

REGION 2

Coastal Wetlands Planning Protection & Restoration Act

27th Priority Project List



Region 2 Regional Planning Team Meeting

February 2, 2017
Lacombe, LA

CWPPRA

1. Welcome and Introductions



- RPT Region 2 Leader: [Brad Inman - USACE](#)

CWPPRA

Announcements

- Copies of the PPL 27 Selection Process & Schedule available at the sign-in table.
- PPL 27 RPT meetings to accept project nominees:
 - Region IV, Vermilion Parish Library, Jan. 31, 2017, 12:30 pm
 - Region III, Port of Morgan City – Office, Feb. 1, 2017, 9:30 am
 - **Region II, USFWS SE LA Refuges Complex (Big Branch), Feb. 2, 2017, 10:00 am**
 - Region I, USFWS SE LA Refuges Complex, Feb. 2, 2017, immediately following Region II
- For parishes that do not have a voting registration form filled out already - Parish representatives must identify themselves during the RPT meetings and **fill out a voting registration form**, including contact information for the primary and secondary voting representatives that will cast votes during the Coastwide Electronic Vote.



CWPPRA

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**



CWPPRA

RPT Meetings

- Project proposals should be consistent with the 2012 State Master Plan or the DRAFT 2017 State Master Plan.
- A project can only be nominated in one basin except for coastwide projects
- Proposals that cross multiple basins, excluding coastwide projects, 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 representatives (CWPPRA agencies and only the parishes located within the project's basin) will determine if those projects are sufficiently different
 - If sufficiently different:
 - Each project will move forward
 - If not sufficiently different:
 - Projects will be combined
 - Federal sponsor will be determined prior to coastwide vote (March 7th).
 - *This decision will be made at the meeting where the projects are proposed*



CWPPRA

RPT Meetings

- Presenters without factsheets **MUST** complete a PPL 27 Nomination Sign-Up Sheet for each project nominee (demo projects too).
- Presenters with factsheets, please give a factsheet each to Kaitlyn, Michelle & the minutes taker before your presentation.
- Limit project proposals to 5 minutes and Powerpoint presentations to 5 slides.
- Public comments on project proposals will be accepted orally during the RPT meetings and in writing by **March 1, 2017**.
- Limit comments/questions during meeting to PPL 27 subject proposals and processes.



CWPPRA

Coastwide Projects

- Proposes a technique applicable across the coast (e.g. vegetative planting)
- Nominated at any RPT meeting
- All coastal parishes & agencies will vote on selection of coastwide nominee
- Only one coastwide nominee may be selected from the coastwide nominee pool during the Electronic Coastwide Vote on **March 7, 2017**.
- The Technical Committee may or may not select a coastwide project in April 2017.



CWPPRA

Demonstration Projects

- Demonstrates a technology which can be transferred to other areas in coastal Louisiana
- Engineering/Environmental Workgroups will validate that demos fit CWPPRA Standard Operating Procedures criteria
- The RPTs select up to 6 demos during the **March 7th** Coastwide Electronic Vote.
- The Technical Committee selects up to 3 demos in April 2017.
- Workgroups may recommend that no demos move forward to candidate stage
- Previous demo candidates must be **re-nominated** for PPL 27.



Coastwide Electronic Vote (**Mar. 7th**) 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

CWPPRA

Coastwide Electronic Vote

- Each officially designated parish representative, each Federal agency, and the State (CPRA) will have one vote.
- No additional projects can be nominated after the RPTs.
- No significant changes to projects proposed at the first round of RPT meetings will be allowed (this includes combining projects).
- Public comments will be heard today and written comments must be submitted by **March 1, 2017**.



CWPPRA

Coastwide Electronic Voting Process

- USACE will send out voting sheets as both Excel spreadsheet and PDF documents 1 week prior to the Coastwide Electronic Vote. Voters will only receive voting sheets for the basins that they are eligible to vote for & the column that they need to mark their vote will be highlighted. Voting instructions will be provided with the voting sheets.
- Voters must email their voting sheets to kaitlyn.m.carriere@usace.army.mil

All votes must be received by 10:30 am on March 7, 2017.



CWPPRA

Nominee Project Evaluations

- Following the Coastwide Electronic Vote, an agency will be assigned to each project to prepare a Nominee Project factsheet (1 page + map).
- CWPPRA Engineering & Environmental Workgroups review draft features and assign preliminary cost and benefit ranges.
- Work groups will also review demo & coastwide projects and verify that they meet PPL 27 criteria.



CWPPRA

PPL 27 Candidate
Project Selection

Candidates evaluated between May and October

- Workgroups conduct site visits and meetings to identify needs and establish project baselines and boundaries.
- Workgroups determine benefits, project features, and cost estimates



CWPPRA

PPL 27 Candidate
Project Evaluation & Selection

- **Coastwide Electronic Vote, Mar. 7, 2017**
 - 21 basin-project nominees, 1 coastwide nominee, and 6 demos selected
- **Technical Committee Mtg, Apr. 27, 2017, New Orleans**
 - Selection of 10 candidates and up to 3 demos
- **Technical Committee Mtg, Dec. 7, 2017, Baton Rouge**
 - Typically recommend up to 4 projects for Phase 1 funding
- **Task Force Mtg, Jan. 2018, New Orleans**
 - Final Selection of projects for Phase 1 funding



CWPPRA

Written Comments

- Send written comments on projects & demos proposed today to the CWPPRA program manager
- **Deadline: March 1, 2017**

Brad Inman
CWPPRA Program Manager
U.S. Army Corps of Engineers
7400 Leake Avenue
New Orleans, Louisiana 70118

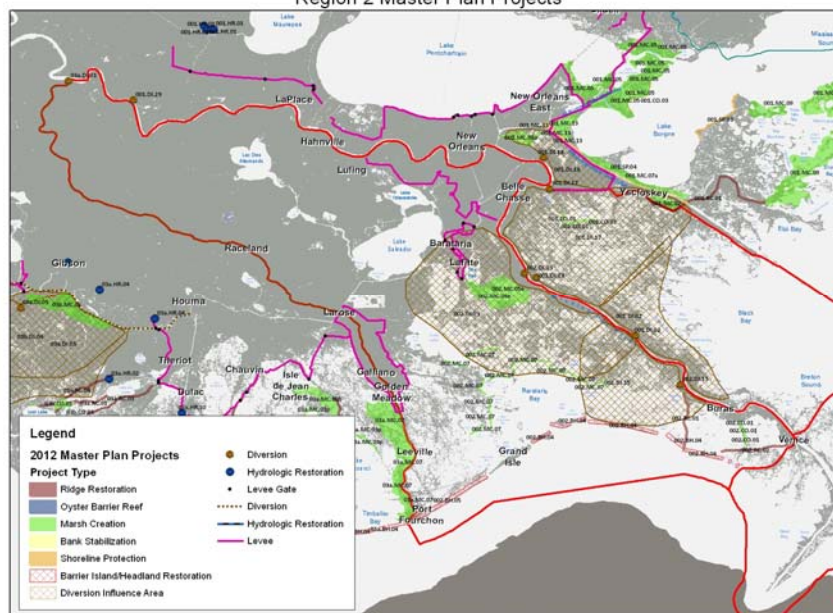
Email: Brad.L.Inman@usace.army.mil

(this information is on the back of the agenda)



CWPPRA

2012 State Master Plan
Region 2 Master Plan Projects

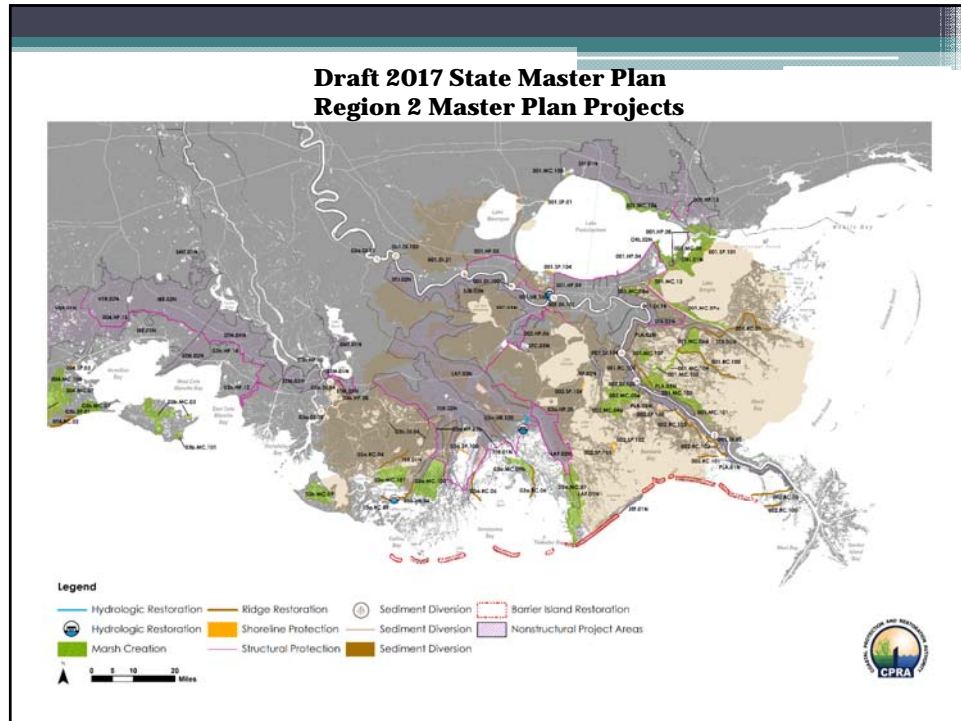


CWPPRA

Project Type	Project Name	Project Costs	Project No.
Barrier Island/Headland Restoration	Barataria Pass to Sandy Point Barrier Island Restoration: Restoration of Barataria Bay barrier islands between Barataria Pass and Sandy Point to provide dune and back barrier marsh habitat and to provide storm surge and wave attenuation for the Barataria Basin.	\$535M	002.BH.04
Barrier Island/Headland Restoration	Belle Pass to Caminada Pass Barrier Island Restoration: Restoration of Barataria Bay barrier islands between Belle Pass and Caminada Pass to provide dune, beach, and back barrier marsh habitat and to provide storm surge and wave attenuation for the Barataria Basin.	\$281M	002.BH.05
Marsh Creation	Grand Liard Marsh/Ridge Restoration: Restoration of 560 acres of marsh and historic ridge in the vicinity of Grand Liard to provide wetland and upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	\$34M	002.CO.01
Marsh Creation	Large-Scale Barataria Marsh Creation-Component E (1st Period Increment): Creation of approximately 8,070 acres of marsh in the Barataria Basin to address the Barataria Landbridge to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	\$495M	002.MC.05e
Marsh Creation	Large-Scale Barataria Marsh Creation-Component E (2nd Period Increment): Creation of approximately 8,070 acres of marsh in the Barataria Basin to address the Barataria Landbridge to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	\$1,980M	002.MC.05e
Marsh Creation	Barataria Bay Rim Marsh Creation: Creation of approximately 2,010 acres of marsh along northern rim of Barataria Bay to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	\$216M	002.MC.07
Marsh Creation	South Lake Lery Marsh Creation: Creation of approximately 450 acres of marsh along the south shore of Lake Lery to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	\$36M	001.CO.01

CWPPRA

Project Type	Project Name	Project Costs	Project No.
Ridge Restoration	Bayou Long Ridge Restoration: Restoration of approximately 49,000 feet (110 acres) of historic ridge along Bayou Long/Bayou Fontanelle to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	\$37M	002.RC.01
Ridge Restoration	Spanish Pass Ridge Restoration: Restoration of approximately 53,000 feet (120 acres) of historic ridge along the banks of Spanish Pass near Venice to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	\$43M	002.RC.02
Ridge Restoration	Bayou LaLoutre Ridge Restoration: Restoration of approximately 117,000 feet (270 acres) of historic ridge along Bayou LaLoutre to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	\$61M	001.RC.01
Sediment Diversion	Mid-Barataria Diversion (250,000 cfs- 1st Period Increment): Sediment diversion into mid-Barataria in the vicinity of Myrtle Grove to build and maintain land, maximum capacity 50,000 cfs (modeled at 50,000 cfs when the Mississippi River flow exceeds 600,000 cfs, at 8% of river flows between 200,000-600,000 cfs, and no operation below 200,000 cfs). NOTE: This project is the first implementation period component of a 250,000 cfs diversion to mid-Barataria. The influence area shown is for the total 250,000 cfs project upon completion in the second implementation period.	\$275M	002.DI.03
Sediment Diversion	Mid Barataria Diversion (250,000 cfs- 2nd Period Increment): Sediment diversion into Mid-Barataria in the vicinity of Myrtle Grove to build and maintain land, 250,000 cfs capacity. NOTE: This project represents the incremental expansion of the 50,000 cfs diversion (002.DI.03) to mid-Barataria (constructed in the 1st Implementation Period) for a total capacity of 250,000 cfs (modeled at 250,000 cfs when Mississippi River flow exceeds 900,000 cfs, at 50,000 cfs for river flows between 600,000-900,000 cfs, at 8% of river flows between 200,000-600,000 cfs, and no operation when river flow is below 200,000 cfs).	\$820M	002.DI.03a
Sediment Diversion	Lower Barataria Diversion (50,000 cfs): Sediment diversion into lower Barataria Bay in the vicinity of Empire, 50,000 cfs capacity (modeled at capacity when Mississippi River flow exceeds 600,000 cfs; modeled at 8% of river flow from 600,000 cfs down to 200,000 cfs; no operation below 200,000 cfs).	\$203M	002.DI.15
Sediment Diversion	Lower Breton Diversion (50,000 cfs): Sediment diversion into lower Breton Sound in the vicinity of Black Bay to build and maintain land, 50,000 cfs capacity (modeled at 50,000 cfs when Mississippi River flow exceeds 600,000 cfs, at 8% of river flows between 200,000-600,000 cfs, and no operation when river flow is below 200,000 cfs).	\$212M	001.DI.02





ATTENDANCE RECORD



DATE	SPONSORING ORGANIZATION	LOCATION
February 2, 2017 10:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	USFWS SE LA Refuges Complex 61389 Hwy 434 Lacombe, LA 70445
PURPOSE		
MEETING OF THE REGIONAL PLANNING TEAM REGION I & 2		
PARTICIPANT REGISTER		
NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
David Brunet	St Tammany Parish	898-2442
Lonnie Fontenot	JESCO (minute-taker)	337-802-7508
ERIC ZOLLINGER	BICOXI MARSH LANDS CORP.	(504) 837-4337
Hope Borne	St. James Parish	(225) 562-2286
Midley Rousseau	" "	225-202-8278
Jason Kroll	NOAA	225-757-5411
Brandon Owens	NOAA FRT	985-351-0353
Robert Spears	Plaquemines Parish CZM	504-491-1607
ACTON James Jo	USDA - NPS	
BARRY HERBERT	LDWF	225-765-0233
Sharon Osowski	EPA	214-665-7506
Michael Bortling	MARINE CARDENS	504 430 8902
Rob Delaune	Digital Engineering	504-468-6129
Travis Byland	CPRA	225-342-6750
Greg Matten	CPRA	225-342-4496
Wes LeBlanc	CPRA	225 342-4127
Quin Kinkler	NRCS	225-665-4253
Cindy Steyer	NRCS	" xt 111
Don Boultang	NRCS	337 291-3067
RICHTER LEONHARD	PES	504-377-9706
Chris Cannon	Living Blanche +	504-432-7004
Blaise Petzold	LDAF CRVP	504-264-8125



ATTENDANCE RECORD



DATE	SPONSORING ORGANIZATION	LOCATION
February 2, 2017 10:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	USFWS SE LA Refuges Complex 61389 Hwy 434 Lacombe, LA 70445
PURPOSE		
MEETING OF THE REGIONAL PLANNING TEAM REGION I & 2		
PARTICIPANT REGISTER		
NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
Charles Sasser	LSU	225 578 6375
Cody Colvin	NRCS	225-278-2732
Tyler Olney	Coastal Resilience Group	225-372-5520
Robert Dubois	FWS	337-291-3127
Tracy Chastwood	NOAA / NMFS	225 389 0502
Danka Davis	NOAA / NMFS	225 389 0508
Tracy Kuhns	GO Fish Coalition	504-289-7162
JOHN LANG	SBPG Coastal	504 579-2173
Capt. George Ricks	SBPG COASTAL CONSULTANT ^{Pres.} SLCC	985-630-2923
Terry Graves	consultant, SBPG	(504) 343 4041
Evelyn Campo	St. John the Baptist Planning	(504) 579-6103
Shane Granier	Biologist CDWF	504 284 5264
Annanda Voisin	Lafourche Parish Gov't	985-493-6616
John Boatman	NRCS	985-331-9084
Patrick Williams	NOAA Fisheries	225-389-0508
Carol Giardin	LCCA	504 331 5326
KENNETH ROBERTS	PLA. Parish Landowner	504-309-6654
Jason Smith	Jefferson Parish	504 731-4612
Seamus Riley	Jefferson Parish	504-731-4612
Ron HARPER	New Orleans	504-658-4071
Amanda Phillips	Sec. Treas. Edward Wisner Donation	504-210-1152
Kent Bollfrass	CPR	225-342-4733



REGION 2 – BARATARIA BASIN

Project Number	Project Proposals
R2-BA-01	Grand Bayou Ridge and Marsh Restoration
R2-BA-02	East Bayou Lafourche Marsh Creation
R2-BA-03	Coffee Bay Marsh Creation and Shoreline Protection
R2-BA-04	Barataria Bay Waterway East Marsh Creation
R2-BA-05	Northeast Turtle Bay Marsh Creation and Critical Area Shoreline Protection
R2-BA-06	North Fourchon Marsh Creation Project
R2-BA-07	Elmer's Island Backbarrier Marsh Creation
R2-BA-08	Wilkinson Canal Marsh Creation
R2-BA-09	Bayou Long Ridge Restoration

R2-BA-01

Grand Bayou Ridge and Marsh Restoration

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name

Grand Bayou Ridge and Marsh Restoration

Project Location

Region 2, Barataria Basin, Plaquemines Parish, Grand Bayou near West Pointe a la Hache

Problem

Within the Lake Hermitage basin, between Bayou Grande Cheniere and the Mississippi River, significant marsh loss has occurred with the construction of oil/gas canals, subsidence, and sediment deprivation. From examination of aerial photography, it appears that 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 (1984-2011) conducted by USGS for the PPL24 candidate project, loss rates in the area are estimated to be -1.49% per year.

Goals

The primary goals of this project are; 1) create forested, coastal ridge habitat along the western bank of Grand Bayou, 2) restore marsh habitat in the open water areas via marsh creation and terracing, and 3) reduce fetch and wave energy in open water areas via the construction of terraces. Specific goals of the project are: 1) Create approximately 11,000 feet (22 acres) of forested ridge; 2) create approximately 366 acres of marsh with dredged material from the Mississippi River; and 3) create 21,700 linear feet (15 acres) of terraces.

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 and Louisiana eyed silkmoth, which are both petitioned for listing as threatened/endangered species. The project could also benefit other species of concern including the peregrine falcon, osprey, mottled duck, seaside sparrow, and neotropical migrants.

Proposed Solution

1. Riverine sediments will be hydraulically dredged and pumped via pipeline to create 22 acres of ridge habitat and create/nourish approximately 366 acres of marsh.
2. Approximately 21,700 linear feet (15 acres) of terraces will be constructed.
3. Containment dikes will be gapped and the ridge and terraces will be planted.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?* Approximately 800 acres would be benefited directly and indirectly. Direct benefits include 22 acres of forested, coastal ridge habitat, 366 acres of marsh creation, and 15 acres of terraces. Indirect benefits would occur to surrounding marshes and within the terrace field.

