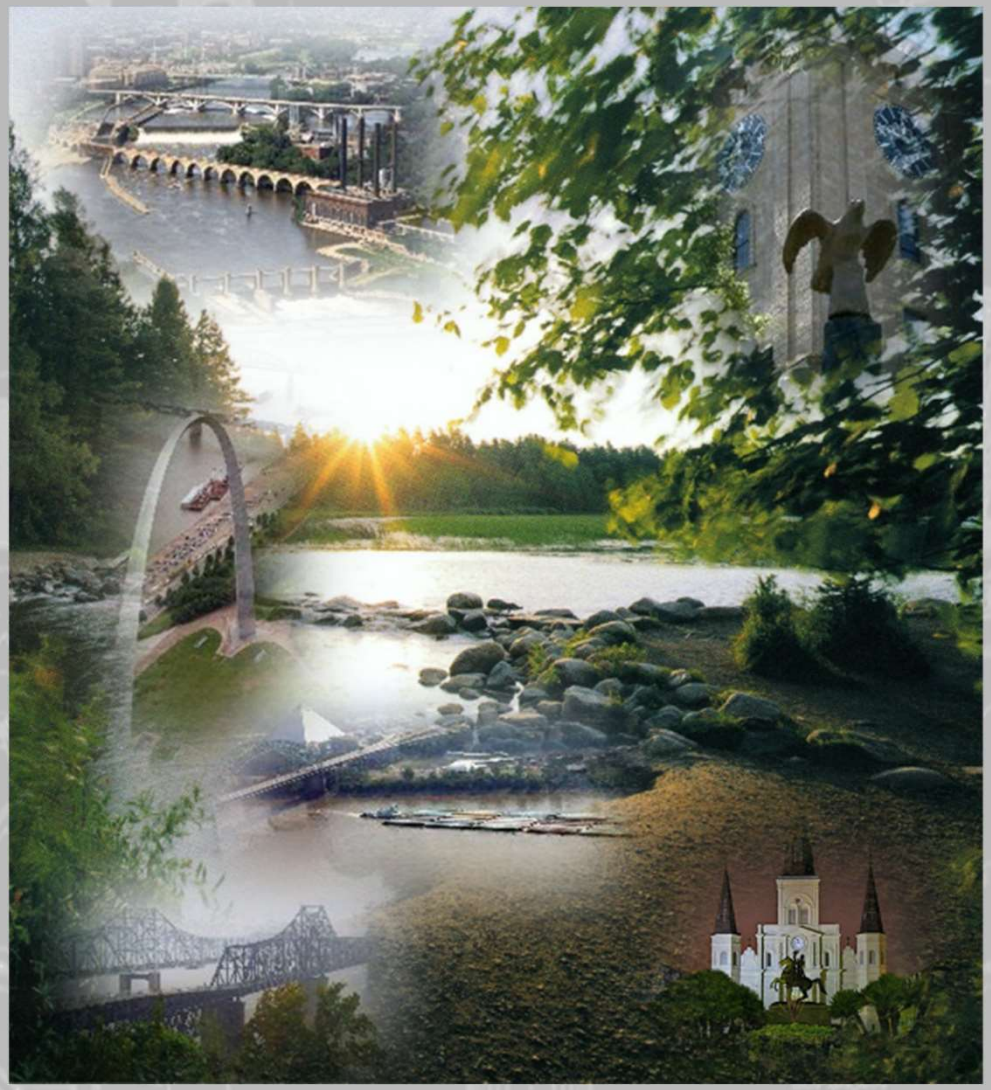
N

Satellite Imagery: 2017 LA NAIP

US Army Corps of Engineers
NEW ORLEANS DISTRICT

0 3000' 6000'

RED PASS RIDGE AND MARSH RESTORATION



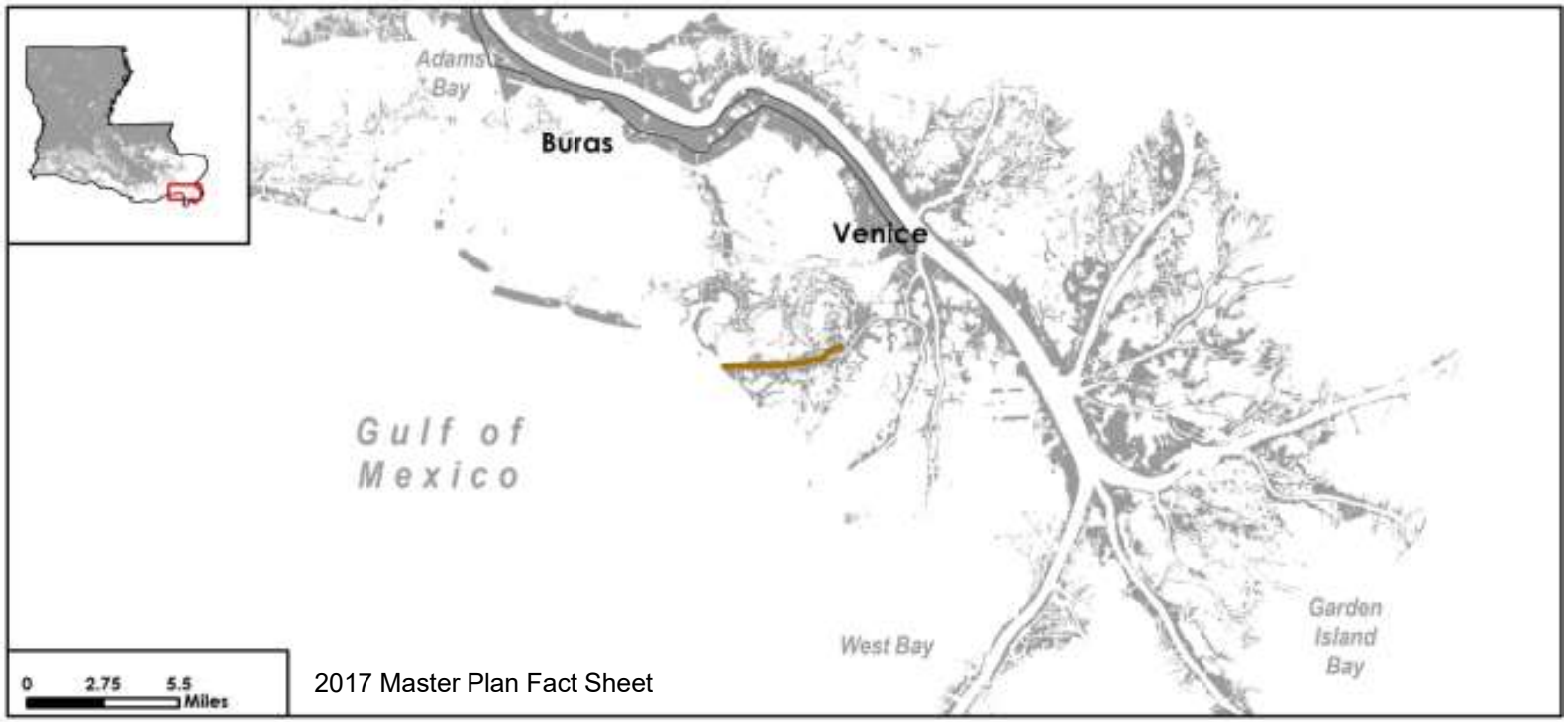
February 10, 2022
Region 2
Barataria

US Army Corps of Engineers®

BUILDING STRONG®

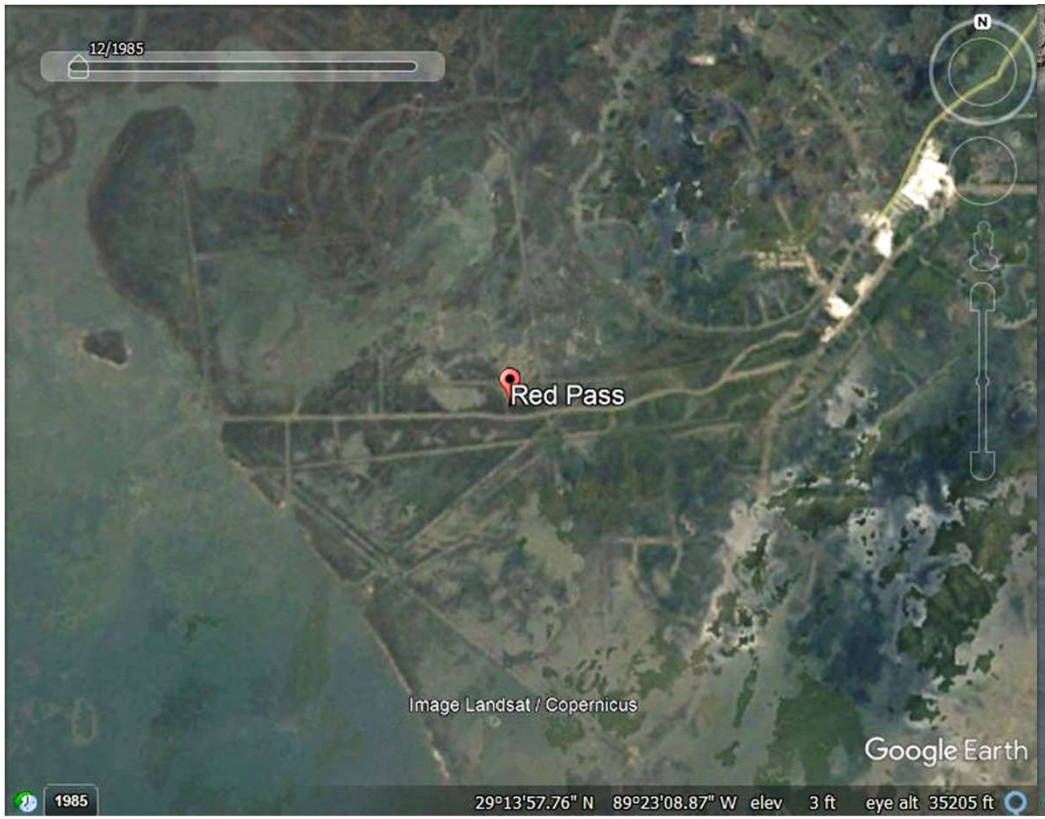
and Taking Care of People!

STATE MASTER PLAN

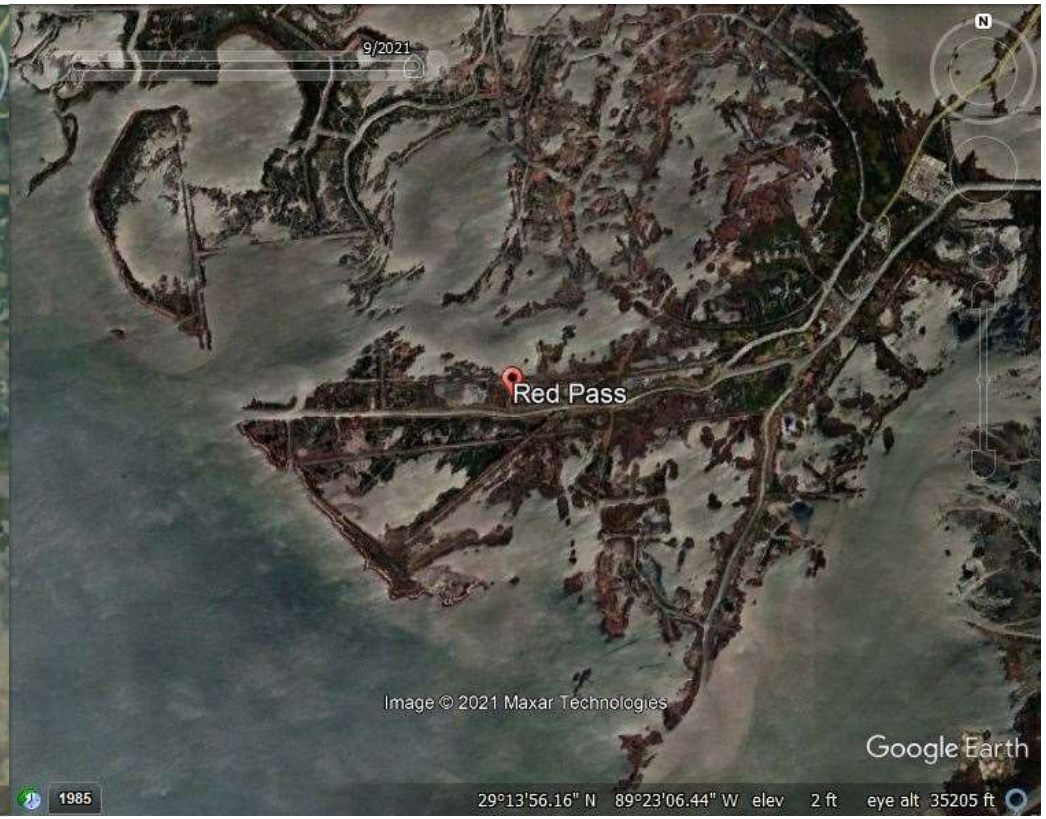


002.RC.100 Red Pass Ridge Restoration: Restoration of approximately 23,000 feet of historic ridge southwest of Venice to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along the banks of Red Pass.

HISTORIC LAND LOSS



December 1985



September 2021

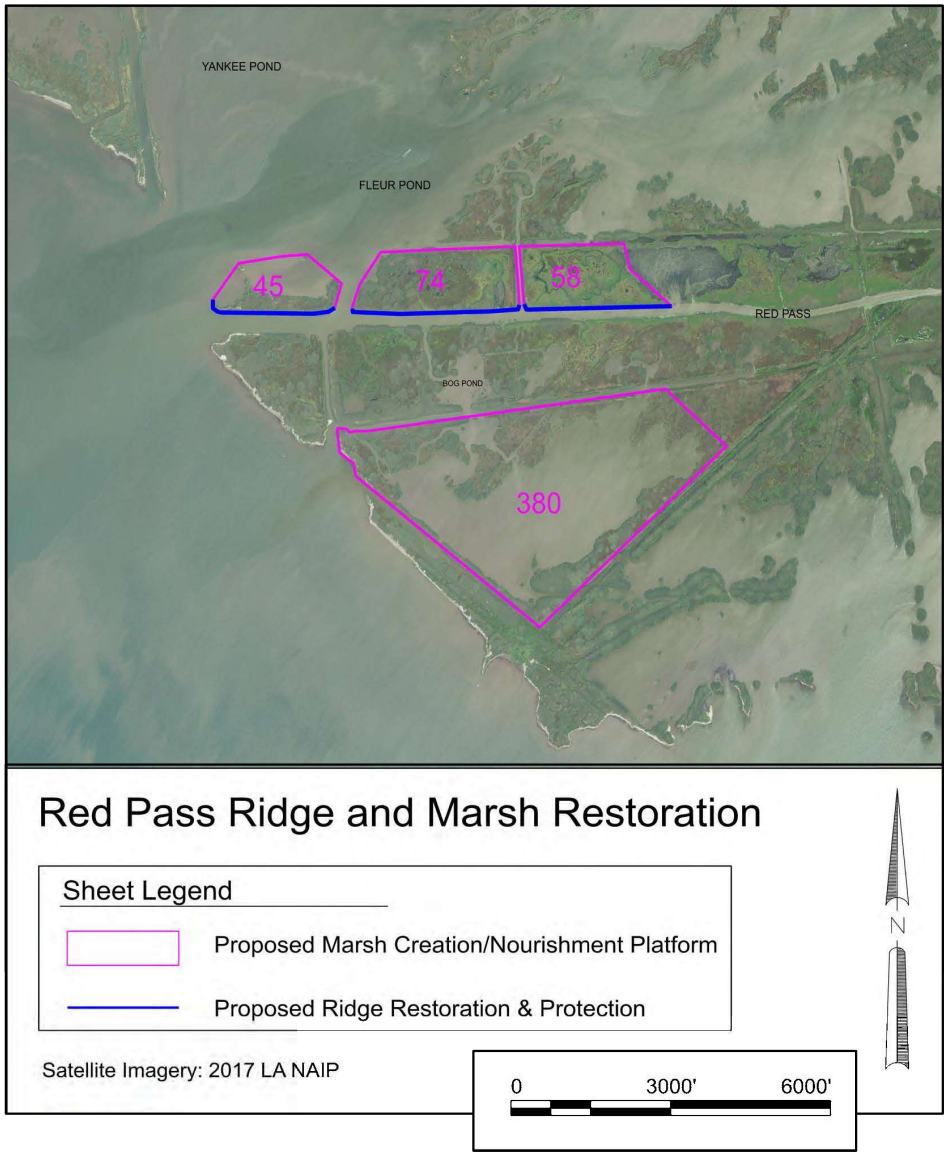
PROJECT PROPOSAL

Total Acres: 557
- 261 Marsh Creation
- 296 Marsh Nourishment

Ridge Restoration
- 8647 Linear feet

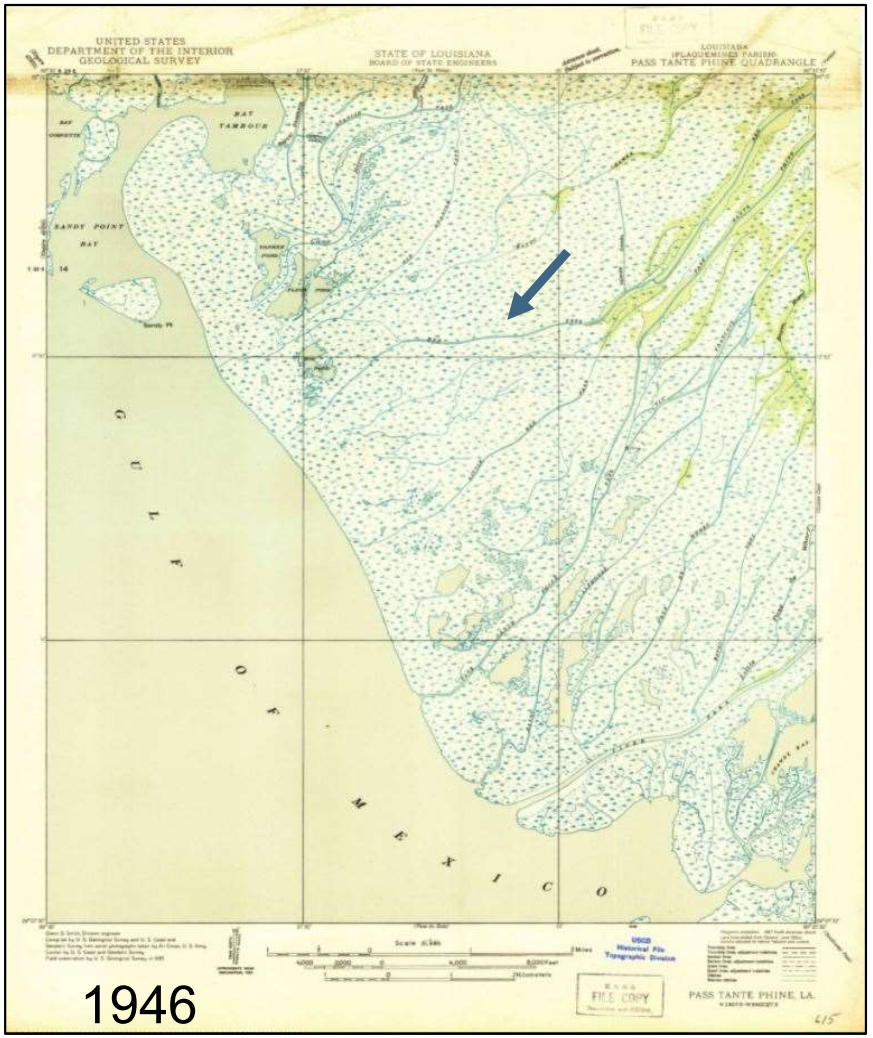
Estimated Cost: $25-$30M
- 25% contingency

Borrow Source: Gulf of Mexico



CURRENT SIGNIFICANCE AND NEED

- Degradation of historic ridge
- High subsidence, lower sediment introduction, more tropical storms, oil and gas activity.



PPL32 PROJECT NOMINEE FACT SHEET
10 February 2022

Project Name
Southwest Leeville Marsh Creation

Project Location
Located within Region 2, Barataria Basin, Lafourche Parish. Southwest of Leeville and north of Port Fourchon.

Problem
In total, the Barataria Basin has suffered the loss of approximately 275,000 acres of marsh from 1932 to 2017, according to USGS. Recent estimations from Hurricane Ida damages include over 100 square miles of wetlands lost, mostly in the Barataria Basin. A series of canals were dredged in the Leeville Oil and Gas fields in the 1950s that contributed to massive land loss in addition to impacts from subsidence, storms and shoreline erosion. Infrastructure in the region and nearby communities Golden Meadow and Leeville become increasingly vulnerable due to the rapidly deteriorating marshes that serve as a critical storm buffer.

Goals
The project goal is to create and nourish approximately 327 acres of marsh in an area southwest of Leeville and to improve stability to a portion of the eastern shore of Bayou Lafourche. In turn this would encourage wetland habitat growth and contribute to coastal resiliency in the neighboring areas of Leeville and Golden Meadow.

Proposed Solution
Approximately 2.5 million cubic yards of dredged materials will be hydraulically pumped from Little Lake to create and nourish an estimated 436 acres of marsh along Bayou Lafourche. To allow for greater tidal exchange and estuarine organism access, temporary containment dikes will be constructed and gapped within three years.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   Approximately 365 acres of marsh creation and 71 acres of marsh nourishment.

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is approximately 325-330 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation and marsh nourishment is assumed. A land loss rate of 1.56%/year is assumed.

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

The project will help restore marshes southwest of Leeville and along Bayou Lafourche, which will provide stability to the eastern shoreline of the channel and provide a storm buffer for neighboring communities.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project may have minor net positive impact to non-critical infrastructure comprised of pipelines and oil and gas wells and camps.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have synergistic effects with nearby projects such as the East Leeville Marsh Creation and Nourishment, BA-194 project.

Considerations
Considerations include oil/gas pipelines and private oyster leases near Little Lake borrow site. Threatened species such as the West Indian Manatee and migratory birds like the Eastern Black Rail are considerations in the area.

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

Preparer(s) of Fact Sheet:
Terri Von Hoven, USACE, terri.m.vonhoven@usace.army.mil. 504.862.1744

South West Leeville Marsh Creation

Sheet Legend

Proposed Marsh Creation/Nourishment Platform

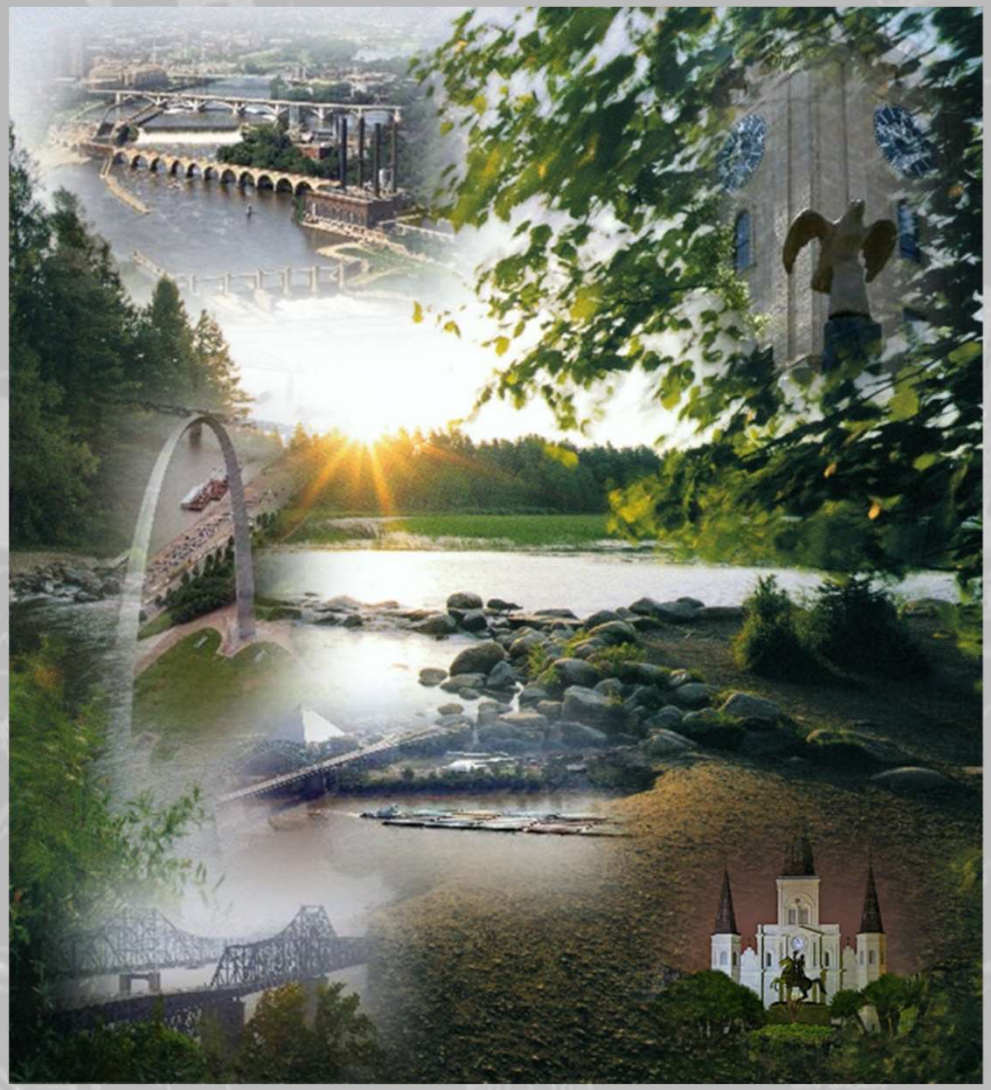
N

Satellite Imagery: 2017 LA NAIP

US Army Corps of Engineers
NEW ORLEANS DISTRICT

0 3000' 6000'

SOUTHWEST LEEVILLE MARSH CREATION



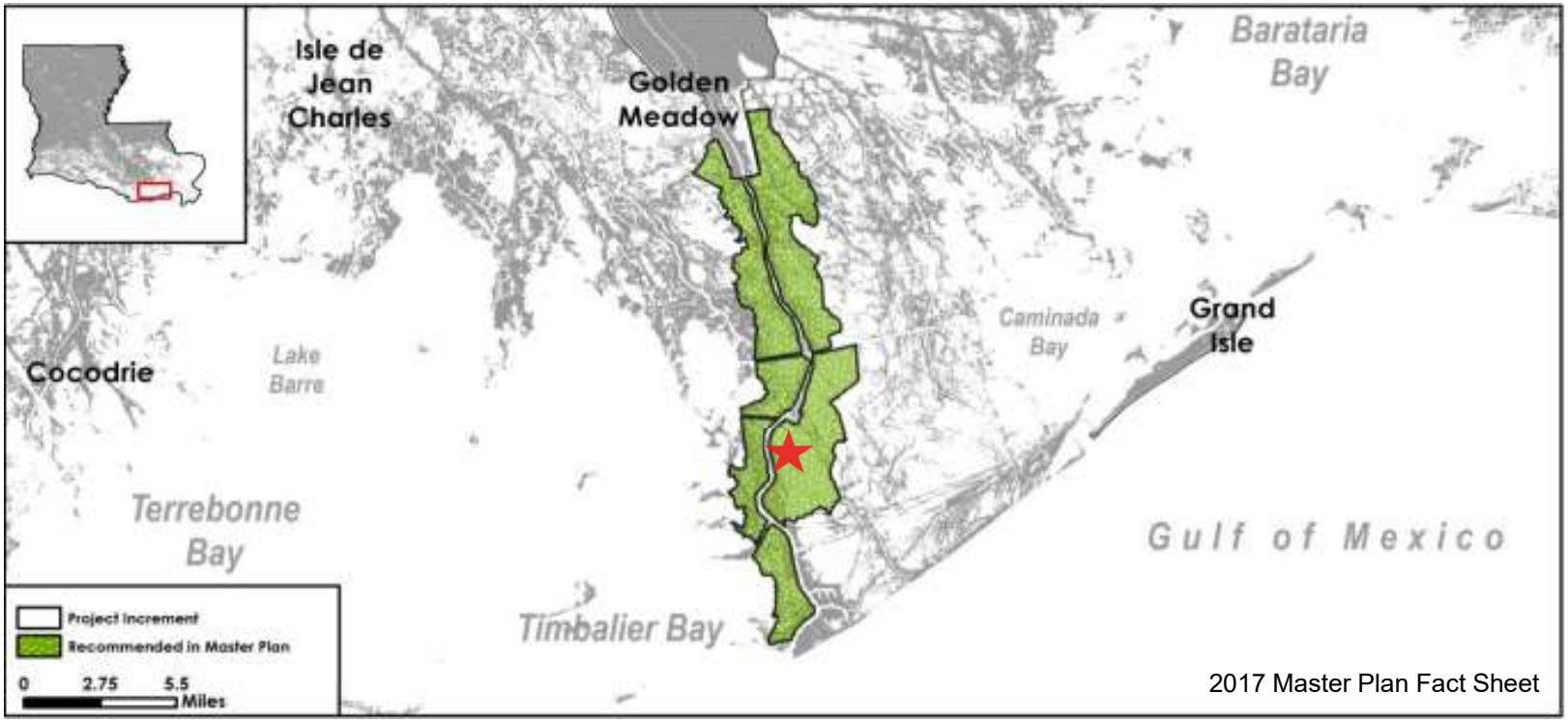
February 10, 2022
Region 2
Barataria

US Army Corps of Engineers®

BUILDING STRONG®

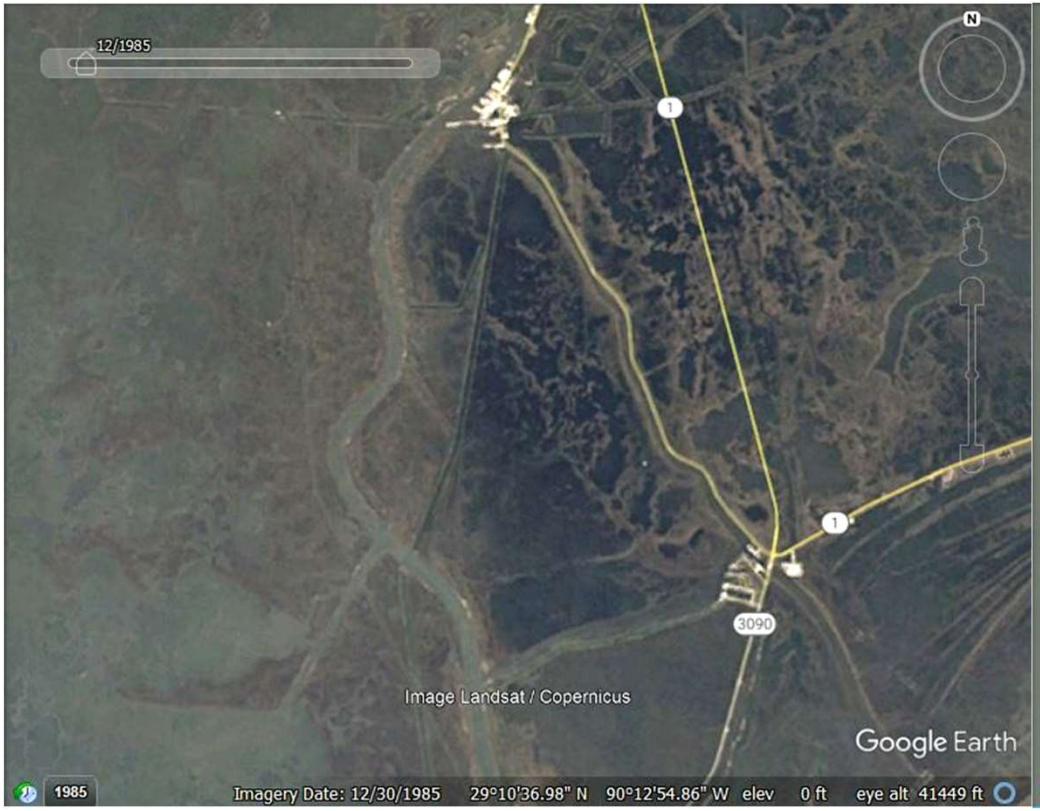
and Taking Care of People!

STATE MASTER PLAN

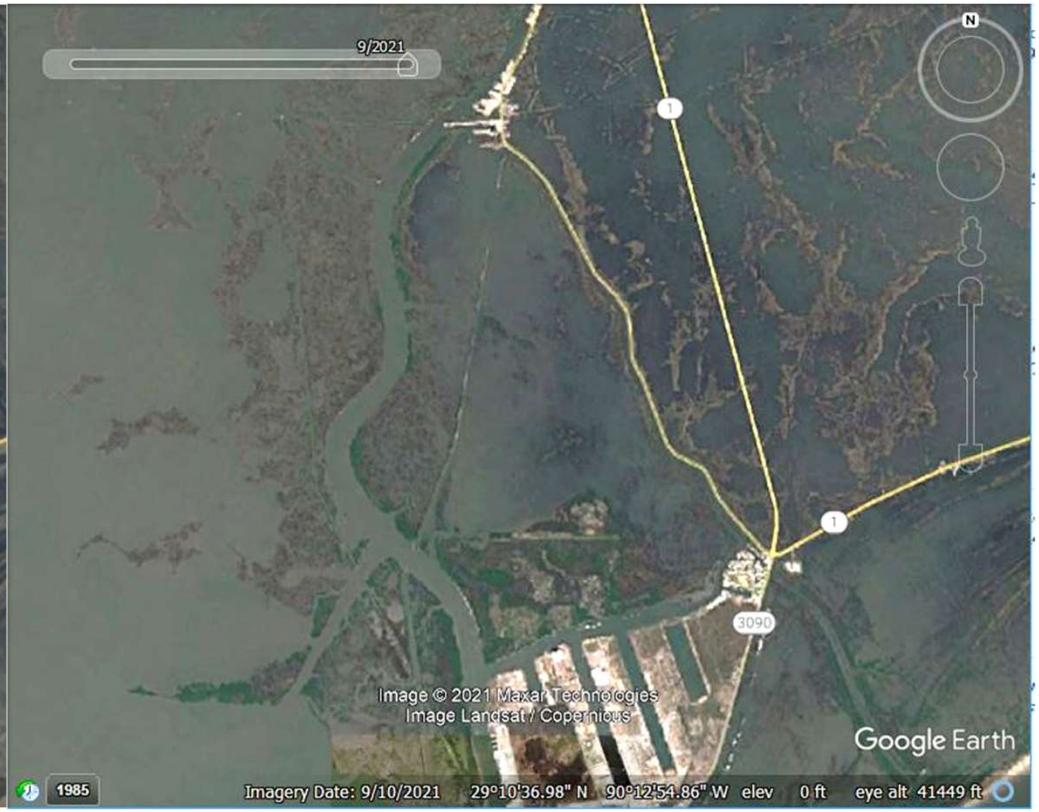


03a.MC.07 Belle Pass-Golden Meadow Marsh Creation: Creation of approximately 23,200 acres of marsh from Belle Pass to Golden Meadow to create new wetland habitat, restore degraded marsh.

HISTORIC LAND LOSS



December 1985



September 2021

PROJECT PROPOSAL

Marsh Restoration

Acres: 436
- 365 Marsh Creation
- 71 Marsh Nourishment

Estimated Cost: $25-$30M
- 25% contingency

Borrow Source: Little Lake

South West Leeville Marsh Creation

Sheet Legend

Proposed Marsh Creation/Nourishment Platform

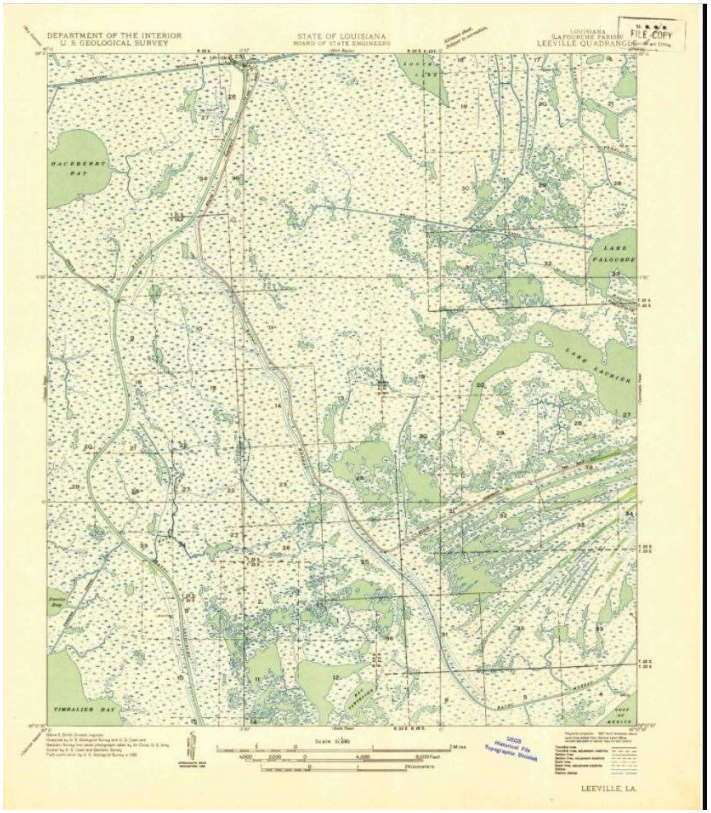
Satellite Imagery: 2017 LA NAIP

N

0 3000' 6000'

CURRENT SIGNIFICANCE AND NEED

West Indian Manatee, photo WGNO, 2018



1934

- Provide storm buffer by recreating historic marsh along Bayou Lafourche
- Reduce effects of coastal storm surge near LA 1
  - Stabilize to the eastern shoreline of the channel
  - Hurricane Ida reported to have damaged over 100 mi^2 of wetlands, most in the Barataria Basin

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name:
Lake Hermitage Shoreline Protection and Marsh Creation

Project Location:
Region 2, Barataria Basin, Plaquemines Parish

Problem:
Within the Lake Hermitage basin, near the community of West Pointe a la Hache, significant marsh loss has occurred with the construction of oil/gas canals, subsidence, and sediment deprivation. From examination of aerial photography, the majority of this loss occurred during the 1960s and 1970s when numerous oil/gas canals were dredged in the area. Based on the hyper-temporal analysis conducted by USGS for the extended project boundary for the Grand Bayou Ridge and Marsh Restoration – Increment 2 project, the land loss rate in the project area is -0.4% per year for the period 1984 to 2020.

Goals:
The primary goals of this project are: 1) restore marsh habitat in the open water areas via marsh creation and 2) protect the shoreline along Lake Hermitage. Specific goals are: 1) Create approximately 391 acres (312 acres of creation; 79 acres of nourishment) of marsh with dredged material from the Lake Hermitage; and 2) Create 7,300 linear feet (1.4 miles) of shoreline protection along the southern shore of Lake Hermitage.

Service goals include restoration/protection of habitat for threatened and endangered species and other at-risk species. This project would restore habitat potentially utilized by the black rail, recently listed as a threatened species. The project could also benefit other species of concern including the saltmarsh topminnow, seaside sparrow, and neotropical migrants.

Proposed Solution:
Sediments from the Lake Hermitage will be hydraulically dredged and pumped via pipeline to create/nourish approximately 391 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 gapped at the end of construction.

Approximately 7,300 linear feet (1.4 miles) of shoreline berm and articulated concrete mats (ACMs) will be added as shoreline protection. The ACMs will be placed on the berm containment of two of the marsh creation areas along the south shore of Lake Hermitage, and they will also be placed along the southeastern lake rim to ensure the shoreline is stabilized during construction and throughout the project life.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly?

Approximately 391 acres would be benefited by the project. Direct benefits include roughly 391 acres of marsh creation and nourishment and the construction of 7,300 linear feet (1.4 miles) of shoreline protection.

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 300-350 acres.

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)?*
The anticipated 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 will protect 7,300 linear feet (1.4 miles) of shoreline along the south shore of Lake Hermitage.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would afford some protection to flood protection levees east of the project area along HWY 23.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with the Lake Hermitage Marsh Creation (BA-42) project, the Bayou Grand Cheniere Marsh and Ridge Restoration (BA-173) project, the Grand Bayou Ridge and Marsh Restoration (BA-217) project, and the Grand Bayou Ridge and Marsh Restoration – Increment 2 project.

Considerations
Landrights, and pipelines/utilities will need to be considered in project design.

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

Preparer(s) of Fact Sheet:
Kristen Ramsey, FWS, 337-291-3137, kristen_ramsey@fws.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Legend

- Marsh Creation
- Shoreline Protection

PPL32
Lake Hermitage Shoreline Protection and Marsh Creation
Plaquemines Parish, Louisiana

Lake Hermitage

BA-42

BA-173

N

0 0.125 0.25 0.5 Miles

PPL32

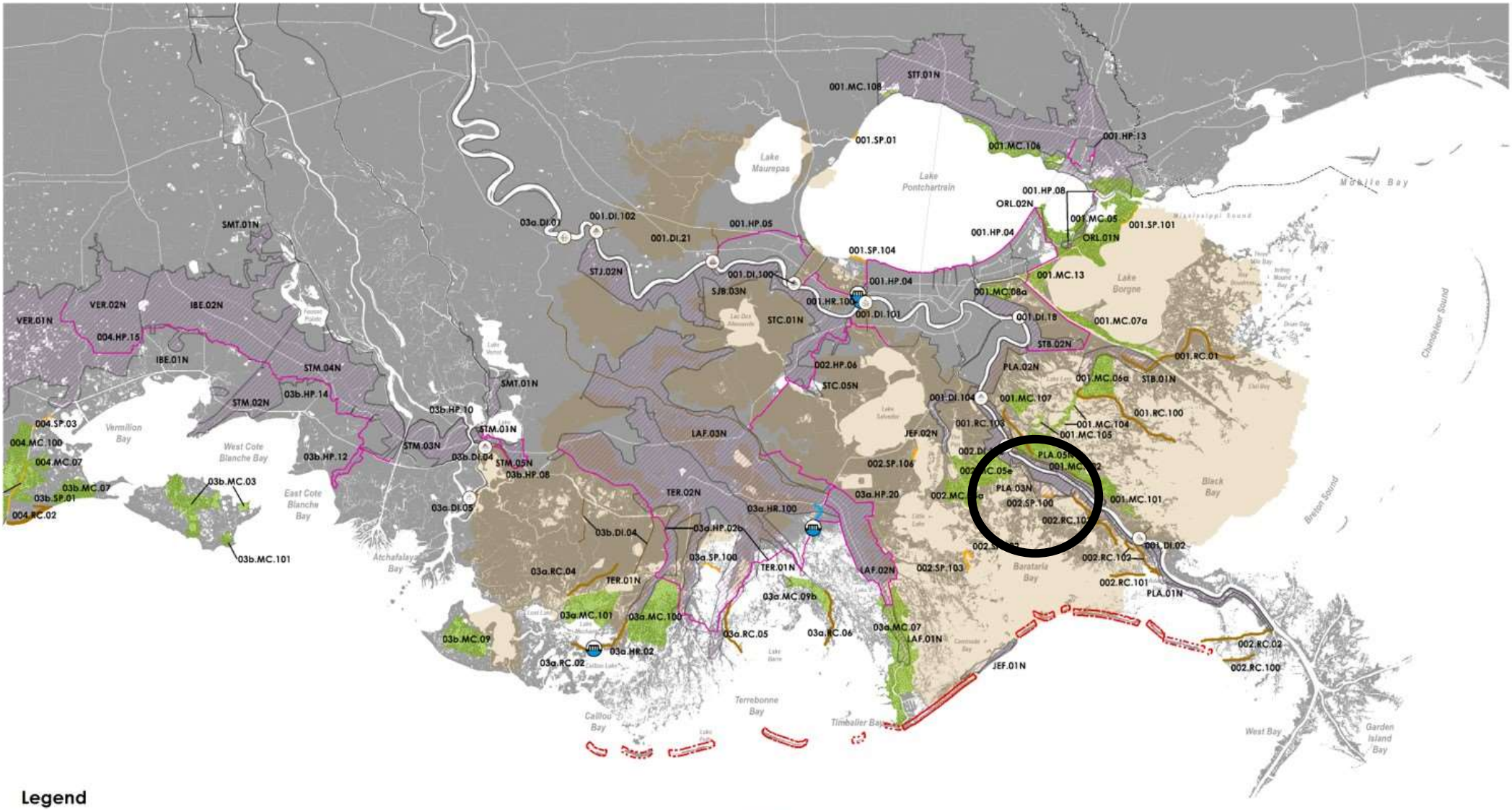
Lake Hermitage Shoreline Protection and Marsh Creation

Region 2, Barataria Basin

Contacts:

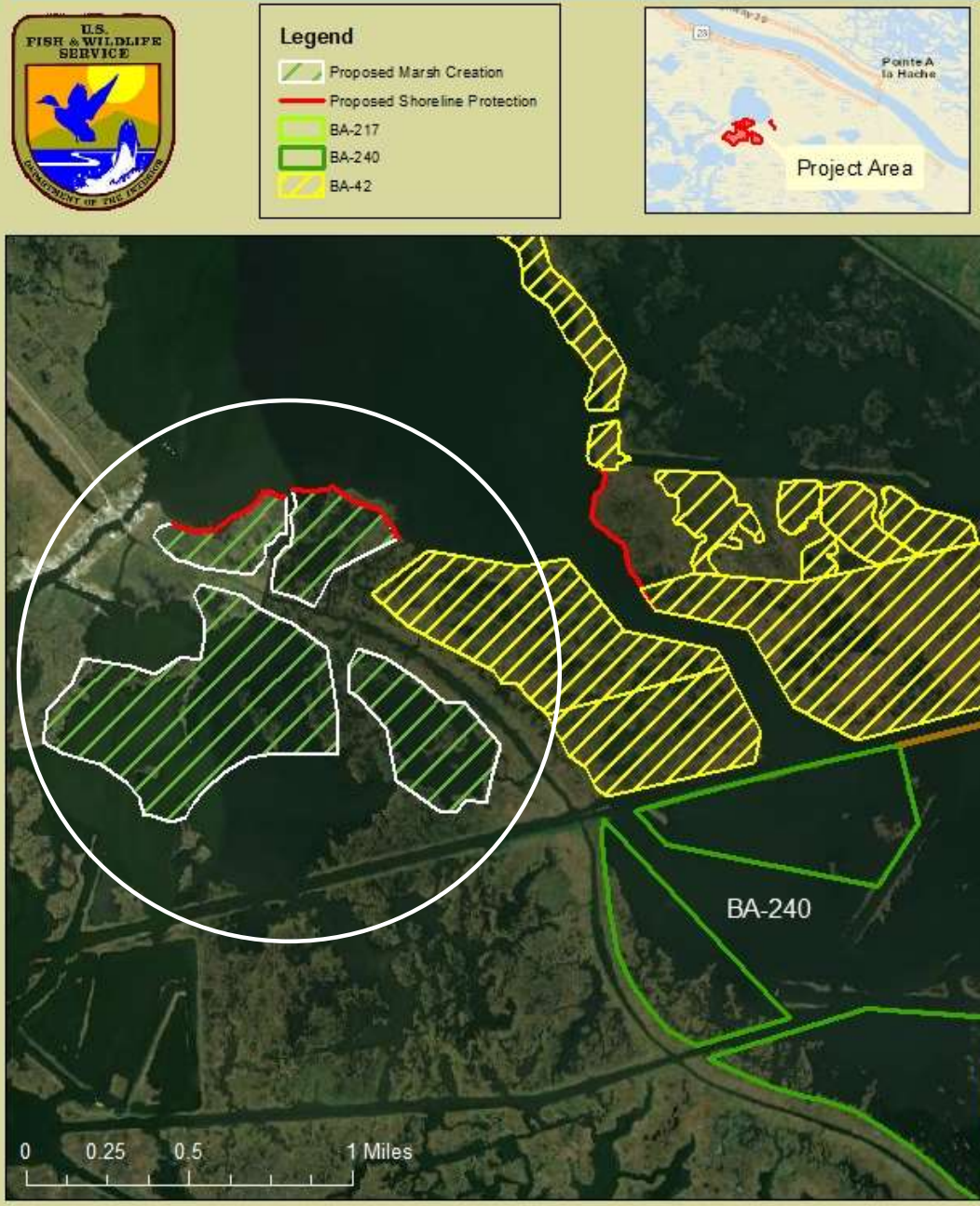
Kristen Ramsey
Fish and Wildlife Biologist
kristen.ramsey@fws.gov
(337) 291-3137

2017 State Master Plan - Lake Hermitage Shoreline Protection (002.SP.100)

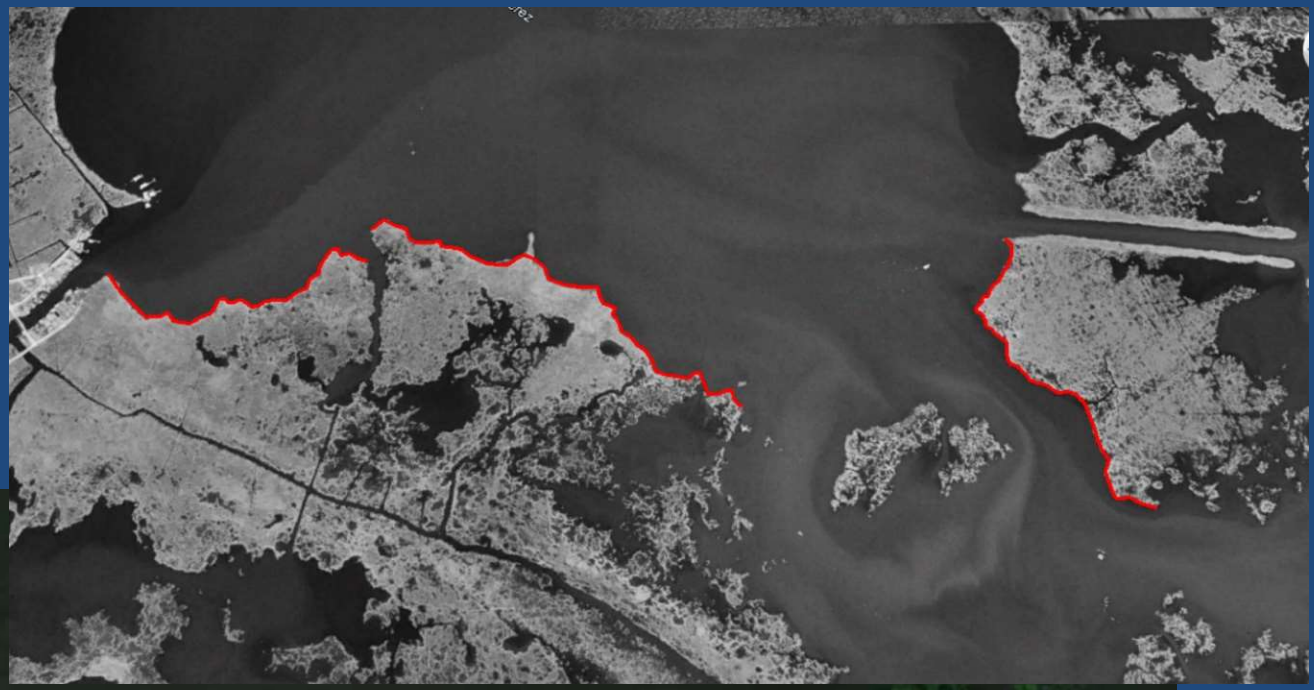


U.S. Fish & Wildlife Service

Louisiana Ecological Services



Lake Hermitage - 1998 to 2021



Lake Hermitage Shoreline Protection and Marsh Creation

- 312 acres of marsh creation
- 79 acres of marsh nourishment
- 7,300 linear feet (1.4 miles) of shoreline protection
- Lake Hermitage borrow
- Net acres = 300 - 350
- Construction plus contingency $25M - $30M
- Project synergy – Lake Hermitage Marsh Creation (BA-42), and Grand Cheniere Ridge and Marsh Creation (BA-240)

REGION II

REGIONAL PLANNING TEAM MEETING

BARATARIA BASIN

February 10, 2022

Kristen Ramsey
kristen_ramsey@fws.gov
337-291-3137

Questions?

PPL32 PROJECT NOMINEE FACT SHEET
February 1, 2022

Project Name
Bayou Rigolettes East Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish

Problem
The project area has been a relatively stable coastal area for the past 35 years and is located within a geographic region referred to as the Barataria Basin Landbridge. A land change analysis conducted by USGS for 254 coastal subunits indicates a 1985-2020 land change rate of -0.03 %/yr for the Perot-Rigolettes Subunit. However, in August 2021, the central and western Barataria Basin experienced thousands of acres of land loss with the passage of Hurricane Ida. Within the 527-acre project area, it is estimated that approximately 300 acres of marsh loss occurred (based on 9/11/2021 imagery). This marsh loss has created a north-south conduit for the movement of water from Bayou Rigolettes and south to Turtle Bay. Rapid water movement through this fragile area of coastal marsh has long been a concern of the landowner and surface lessees.

Goals
The primary goals of the project are: 1) restore marsh habitat in an area significantly impacted by Hurricane Ida and 2) create marsh habitat to restore the historic hydrology in a fragile marsh ecosystem. The specific goals of this project are: 1) create 357 acres of marsh and 2) nourish 170 acres of marsh.

Service goals include restoration/protection of habitat for threatened and endangered species and other at-risk species. This project would restore habitat potentially utilized by the black rail, a threatened species. The project could also benefit other species of concern including the saltmarsh topminnow and seaside sparrow.

Proposed Solution
Sediments from Bayou Rigolettes would be hydraulically dredged and pumped via pipeline to create/nourish 527 acres of marsh. Marsh platform elevations will be conducive to the establishment of intertidal marsh. Containment dikes will be constructed around the entire marsh creation cell. Opportunities to utilize existing spoil banks for containment will be investigated. Containment dikes will be gapped at the end of construction or by TY3.

Project Benefits
The project would result in approximately 350-400 net acres over the project life.

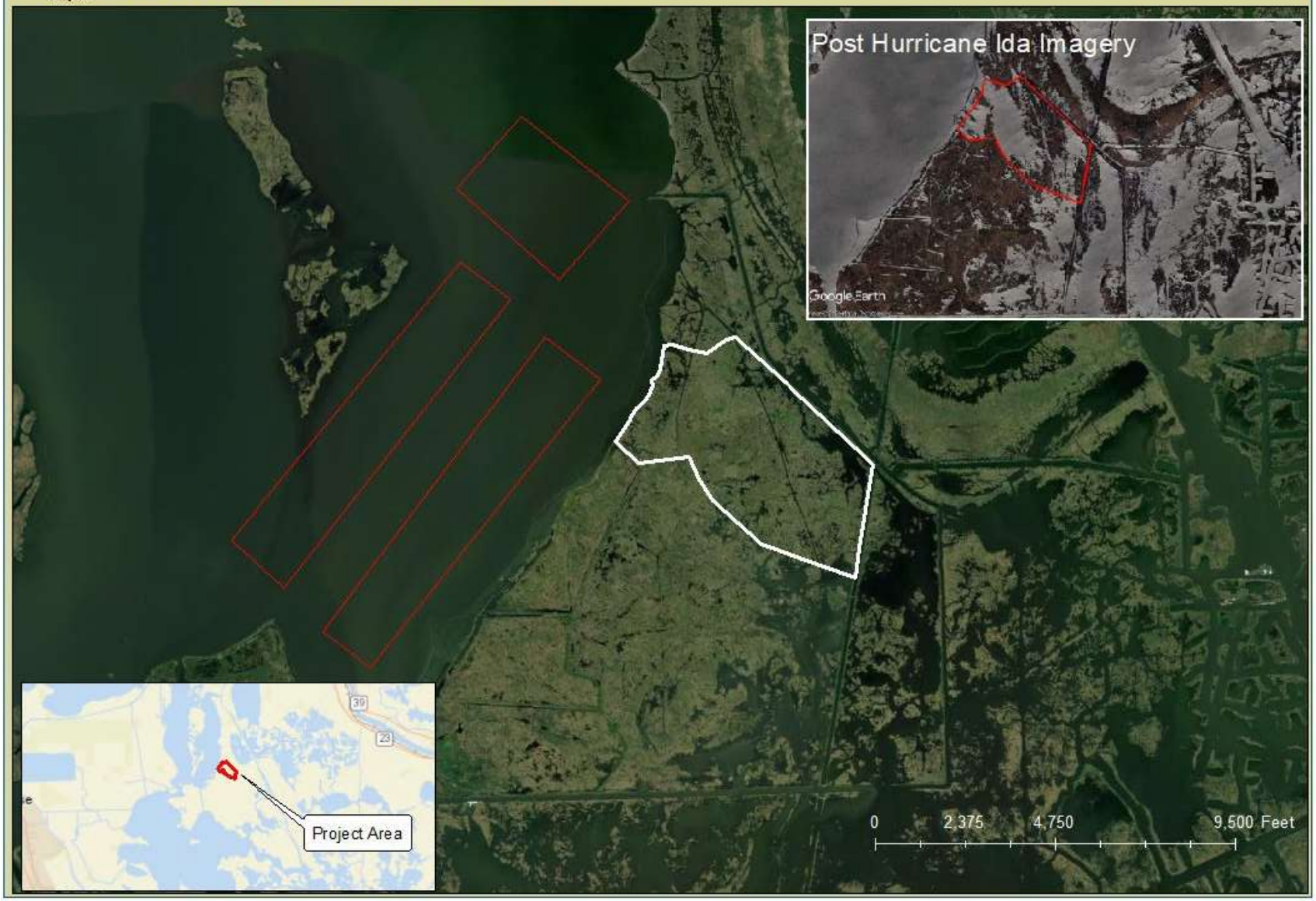
Project Costs
The estimated construction cost plus 25% contingency is $20M - $25M.