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 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 created.

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 would provide a synergistic effect with the BA-173 Bayou Grande Cheniere Marsh and Ridge Restoration Project (Phase 1), the BA-42 Lake Hermitage Marsh Creation Project (Completed; PPL15) and the West Pointe a la Hache Siphons.

Identification of Potential Issues

Oil and gas infrastructure.

Preliminary Construction Costs

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

Preparer of Fact Sheet

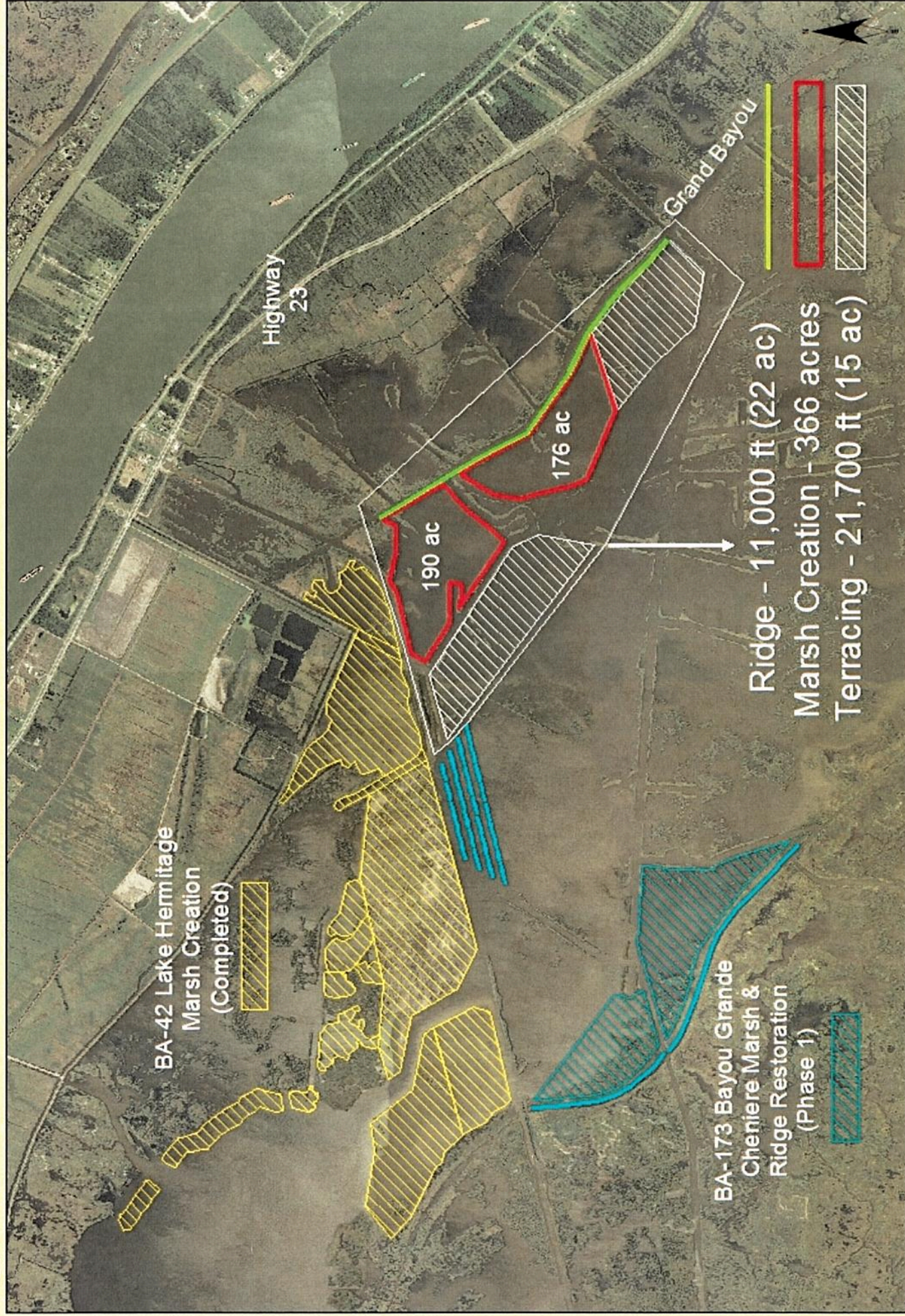
Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov

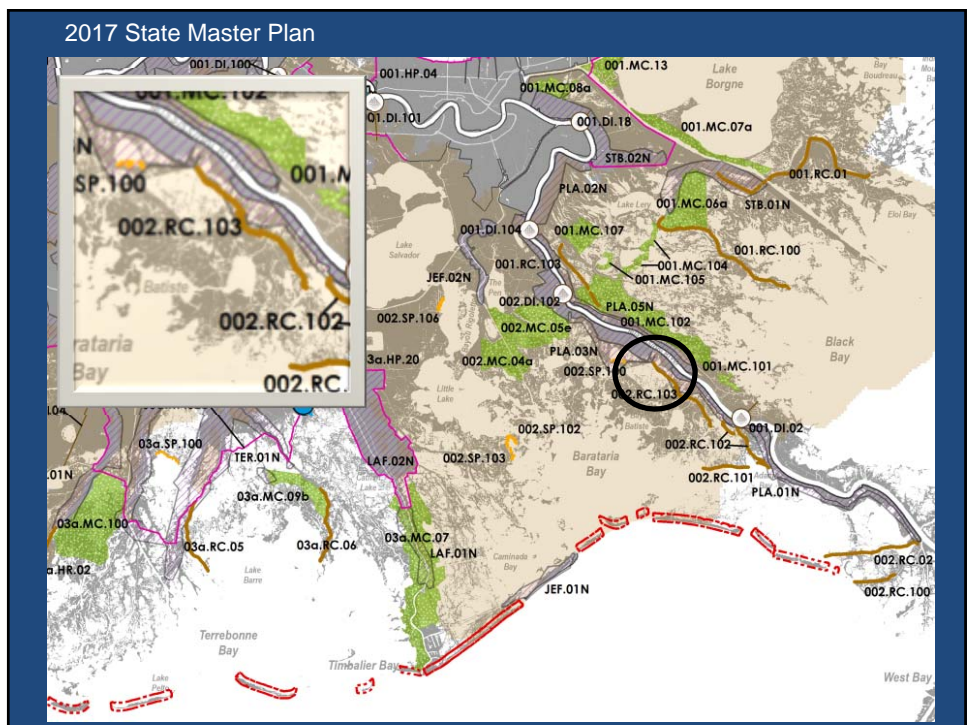


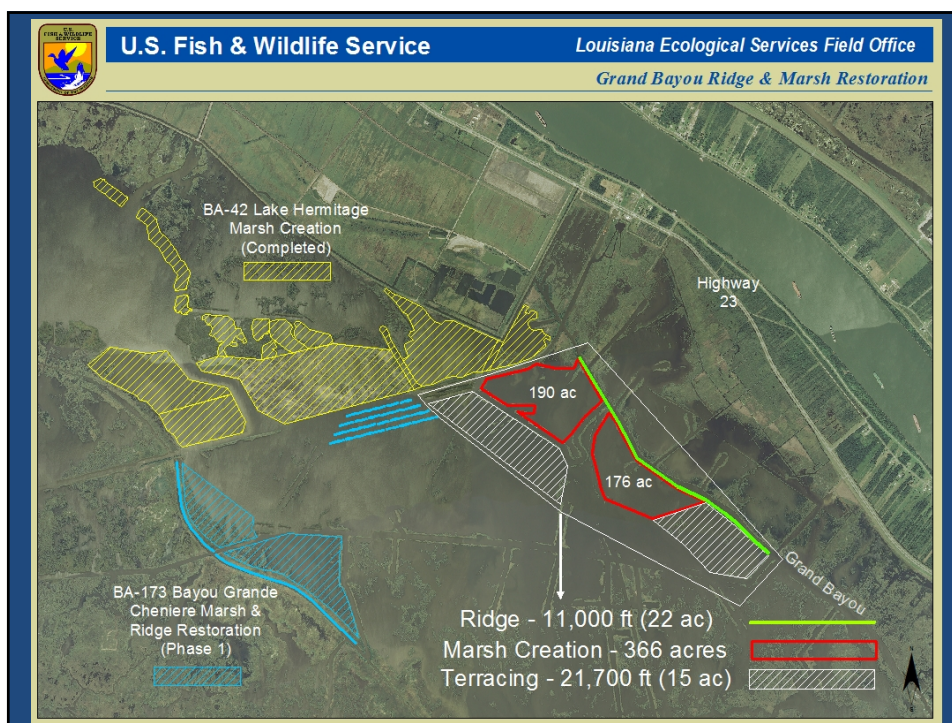
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Grand Bayou Ridge & Marsh Restoration







Grand Bayou Ridge and Marsh Restoration

- Mississippi River borrow site
- 11,000 ft (22 acres) of ridge restoration
- 366 acres of marsh creation/nourishment
- 21,700 feet of terraces (15 acres)
- Net acres = 300 - 350
- Construction plus contingency = \$30M - \$35M
- Project synergy - BA-42, BA-173, Siphons
- Infrastructure nearby

R2-BA-02

East Bayou Lafourche Marsh Creation

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

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 Leeville area has experienced extensive loss of emergent wetlands from subsidence, storms, canal dredging, and altered hydrology. Wetland loss has increased the vulnerability of Leeville and Louisiana Highway 1 to damage from tropical storms. Based on the hyper-temporal analysis conducted by USGS for the PPL26 candidate, the project area loss rate is estimated to be -1.42% per year for the period 1984 to 2016.

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 (368 acres of marsh creation and 49 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 black rail and Louisiana eyed silkmoth, which are both petitioned for listing as threatened/endangered species. The project could also benefit other at-risk species including the peregrine falcon, osprey, diamondback terrapin, and seaside sparrow.

Proposed Solution

Sediments from a Little Lake 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.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?*
Approximately 417 acres would be benefited directly. Direct benefits include 368 acres of marsh creation and 49 acres of marsh nourishment. Indirect benefits would occur to marsh surrounding the project area.
- 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 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 restore marsh along what remains of the historical natural levee ridge along Bayou Lafourche.

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

Some protection could be afforded to Highway 1, which is not elevated along this reach.

- 6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*

The project is complementary to the BA-194 East Leeville Marsh Creation Project. Both projects would restore marsh along the Bayou Lafourche/Hwy 1 corridor.

Considerations

Oil and gas infrastructure (i.e., pipelines) and oyster leases would have to be considered in the project design.

Preliminary Costs

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

Preparer of Fact Sheet

Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov



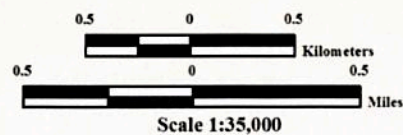
East Bayou Lafourche Marsh Creation (PPL26 Candidate)



Marsh Creation *

Project Boundary

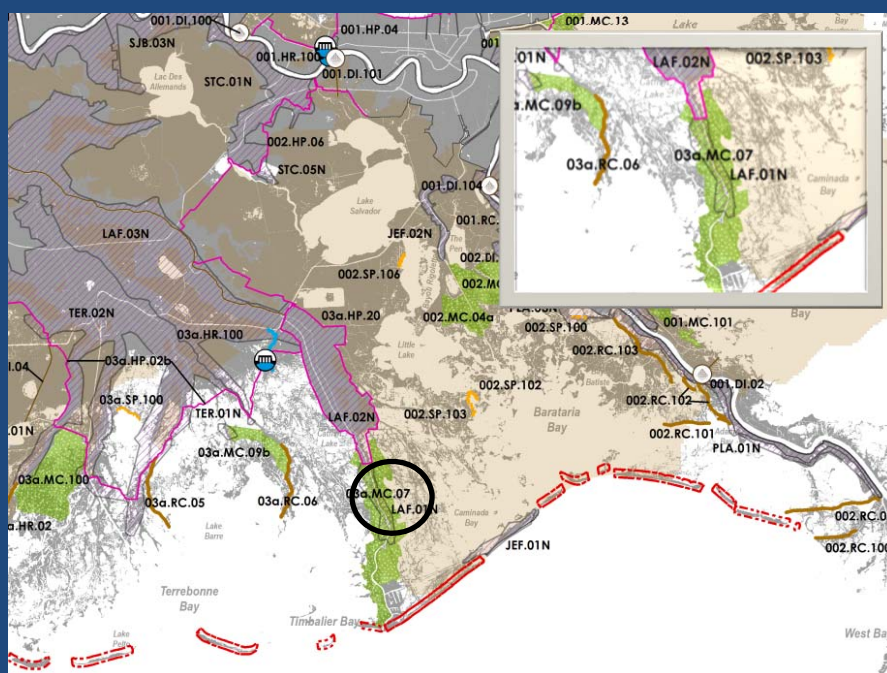
* denotes proposed features

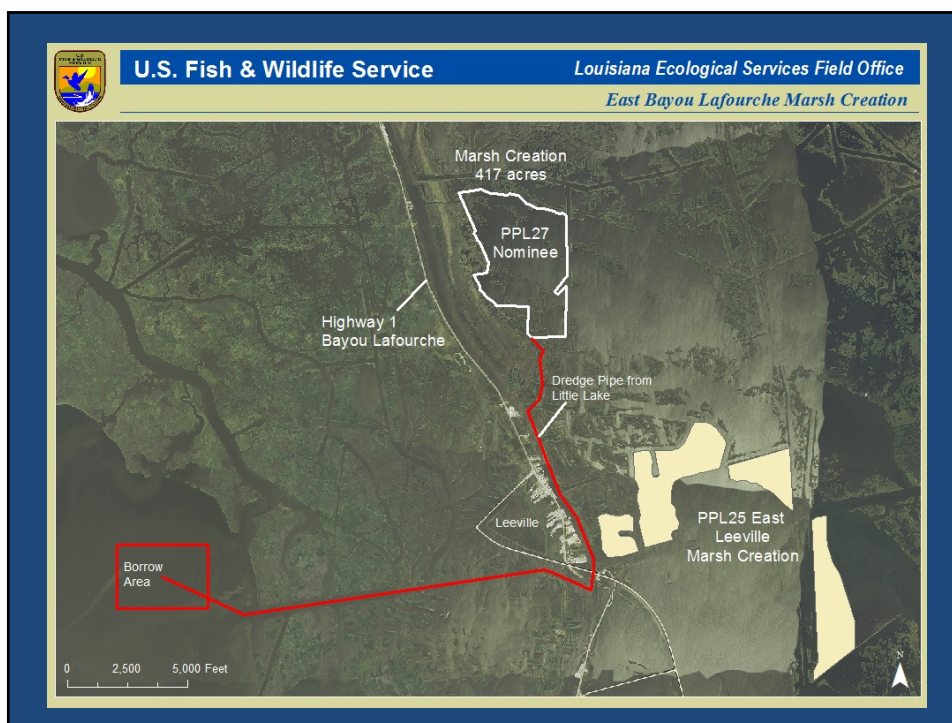


Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2016-11-0026
Map Date: June 20, 2016





East Bayou Lafourche Marsh Creation

- Little Lake borrow site
- 417 acres of marsh creation/nourishment
- Net acres = 300 - 350
- Construction plus contingency = \$25M - \$30M
- Project synergy – BA-194 East Leeville Marsh Creation (Phase 1)

R2-BA-03

Coffee Bay Marsh Creation and Shoreline Protection

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name: Coffee Bay Marsh Creation and Shoreline Protection

Project Location:

Region 2, Barataria Basin, Lafourche Parish, southwest of Little Lake

Problem:

Historic wetland loss in the area was caused mainly by altered hydrology from canals and levees, wind erosion and the shoreline of Little Lake, sediment deprivation, and natural subsidence. Based on the hyper-temporal analysis conducted by USGS for the extended project boundary of the Northwest Turtle Bay project during PPL21 analysis, loss rates in the area are estimated to be -0.61% per year for the period 1984 to 2011. Using maps from 1998 and 2013, shoreline erosion rates were calculated along the Coffee Bay area. Shoreline erosion rates in that area ranged from 8 ft/yr to 70 ft./yr. A 28,616 LF section of shoreline was estimated to have an average erosion rate of 22 ft./yr.

Goals:

The goals of the project are to 1) protect approximately 23,000 LF of critical shoreline, 2) protect approximately 150 acres of marsh habitat, and 3) create approximately 255 acres of marsh with material dredged from Little Lake and 4) create approximately 8,000 LF of terraces (5 acres of marsh).

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

Proposed Solutions:

With the currently proposed project, 22,000 ft. of rock revetment and 2,000 ft. of foreshore rock dike would be constructed to protect approximately 23,000 feet of critical shoreline and preserve approximately 150 acres of existing marsh. The rock revetment would be constructed to a settled height of +2.5 ft. and the foreshore rock dike would be built along the -2.0 foot contour and built to a settle height of +2.5 ft.

The currently proposed project would also create approximately 255 acres of marsh using sediment hydraulically dredged from Little Lake. Existing canal spoil banks, emergent marsh, and segments of containment dikes will be used to contain the dredge material. Containment dikes will be degraded/gapped as necessary to reestablish hydrologic connectivity with adjacent wetlands. The current proposal would also create approximately 8,000 LF of terraces (5 acres of marsh) in strategic areas. There are several alternative/additional sites for terraces, marsh creation, and/or marsh nourishment.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* Approximately 515 acres would be directly benefited.

2) *How many acres of wetlands will be protected/created over the project life?* The total net acres protected/created over the project life are approximately 371 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%).* Loss rate reduction should be >75%.

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 contribute to protection of the Central Barataria Basin Landbridge, protect a portion of the Little Lake shoreline, and give some protection to the Bayou L'Ours Ridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?* There are numerous camps and several oil and gas facilities that would be protected with this project as well as numerous pipelines benefiting from a reduction of cover.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would work in sync with BA-2, BA-27, BA-20, BA-23, BA-03a, BA-26, BA-36 (and associated CIAP project), and BA-41, contributing to protection of the Central Barataria Basin Landbridge.

Identification of Potential Issues:

The proposed project has the following potential issues: there are pipelines in the project area and in Little Lake. Little Lake is designated as an oyster seed ground. There is a nearby existing borrow site (BA-37) that is cleared for dredging.

Preliminary Construction Costs:

The estimated construction cost including 25% contingency is \$26 M.

Preparer(s) of Fact Sheet:

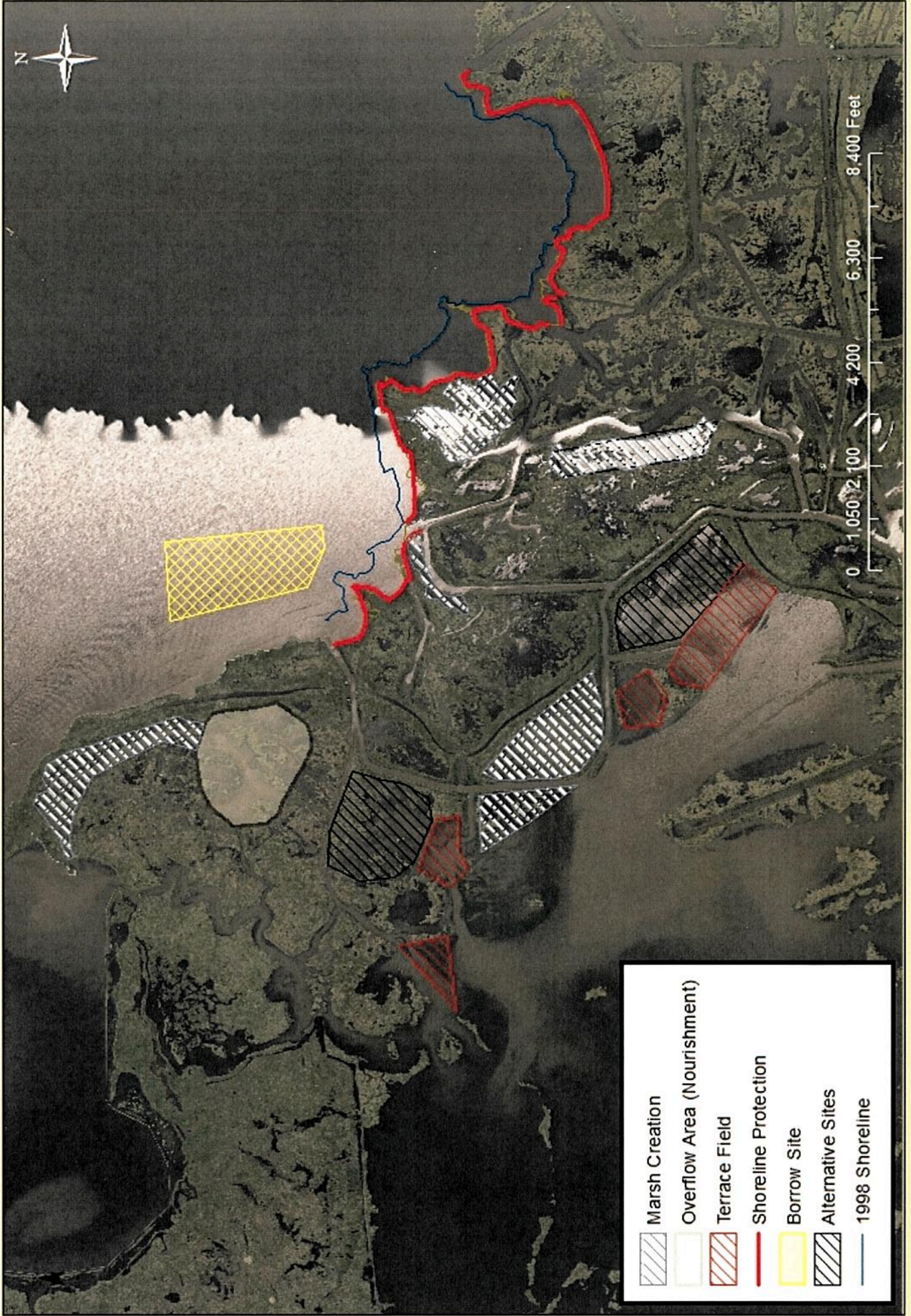
Robert Dubois (337) 291-3127 robert_dubois@fws.gov



U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office³

PPL27 Coffee Bay Marsh Creation and Shoreline Protection





COFFEE BAY SHORELINE PROTECTION AND MARSH CREATION





COFFEE BAY SHORELINE PROTECTION AND MARSH CREATION

Problem:

- **Shoreline Erosion**
- **Erosion rates between 10-70 ft./yr.**
- **Used an Average erosion rate of 22 ft./yr.**



COFFEE BAY SHORELINE PROTECTION AND MARSH CREATION

Solution:

- Build 22,000 ft. of rock revetment and 2,000 ft. of foreshore dike, to a height of +2.5 ft.
- Hydraulically dredge material from Little Lake water bottom to create 255 acres of marsh.
- Construct 8,000 lf of Terraces (5 acres of Marsh).

COFFEE BAY SHORELINE PROTECTION AND MARSH CREATION

Goals:

- Restore 23,000 ft. of Shoreline along Coffee Bay
- Protect 150 acres of natural marsh
- Create 255 acres of marsh

Net Acres:

- Total net acres = 371 acres

Potential Issues:

- Pipelines within the project area .

Preliminary Construction Costs

- The estimated construction cost plus 25% contingency \$26 M.

Species of Concern and Rare Species

- **Least Bittern**
- **Black Rail**
- **Mottled Duck**
- **Saltmarsh topminnow**
- **Brown Pelican**
- **Louisiana Eyed Silkmoth**
- **King Rail**

R2-BA-04

Barataria Bay Waterway East Marsh Creation

PPL27 PROJECT NOMINEE FACT SHEET
January 26, 2017

Project Name

Barataria Bay Waterway East Marsh Creation

Project Location

Region 2, Barataria Basin, Jefferson Parish

Problem

The marshes located east of the Barataria Bay Waterway and north of the Bayou Barataria ridge have completely converted to open water. This loss of marsh was caused by subsidence, sediment deprivation, and construction of access canals, including Barataria Waterway.

Goals

The goal of the project is to create approximately 240 acres of marsh with dredged material from the Mississippi River.

Proposed Solution

The proposed project would create approximately 240 acres of marsh using sediment dredged from the Mississippi River. The dredged material would be fully contained. 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 estimated cost includes funds to plant 50% of the created marsh.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?* 240 acres directly benefited; indirect benefit not yet determined.

2) *How many acres of wetlands will be protected/created over the project life?* 227 net 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)?* Background loss rate currently estimated to be -0.79%/year. The anticipated land loss rate reduction throughout the area of direct benefits will be 50% 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?*
 The project will serve to complete a band of healthy marsh extending from the Bayou Barataria ridge northward to Bayou Dupont.

5) *What is the net impact of the project on critical and non-critical infrastructure?* This project would buffer the effect of tropical weather events for the communities of Lafitte and Barataria which lie to the north.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would be synergistic with the CWPPRA BA-41

and BA-48 projects, the State-only small-dredge marsh creation project, and the BA-43 Mississippi River Long Distance Sediment Pipeline Project expanding a band of healthy marsh extending from the Bayou Barataria ridge northward to Bayou Dupont.

Identification of Potential Issues

The proposed project has the following potential issues: pipeline(s) would have to be avoided for containment dikes.

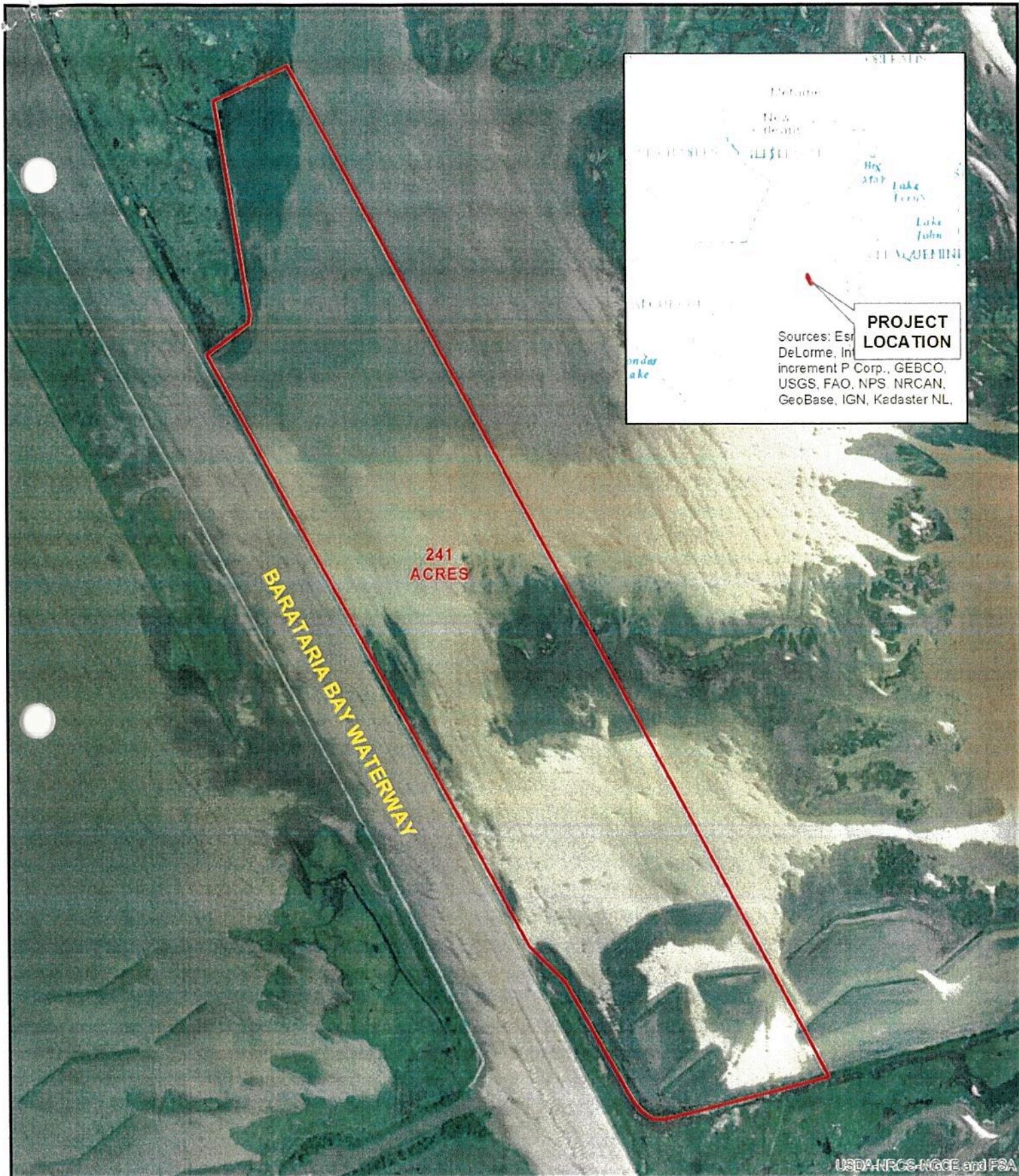
Preliminary Construction Cost

\$28 million (\$35 million with 25% contingency)

Preparers of Fact Sheet:

Quin Kinler, USDA-NRCS, 225-665-4253 ext 110, quin.kinler@la.usda.gov

Cody Colvin, USDA-NRCS, 225-665-4253 ext 109, cody.colvin@la.usda.gov



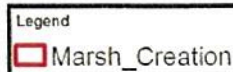
Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source: NAIP 2015

Map Date: JANUARY 10, 2017



**PPL-27 BARATARIA BAY
WATERWAY
EAST MARSH CREATION
JEFFERSON PARISH, LA**



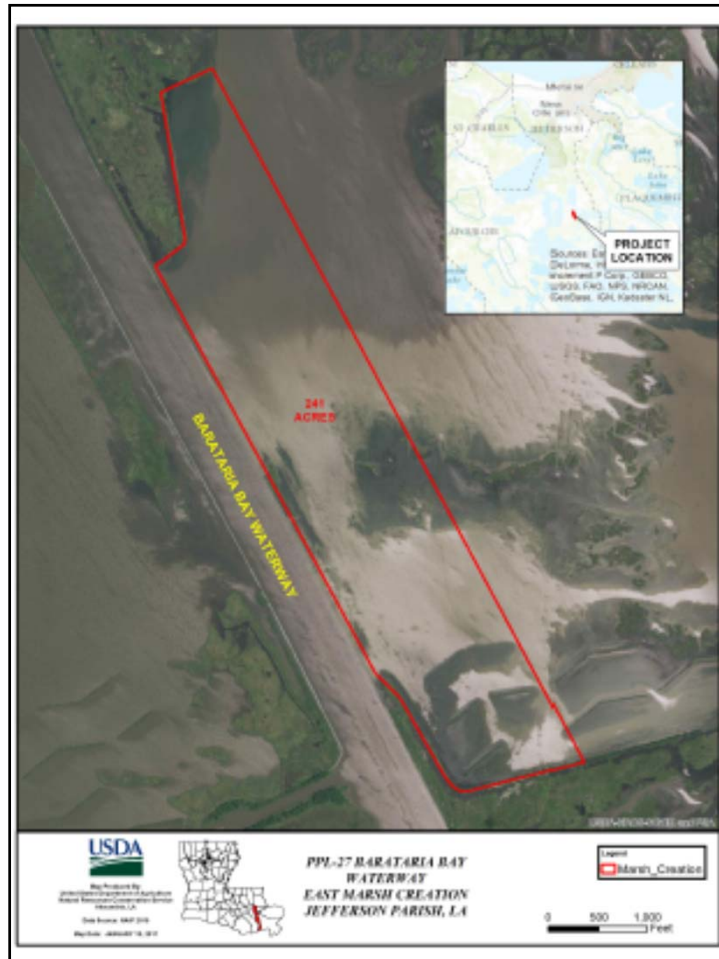
0 500 1,000
Feet

PPL 27
Regional Planning Team
February 2, 2017

Region 2
Barataria Basin

Barataria Bay Waterway East
Marsh Creation





BBWW East MC

- 240 acres of marsh creation
- Furthers concept of Long Distance Dredge Project
- Preliminary Construction Cost \$28M (\$35M w/ 25% contingency)

R2-BA-05

**Northeast Turtle Bay Marsh Creation and Critical Area
Shoreline Protection**

PPL27 PROJECT NOMINEE FACT SHEET
January 26, 2017

Project Name

Northeast Turtle Bay Marsh Creation and Critical Area Shoreline Protection

Project Location

Region 2, Barataria Basin, Jefferson Parish, northeast of Turtle Bay

Problem

Historic wetland loss in the area occurs in the form of shoreline erosion along Turtle Bay and interior marsh loss. The interior loss is caused by subsidence, sediment deprivation, and construction of access and pipeline canals. Based on analysis conducted by USGS, loss rates in the area are estimated to be -0.44% per year for the period 1985 to 2016. Shoreline erosion along the northeast shore of Turtle Bay, in the area proposed to be addressed by this project, is approximately 3 to 4 feet per year. While this rate may not seem excessive, this reach of shoreline is very narrow and loss of this shoreline would connect Turtle Bay to a large lagoon, greatly altering the hydrology of the marsh.

Goals

The goals of the project are to 1) create approximately 515 acres of marsh and nourish approximately 249 acres of marsh (764 acres total) with dredged material from the Mississippi River, 2) protect approximately 2,335 feet of critical shoreline, and 3) prevent further enlargement of two primary water exchange points.

Proposed Solution

The proposed project would create approximately 515 acres and nourish approximately 249 acres of marsh using sediment dredged from the Turtle Bay. Two types of containment will be utilized for this project: semi-contained and fully contained. For the semi-contained portion, there will be approximately 56 acres of marsh creation and 106 acres of marsh nourishment. For the fully contained portion, there will be approximately 459 acres of marsh creation and 143 acres of marsh nourishment. Containment dikes will be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands. Approximately 2,335 feet of critical shoreline would be protected and two channel liners would be installed to prevent further enlargement of two primary water exchange points. Maintenance of the shoreline protection feature and channel liners would be included. 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.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?* 764 directly benefited; indirect benefit not yet determined.
- 2) *How many acres of wetlands will be protected/created over the project life?* 502 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 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?* This project would contribute to protection of the Central Barataria Basin Landbridge.

5) *What is the net impact of the project on critical and non-critical infrastructure?* The communities of Lafitte and Barataria lie to the north of this important landmass which serves to buffer the effect of tropical weather events. Numerous pipelines would benefit from reducing land loss in the area.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would work in sync with BA-2, BA-27, BA-20, BA-23, BA-03a, BA-26, BA-36 (and associated CIAP project), and BA-41, contributing to protection of the Central Barataria Basin Landbridge.

Identification of Potential Issues

The proposed project has the following potential issues: no issues presently identified.

Preliminary Construction Costs

\$26 million (\$33 million with 25% contingency).

Preparers of Fact Sheet:

Quin Kinler, USDA-NRCS, 225-665-4253 ext 110, quin.kinler@la.usda.gov

Cody Colvin, USDA-NRCS, 225-665-4253 ext 109, cody.colvin@la.usda.gov



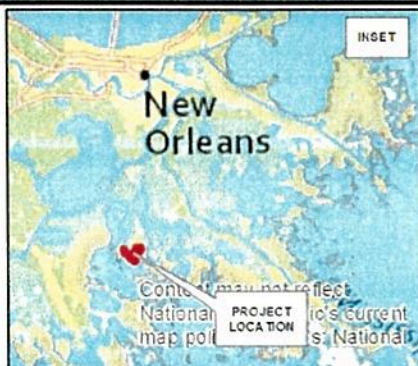
USDA NRCS-NGCE and FSA



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

Data Source: NA P 2015

Map Date: JANUARY 10, 2017



PPL 27 NE TURTLE BAY MARSH CREATION AND CRITICAL SHORELINE PROTECTION JEFFERSON PARISH, LA

Legend

- CHANNEL LINER
- PROJECT BOUNDARY
- SHORELINE PROTECTION
- MARSH CREATION
- MARSH NOURISHMENT

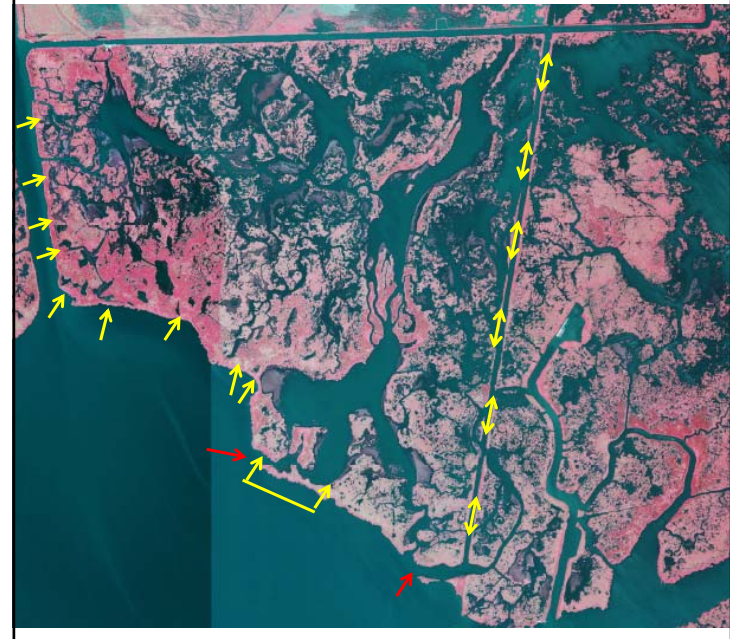
0 1,000 2,000
Feet

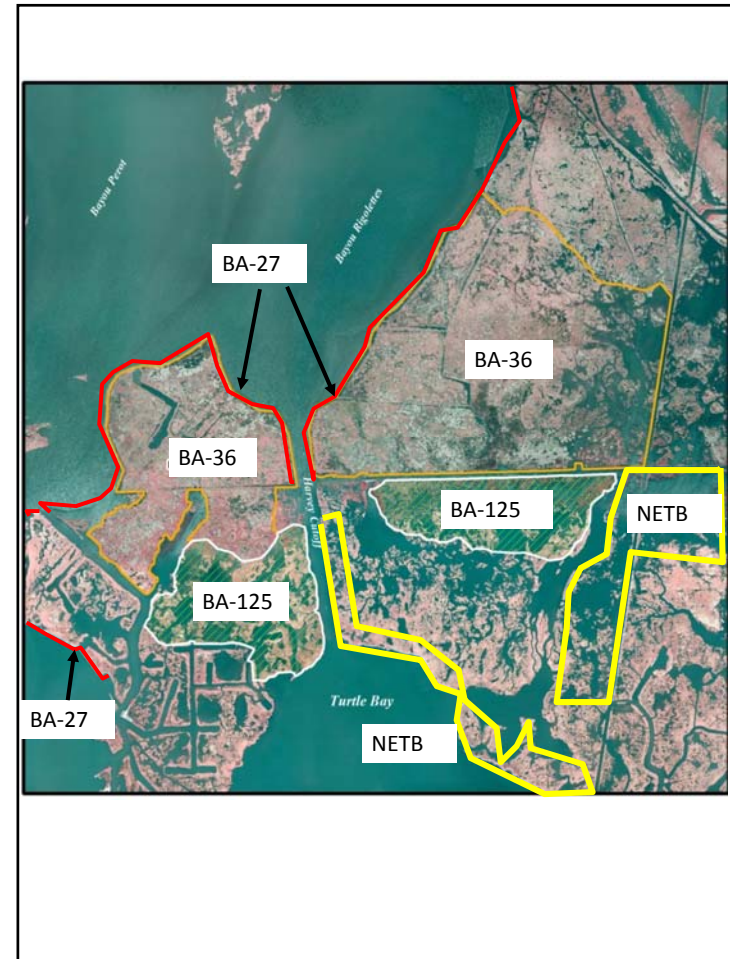
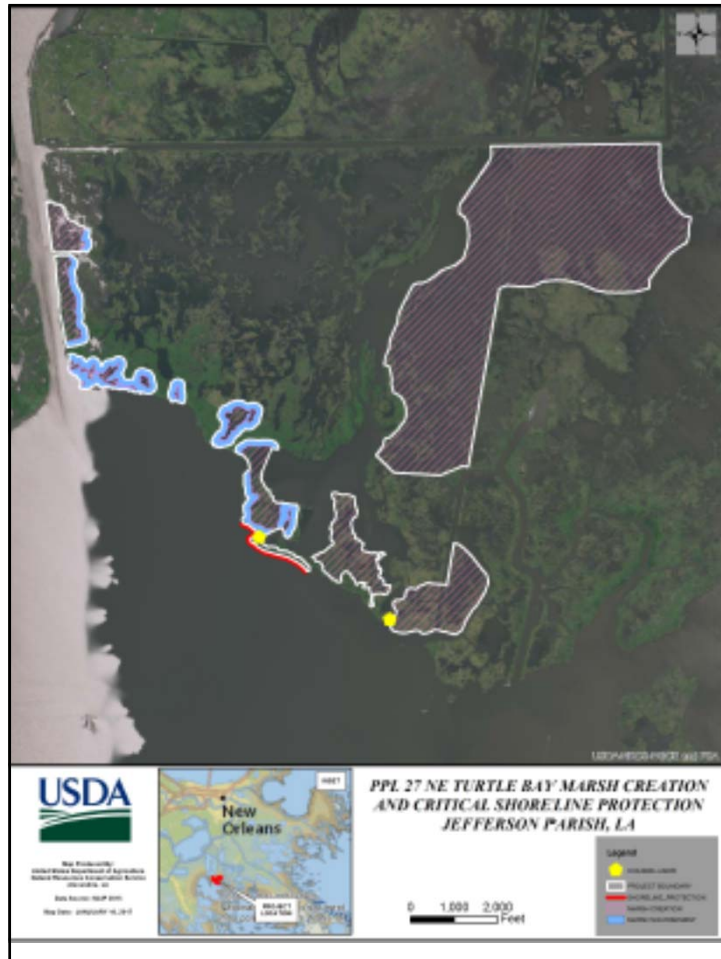
PPL 27
Regional Planning Team
February 2, 2017

Region 2
Barataria Basin

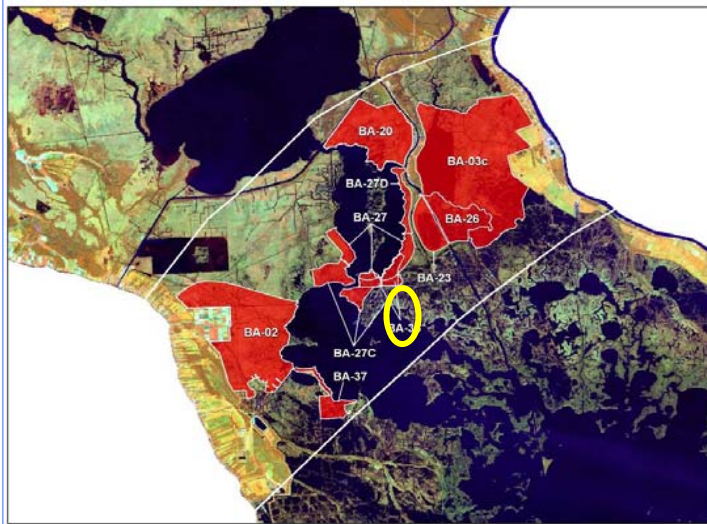
Northeast Turtle Bay
Marsh Creation and Critical
Shoreline Protection

- Potential Shoreline Breaches
- Enlargement of Existing Channels
- Water Exchange through Pipeline Canal
- Widespread Loss of Emergent Marsh





Barataria Basin Landbridge Concept



Northeast Turtle Bay

- 515 acres of marsh creation
- 249 acres of marsh nourishment
- 2,335 feet of critical shoreline protection
- 2 channel liners at primary water exchange points.
- \$26M (\$33M w/25% contingency)

R2-BA-06

North Fourchon Marsh Creation Project

PPL27 PROJECT FACT SHEET

February 2, 2017

Project Name

North Fourchon Marsh Creation Project

Master Plan Strategy

Belle Pass-Golden Meadow Marsh Creation (2017 Master Plan 03a.MC.07): Creation of approximately 24,800 acres of marsh from Belle Pass to Golden Meadow to create new wetland habitat and restore degraded marsh.

Project LocationRegion 2, ~~Terrebonne~~ Basin, Lafourche Parish**Problem**

Historic wetland loss in the project area stems from subsidence, sediment deprivation, and construction of pipeline canals. According to USGS data, nearly 324,000 ac of land were lost between 1932 and 2010 within the basin, which had the highest land loss rate in the state from 1985 to 2004. Wetlands have been replaced by open water where canals are dug, while spoil banks convert them to upland habitat. Bounded by Bayou Lafourche to the east and Timbalier Bay to the west the project area is also subject to shoreline erosion. Land loss rate is estimated at -1.56%

Proposed Solution

This project would create marsh habitat and increase the longevity of existing marsh habitat and provide protection to surrounding wetlands, Bayou Lafourche, and the community and infrastructure of Port Fourchon. Sediment for marsh creation would be mined in Timbalier Bay or Little Lake, hydraulically dredged and pumped to the marsh creation and nourishment cells.

Project Goals

Create/nourish approximately 476 ac of marsh using sediment dredged from Timbalier Bay or Little Lake.

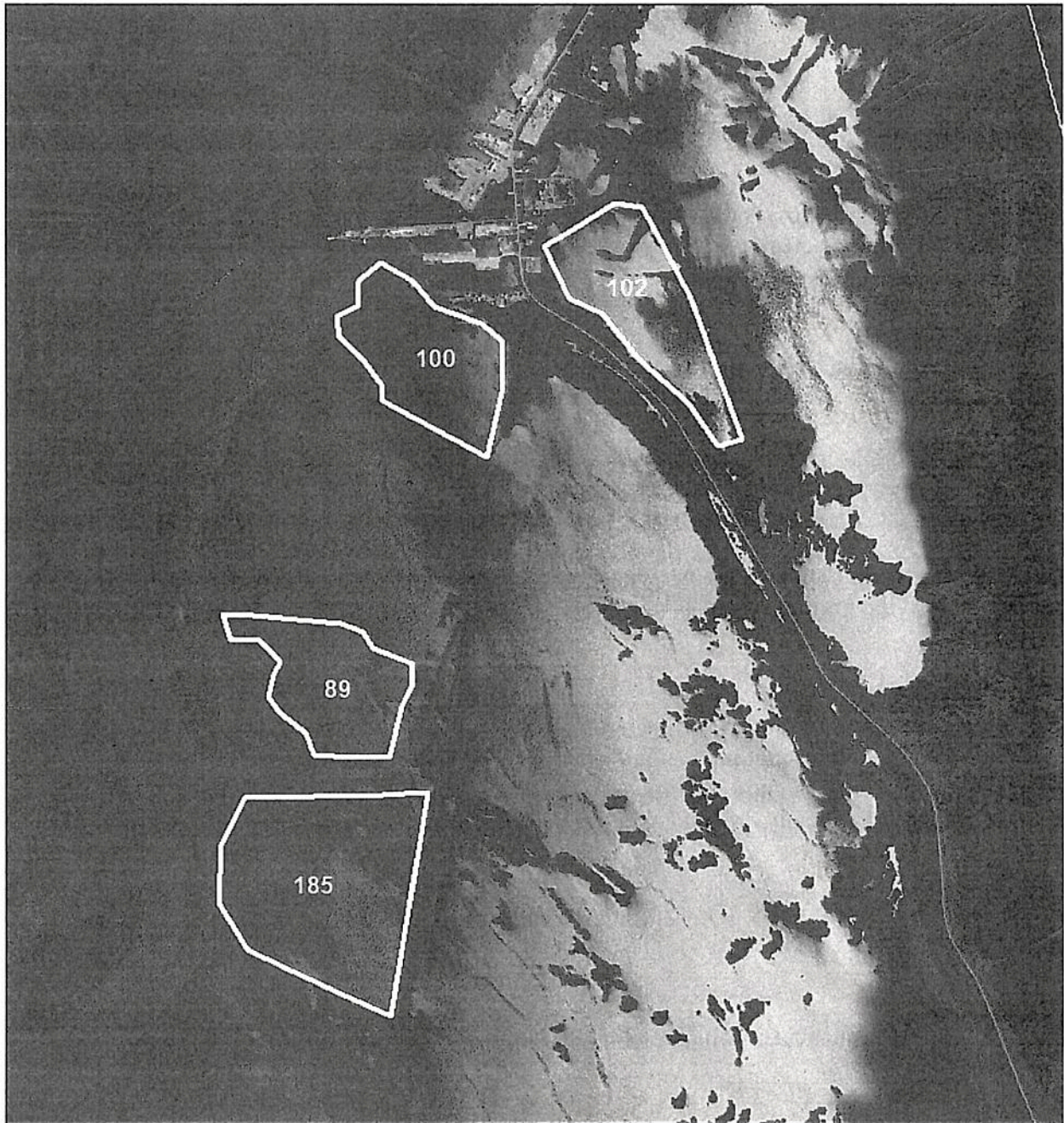
Project Costs

The preliminary project cost estimate with 25% contingency is \$27 million. The fully funded range is \$30M - \$35M.

Preparer(s) of Fact Sheet:

Adrian Chavarria, EPA; (214) 665-3103; chavarria.adrian@epa.gov

Sharon L. Osowski, Ph.D; EPA; (214) 665-7506; osowski.sharon@epa.gov



Fourchon Marsh Creation

LaFourche Mitt



Basemap: 2015 NAIP DOQQ - LaFourche Parish
Produced by: EPA Region 6, Dallas, TX



0 0.2 0.4 0.8 1.2 Miles

North Fouchon Marsh Creation

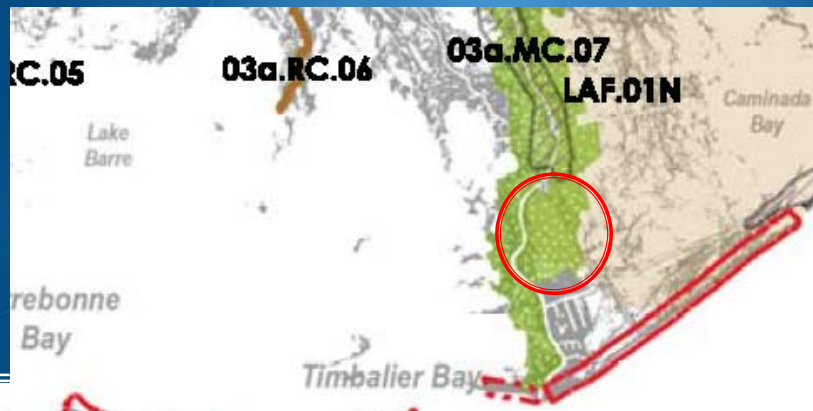


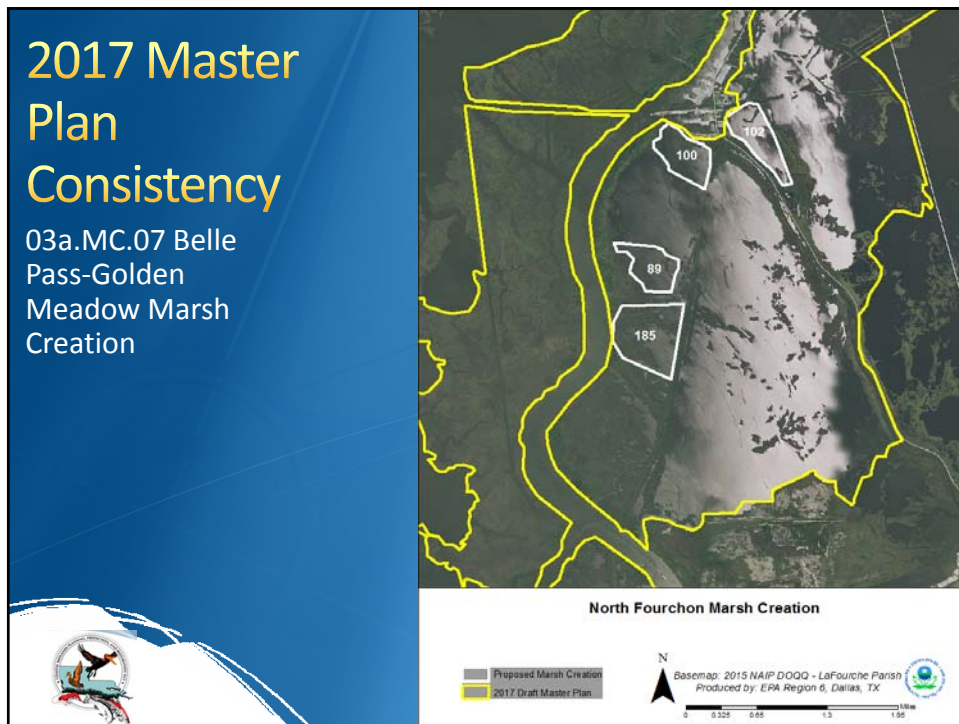
Coastal Wetlands Planning, Protection
and Restoration Act

2017 Master Plan Solution



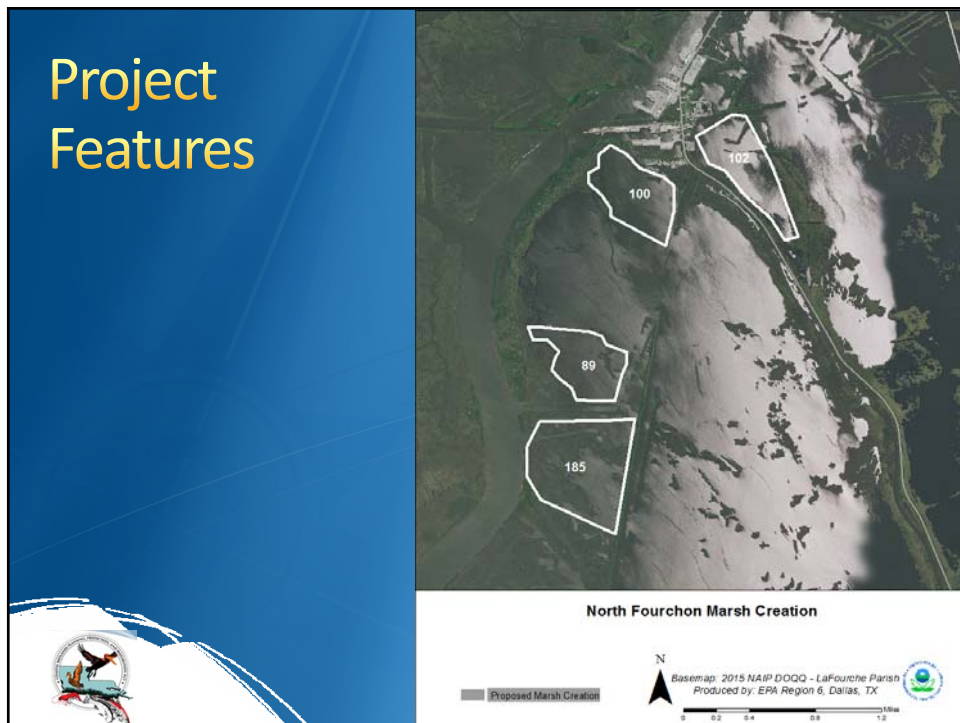
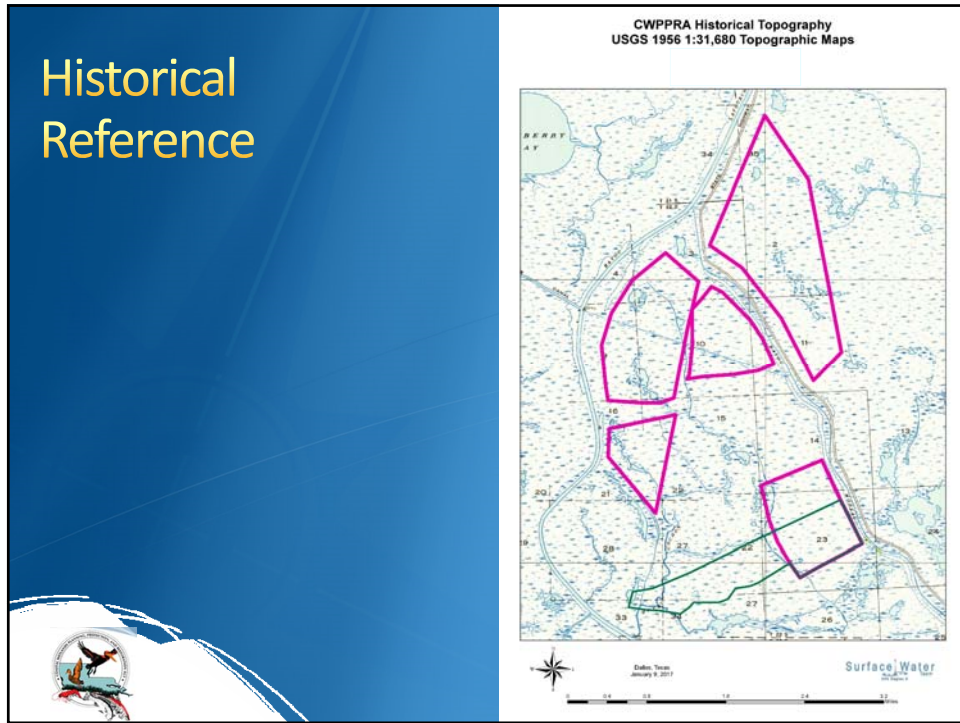
03a.MC.07 Belle Pass-Golden Meadow Marsh Creation: Creation of approximately 24,800 acres of marsh from Belle Pass to Golden Meadow to create new wetland habitat and restore degraded marsh.





Problems

- This area has experienced wetland loss due to:
 - Subsidence
 - Sediment deprivation
 - Erosion
 - Construction of pipeline canals
- The area had the highest land loss rate in the state from 1985-2004 (USGS)
- LaFourche Parish could be at risk for increased storm surge and flooding in the next 50 years (2017 MP).