Preparer of Fact Sheet
Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Bayou Rigolettes East Marsh Creation



REGION II

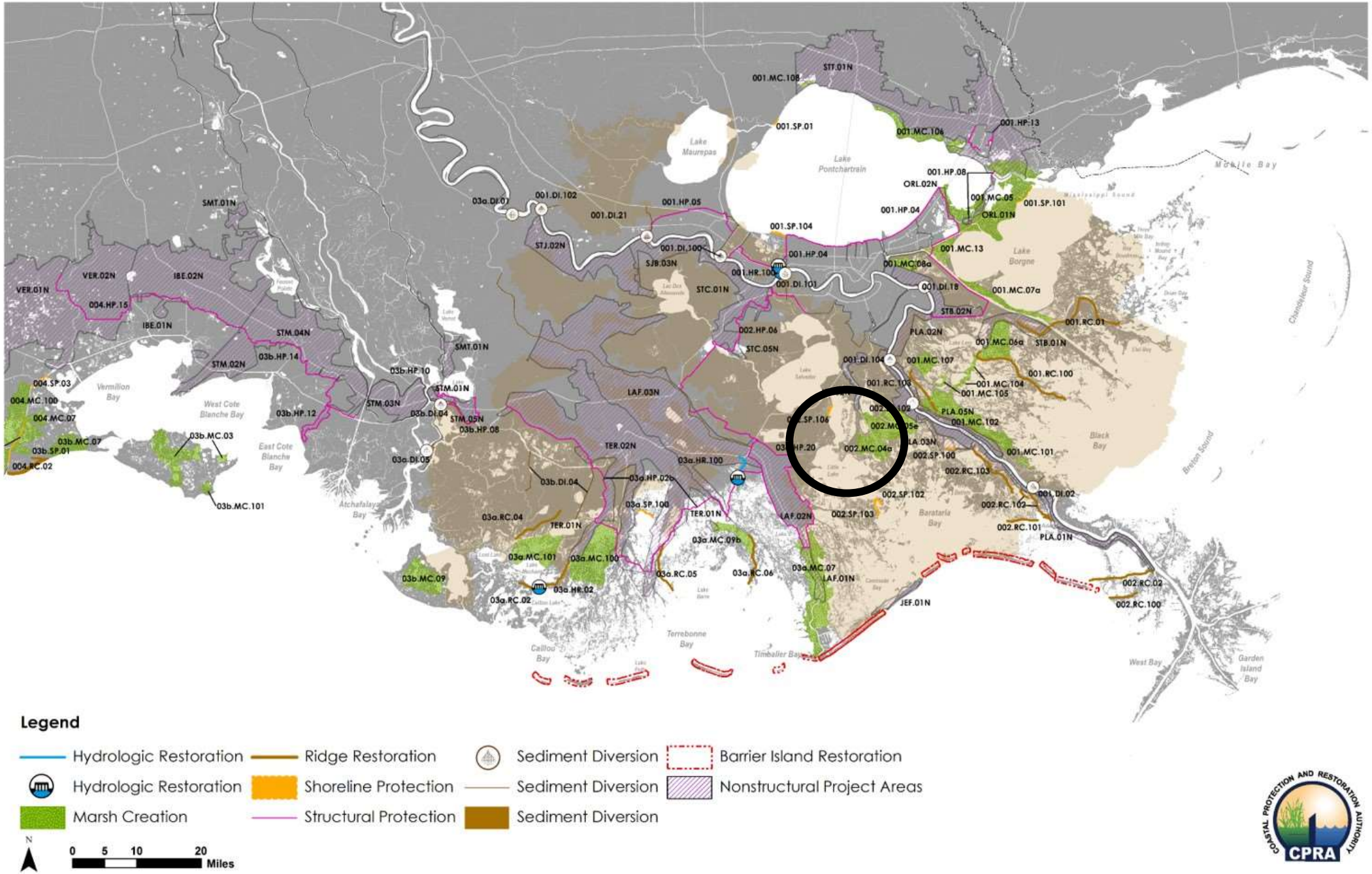
REGIONAL PLANNING TEAM MEETING

BARATARIA BASIN

February 10, 2022

Kevin Roy
kevin_roy@fws.gov
337-291-3120

2017 State Master Plan – 002.MC.04a – Lower Barataria Marsh Creation



Legend

- Hydrologic Restoration
- Hydrologic Restoration
- Marsh Creation
- Ridge Restoration
- Shoreline Protection
- Structural Protection
- Sediment Diversion
- Sediment Diversion
- Sediment Diversion
- Barrier Island Restoration
- Nonstructural Project Areas

N

0 5 10 20 Miles

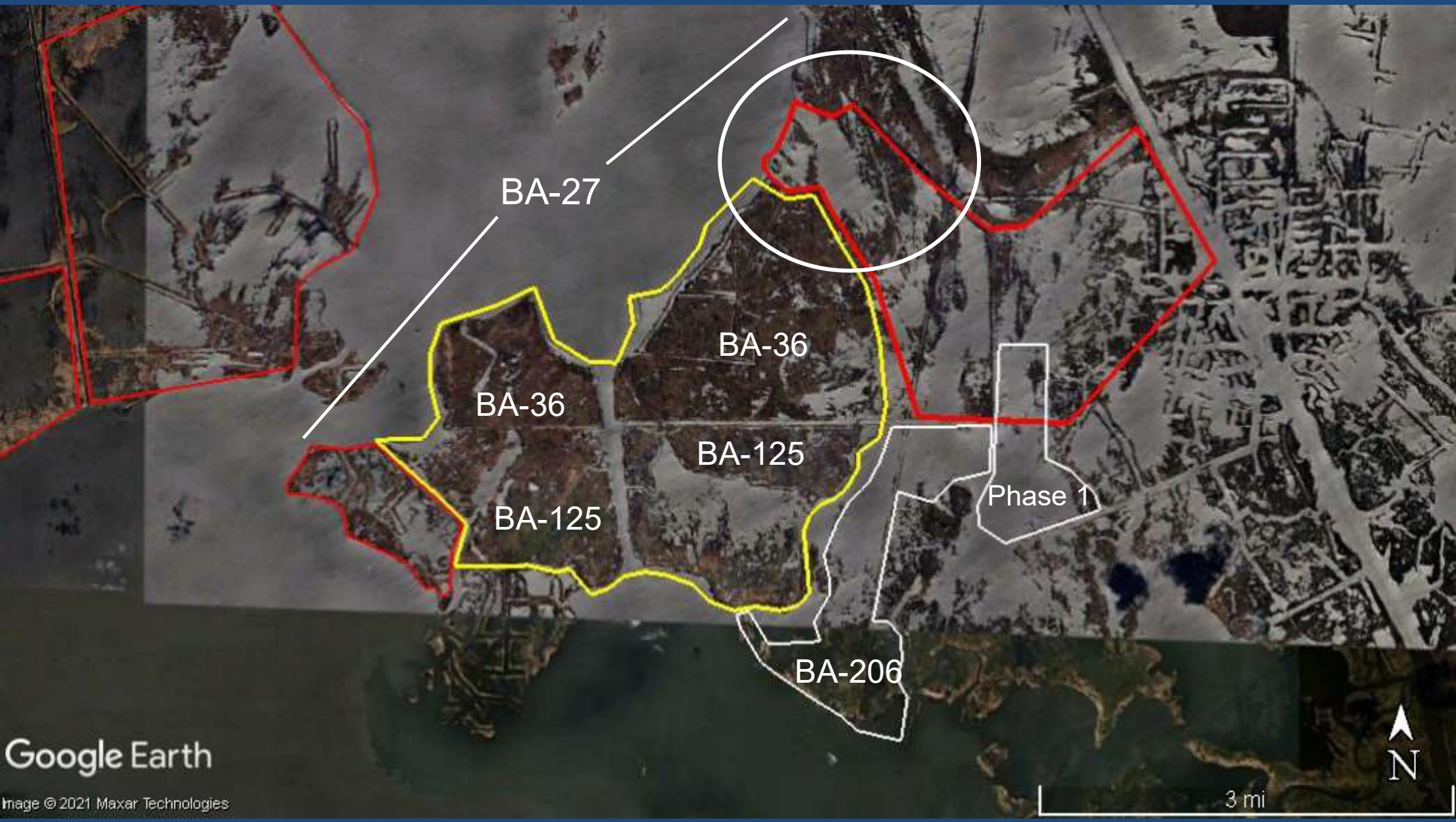
COASTAL PROTECTION AND RESTORATION AUTHORITY
CPRA

Central Barataria Basin – Pre Hurricane Ida

North Little Lake Region – Lafourche and Jefferson Parishes

Central Barataria Basin Landbridge – Jefferson Parish

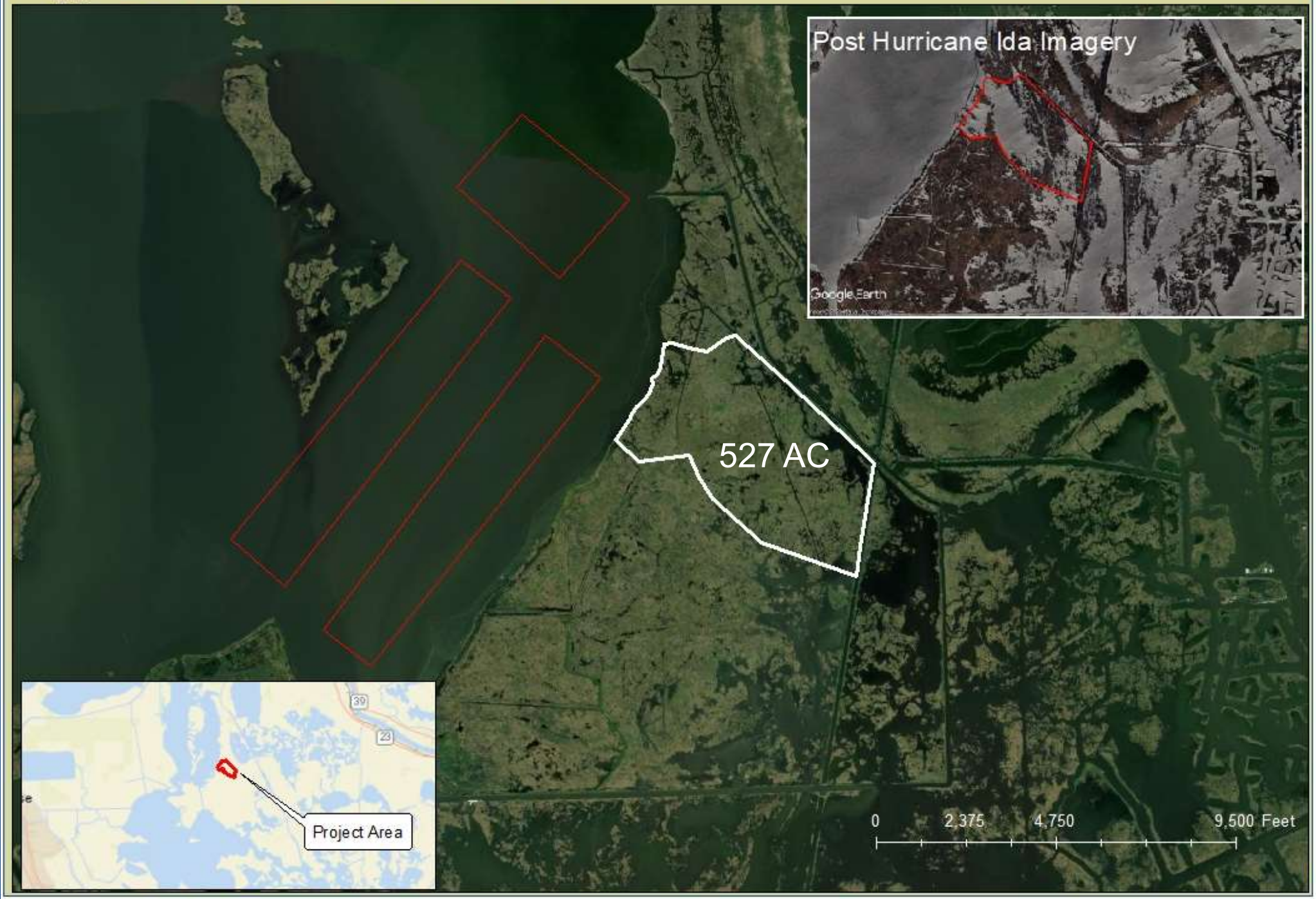
Central Barataria Basin Landbridge – Jefferson Parish



U.S. Fish & Wildlife Service

Louisiana Ecological Services

Bayou Rigolettes East Marsh Creation



Bayou Rigolettes East Marsh Creation

- 527 acres – total project footprint
- 357 acres MC and 170 acres MN
- Net acres = 350-400
- Bayou Rigolettes borrow site (3.2 MCY)
- Construction plus 25% contingency = $20M-$25M
- Synergy – BA-27, BA-36, BA-125, BA-206

Contributors:
Michelle Gonzales, Jefferson Parish
Coastal Engineering Solutions, LLC
Frank Tessier, Rigolettes Limited Partnership

PPL32 PROJECT NOMINEE FACT SHEET
February 1, 2022

Project Name
Northwest Little Lake Marsh Creation

Project Location
Region 2, Barataria Basin, Lafourche Parish, Northwestern Little Lake Shoreline, South of Clovelly Canal

Problem
The project area has been a relatively stable coastal area for the past 35 years. A land change analysis conducted by USGS for 254 coastal subunits indicates a 1985-2020 land change rate of 0.09 %/yr for the Delta Farms Subunit. However, in August 2021, the central and western Barataria Basin experienced thousands of acres of land loss with the passage of Hurricane Ida. One of the areas hardest hit by the storm is the northwestern Little Lake shoreline. Within the 500-acre project area, it appears that only a few remnants of marsh remain (based on 9/11/2021 imagery).

Goals
The primary goals of the project are: 1) restore marsh habitat in an area significantly impacted by Hurricane Ida and 2) restore approximately 6,500 LF of the northwestern Little Lake shoreline. The specific goals of this project are: 1) create 460 acres of marsh and 2) nourish 40 acres of marsh.

Proposed Solution
Sediments from Little Lake would be hydraulically dredged and pumped via pipeline to create/nourish 500 acres of marsh. Marsh platform elevations will be conducive to the establishment of intertidal marsh. Containment dikes will be constructed around the entire marsh creation cell. Containment dikes will be gapped at the end of construction or by TY3.

Project Benefits
The project would result in approximately 450-500 net acres over the project life.

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

Preparer of Fact Sheet
Kevin Roy, FWS, (337) 291-3120, Kevin_Roy@fws.gov
Quin Kinler, NRCS, (225) 271-2403, Quin.Kinler@usda.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Northwest Little Lake Marsh Creation

North Little Lake Region – Lafourche Parish

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Northwest Little Lake Marsh Creation

Northwest Little Lake Marsh Creation

- 500 acres – total project footprint
- 460 acres MC and 40 acres MN
- Net acres = 450-500
- Little Lake borrow site (4.0 MCY)
- Construction plus 25% contingency = $20M-$25M
- Synergy – BA-02 GIWW to Clovelly HR

Contributors:
Amanda Voisin, Lafourche Parish
Quin Kinler, NRCS

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Southeast Golden Meadow Marsh Creation

Project Location
Region 2, Barataria Basin, Lafourche Parish, Southeast of Golden Meadow

Problem
The project area has experienced extensive loss of emergent wetlands from subsidence, storms, canal dredging, and altered hydrology. Wetland loss has increased the vulnerability of the South Lafourche Hurricane Protection Levee to damage from tropical storms. Based on the land-water analysis conducted by USGS for the extended project boundary, the land loss rate in the project area is -0.55% per year for the period 1984 to 2020.

Goals
The primary goal of this project is to restore marsh southeast of Golden Meadow near the alignment of the South Lafourche Hurricane Protection Levee. The specific goal of the project is to create approximately 354 acres (292 acres of marsh creation and 62 acres of marsh nourishment) of marsh with dredged material from Bayou Lafourche.

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

Proposed Solution
Sediments from Bayou Lafourche will be hydraulically dredged and pumped via pipeline to create/nourish approximately 354 acres of marsh. The proposed design is to place the dredged material to a slurry height of +2.7 ft NAVD88 with a target marsh elevation of +0.82 ft NAVD88. 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 gapped at the end of construction.

Project Benefits
The project would result in approximately 250-300 net acres over the 20-year project life.

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

Preparer of Fact Sheet
Kevin Roy, USFWS, kevin_roy@fws.gov, 337-291-3120

Southeast Golden Meadow Marsh Creation
(PPL32 Nominee)

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5
Kilometers

0.45 0 0.45
Miles

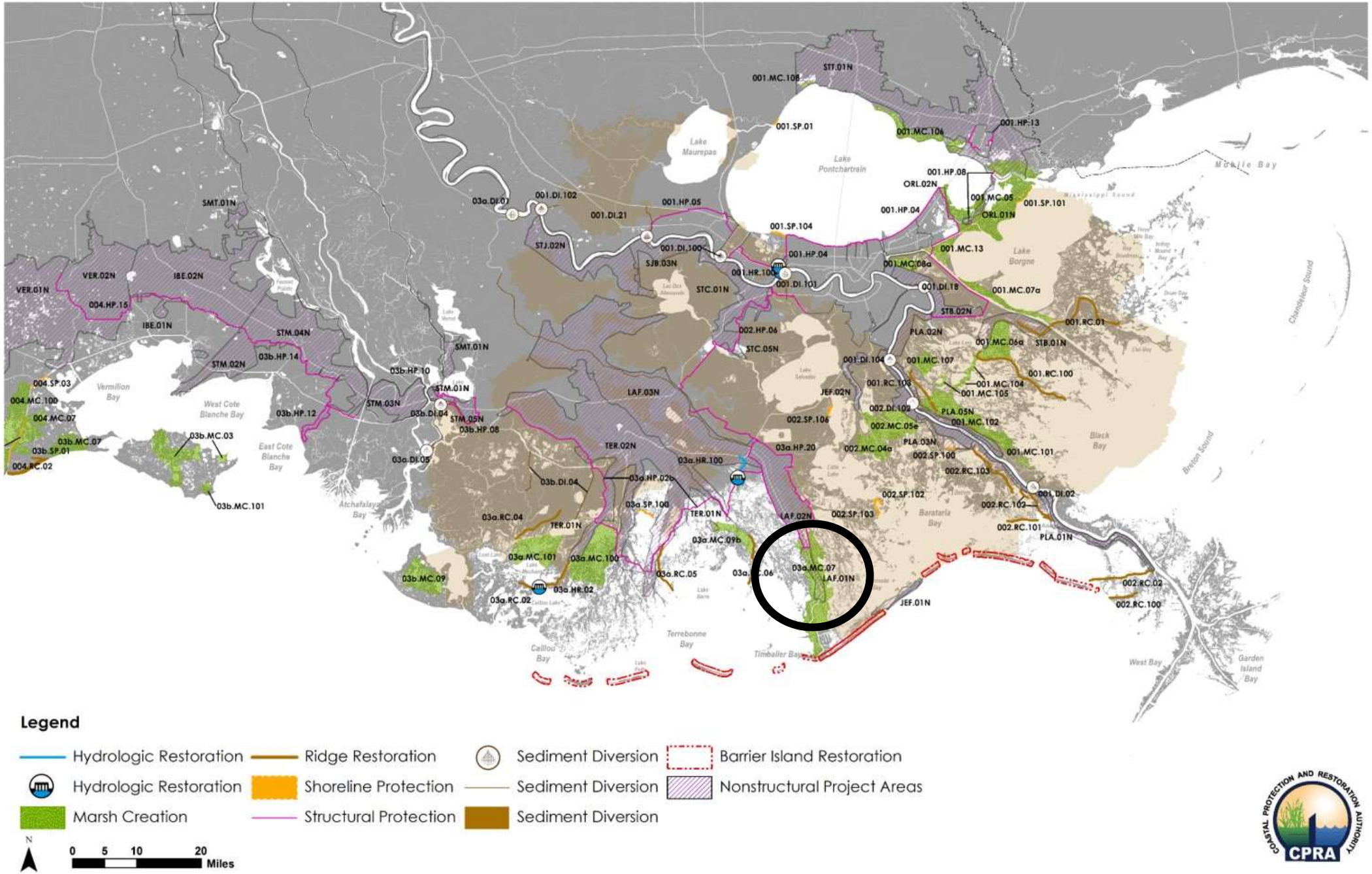
Scale 1:25,000

Map ID:
Map Date. January 31, 2022

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal and Ocean Restoreation Branch
Baton Rouge, La

Image Source:
2019 NAIP Photography

2017 State Master Plan – 03a.MC.07 – Belle Pass-Golden Meadow Marsh Creation



Legend

- Hydrologic Restoration
- Hydrologic Restoration
- Marsh Creation
- Ridge Restoration
- Shoreline Protection
- Structural Protection
- Sediment Diversion
- Sediment Diversion
- Sediment Diversion
- Barrier Island Restoration
- Nonstructural Project Areas

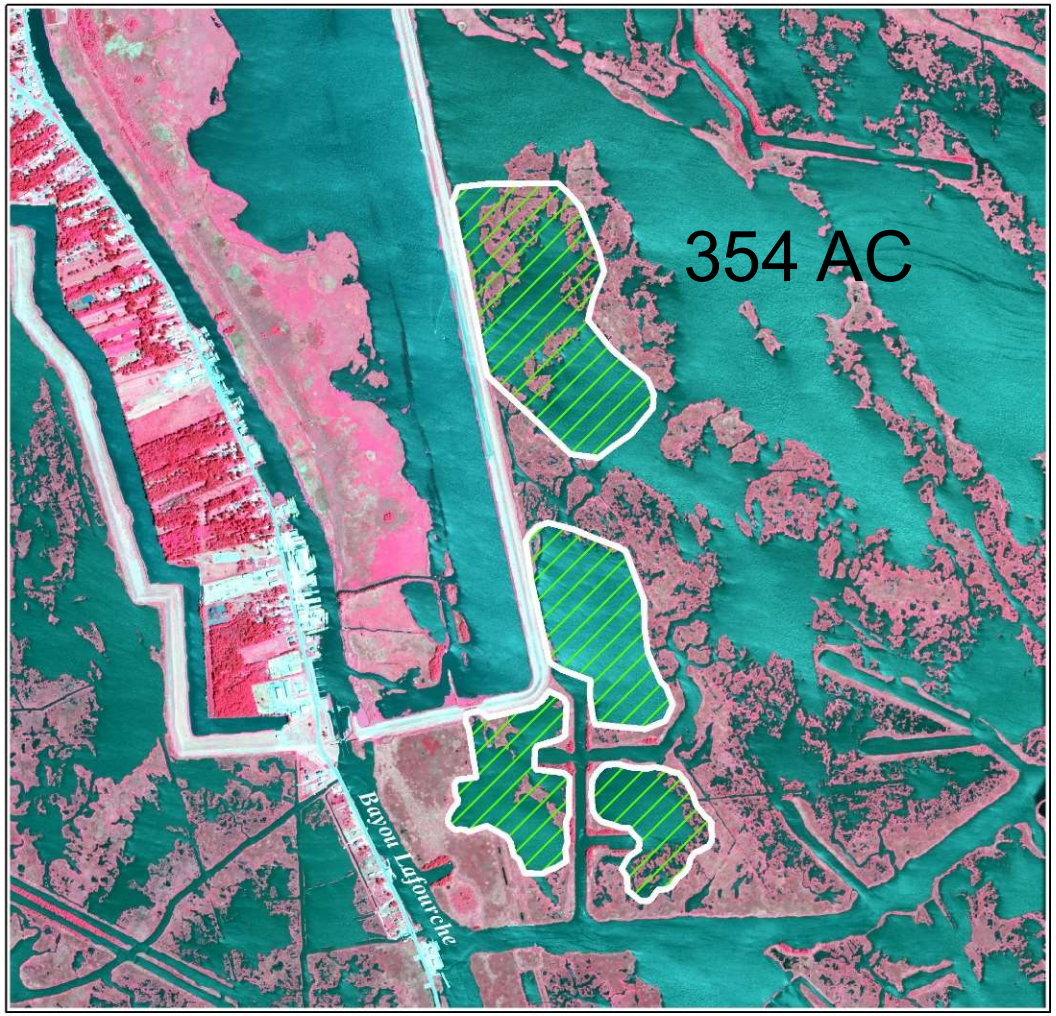
N

0 5 10 20 Miles

COASTAL PROTECTION AND RESTORATION AUTHORITY
CPRA

- Lafourche Parish invested RESTORE Act funds to investigate marsh and ridge restoration options along the Bayou Lafourche corridor
- T. Baker Smith was selected to perform E&D services in 2017
- Marsh creation areas along the South Lafourche levee were investigated as the Bayou Lafourche Marsh Creation Project
- Plans to submit the project for other funding streams were withdrawn
- FWS approached by Lafourche Parish to develop a CWPPRA nominee

State Master Plan – 03a.MC.07
Belle Pass-Golden Meadow
Marsh Creation



Southeast Golden Meadow Marsh Creation
(PPL32 Nominee)

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.45 0 0.45 Miles

Scale 1:25,000

Map ID:
Map Date: January 31, 2022

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal and Ocean Restoration Branch
Baton Rouge, La

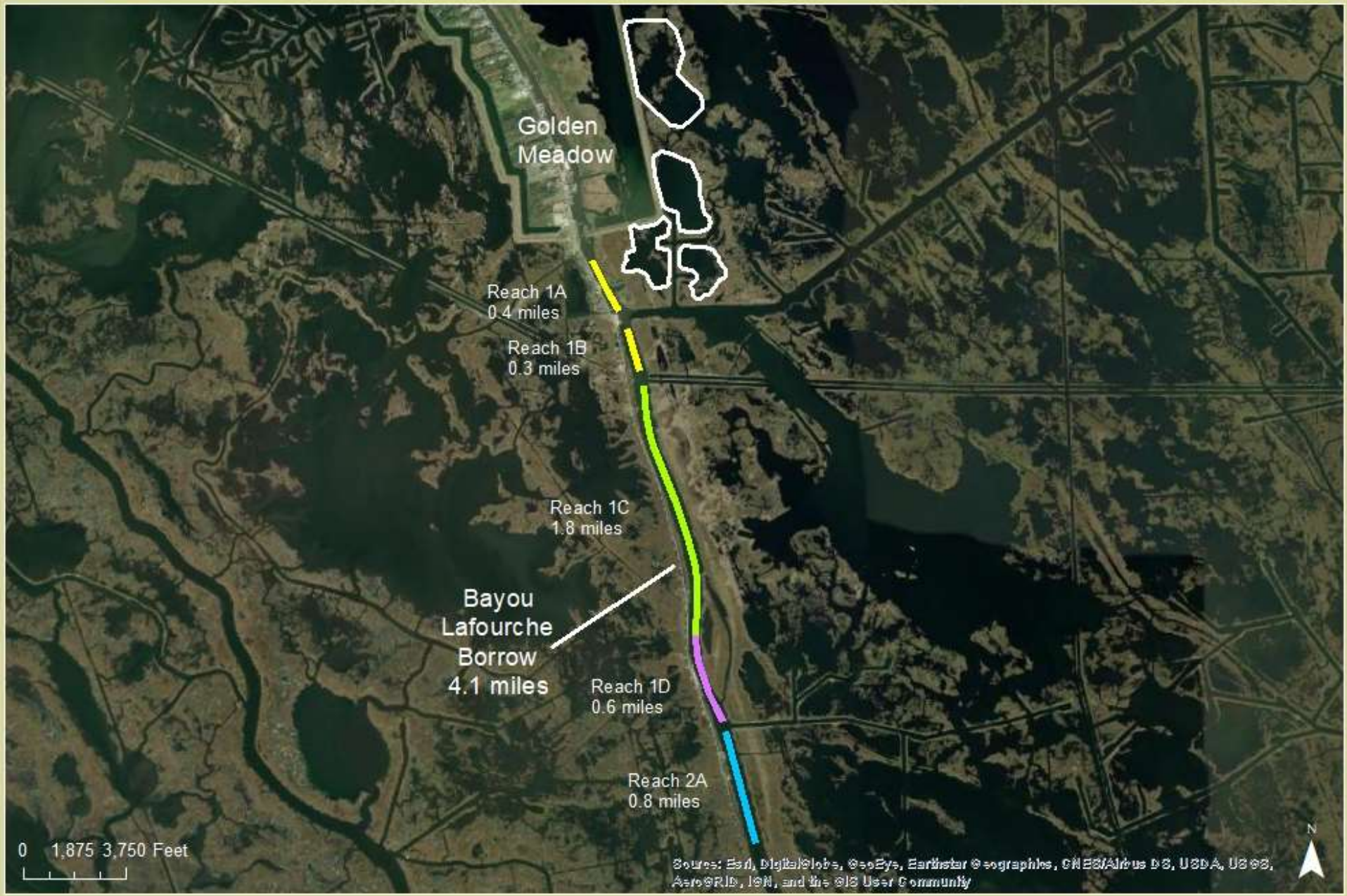
Image Source:
2019 NAIP Photography

Post Hurricane Ida

U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Southeast Golden Meadow Marsh Creation - Bayou Lafourche Dredging Reaches



Southeast Golden Meadow Marsh Creation

- 354 acres – total project footprint
- 292 acres MC and 62 acres MN
- Net acres = 250-300
- Bayou Lafourche borrow site (4.1 miles; 3.1 MCY)
- Construction plus 25% contingency = $25M-$30M
- Adjacent to South Lafourche Hurricane Protection System

Contributors:
Amanda Voisin, Lafourche Parish
Ian McGowan, Castex Lafourche
T. Baker Smith

PPL32 PROJECT NOMINEE FACT SHEET
February 1, 2022

Project Name
East Bayou Lafourche Marsh Creation

Project Location
Region 2, Barataria Basin, Lafourche Parish, south of Golden Meadow adjacent to Bayou Lafourche

Problem
The area from Golden Meadow to Leeville, along the Highway 1-Bayou Lafourche corridor, has experienced extensive loss of emergent wetlands from subsidence, storms, canal dredging, and altered hydrology. Of particular note, is the extensive loss which occurred in August 2021 with the passage of Hurricane Ida. Wetland loss has increased the vulnerability of Louisiana Highway 1 to damage from tropical storms. A land change analysis conducted by USGS for 254 coastal subunits indicates a 1985-2020 land change rate of -1.19 %/yr for the Lake Palourde subunit.

Goals
The primary goal of this project is to restore marsh along the Highway 1-Bayou Lafourche corridor via marsh creation. The specific goal of the project is to create approximately 417 acres (393 acres of marsh creation and 24 acres of marsh nourishment) of marsh with dredged material.

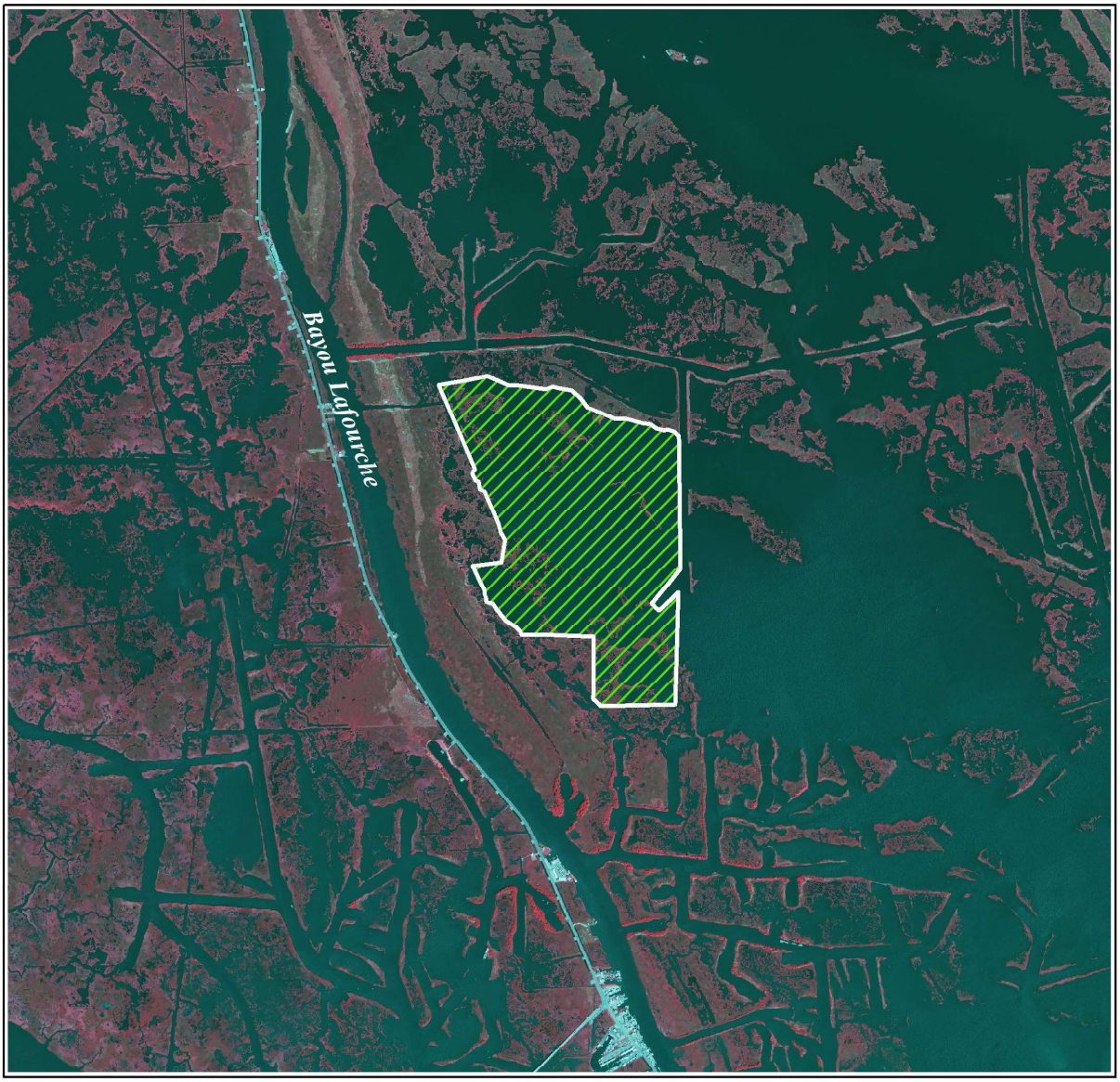
Service goals include restoration/protection of habitat for threatened and endangered species and other at-risk species. This project would restore habitat potentially utilized by the threatened black rail and other at-risk species such as the saltmarsh topminnow and seaside sparrow.

Proposed Solution
Sediments from a Little Lake/Caminada Bay borrow site will be hydraulically dredged and pumped via pipeline to create/nourish approximately 417 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh and within the intertidal range. Perimeter containment dikes will be constructed. Containment dikes exposed to open water will be planted with appropriate vegetation. Containment dikes will be gapped at the end of construction or by target year 3.

Project Benefits
The project would result in approximately 350-400 net acres over the 20-year project life.

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

Preparer of Fact Sheet
Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov



East Bayou Lafourche Marsh Creation
(PPL32 Nominee)

Marsh Creation *

Project Boundary

* denotes proposed features

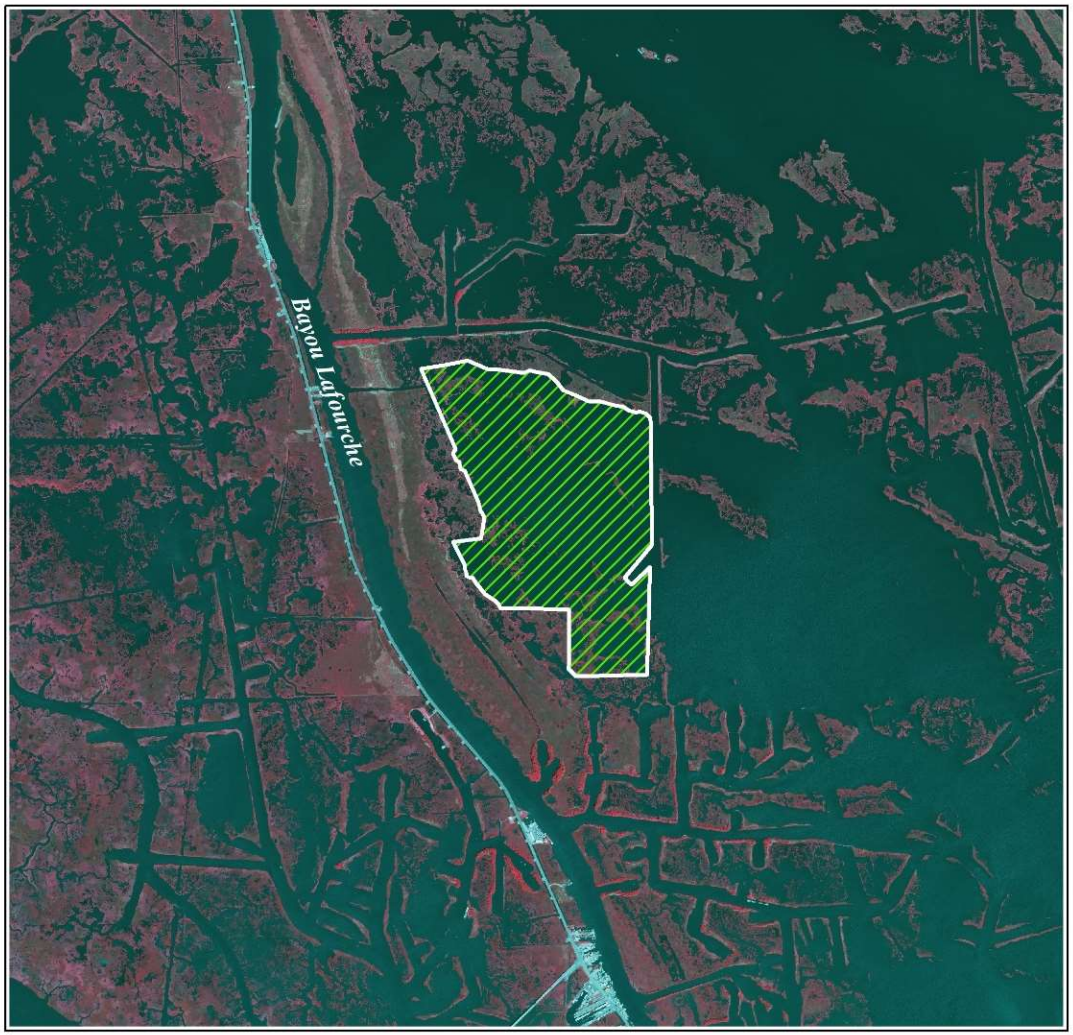
0.5 0 0.5
Kilometers
0.5 0 0.5
Miles

Scale 1:35,000

Map ID:
Map Date: January 31, 2022

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2019 NAIP



East Bayou Lafourche Marsh Creation
(PPL32 Nominee)

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

Map ID:
Map Date: January 31, 2022

USGS science for a changing world

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

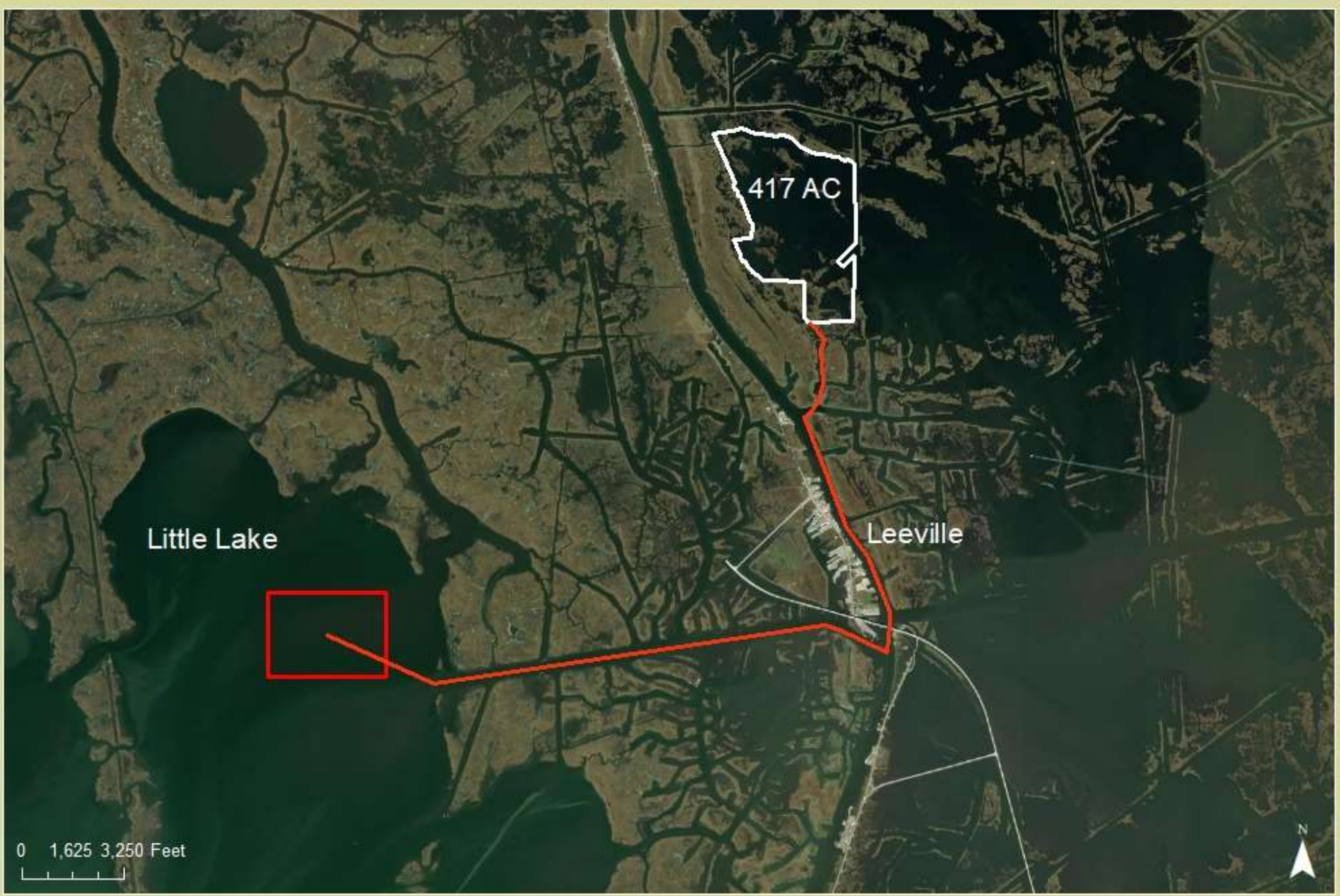
Image Source:
2019 NAIP

Post Hurricane Ida

U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

East Bayou Lafourche Marsh Creation



East Bayou Lafourche Marsh Creation

- 417 acres – total project footprint
- 393 acres MC and 24 acres MN
- Net acres = 350-400
- Little Lake borrow site (3.6 MCY)
- Construction plus 25% contingency = $30M-$35M
- Situated along Highway 1-Bayou Lafourche Corridor

Contributors:
Amanda Voisin, Lafourche Parish
ConocoPhillips

PPL32 PROJECT NOMINEE FACT SHEET
January 31, 2022

Project Name
Fifi Island Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish

Problem
Fifi Island has undergone significant land loss from storms, subsidence, and wave erosion due to its northern exposure to Bay Des Ilettes. Since the early 2000s, several restoration efforts have taken place on the island. The island has experienced periods of land gain due to the deposition of dredged material from the maintenance dredging of Bayou Rigaud. The latest dredging event was in 2010. The Grand Isle Independent Levee District has also been instrumental in several island restoration projects. A rock dike now provides protection to wave energy along the northern island shoreline. Additional rock dikes have also been constructed along the southern shoreline adjacent to Bayou Rigaud. Based on the hyper-temporal analysis conducted by USGS for the PPL29 candidate, the land loss rate in the project area is -1.21% per year for the period 1984 to 2019.

Goals
The primary goals of the project are: 1) restore marsh habitat on Fifi Island via marsh creation and 2) provide backbarrier marsh habitat in the vicinity of Grand Isle. The specific goals of this project are: 1) create 105 acres of marsh and 2) nourish 4 acres of marsh.

Service goals include restoration/protection of habitat for threatened and endangered species and other at-risk species. This project would restore habitat potentially utilized by the black rail, a threatened species. The project could also benefit other species of concern including the saltmarsh topminnow and seaside sparrow.

Proposed Solution
Sediments from Bayou Rigaud and/or Bay Des Ilettes will be hydraulically dredged and pumped via pipeline to create/nourish 109 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. Containment dikes will be gapped at the end of construction or by TY3.

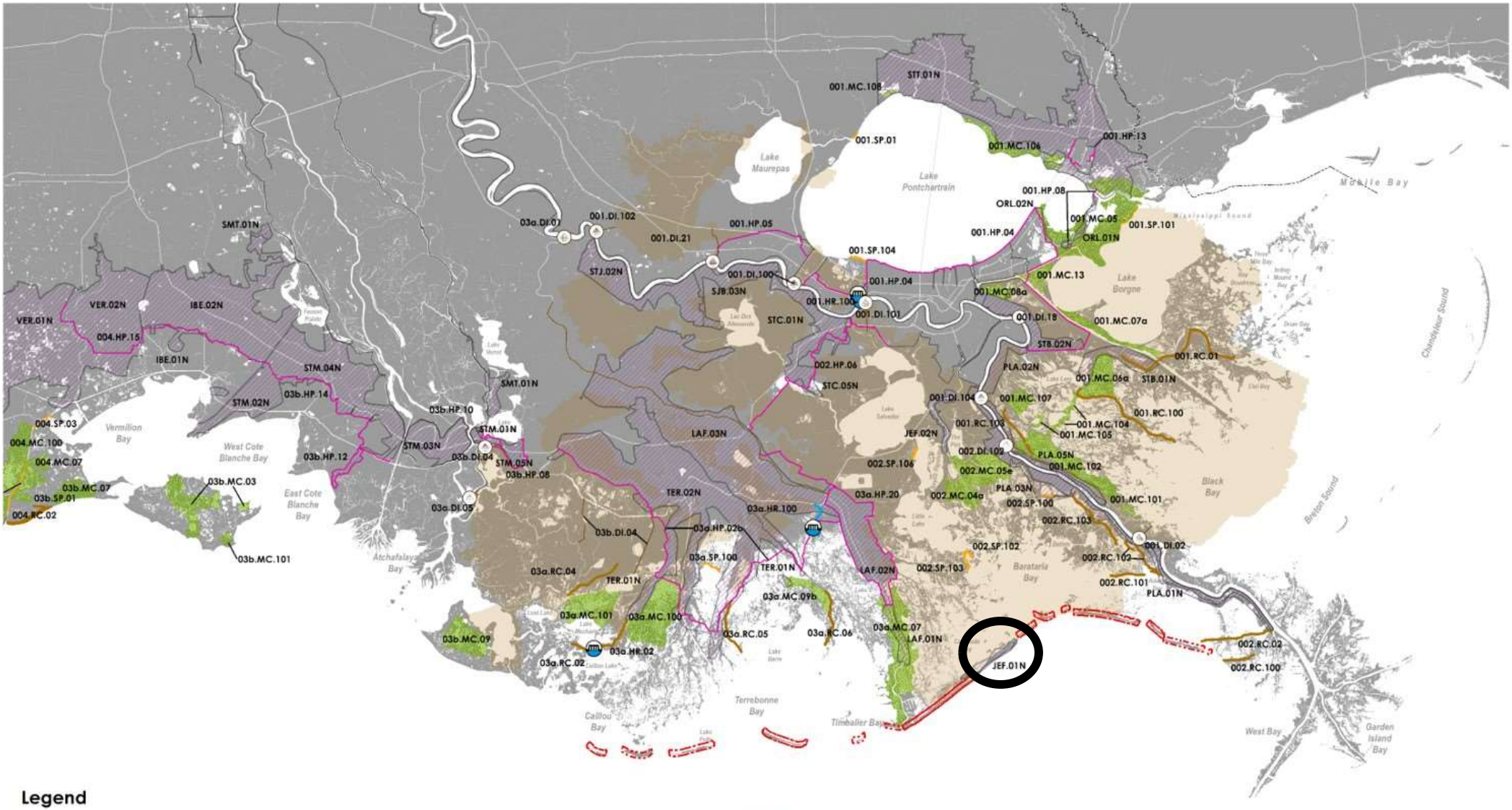
Project Benefits
The project would result in approximately 50-100 net acres over the project life.

Project Costs
The estimated construction cost plus 25% contingency is $10M - $15M.

Preparer of Fact Sheet
Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov


U.S. Fish & Wildlife Service
Louisiana Ecological Services
Fifi Island Marsh Creation
Borrow Area
Corps FY22 Maintenance Event
Fifi Island Marsh Creation
109 Acres
Bayou Rigaud
0
1,625
3,250
6,500 Feet

2017 State Master Plan – Barrier Island Restoration Programmatic Strategy



U.S. Fish & Wildlife Service

Louisiana Ecological Services

Fifi Island Marsh Creation

Fifi Island Marsh Creation

- 109 acres of marsh creation/nourishment
- Net acres = 50-100
- Bay or Bayou Rigaud borrow site (1.3 MCY)
- Construction plus 25% contingency = $10M-$15M
- Intertidal habitat in close proximity to Grand Isle
- Affords some degree of protection to Grand Isle

Contributors:
Michelle Gonzales, Jefferson Parish
Ray Newman, COE, New Orleans

REGION II

REGIONAL PLANNING TEAM MEETING

BARATARIA BASIN

February 10, 2022

Kevin Roy
kevin_roy@fws.gov
337-291-3120

Questions?

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name:
Bayou Chevreuil Hydrologic Restoration and Vegetative Planting

Project Location:
Region 2, Barataria Basin, St. John the Baptist and St. James Parishes, Bayou Chevreuil, Lac Des Allemands Swamp

Problem:
The Lac Des Allemands River Basin has experienced drainage impairments, water quality impairments, impoundment, subsidence, and inadequate accretion of sediment and organic matter. These problems were largely caused by human activities that severed the area from the natural flow of water. The poor hydrology in the area is due to multiple manmade and natural levees. The Vacherie Canal to the north eliminated connectivity with bottomland hardwood swamps and uplands to the north. Bayou Chevreuil to the south was dredged in 1959 which impounded the area with spoil banks.

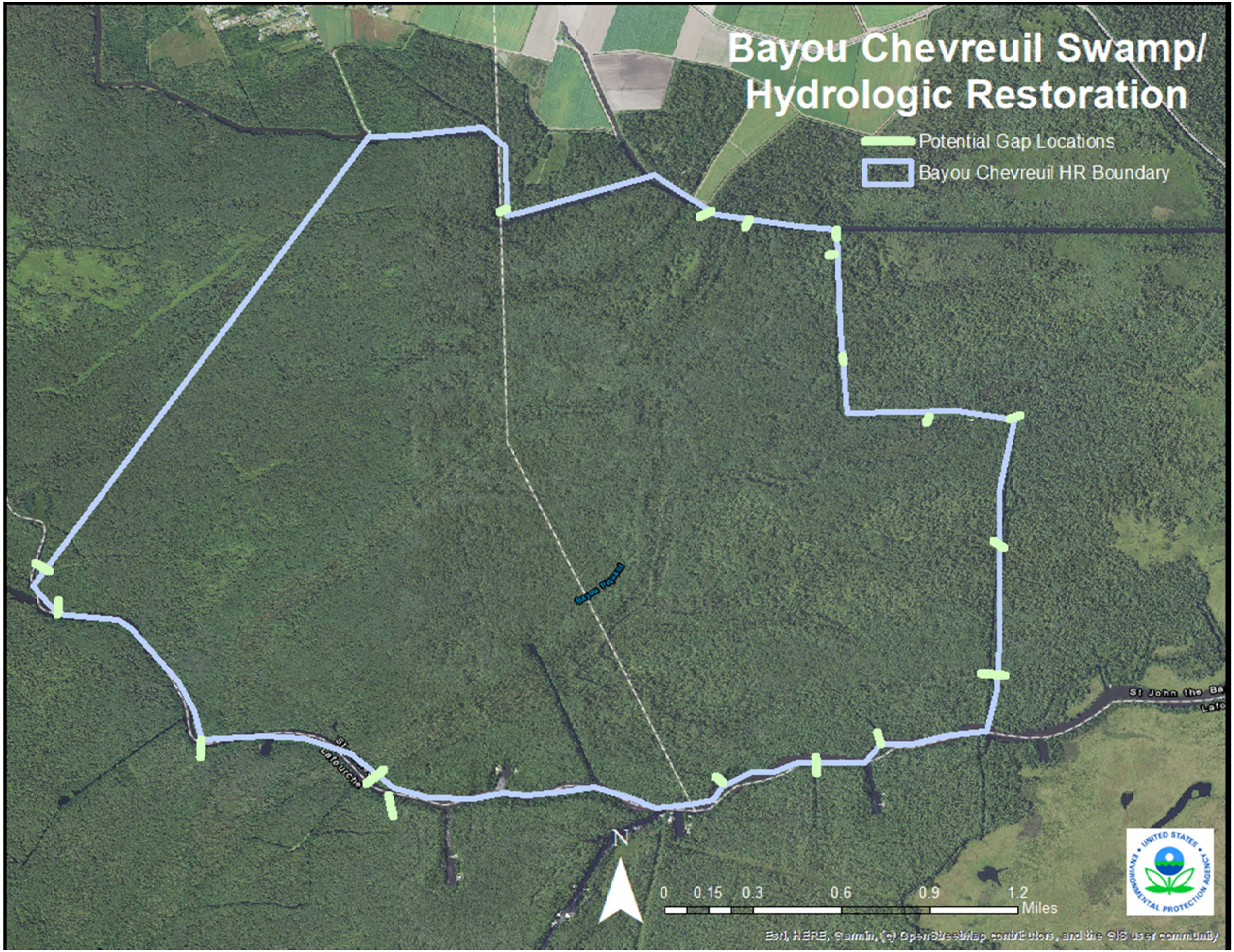
Goals:
The goals of this project are similar to those of BA-34-2 and include 1) restoring natural hydrology on Bayou Chevreuil 2) reducing impoundment 3) increasing swamp longevity and productivity, and 4) protecting neighboring developed areas from flooding hazards through hydrologic restoration.

Proposed Solution:
The proposed project includes: 1) construction of gaps on the northern bank of Bayou Chevreuil & elsewhere, 2) creation of conveyance channels that originate from the gaps and extend inward into the swamp, 3) improve/clean out historical drainage pathways to the gap locations, and 4) vegetative plantings of cypress and tupelo saplings.

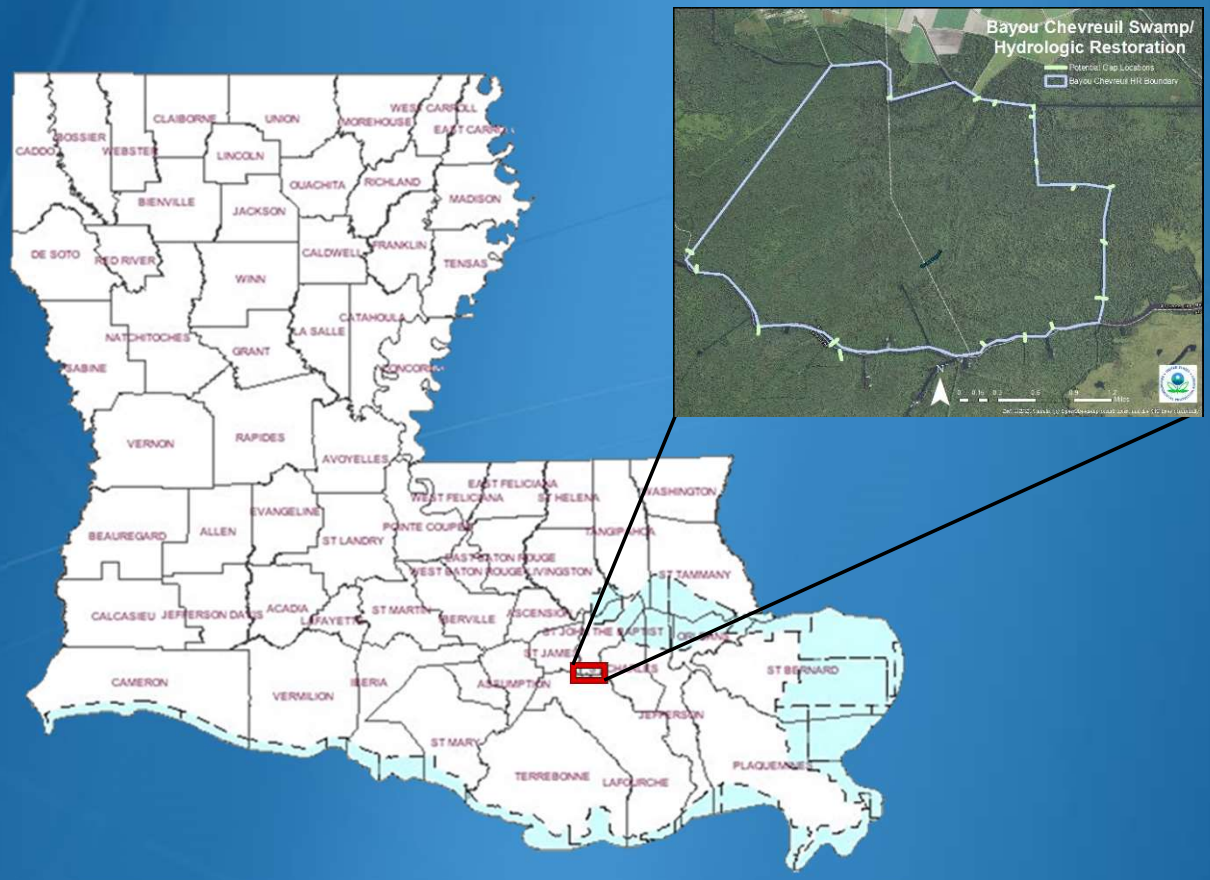
Project Benefits:
The proposed project will benefit approximately 2,866 acres with hydrologic improvements that would reverse the impoundment effects. Planting seedlings will help reestablish the swamp forest. Project benefits would include storm buffering, increased swamp productivity and increased wildlife and fishery habitat.

Project Estimated Costs: $5 - $10M.

Preparer of Fact Sheet:
Brandi Spano, EPA Region 6, (214) 665-7329, spano.brandi@epa.gov


Bayou Chevreuil Swamp/
Hydrologic Restoration
Potential Gap Locations
Bayou Chevreuil HR Boundary
Cajun Pipeline
St John the Ba
Lafo
St
Lafourche
N
0 0.15 0.3 0.6 0.9 1.2
Miles
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Bayou Chevreuil Hydrologic Restoration & Vegetative Plantings



Coastal Wetlands Planning, Protection and Restoration Act

2017 Master Plan Solution

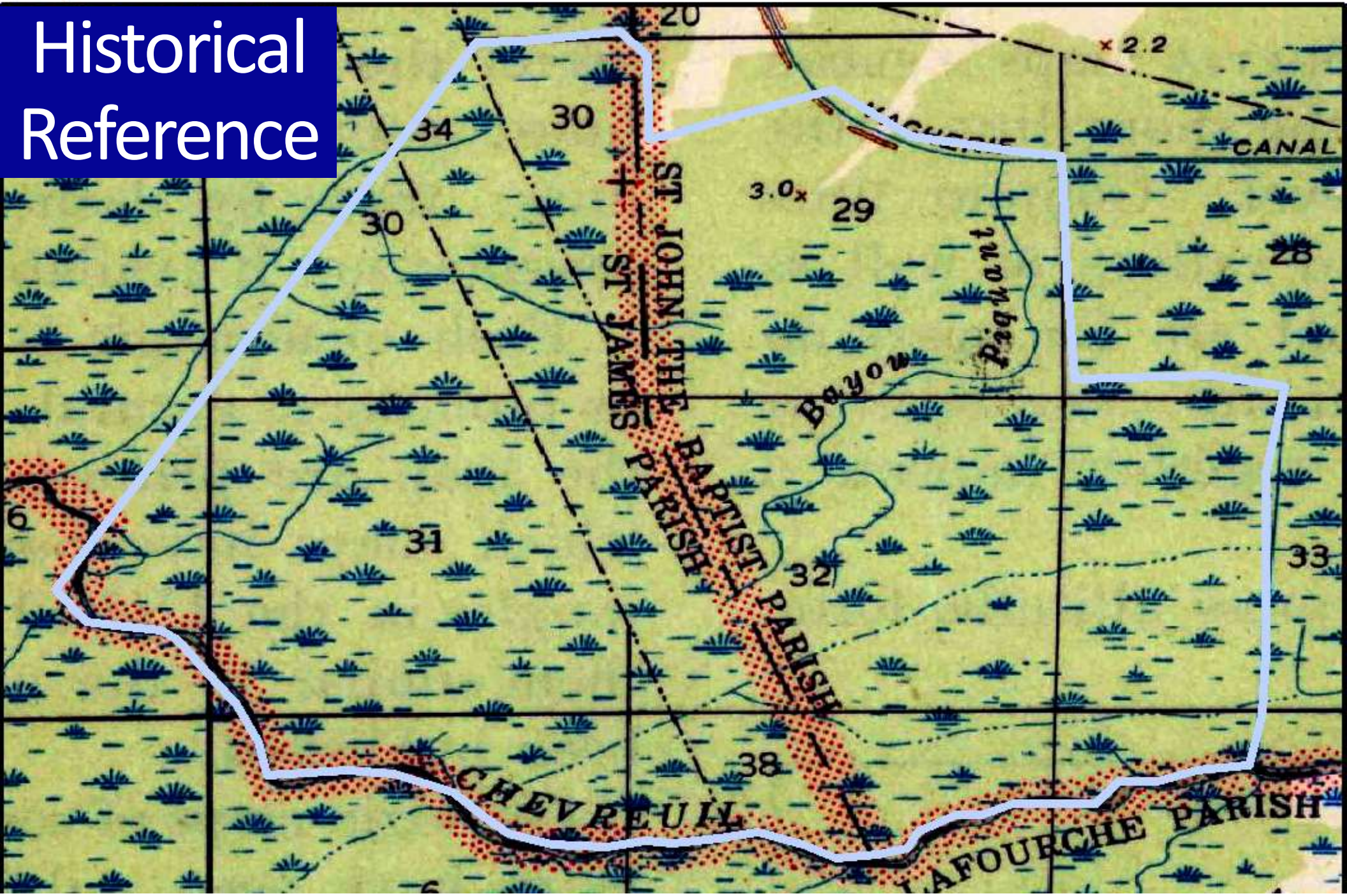
Programmatic Considerations: Small-Scale Hydrologic Restoration. Hydrologic restoration, as a technique for improving marsh health, seeks to restore natural hydrologic patterns either by conveying fresh water to areas that have been isolated by man-made features, relieving unnatural impoundments, or by preventing the intrusion of salt water. The state recognizes that there are many small-scale hydrologic improvements that could benefit existing wetlands and work synergistically with existing and planned restoration projects.

Bayou Chevreuil Swamp/HR 1944 topo

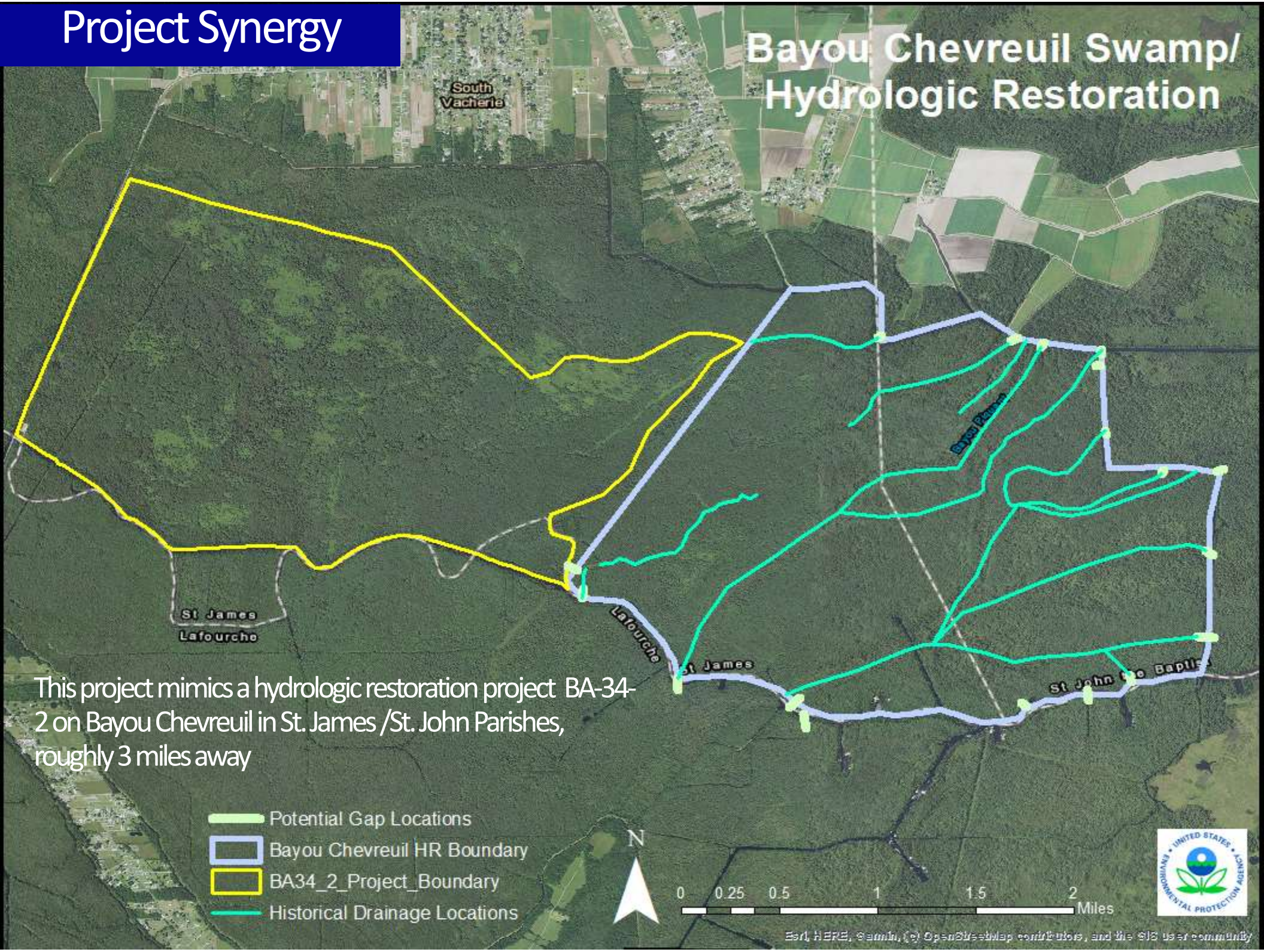
N

0 0.15 0.3 0.6 0.9 1.2 Miles

Historical Reference

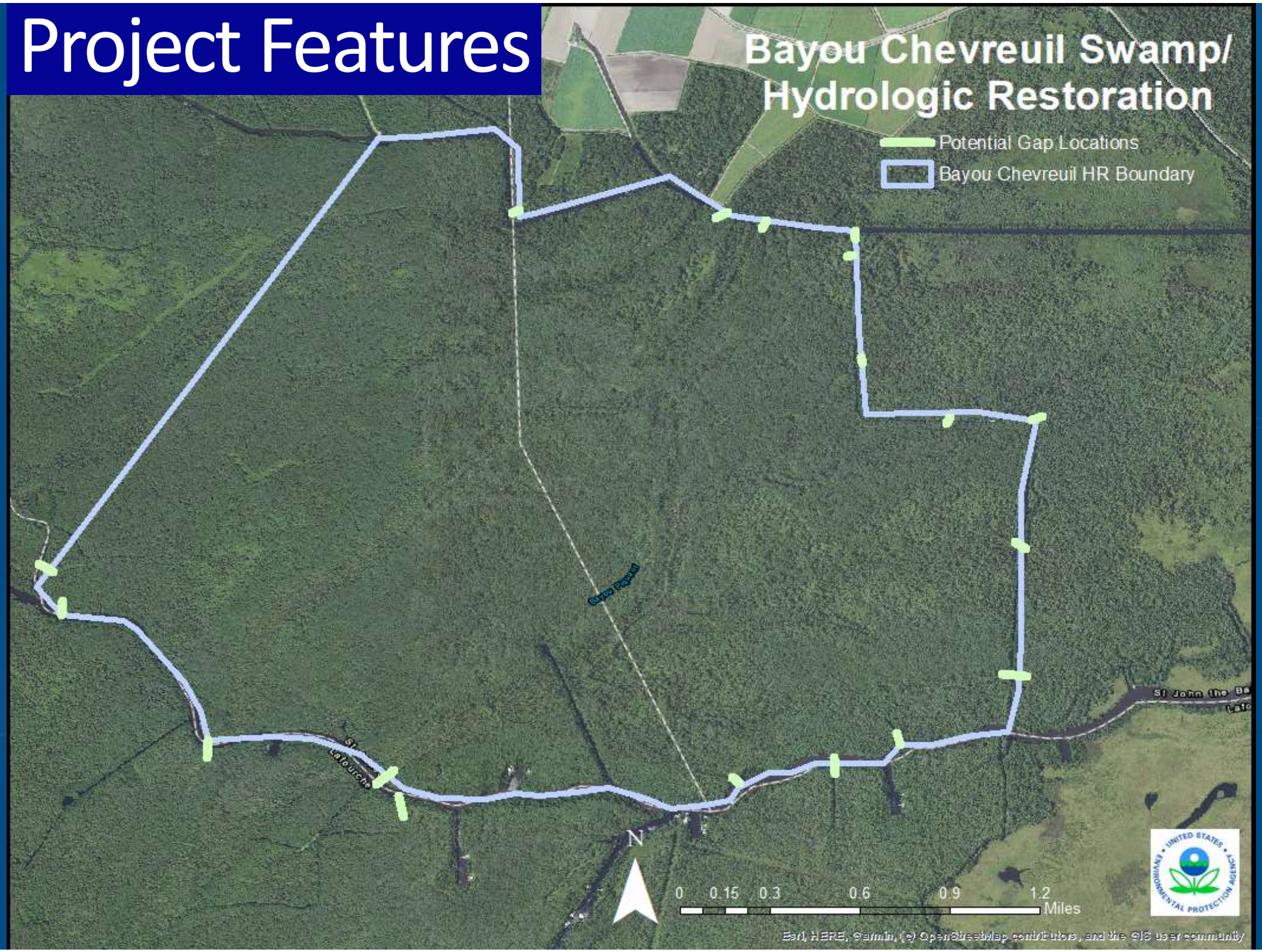


Project Synergy



BA-34-2 One Year Post Construction

Project Features



Problems

- Drainage and water quality impairments resulting in marsh loss and decline of cypress forest
- Impoundment, subsidence, inadequate accretion
- Roads, drainage canals, and spoil banks contribute to the problem

Solutions

- Construction of gaps on the northern bank of Bayou Chevreuil & elsewhere
- Creation of conveyance channels that originate from the gaps and extend inward into the swamp
- Improve/clean out historical drainage pathways to the gap locations
- Vegetative plantings of cypress and tupelo saplings.