Project Goals

- Create/nourish 476 acres emergent marsh with sediment from Timbalier Bay or Little Lake to increase the longevity of existing marsh habitat
- Provide protection for the community and infrastructure of the Port Fourchon area
- Estimated preliminary cost w/25% contingency is \$27 million. Fully funded cost range \$30-35M.



R2-BA-07

Elmer's Island Backbarrier Marsh Creation

PPL27 PROJECT NOMINEE FACT SHEET

February 2, 2017

Project Name

Elmer's Island Restoration

Project Location

Region 2, Barataria Basin, Jefferson Parish

Problem

As part of an erosional headland, Elmer's Island is dominated by marine processes including over wash. The island narrowed and decreased in elevation escalating the rate of over wash and breaching near the confluence with the headland as well as along Caminada Pass. The spit along the pass is breached. Resiliency to over wash and breaching is related to both island height and width. Construction of beach and dune under Caminada Beach and Dune Restoration Increment 2 Project (BA-143) is addressing sand and dune height needs. Residual vulnerability from breaching may remain due to island width. The loss rate in the project area is estimated to be -0.79%/year based on USGS hyper temporal data from 1984 to 2016.

Goals

The project goal is to create/nourish approximately 265 acres (ac) of back-barrier marsh and maintain or improve hydrology by connecting the lagoon to the Bayou Thunder Von Tranc and Moreau watershed west of Elmer's Road.

Proposed Solution

Marsh creation via dedicated dredging of sediment is the primary technique along with culvert placement to restore hydrologic connectivity to marsh located west of the project area. Sediment would be mined from an offshore borrow site and placed in the project area to create approximately 228 acres and nourish approximately 37 acres of saline marsh. The borrow site would be located to avoid inducing wave refraction/diffraction impacts on the shoreline. Material would be placed to achieve a settled target elevation of +0.87 feet NAVD 88, GEOID 12A based on CRMS station 0167. The marsh creation would be confined disposal with the dike along the lagoon gapped no later than three years after construction at a rate of 25 ft wide every 250 ft. Half of the created elevations (228 acres) would be planted with smooth cordgrass plugs. Two 36 inch culverts would be installed in four locations under Elmer's Road (total of eight culverts) to improve connection of marsh with the lagoon and vice versa.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 265 ac.
- 2) *How many acres of wetlands will be protected/created over the project life?*
The project would result in approximately 222 net acres over the 20-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 50-75% 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?*

The project will help maintain barrier headland and Gulf beach rim.

- 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 infrastructures which consists of LA1, a hurricane evacuation route, and residence of Chenier Caminada due to reducing the rate or frequency of flooding from south/southeast wind.

- 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 sand fencing efforts and existing rock. The project will also have synergy with portions of the Caminada Beach and Dune Restoration Increment 2 Project (BA-143).

Considerations

The proposed project has potential oyster, piping plover, borrow source, and utility/pipeline considerations.

Preliminary Construction Costs

The fully funded cost range is \$25M-\$30M.

Preparer(s) of Fact Sheet:

Dawn Davis, NOAA Fisheries, 225-389-0508, ext 206, Dawn.Davis@noaa.gov

Brandon Howard, NOAA Fisheries, (225) 389-0508, ext. 207; Brandon.Howard@noaa.gov



Elmer's Island Back Barrier Marsh Creation PPL 27 Candidate

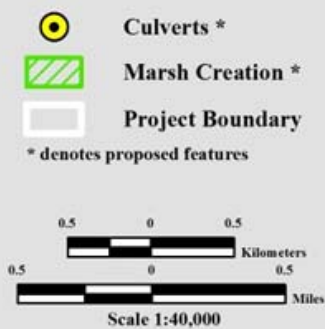


Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La


Image Source:
2012 DOQQ





Map ID: USGS-NWRC 2016-11-0036
Map Date: August 01, 2016



Science, Service, Stewardship




Elmer's Island Backbarrier Marsh Creation Region 2 – Barataria Basin PPL27 RPT

**NOAA
FISHERIES
SERVICE**

February 2, 2017

**NOAA
FISHERIES
SERVICE**



Problems at Elmer's Island

- The island has narrowed and decreased in elevation escalating the rate of over wash and breaching
- The loss rate is estimated to be -0.79%/year based on USGS hyper temporal data from 1984 to 2016
- Limited access for fish from the lagoon to the Bayou Thunder Von Tranc and Moreau watershed west of Elmer's Road

2



NOAA
FISHERIES
SERVICE



Project Features and Benefits

Backbarrier marsh creation (~2MCY) with 50% planting

- Marsh creation = 265 acres (228 acres marsh creation and 37 acres marsh nourishment)
 - Near-shore borrow area
- Install 8 culverts under Elmer's Road
- TY20 net = 222 acres
- Fully funded cost range = \$25M - \$30M

5

NOAA
FISHERIES
SERVICE



Questions?

Elmer's Island eats truck



6

R2-BA-08

Wilkinson Canal Marsh Creation

PPL27 PROJECT NOMINEE FACT SHEET

February 2, 2016

Project Name

Wilkinson Canal Marsh Creation and Terracing

Project Location

Region 2, Barataria Basin, Plaquemines Parish

Problem

There is widespread historic and continued rapid land loss within the project site and surrounding marshes resulting from subsidence, wind erosion, storms, and altered hydrology. Based on USGS data from 1984 to 2011, the wetland loss rate for the proposed project area is -1.04 %/year. The natural limits of Bayou Dupont are difficult to determine in some areas because land loss is causing the coalescence of the bayou with adjacent water bodies. Natural tidal flow and drainage patterns that once existed through the bayou are currently circumvented by the increasing area of open water. Data suggest that from 1932 to 1990, the basin lost over 245,000 acres of marsh, and from 1978 to 1990, Barataria Basin experienced the highest rate of wetland loss along the entire coast.

Goals

The project goals are to:

- Create and/or nourish up to 465 acres of emergent brackish marsh
- Construct up to 24,150 linear feet (13 acres) of terraces in a 345 acre open water terrace field adjacent to the marsh creation/nourishment

Proposed Solution

The concept provides for the restoration of approximately 465 acres of emergent brackish marsh (425 acres of marsh creation and 40 acres of marsh nourishment) to help reestablish the banks of Bayou Dupont while also providing protection to the local flood protection levee. Sediment will be hydraulically pumped from a borrow source in the Mississippi River (near the Myrtle Grove area). Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. No later than three years post construction, the containment dikes will be degraded and/or gapped. Additionally, half of the newly constructed marsh (212 acres) will be planted following construction to stabilize the platform and reduce time for full vegetation. The project will also construct 24,150 ft. (13 acres) of terraces in 345 acres of shallow open water just south of the marsh platform to help reduce wave fetch in the area. Terraces would be constructed to an elevation of +2.0 feet NAVD 88, with a 15-ft crown width, and would be planted.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?*
This total project area is approximately 815 acres (425 acres of marsh creation and 40 acres of marsh nourishment + 345 acre terrace field).
- 2) *How many acres of wetlands will be protected/created over the project life?*
Assuming a 50% reduction in the background loss rate (PPL23 Candidate Project Wilkinson Canal USGS Extended Boundary Loss Rate, -1.04%/year), the marsh creation, nourishment, and constructed terraces would result in 399 net 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, nourishment, and terraces.
- 4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.?*
The project will help restore a portion of the natural eastern bankline of Bayou Dupont.
- 5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to Plaquemines Levee. The project would also provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. Minor oil and gas facilities and pipelines in the area would benefit from an increase in marsh acreage.
- 6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project will work synergistically with (BA-48) Bayou Dupont Marsh and Ridge Creation, (BA-39) Bayou Dupont Sediment Delivery System, and (BA-164) Bayou Dupont Sediment Delivery, Marsh Creation #3.

Considerations

The proposed project has potential utility/pipeline issues along with oyster leases along the dredge pipeline path.

Preliminary Construction Costs

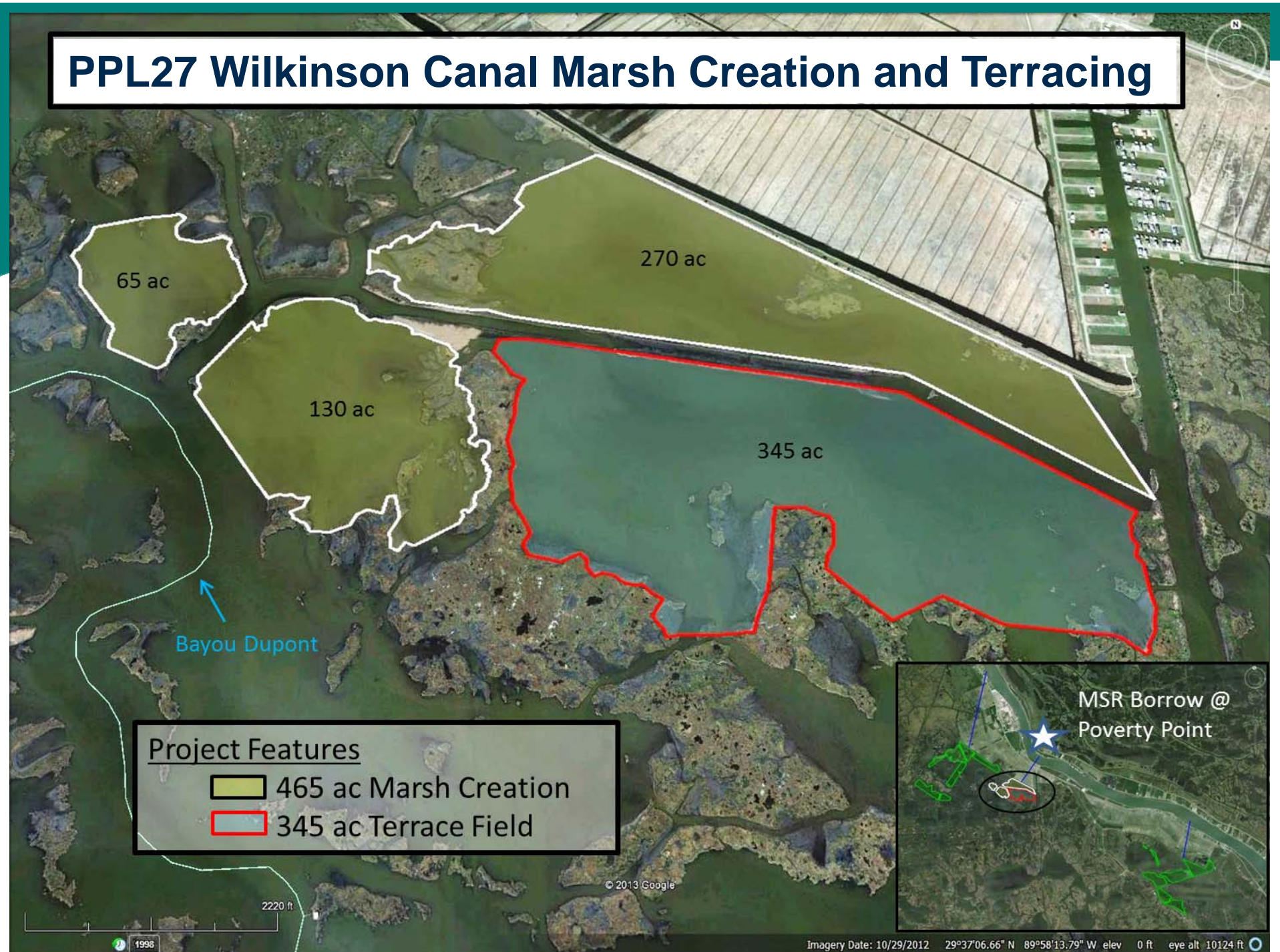
The fully-funded cost range is \$35M - \$40M.

Preparer(s) of Fact Sheet:


Dawn Davis, NOAA Fisheries, 225-389-0508 ext 206, dawn.davis@noaa.gov

Patrick Williams, NOAA Fisheries, 225-389-0508, ext 208, patrick.williams@noaa.gov


PPL27 Wilkinson Canal Marsh Creation and Terracing



Science, Service, Stewardship



Wilkinson Canal Marsh Creation and Terracing Region 2 – Barataria Basin PPL27 RPT



**NOAA
FISHERIES
SERVICE**

February 2, 2017



2012 and 2017 Coastal Master Plan

Marsh Creation Subunit – 002.MC.05e

Table of Contents

Scale 1:40000

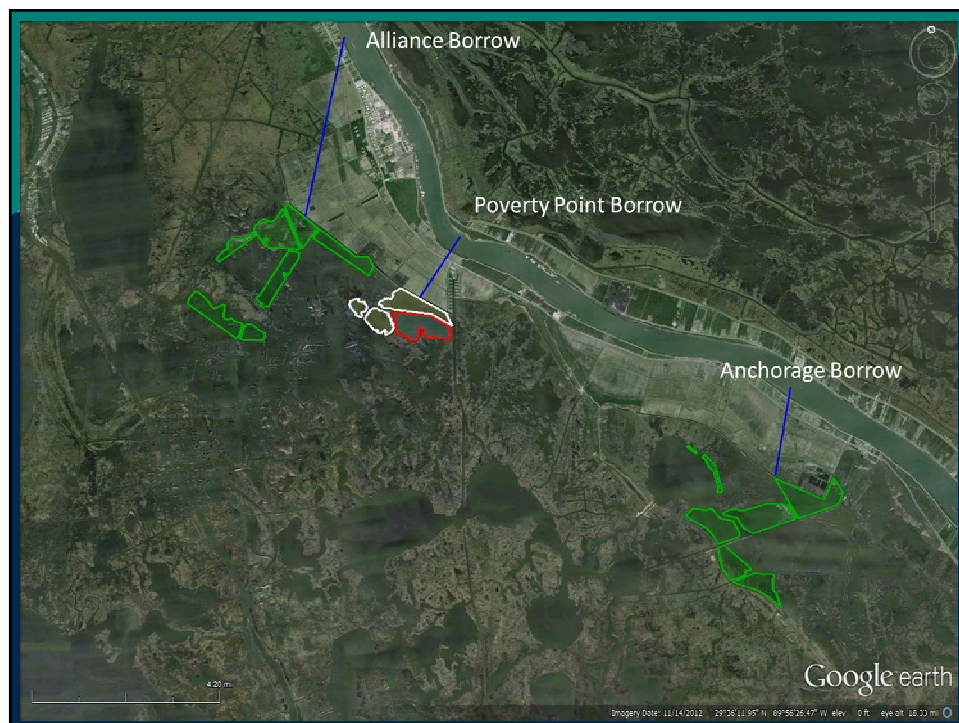
NOAA
FISHERIES
SERVICE

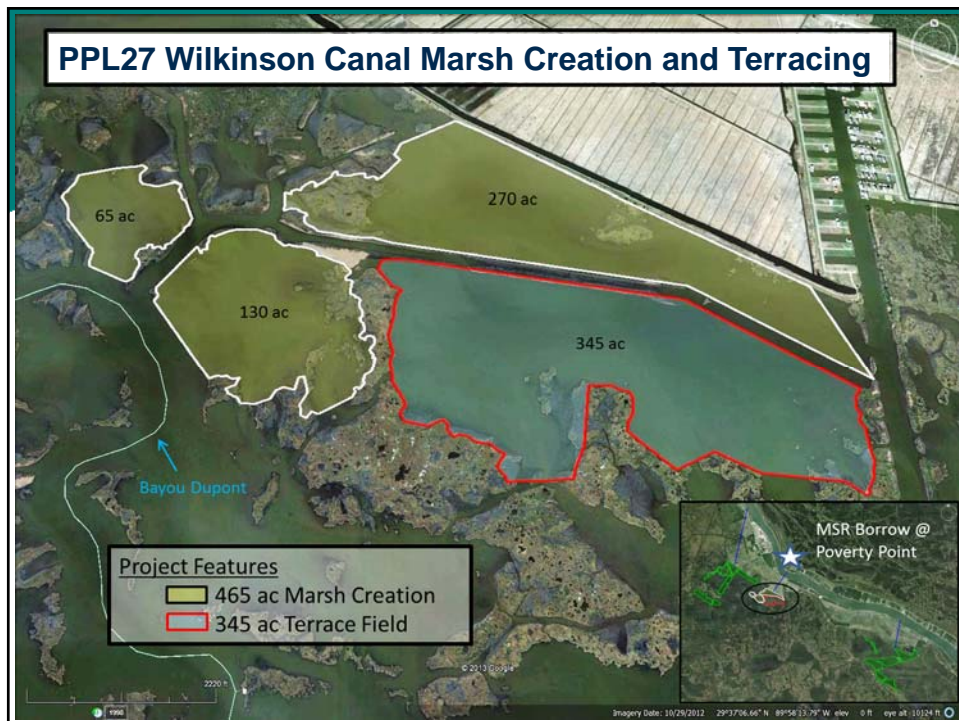
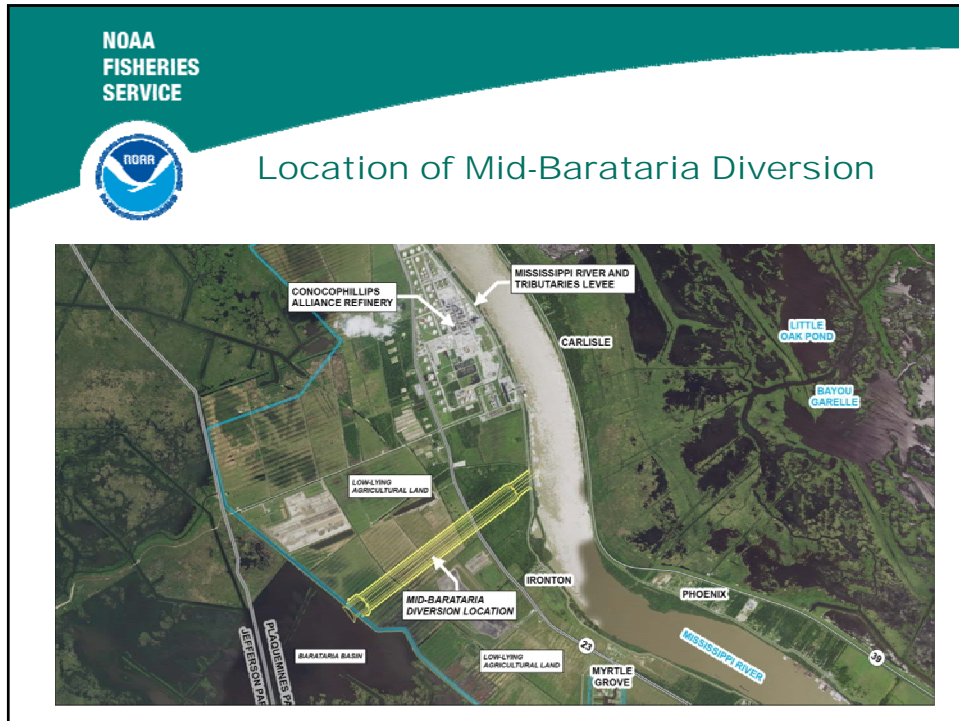


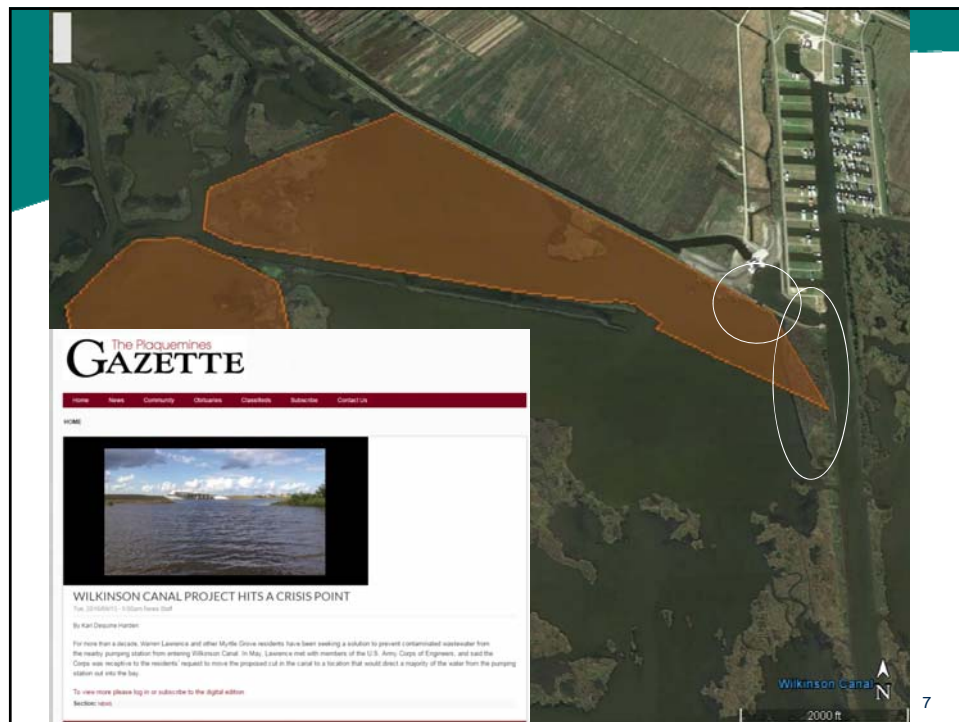
Problems near Bayou Dupont Area:

- High land loss rates in Barataria Basin:
lost over 245,000 ac of marsh between 1932 and 1990; -1.04%/yr 1984 to 2011 USGS
- High subsidence:
2.1-3.5 ft/century, Coast 2050 Myrtle Grove Unit
- Reduced intermediate/brackish habitat for fish and wildlife in the area

3







**NOAA
FISHERIES
SERVICE**



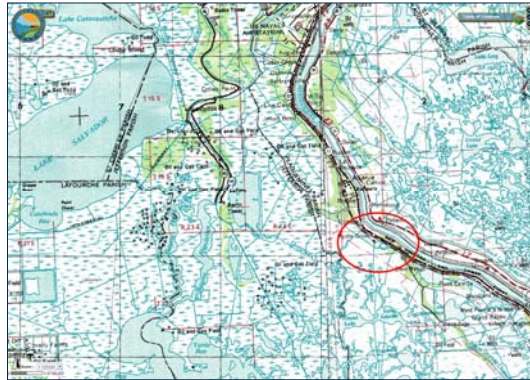
Project Features and Benefits

- Total habitat restored is 465 acres (425 acres of marsh creation and 40 acres of marsh nourishment)
- Terrace field is 345 acres with 24,150 feet (13 acres) of terraces
- Net acres = 399 acres
- Fully funded cost range = \$35M - \$40M

NOAA
FISHERIES
SERVICE



Questions?



R2-BA-09

Bayou Long Ridge Restoration



CWPPRA PPL 27 Nomination Sign-Up Sheet

BA-091

Complete a sign-up sheet for each project you nominate. Please print neatly!

Name of Project:

BAYOU LONG RIDGE RESTORATION
CPRA 2012 MASTER PLAN # 002.RE.01

Is this a demonstration project?

Yes

No

If not, please provide the below information.

Region: (Circle one)

1

2

3

4

Coastwide

Basin: (Circle one)

Pontchartrain

Barataria

Terrebonne

Calcasieu-Sabine

Breton Sound

Atchafalaya

Mermentau

Teche-Vermilion

Did you provide a factsheet?

Yes

No

Contact Information:

Name:

KENNETH RAGAS

Phone Number:

504-309-6654

27
PPL PROJECT NOMINEE FACT SHEET
~~January 10, 2006~~

FEBRUARY 2, 2017

Project Name

Bayou Long/Empire Waterway Shoreline Protection and Marsh Creation

Coast 2050 StrategyCoastwide Common Strategies

Dedicated dredging to create, restore or protect wetlands
Off-shore and Riverine Sand and sediment delivery systems
Vegetative Plantings

Project Location

Region 2, Barataria Basin, Plaquemines Parish, Bastian Bay mapping unit, vicinity of Empire

Problem

Bastian Bay mapping unit historically structured by a series of north south bayous and associated ridges (i.e., Bayou Long, Bayou Grand Liard, Dry Cypress Bayou). Currently, the majority of these bayou ridges have eroded. Ridge loss combined with interior wetlands loss has resulted in large expanses of unbroken open water.

The Empire Waterway forms the boundary between the Bastian Bay mapping unit and the Cheniere Ronquille mapping unit. Its continued degradation threatens to dramatically increase the expanse of open water between the two mapping units and allow for lateral tidal movement to Grand Bayou to the east (approximately four additional miles). Land loss projections suggest that the remaining bayou bank wetlands are anticipated to be completely converted to open water by 2050.

Proposed Project Features

Proposed project features focus on restoring the structural function of the Bayou Long/Empire Waterway ridge through construction of a foreshore structure and adjacent marsh platform. A combination of foreshore revetment (or other appropriate hard structure) and earthen levee/ridge features would be constructed on the 6.9 mile eastern "bankline" of the Empire Waterway. The foreshore revetment would be constructed at about the -2' NAVD contour and form the eastern containment for the marsh platform. Where geotechnical conditions and bathymetry allows, a ridge feature will be constructed by building substantial retention dikes (i.e., 20-foot crown width at +7 feet NAVD) with material dredged from the Empire Waterway.

GULF OF MEXICO

The marsh platform would be constructed from ~~Mississippi River~~ material and placed in a 500-foot wide confined disposal area east of shoreline protection to create an estimated 418 acres of marsh. An estimated 6.0 M cy of river materials will be required for marsh creation assuming a fill height from -3.5' to +2.5' NAVD and a 1:1.5 cut-to-fill ratio. About 40,000 feet of retention dike is anticipated in addition to the foreshore containment described above. Due to the geometry of the disposal site, it is not anticipated that tidal

creeks will be constructed. Containment dike gapping will be incorporated into the project design and cost estimate. Following consolidation of the marsh platform, vegetative plantings will be installed (including woody species on ridge), although a reduced planting cost (i.e., < \$3,500/acre) due to project scale.

Goals

Restore the integrity of the Bayou Long/Empire Waterway Ridge.
Restore saline marsh.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?*

The project is anticipated benefit a total of about 500 acres. There are 418 acres of marsh platform. Limited (less than 75 acres) additional indirect benefits are anticipated to wetlands immediately west of the Empire Waterway due to reduction in wind-generated erosion.

- 2) *How many acres of wetlands will be protected/created over the project life?*

Bastain Bay mapping unit loss rates are extremely high (recent 8.5%/yr and 3.88%/yr average, see Table 1). Such rates may not be reflective of the project area due to lack of existing wetlands. For the purposes of the nomination, assume 3.0% FWOP and 1.5% FWP due to lack of data. Based on that assumption, the project is estimated to provide direct net benefits to 290 acres over the project life (Table 2).

- 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 majority of the project area's marshes have completely degraded into open water. It is projected that loss rates for the created marsh (1.5%/year) will be about 50% of background loss rate.

- 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 Empire Waterway Ridge will be strengthened and/or restored to serve as a barrier to marsh degradation and open water expansion. Restoring the ridge will preserve the boundary between the Cheniere Ronquille and Bastian Bay mapping units.

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

The project may provide net benefits to the Empire Waterway by assisting in stabilizing the navigation channel.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*

The project will reduce lateral tidal movement occurring within the mapping unit. The project, combined with on-going barrier island restoration, will benefit southeastern Barataria Bay by restoring structural components of the estuarine system.

Identification of Potential Issues

Oysters, pipeline crossings

Preliminary Construction Costs

Estimated construction cost including 25% contingency are s are \$28M – \$43M depending on foreshore feature. Construction cost of project based on complete foreshore revetment is about \$34M and construction cost based on complete earthen revetment is \$23M. See Table 3.

Preparer of Fact Sheet

~~Andrew MacInnes, (504) 297-5320, Andrew_MacInnes@cmaceess.com~~

KENNETH RAGAS 504-309-6654, 504-453-0508
8246 kuras@ATT.NET

Table 1 – Mapping unit loss rates derived from Coast 2050

Bastian Bay Mapping Unit			
Acres Marsh	Year	Interval	Loss Rate
27555	1932		
25660	1956	24	0.29%
19530	1974	18	1.33%
10390	1983	9	5.20%
4210	1990	7	8.50%

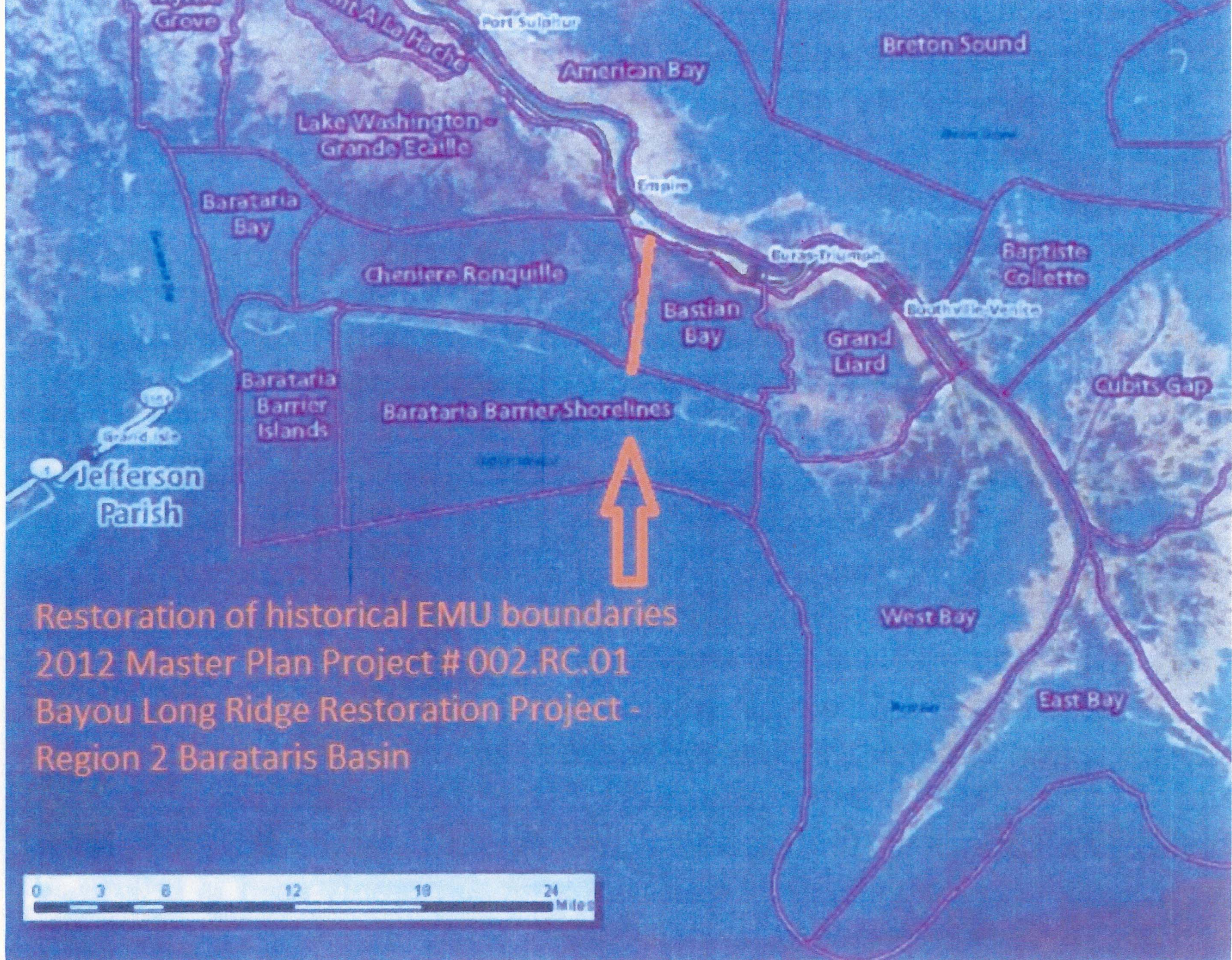
Table 2 – Acreage projections

FWOP			
Estimate that 5% of project area is existing marsh; TY1 acres = 5% of 418 acres			
TY	Loss Rate	Acres	
1	3.00%	42	
2	3.00%	41	
3	3.00%	39	
4	3.00%	38	
5	3.00%	37	
6	3.00%	36	
7	3.00%	35	
8	3.00%	34	
9	3.00%	33	
10	3.00%	32	
11	3.00%	31	
12	3.00%	30	
13	3.00%	29	
14	3.00%	28	
15	3.00%	27	
16	3.00%	26	
17	3.00%	26	
18	3.00%	25	
19	3.00%	24	
20	3.00%	23	

FWP			
Assume loss rate for 418 acres created & nourished marsh is half background rate			
TY	Loss Rate	Acres	
1	1.50%	418	
2	1.50%	412	
3	1.50%	406	
4	1.50%	399	
5	1.50%	393	
6	1.50%	388	
7	1.50%	382	
8	1.50%	376	
9	1.50%	370	
10	1.50%	365	
11	1.50%	359	
12	1.50%	354	
13	1.50%	349	
14	1.50%	343	
15	1.50%	338	
16	1.50%	333	
17	1.50%	328	
18	1.50%	323	
19	1.50%	318	
20	1.50%	314	

TY 20 Net Benefits:

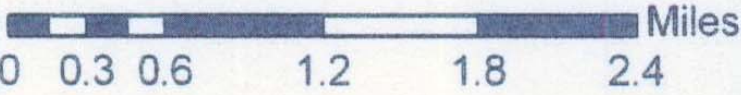
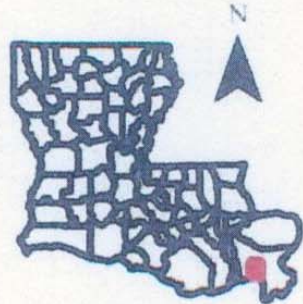
290



Empire Waterway Bank Restoration

Legend

— Empire Waterway East Bank Restoration Area



REGION 2 – BRETON SOUND BASIN

Project Number	Project Proposals
R2-BS-01	Mid Breton Land Bridge Marsh Creation and Terracing
R2-BS-02	Breton Landbridge Marsh Creation
R2-BS-03	Phoenix Marsh and Ridge Restoration
R2-BS-04	Davant Marsh Creation
R2-BS-05	East Delacroix Marsh Creation and Terracing
R2-BS-06	Bayou Terre aux boeuf and Ridge Restoration and Marsh Creation
R2-BS-07	Bayou La Chape Marsh Creation
R2-BS	Lake Lery Shoreline Marsh Creation and Terracing <i>(Not Consistent with 2012 or draft 2017 State Master Plans)</i>
R2-BS	North Lake Lery Wetland Restoration <i>(Not Consistent with 2012 or draft 2017 State Master Plans)</i>

R2-BS-01

Mid Breton Land Bridge Marsh Creation and Terracing

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name: Mid Breton Land Bridge (Marsh Creation and Terracing)

Project Location:

Region 2, Breton Basin, Plaquemines Parish, South of Lake Lery, West of Delacroix Island

Problem:

The landfall of Hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats east of the Mississippi River. 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. Since 2005, the operation of Caernarvon Freshwater Diversion has not adequately addressed hurricane impacts. It seems that the Caernarvon Diversion will not be able to rebuild the marshes in the project area. Without restoration this region will continue to see the coalescence of water bodies such as Grand Lake, Lake Petit, and the surrounding marsh areas resulting in more direct connection between interior intermediate marshes and the open brackish Black Bay system. This will have a snowball effect with increased marsh loss due to wind induced erosion.

Goals:

The goal of this project is to maintain/restore the landbridge between the Bayou Terre aux Boeufs and River aux Chenes ridges by restoring critical wetlands destroyed by Hurricane Katrina.

Specific Goals: 1) create approximately 500 acres of intertidal marsh with material dredged from Lake Lery, and 2) create approximately 23,000 LF of terraces (12 acres of marsh) in strategic areas to reduce erosion due to wind induced waves.

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

Proposed Solutions:

The currently proposed project would create approximately 500 acres of marsh using sediment hydraulically dredged from Lake Lery. Lake Lery is currently filling in with sediment from the Caernarvon Diversion structure. Existing canal spoil banks, emergent marsh, and segments of containment dikes will be used to contain the dredge material. Containment dikes will be degraded/gapped as necessary to reestablish hydrologic connectivity with adjacent wetlands. The current proposal would also create approximately 23,000 LF of terraces (12 acres of marsh) in strategic areas to reduce erosion due to wind induced waves.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* Approximately 900 acres would be benefited.

2) *How many acres of wetlands will be protected/created over the project life?* The total net acres protected/created over the project life are approximately 481 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%).* Loss rate reduction should be 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.* This project would contribute to the restoration of a land bridge between Bayou Terre aux Boeuf ridge and River aux Chenes ridge. It would also reestablish a large section of Bayou Gently's shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure?* The community of Delacroix would be protected with this project along with numerous camps and at least one oil and gas facility.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would work in sync with BS-16, BS- 24, and recently constructed St. Bernard Parish marsh creation project.

Identification of Potential Issues:

There are pipeline within the proposed project area that would need to be avoided.

Preliminary Construction Costs:

The estimated construction cost including 25% contingency is \$27 M.