- Construction cost + 25% contingency is $5M - $10M

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Bayou eau Noire Ridge Restoration and Marsh Creation

Master Plan Strategy
Bayou Eau Noire Ridge Restoration (2017 Master Plan 002.RC.102): Restoration of approximately 34,800 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along Bayou Eau Noire.

Project Location
Region 2, Barataria Basin, Plaquemines Parish

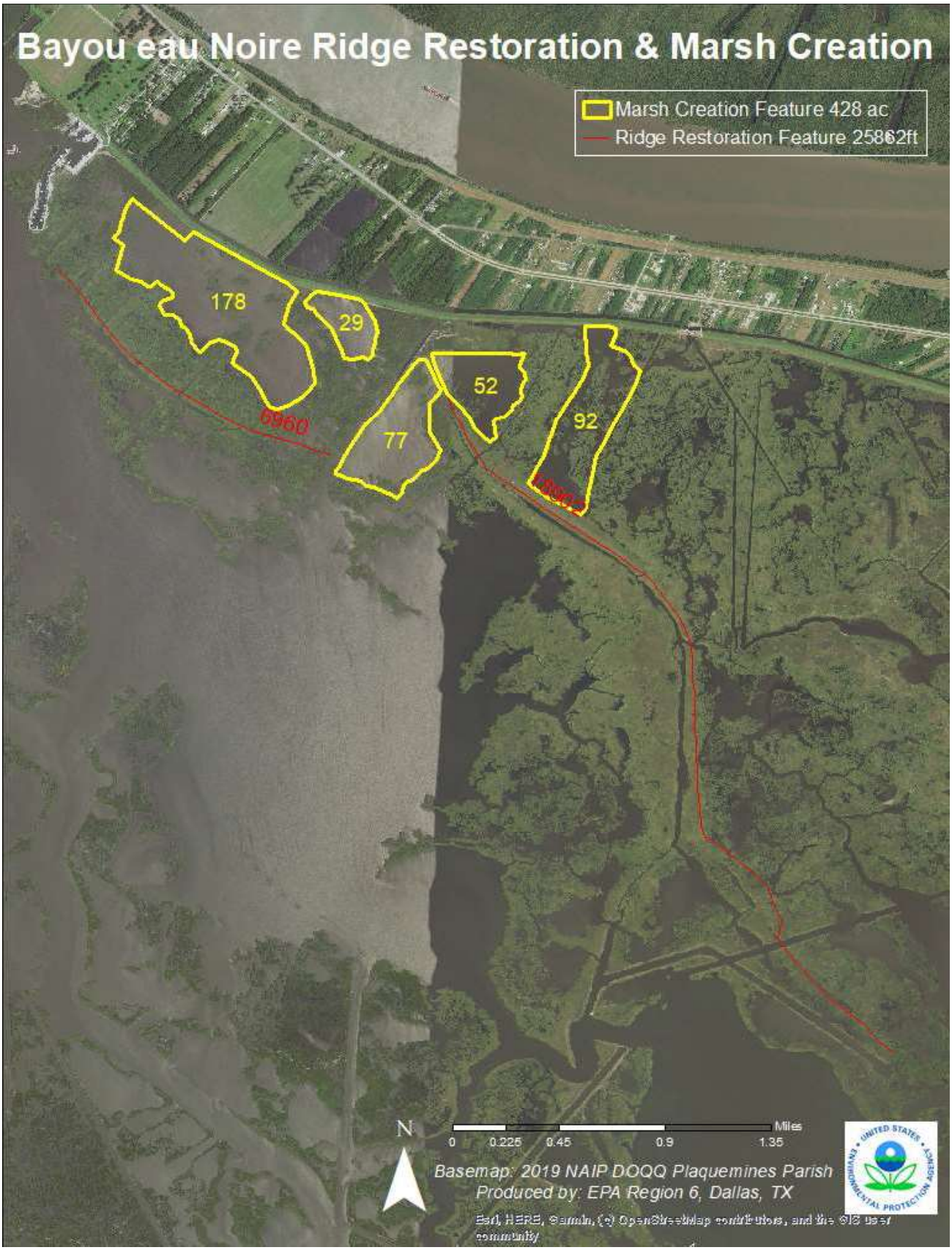
Problem
The project area is a broken marsh area immediately adjacent to the west bank of the Mississippi River levee just east of Bay de la Chenier. The historic ridge has degraded over time and marshes have become fragmented and converted to open water due to ongoing subsidence and storm events. In addition, oil and gas canals disrupted hydrology and further degraded the marsh. The marsh creation cell is located in the Bay De La Cheniere Subunit which shows a land loss rate of -0.45%/yr.

Proposed Solution
The proposed project would restore approximately 25,862 linear feet of historic ridge and create/nourish approximately 450 acres of marsh using sediment dredged from the Mississippi River as additional support for the ridge feature.

Project Benefits
Restore 25,862 linear feet of historic ridge and create/nourish approximately 450 acres (create 264 acres and nourish 186 acres) of marsh using sediment dredged from the Mississippi River.

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

Preparer(s) of Fact Sheet:
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov

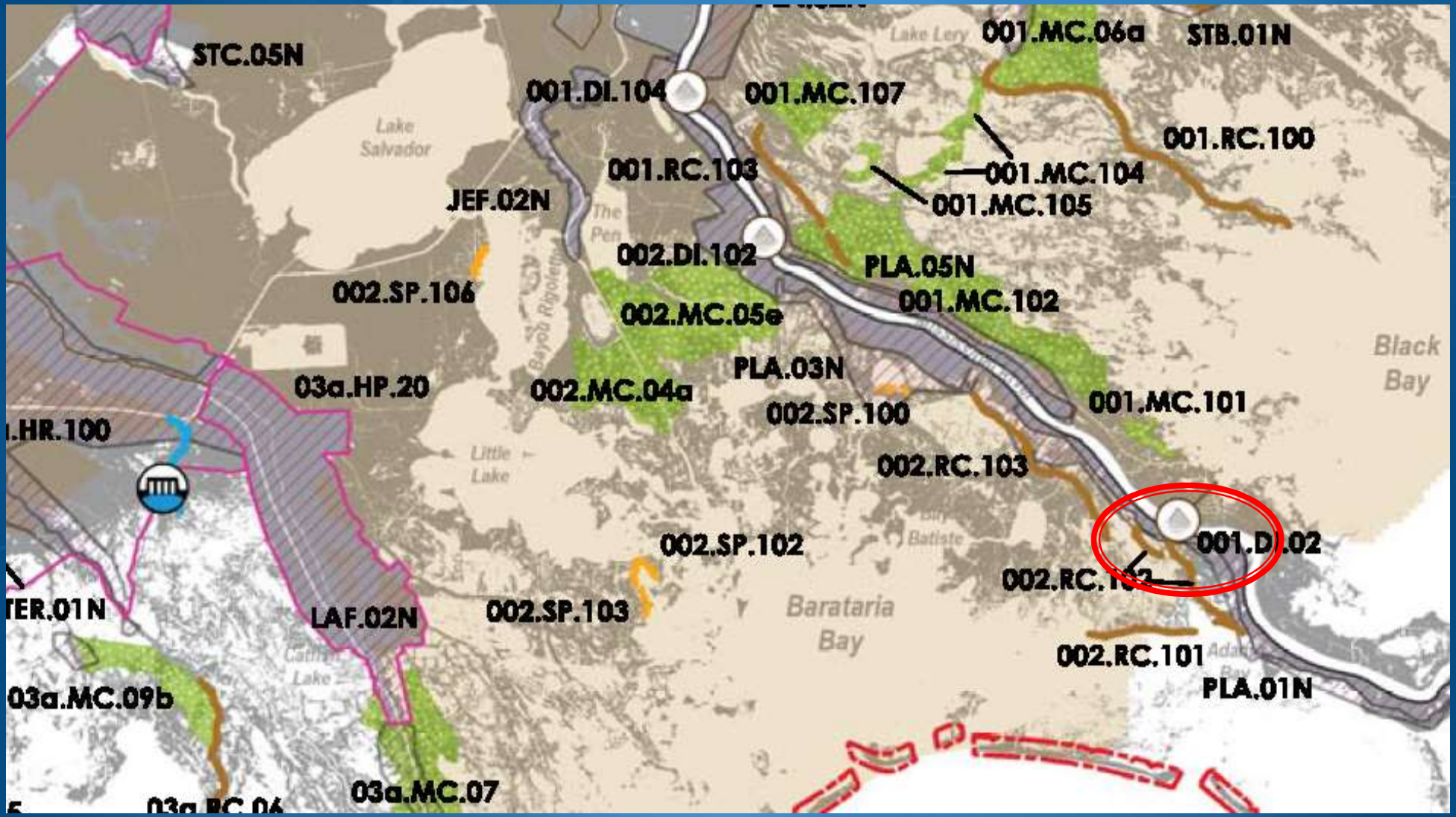

Bayou eau Noire Ridge Restoration & Marsh Creation
Marsh Creation Feature 428 ac
Ridge Restoration Feature 25862ft
178
29
52
77
92
6960
N
Miles
0
0.225
0.45
0.9
1.35
Basemap: 2019 NAIP DOQQ Plaquemines Parish
Produced by: EPA Region 6, Dallas, TX
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Bayou eau Noire
Ridge Restoration & Marsh Creation

Coastal Wetlands Planning, Protection and Restoration Act

2017 Master Plan Solution

002.RC.102 Bayou Eau Noire Ridge Restoration: Restoration of approximately 34,800 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along Bayou Eau Noire.

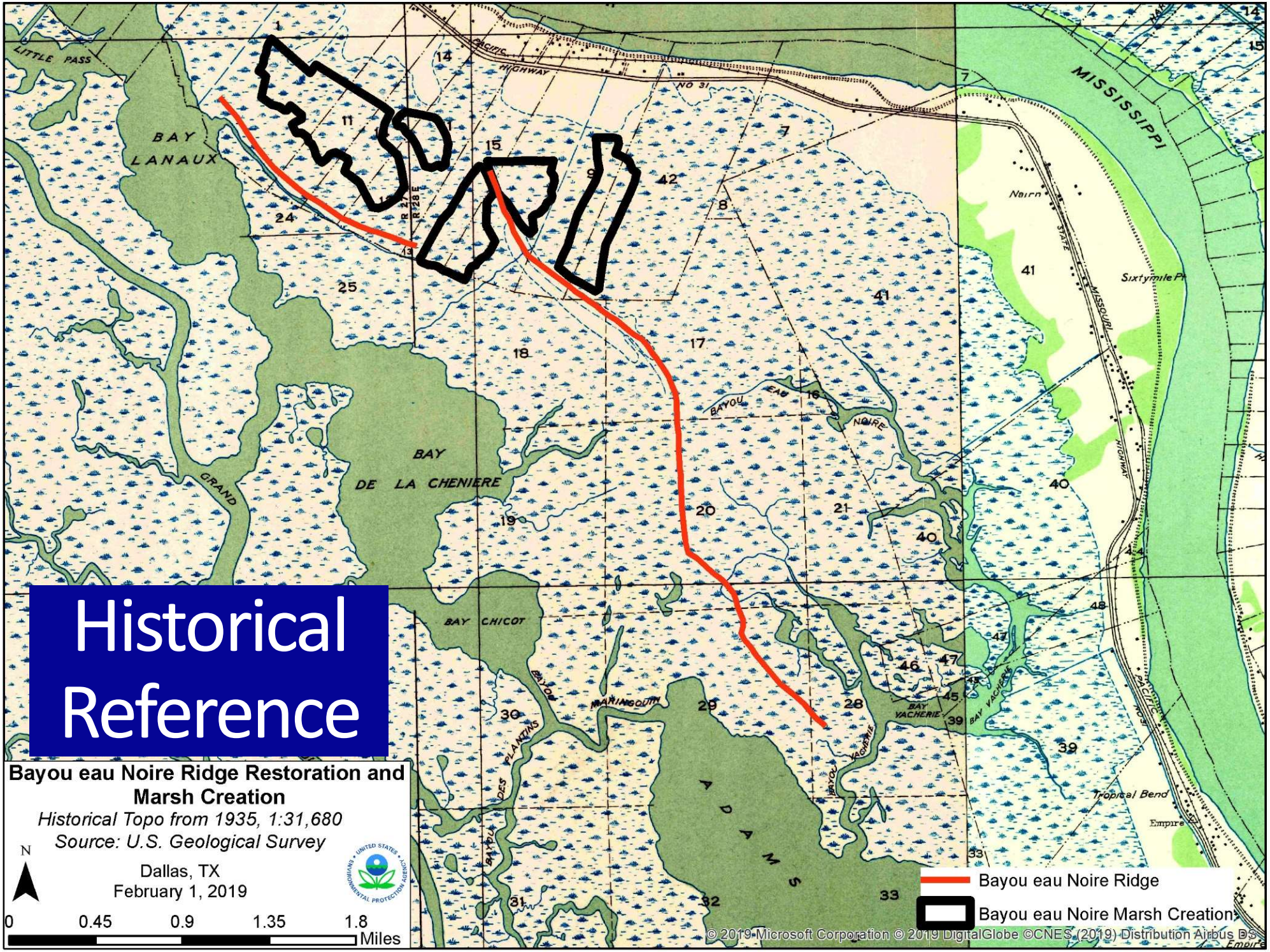


2017 Master Plan Consistency & Project Synergy

Marsh cells support the restored ridge feature

Problems

- Historic ridge feature has degraded over time
- Marsh has degraded and converted to open water over time due to multiple stressors
- Subsidence & storm events
- Plaquemines Parish could lose an additional 55% of its land area over the next 50 years & faces extensive wetland loss & severe storm surge flood risk (2017 MP).


Historical Reference
Bayou eau Noire Ridge Restoration and Marsh Creation
Historical Topo from 1935, 1:31,680
Source: U.S. Geological Survey
Dallas, TX
February 1, 2019
N
0
0.45
0.9
1.35
1.8
Miles
Bayou eau Noire Ridge
Bayou eau Noire Marsh Creation
© 2019 Microsoft Corporation © 2019 DigitalGlobe ©CNES (2019) Distribution Airbus DS
LITTLE PASS
BAY LANAUX
BAY DE LA CHENIERE
BAY CHICOT
GRAND
BAYOU EAU NOIRE
MISSISSIPPI
PACIFIC HIGHWAY NO 31
Nairn
Sixtymile Pt
MISSOURI
BAY VACHERIE
Tropical Bend
Empire
ADAMS

Project Features

Restore 25,862 linear feet of historic ridge

Create/nourish 450 acres (create 264 acres and nourish 186 acres) of emergent marsh using sediment from the Mississippi River as additional support for the ridge feature

Address Plaquemines Parish Phase 1 (construct wetlands adjacent to levees protecting fastlands) and Phase 2 (enhance wetlands in identified areas) priorities

Restore wetland habitat & provide increased protection for residents

Construction cost + 25% contingency is $25M - $30M

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Three Bayou Bay Marsh Creation

Master Plan Strategy
Lower Barataria Marsh Creation-Component A (2017 Master Plan 002.MC.04a): Creation of approximately 7,400 acres of marsh in Jefferson Parish on the east shore of Little Lake and Turtle Bay to create new wetland habitat and restore degraded marsh.

Project Location
Region 2, Barataria Basin, Jefferson Parish

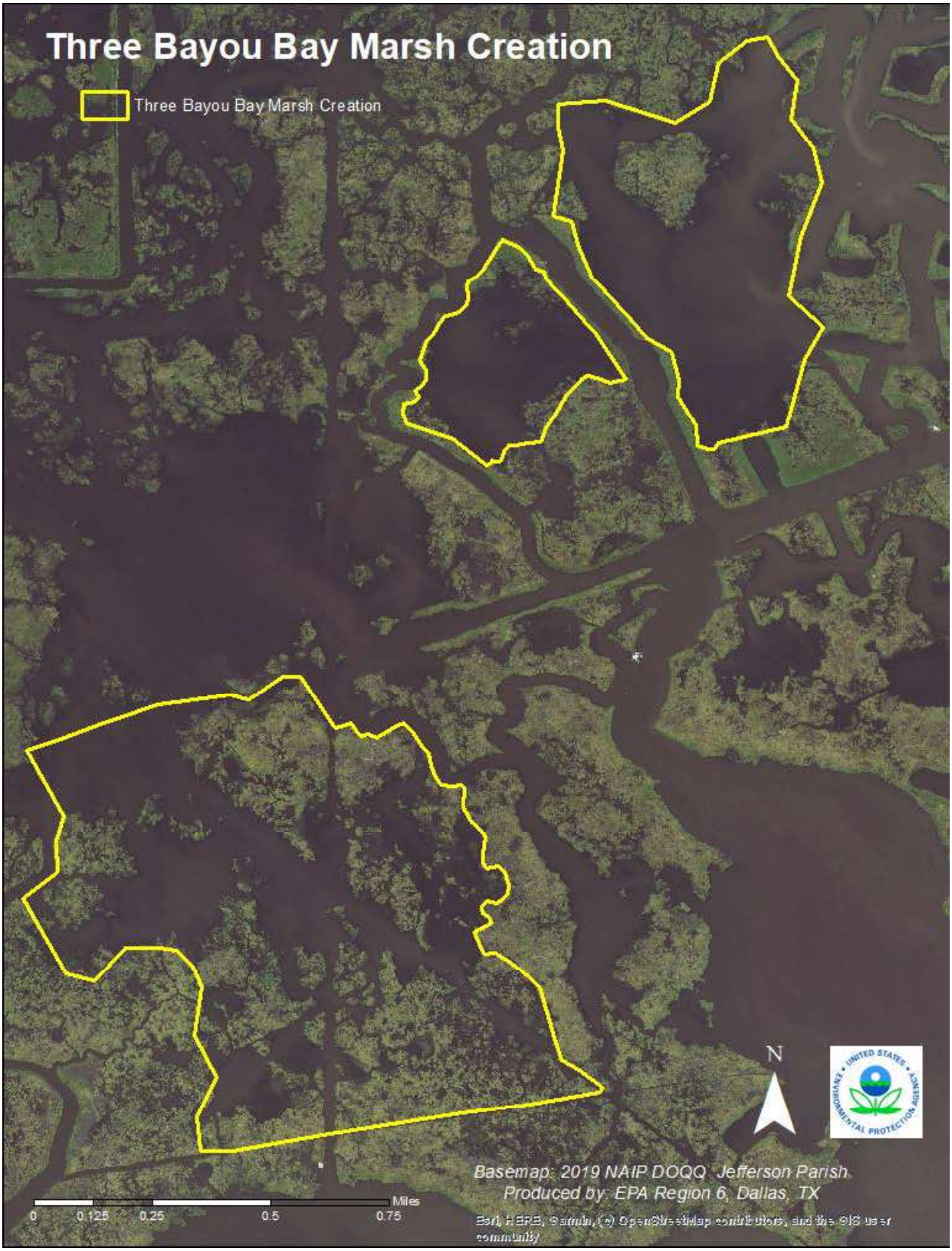
Problem
The project area is a semi-open water body near Three Bayou Bay. Wetland loss has occurred in the project area and are not able to maintain viable elevations due to ongoing subsidence. In addition, oil and gas canals disrupted hydrology and facilitated saltwater intrusion further degrading the marsh. The marsh creation cell is located near the NE Turtle Bay Extension MC concept (WVA) which shows a land loss rate of -0.64%/yr.

Proposed Solution
The proposed project would create/nourish approximately 638 acres (384 acres created, and 254 acres nourished) of marsh using sediment dredged from the Little Lake. The dredged material would be fully contained. Containment dikes would be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands.

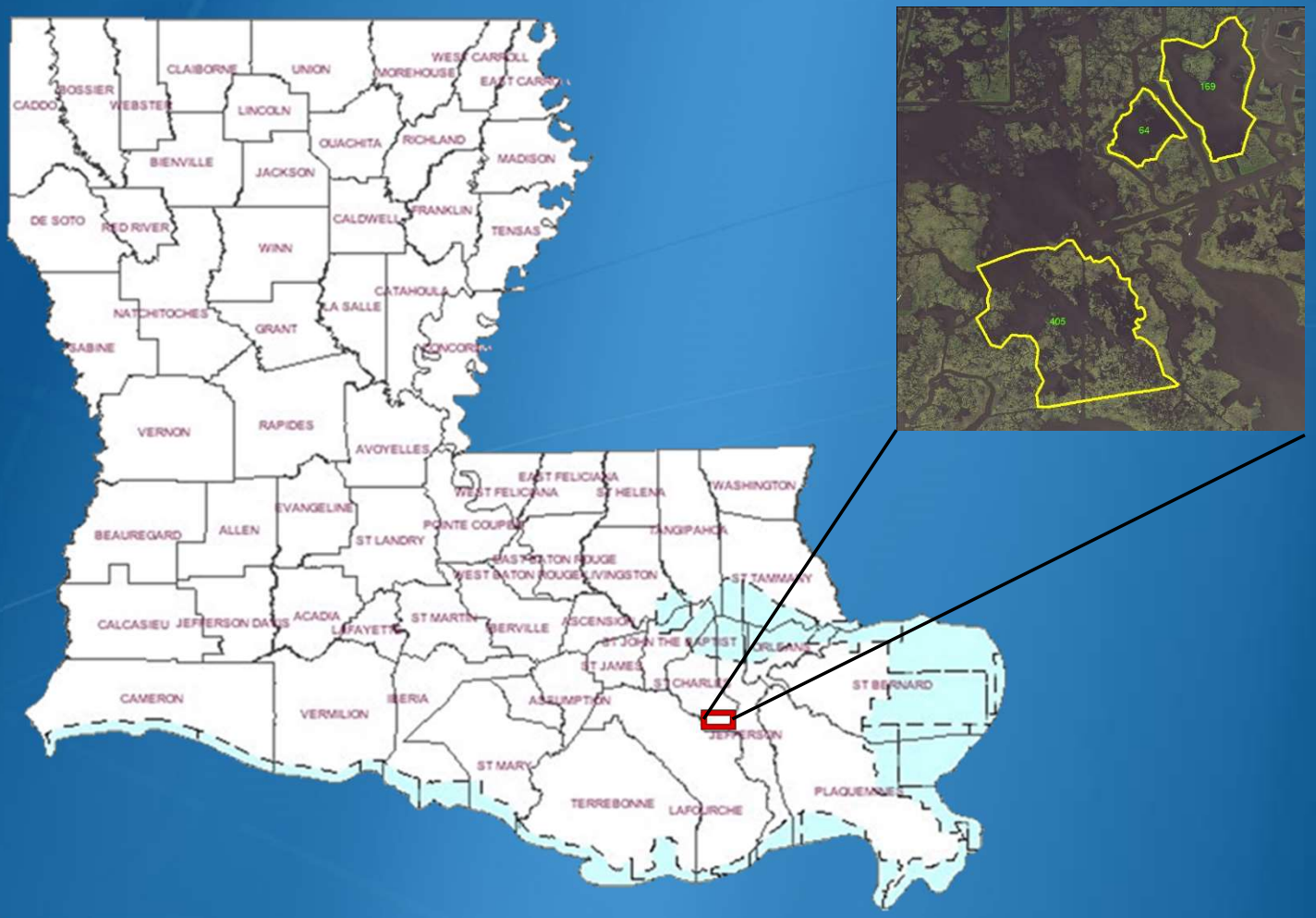
Project Benefits
Create/nourish approximately 638 acres of marsh using sediment dredged from the Little Lake.

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

Preparer(s) of Fact Sheet:
Brandi Spano, EPA Region 6, (214) 665-7329, spano.brandi@epa.gov


Three Bayou Bay Marsh Creation
Three Bayou Bay Marsh Creation
N
Basemap: 2019 NAIP DOQQ Jefferson Parish
Produced by: EPA Region 6, Dallas, TX
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Miles
0
0.125
0.25
0.5
0.75

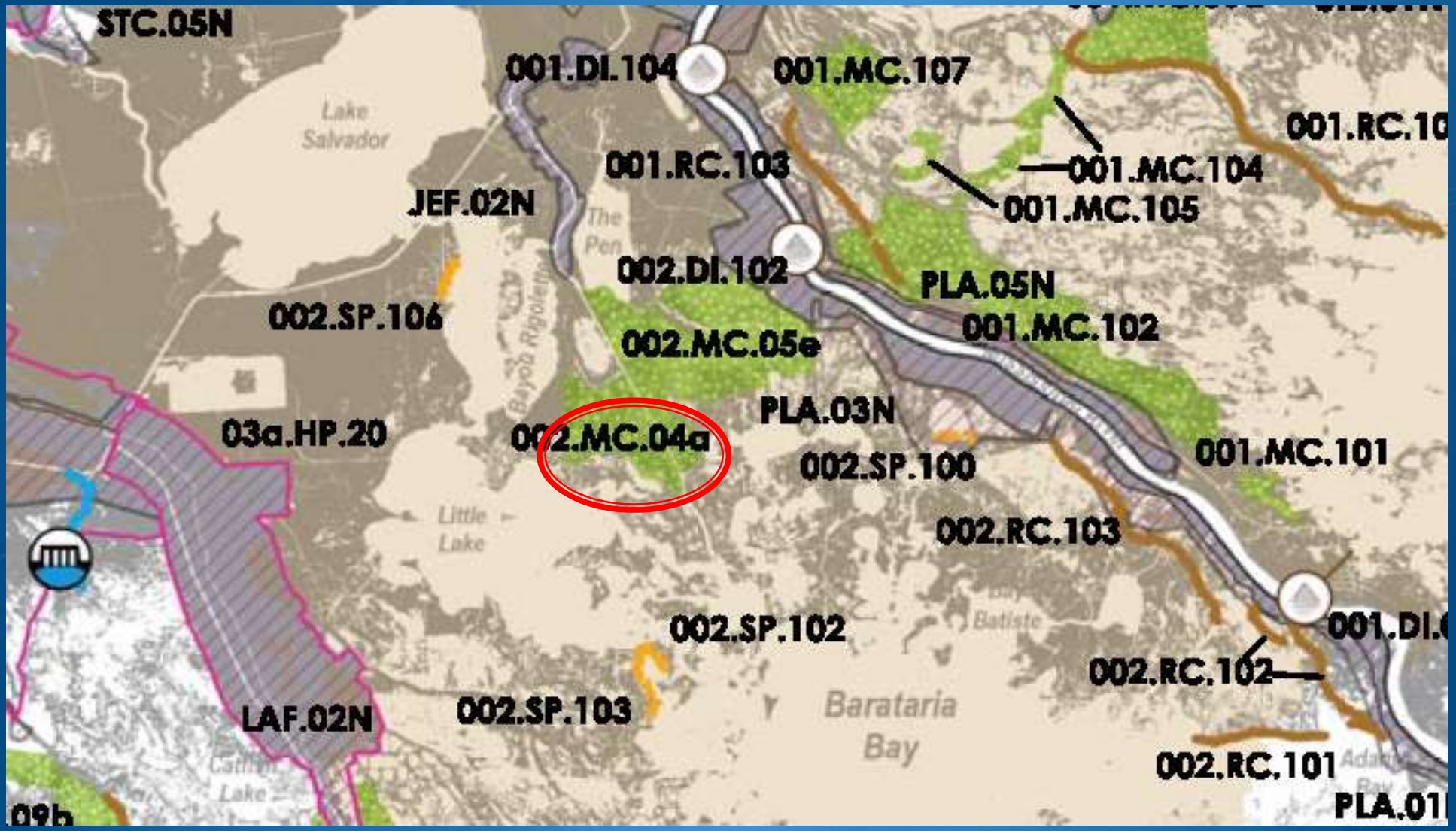
Three Bayou Bay Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

2017 Master Plan Solution

002.MC.04a Lower Barataria Marsh Creation-Component A: Creation of approximately 7,400 acres of marsh in Jefferson Parish on the east shore of Little Lake and Turtle Bay to create new wetland habitat and restore degraded marsh.



2017 Master Plan Consistency

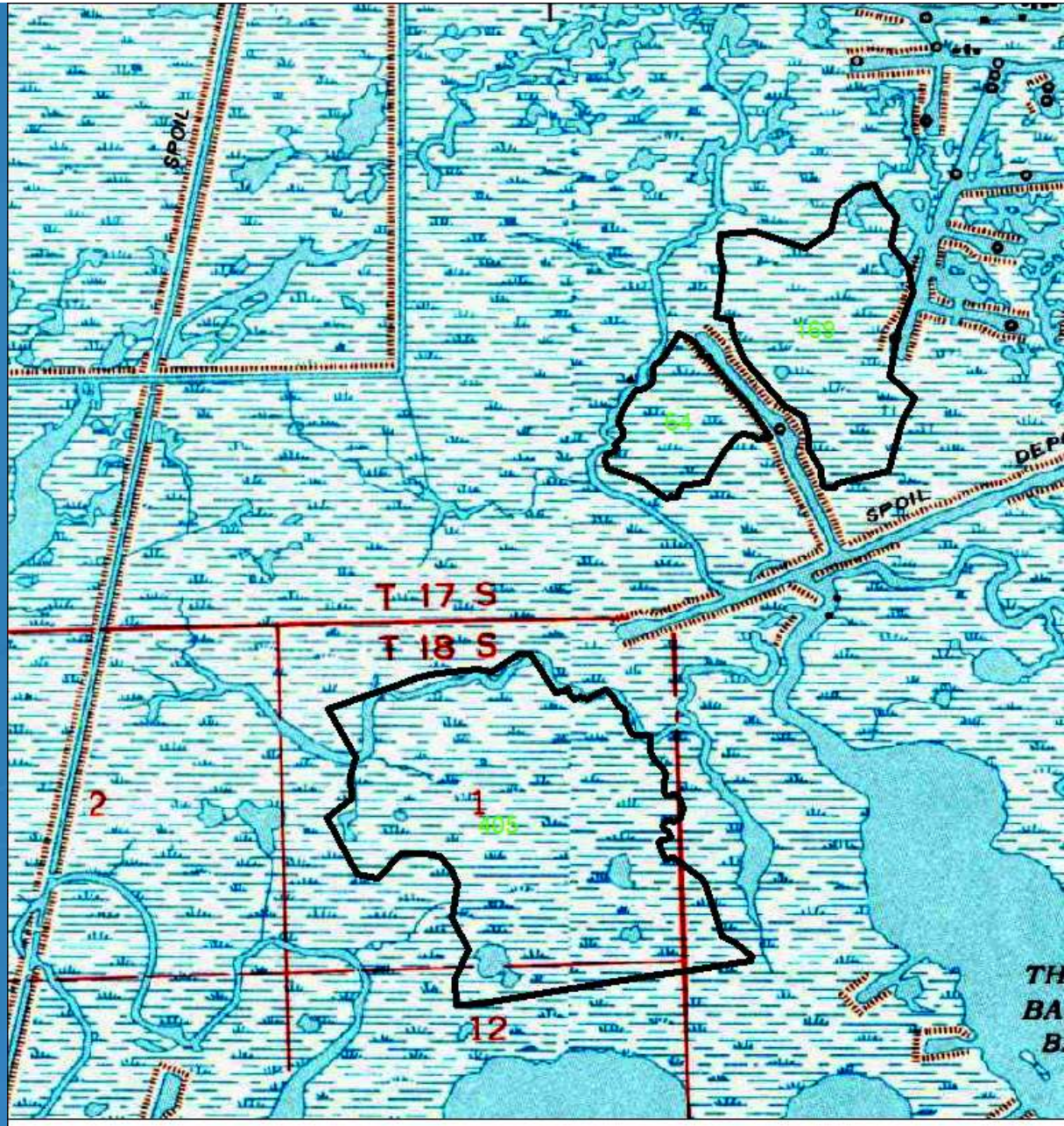
- 002.MC.04a Lower Barataria Marsh Creation-Component A

Problems

- Subsidence
- Oil & gas canals disrupted hydrology
- Saltwater intrusion
- Decreased sediment input
- Jefferson Parish could lose an additional 42% of its land area over the next 50 years and face severe storm surge flood risk (2017 MP).

Historical Reference

- Historical topo from 1962
- Predominantly solid marsh



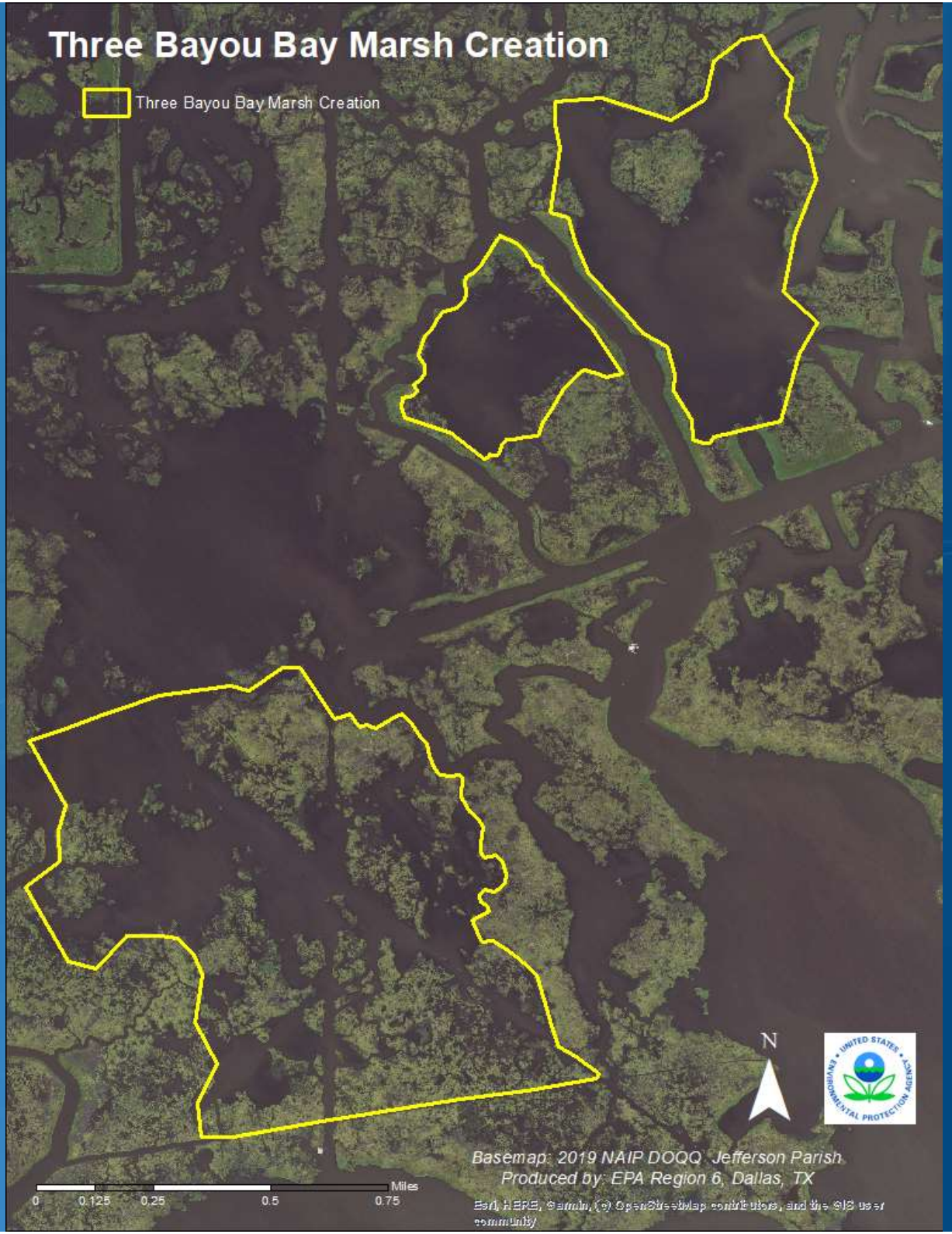
Three Bayou Bay Marsh Creation

Project Features

Create/nourish 638 acres of emergent marsh with sediment from the Little Lake

Restore degraded wetland habitat

Construction plus 25% contingency = $30M-35M



PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Bayou Moreau Marsh Restoration

Project Location
Region 2, Barataria Basin, Lafourche Parish, Louisiana

Problem
The project is located at the confluence of Bayou Moreau with the Caminada Headland south of Port Fourchon and Louisiana Highway 3090. Storms, subsidence, shoreline erosion, and oil and gas exploration have contributed to wetland loss in the project area. The USGS 1985 to 2020 loss rate is -0.54%/yr for the Port Fourchon Shoreline mapping unit. Coastal habitat loss has reduced the resiliency of remaining habitat and infrastructure.

Goals
The project goal is to create 278 acres and nourish 83 acres of marsh.

Proposed Solution
The proposed solution is to restore marsh adjacent to a particular reach of the Gulf of Mexico shoreline to contribute nature-based defenses for critical infrastructure while providing ecological benefits. An alternative or additive alternate cell has been identified potentially for terracing or marsh creation to accommodate flexibility with ongoing and pending adjacent projects, but is not included in the cost or benefits. The marsh creation areas are located and configured to maintain hydrologic connectivity with Pass Fourchon to the west and Bayou Thunder to the east. Sediment would be mined from the Gulf and pumped into three confined disposal areas to create 278 acres and nourish 83 acres of tidal salt marsh. Gulf borrow has been sited to avoid adverse impacts to the shoreline and pipelines and is adjacent to the BA-171 borrow area. Containment dikes would be gapped to the constructed marsh fill elevation at the end of construction for dewatering and gapped or degraded no later than year three after construction to establish tidal exchange.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? The total acres benefited is 361 acres (278 marsh creation and 83 acres marsh nourishment).

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres of marsh protected/created over the project life is approximately 250 - 300 acres (268 net). Indirect benefit to additional acres may occur.

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

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* Yes, the project bolsters the width of the Caminada Headland and the banklines of Bayou Moreau.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would have a net positive impact on critical infrastructure consisting of the LOOP and Shell Mars pipelines, Port Fourchon, and Highway 3090. The project would be have net positive impacts on secondary or recreational residential property.

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 BA-171 (Caminada Headlands Back Barrier Marsh Creation), BA- 45 (Caminada Beach and Dune, Increment I), Port Fourchon Terracing and Living Shoreline – Ducks Unlimited NFWF Resiliency Project, Port Fourchon Expansion Mitigation Project, and Lafourche Parish Wisner/NOAA Community-based Restoration Program Project.

Considerations

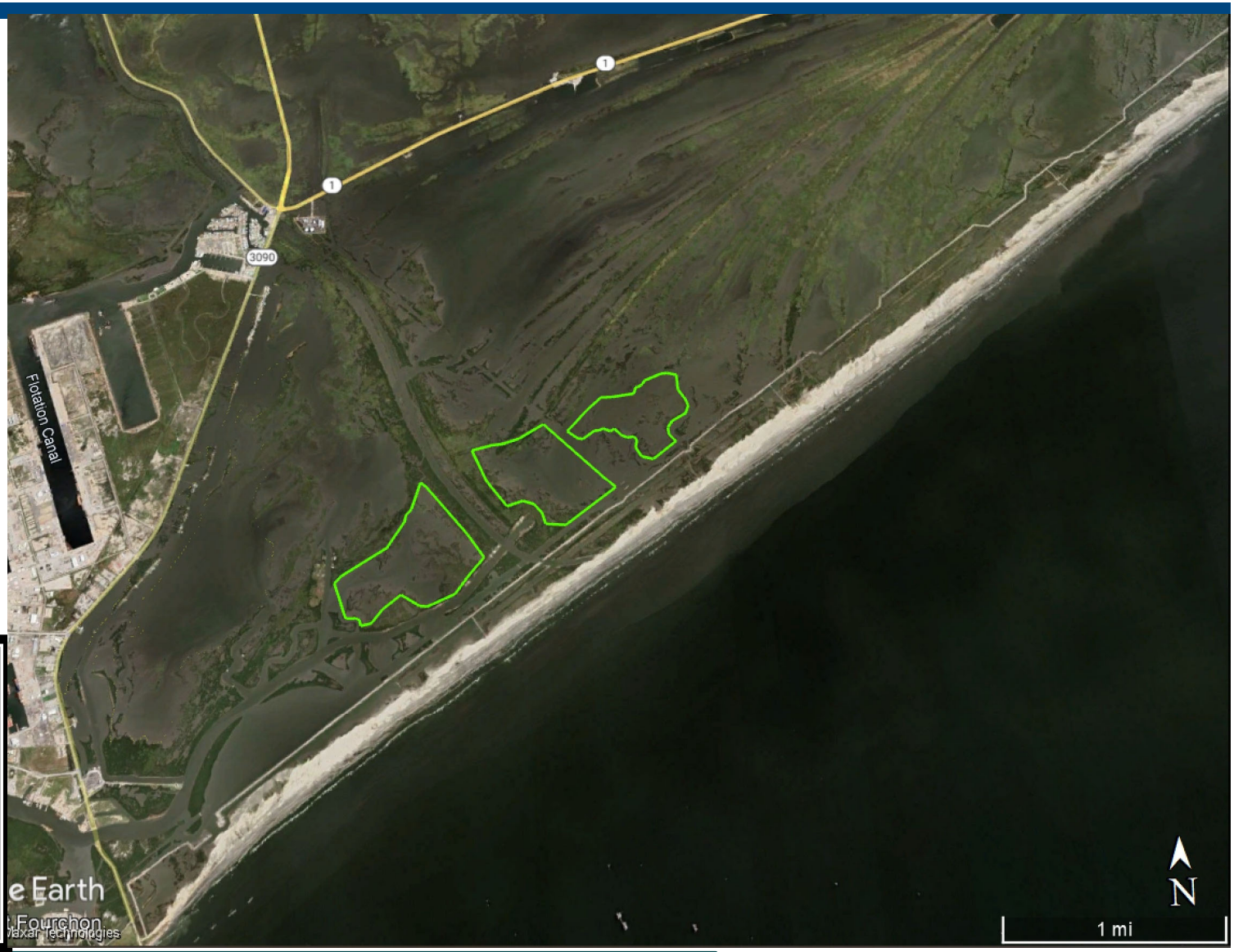
Considerations for this project include pipelines/utilities.

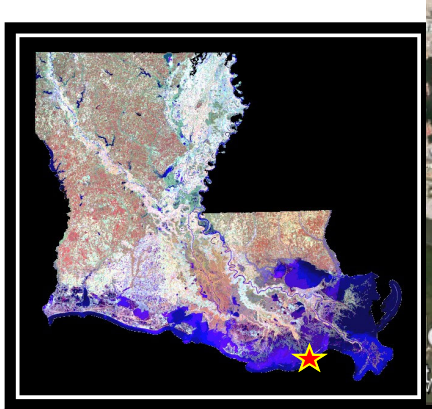
Preliminary Cost

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

Preparer of Fact Sheet

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





Bayou Moreau Marsh Restoration

278 Marsh Creation
83 Marsh Nourishment

2021 Aerial Imagery
Map Date 02-01-2022

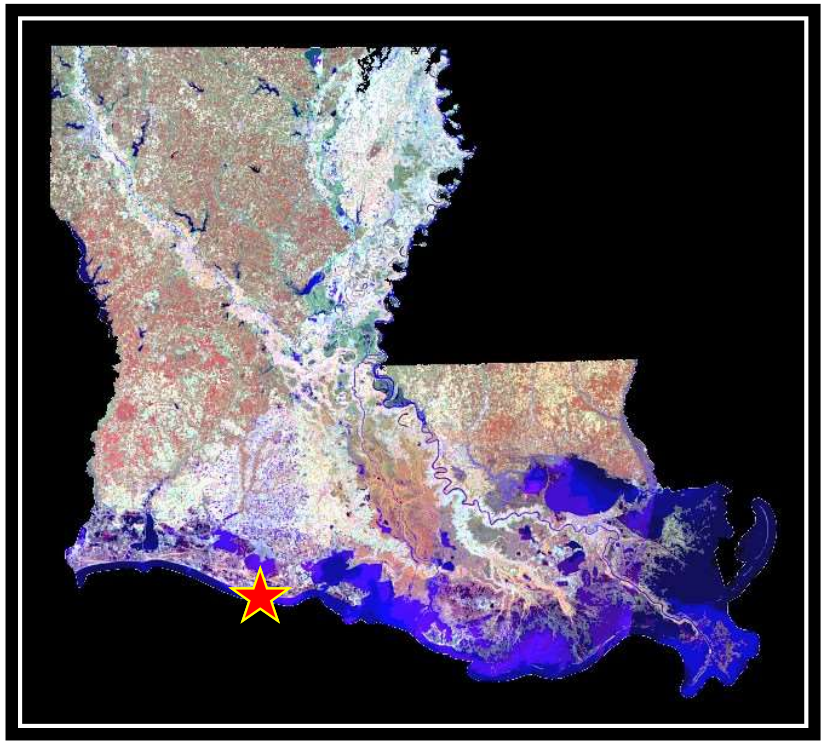
Legend

Marsh Creation and Nourishment

Bayou Moreau Marsh Restoration

REGION 2 – Barataria Basin

Presenter: Patrick Williams, NOAA



Special Thanks
Edward Wisner Donation Trust
ConocoPhillips
Ducks Unlimited
Lafourche Parish Government
Greater Lafourche Port Commission
The Water Institute of the Gulf

PPL32 CWPPRA Regional Planning Team

Virtual Meeting

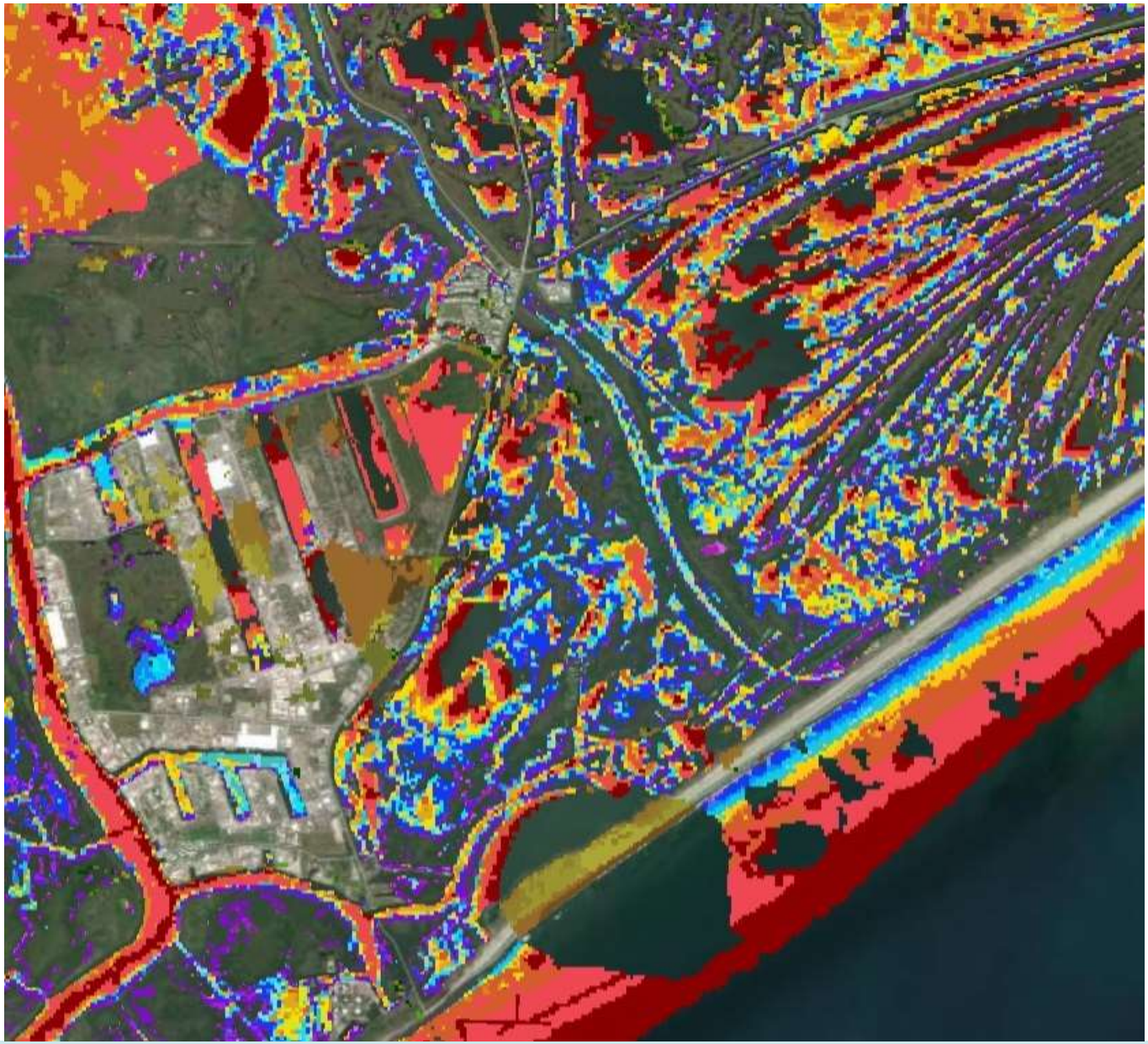
February 10, 2022

Project Vicinity

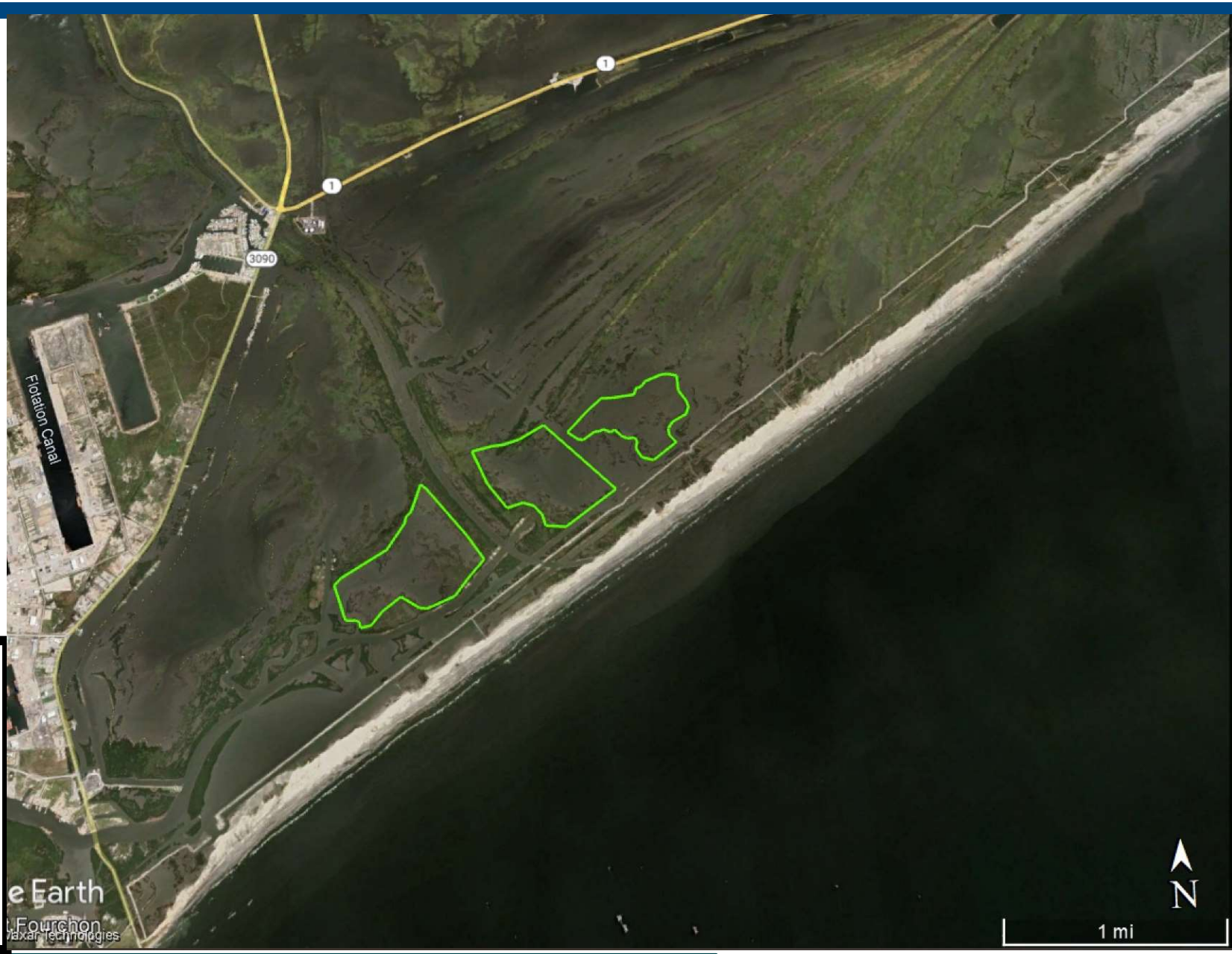
Project Area Degradation

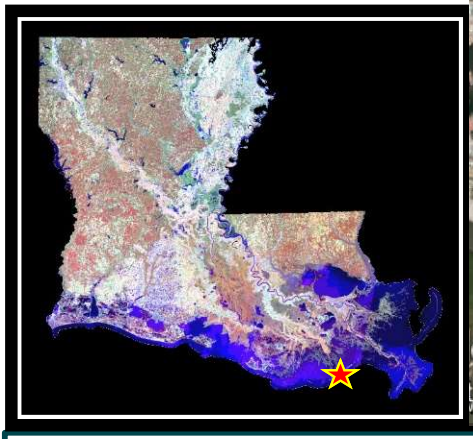
Bayou Moreau Marsh Restoration

-0.54%/yr 1985 to 2020



Project Area





Bayou Moreau Marsh Restoration

278 Marsh Creation
83 Marsh Nourishment

2021 Aerial Imagery
Map Date 02-01-2022

Legend

Marsh Creation and Nourishment

Summary

- 278 Marsh Creation, 83 Marsh Nourishment
- Gulf of Mexico Borrow
- Construction Cost + 25% Contingency $30M - $35M
- Net Benefits: 268 acres

Synergy

- Synergy with other Restoration projects: BA-45, BA-171, NFWF Port Fourchon Terracing and Living Shoreline, Port Fourchon Mitigation

Photo Courtesy of Ducks Unlimited

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Grand Pierre Island Restoration

Louisiana's 2017 Coastal Master Plan
Barrier Island/Headland Restoration – 002.BH.04

Project Location
Region 2, Barataria Basin, Plaquemines Parish

Problem
As part of the Barataria Barrier Shoreline, Grand Pierre Island is dominated by marine processes including overwash. The island has receded rapidly and decreased in elevation. In 2020, the island sustained an approximately 600-foot wide breach as a result of Hurricane Zeta. In 2021, the breach increased to 620 feet. The land loss rate is -0.02%/yr based on data from 1985 to 2020 in the Barataria Barrier Island LCA mapping subunit, whereas it is 0.81%/yr for the adjacent Barataria Barrier Shorelines mapping subunit. The 1884 to 2000 Gulf shoreline erosion rate is -50.6 ft/yr and -46.8 ft/yr from 1988 to 2000.

Goals
The project goal is for approximately 150 to 200 net acres after 20 years. This includes creating 101 acres of back barrier marsh and 72 acres of emergent beach and dune, protecting and enhancing 114 acres of existing supratidal and intertidal island habitat, and enhancing 55 acres of subtidal Gulf shoreface with sand fill.

Proposed Solution
The proposed features consist of placing 127 acres of beach and dune fill (constructing 19 acres of dune, 53 acres of intertidal and supratidal beach fill, 55 acres of subtidal beach fill) and 101 acres of back-barrier marsh. The dune would be constructed to +8 ft NAVD88 150 ft wide. Marsh would be created using confined or semiconfined disposal with a constructed marsh fill elevation of +2.5 ft NAVD88. Additionally, 114 acres of existing supratidal and intertidal habitat would be benefited. Sediment would be mined from nearshore borrow sites in the Gulf of Mexico. Tentative sites includes those previously identified and remaining after construction of other island projects. The project includes planting dune and swale vegetation as well as construction of sand fences.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 446 acres. Some indirect benefits to marsh north of the proposed restoration footprint may result.

2) *How many acres of wetlands will be protected/created over the project life?*
   Between 150 and 200 net acres of barrier island habitat are estimated to be protected/created over the project life.

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)?*

Using a 50% reduction in the background rate, 165 net acres would remain. Alternatively, 57% of the target year 1 constructed acres are projected to remain at year 20 based upon the design/benefit performance average from all island projects (i.e., 163 acres).

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
Yes, the project restores a barrier island.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will have a minor net positive effect on non-critical infrastructure.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project provides synergy with the overall Barataria Barrier Shoreline Complex as well as the adjacent constructed East Grand Terre Project (BA-30) and Chenier Ronquille Barrier Island Restoration Project (BA-76).

Considerations
Land rights have yet to be determined, oyster leases.

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

Preparer(s) of Fact Sheet:
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Patrick Williams; NOAA Fisheries Service, 225-329-9268, Patrick.Williams@noaa.gov

NOAA FISHERIES

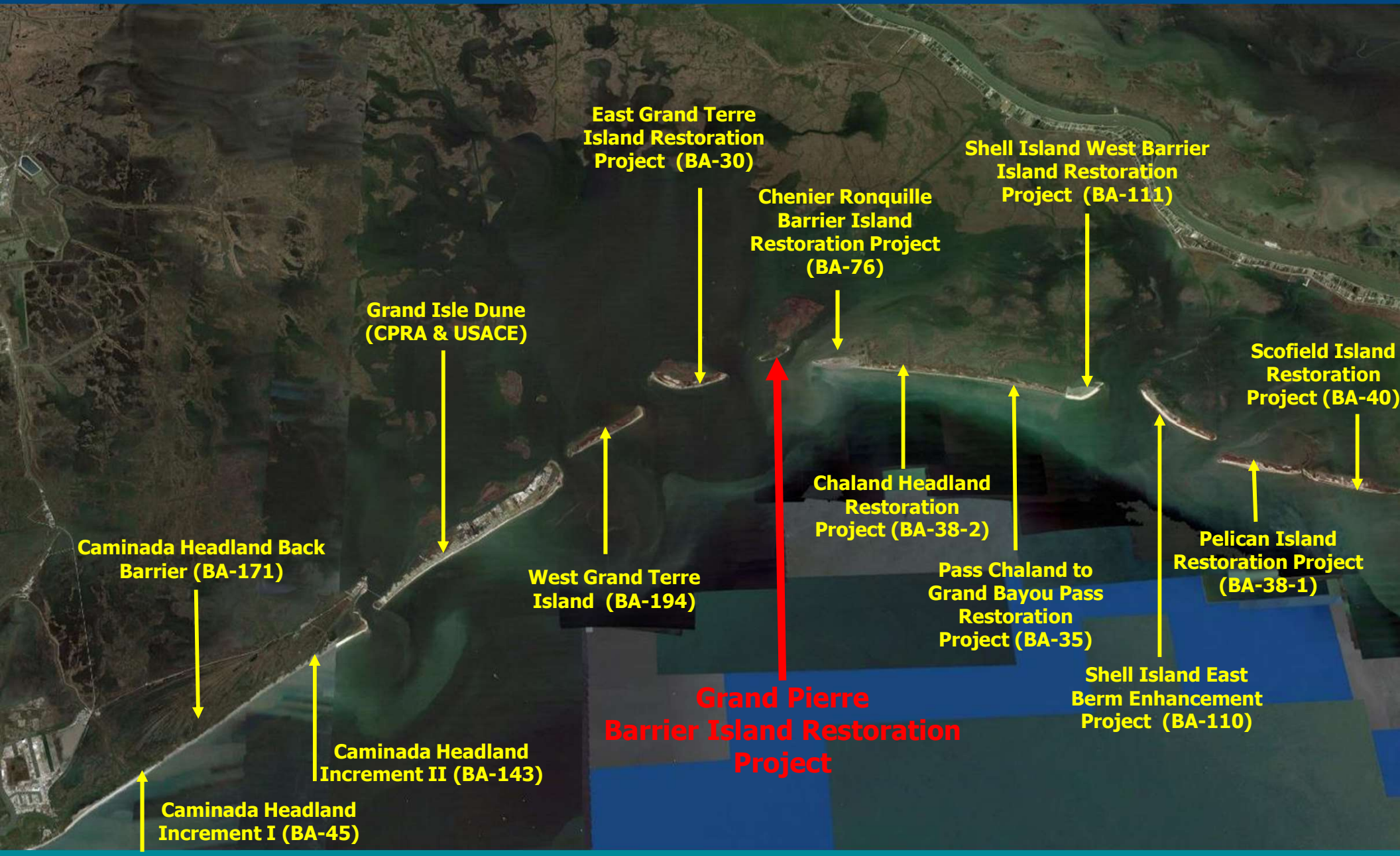
Grand Pierre Barrier Island Restoration

Region 2 – Barataria Basin
Plaquemines Parish

PPL32 CWPPRA Regional Planning Team

Virtual Meeting
February 4, 2022

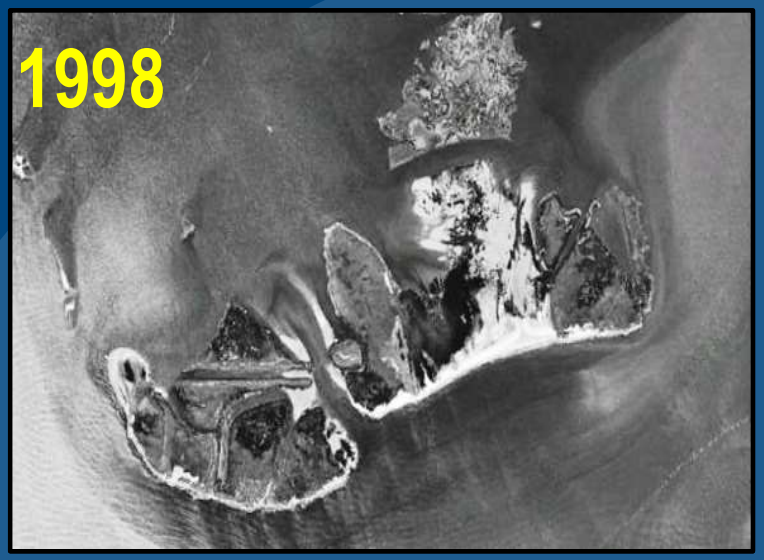
Project Vicinity



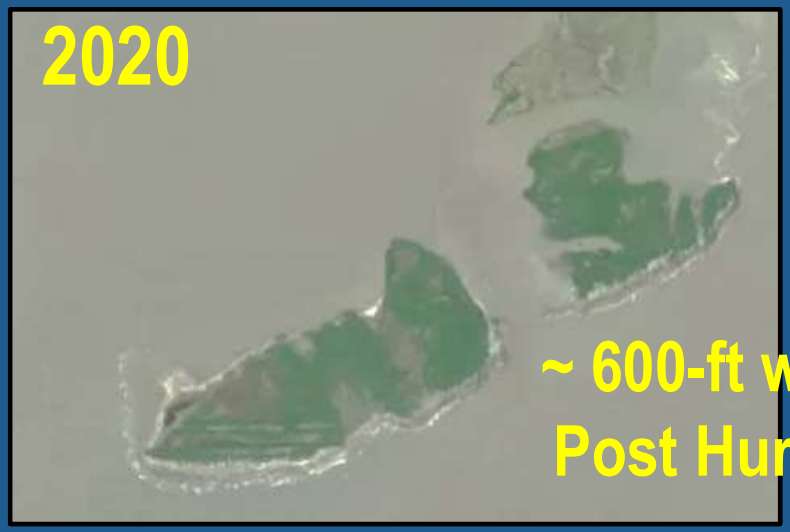
Why is Grand Pierre Important?