Preparer(s) of Fact Sheet:

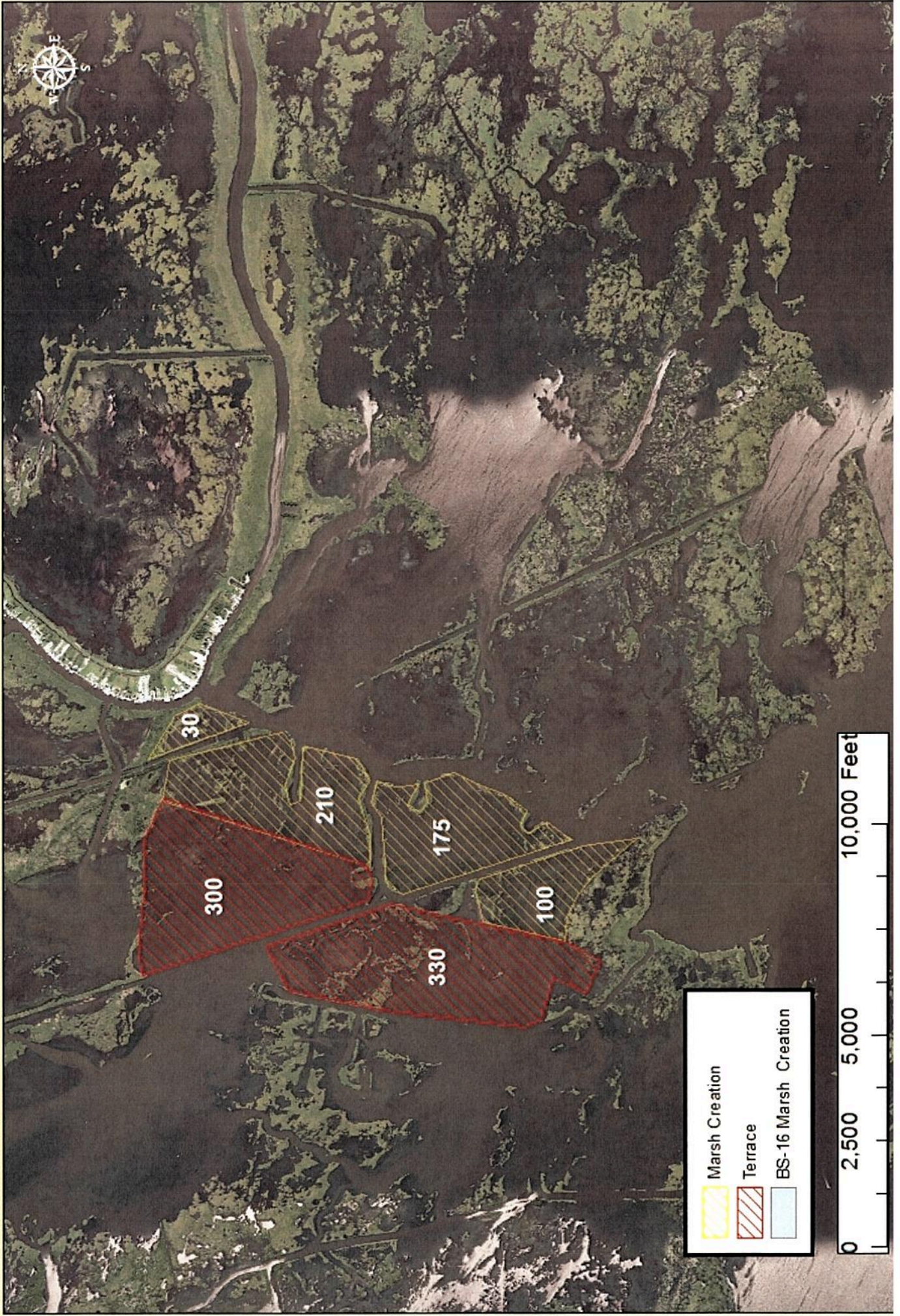
Robert Dubois (337) 291-3127 robert_dubois@fws.gov



U.S. Fish & Wildlife Service

Louisiana Ecological Services

PPL 27 Mid Breton Land Bridge (Marsh Creation and Terracing)





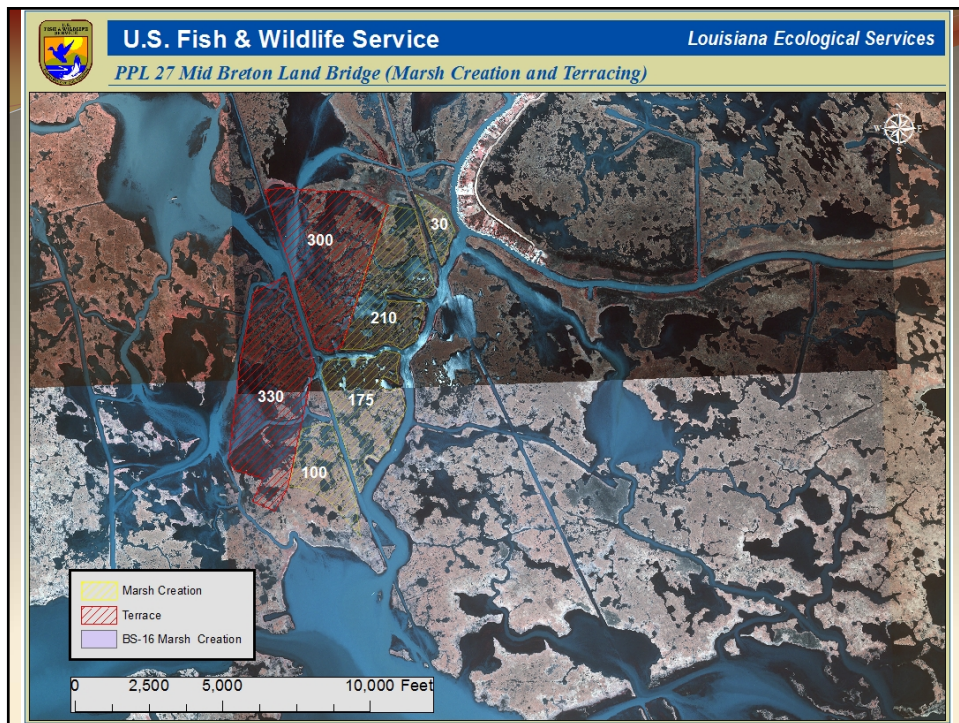
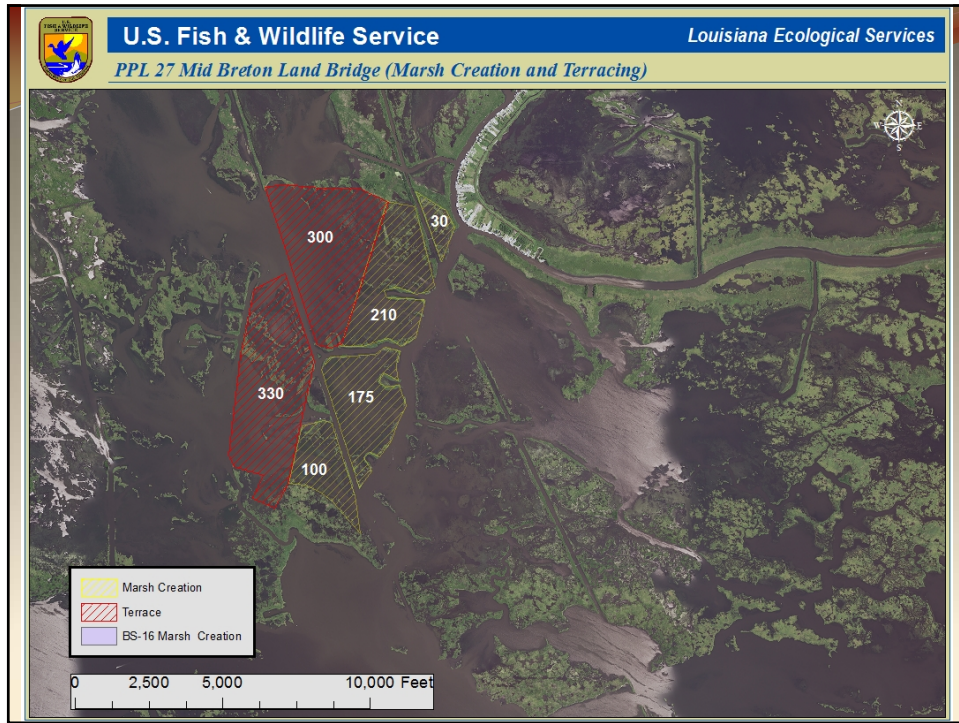
MID BRETON LAND BRIDGE (Marsh Creation)

Problem:

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

PPL 16

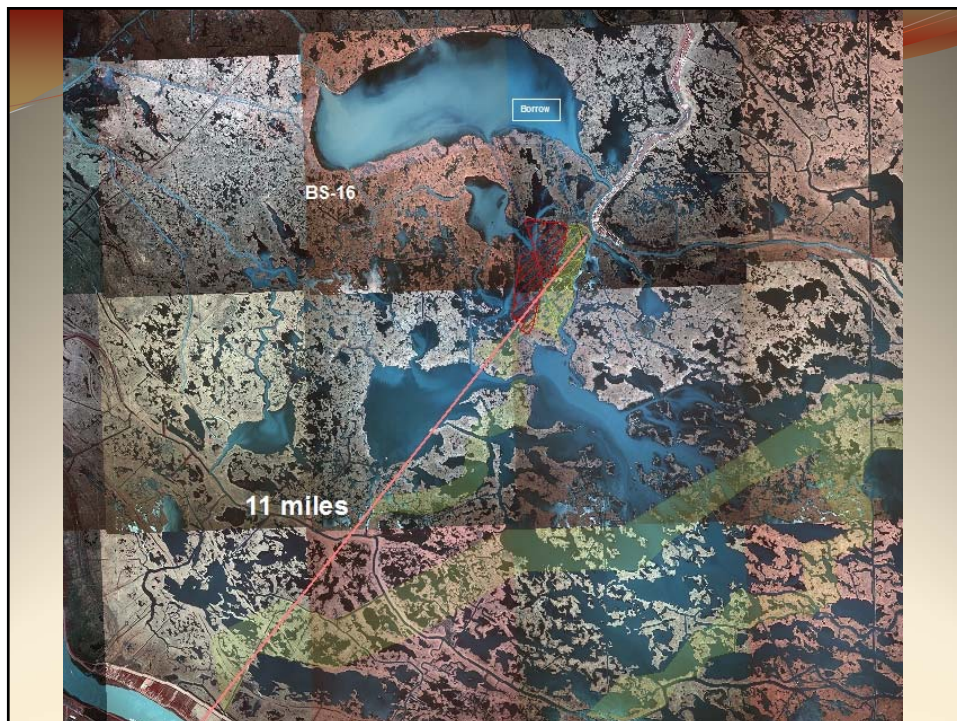




MID BRETON LAND BRIDGE (Marsh Creation)

Solution:

- Create 500 acres of intertidal marsh with material hydraulically dredged from Lake Lery
- Construct 23,000 lf of Terraces (12 acres of Marsh).





MID BRETON LAND BRIDGE (Marsh Creation)

Goals:

- Create 500 acres of marsh .
- Create 23,000 lf of terraces (12 acres of marsh).

Net Acres:

- Total net acres = 371 acres

Potential Issues:

- Pipelines within the project area
- There is an existing borrow site from BS-16 that could be utilized if needed.

Preliminary Construction Costs

- The estimated construction cost plus 25% contingency \$27 M.

Species of Concern and Rare Species

- **Least Bittern**
- **Black Rail**
- **Mottled Duck**
- **Brown Pelican**
- **Louisiana Eyed Silkmoth**
- **King Rail**

R2-BS-02

Breton Landbridge Marsh Creation

PPL27 PROJECT NOMINEE FACT SHEET

February 2, 2017

Project Name

Breton Landbridge Marsh Creation (West), River aux Chenes to Grand Lake

Project Location

Region 2, Breton Basin, Plaquemines Parish

Problem

The wetlands within this area have a unique history. Historically this area was nourished by the fresh water, sediment and nutrients delivered by the Mississippi River. Following the creation of levees along the lower river, these inputs ceased, with exception of levee breaches in 1923 and 1927. In 1991, the Caernarvon Freshwater Diversion Structure became operational with capabilities to divert up to 8,000 cubic feet/sec. As a result of these freshwater influences, the marshes in the area have fluctuated between fresh/intermediate and brackish/saline habitat types over time. The major cause of wetland loss for this area has been attributed to storm activity (i.e. Hurricanes Betsy and Katrina), causing both storm-induced scour and forcing salt water into the lower salinity marshes. Altered hydrology and oil/gas development have exacerbated storm-related loss. Subsidence, high in this area, ranges from 2.1-3.5 ft/century. Natural lakes and bays continue increase in size due to coalescence with marsh lost to water and increased wave fetch. The USGS loss rate from 1985-2009 is -0.93 percent/yr. The 1985 to 2016 USGS loss rate is -1.39%/yr for the Caernarvon Outfall mapping subunit.

Goals

The overall, long-range, restoration goal would be to create/nourish approximately 1,000 to 2,000 acres of intermediate marsh across 7 miles of the Breton Basin from River aux Chenes to Bayou Terre Bouefs. Two conceptual alternative alignments are envisioned: 1) restore marshes and shorelines along western and northern Grand Lake and along Bayou Gentilly (individual options A, C and D below) or 2) restore marshes and bank lines along southern Grand Lake and along Bayou Gentilly.

Proposed Solution

The proposed solution would be to create/nourish degrading marsh and restore portions of the Grand Lake shoreline, Orange Bayou, and Bayou Gentilly. The marsh and shoreline restoration would be constructed in a west-to-east configuration, across basin, creating more robust landmass between River aux Chenes and Bayou Terre aux Boeufs. It is envisioned that this restoration effort could be completed in two to four phases, approximately 500 acres each, and once restored would reduce the potential for coalescence of Lake Lery with Grand Lake and Lake Petit to its south. Sediment would be hydraulically pumped from a borrow source for marsh creation. Internal and external borrow sources have been identified; internal borrow from Grand Lake or Lake Lery is the most cost effective. Alternative internal borrow sources down basin of the landbridge alignment will be investigated to avoid increasing the tidal prism by borrowing north of the proposed landbridge. 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?*
The total project area is approximately 500 acres (per phase).
- 2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 373 acres of intermediate marsh would be protected/created over the project life (per phase).
- 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 restore portions of Orange Bayou, Bayou Gentilly, and Grand Lake shorelines.
- 5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project may have moderate net positive impact to non-critical infrastructure comprised of pipelines and oil and gas wells.
- 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 effects with: 1) BS-16 South Lake Lery Shoreline and Marsh Restoration, 2) BS-24 Terracing and Marsh Creation South of Big Mar, 3) CIAP project constructed west of Delacroix, and 4) the Caernarvon Freshwater Diversion.

Considerations

The proposed project has utility/pipeline considerations and may have oyster considerations.

Preliminary Construction Costs


The fully funded cost range is \$30M-\$35M.

Preparer(s) of Fact Sheet:

Patrick Williams, NOAA Fisheries, 225-389-0508, ext 208, patrick.williams@noaa.gov
Twyla Cheatwood, NOAA Fisheries, 225-389-0508, ext 209, twyla.cheatwood@noaa.gov

PPL27 Breton Landbridge Marsh Creation (West): River aux Chenes to Grand Lake

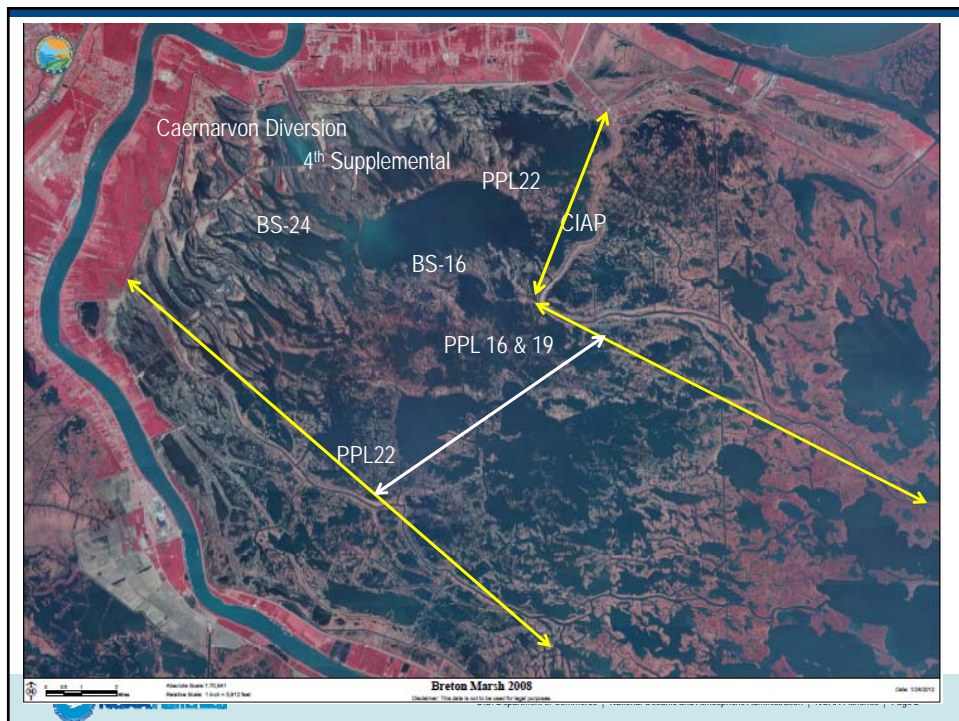


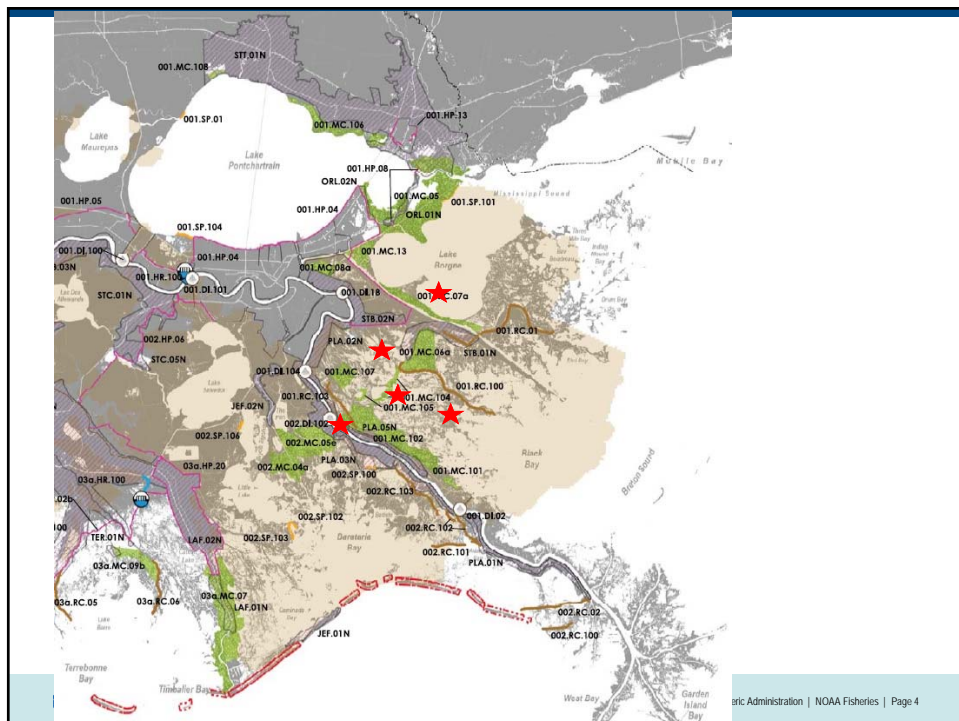
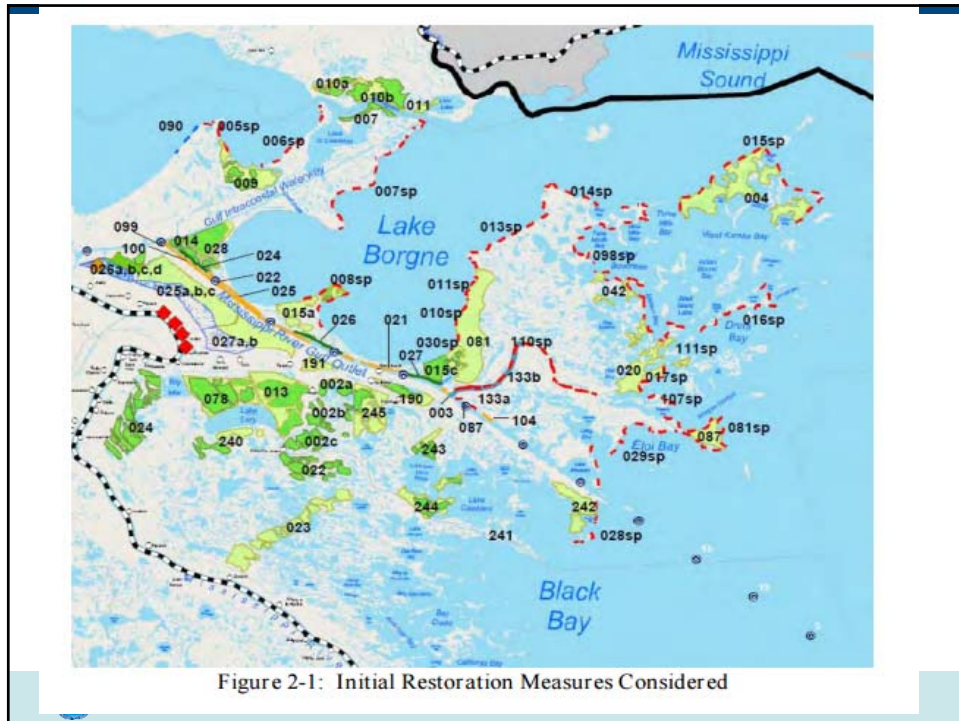