- Final piece in the Gulf line of defense for Barataria Basin
- Protects ~ 700 acres (now) of lower basin saline marsh
- Loss would create 2.8 mile tidal pass into the Barataria Basin
- Not identified as a priority for restoration under any funding mechanism

What is the Problem?



~124 acres
lost from
1998 to 2021

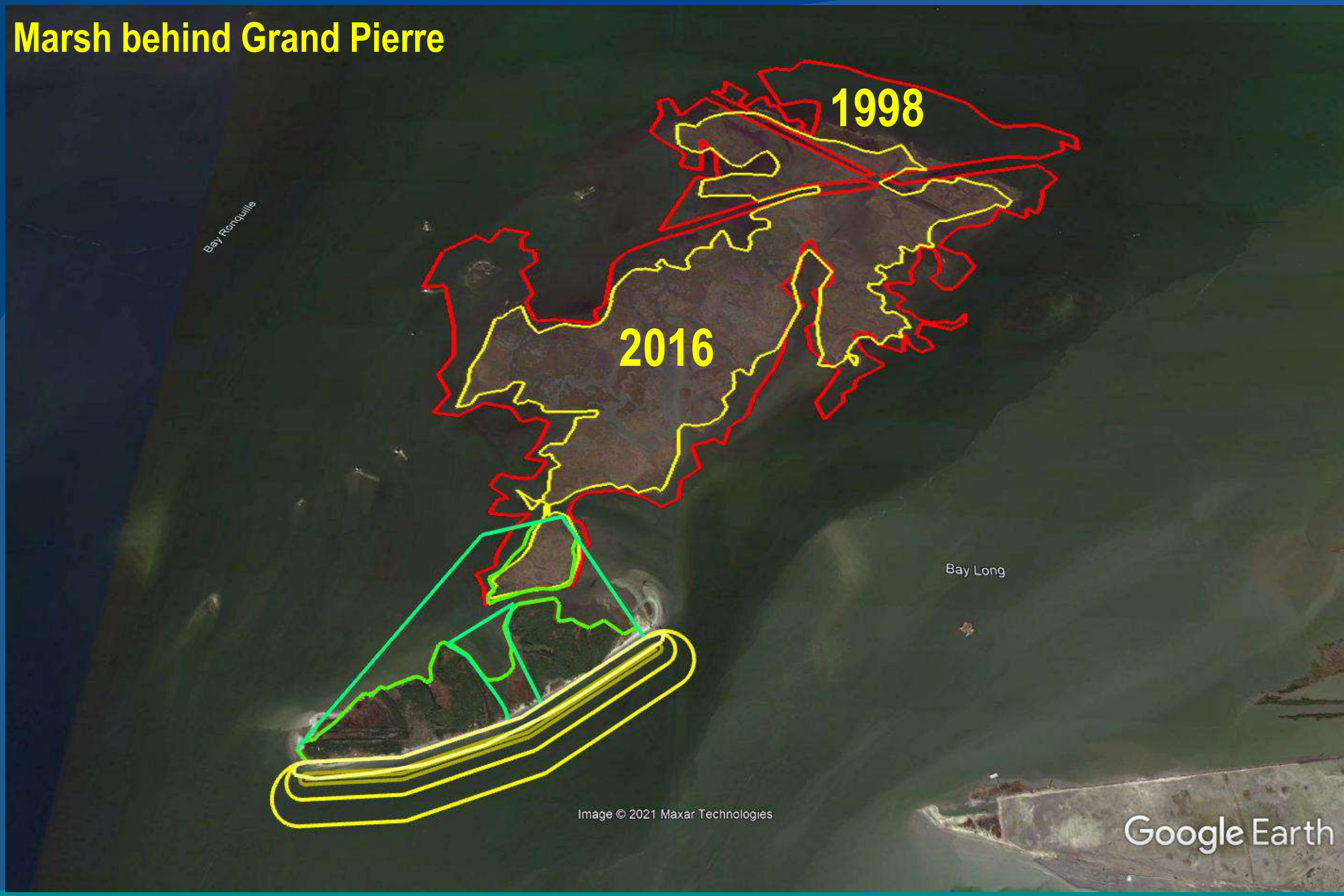


~ 600-ft wide breach
Post Hurricane Zeta

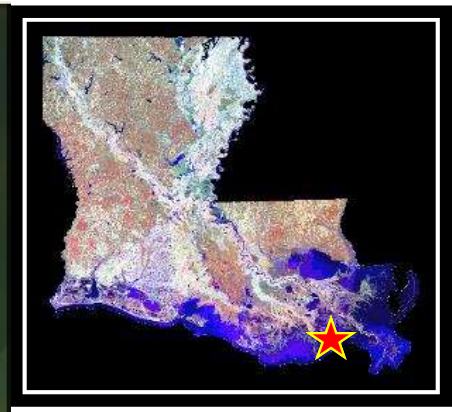
~ 620-ft wide breach
Pre Hurricane Ida

Why Now?

Marsh behind Grand Pierre




Marsh behind Grand Pierre
Inlet
Spit
N
2020 Post Hurricane Zeta
Grand Pierre



PPL31 Grand Pierre Barrier Island Restoration

446 Acres Barrier Island Restoration

Federal Sponsor: NOAA Fisheries
2016 Aerial Imagery
Map Date 01-25-2021

Legend

- Marsh Creation
- Beach and Dune Fill

Summary

- Complete Barataria Basin barrier island restoration
- 127 acres beach and dune fill
- 101 acres back-barrier marsh creation (includes breach repair)
- 165 net acres
- Nearshore borrow areas
- Construction cost plus 25% contingency $25 - $30 million

Thanks to Southern Shores Engineering

Synergy

- Synergy with BA-30 and BA-76

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Grand Pierre with Extension

- $~5M
- 23 ac dune
- 56 ac marsh
- 31 beach fill

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Grand Isle Bayside Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish

Problem
Grand Isle, as part of the Barataria Basin barrier island chain, is part of a highly dynamic system that can be reshaped or breached and succumb to the forces of the Gulf of Mexico or hurricanes. Being an inhabited barrier island, Grand Isle has received support for beach and dune restoration along with shoreline protection. There has been no focus on building up the backbarrier marsh of the island. Adding a backbarrier marsh can improve barrier island shoreline integrity and its lifespan (Hein et al 2021). The western end of the island in particular is narrow and would benefit with additional protection from the creation of a backbarrier marsh. The subsidence rate in the lower Barataria Basin, is 8.8 mm per year (2017 Coastal Master Plan) and is one of the highest rates on the coast. With Hurricane Ida impacting Grand Isle in August 2021, the need for additional restoration in that area is now seen as even more timely.

Goals
The project goals are to create and/or nourish up to 179 acres of intertidal marsh and to design the project to build resilient wetlands that maximize wetland benefits for the twenty year project life.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 179 acres of backbarrier marsh (154 acres of marsh creation and 25 acres of marsh nourishment). Sediment will be hydraulically pumped from a borrow source in Caminada Bay. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is approximately 179 acres (approximately 154 acres of marsh creation and 25 acres of marsh nourishment).

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is 100-150 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation and 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.?*
   The project will create back barrier marsh for Grand Isle.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to the town of Grand Isle and some oil and gas infrastructure.

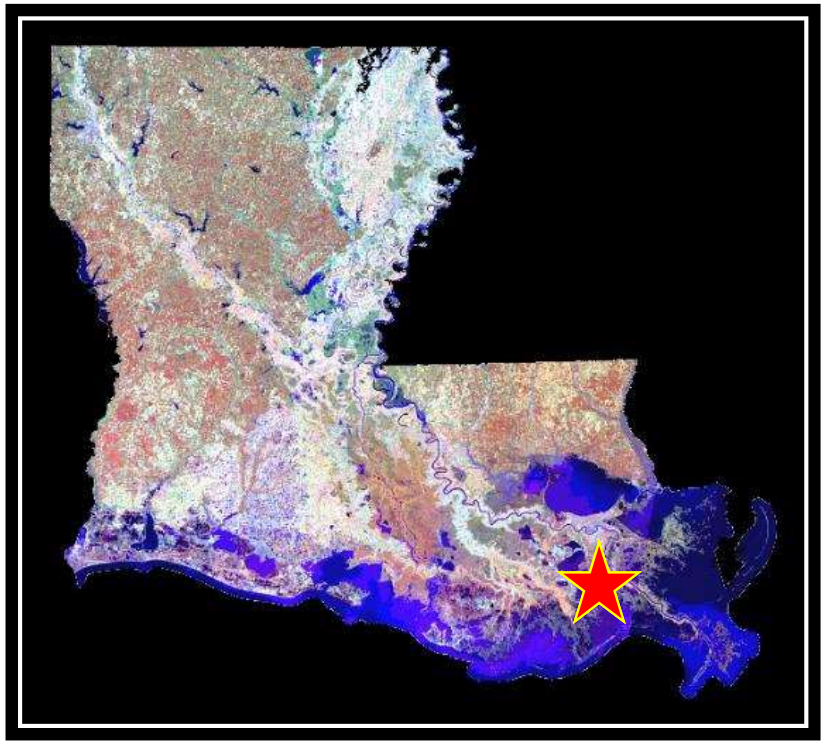
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project works synergistically with Grand Isle Bayside Breakwaters (BA-187 and BA-233) and the Hurricane and Storm Damage Risk Reduction System.

Considerations
The proposed project has potential pipeline and oyster considerations.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $10M - $15M.

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, dawn.davis@noaa.gov

Grand Isle Bayside Marsh Creation



REGION 2 – Barataria Basin

Presenter: Dawn Davis, Fishery Biologist

Special Thanks:
Jefferson Parish

PPL32 CWPPRA Regional Planning Team
Virtual Meeting
February 10, 2022

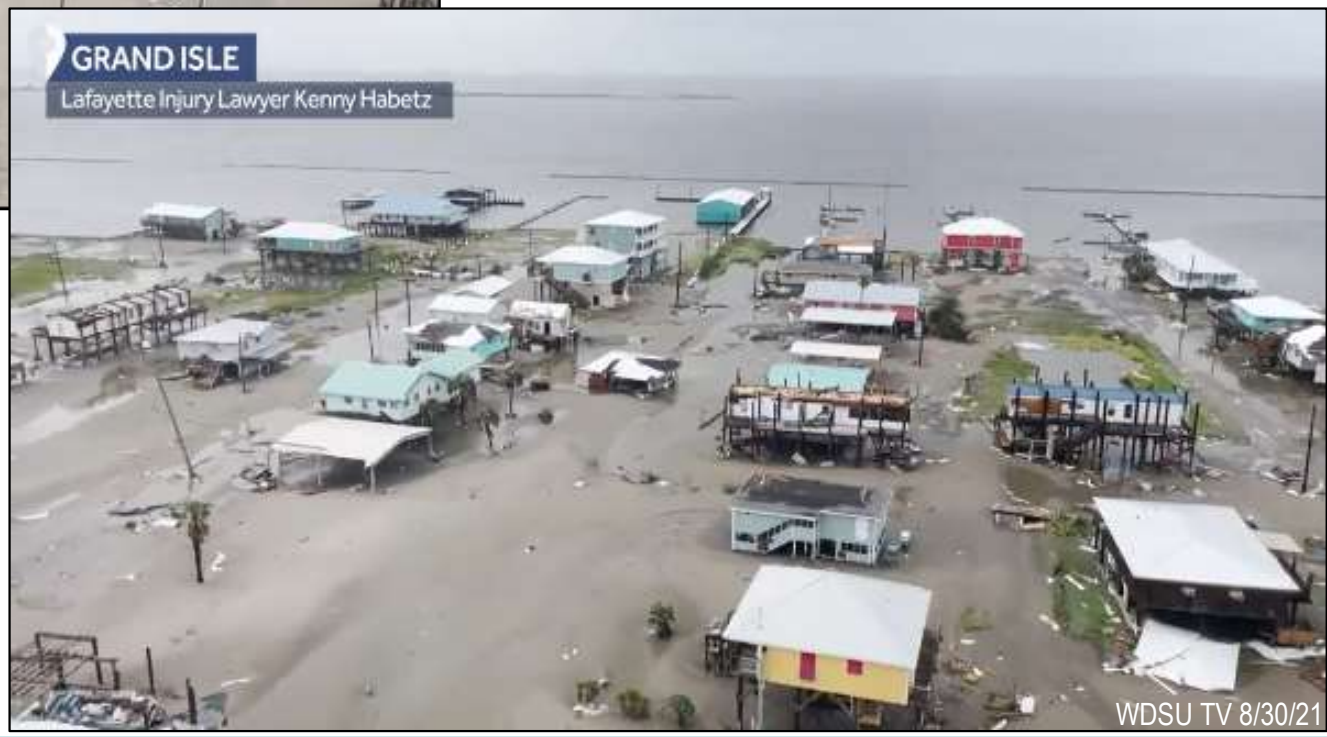
Project Vicinity

Project Area Degradation

1998

2021

Impacts from Hurricane Ida



WDSU TV 8/30/21

Proposed Project Solution

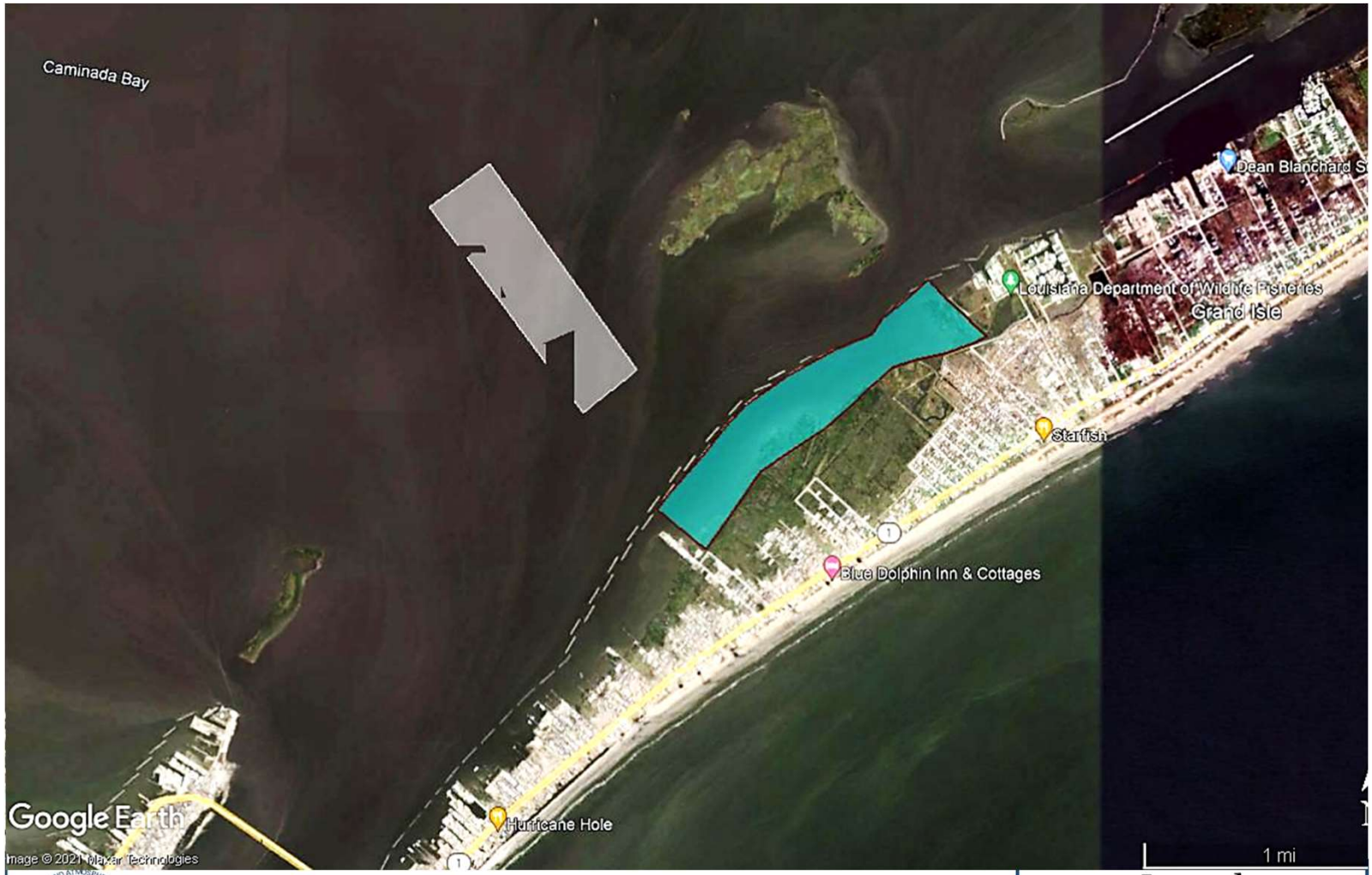
- Work within 2017 State Master Plan Polygon 00.BH.00 (Barrier Island Restoration)

- Restore 179 Acres of Marsh Creation/Nourishment
  - 154 acres MC and 25 acres MN
  - Dredge material from Caminada Bay
  - Full containment with dike gapping after construction

- Build resilient wetlands that maximize wetland benefits for the twenty year project life

- Help improve barrier island integrity and lifespan

Project Map


Caminada Bay
Dean Blanchard S
Louisiana Department of Wildlife Fisheries
Grand Isle
Starfish
Blue Dolphin Inn & Cottages
Hurricane Hole
Google Earth
Image © 2021 Maxar Technologies
1 mi
PPL32 Grand Isle Bayside Marsh Creation
154 Acres Marsh Creation
25 Acres Marsh Nourishment
Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022
Legend
Marsh Creation

Summary

- Marsh Creation/Nourishment: 179 acres
- Construction Cost + 25% Contingency: $10M - $15M
- Net Benefits: 100-150 acres

Synergy

- Priority with Jefferson Parish Coastal Strategic Action Plan (JP-09)

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PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Southeast Lafitte Marsh Creation

Project Location
Region 2, Barataria Basin, Jefferson Parish

Problem
The Barataria Land Bridge consists of 3000 acres of degraded marsh and open water in the Upper Barataria Basin. Historically, sea level rise, saltwater intrusion, and construction of oil and gas canals and pipelines, along with sediment deprivation from the construction of levees along the Mississippi River have contributed significantly to wetland losses. The Barataria Basin has the second highest land loss rate of the ten coastal basins in the state, having lost approximately 29% of its wetlands (Couvillion et al 2017). An additional impact to the wetlands occurred when Hurricane Ida struck Louisiana in 2021. It caused an estimated 160 km^2 of land loss in Barataria Basin (Couvillion 2021, CPRA Board Meeting, 11/17/21). The marshes along the southern shore of the Pen need to be restored as they serve as one of the lines of defense to help protect the town of Lafitte from future storm impacts. The Southeast Lafitte Marsh Creation Project would work synergistically with the other Barataria Land Bridge restoration projects.

Goals
The project goals are to create and/or nourish up to 375 acres of intertidal marsh and to design the project to build resilient wetlands that maximize wetland benefits for the twenty year project life.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 375 acres of emergent intermediate marsh (205 acres of marsh creation and 170 acres of marsh nourishment). Sediment will be hydraulically pumped from a borrow source in the Pen. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is approximately 375 acres (approximately 205 acres of marsh creation and 170 acres of marsh nourishment).

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

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation and 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.?*
The project will help restore the southern rim of the Pen.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to the town of Lafitte.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project works synergistically with Large Scale Barataria Marsh Creation: Upper Barataria Component (BA-207), South Shore of the Pen (BA-41), Bayou Dupont Marsh and Ridge Creation (BA-48) and Bayou Dupont Sediment Delivery - Marsh Creation #3 and Terracing (BA-164 in rebuilding the Barataria Land Bridge.

Considerations
The proposed project has potential pipeline issues.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $15M - $20M.

Preparer(s) of Fact Sheet:
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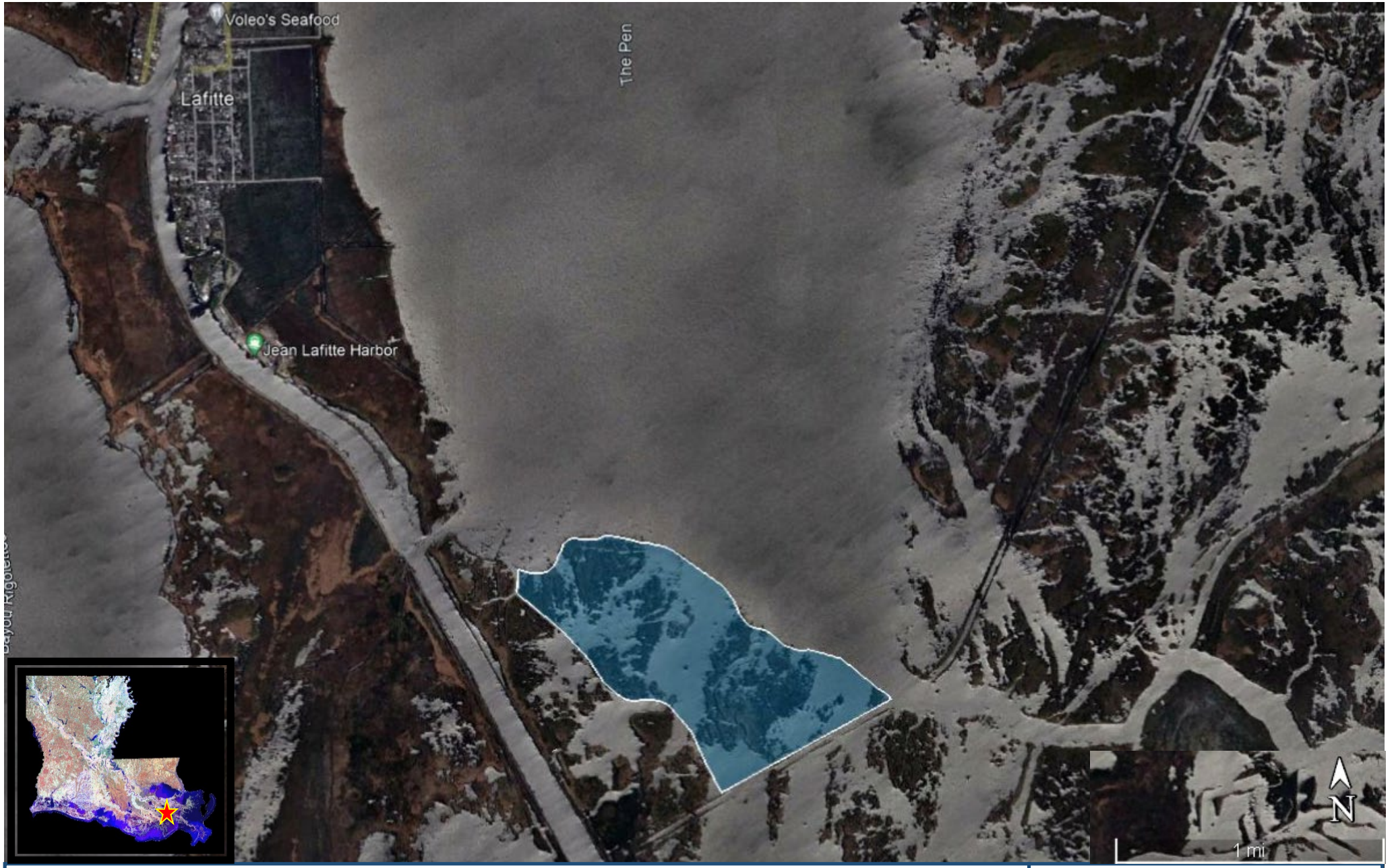


PPL32 Southeast Lafitte Marsh Creation

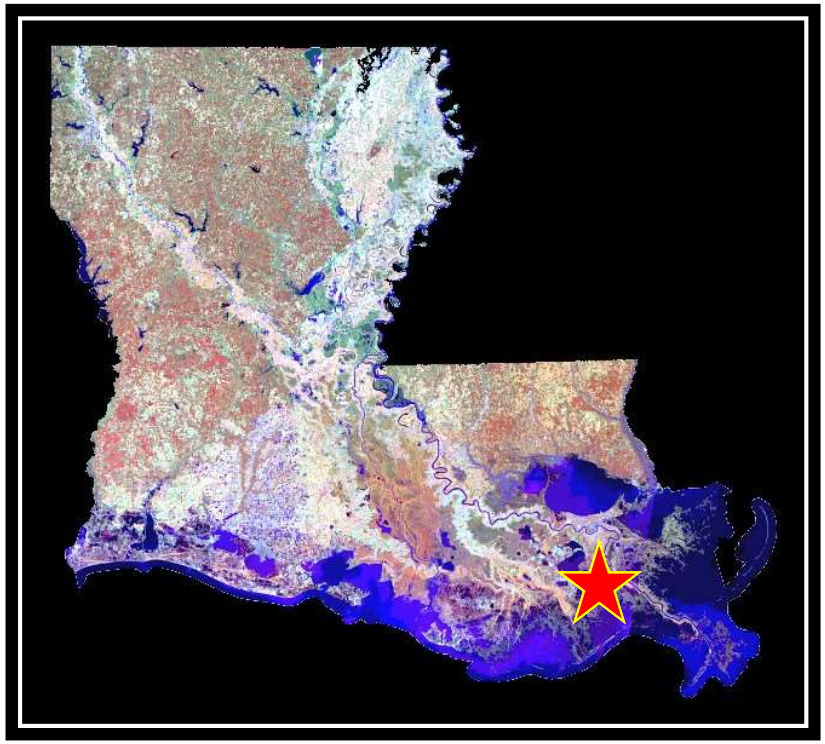
205 Acres Marsh Creation
170 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

Legend

Marsh Creation

Southeast Lafitte Marsh Creation



REGION 2 – Barataria Basin

Presenter: Dawn Davis, Fishery Biologist

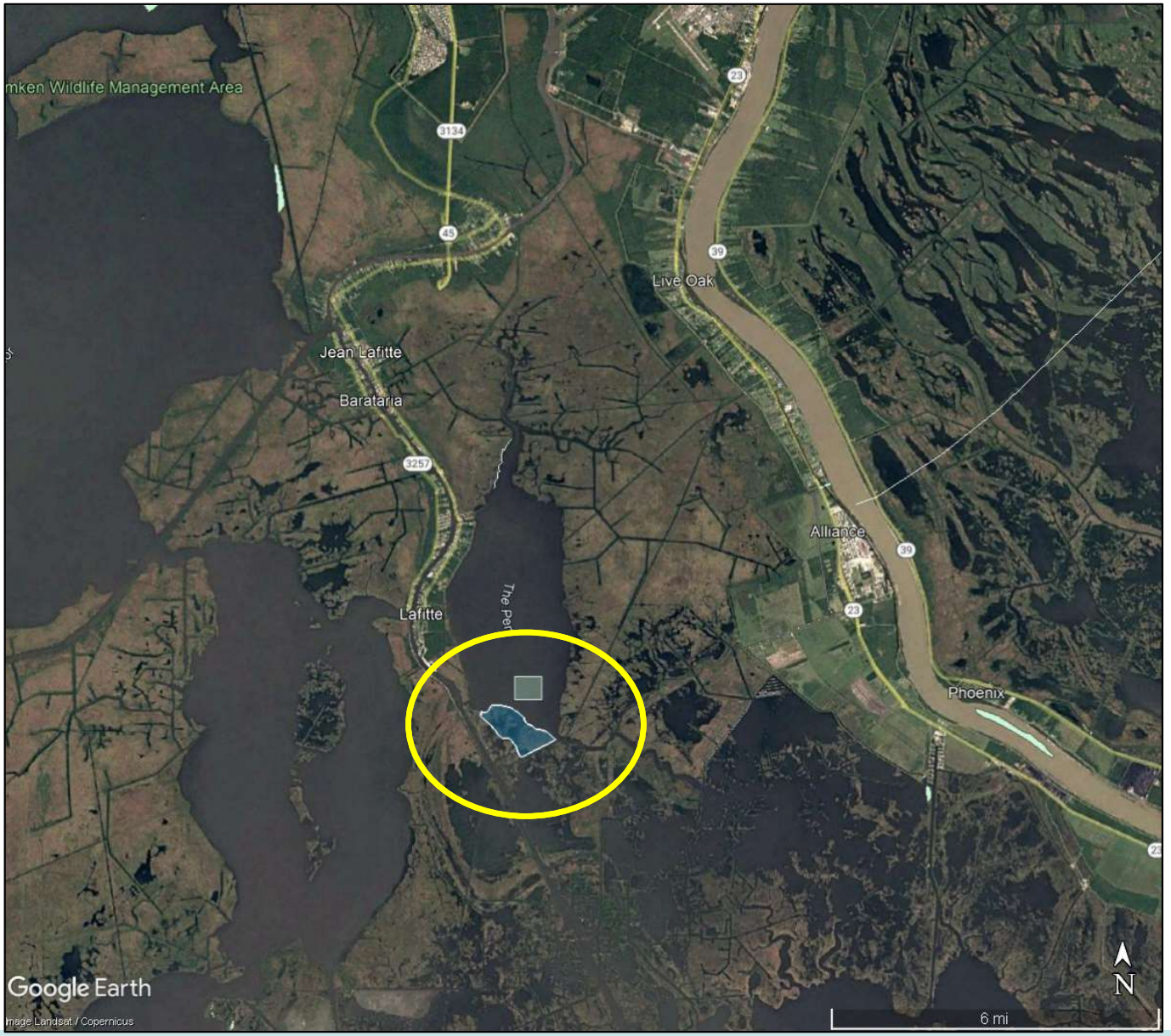
Special Thanks:
NRCS
USACE
Jefferson Parish

PPL32 CWPPRA Regional Planning Team

Virtual Meeting

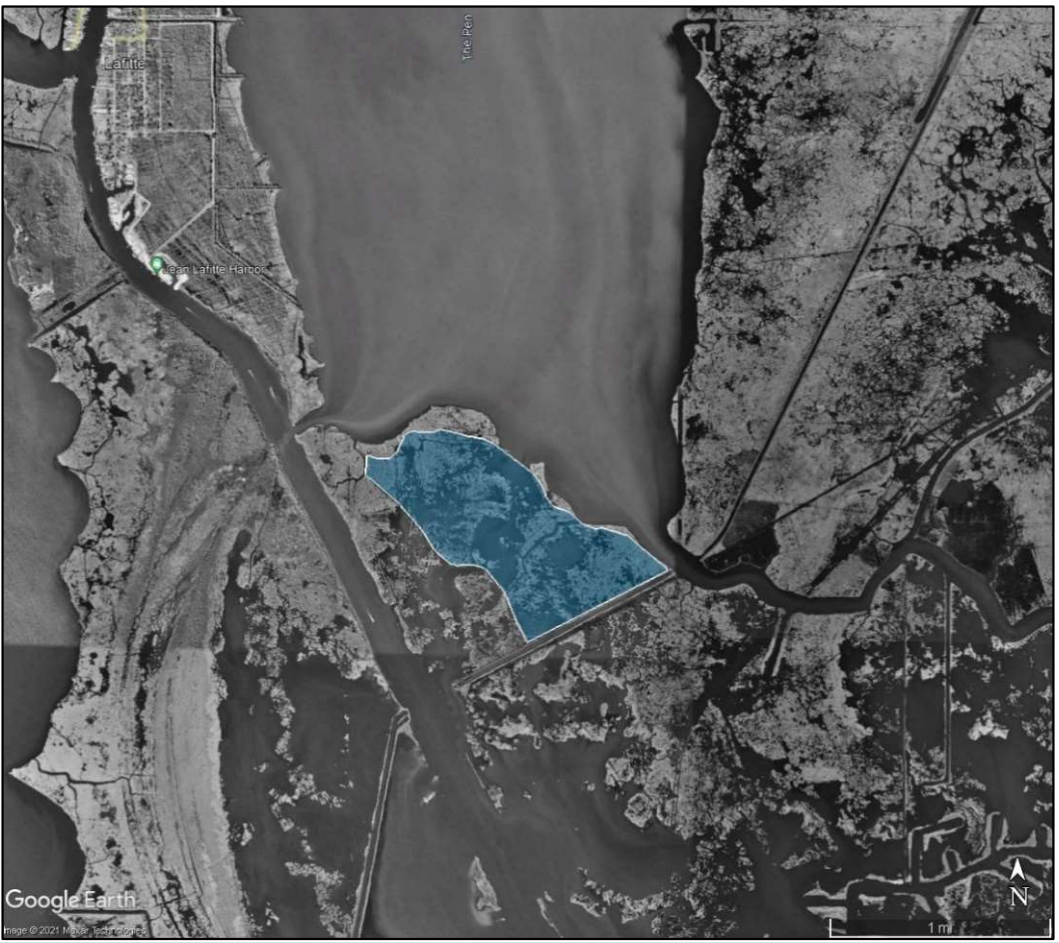
February 10, 2022

Project Vicinity

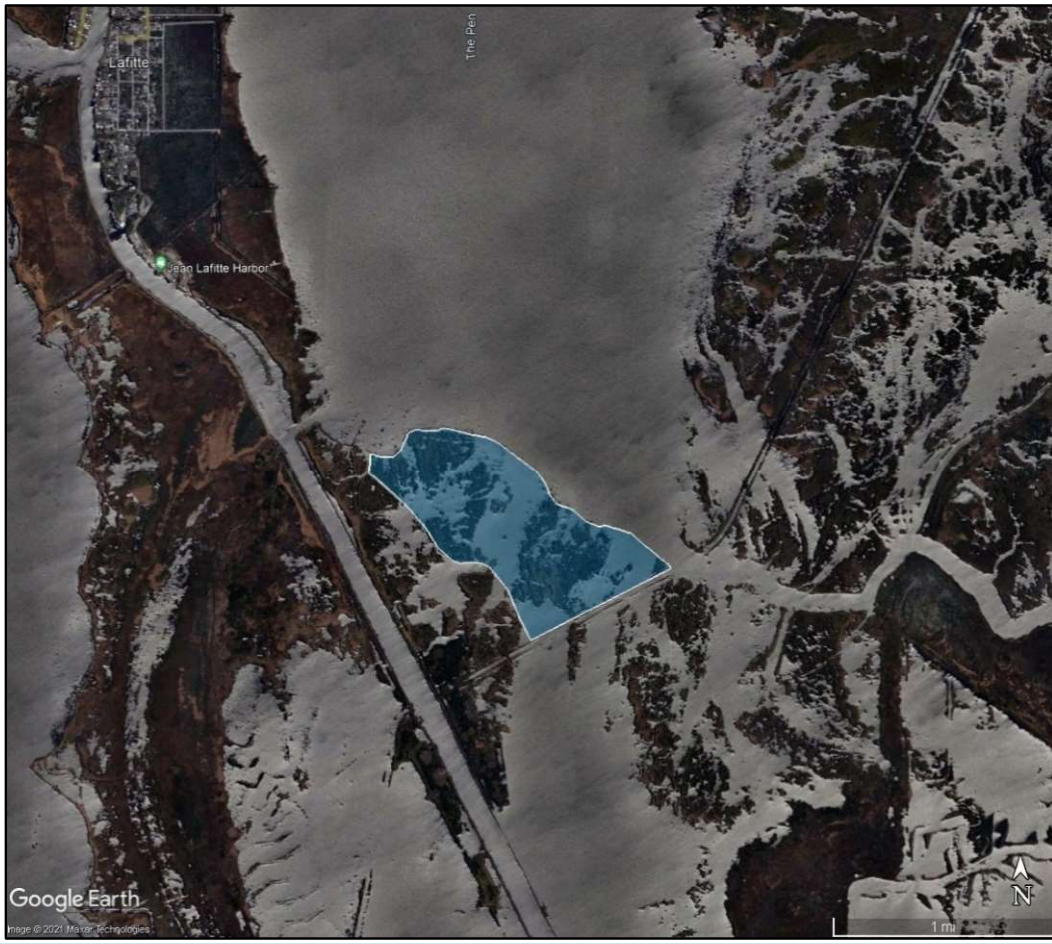


Project Area Degradation

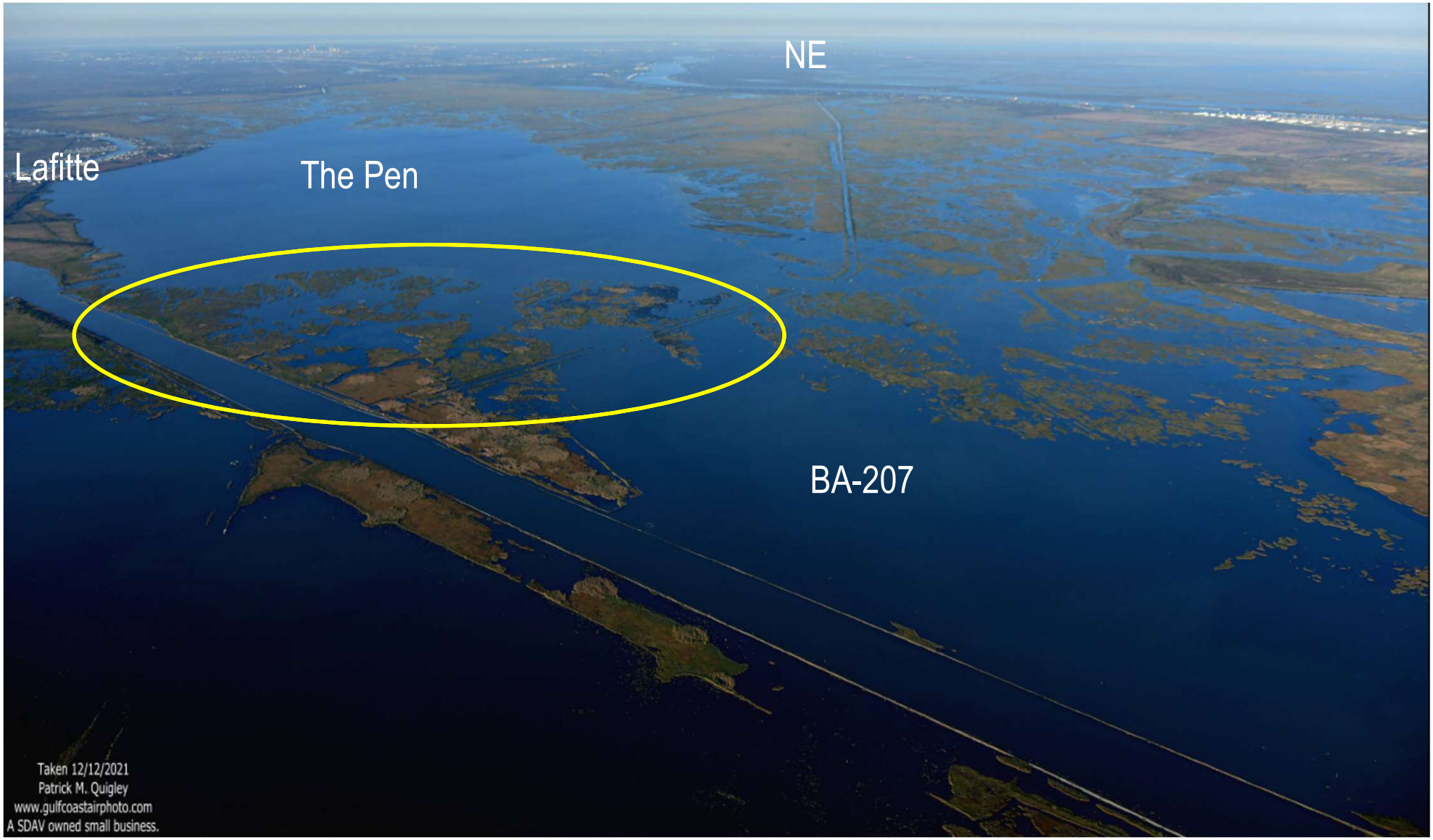
1998



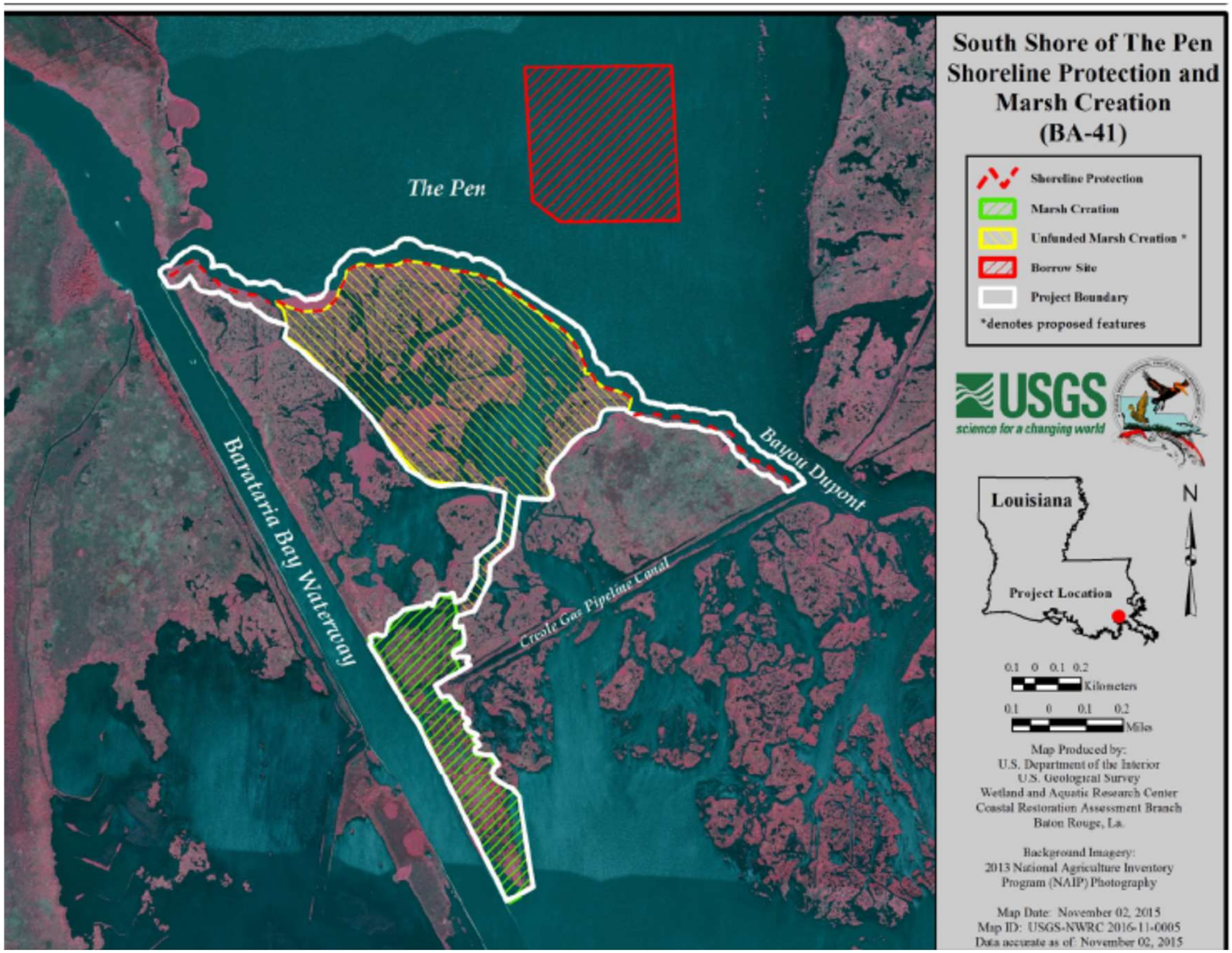
2020



Aerial view of project area



Project area history



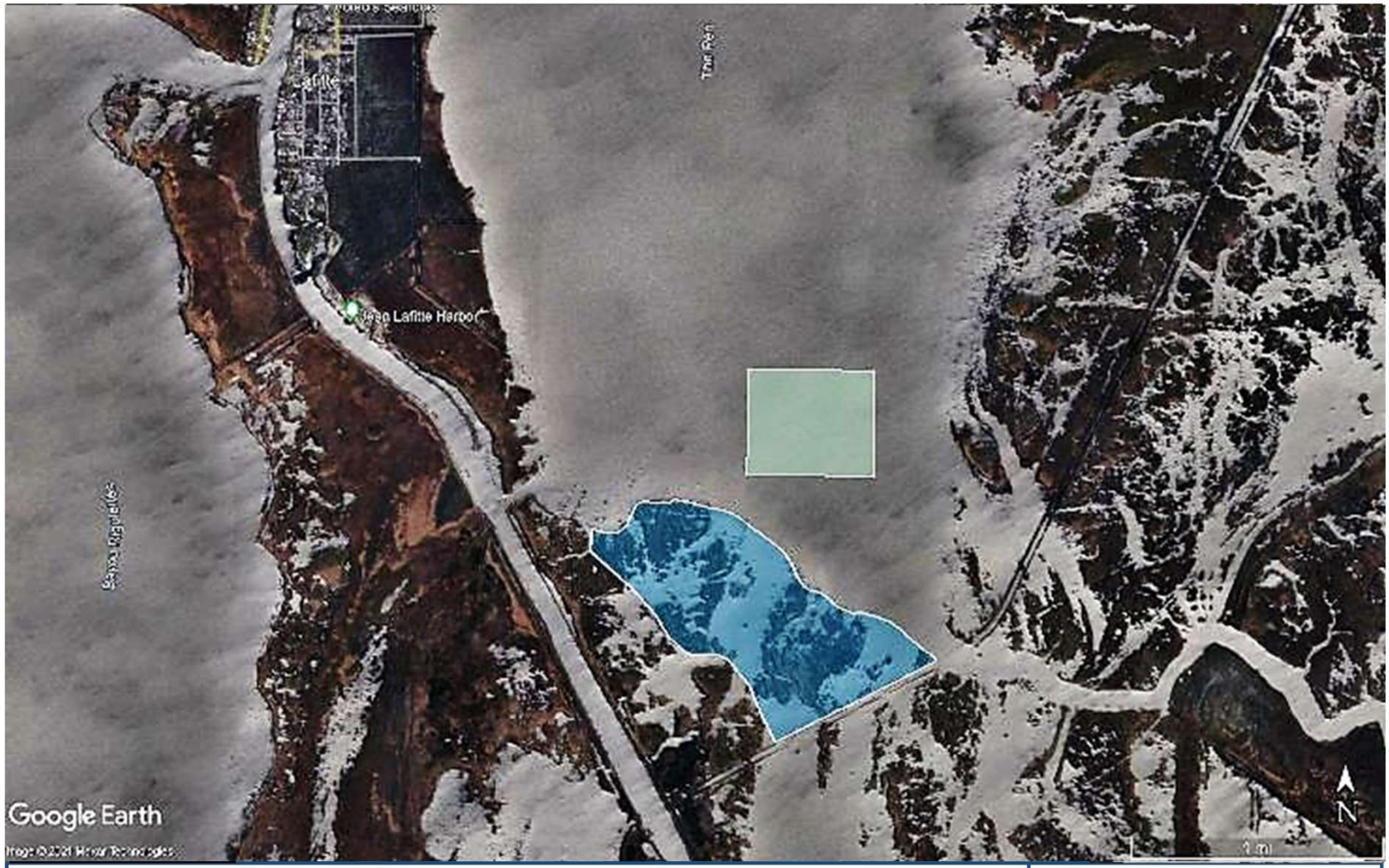
Proposed Project Solution

- Work within 2017 State Master Plan Polygon 002.MC.05e (Large Scale Barataria Marsh Creation – Component E)

- 375 Acres of Marsh Creation/Nourishment
  - 205 acres MC and 170 acres MN
  - Dredge material from the Pen
  - Full containment with dike gapping after construction

- Build resilient wetlands that maximize wetland benefits for the twenty year project life

Project Map



PPL32 Southeast Lafitte Marsh Creation

205 Acres Marsh Creation
170 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

Legend

Marsh Creation

Summary

- Marsh Creation/Nourishment: 375 Acres
- Construction Cost + 25% Contingency: $15M - $20M
- Net Benefits: 200-250 acres

Synergy

- Synergy with other Barataria Land Bridge projects such as BA-207, BA-41, BA-48, BA-164

Contact information:
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REMOVED
R2, BA-19

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Little Lake Dedicated Dredging near Brusle Lake

Project Location
Region 2, Barataria Basin, Lafourche Parish

Problem

The Little Lake mapping unit has high wetland loss caused by shoreline erosion, subsidence, and channel construction. The project is located in an area protecting approximately 3,000 acres of fragile interior marshes between the Little Lake shoreline and Bayou L'Ours Ridge. Project area wetlands are subject to high shoreline erosion rates (20 to 40 feet per year) and subsidence deteriorating interior marshes. An additional impact to the wetlands occurred when Hurricane Ida struck Louisiana in 2021. It caused an estimated 160 km^2 of land loss in Barataria Basin, particularly on its western side (Couvillion 2021, CPRA Board Meeting, 11/17/21). Little Lake Dedicated Dredging near Brusle Lake Project would work synergistically with another NOAA project, Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake (BA-37).

Goals
The project goals are to create and/or nourish up to 604 acres of intertidal marsh and to design the project to build resilient wetlands that maximize wetland benefits for the twenty year project life. This project will restore approximately 2.1 miles of lake shoreline.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 604 acres of emergent marsh (554 acres of marsh creation and 50 acres of marsh nourishment). Sediment will be hydraulically pumped from a borrow source in Little Lake. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is approximately 604 acres (approximately 554 acres of marsh creation and 50 acres of marsh nourishment).

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is 500-550 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation and 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.?*
   The project will help restore the southwestern rim of Little Lake near Brusle Lake.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide some protection to the levee system near Galliano, LA.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project works synergistically with Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake (BA-37).

Considerations
The proposed project has potential pipeline and oyster issues.

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

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, dawn.davis@noaa.gov

Little Lake Dedicated Dredging near Brusle Lake

554 Acres Marsh Creation
50 Acres Marsh Nourishment

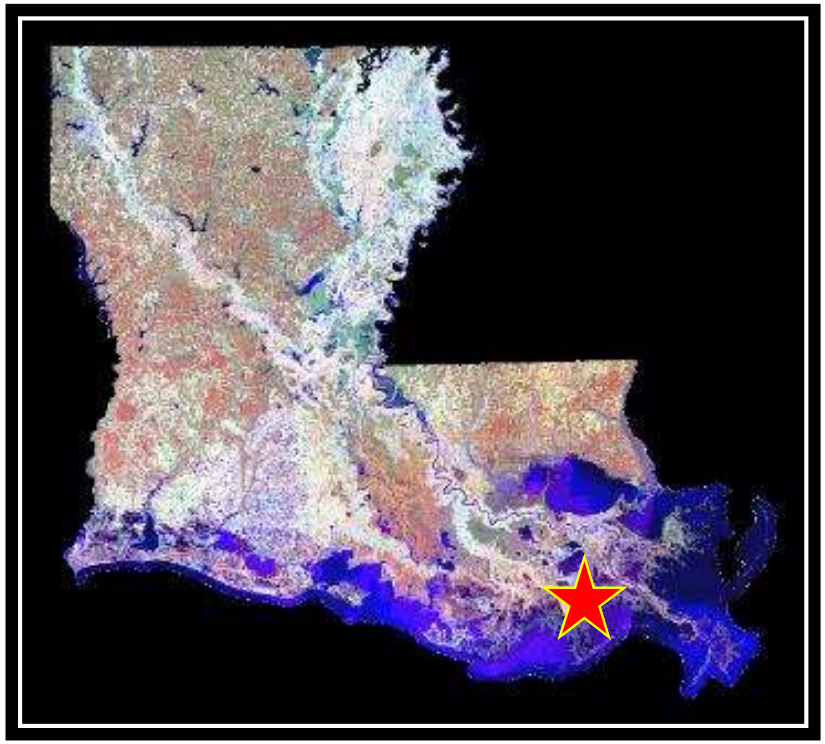
Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

Legend

Marsh Creation

Little Lake Dedicated Dredging near Brusle Lake

NOAA FISHERIES



REGION 2 – Barataria Basin

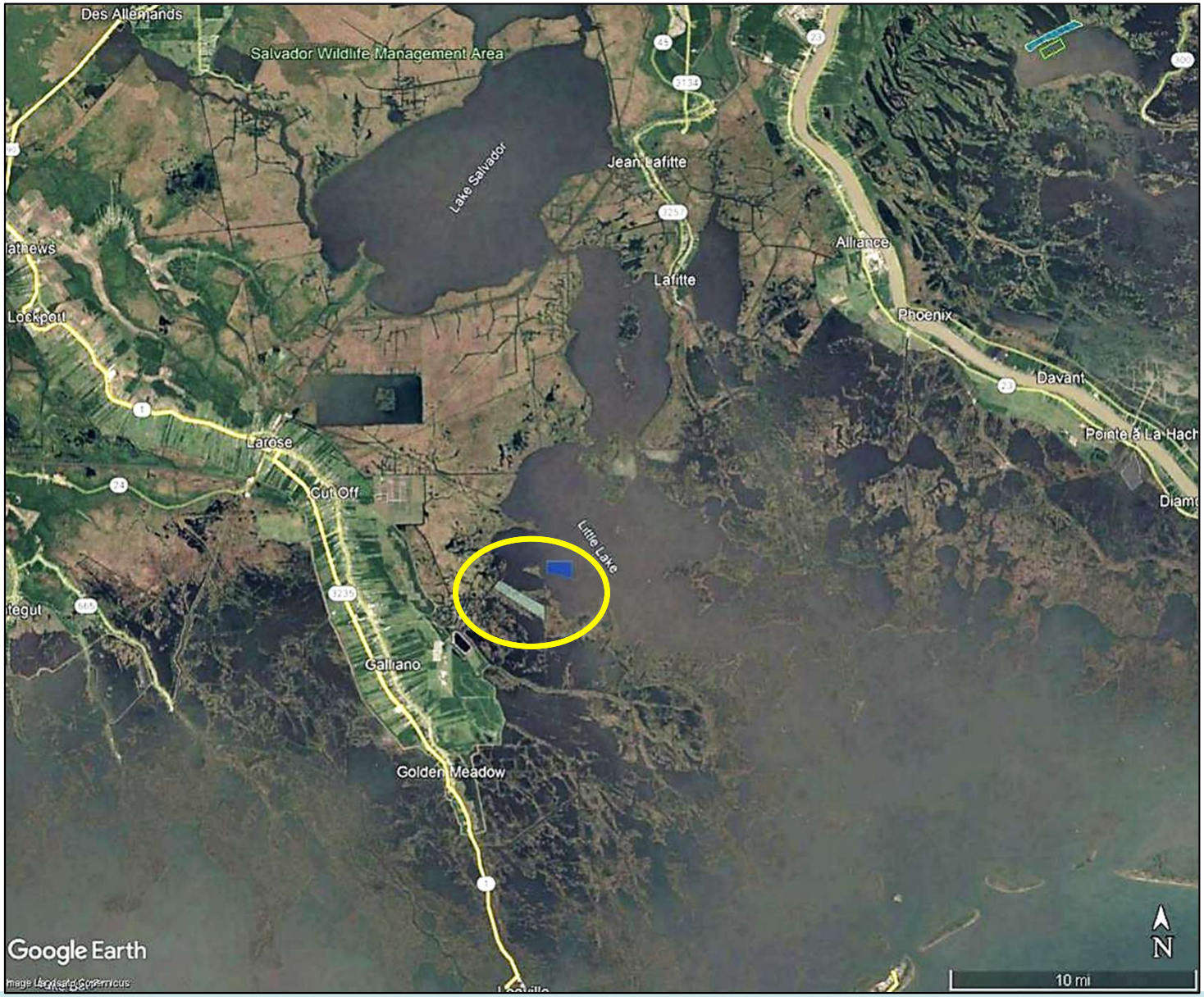
Presenter: Dawn Davis, Fishery Biologist

PPL32 CWPPRA Regional Planning Team

Virtual Meeting

February 10, 2022

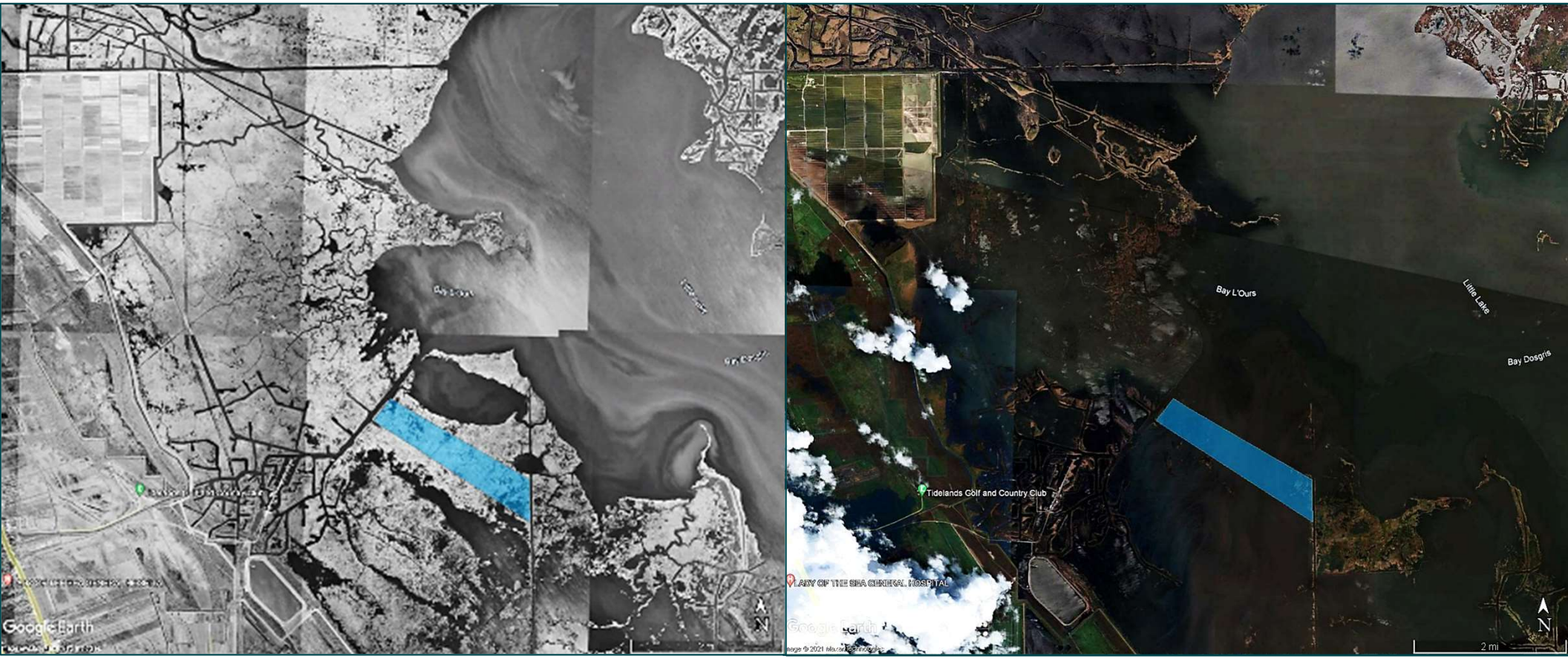
Project Vicinity



Project Area Degradation

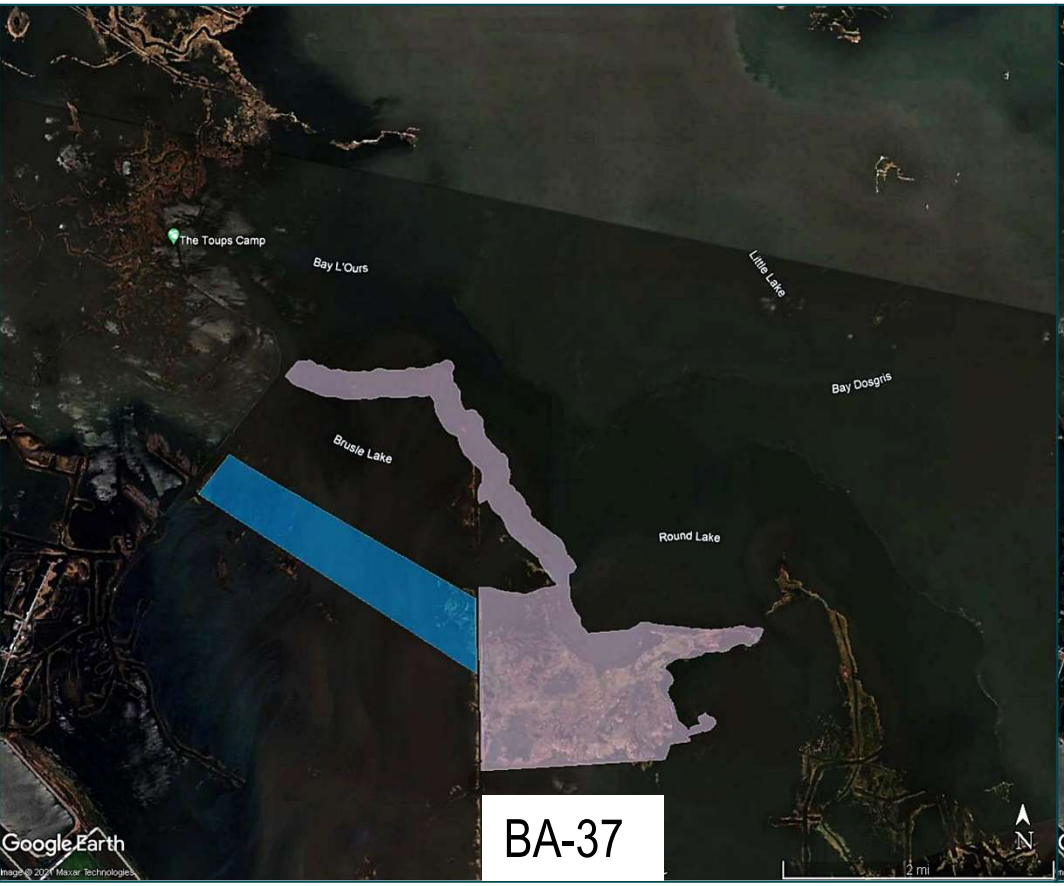
1998

Post-dredge 2021

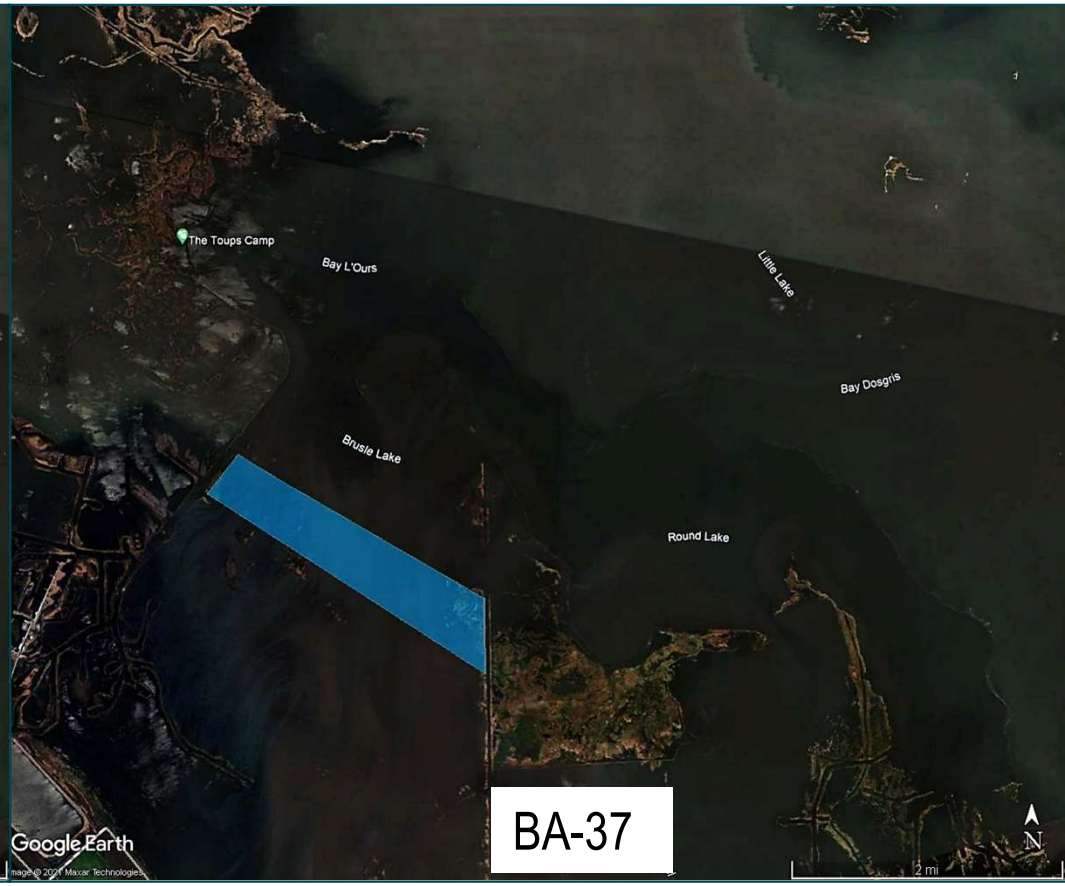


Project Area History

BA-37 Project Footprint



BA-37 Post-Hurricane Ida



Proposed Project Solution

- 604 acres of marsh creation/nourishment
  - 554 acres MC and 50 acres MN
  - Dredge material from Little Lake
  - Full containment with dike gapping after construction
- Build resilient wetlands that maximize wetland benefits for the twenty year project life
- Restore 2.1 miles of lake shoreline

Project Map


Bay L'Ours
Little Lake
Bay Dosgris
Tidelands Golf and Country Club
Little Lake Dedicated Dredging
near Brusle Lake
554 Acres Marsh Creation
50 Acres Marsh Nourishment
Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022
Legend
Marsh Creation

Summary

- Marsh Creation/ Nourishment: 604 Acres
- Construction Cost + 25% Contingency: $25M - $30M
- Net Benefits: 500-550 acres

Synergy

- Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake (BA-37)

Contact information:
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REMOVED
R2, BA-20

PPL32 PROJECT NOMINEE FACT SHEET
February 10th, 2022

Project Name
East Lake Hermitage Marsh Creation Project

Project Location
Region 2, Barataria Basin, Plaquemines Parish, east of Lake Hermitage and west of Pointe a La Hache

Problem
Historically, this area was nourished by the freshwater delivered by the Mississippi River until the creation of the levees along the lower river. The major cause of wetland loss has been from storm activity (i.e. Hurricane Betsy and Katrina), causing both storm-induced scouring and salt water intrusion. The wetland loss rate in the area is -0.47%/year based on CRMS0263 data from 2009 to 2021.

Goals
The project goals are to 1) create and/or nourish approximately 450 acres of semi contained brackish marsh adjacent to a flood protection levee 2) create 65 acres of tidal ponds/creeks within the marsh creation area.

Proposed Solution
Sediments from the Mississippi River (Point Celeste) will be hydraulically dredged and pumped into the project area via dredge pipeline using the previously designed (BA-042) and utilized dredge pipeline corridor. A total of 450 acres of marsh creation and nourishment will be constructed between the Lake Hermitage shoreline and the flood protection levee. Containment is only expected to be used on an as needed basis as much of the project should be able to be completed with minimal containment. The project plans a 65 acre tidal pond/creek utilizing similar concepts and designs for ponds in the Barataria basin. Any containment dikes needed for the project 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 350 acres would be benefited directly and indirectly. Direct benefits include approximately 400 acres of marsh creation and 50 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 300-350 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 protect the adjacent levee system to the east of the project.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help to protect the flood protection levees east of the project area along Hwy 23.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would provide a synergistic effect with the Grand Bayou Ridge and Marsh Restoration (BA-217), Grand Bayou Ridge and Marsh Restoration – Increment 2, Upper Barataria Marsh Creation Project (BA-207), Grand Cheniere Marsh and Ridge Restoration Project (BA-173), the Lake Hermitage Marsh Creation Project (BA-042), and the West Pointe a La Hache Siphons.

Considerations

Considerations for this project include pipelines/landrights/utilities.

Preliminary Cost

The fully-funded cost with 25% contingency range is $30M - $35M.

Preparer of Fact Sheet

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

PPL32 East Lake Hermitage Marsh Creation

400 Acres Marsh Creation
50 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 01-17-2021

Legend

- Marsh Creation
- Tidal Creeks/Ponds
- Borrow Area

CWPPRA RPT Region 2

Breton Sound

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Bohemia Spillway Outfall Management – Lower Grand Bayou

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish

Problem
The Bohemia Spillway is one of the few areas within the Mississippi (MS) River floodplain that is considered sustainable and has relatively low rates of land loss. Land loss is associated with the direct loss due to dredging of canals and due to shoreline erosion near the bays. Even though this area is considered a stable marsh land building has yet to occur. Sediment supplied by overbank flooding is not directly delivered to the marsh but is carried out into adjacent bays through the numerous canals and bayous. Currently, under the normal range of river stage that goes through the Bohemia Spillway, peak annual flow is likely to 30,000 to 50,000 cubic feet per second (LPBF Bohemia Spillway Report 2013). In that Report, it is suggested that sediment that gets deposited into the bay is redistributed into the marsh during storms and fronts. Loss rates for 1985-2016 for the American Bay mapping unit is -0.44%/yr (Couvillion et al. 2017).

Goals
The primary goal is to manage outfall of the Spillway to enhance the natural marsh processes and increase the growth rate of the emergent wetlands associated with Lower Grand Bayou and adjacent distributary channels. Specifically the goal is to: 1) maintain and increase flow of fresh water and sediments into shallow, open-water habitat, 2) create marsh using the material from the bayou, 4) create terraces that will trap sediments, 3) reduce fetch and wave energy in open water areas and 6) protect the shoreline along Battle Ground Bay. The project will build upon the multiple lines of defense strategy by extending the marsh into the bays offering a buffer for areas to the north. Additional indirect benefits include increased sediment retention within the marsh and bay areas.

Proposed Solution
The proposed solution is to create approximately 192 acres of marsh within the outfall of Lower Grand Bayou to facilitate sediment retention in the bays. Material will be dredged primarily from Lower Grand Bayou (18,300 LF) to ensure efficiency of the distributary bayous. Portions of the Back Levee Canal (10,000 LF) experiencing siltation will also be dredged to ensure flow to Grand Bayou and areas to the north. A crevasse (433 feet long x 75 feet wide x 8 feet deep) will be dredged to facilitate sediment-laden waters into Long Bay from Lower Grand Bayou. Approximately 15,540 linear feet of terraces (i.e., 150 acres of terrace field/s resulting in 10 acres of marsh creation benefits) will be created within strategic areas to encourage sediment retention. The terrace slopes and crown would be planted with appropriate marsh vegetation. Shoreline protection is proposed along the southwestern shoreline of Battle Ground Bay to prevent the shoreline from eroding into inland bays and bayous. Approximately 3,700 linear feet (12,333 sq. yards) of gabion mattresses will be placed along the foreshore containment dike of the proposed marsh creation area.

Preliminary Construction Costs
The construction cost +25% contingency is estimated to be $20-25M.

Preparer(s) of Fact Sheet:
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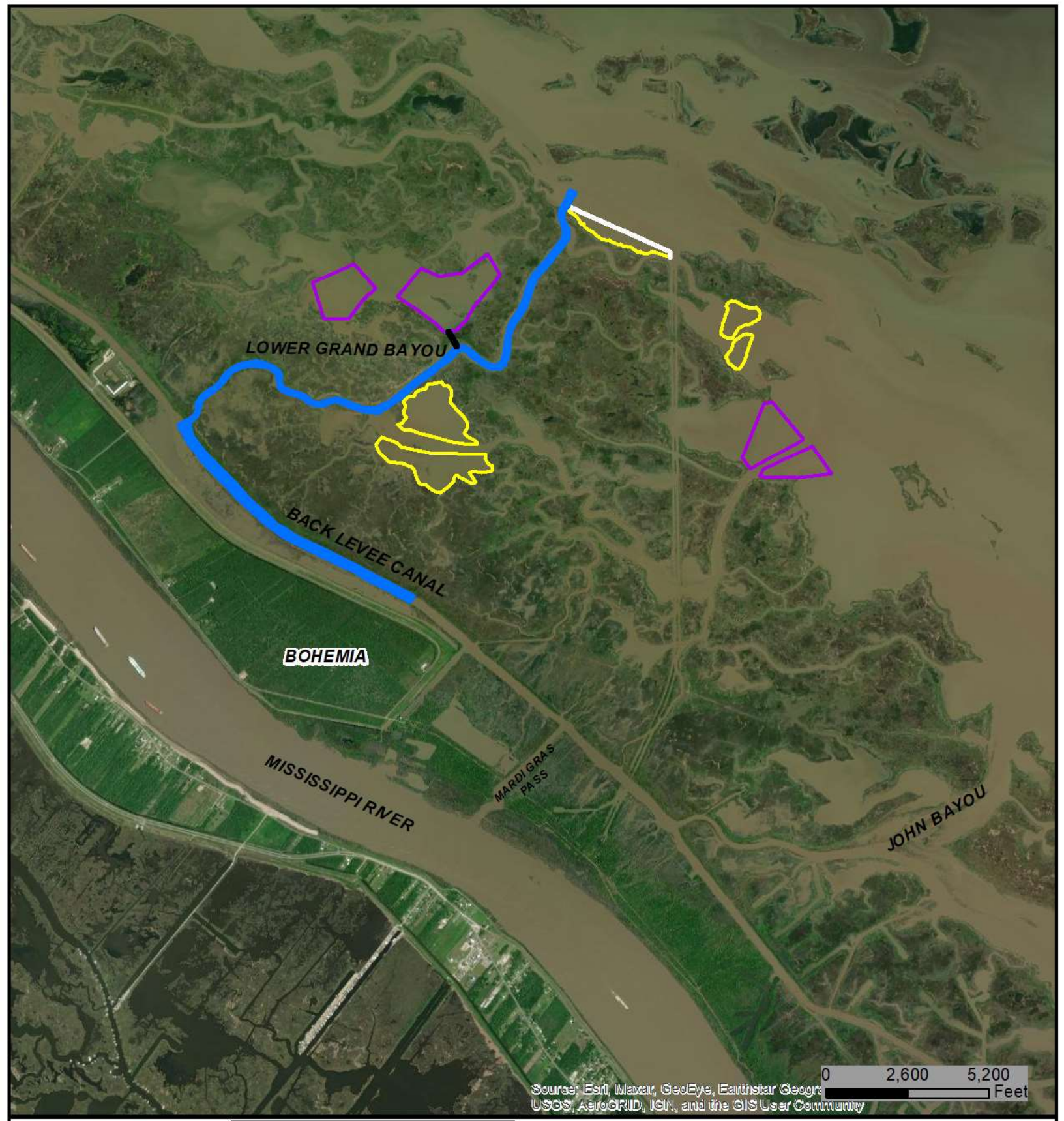
Eric Whitney, USDA-NRCS, eric.whitney@usda.gov, 337-291-3069



USDA

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

Data Source: ESRI APRIL 2021

Map Date: JANUARY 25, 2022

PPL 32
BOHEMIA SPILLWAY
OUTFALL MANAGEMENT
PLAQUEMINES PARISH, LA

N
W E
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Legend
- MARSH_CREATION_1_27_20
- DREDGING_1_27_20
- SHORELINE_PROTECTION_1_27_20
- TERRACES_1_27_20
- 433_ft_CREVASSE

PPL32

Bohemia Spillway Outfall Management – Lower Grand Bayou

Region 2, Breton Sound Basin

Contacts:
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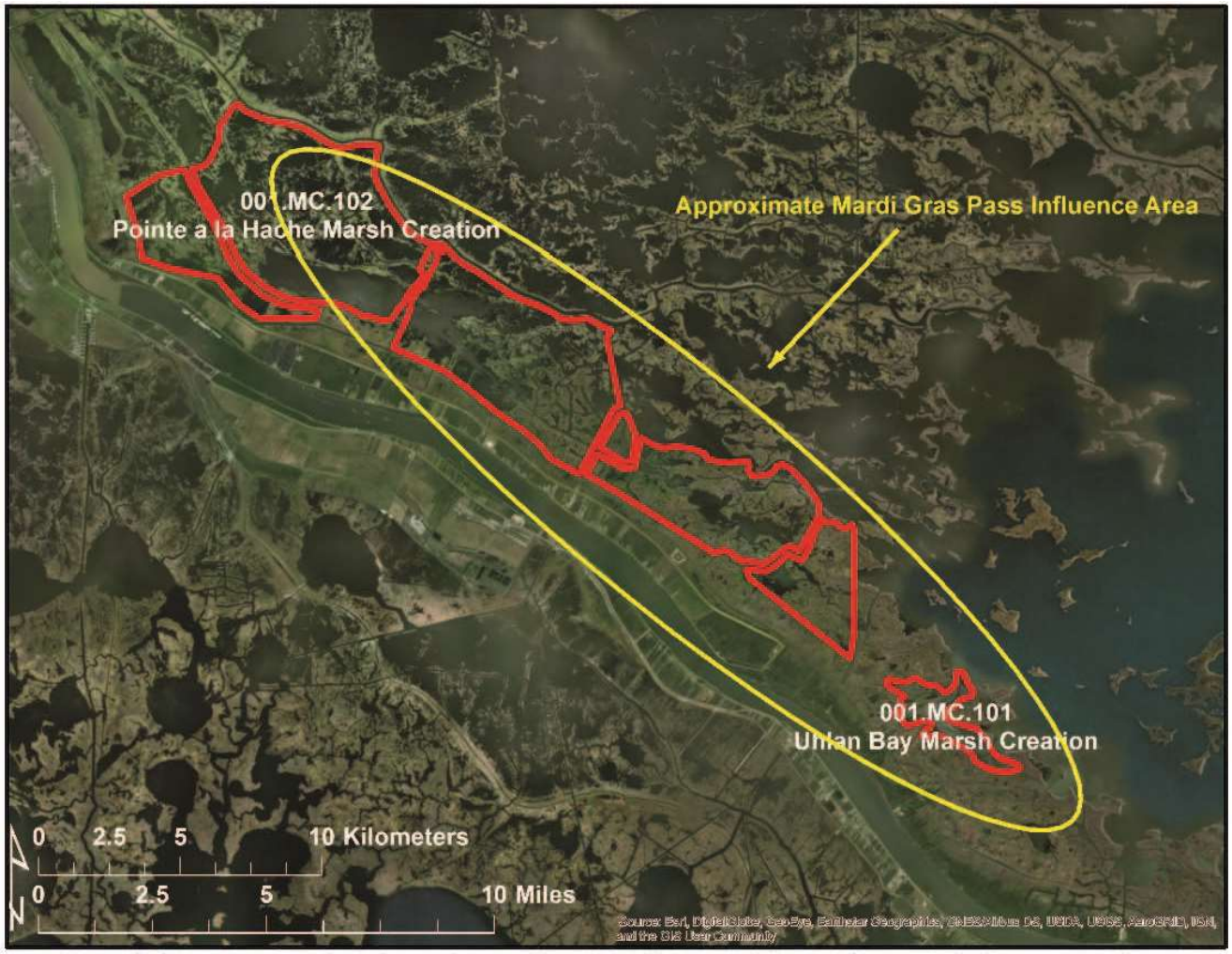
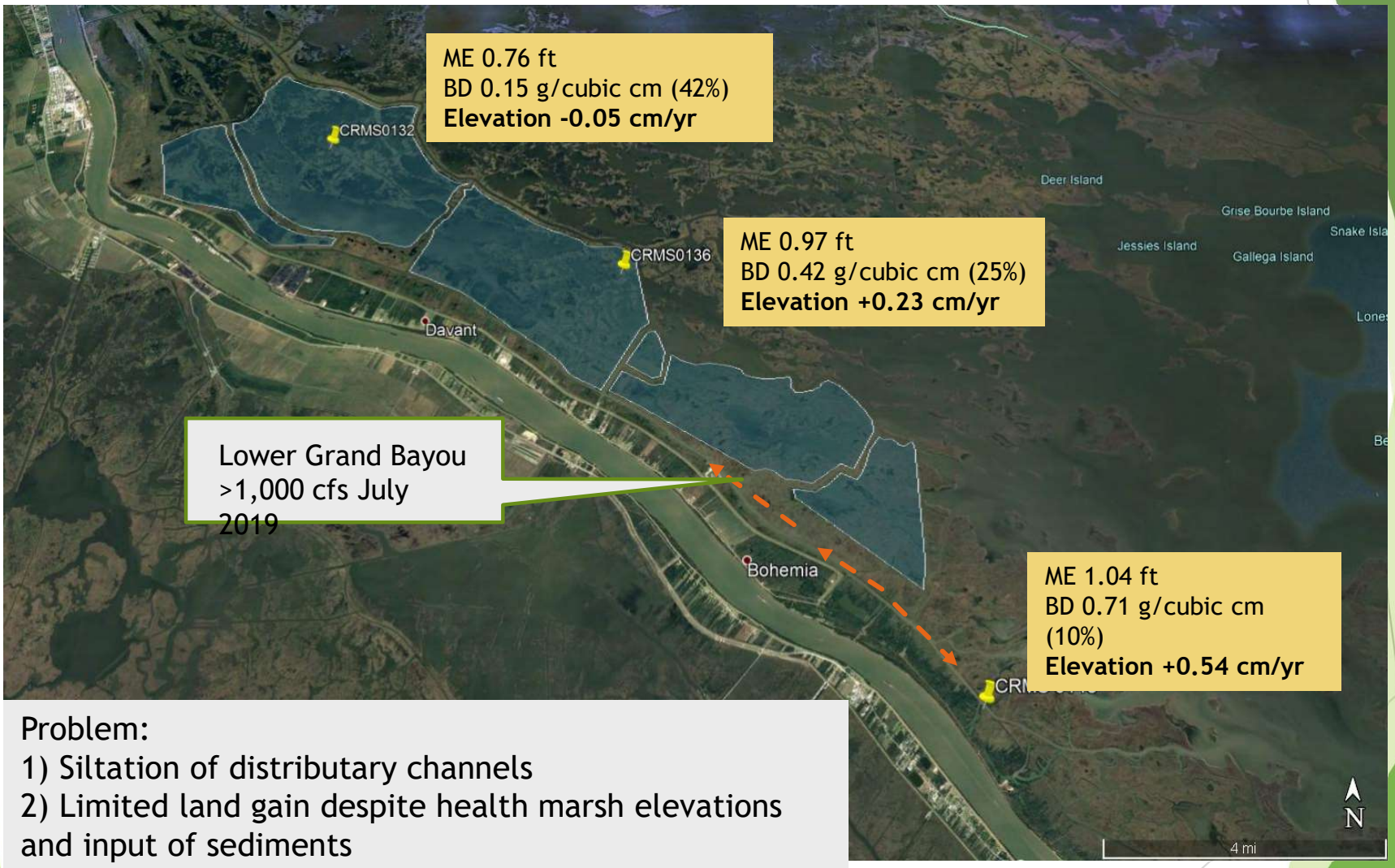
PPL32 Bohemia Spillway Outfall Management



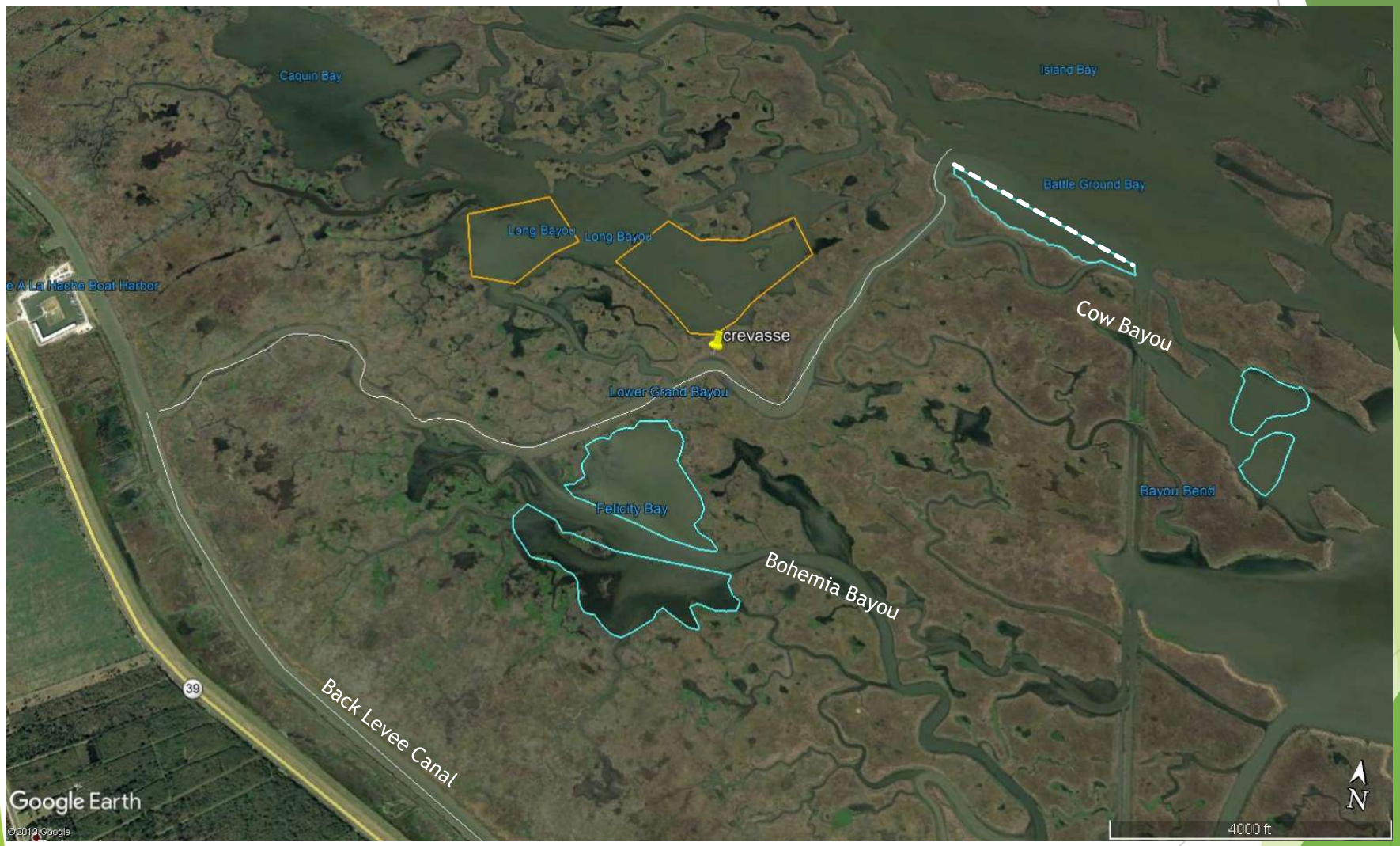
LPBF. 2018. MGP Regional Influence: Sediment Distribution and Deposition, Salinity and Nutrients in 2017

PPL32 Bohemia Spillway Outfall Management



Problem:
1) Siltation of distributary channels
2) Limited land gain despite health marsh elevations and input of sediments

PPL32 Bohemia Spillway Outfall Management




Long Bayou
Cow Bayou
Lower Grand Bayou
Felicity Bay
Bayou Bend
Bohemia Bayou
Bay Law
Bohemia
Clam Bay
Bayou Law
Bayou Law
39
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©2019 Google
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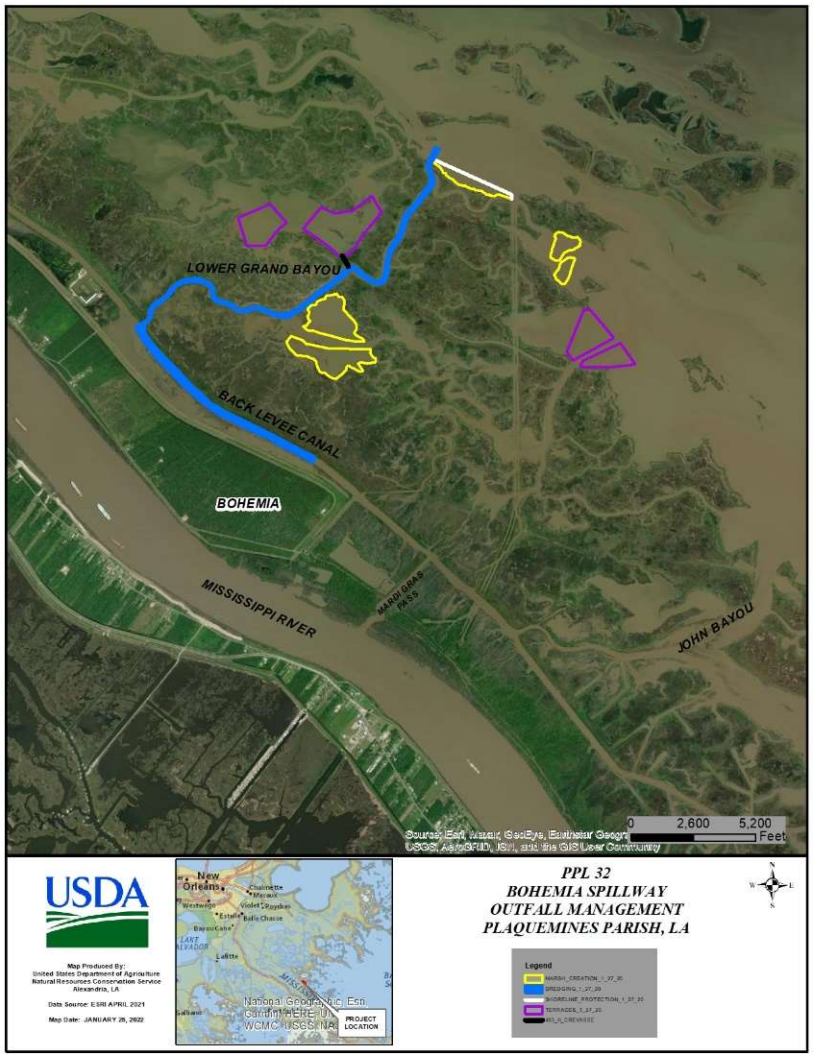
PPL32 Bohemia Spillway Outfall Management



Goal:

- Dredging: 28,300 LF
- Marsh Creation: 192 Acres
- Terraces:
  - 15,540 LF
  - 3 Terrace Fields (150 Acres)
  - 10 acres MC + additional benefits = sediment retention
- Shoreline Protection: 3,700 LF

Construction Costs + 25% Contingency = $20-25M

Delta Mngt at Fort. St Philip (BS-11)

"The ultimate usefulness of sediment to build coastal wetlands by an outlet or diversion is dependent not just on the outlet or diversion's existence, capacity, and operation, but also on the riverside and bayside conditions to capture sediment, build land and become vegetated."

-LPBF 2017

West Bay Diversion

Public: How to Provide a Statement

- **Step 1:** Select Chat at the bottom of your screen
- **Step 2:** Ensure your message is being sent to **"Everyone"**
- **Step 3:** Type in the chat box **[Your First and Last Name]** and then press **'Enter'** on your keyboard to send.

- **Step 4:** Please wait until you are called by name. You will then dial ***6** on your phone's keypad to **unmute** your phone.
- **Step 5:** Once you have provided your statement, please dial ***6** again to **re-mute** your phone.

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Horsepower Canal Marsh Creation

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish, East of Phoenix, LA

Problem
Within the project vicinity, marsh loss has occurred as the result of oil/gas canals, subsidence, and a lack of sediment deposition. For the Phoenix Marsh Creation-West Increment Project (PPL30), USGS calculated a land change rate of -0.65% per year for the period 1984 to 2019.

Goals
The primary goal of this project is to restore degraded marsh along the east bank of Plaquemines Parish near Pointe a la Hache and to continue the East Bank Land Bridge west of River aux Chenes. The specific goal of this project is to create 355 acres of marsh and nourish 150 acres of marsh with dredged material from the Mississippi River.

Proposed Solution
Sediment will be hydraulically dredged from the Mississippi River-Myrtle Grove Anchorage to create 355 of marsh and nourish an additional 150 acres. The dredged riverine sediments will be pumped via pipeline into two fully-contained marsh creation cells. Containment dikes will be gapped no later than three years post construction.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
Approximately 505 acres would be benefited directly, including 355 acres of marsh creation and 150 acres of marsh nourishment.

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 300-350 ac. of marsh will be protected/created over the project life.

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)?*
The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the projects life.

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

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will support critical infrastructure including Louisiana Highway 39, a hurricane evacuation route, and the Mississippi River and hurricane protection levees.

These levees provide protection to the communities along the river including Phoenix and Carlisle.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with projects along the Breton Sound Basin Landbridge including the Phoenix Marsh Creation – East Increment Project and the Breton Landbridge Marsh Creation (West) Project.

Considerations
The proposed project has potential utility/pipeline and levee considerations.

Preliminary Costs
The construction cost plus 25% contingency is $35-40 million.

Preparer of Fact Sheet
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Jackie Jones, Jacqueline.Jones@USDA.gov, 337/291-3055

USDA

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

Data Source: NAIP 2019

Map Date: JANUARY 26, 2022

PPL 32
HORSEPOWER CANAL
MARSH CREATION
PLAQUEMINES PARISH, LA

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W E
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0 1,000 2,000
Feet

Legend

MARSH_CREATION

PPL32

Horsepower Canal Marsh Creation

Region 2, Breton Sound Basin

Contacts:
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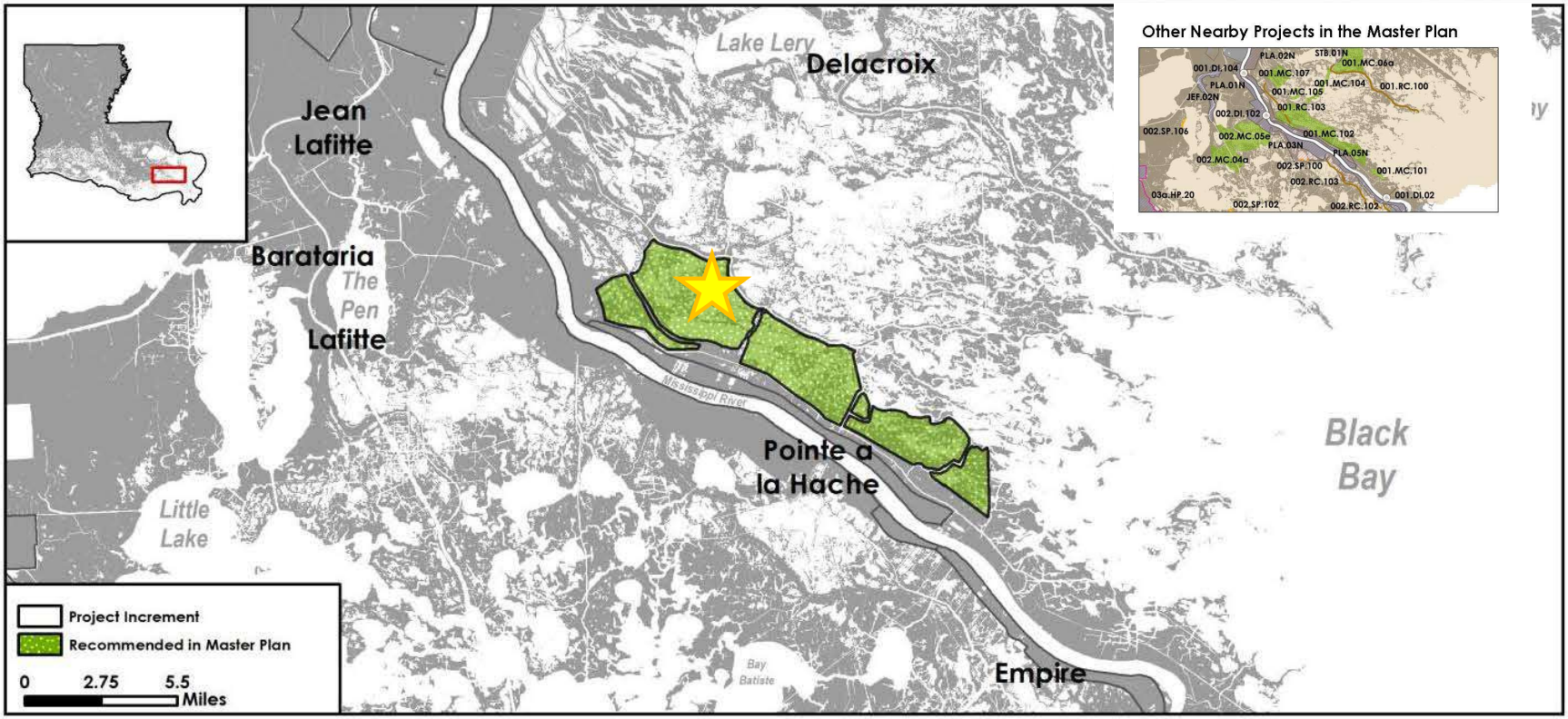
Jackie Jones, Planning Engineer, Jacqueline.Jones@USDA.gov, 337/291-3055

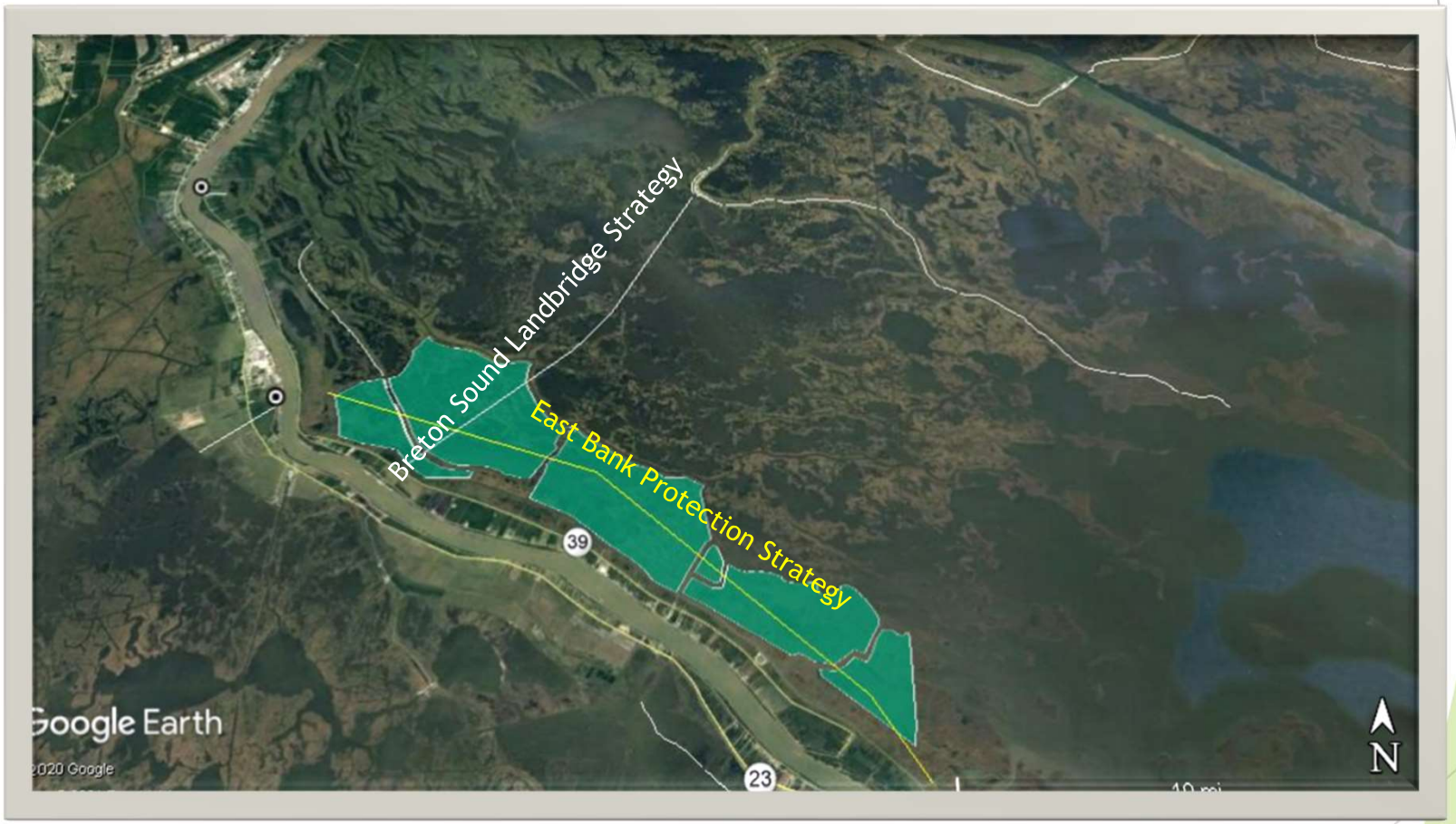
Pointe a la Hache Marsh Creation

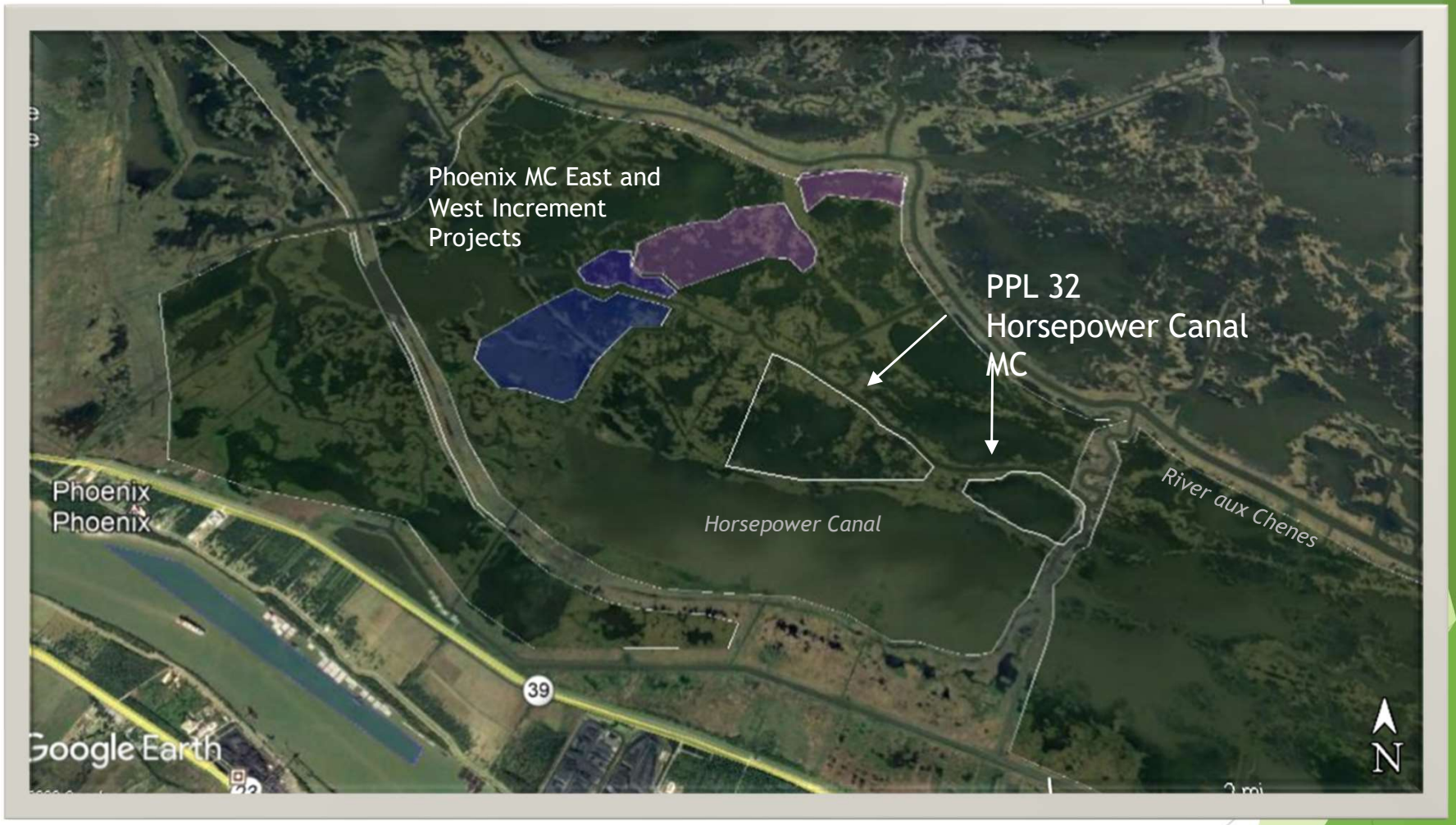
Marsh Creation

Project ID: 001.MC.102



Breton Sound Basin Restoration Strategies




Phoenix MC East and
West Increment
Projects
PPL 32
Horsepower Canal
MC
Phoenix
Phoenix
Horsepower Canal
River aux Chenes
39
Google Earth
N

PPL32 – Horsepower Canal Marsh Creation

Mississippi River Borrow

355 acres Marsh Creation

150 acres Marsh Nourishment

505 acres Total

300-350 net acres

Construction Costs + 25%

Continency = **$35-40M**

Support critical infrastructure:

- LA Hwy 39 (Evacuation Route)
- Mississippi River
- Hurricane protection levees
- Communities along the river (Phoenix & Carlisle)

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Spanish Lake Shoreline Restoration (Shoreline Berm/Marsh Creation)

Project Location
Region 2, Breton Basin, Plaquemines Parish, west of Grand Lake and east of Spanish Lake.

Problem
From 1932 to 1990, the Caernarvon Mapping Unit lost 14,240 acres of its marsh. Prior to Hurricane Katrina, the greatest lost documented occurred between 1956 and 1974 and coincided with Hurricane Betsy and extensive canal building. Hurricane Katrina in 2005 devastated the area resulting in substantial marsh loss. According to USGS Open File Report (2006-1274), approximately 39 square miles of marsh around the upper and central portions of Breton Sound were converted to open water by mechanical removal of the marsh or by marsh submergence. Based on the hyper-temporal analysis conducted by USGS for the extended project boundary, the loss rate in the project area is estimated to be –0.96 %/year for the period 1985 to 2020.

Goals
The goal of this project is to restore the eastern shoreline of Spanish Lake with a more robust marsh and create more typical intertidal marsh in the open water and fragmented marshes east of that restored shoreline.

Specific goals: 1) Create approximately 207 acres and nourish approximately 25 acres of intermediate to low salinity brackish marsh around the perimeter of Spanish Lake. 2) Restore approximately 18,000 linear feet of Spanish Lake's eastern shoreline.

Proposed Features
1. Hydraulically dredge material from the Mississippi River (Alliance or Alliance South Anchorage) to create/nourish 232 acres of marsh.
2. Approximately 18,000 linear feet of shoreline would be restored with material dredged from Mississippi River.
3. Material would be shaped from a higher elevation near the newly created Spanish Lake shoreline to a lower elevation east of that shoreline.
4. Because river material will be used, earthen containment would not be necessary.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly?
This total project area is 232 ac.

2) How many acres of wetlands will be protected/created over the project life?
Approximately 190 net acres would result after the 20-year project life.

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 land loss rate reduction throughout the area of direct benefits is approximately 50% to 74% over the project life.

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?*
This project would restore the eastern shoreline of Spanish Lake.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
This project would help protect small camps around the Spanish Lake area.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project would work synergistically with BS-16, BS-24, BS-32, BS-38, BS-42, and BS-44.

Preliminary Cost
The construction cost plus 25% contingency is estimated to be between $30 and $35M.

Preparer(s) of Fact Sheet:
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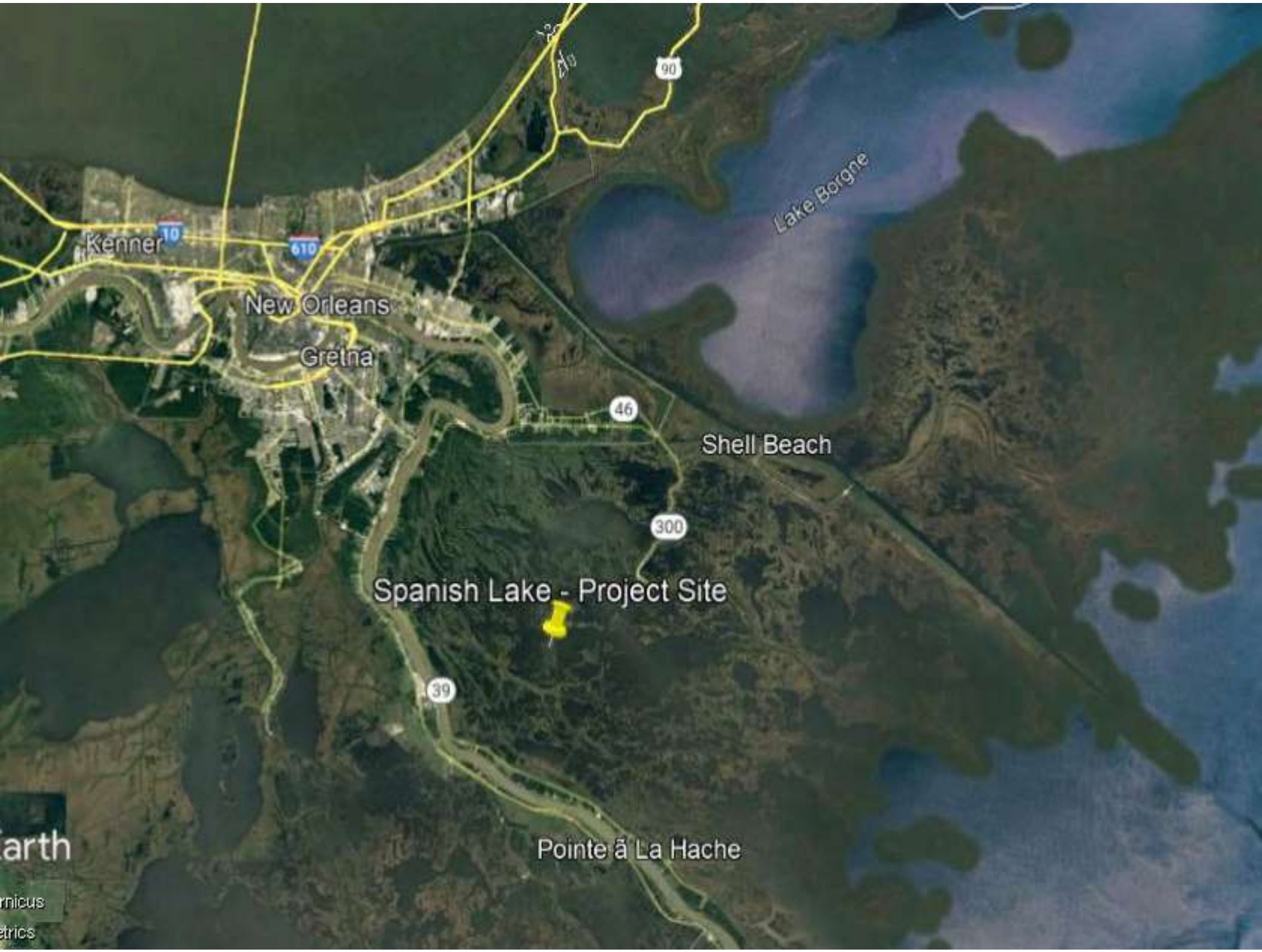
U.S. Fish & Wildlife Service

Louisiana Ecological Services

Spanish Lake Shoreline Restoration

SPANISH LAKE SHORELINE RESTORATION AND MARSH CREATION


Kenner
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New Orleans
Gretna
Lake Borgne
90
46
Shell Beach
300
Spanish Lake - Project Site
39
Pointe ā La Hache
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SPANISH LAKE SHORELINE RESTORATION AND MARSH CREATION

Problem:

- **Hurricane Katrina destroyed thousands of acres of marsh**
- **Estimated over 40 sq. miles of marsh were converted to open water from Hurricane Katrina**
- **Because of increased open water, wave fetch induced erosion is now a problem**


Grand Lake
Spanish
Lake

Spanish Lake Shoreline Restoration

SPANISH LAKE SHORELINE RESTORATION AND MARSH CREATION

Solution:

- **Hydraulically dredge material from the Mississippi River to restore the eastern shoreline of Spanish Lake (270 acres marsh creation and 30 acres marsh nourishment).**
- **Because this is proposed with river material, no containment dikes are being proposed at this time.**

PROPOSED POTENTIAL RIVER BORROW SITES

SPANISH LAKE SHORELINE RESTORATION AND MARSH CREATION

Goals:

- Restore approximately 17,000 ft. of the eastern Spanish Lake shoreline with material dredged from the Mississippi River .
- Create/nourish 300 acres of enhanced (slightly higher) intertidal marsh between Spanish and Grand Lakes with material dredged from the Mississippi River.

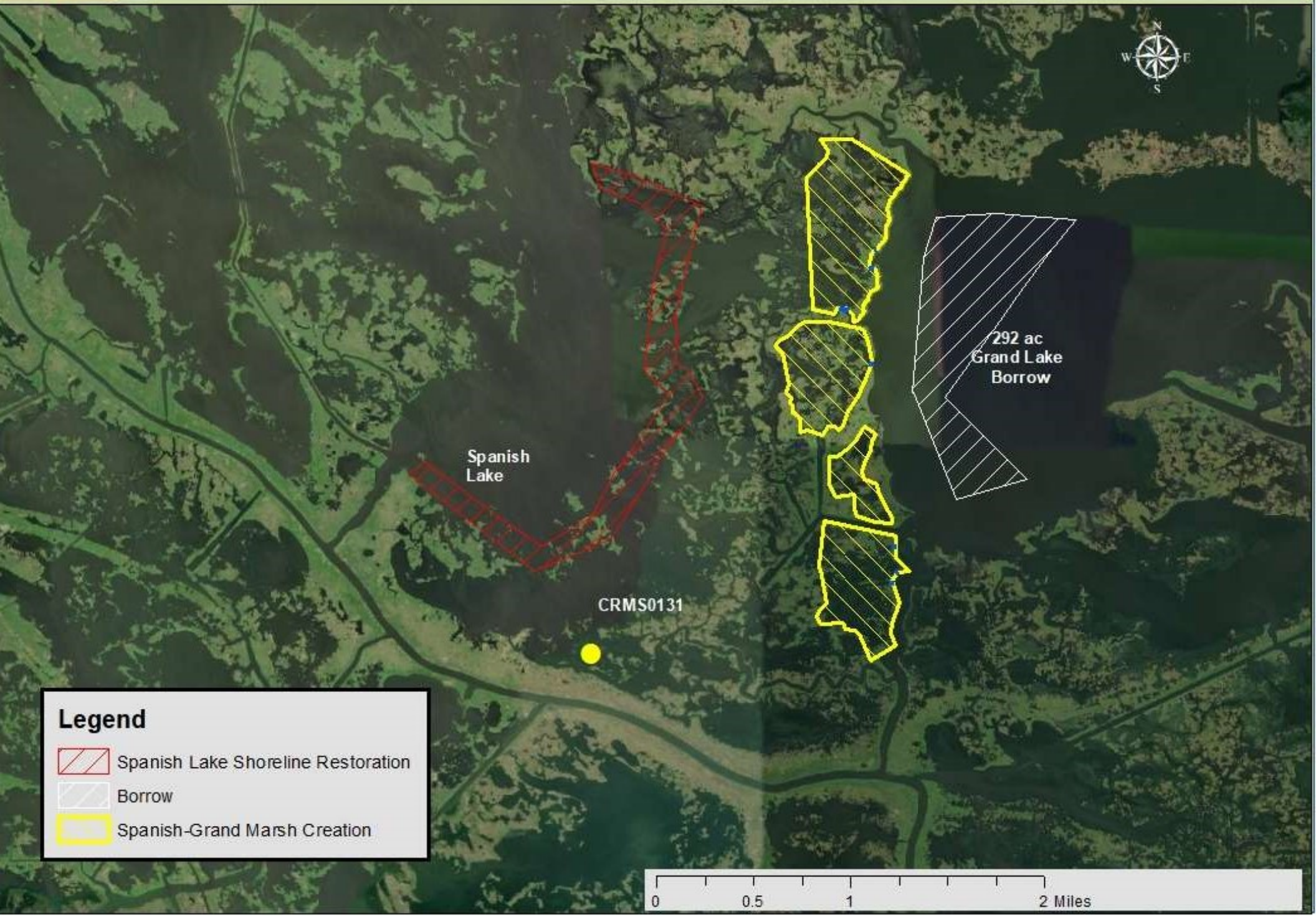
Net Acres:

- Total net acres = 190 acres (not including hydraulic components)

Preliminary Construction Costs

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

Spanish Lake Grand Lake Marsh Creation



Species of Concern and Listed Species

- Black Rail
- Least Bittern
- Mottled Duck
- King Rail

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Spanish Lake-Grand Lake Marsh Creation

Project Location
Region 2, Breton Basin, Plaquemines Parish, west of Grand Lake and east of Spanish Lake.

Problem
From 1932 to 1990, the Caernarvon Mapping Unit lost 14,240 acres of its marsh. Prior to Hurricane Katrina, the greatest lost documented occurred between 1956 and 1974 and coincided with Hurricane Betsy and extensive canal building. Hurricane Katrina in 2005 devastated the area resulting in substantial marsh loss. According to USGS Open File Report (2006-1274), approximately 39 square miles of marsh around the upper and central portions of Breton Sound were converted to open water by mechanical removal of the marsh or by marsh submergence. Based on the hyper-temporal analysis conducted by USGS from 1985-2020, the loss rate in the project area is estimated to be –0.961 %/year.

Goals
The goal of this project is to halt the coalescence of Grand Lake and Spanish Lake by restoring the broken marshes west of the Grand Lake shoreline to a more typical and healthy intertidal marsh.

Specific goals: 1) Create approximately 293 acres and nourish approximately 217 acres of intermediate marsh west of the western shoreline of Grand Lake.

Proposed Solution
Sediment will be dredged from a borrow site in Grand Lake and pumped via pipeline to create/nourish approximately 510 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh within the intertidal range. Earthen containment dikes will be constructed around the perimeter of marsh creation cells. Containment dikes along the Grand Lake shoreline will be planted with appropriate vegetation. Containment dikes will be gapped at the end of construction or by target year 3.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 510 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 250 – 300 ac of marsh will be protected/created over the project life.

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 land loss rate reduction throughout the area of direct benefits is approximately 50% to 74% over the project life.

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?*
This project would restore the marshes directly west of the Grand Lake halting the possibility of a breach between Grand Lake and open water west of that shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
This project would protect small several camps.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project would work synergistically BS-16, BS-24, BS-32, BS-38, BS-42 and BS-44 projects.

Preliminary Cost
The estimated construction cost plus 25% is between $20 and $25M.

Preparer(s) of Fact Sheet:
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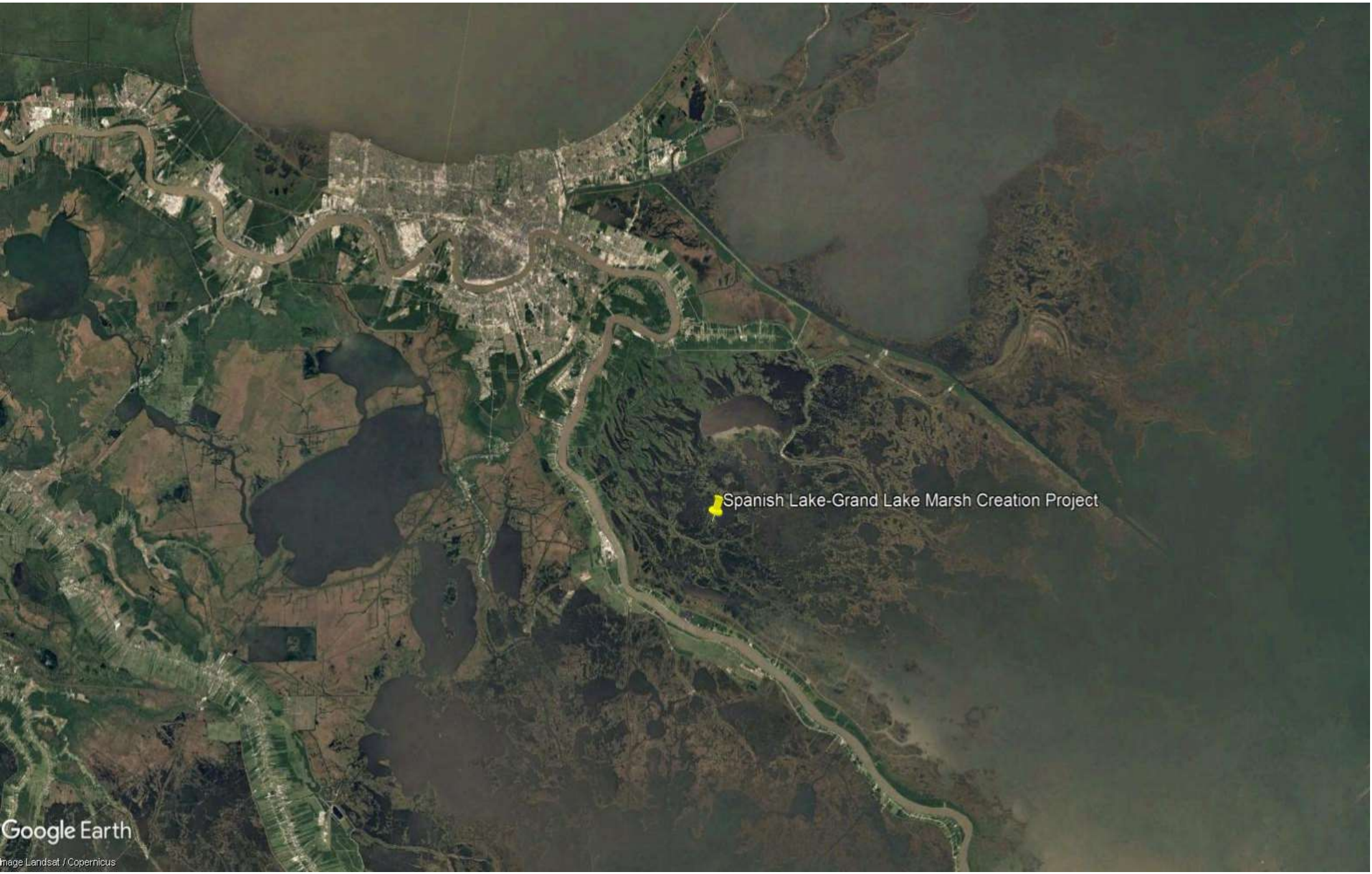
U.S. Fish & Wildlife Service

Louisiana Ecological Services

Spanish Lake Grand Lake Marsh Creation

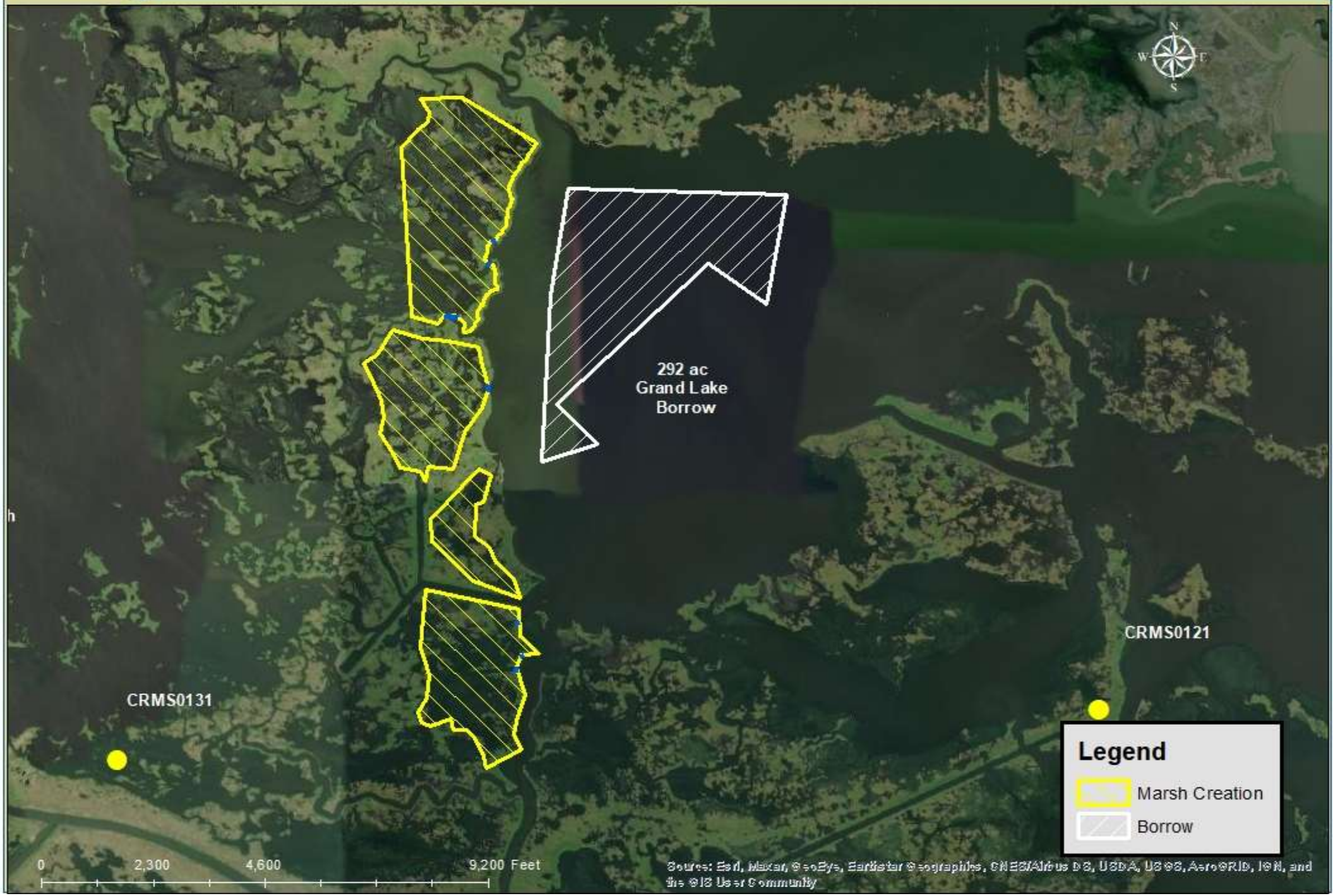
SPANISH LAKE
GRAND LAKE
MARSH CREATION


Spanish Lake-Grand Lake Marsh Creation Project
Google Earth
Image Landsat / Copernicus

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Spanish Lake Grand Lake Marsh Creation




Grand Lake
Spanish Lake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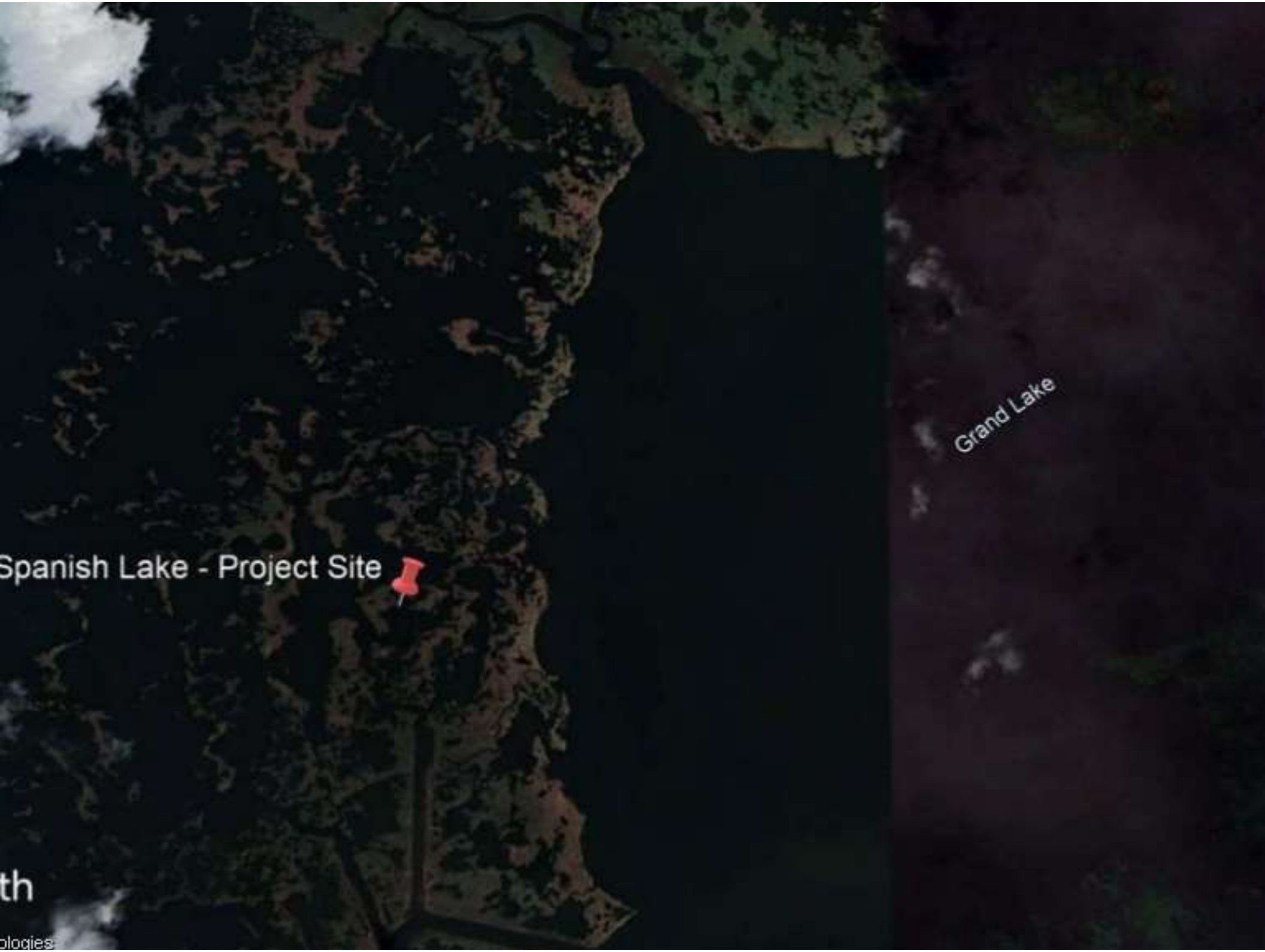
Grand Lake
Spanish Lake - Project Site
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SPANISH LAKE – GRAND LAKE MARSH CREATION

Goals:

- **Create/nourish 510 acres of broken marsh west of Grand Lake with material dredged from Grand Lake.**
- **Stop the coalescing of Grand Lake and Spanish Lake**

Net Acres:

- **Total net acres = 250-300 acres**

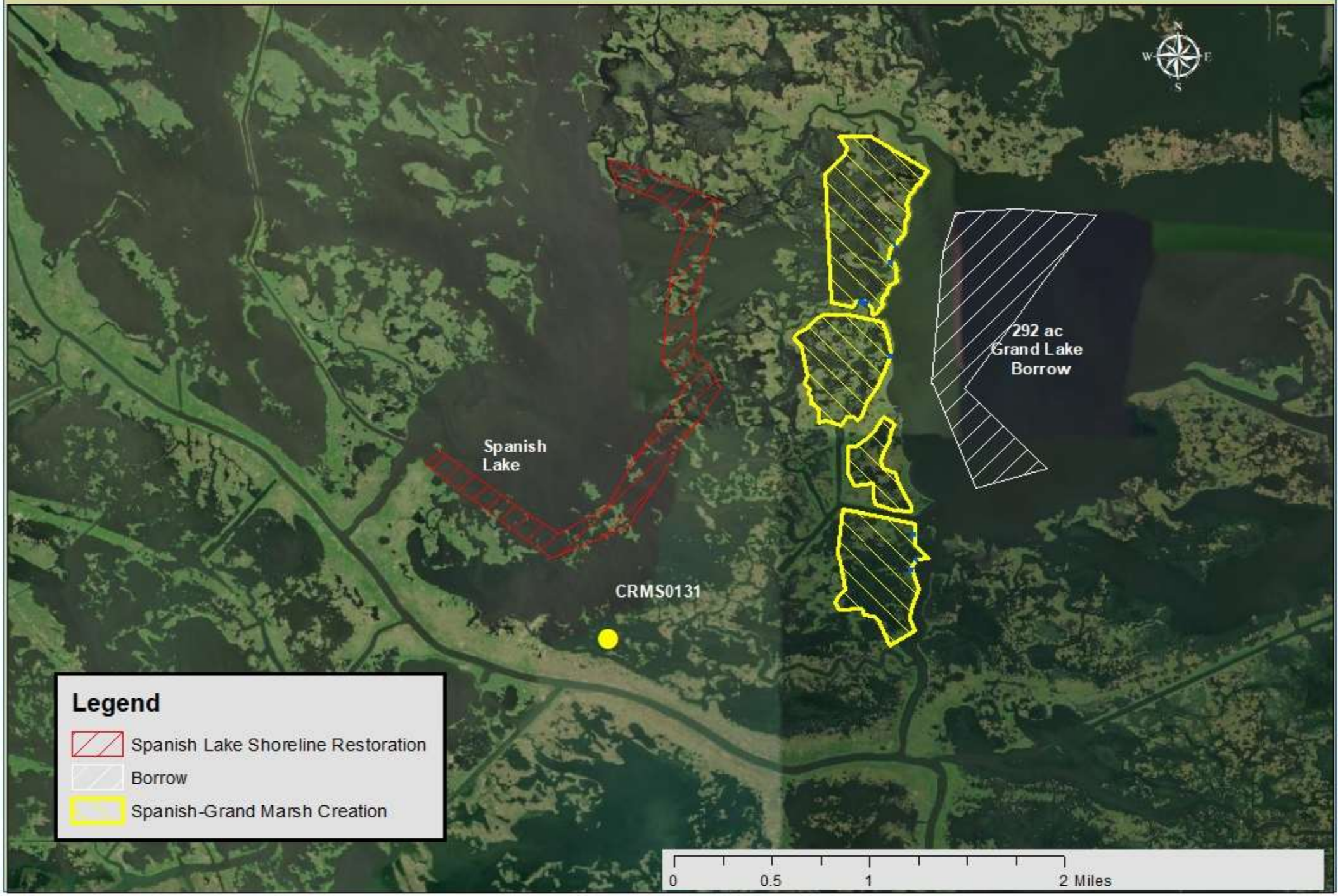
Preliminary Construction Costs:

- **The estimated construction cost range plus 25% contingency $20-25M**

U.S. Fish & Wildlife Service

Louisiana Ecological Services

Spanish Lake Grand Lake Marsh Creation



SPECIES OF CONCERN AND RARE SPECIES

- Least Bittern
- Mottled Duck
- King Rail
- Saltmarsh Topminnow

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Yscloskey Marsh Creation

Project Location
Region 2, Breton Basin, St. Bernard Parish

Problem
St. Bernard Parish may experience some of the highest rates of wetland loss over the next 50 years of any coastal parish and with no further action, it could lose an additional 237 sq. miles (72% of the parish land area; 2017 Master Plan Appx A). Locations outside the levees could experience increased storm surge flood risk. This project area has experienced wetland loss due to a variety of factors including subsidence, saltwater intrusion, and storm damage. Hurricane Katrina devastated the area resulting in substantial marsh loss which has exposed infrastructure to open water conditions. Marsh loss has increased exposure of the community of Yscloskey to flooding from the south/southwest. The loss rate is estimated to be -0.49% per year for the period of 1985 to 2020 for the USGS Tanasia Lagoon subunit.

Goals
The primary goal of this project is to restore marsh between the communities of Reggio and Yscloskey along the alignment of the historic Bayou la Loutre ridge. The specific goal of the project is to create approximately 457 acres (406 acres of marsh creation and 51 acres of marsh nourishment) of marsh with dredged material.

Proposed Solution
Sediments from Lake Borgne will be hydraulically dredged and pumped via pipeline to create/nourish approximately 457 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of marsh within the intertidal range. Perimeter containment dikes will be constructed where necessary. Containment dikes will be gapped at the end of construction or by target year 3. The project would work synergistically with the Reggio Marsh Creation & Hydrologic Restoration (BS-43) project funded for engineering and design in PPL30.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 457 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 350 – 400 ac of marsh will be protected/created over the project life.

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)?*
   The anticipated 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 will help protect the Bayou la Loutre Ridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
Protection would be afforded to flood protection levees along HWY 46 (a hurricane evacuation route). The project would also positively impact Hopedale Highway, and residences of Yscloskey, providing synergistic flood protection to a community which falls outside of a Hurricane Protection System.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with the Reggio Marsh Creation & Hydrologic Restoration (BS-43) project being designed to the southwest.

Considerations
The proposed project has potential utility/pipeline considerations.

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

Preparer(s) of Fact Sheet:
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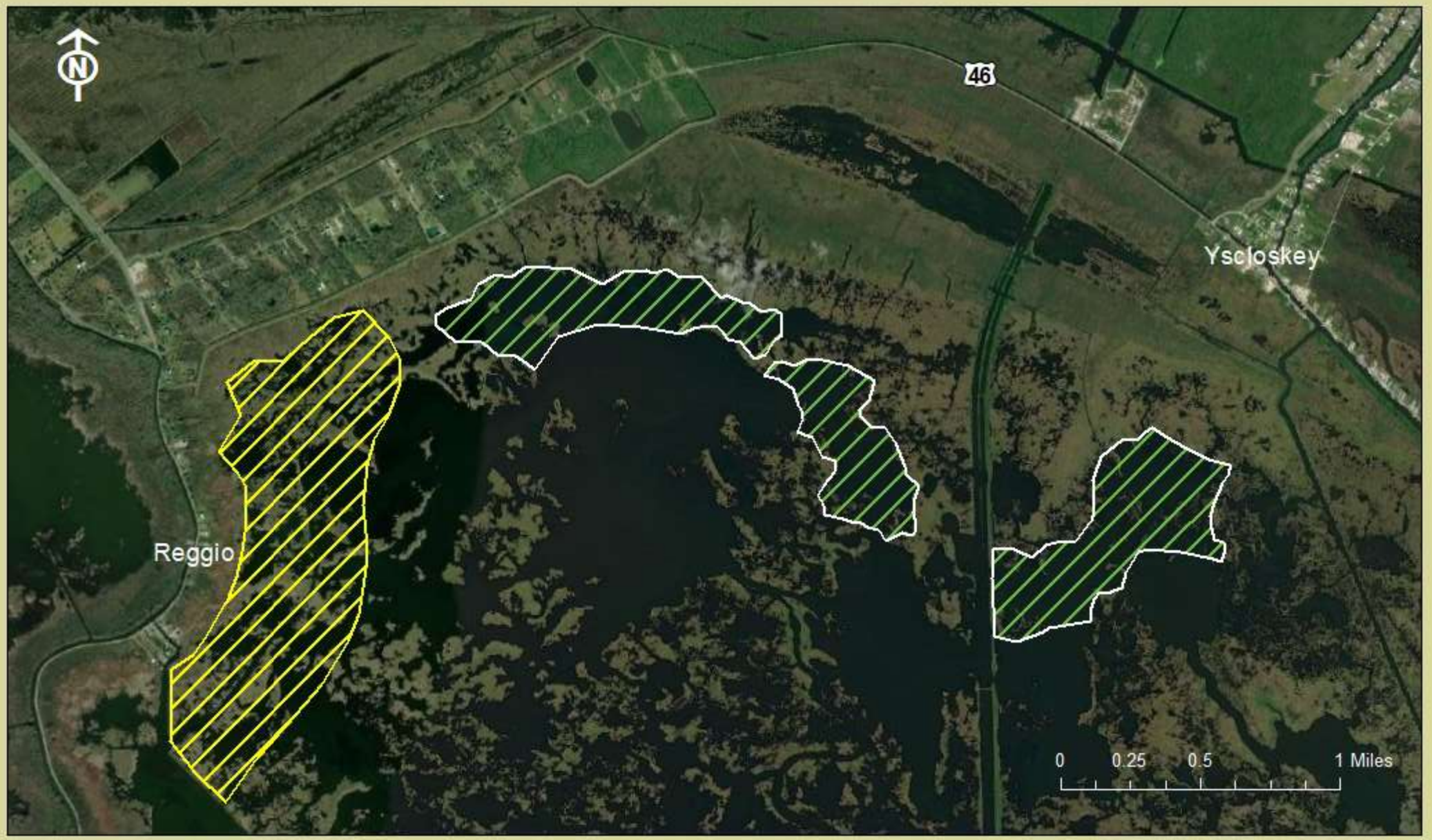
U.S. Fish & Wildlife Service

Louisiana Ecological Services

Legend

- Marsh Creation
- BS-43

PPL32
Yscloskey Marsh Creation
St. Bernard Parish, Louisiana



PPL32

Yscloskey Marsh Creation

Region 2, Breton Sound Basin

Contacts:
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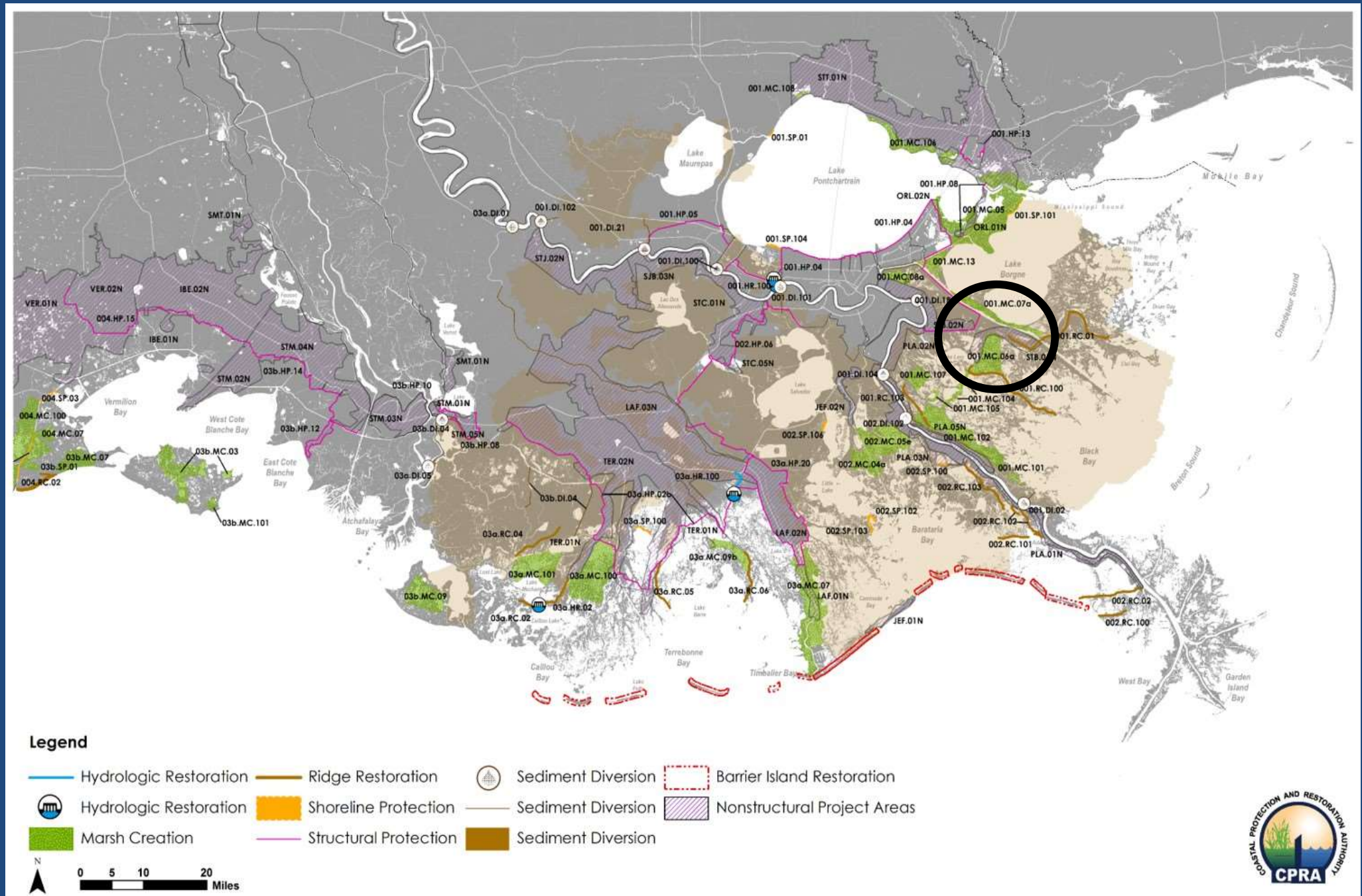
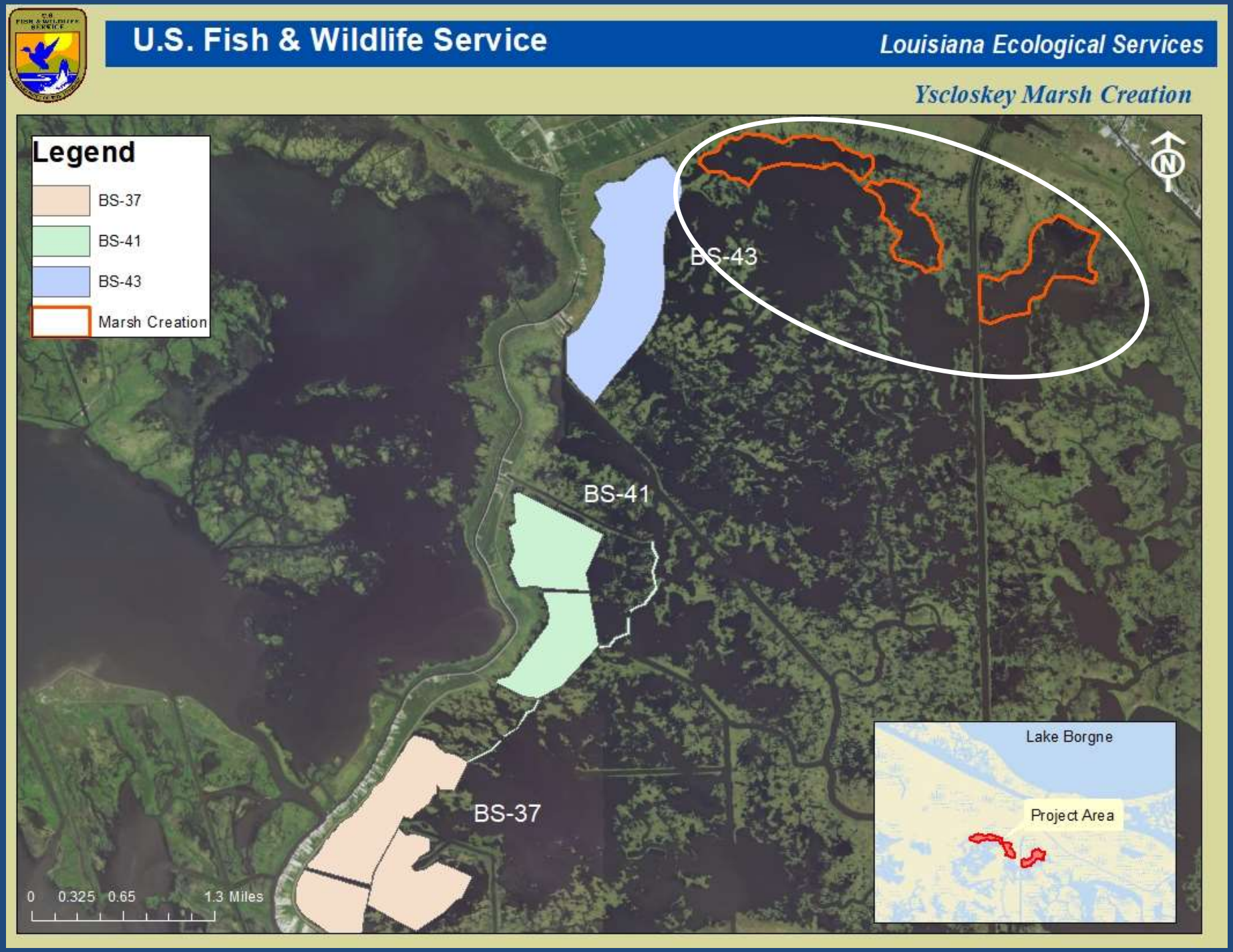
2017 State Master Plan - Breton Marsh Creation - Component A (001.MC.06a)



Marsh Creation in Upper Breton Basin



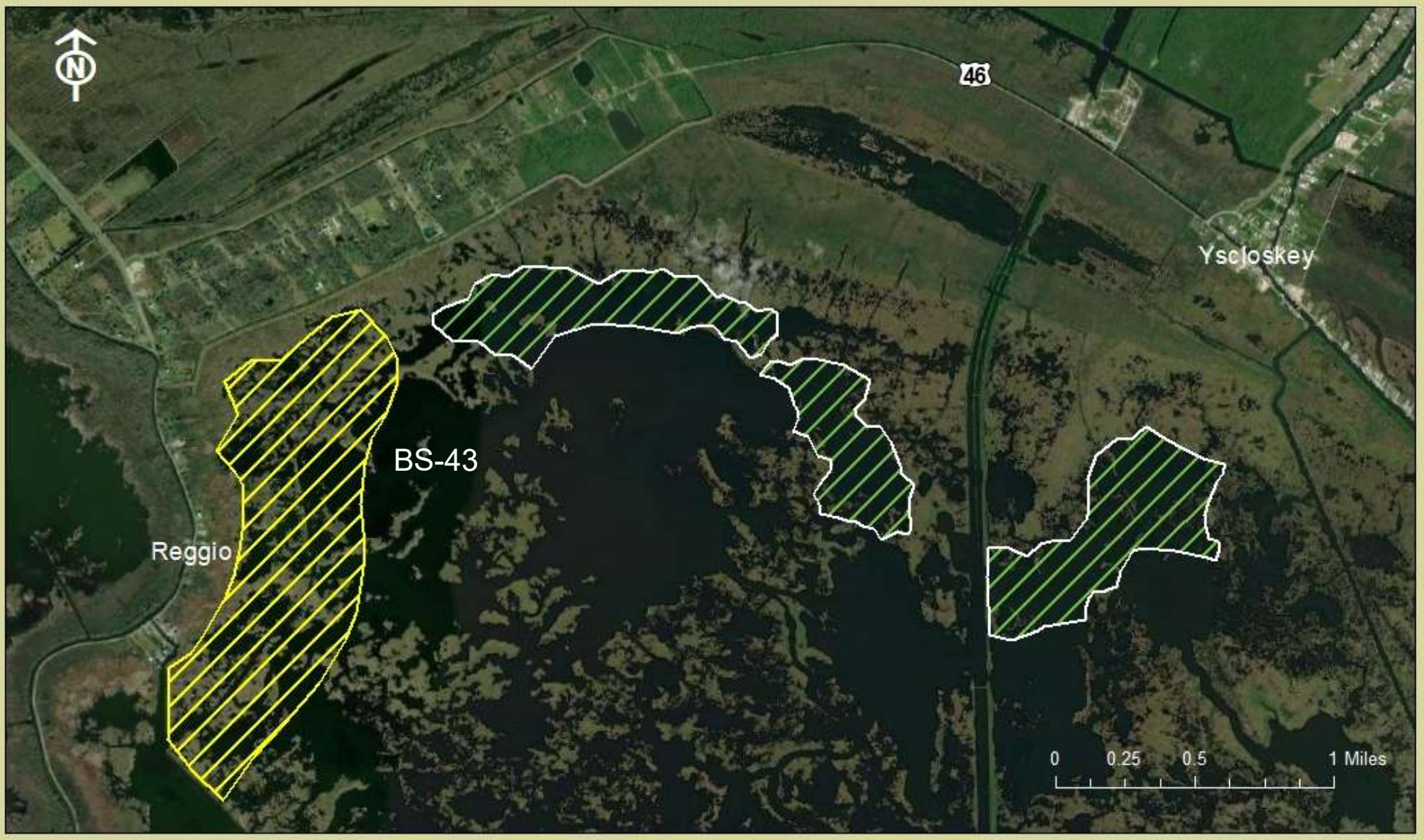
U.S. Fish & Wildlife Service

Louisiana Ecological Services

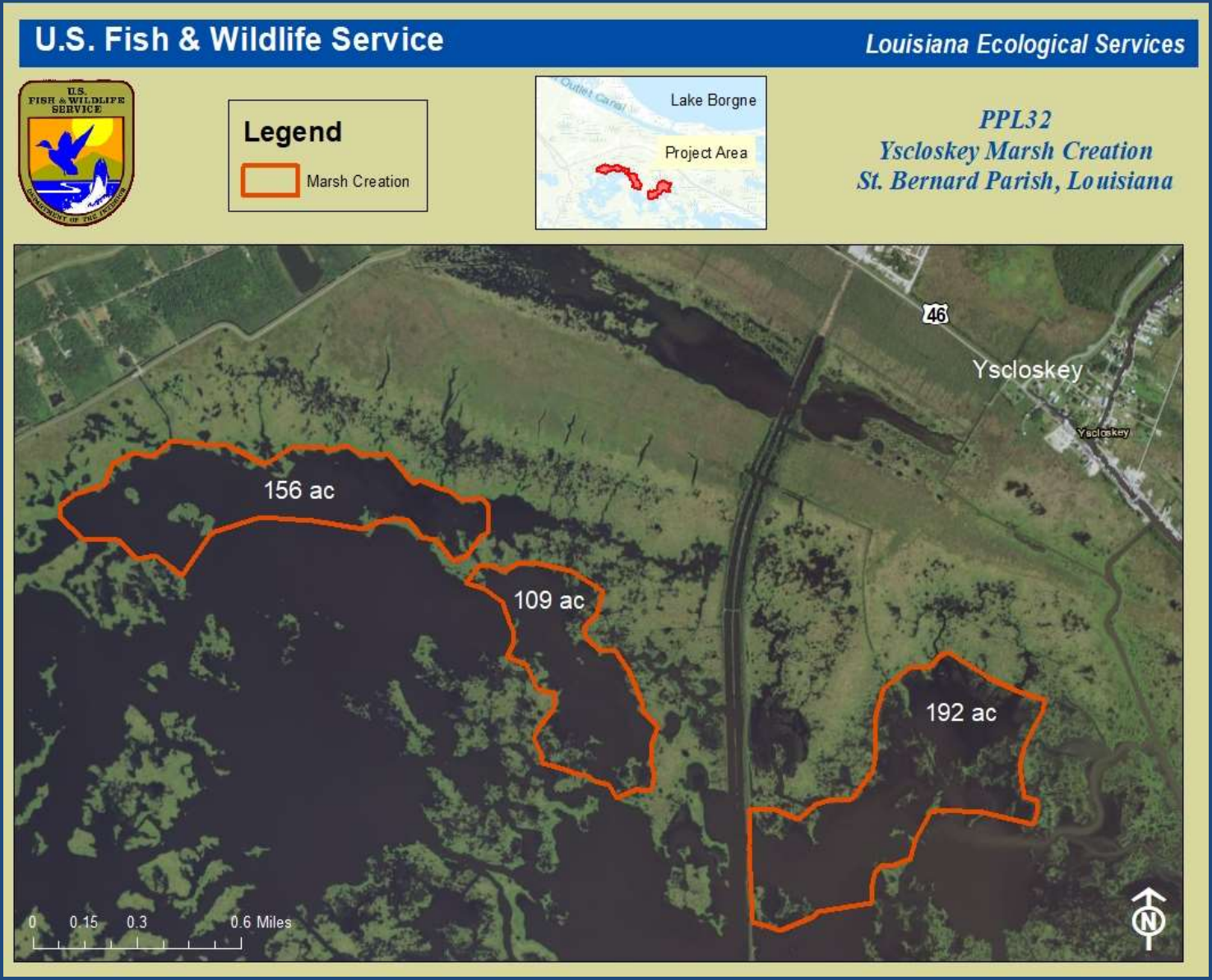
Legend

- Marsh Creation
- BS-43

PPL32
Yscloskey Marsh Creation
St. Bernard Parish, Louisiana



Yscloskey Marsh Creation



- 406 acres of marsh creation
- 51 acres of marsh nourishment
- Lake Borgne borrow
- Net acres = 350 - 400
- Construction plus contingency $25M - $30M
- Project synergy – Reggio Marsh Creation & Hydrologic Restoration (BS-43)

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name:
Carlisle Ridge Restoration and Marsh Creation South

Project Location:
Region 2, Breton Sound Basin, Plaquemines Parish

Problem:
Within the project vicinity, marsh loss has occurred as the result of oil/gas canals, subsidence, and a lack of sediment deposition. The USGS land change rate for the Schayots Canal subunit (1985 to 2020) is -0.63% per year. Subsidence rates in this area range from 1.44 to 2.13 feet per century (Reed and Yuill 2017). Hurricane Katrina caused the majority of wetland loss in the project area. Wind erosion and saltwater intrusion have resulted in loss of marsh vegetation and wetland soils and altered hydrology and oil/gas development have exacerbated this loss.

Goals:
The primary goal of the project is to restore marsh habitat in the open water areas on the east bank of the Mississippi River between Schayots Canal and Horsepower Canal through the placement of dredged material via hydraulic dredging. The project would work synergistically with the Phoenix Marsh Creation–East Increment (BS-42) and West Increment (BS-44) projects and would create continuity with the Breton Landbridge Marsh Creation (West) Project (BS-38), extending the landbridge west across the Breton Sound Basin to the Mississippi River. The specific goal is to hydraulically dredge riverine sediments from the Mississippi River and pump the sediments via pipeline to create and nourish 462 acres of intermediate marsh. The project also proposes to create 8,373 linear feet (10 acres) of forested ridge habitat.

Service goals include restoration/protection of habitat for threatened and endangered species and other at-risk species. This project would restore habitat potentially utilized by the black rail, which is proposed for listing as a threatened species. The project could also benefit other species of concern including the saltmarsh topminnow and seaside sparrow.

Proposed Solution:
1) Sediments from the Mississippi River will be hydraulically dredged and pumped via pipeline to create/nourish approximately 462 acres of marsh. The proposed design is to place the dredged material to a fill height of +2.0 ft (NAVD88). 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 gapped at the end of construction.

2) Approximately 8,373 linear feet (10 acres) of forested ridge will be created along the eastern bank of Grand Bayou using material from the Mississippi River. The ridge will be constructed to a crown elevation of +5.0 feet (NAVD88) and a top width of 20 feet. Planting of the crown and slopes is proposed. The restoration of the historic ridge will provide coastal upland habitat, restore natural hydrology, and provide wave and storm attenuation near Phoenix.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
Approximately 470 acres would be benefited directly and indirectly. Direct benefits include roughly 10 acres of forested, coastal ridge habitat and 462 acres of marsh creation/nourishment.

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 350-400 acres.

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)?*
The anticipated 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 will restore 8,373 linear feet (10 acres) of the Carlisle Ridge which runs parallel to and east of the Mississippi River.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would afford some protection to flood protection levees west of the project area along HWY 39.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with the Phoenix Marsh Creation–East Increment (BS-42) and West Increment (BS-44) projects to the east.

Considerations

Landrights, and pipelines/utilities will need to be considered in project design.

Preliminary Construction Costs

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

Preparer(s) of Fact Sheet:

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U.S. Fish & Wildlife Service

Louisiana Ecological Services

Legend

- Marsh Creation
- Ridge Restoration
- Borrow Area
- BS-42 and BS-44

PPL32
Carlisle Ridge Restoration and Marsh Creation South
Plaquemines Parish, Louisiana

PPL32

Carlisle Ridge Restoration and Marsh Creation

Region 2, Breton Sound Basin

Contacts:

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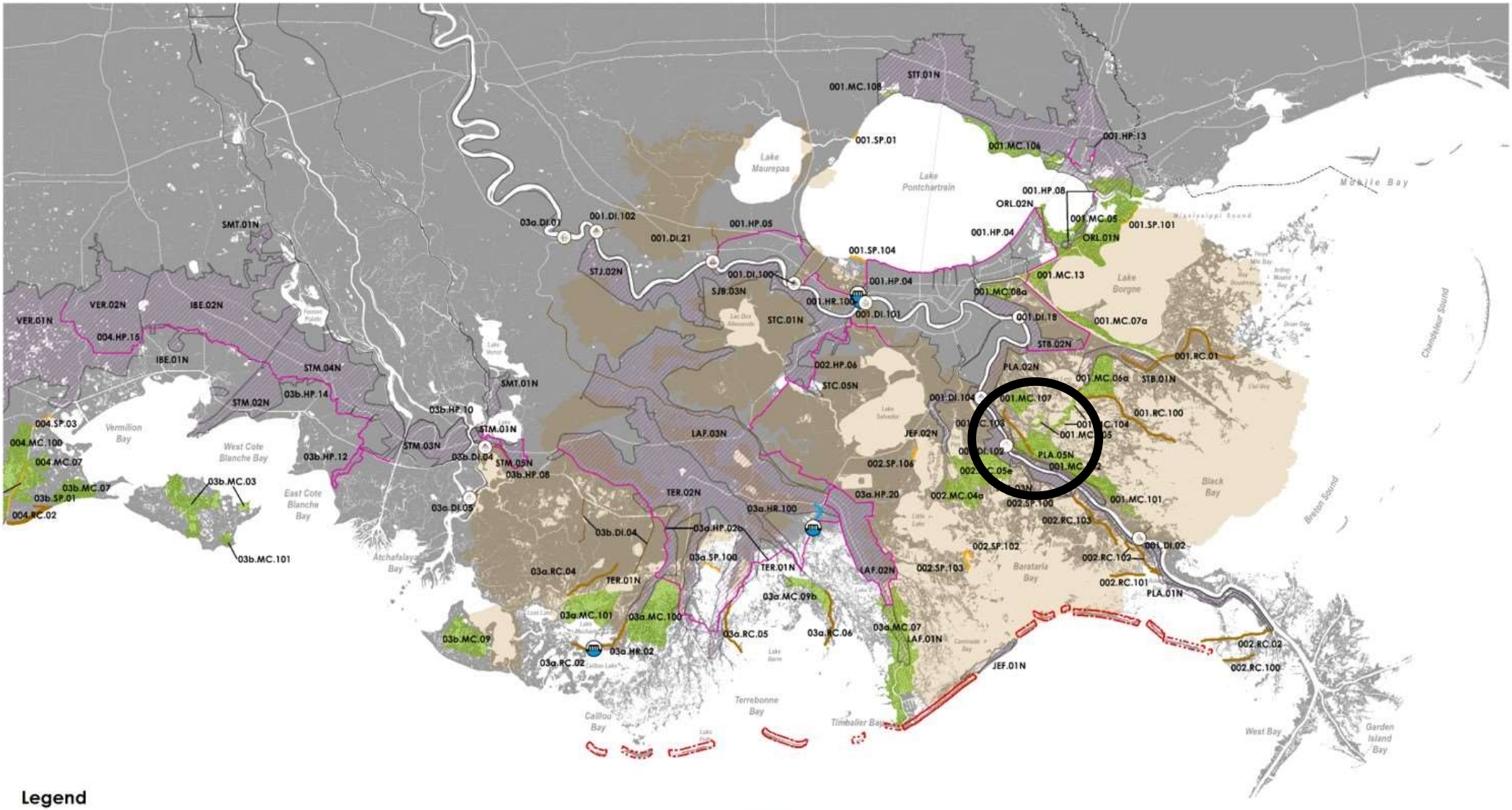
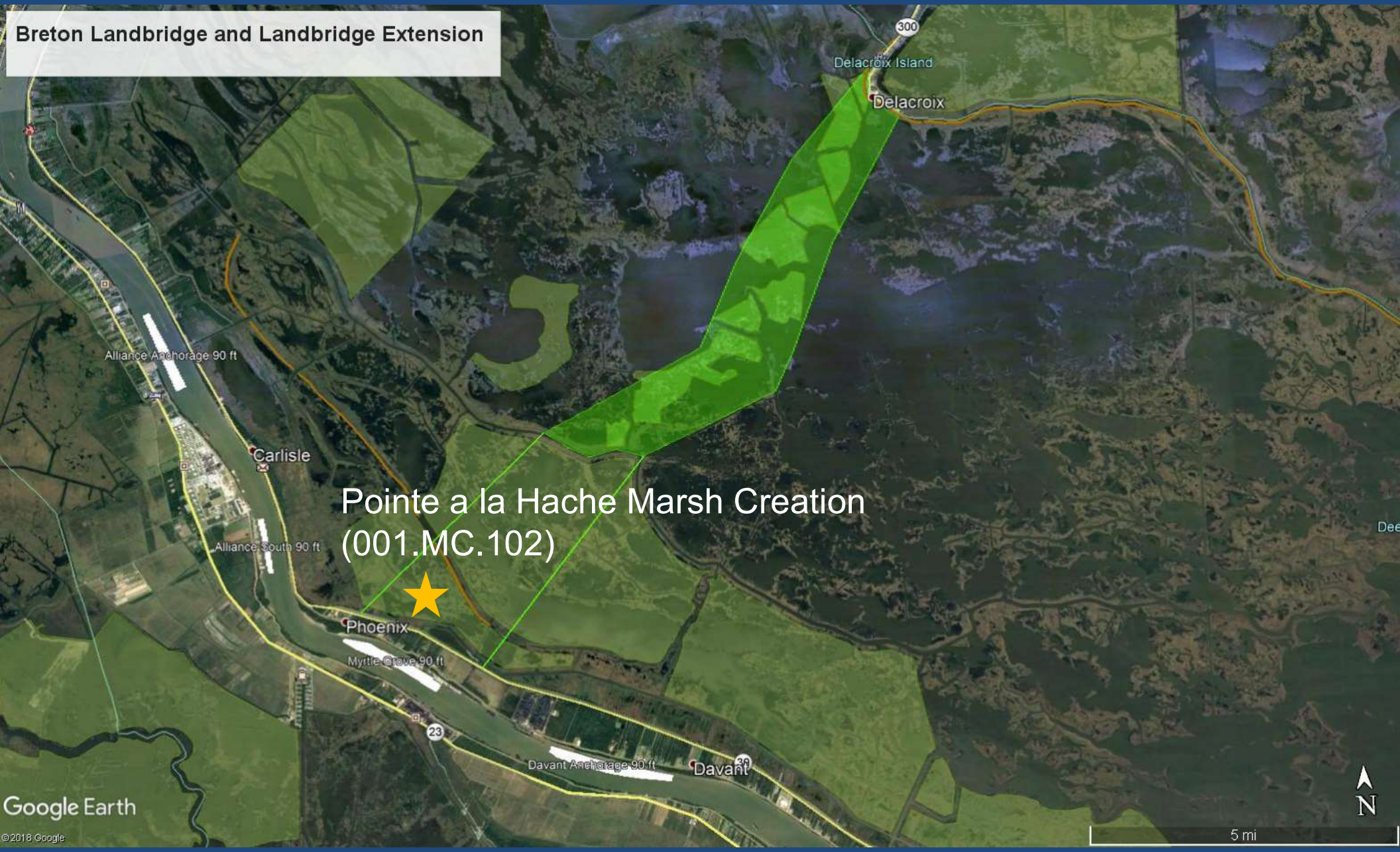
(337) 291-3137

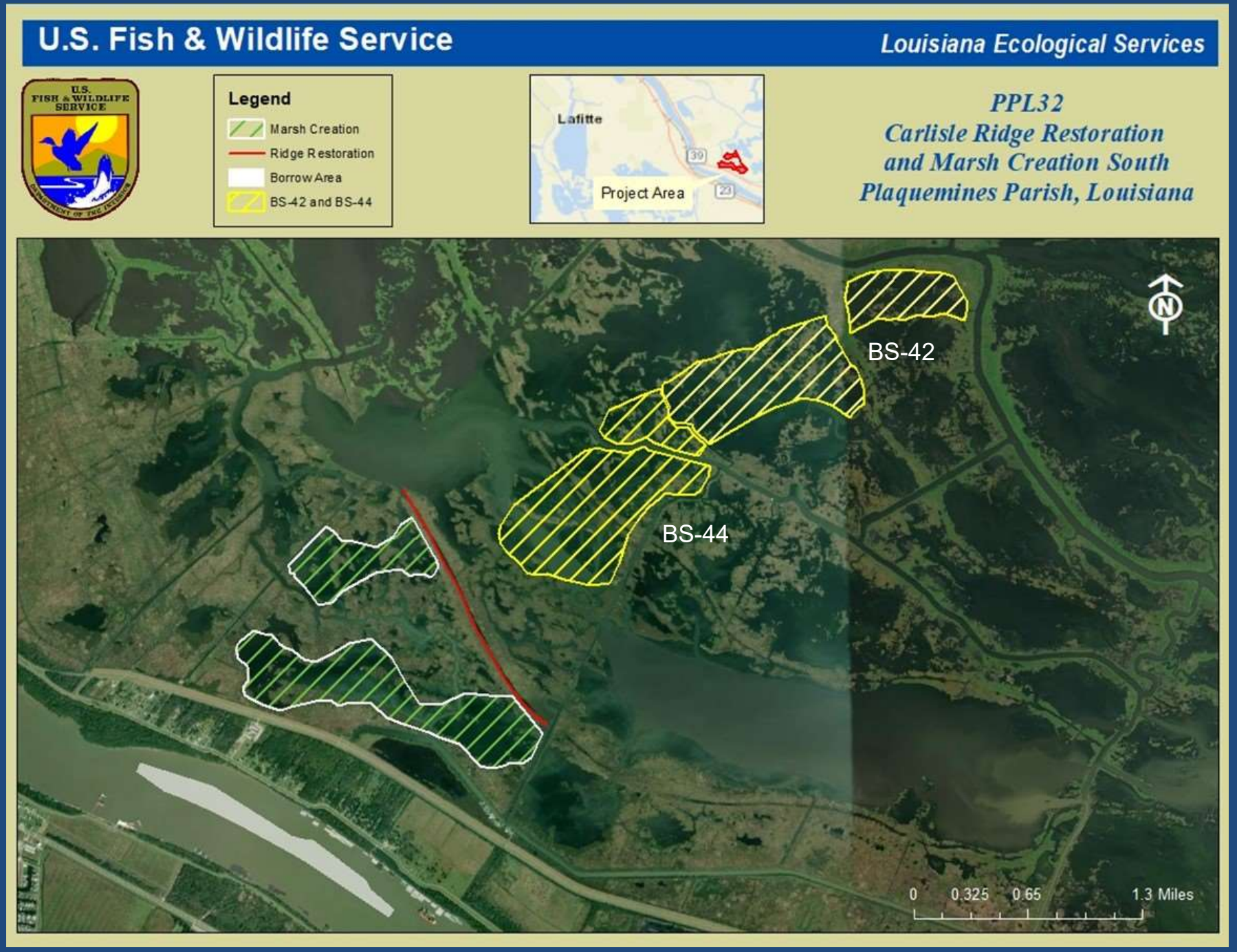
2017 State Master Plan - Carlisle Ridge Restoration (001.RC.103) and Pointe a la Hache Marsh Creation (001.MC.102)



Breton Landbridge Extension – Plaquemines Parish



Breton Landbridge Extension – Plaquemines Parish



Breton Landbridge Extension – Plaquemines Parish

Carlisle Ridge Restoration and Marsh Creation South

- 357 acres of marsh creation
- 105 acres of marsh nourishment
- 8,373 linear feet (10 acres) of forested ridge habitat
- Mississippi River borrow
- Net acres = 350 - 400
- Construction plus contingency $30M - $35M
- Project synergy – Phoenix Marsh Creation – East Increment (BS-42), and Phoenix Marsh creation – West Increment (BS-44)

River aux Chenes Marsh Creation South

- 300 acres of marsh creation
- 65 acres of marsh nourishment
- Mississippi River borrow (Davant Anchorage)
- Net acres = 250 - 300
- Construction plus contingency $30M - $35M
- Project synergy – Phoenix Marsh Creation – East Increment (BS-42), and Phoenix Marsh creation – West Increment (BS-44)

REGION II

REGIONAL PLANNING TEAM MEETING

BRETON SOUND BASIN

February 10, 2022

Kristen Ramsey
kristen_ramsey@fws.gov
337-291-3137

Questions?

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Davant Marsh Creation (Increment 1)

Master Plan Strategy
Pointe a la Hache Marsh Creation (2017 Master Plan 001.MC.102): Creation of approximately 19,100 acres of marsh on the east bank of Plaquemines Parish near Pointe a la Hache to create new wetland habitat and restore degraded marsh.

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish

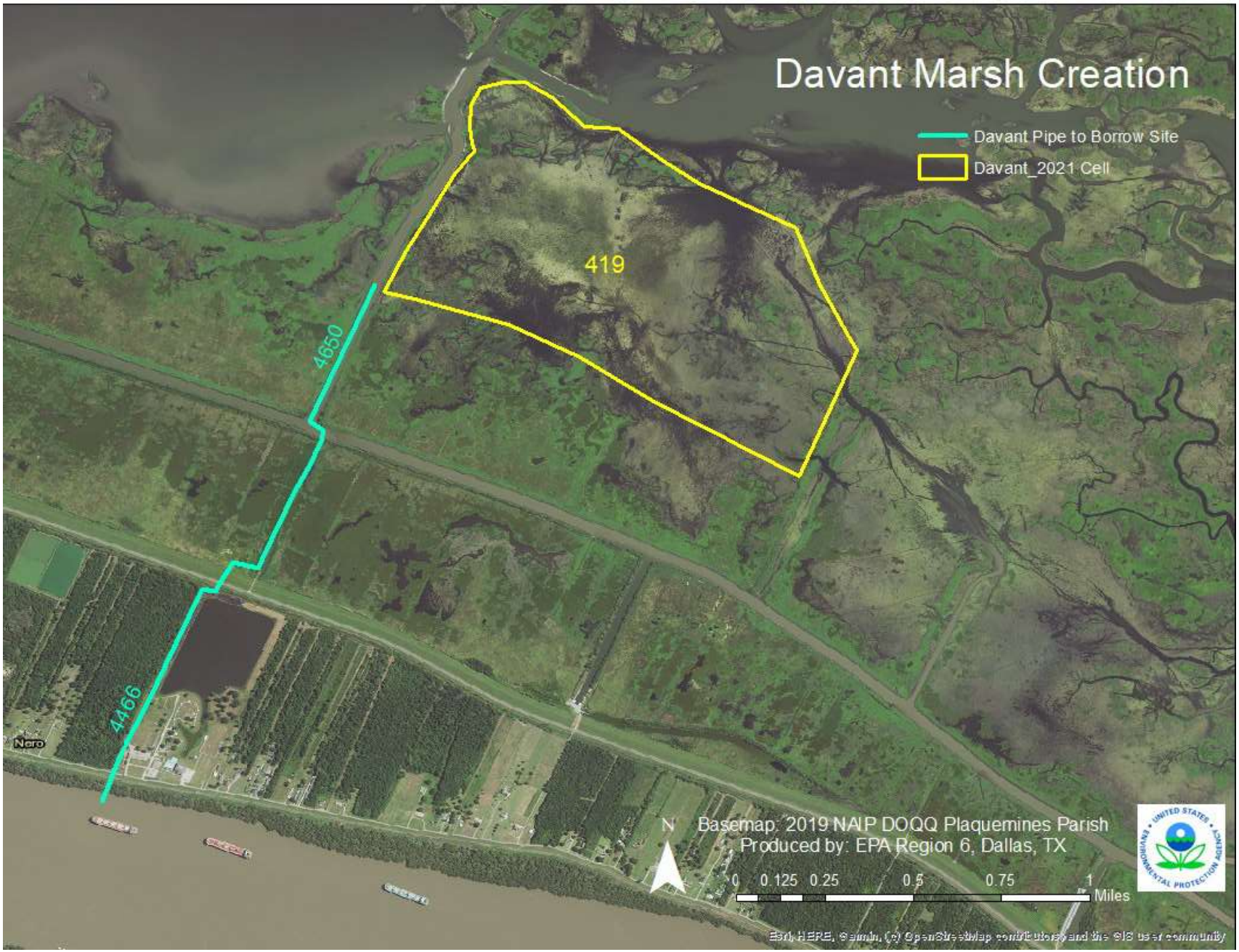
Problem
The project area is an open water body immediately adjacent to the east bank of the Mississippi River levee. As a result of leveeing the Mississippi River for navigation and flood control, the Pointe a la Hache wetlands were cut off from the historic overbank flooding of the river. Without continued sediment input, marshes could not maintain viable elevations due to ongoing subsidence. In addition, oil and gas canals disrupted hydrology and facilitated saltwater intrusion further degrading the marsh. The marsh creation cell is located in the Schayots Canal Subunit which shows a land loss rate of -0.63%/yr.

Proposed Solution
The proposed project would create/nourish approximately 419 acres of marsh using sediment dredged from the Mississippi River.

Project Benefits
Create/nourish approximately 419 acres (create 361 acres and nourish 58 acres) of emergent marsh using sediment dredged from the Mississippi River.

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

Preparer(s) of Fact Sheet:
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov


Davant Marsh Creation
Davant Pipe to Borrow Site
Davant_2021 Cell
419
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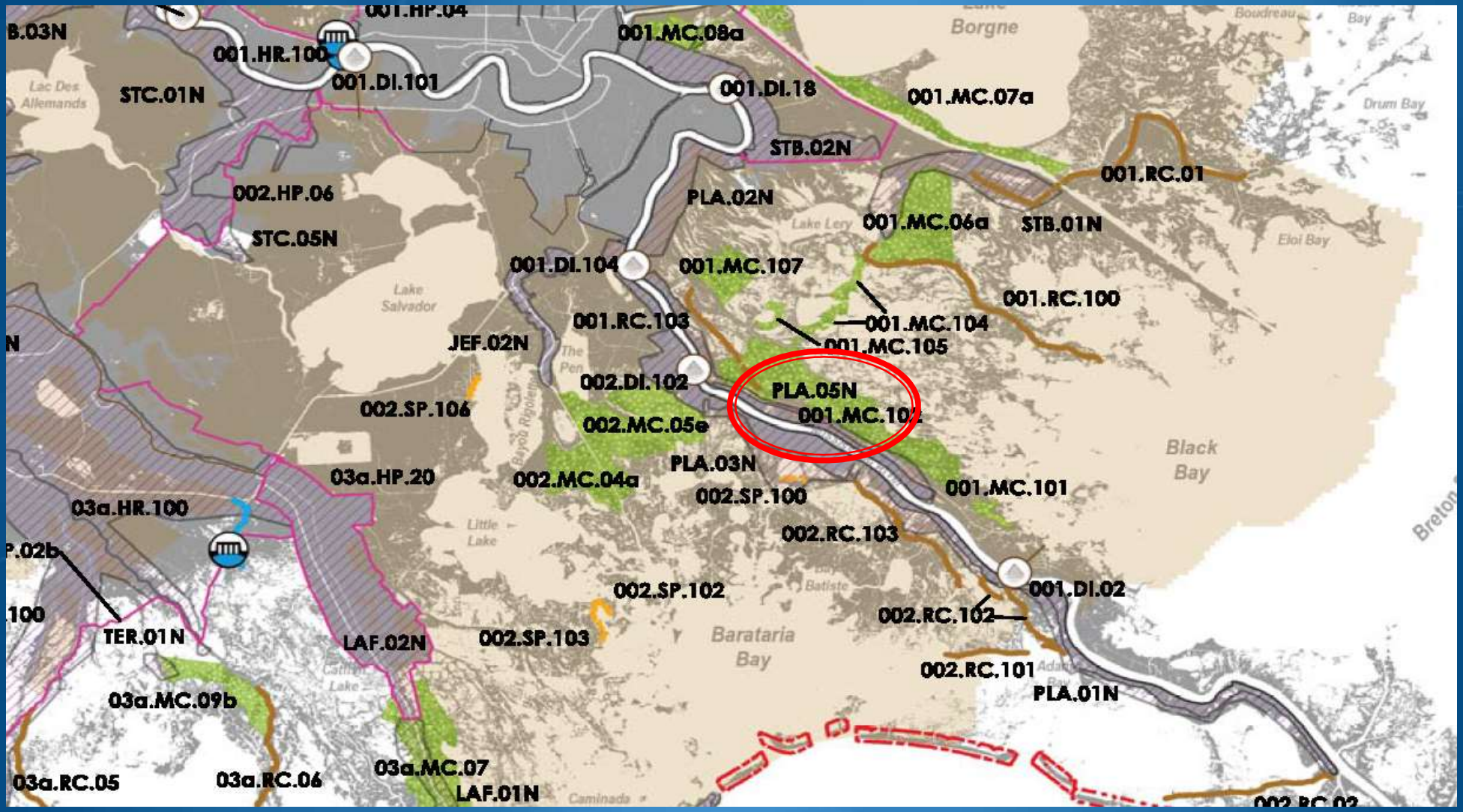
Basemap: 2019 NAIP DOQQ Plaquemines Parish
Produced by: EPA Region 6, Dallas, TX
0 0.125 0.25 0.5 0.75 1
Miles
Esri, HERE, © amin, (c) OpenStreetMap contributors, and the GIS user community

Davant Marsh Creation (Increment 1)

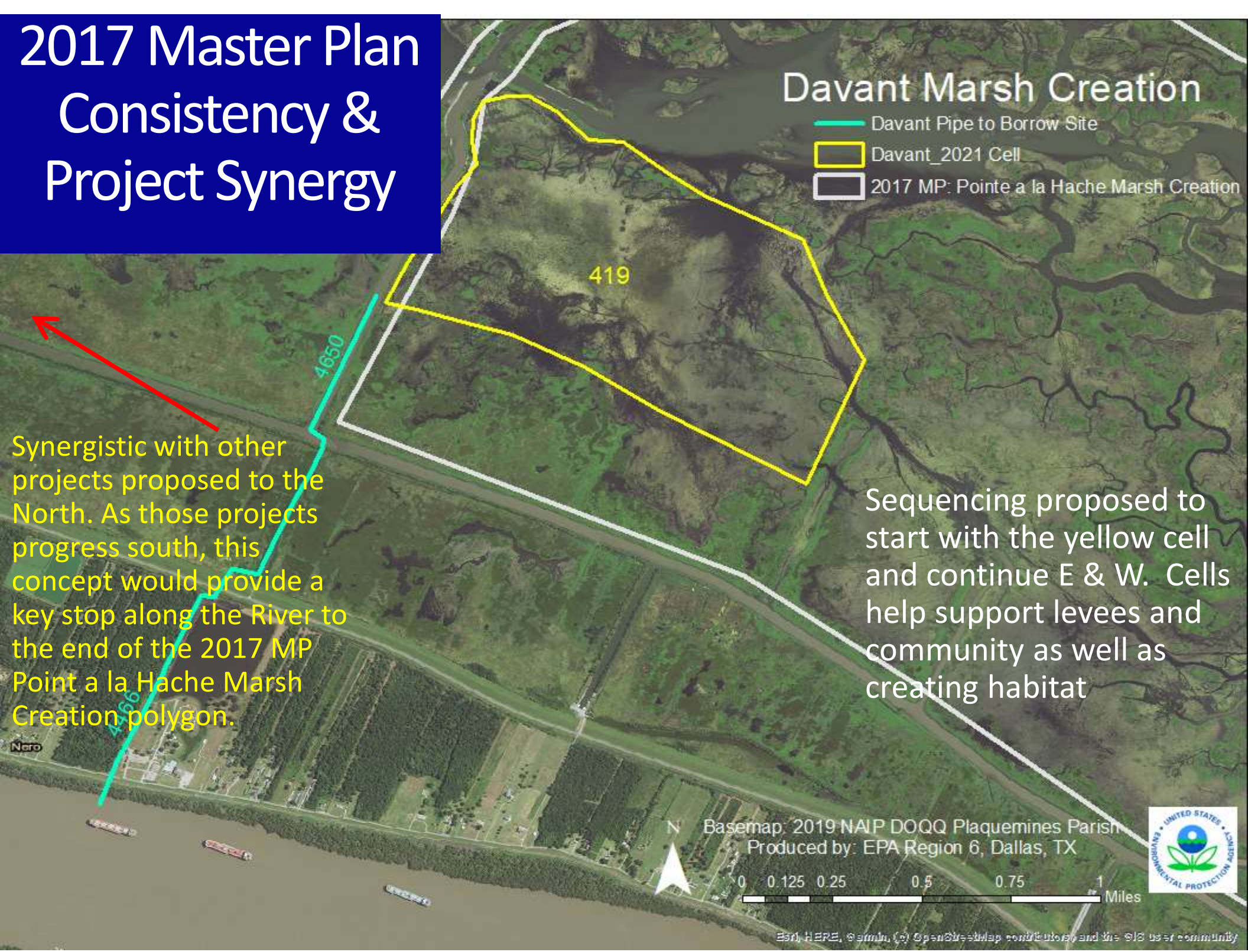
Coastal Wetlands Planning, Protection and Restoration Act

2017 Master Plan Solution

<u>001.MC.102 Pointe a la Hache Marsh Creation:</u> Creation of approximately 19,100 acres of marsh on the east bank of Plaquemines Parish near Pointe a la Hache to create new wetland habitat and restore degraded marsh.



2017 Master Plan Consistency & Project Synergy



Problems

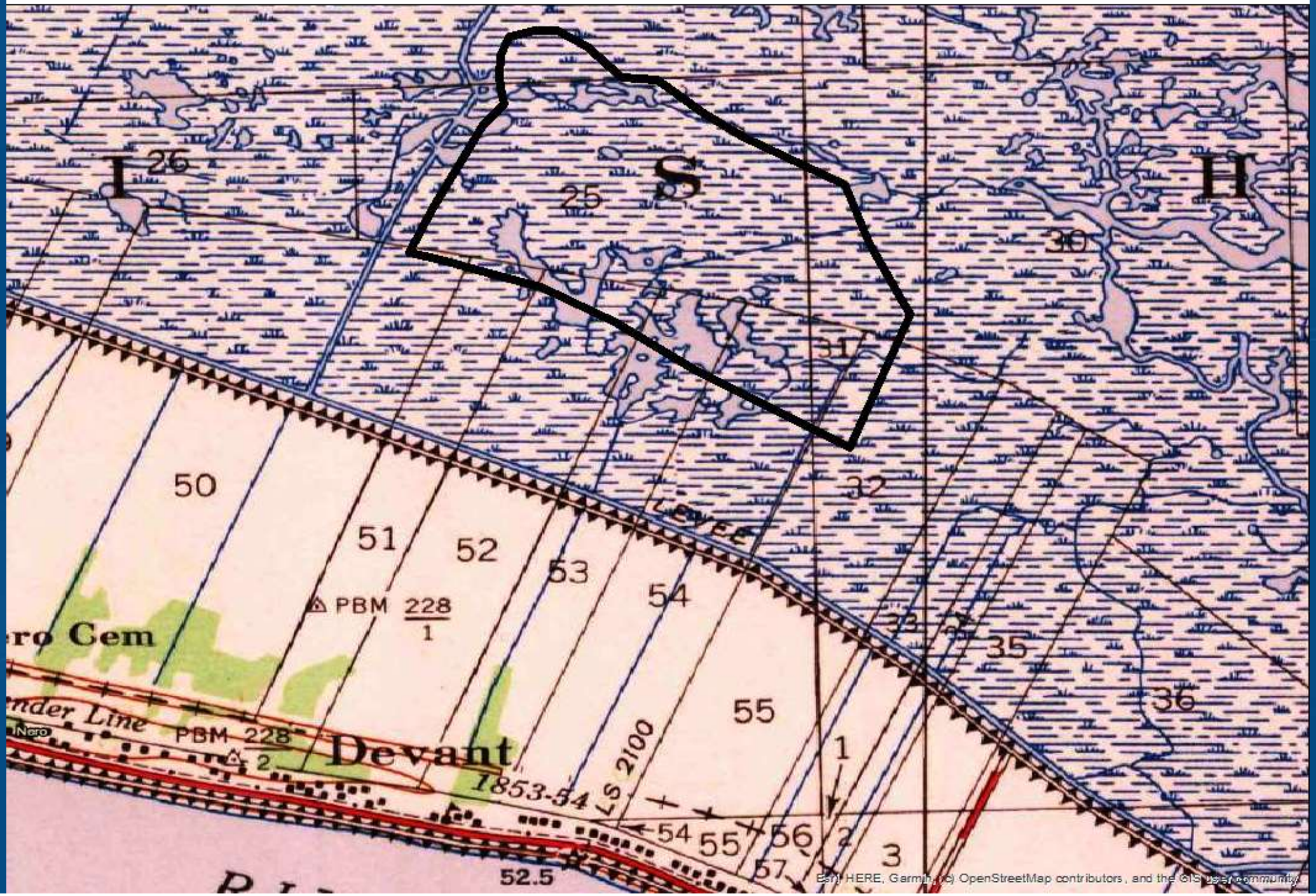
- Levees for navigation and flood control cut off wetlands from overbank flooding
- Marsh areas could not maintain viable elevations without sediment input
- Subsidence
- Oil & gas canals disrupted hydrology
- Saltwater intrusion
- Plaquemines Parish could lose an additional 55% of its land area over the next 50 years and face severe storm surge flood risk (2017 MP).

Davant Marsh Creation 1948 Topo

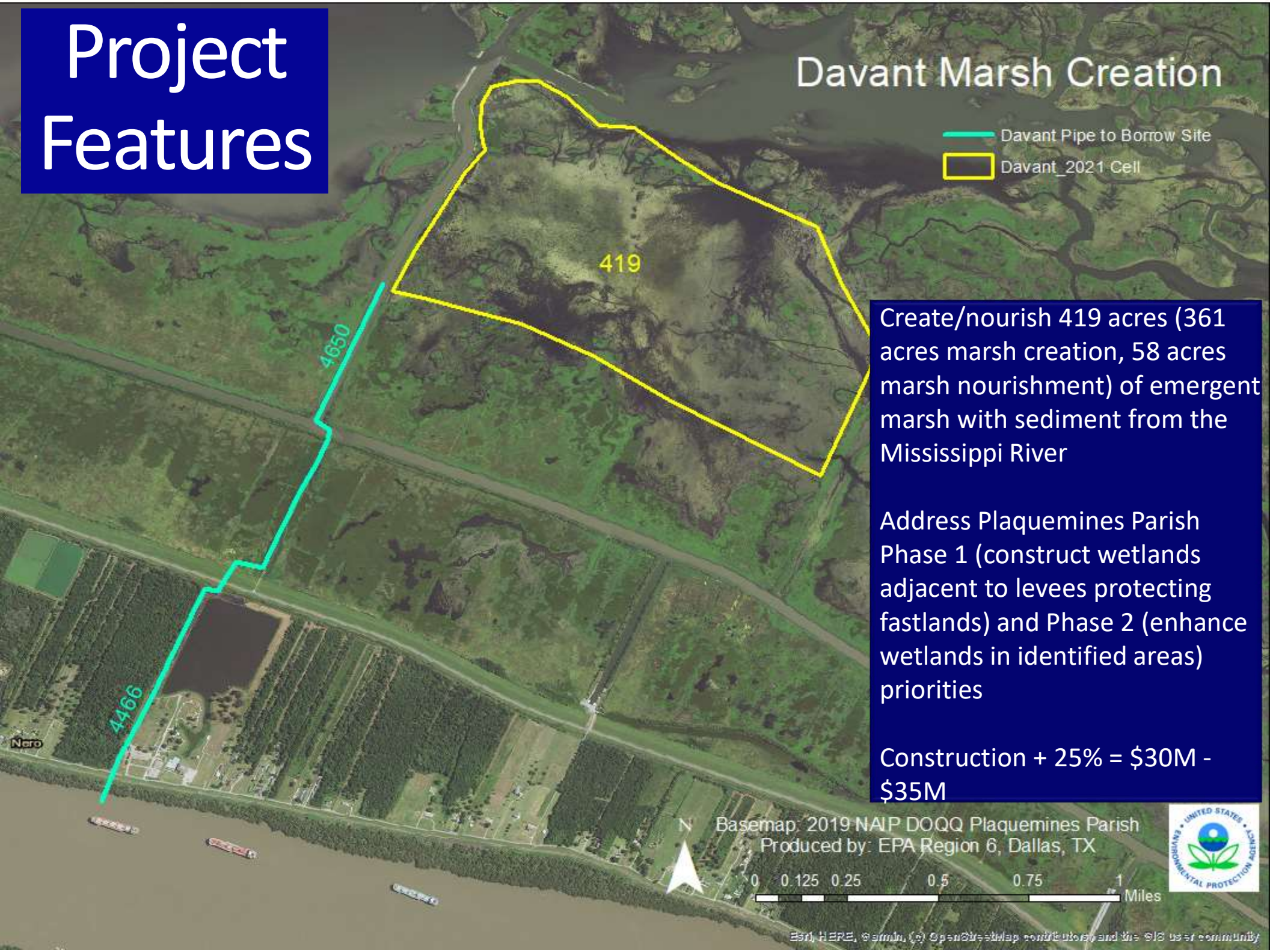
N

Davant_2021 Cell

0 0.125 0.25 0.5 0.75 1 Miles



Project Features



Create/nourish 419 acres (361 acres marsh creation, 58 acres marsh nourishment) of emergent marsh with sediment from the Mississippi River

Address Plaquemines Parish Phase 1 (construct wetlands adjacent to levees protecting fastlands) and Phase 2 (enhance wetlands in identified areas) priorities

Construction + 25% = $30M - $35M

REMOVED
R2, BS-09

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Reggio East Marsh Creation

Master Plan Strategy
Breton Marsh Creation-Component A (2017 Master Plan 001.MC.06a): Creation of approximately 12,000 acres of marsh in the Breton Marsh east of Delacroix Island to create new wetland habitat and restore degraded marsh.

Project Location
Region 2, Breton Sound Basin, St. Bernard Parish

Problem
St. Bernard Parish may experience some of the highest rates of wetland loss over the next 50 years of any coastal parish and with no further action, it could lose an additional 237 sq. miles (72% of the parish land area; 2017 Master Plan Appx A). Locations outside the levees could experience increased flood risk. This project area has experienced wetland loss due to a variety of factors including subsidence and storm damage. Multiple storms over successive years have devastated the area resulting in substantial marsh loss. The Reggio East marsh creation cell is adjacent to the BS-43 Reggio MC project, which shows a land loss rate of -0.77%/yr (WVA).

Proposed Solution
Create/nourish 375 acres of wetlands by converting open water into marsh and nourishing existing marsh remnants with sediment hydraulically dredged from a borrow source in Lake Lery; however, other sediment sources, including the East Bank Sediment Pipeline (BS-33), will be considered. Containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access. Restoration in this area would build habitat as well as aid against hurricanes and flooding impacts to the community.

Project Benefits
Create/nourish 375 acres (create 316 acres and nourish 59 acres) of marsh with sediment dredged from Lake Lery or potentially other sediment sources, including the East Bank Sediment Pipeline (BS-33).

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

Preparer(s) of Fact Sheet:
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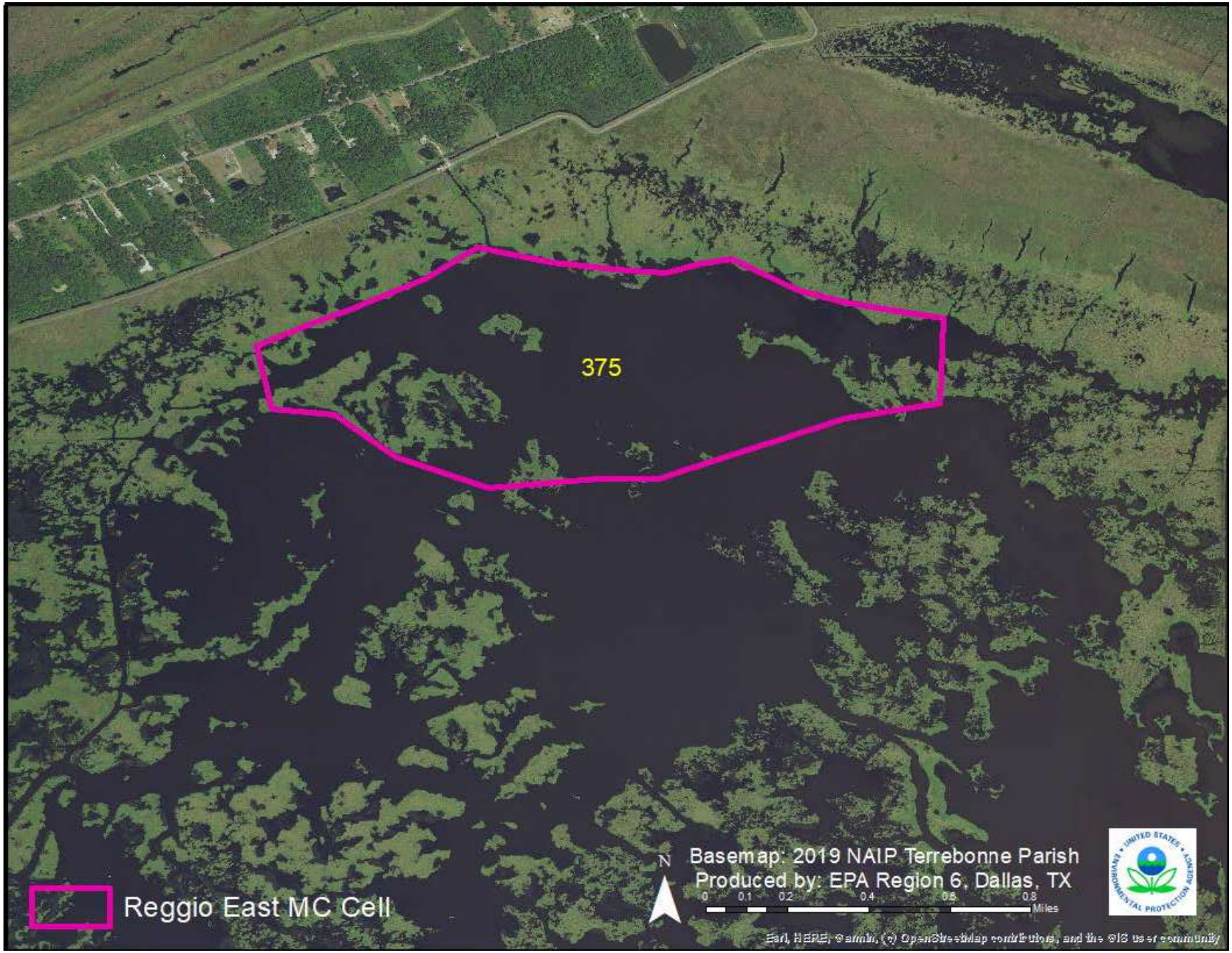
375
Reggio East MC Cell
N
Basemap: 2019 NAIP Terrebonne Parish
Produced by: EPA Region 6, Dallas, TX
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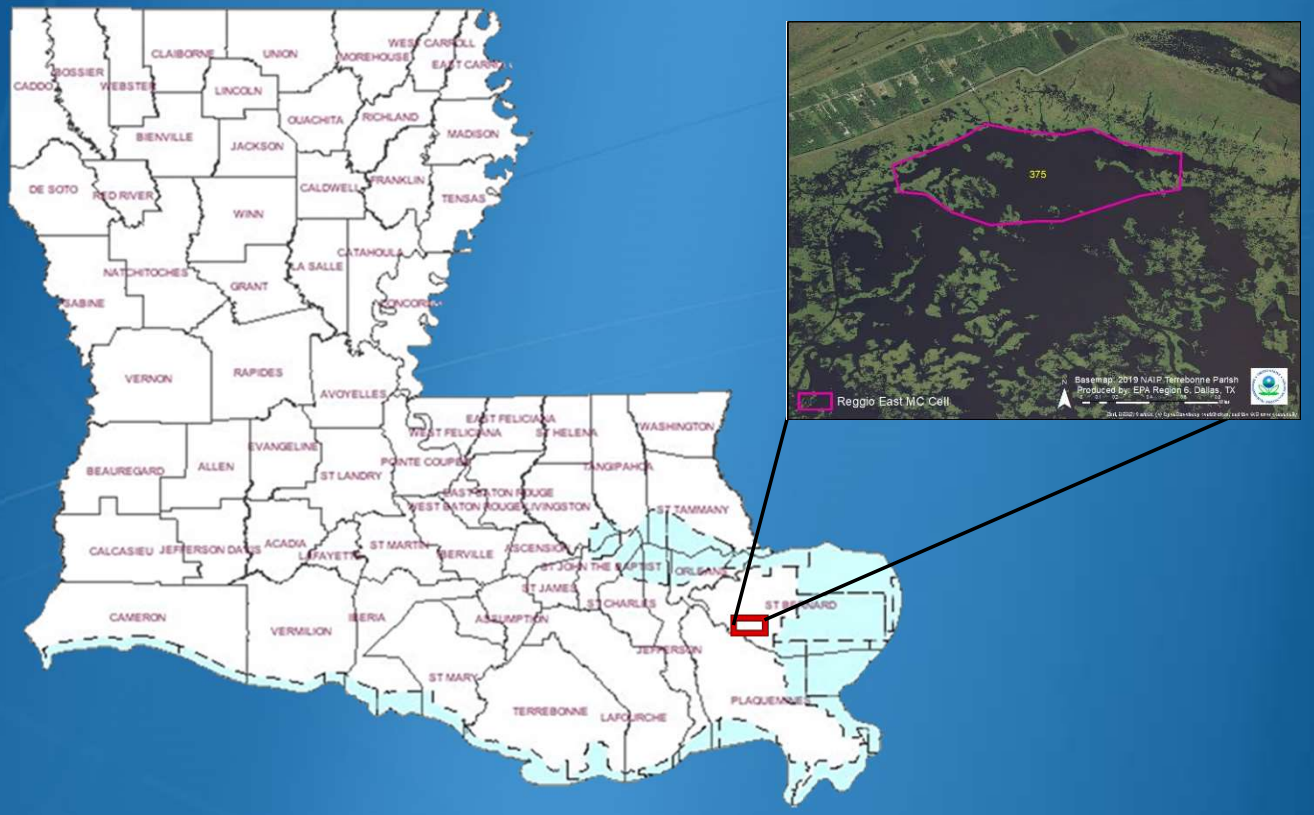
Miles
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

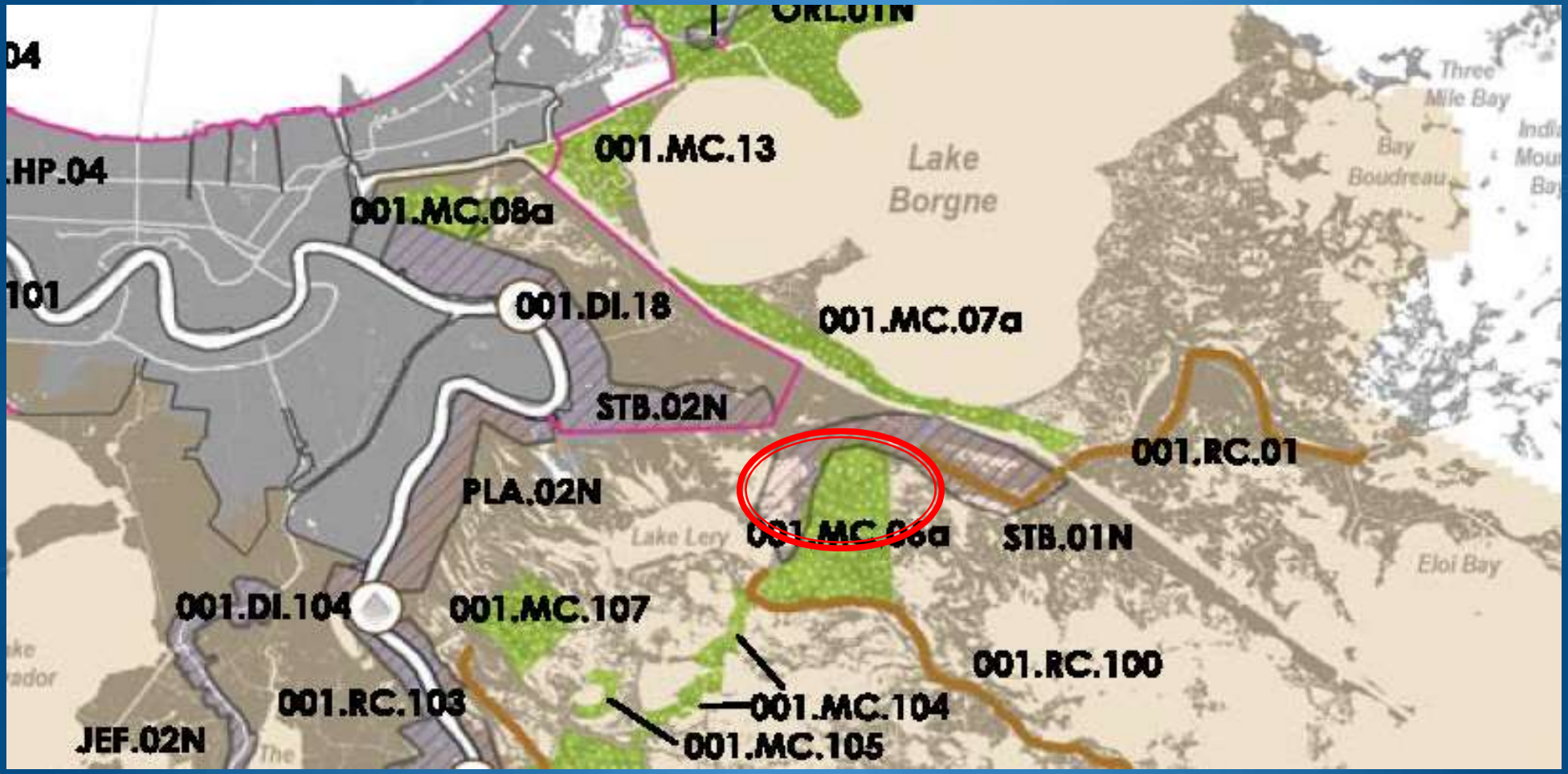
Reggio East Marsh Creation



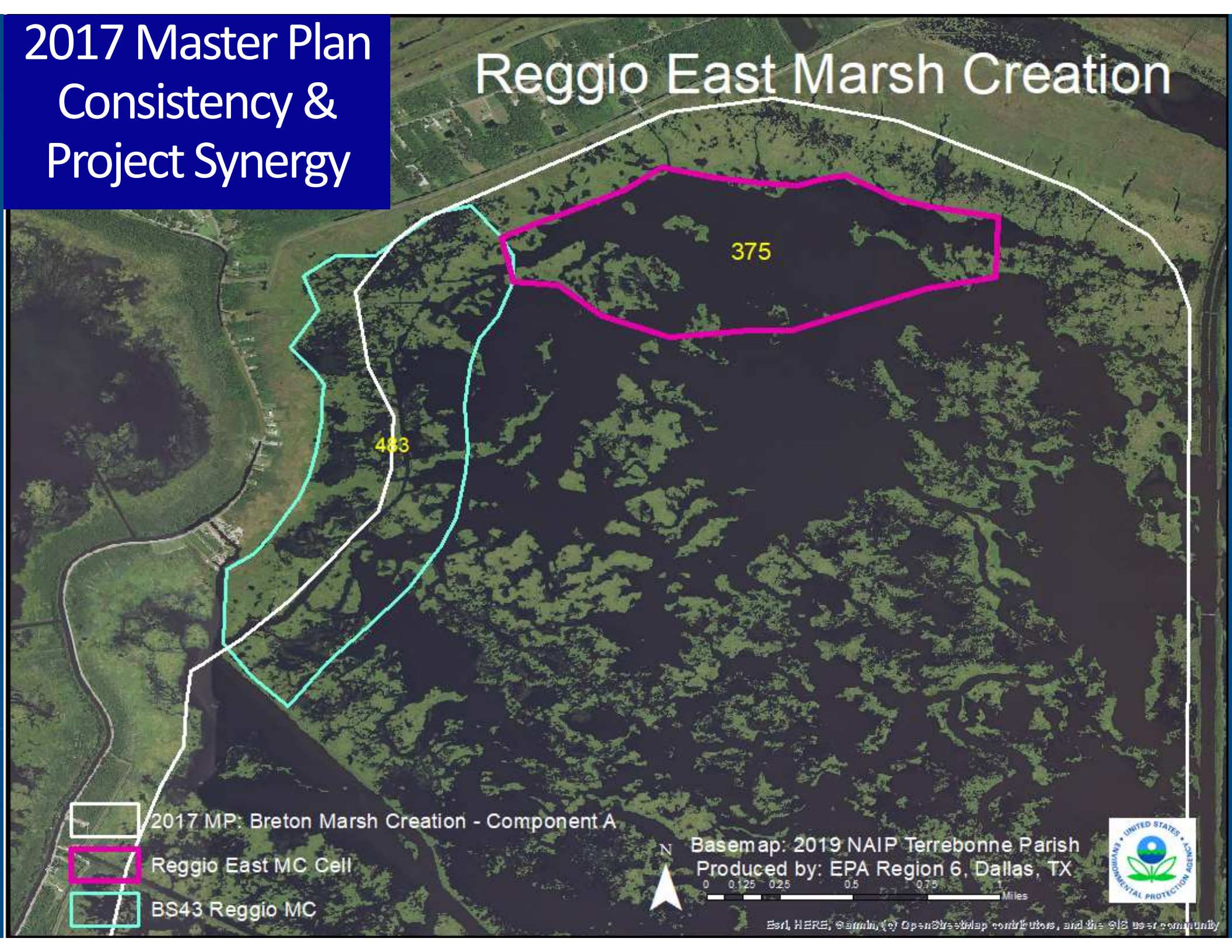
Coastal Wetlands Planning, Protection and Restoration Act

2017 Master Plan Solution

001.MC.06a Breton Marsh Creation- Component A: Creation of approximately 12,000 acres of marsh in the Breton Marsh east of Delacroix Island to create new wetland habitat and restore degraded marsh.

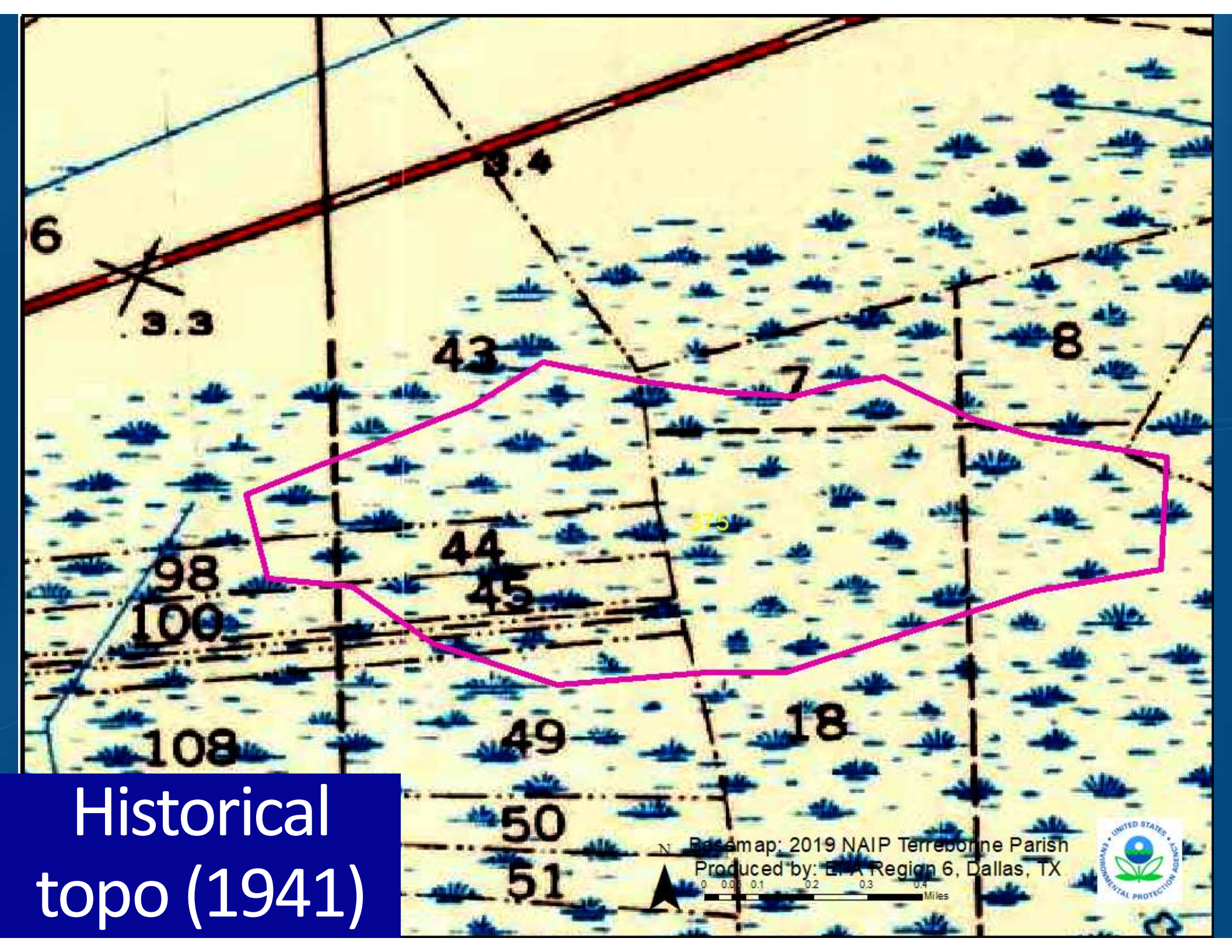


2017 Master Plan Consistency & Project Synergy

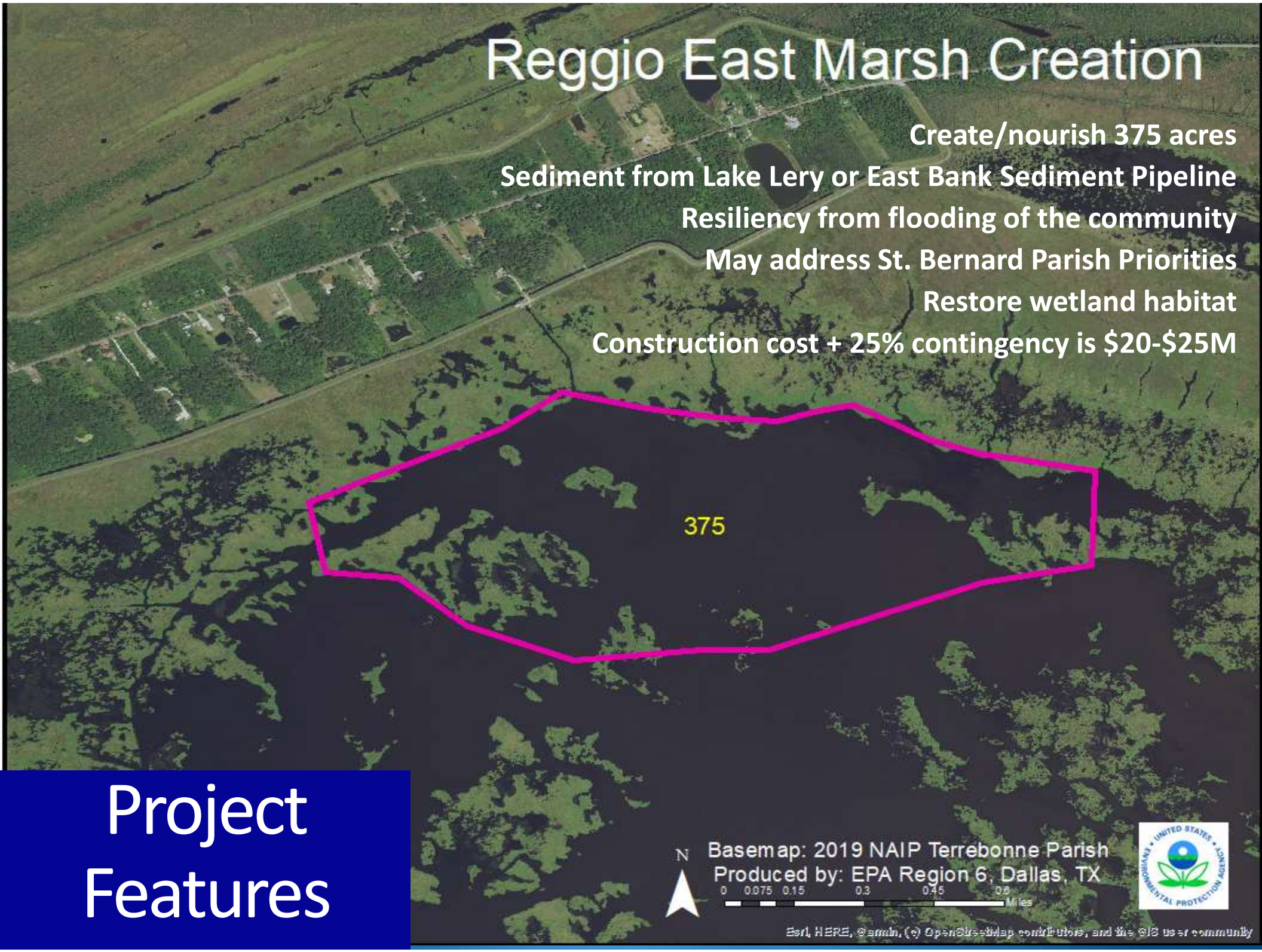


Problems

- Storm impacts from multiple storm events
- Subsidence & Sea-level rise
- St. Bernard Parish may experience some of the highest rates of wetland loss and increased flood risk over the next 50 years (2017 MP)
- Improves local community resilience, restores habitat, protects critical infrastructure, and supports stakeholder priorities in synergy with EPA's mission



Historical topo (1941)


Reggio East Marsh Creation
Create/nourish 375 acres
Sediment from Lake Lery or East Bank Sediment Pipeline
Resiliency from flooding of the community
May address St. Bernard Parish Priorities
Restore wetland habitat
Construction cost + 25% contingency is $20-$25M
375
Project Features
N
Basemap: 2019 NAIP Terrebonne Parish
Produced by: EPA Region 6, Dallas, TX
0 0.075 0.15 0.3 0.45 0.6
Miles
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

PPL32 PROJECT FACT SHEET
February 10, 2022

Project Name
Bayou Terre aux Boeufs Ridge Restoration and Marsh Creation

Master Plan Strategy
Bayou Terre aux Boeufs Ridge Restoration (2017 Master Plan 001.RC.100): Restoration of approximately 91,200 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along Bayou Terre aux Boeufs.

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish

Problem
As a result of storm events, subsidence, and sea level rise, among other factors, the ridge has degraded in this area. As the ridge continues to degrade the water bodies on each side merge creating a much larger open water area, bringing increased wave fetch, storm surge, and conversion of the remaining fragmented wetlands into open water areas. The area remains vulnerable to future hurricane damage and subsidence. The marsh creation cell is located in the Caernarvon Outfall Subunit which shows a land loss rate of -0.96%/yr.

Proposed Solution
Create 26,948 linear feet of ridge along Bayou Terre aux Boeufs to provide coastal upland habitat, restore natural hydrology, provide storm surge attenuation, and improve local community resilience. Create/nourish 384 acres emergent marsh with sediment potentially dredged from Petit Lake; however, other sediment sources, including the East Bank Sediment Pipeline (BS-33), will be considered.

Project Benefits
Create 26,948 linear feet of ridge along Bayou Terre aux Boeufs and create/nourish 384 acres (create 230 acres and nourish 154 acres) emergent marsh.

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

Preparer(s) of Fact Sheet:
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Blaise Pezold Meraux Foundation; (504) 264-8125; blaise@merauxfoundation.org
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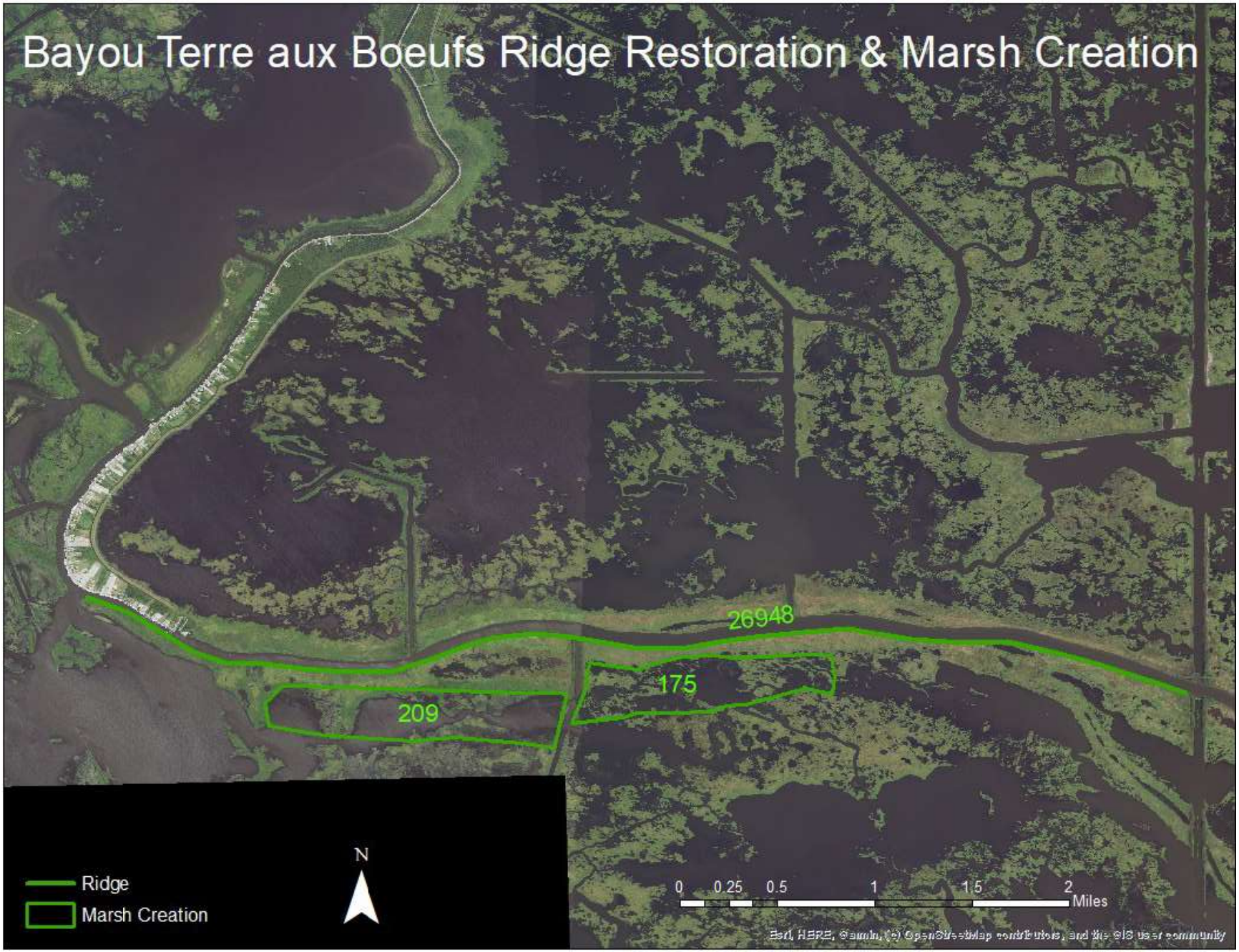
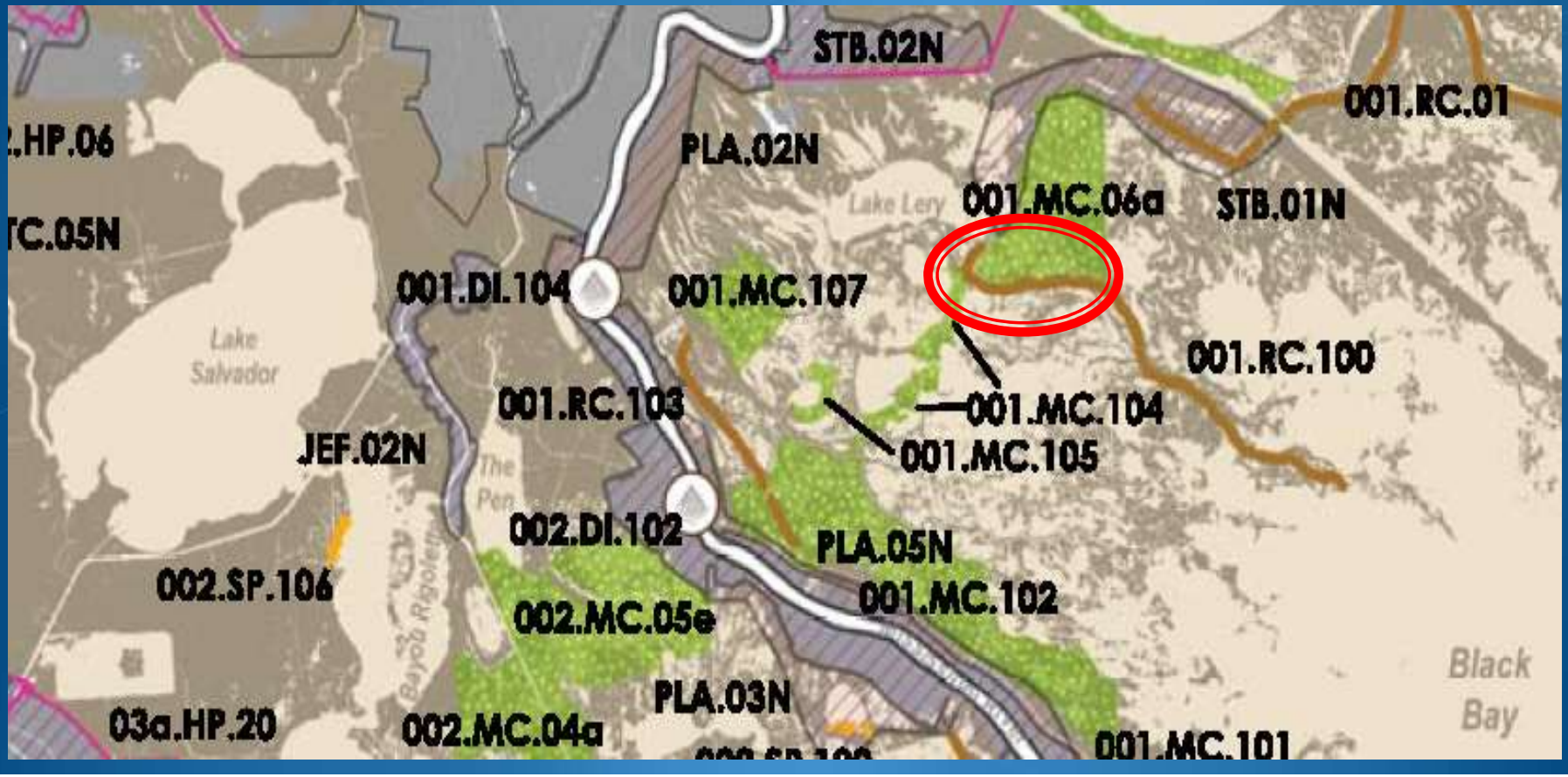
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov


Bayou Terre aux Boeufs Ridge Restoration & Marsh Creation
26948
175
209
Ridge
Marsh Creation
N
0 0.25 0.5 1 1.5 2
Miles
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

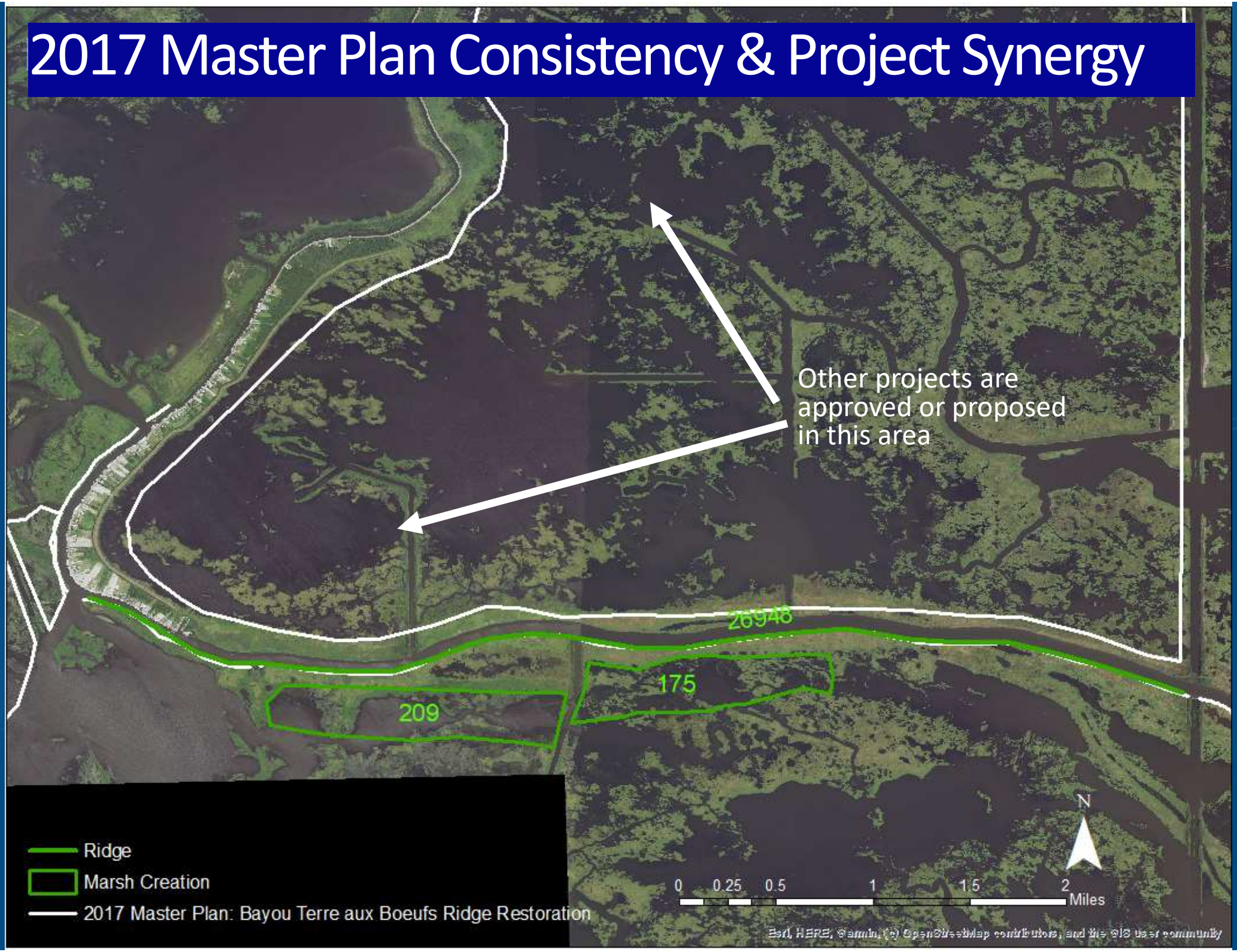
Bayou Terre aux Boeufs Ridge Restoration & Marsh Creation

2017 Master Plan Solution

001.RC.100 Bayou Terre aux Boeufs Ridge Restoration: Restoration of approximately 91,200 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along Bayou Terre aux Boeufs.



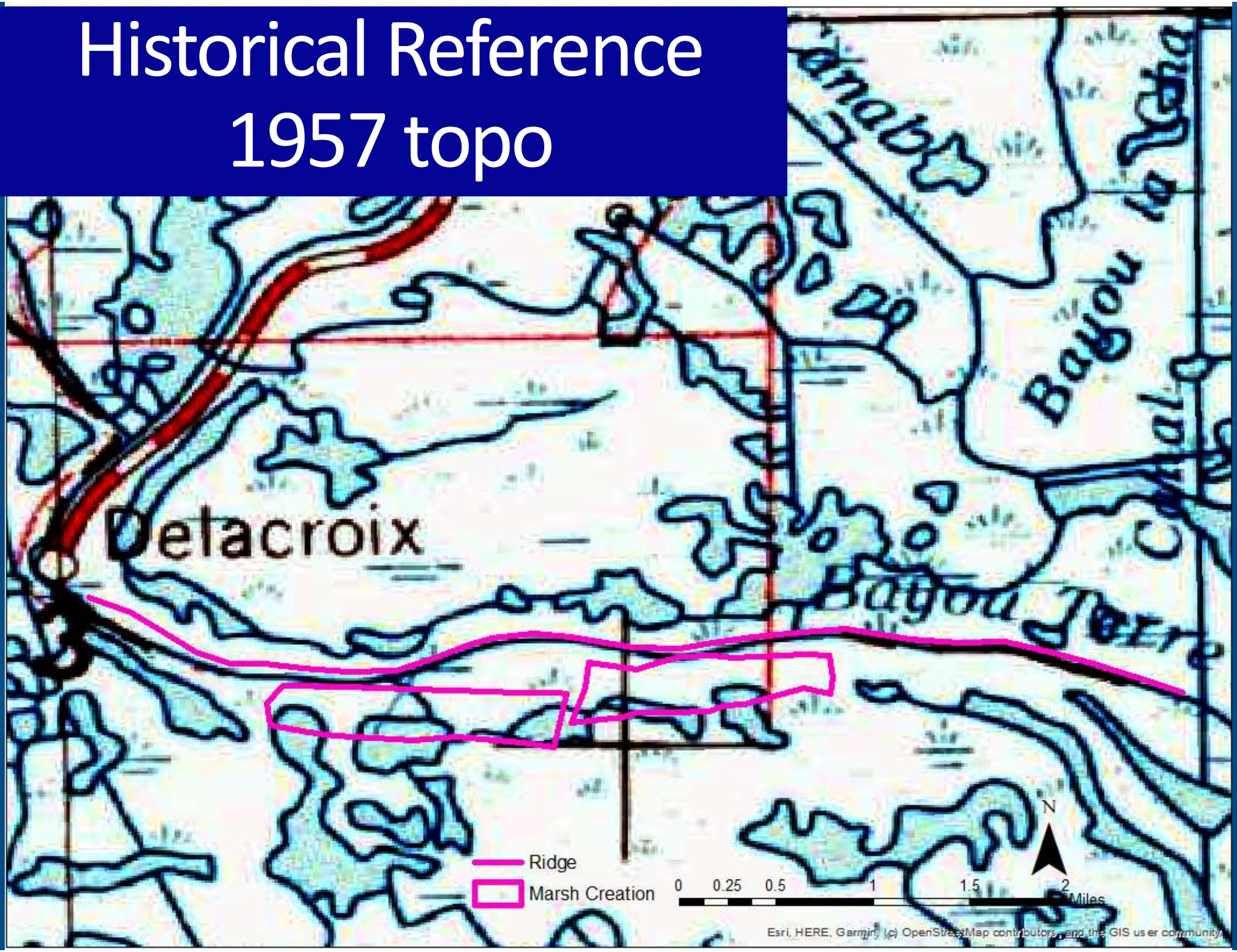
2017 Master Plan Consistency & Project Synergy



Problems

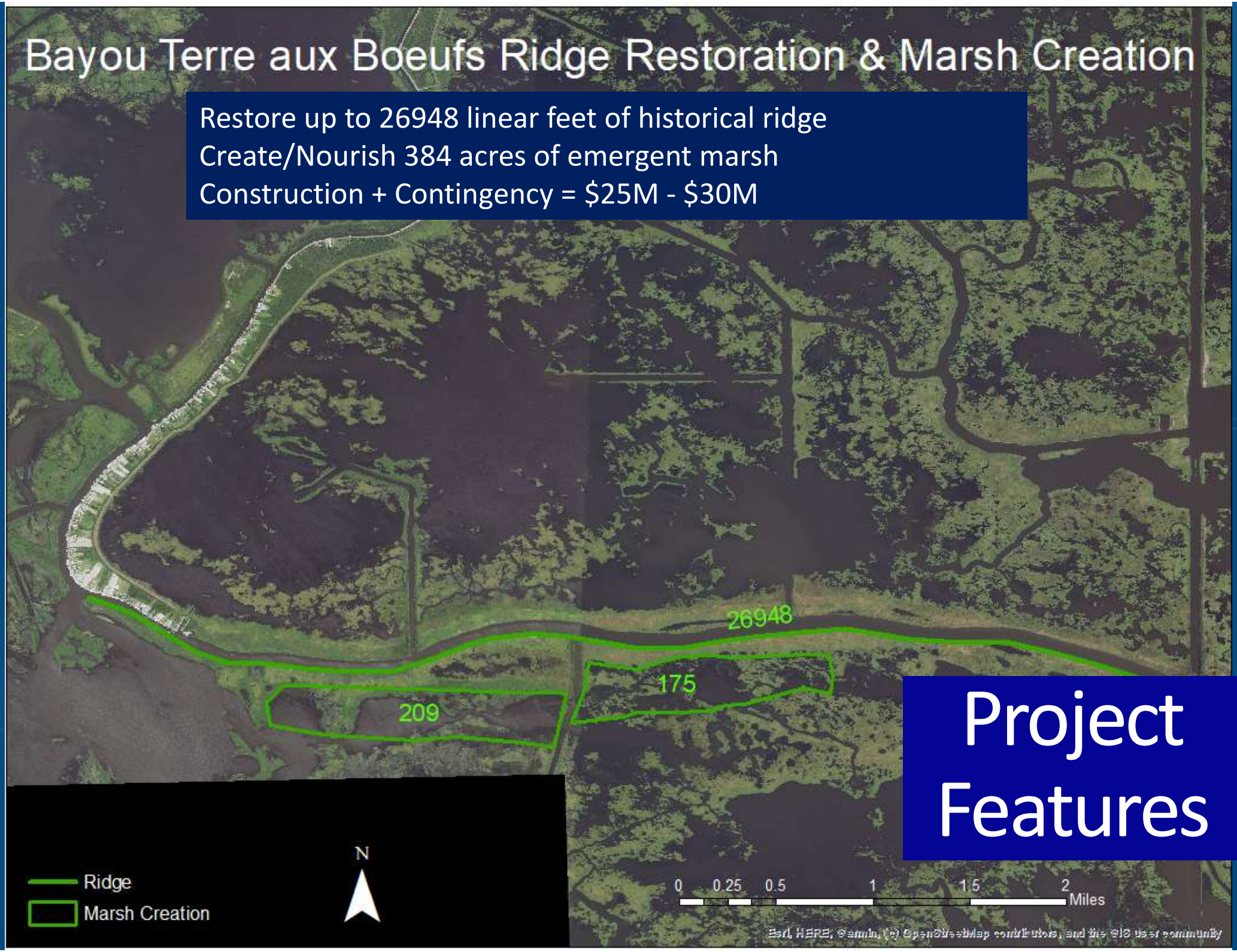
- Historic ridge is degrading between the water bodies on both sides which may cause them to merge creating additional impacts
- Subsidence
- Storm events
- Fragmenting wetlands supporting the ridge
- Both Plaquemines (55%) and St. Bernard (72%) Parishes could lose extensive land area over the next 50 years and experience severe storm surge flood risk (2017 MP). (Addresses St. Bernard Parish 2018 Priority Project Tier 1)

Historical Reference 1957 topo



Bayou Terre aux Boeufs Ridge Restoration & Marsh Creation

Restore up to 26948 linear feet of historical ridge
Create/Nourish 384 acres of emergent marsh
Construction + Contingency = $25M - $30M



Project Features

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Bayou Grosbec Marsh Creation

Project Location
Region 2, Breton Basin, St. Bernard Parish

Problem
Hurricanes Katrina, Rita, and Ida caused the majority of wetland loss in the project area. Wind erosion and saltwater intrusion have resulted in loss of marsh vegetation and wetland soils. Marsh loss has increased exposure of Delacroix to flooding from the east/southeast. The USGS expanded project boundary loss rate from the nearby PPL28 East Delacroix Marsh Creation and Terracing (BS-37) project is -1.58%/yr from 1984 to 2018 for the extended project boundary area.

Goals
The project goal is to create and nourish approximately 410 acres (ac) of tidal emergent marsh.

Proposed Solution
The project goal is to create and nourish approximately 410 ac of marsh (369 ac creation 41 ac nourishment) utilizing a layout to help protect the community of Delacroix and provide synergy with BS-37, BS-41 North Delacroix Marsh Creation and Terracing, and BS-43 Reggio Marsh Creation and Hydrologic Restoration projects which are all currently in Phase I Engineering and Design. Sediment would be mined from Cochon Bay and placed via pipeline. The borrow area would be designed to avoid adverse impacts to the existing shorelines of Cochon Bay. During both Phase 0 and Phase 1, opportunities would be explored to increase the amount of marsh creation.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 410 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 300 – 350 ac of marsh will be protected/created over the project life.

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)?*
   The anticipated land loss rate reduction throughout the area of direct benefits will be 50-74% over the projects life.

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

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

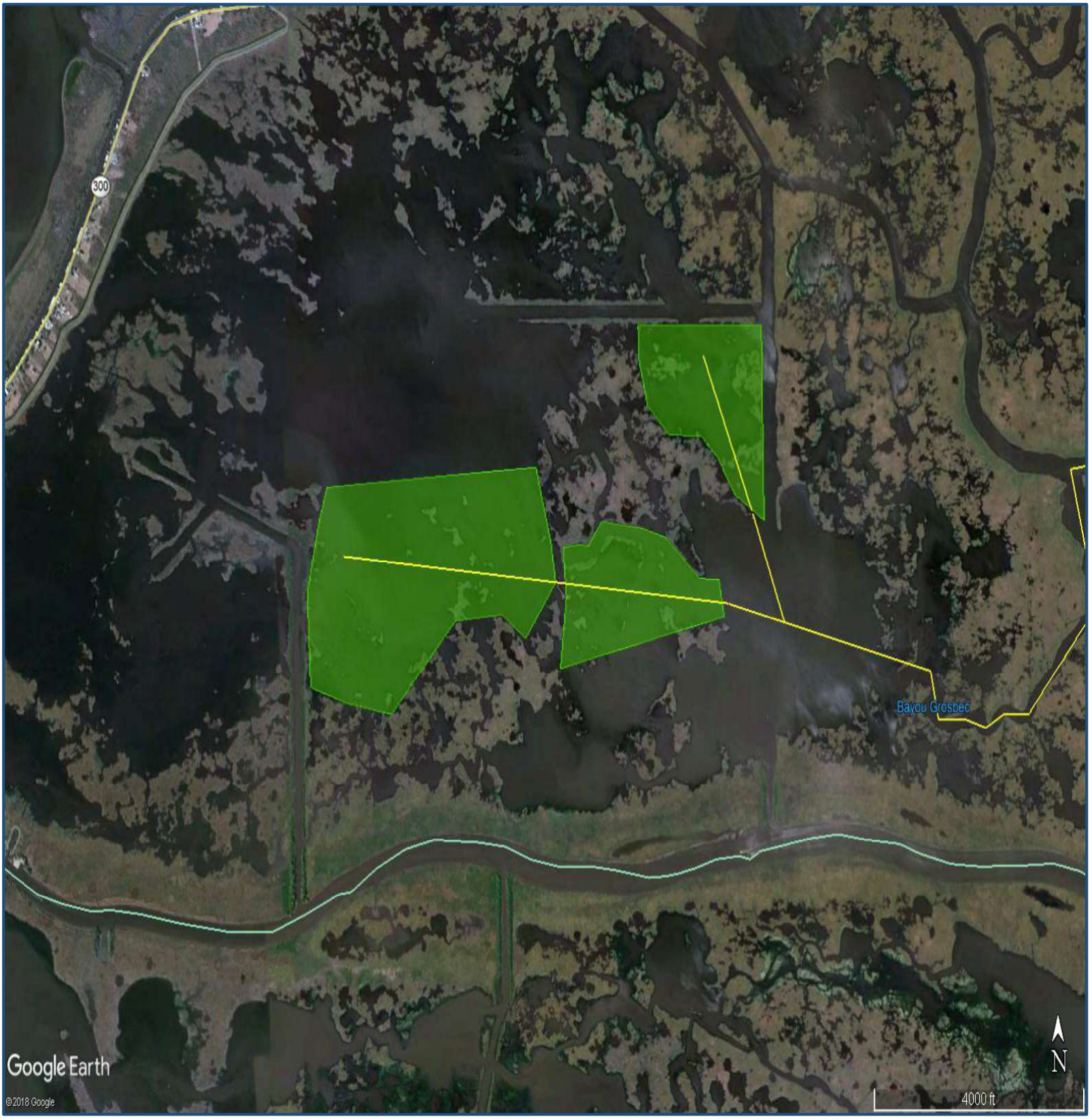
The project would have moderate net positive impact to critical infrastructure which consists of Delacroix Highway, a hurricane evacuation route, and residences of Delacroix. Net positive impact would result from providing synergistic flood protection with the back levee and help protect the highway.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have a synergistic effect with the CIAP project constructed west of Delacroix helping to protecting Delacroix from wave fetch, BS-37, BS-41, and BS-43.

Considerations
The proposed project has potential utility/pipeline considerations.

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

Preparer(s) of Fact Sheet:
Brandon Howard, NOAA Fisheries, 225-380-0050, brandon.howard@noaa.gov
Jason Kroll, NOAA Restoration Center, 225-757-5411, jason.kroll@noaa.gov



PPL32 Bayou Grosbec Marsh Creation

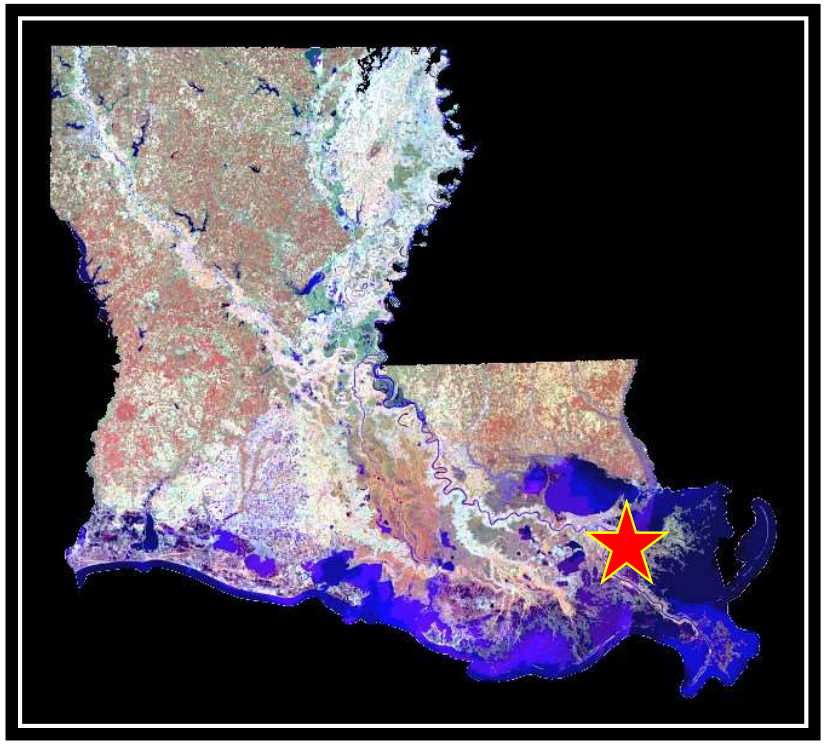
377 Acres Marsh Creation
33 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2021

Legend

- Dredge Pipeline
- Marsh Creation Areas

Bayou Grosbec Marsh Creation



REGION 2 – Breton Basin

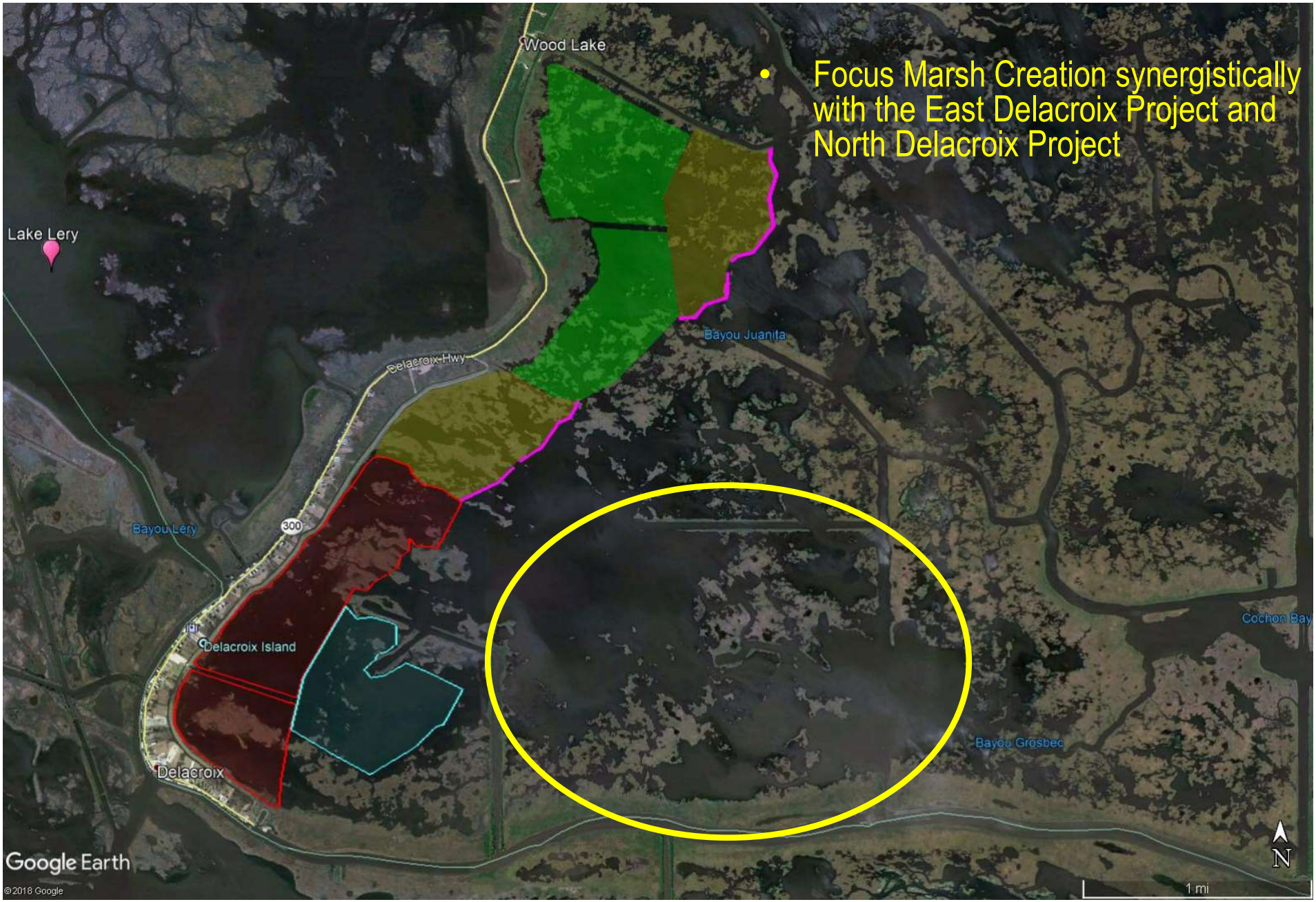
Presenter: Brandon Howard, Fishery Biologist, NOAA

Special Thanks

Jerry Graves, Jr.
John Lane
George Ricks
St. Bernard Parish

PPL30 CWPPRA Regional Planning Team Meeting

February 10, 2022



- Focus Marsh Creation synergistically with the East Delacroix Project and North Delacroix Project

Restoration Solution

- 410 Acres of Marsh Creation/Nourishment
  - 369 acres of marsh creation & 41 acres of marsh nourishment
  - Hydraulically dredge material from Cochon Bay
  - Contained fill areas with dike gapping after construction

Project Map

PPL31 Bayou Grosbec Marsh Creation

377 Acres Marsh Creation
33 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2021

Legend

- Dredge Pipeline
- Marsh Creation Areas

- 2017 State Master Plan Polygon 001.MC.06a
- Cochon Bay Borrow Area
- 410 Acres TOTAL of Marsh Creation/Nourishment
- Approximately 369 acres Creation and 41 acres Nourishment

Summary of Features, Cost, and Benefits

- **410 Acres Total**
  - 369 acres Marsh Creation
  - 41 acres Nourishment
- **Construction Cost + 25% Contingency $25M - $30M**
- **Net Benefits: 300 - 350 acres**

Contact information:
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Jason Kroll, 225-757-5411
jason.kroll@noaa.gov

PPL32 PROJECT NOMINEE FACT SHEET
February 10th, 2022

Project Name
River aux Chenes North Marsh Creation Project

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish, south of Spanish Lake

Problem
Within the project vicinity, marsh loss has occurred as the result of oil/gas canals, subsidence, and lack of sediment deposition. Historically, this area was nourished by freshwater delivered by the Mississippi River until the creation of the levees along the lower river. The major cause of wetland loss has been from storm activity (i.e. Hurricane Betsy and Katrina), causing both storm-induced scouring and salt water intrusion. One of the areas most severely impacted was the Breton Sound Basin where it is estimated that 40.9 square miles of marsh were converted to open water. The wetland loss rate in the area is -0.78% per year for the period 1984 to 2019, based on the nearby Phoenix Marsh Creation - East Increment PPL29 Candidate project.

Goals
The project goals are to create and/or nourish 526 acres of intermediate marsh within open water and fragmented marsh habitats ensuring tidal influence as early as possible and for as long as possible during the 20-year project life, taking into consideration elevations and ecological performance of existing marsh habitats. Restoration of intermediate marsh habitat with dredged material from Grand Lake will create 412 acres and nourish 114 acres, parallel to River aux Chenes, providing linkages to the Breton West Landbridge project (BS-38) to its north and linkages to the Phoenix Marsh Creation - East Increment project (BS-42) to its east and the Phoenix Marsh Creation - West Increment project (BS-44) to its south.

Proposed Solution
Sediments will be hydraulically dredged from Grand Lake to create 412 acres of marsh and nourish an additional 114 acres of marshes south of Spanish Lake. The dredged lake sediments will be pumped via pipeline into three confined fill placement areas. This project will build up the marsh along the banks of River aux Chenes in a north to south configuration. Containment dikes will be constructed around each marsh creation cell. 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 526 acres would be benefited directly and indirectly. Direct benefits include 412 acres of marsh creation and 114 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 350-400 acres.

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)?* 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.* No.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would offer some protection to flood protection levees west of the project 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 two landbridge projects currently in Phase II construction: the Mid Breton Landbridge Marsh Creation and Terracing (BS-32) project and the Breton West Landbridge Marsh Creation project (BS-38). Additionally, the project would be synergistic with two projects currently in Phase I engineering and design: the Phoenix Marsh Creation - East Increment (BS-42) and the Phoenix Marsh Creation - West Increment (BS-44).

Considerations
None identified at this time.

Preliminary Cost
The construction cost plus 25% contingency is $20M - $25M.

Preparer of Fact Sheet
January Murray, NOAA, (225) 380-0089, january.murray@noaa.gov

PPL32
River aux Chenes
North Marsh Creation

412 Acres Marsh Creation
114 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
1-2021 Aerial Imagery
Map Date 01-28-2022

Legend

Marsh Creation
526 acres

River aux Chenes North Marsh Creation Project

REGION 2 – Breton Sound Basin

Presenter: January Murray, Project Manager, NOAA

Special Thanks:

Plaquemines Parish

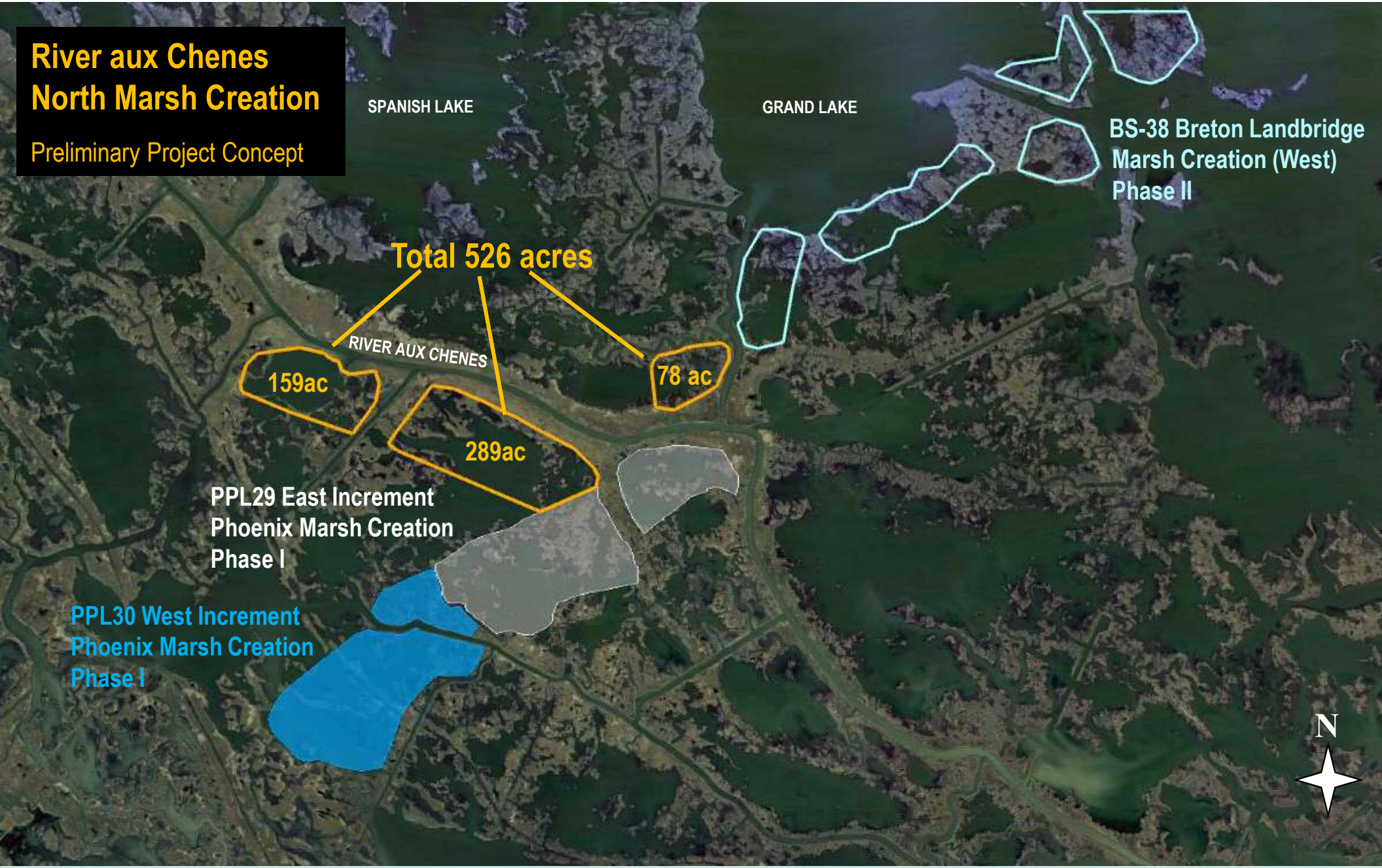
NOAA Project Team

PPL32 CWPPRA Regional Planning Team Meeting

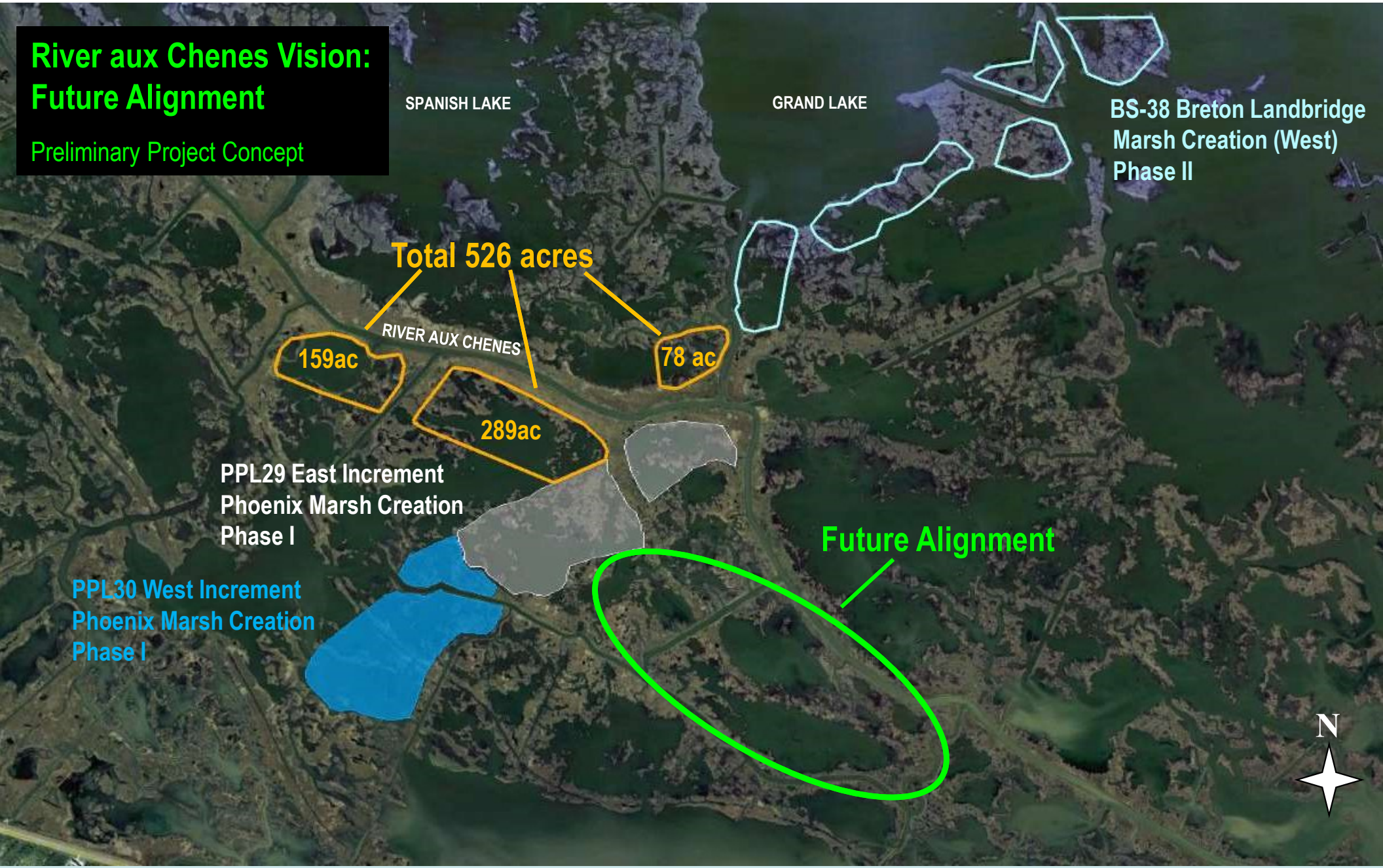
February 10, 2022

Project Location

River aux Chenes North Marsh Creation Project



Project Location



Project Area Problems, Goals, & Solutions

Problems: Wetland Degradation (-0.78%/yr)

- Sea Level Rise, Subsidence, Hurricane Impacts, & Conversion of Marsh to Open Water

Goals: Marsh Creation & Nourishment

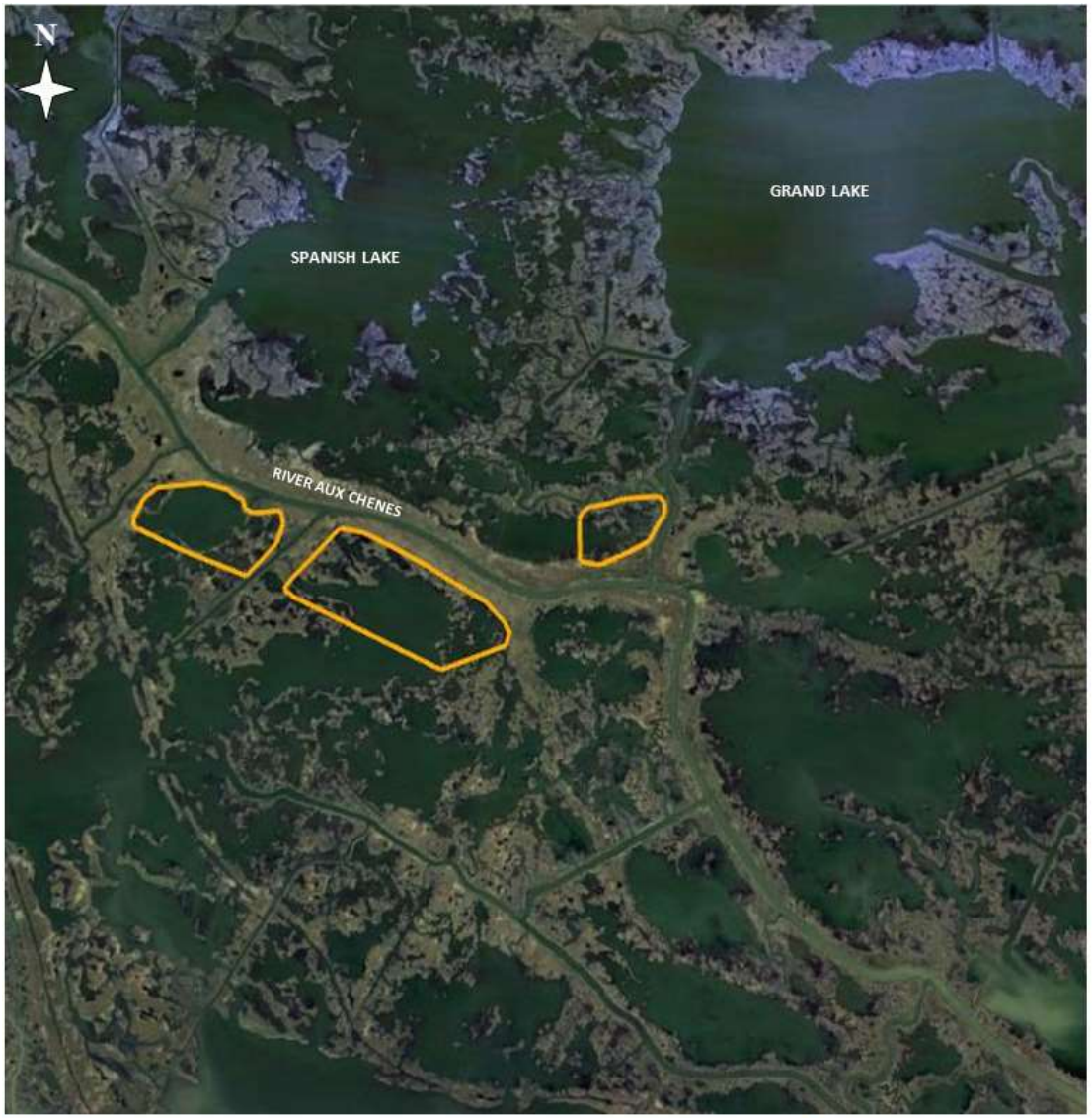
- Restore intertidal marsh habitat
- Design & construct resilient wetlands to maximize wetland benefits throughout the 20 year project life

Restoration Solution:

- 474 acres of Marsh Creation & 52 acres of Marsh Nourishment
- Hydraulically dredge material from Grand Lake
- Contained fill areas with dikes gapped after construction

River aux Chenes North Marsh Creation Project

Project Map



PPL32
River aux Chenes
North Marsh Creation

412 Acres Marsh Creation
114 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
1-2021 Aerial Imagery
Map Date 01-28-2022

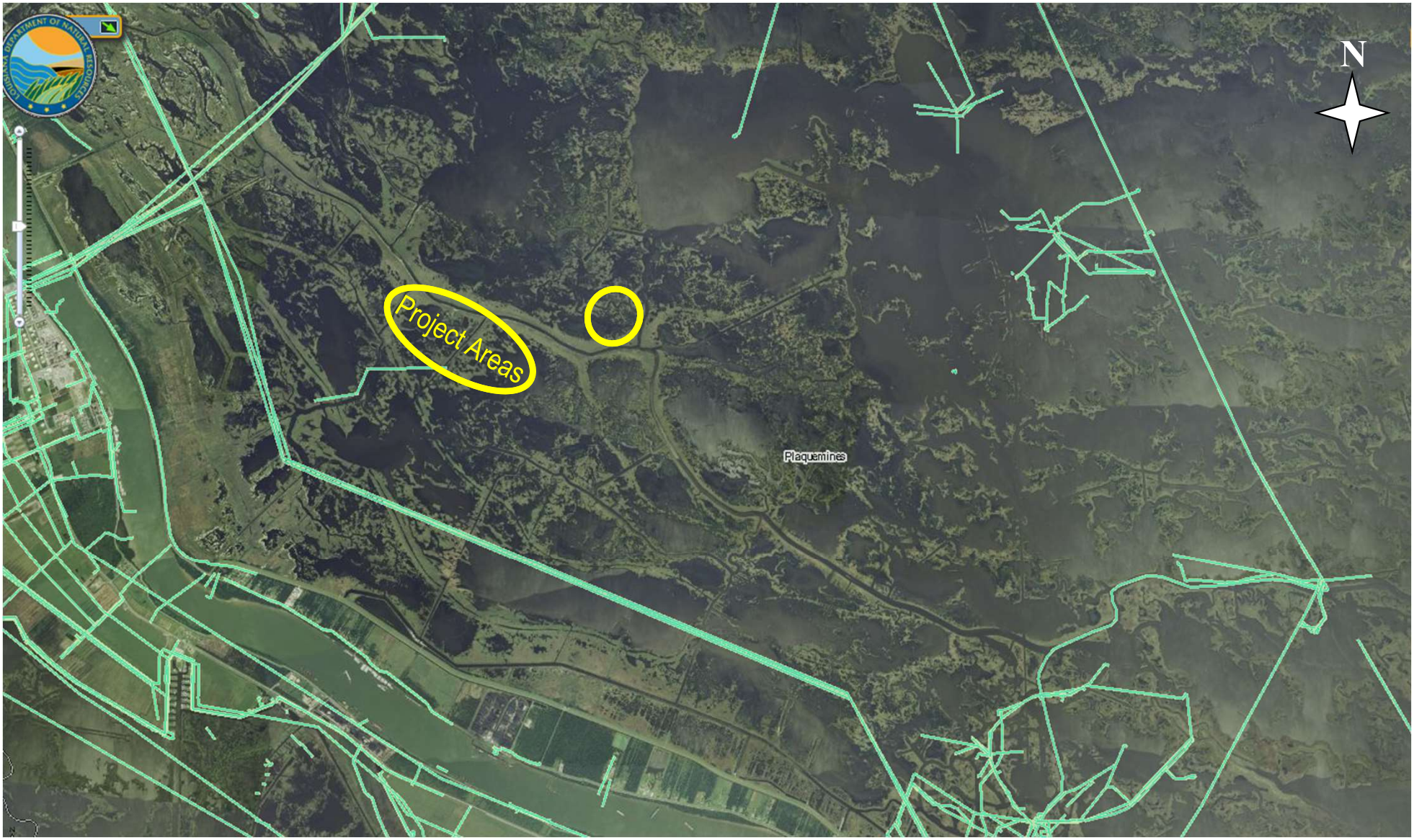
Legend

Marsh Creation
526 acres

- 2017 State Master Plan Polygon 001.MC.102
- Grand Lake Borrow Area
- 526 acres TOTAL of Marsh Creation / Nourishment
- Approximately 412 acres Creation and 114 acres Nourishment

Pipelines

River aux Chenes North Marsh Creation Project



Summary of Features, Cost, and Benefits

- **526 Acres Total**
  - 412 acres Marsh Creation
  - 114 acres Marsh Nourishment
- **Construction Cost + 25% Contingency $20M - $25M**
- **Net Benefits: 350-400 acres**

Contact Information:
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Jason Kroll, 225-757-5411
jason.kroll@noaa.gov

PPL32 PROJECT NOMINEE FACT SHEET
February 10th, 2022

Project Name
Carlisle Ridge Restoration and Marsh Creation North Project

Project Location
Region 2, Breton Sound Basin, Plaquemines Parish

Problem
Within the project vicinity, marsh loss has occurred as the result of oil/gas canals, subsidence, and lack of sediment deposition. Historically, this area was nourished by freshwater delivered by the Mississippi River until the creation of the levees along the lower river. The major cause of wetland loss has been from storm activity (i.e. Hurricanes Betsy and Katrina), causing both storm-induced scouring and salt water intrusion. The Breton Sound Basin was severely impacted by Hurricane Katrina, where it is estimated that 40.9 square miles of marsh was converted to open water. The wetland loss rate in the area is -0.63% per year for the period 1984 to 2020 based on USGS subunit land change trends.

Goals
The project goals are to restore 13,850 linear feet (18 acres) of forested ridge habitat west of Little Oak Pond to further sustain this environment and to create and/or nourish 494 acres of intermediate marsh within open water and fragmented marsh habitats. Dredged material from the Mississippi River will be used to restore 18 acres of forested ridge and to create 296 acres and nourish 198 acres of marsh habitat.

Proposed Solution
Sediments will be hydraulically dredged and pumped via pipeline from the Mississippi River to create 13,850 linear feet (18 acres) of forested ridge habitat. The ridge will be constructed with a crown elevation of +5.0 feet NAVD88, 20 feet wide, and the crown and slopes will be planted. Additionally, sediments from the Mississippi River will be pumped via pipeline into three confined fill placement areas to create and nourish 494 acres of marsh. Dewatering and compaction of dredged materials will establish intertidal emergent marsh habitat. Containment dikes will be constructed around each marsh creation cell. 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 494 acres of marsh and 18 acres of ridge would be benefited directly and indirectly. Direct benefits include 18 acres of forested, coastal ridge habitat and 296 acres of marsh creation and 198 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 300-350 acres.

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)?* 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.* Yes. Forested coastal ridge habitat would be restored.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would offer some protection to flood protection levees west of the project 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 two projects to the southeast currently in Phase I engineering and design: the Phoenix Marsh Creation - East Increment (BS-42) and the Phoenix Marsh Creation - West Increment (BS-44).

Considerations

Oil and gas infrastructure will need to be considered in project design.

Preliminary Cost

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

Preparer of Fact Sheet

January Murray, NOAA, (225) 380-0089, january.murray@noaa.gov

PPL32 Carlisle Ridge Restoration & Marsh Creation North

296 Acres Marsh Creation
198 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
1-2021 Aerial Imagery
Map Date 02-1-2022

Legend

- Marsh Creation 494 acres
- Forested Ridge 18 acres

Carlisle Ridge Restoration & Marsh Creation North Project

NOAA FISHERIES

REGION 2 – Breton Sound Basin

Presenter: January Murray, Project Manager, NOAA

Special Thanks:

Plaquemines Parish

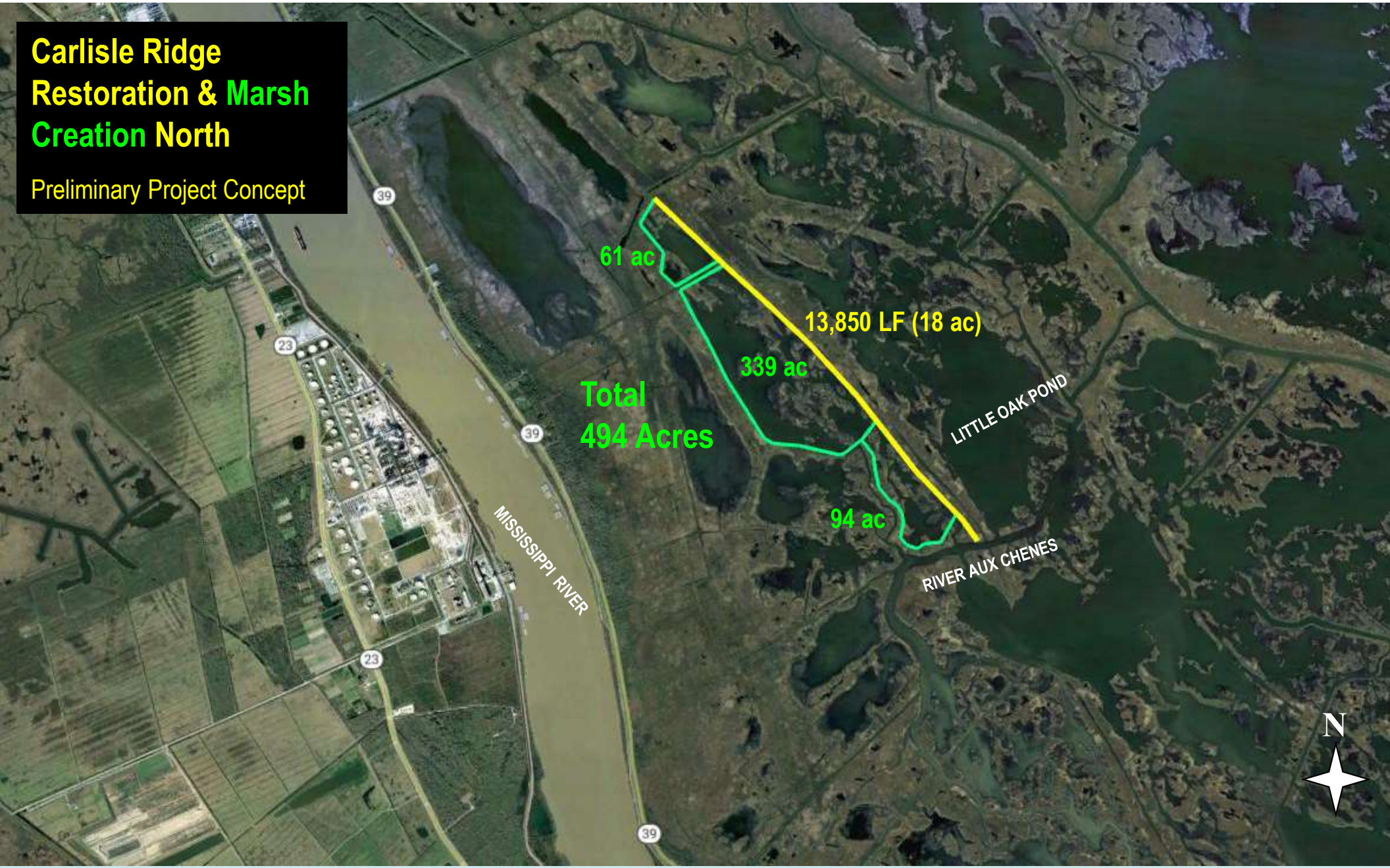
NOAA Project Team

PPL32 CWPPRA Regional Planning Team Meeting

February 10, 2022

Project Location

Carlisle Ridge Restoration & Marsh Creation North Project



Project Area Problems & Goals

Problems: Wetland Degradation (-0.63%/yr)

- Sea Level Rise
- Subsidence
- Hurricane Impacts
- Conversion of Marsh to Open Water

Goals: Ridge Restoration

- Provide coastal upland habitat
- Restore natural hydrology
- Provide wave & storm surge attenuation near Carlisle
- Creating a ridge will further sustain this environment

Project Area Goals & Solutions

Goals: Marsh Creation & Nourishment

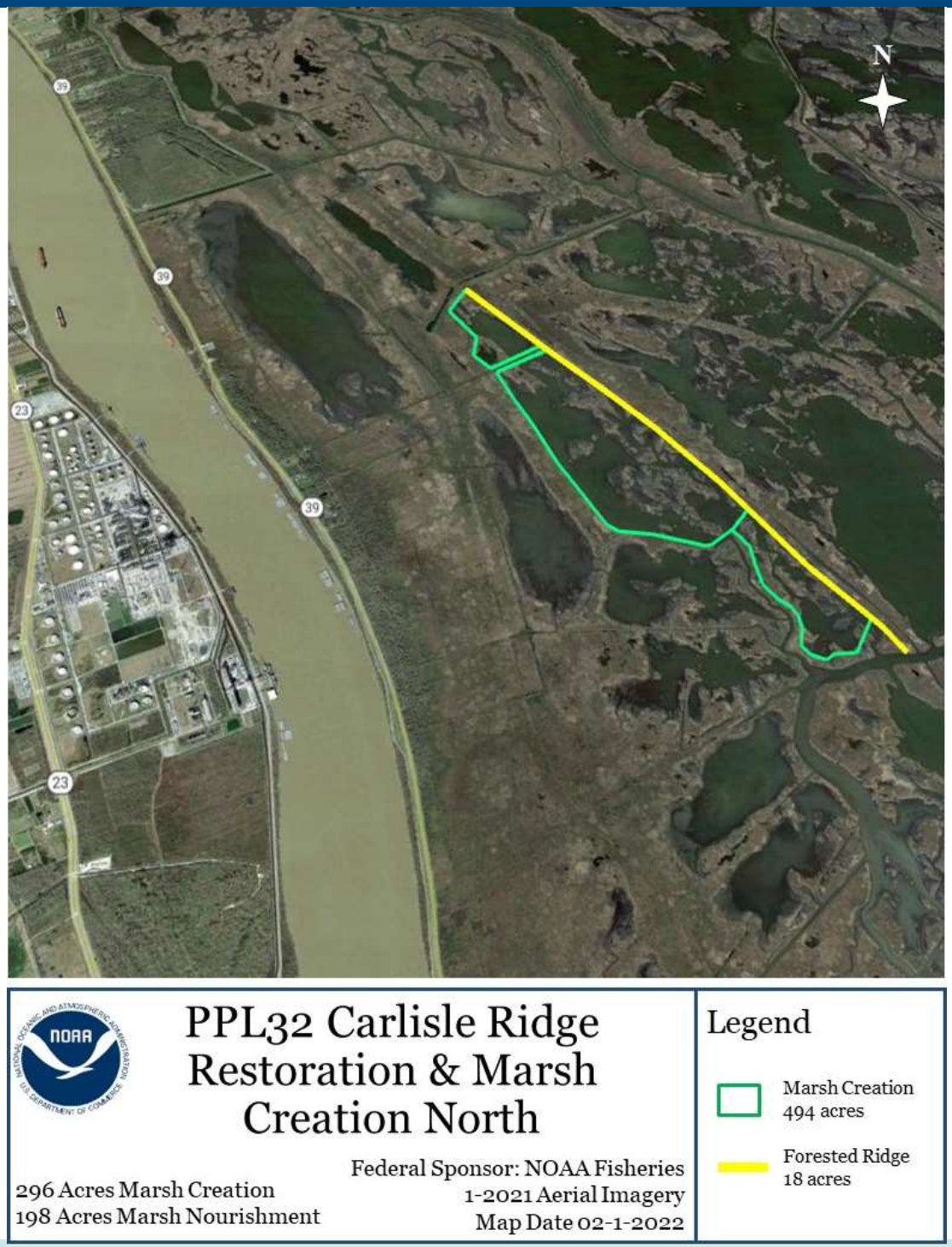
- Restore intertidal marsh habitat
- Design & construct resilient wetlands to maximize wetland benefits throughout the 20-year project life

Restoration Solution:

- 18 acres (13,850 linear feet) of Ridge Restoration
- 296 acres of Marsh Creation & 198 acres of Marsh Nourishment
- Hydraulically dredge material from Mississippi River
- Contained fill areas with dikes gapped after construction

Carlisle Ridge Restoration & Marsh Creation North Project

Project Map



- 2017 State Master Plan Polygon 001.RC.103
- Mississippi River Borrow Area
- 18 acres (13,850 linear feet) Ridge Restoration
- 494 acres TOTAL of Marsh Creation / Nourishment
- Approximately 296 acres Creation & 198 acres Nourishment

Pipelines

Carlisle Ridge Restoration & Marsh Creation North Project

Summary of Features, Cost, and Benefits

- **18 acres (13,850 linear feet) Ridge Restoration**
- **494 Acres Total**
  - 296 acres Marsh Creation
  - 198 acres Marsh Nourishment
- **Construction Cost + 25% Contingency $30M - $35M**
- **Net Benefits: 300-350 acres**

Contact Information:
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january.murray@noaa.gov
Jason Kroll, 225-335-9659
jason.kroll@noaa.gov

REMOVED
R2, BS-14

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
East Lake Lery Marsh Creation

Project Location
Region 2, Breton Basin, St. Bernard Parish

Problem
The marshes forming the eastern shoreline of Lake Lery were severely damaged by Hurricane Katrina. Wind-induced waves within Lake Lery could further damage the shoreline and cause accelerated interior marsh loss. Without directly rebuilding these marshes, the lake will continue to grow and potentially coalesce with Bayou Terre aux Boeufs. The 1985 to 2020 loss rate is -0.81% per year for the USGS North Lake Lery mapping subunit.

Goals
The primary goals of the project are to create/nourish 257 acres of intertidal marsh through dedicated dredging and to design the project to build resilient wetlands that maximize wetland benefits for the twenty year project life. The marsh creation/nourishment area will restore approximately 1.9 miles of the lake shoreline.

Proposed Solution
The project would create 207 acres and nourish an additional 50 acres of marsh along the eastern shore of Lake Lery using material dredged from Lake Lery. Temporary containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 257 acres (207 acres marsh creation and 50 acres of nourishment).

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 150-200 net acres of marsh will be protected/created over the twenty year project life.

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)?*
The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the project's life.

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

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

The project would have moderate net positive impact to non-critical infrastructure comprised of pipelines.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have synergistic effects with: 1) BS-16 South Lake Lery Shoreline and Marsh Restoration, 2) BS-24 Terracing and Marsh Creation South of Big Mar, and 3) CIAP project constructed west of Delacroix.

Considerations
The proposed project has utility/pipeline considerations.

Preliminary Construction Costs
The construction cost plus 25% contingency is $15M-$20M.

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, Dawn.Davis@noaa.gov

PPL32 East Lake Lery Marsh Creation

207 Acres Marsh Creation
50 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

Legend

Marsh Creation

REMOVED
R2, BS-15

PPL32 PROJECT NOMINEE FACT SHEET
February 10, 2022

Project Name
Lake Lery Marsh Creation and Rim Restoration Project Phase III

Project Location
Region 2, Breton Basin, St. Bernard Parish

Problem
The marshes forming the northern shoreline of Lake Lery were severely damaged by Hurricane Katrina. Wind-induced waves within Lake Lery could further damage the shoreline and cause accelerated interior marsh loss. Without directly rebuilding these marshes, the lake will continue to grow and potentially coalesce with newly open waters north of the lake. The 1985 to 2020 loss rate is -0.81% per year for the USGS North Lake Lery mapping subunit.

Goals
The primary goals of the project are to create/nourish 401 acres of intertidal marsh through dedicated dredging and to design the project to build resilient wetlands that maximize wetland benefits for the twenty year project life. The marsh creation/nourishment area will restore approximately 2.4 miles of the lake shoreline.

Proposed Solution
The project would create and nourish 401 acres of marsh along the northern shore of Lake Lery using material dredged from Lake Lery. Temporary containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 401 acres.

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 200-250 net acres of marsh will be protected/created over the twenty year project life.

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)?*
The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the project's life.

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

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

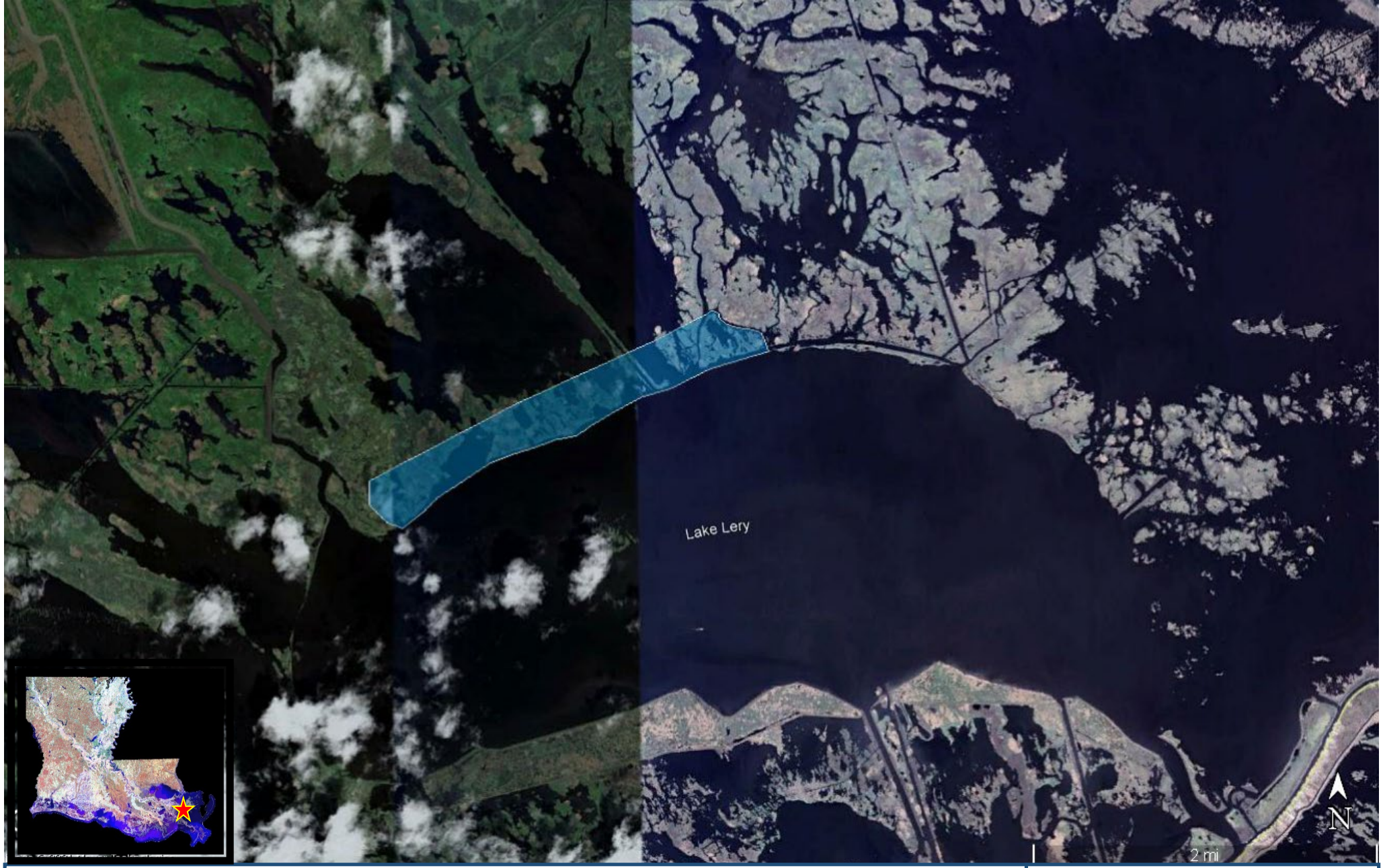
The project would have moderate net positive impact to non-critical infrastructure comprised of pipelines.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project will have synergistic effects with: 1) BS-16 South Lake Lery Shoreline and Marsh Restoration, 2) BS-24 Terracing and Marsh Creation South of Big Mar, and 3) CIAP project constructed west of Delacroix.

Considerations
The proposed project has utility/pipeline considerations.

Preliminary Construction Costs
The construction cost plus 25% contingency is $20M-$25M.

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, Dawn.Davis@noaa.gov



PPL32 Lake Lery Marsh Creation and Rim Restoration – Phase III

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

401 Acres Marsh Creation and Marsh Nourishment

Legend

Marsh Creation

Lake Lery Marsh Creation:

East Lake Lery Marsh Creation
and
Lake Lery Marsh Creation and Rim Restoration Phase III

REGION 2 – Breton Basin

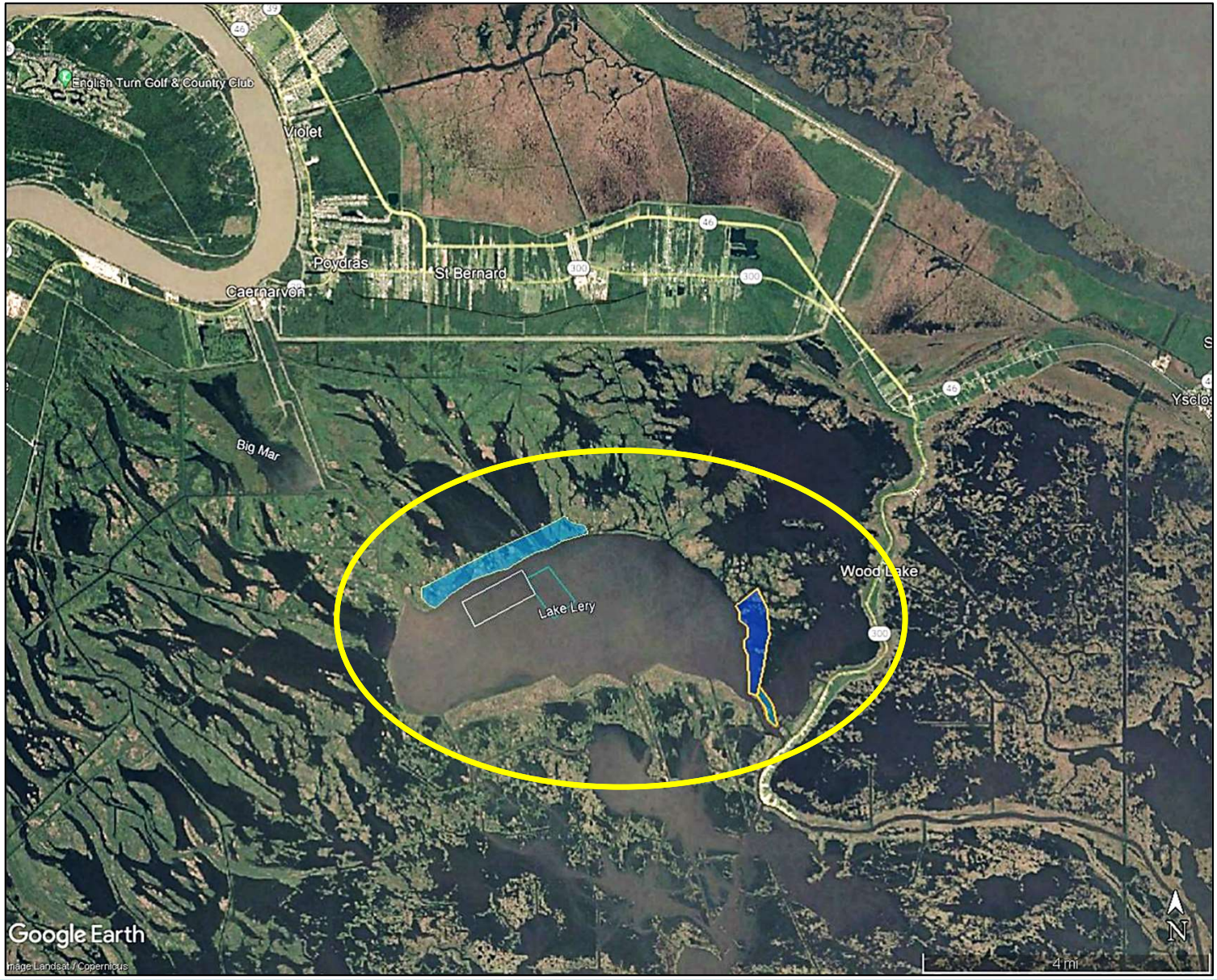
Presenter: Dawn Davis, Fishery Biologist

PPL32 CWPPRA Regional Planning Team

Virtual Meeting

February 10, 2022

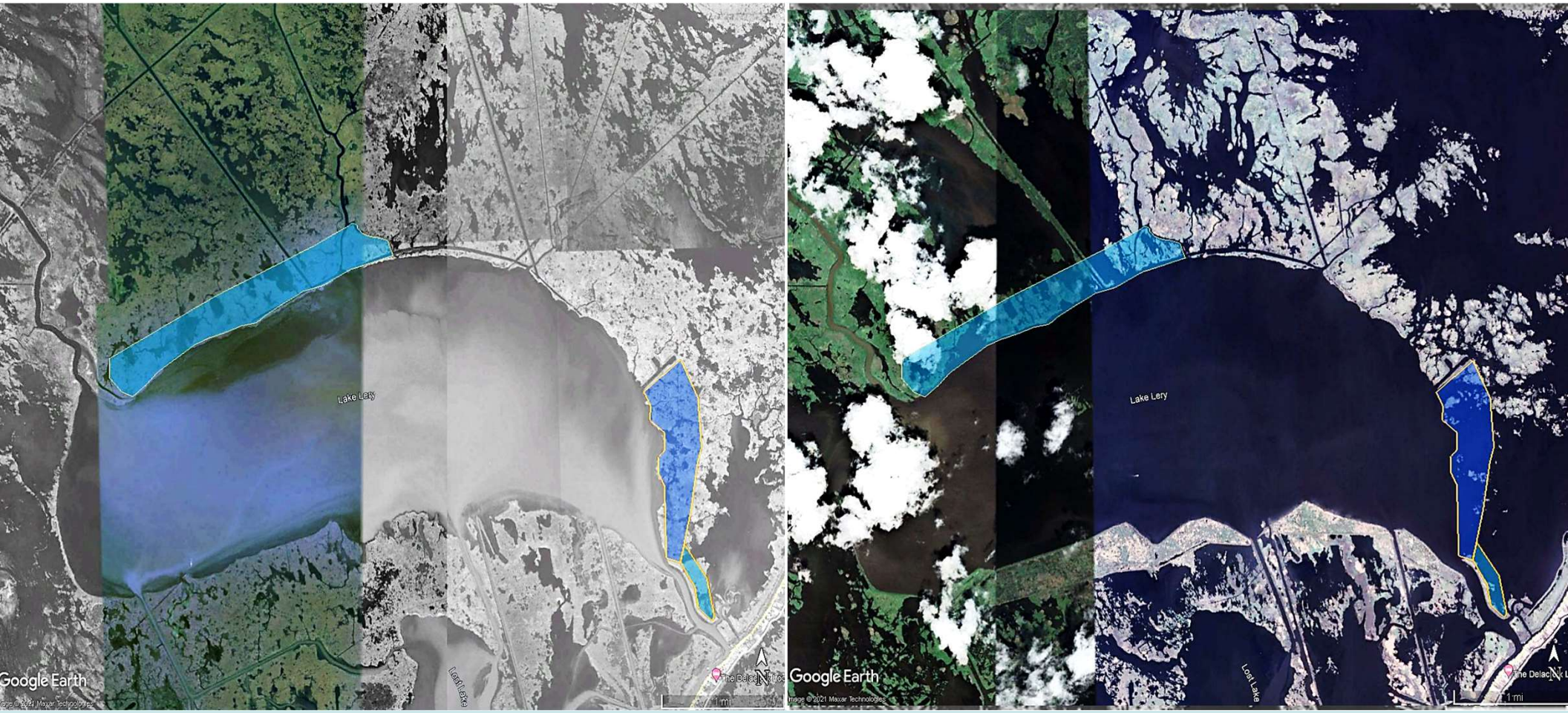
Project Vicinity



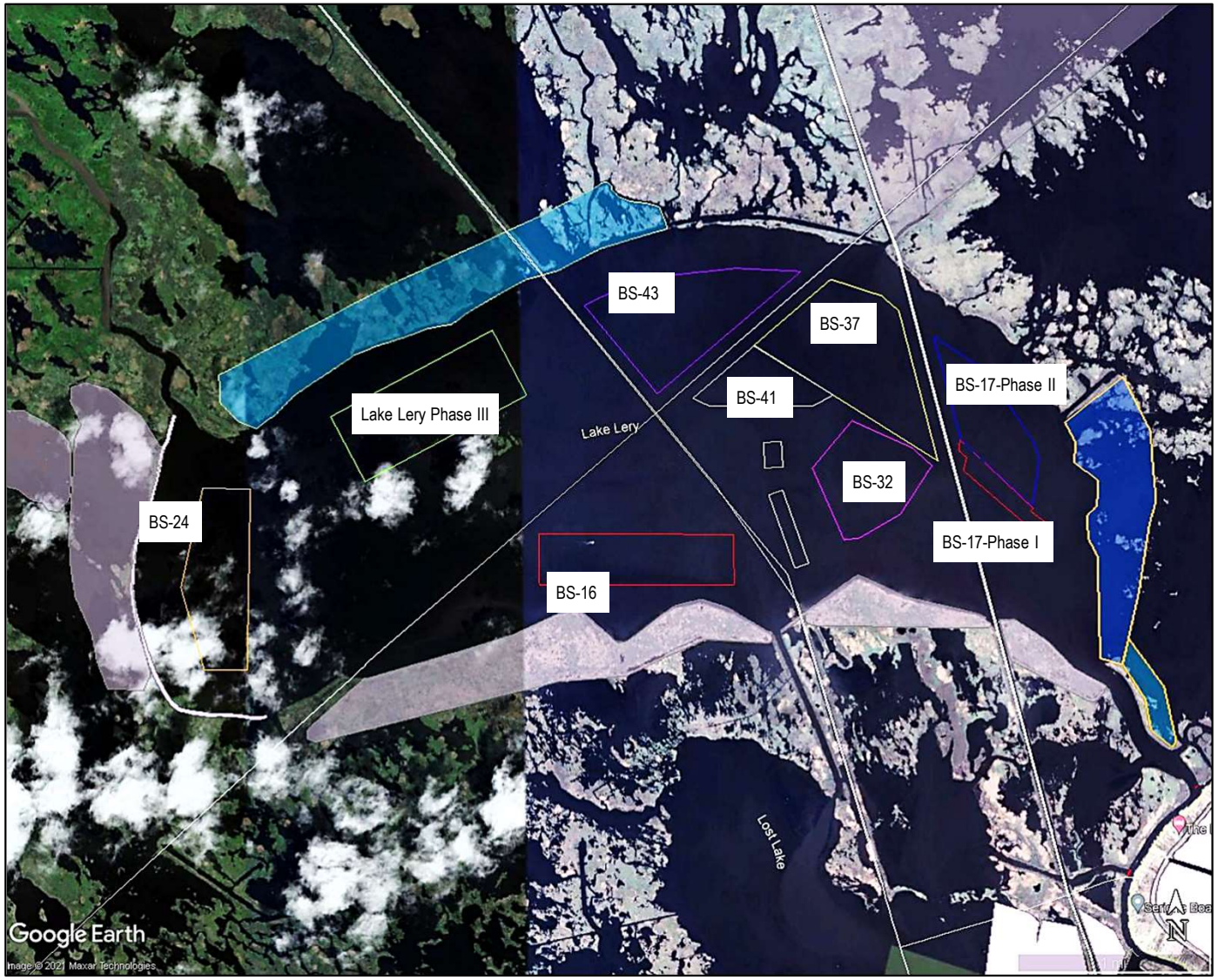
Project Area Degradation

Pre-Katrina 2005

Post-Katrina 2005



Project area history

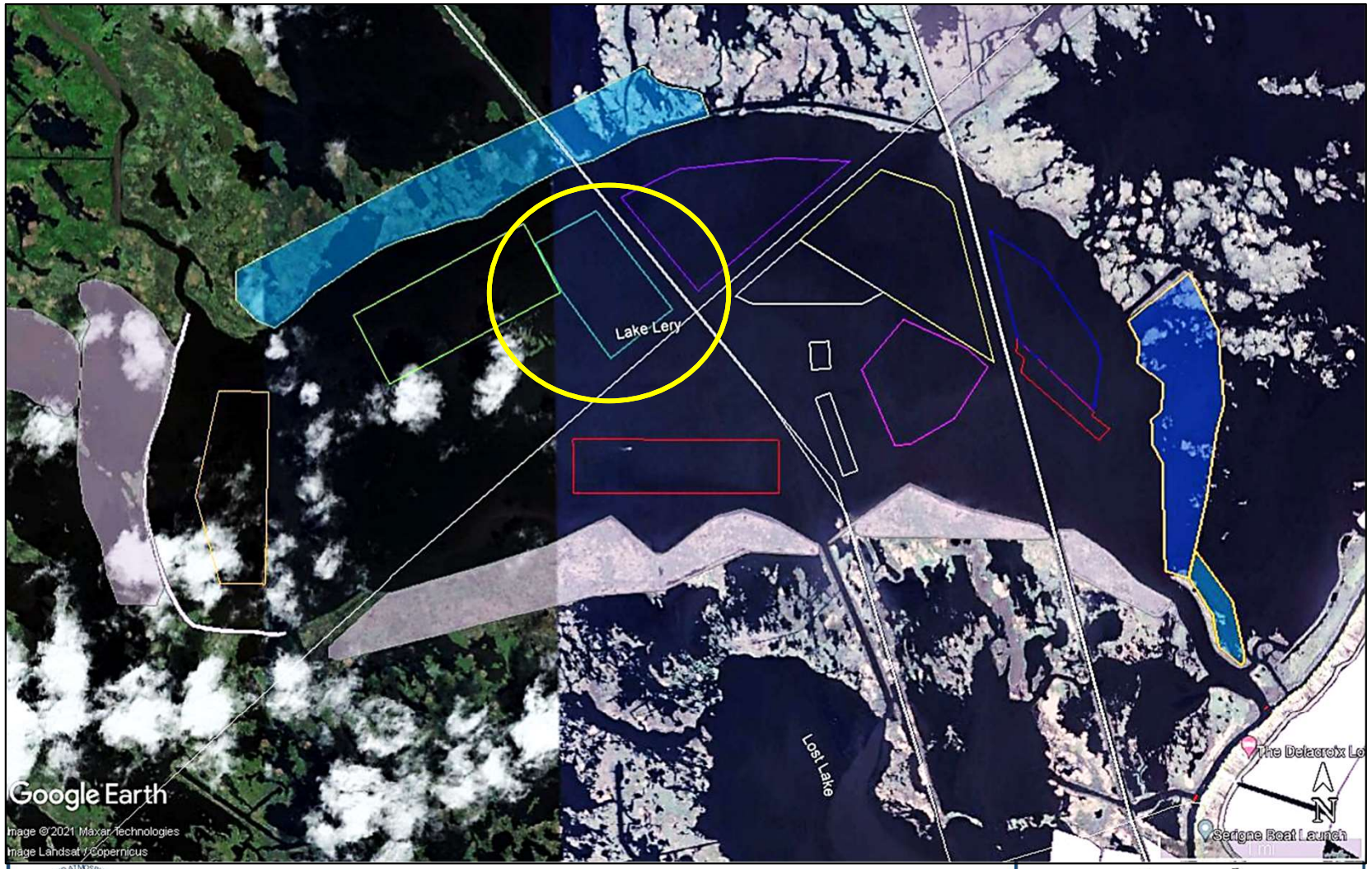


East Lake Lery Marsh Creation

Proposed Project Solution

- 257 acres of marsh creation/nourishment
  - 207 acres MC and 50 acres MN
  - Dredge material from Lake Lery
  - Full containment with dike gapping after construction
- Build resilient wetlands that maximize wetland benefits for the twenty year project life
- Restore 1.9 miles of lake shoreline

Project Map



NOAA

PPL32 East Lake Lery Marsh Creation

207 Acres Marsh Creation
50 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022

Legend

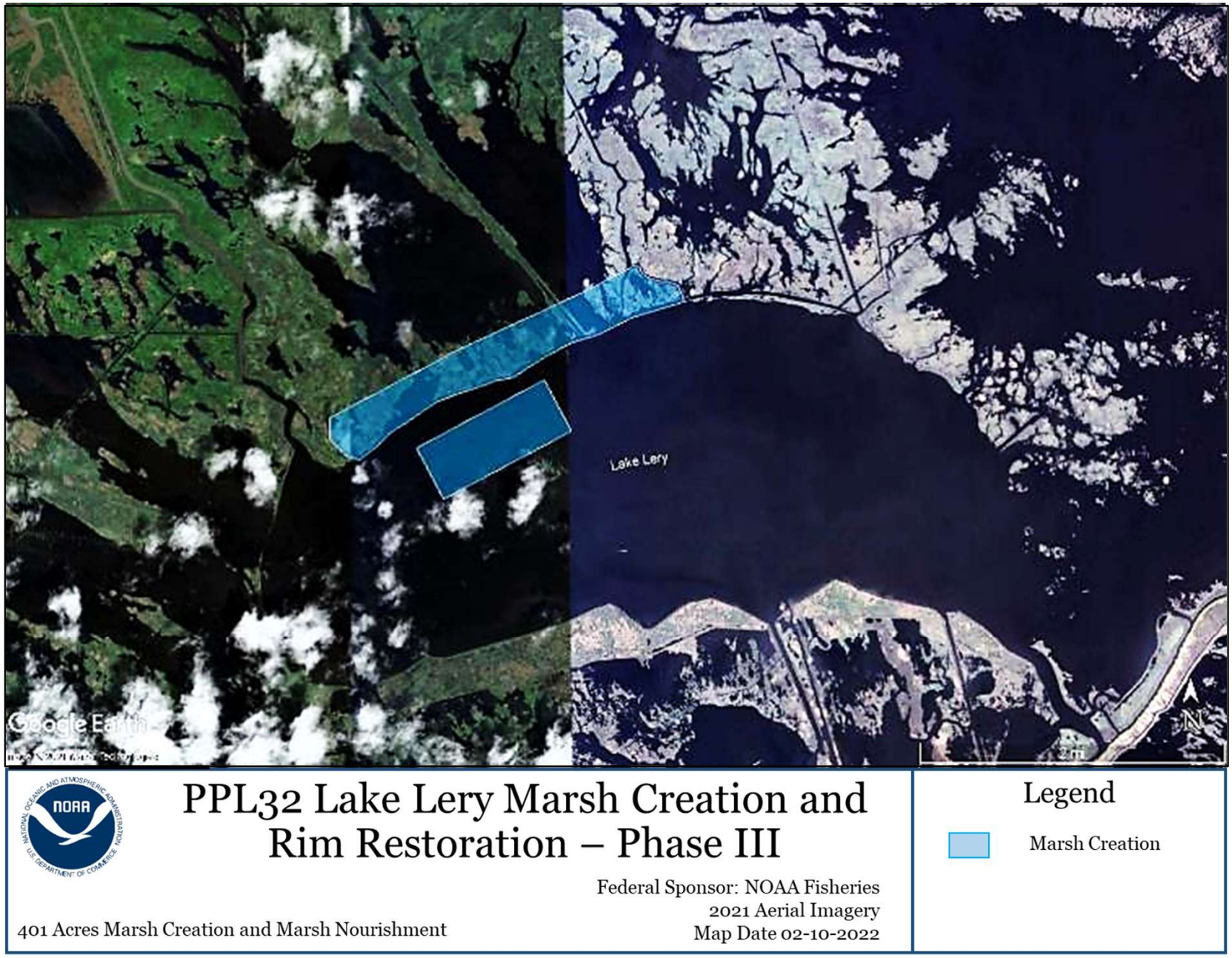
Marsh Creation

Lake Lery Marsh Creation and Rim Restoration Phase III

Proposed Project Solution

- 401 acres of marsh creation/nourishment
  - Dredge material from Lake Lery
  - Full containment with dike gapping after construction
- Build resilient wetlands that maximize wetland benefits for the twenty year project life
- Restore 2.4 miles of lake shoreline

Project Map


Lake Lery
Google Earth
N
PPL32 Lake Lery Marsh Creation and Rim Restoration – Phase III
Federal Sponsor: NOAA Fisheries
2021 Aerial Imagery
Map Date 02-10-2022
401 Acres Marsh Creation and Marsh Nourishment
Legend
Marsh Creation

Summary

East Lake Lery Marsh Creation

- Marsh Creation/Nourishment: 257 Acres
- Construction Cost + 25% Contingency: $15M - $20M
- Net Benefits: 150-200 acres

Lake Lery Marsh Creation and Rim Restoration Phase III

- Marsh Creation/Nourishment: 401 Acres
- Construction Cost + 25% Contingency: $20M - $25M
- Net Benefits: 200-250 acres

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