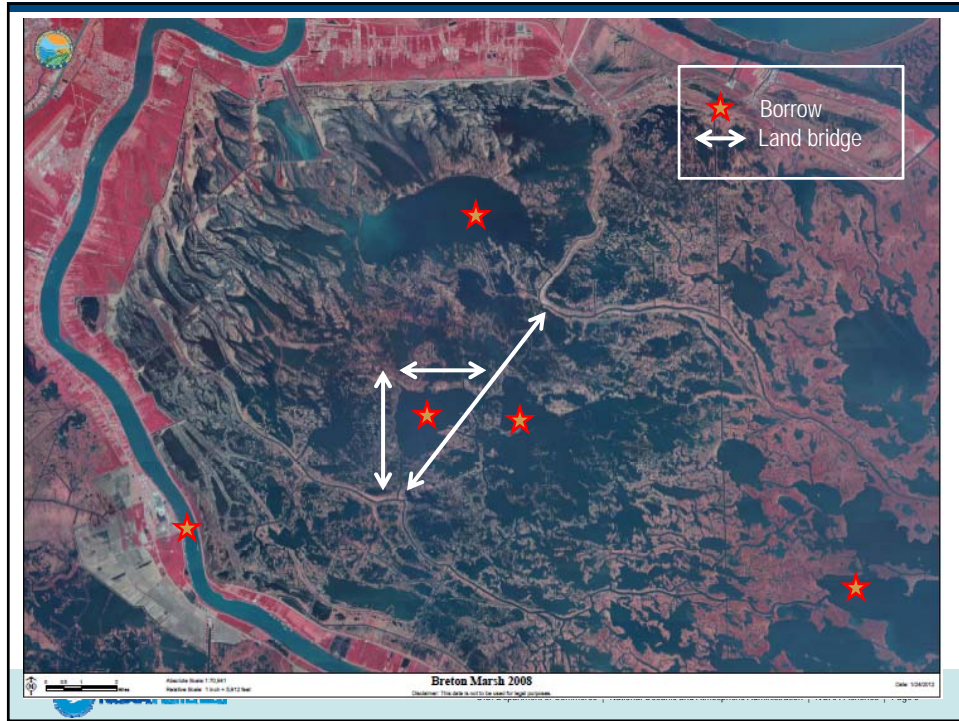
NOAA
FISHERIES
Habitat
Conservation
Division

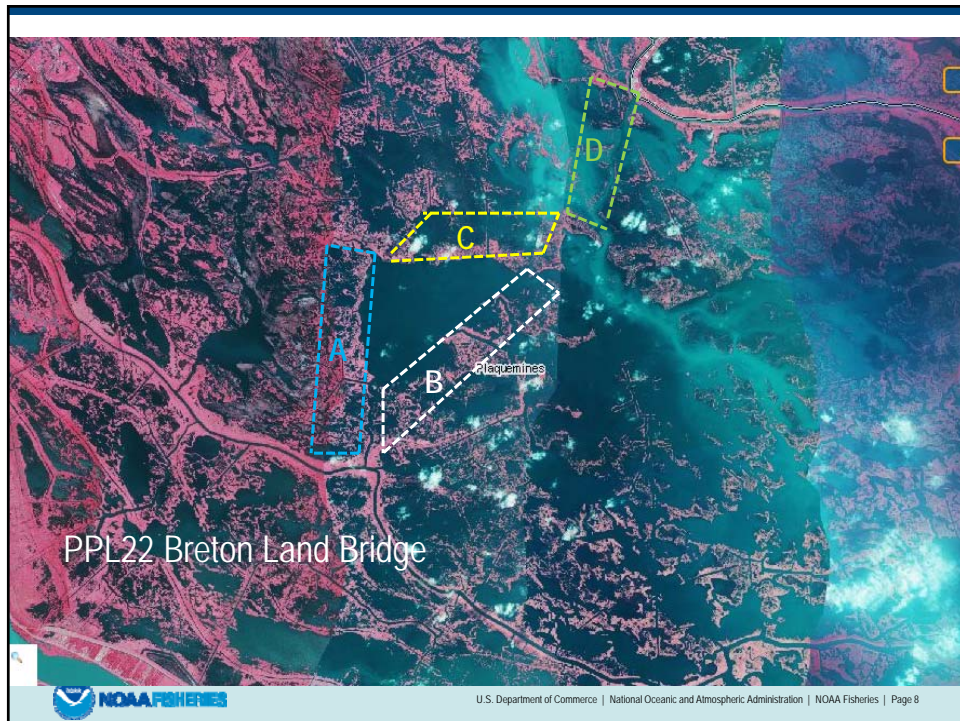
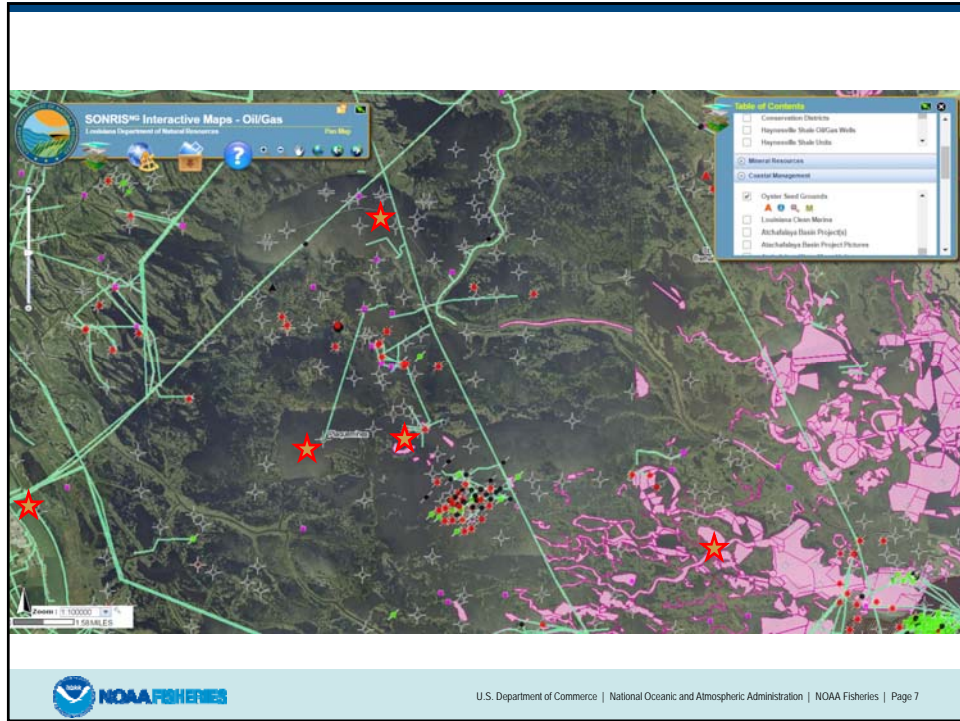
PPL27 Breton Landbridge West

February 2, 2017









PPL27 Breton Landbridge Marsh Creation (West): River aux Chenes to Grand Lake



Cost Estimate

	Borrow Source	Acres	FF Cost
PPL27 Options A or B	Grand Lake	~500	\$25 - 30M
PPL 27 Options A or B	MSR River	~500	\$45- 50M
Option C or D	Internal ?	~500	\$25 - 30M
Option C or D	Internal ?	~500	\$25 - 30M

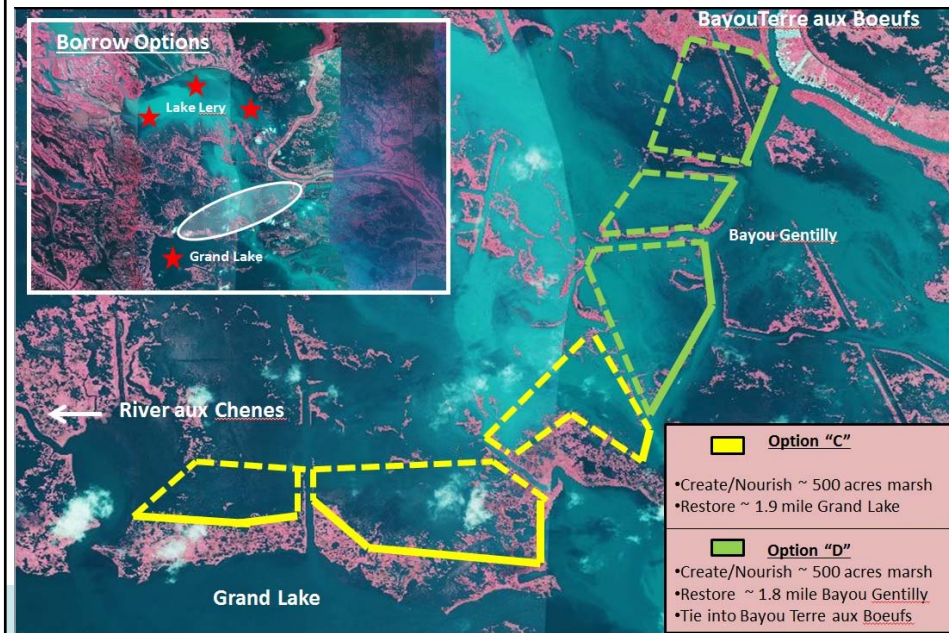


MapScale: 1:10000
MapScale: 1:10000

Breton Marsh 2008

Date: 10/20/2015

PPL27 Breton Landbridge Marsh Creation (East): River aux Chenes to Grand Lake



R2-BS-03

Phoenix Marsh and Ridge Restoration

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name

Phoenix Marsh and Ridge Restoration

Project Location

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

Problem

Within the project vicinity, marsh loss has occurred with the construction of oil/gas canals, subsidence, and sediment deprivation. Based on USGS' hyper-temporal analysis (1985-2016) for the Schayots Canal mapping unit, the loss rate for this area is estimated to be -1.00% per year.

Goals

The primary goals of this project are; 1) create forested, coastal ridge habitat, 2) restore marsh habitat in the open water areas via marsh creation and terracing, and 3) reduce fetch and wave energy in open water areas via the construction of terraces. Specific goals of the project are: 1) Create approximately 8,450 feet (17 acres) of forested ridge; 2) create approximately 390 acres of marsh with dredged material from the Mississippi River; and 3) create 9,500 linear feet (7 acres) of terraces.

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 petitioned for listing as a threatened/endangered species. The project could also benefit other species of concern including the peregrine falcon, osprey, mottled duck, seaside sparrow, and neotropical migrants.

Proposed Solution

1. Riverine sediments will be hydraulically dredged and pumped via pipeline to create 17 acres of ridge habitat and create/nourish approximately 390 acres of marsh.
2. Approximately 9,500 linear feet (7 acres) of terraces will be constructed.
3. Containment dikes will be gapped and the ridge and terraces will be planted.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?* Approximately 577 acres would be benefited directly and indirectly. Direct benefits include 17 acres of forested, coastal ridge habitat, 390 acres of marsh creation, and 7 acres of terraces. Indirect benefits would occur to surrounding marshes and within the terrace field.

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 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 created.

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.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* None identified at this time.

Identification of Potential Issues

None identified at this time.

Preliminary Construction Costs

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

Preparer of Fact Sheet

Kevin Roy, USFWS, (337) 291-3120, kevin_roy@fws.gov



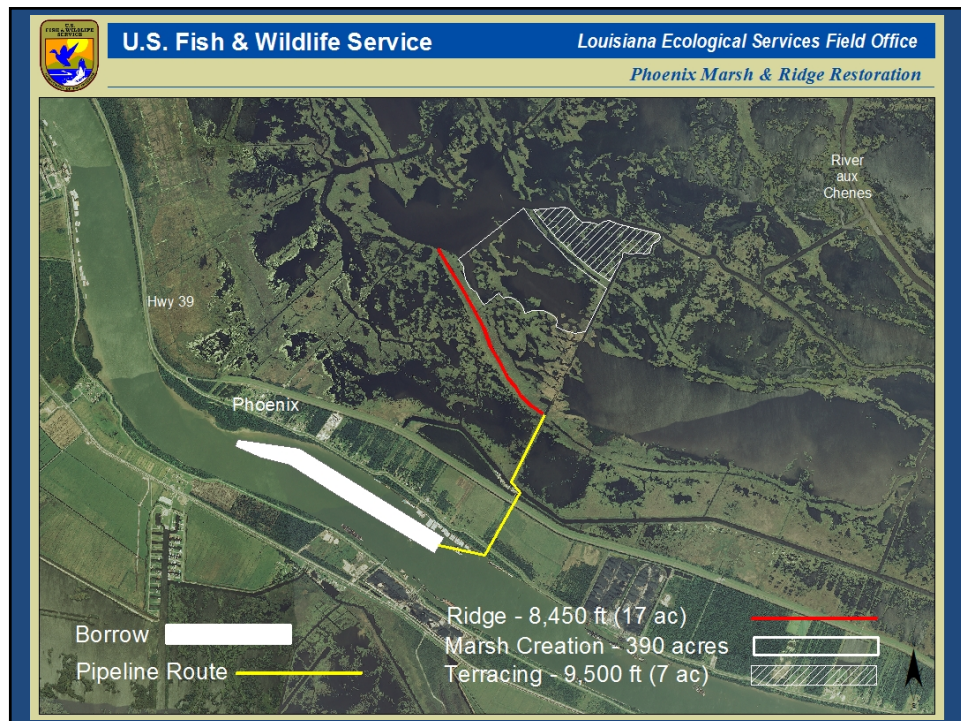
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Phoenix Marsh & Ridge Restoration







Phoenix Marsh and Ridge Restoration

- Mississippi River borrow site
- 8,450 ft (17 acres) of ridge restoration
- 390 acres of marsh creation/nourishment
- 9,500 ft of terraces (7 acres)
- Net acres = 300 - 350
- Construction plus contingency = \$30M - \$35M



R2-BS-04

Davant Marsh Creation

PPL27 PROJECT FACT SHEET
February 2, 2017

Project Name

Devant Marsh Creation

Master Plan Strategy

Pointe a la Hache Marsh Creation (2017 Master Plan 001.MC.102): Creation of approximately 14,100 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 land loss rate for the area is -1.00% per year.

Proposed Solution

The proposed project would create/nourish approximately 350 acres of marsh using sediment dredged from the Mississippi River. The dredged material would be fully contained. Containment dikes would be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands. The created marsh would be planted.

Project Benefits

Create/nourish approximately 350 acres of intermediate marsh using sediment dredged from the Mississippi River.

Project Costs

The preliminary project cost estimate with 25% contingency is \$26 million. The fully funded range is \$35M - \$40M.

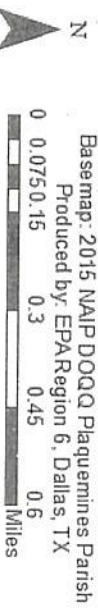
Preparer(s) of Fact Sheet:

Sharon L. Osowski, Ph.D; EPA; (214) 665-7506; osowski.sharon@epa.gov
Adrian Chavarria, EPA; (214) 665-3103; chavarria.adrian@epa.gov



Devant (Back Levee Canal) Marsh Creation

 Proposed Marsh Creation



Devant Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act




2017 Master Plan Solution

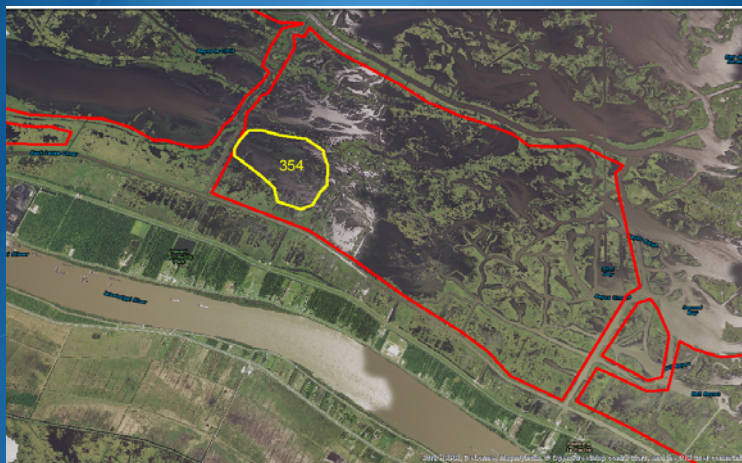
001.MC.102 Pointe a la Hache Marsh Creation: Creation of approximately 14,100 acres of marsh on the east bank of Plaquemines Parish near Pointe a la Hache to create new wetland habitat and restore degraded marsh.





2017 Master Plan Consistency

001.MC.102 Pointe a la Hache Marsh Creation



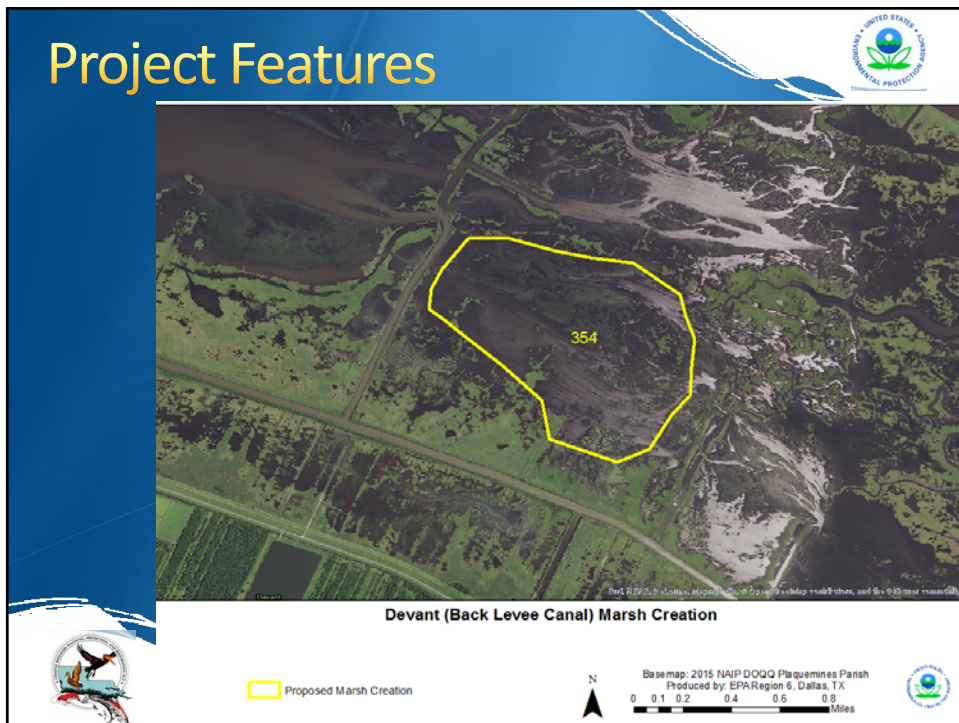
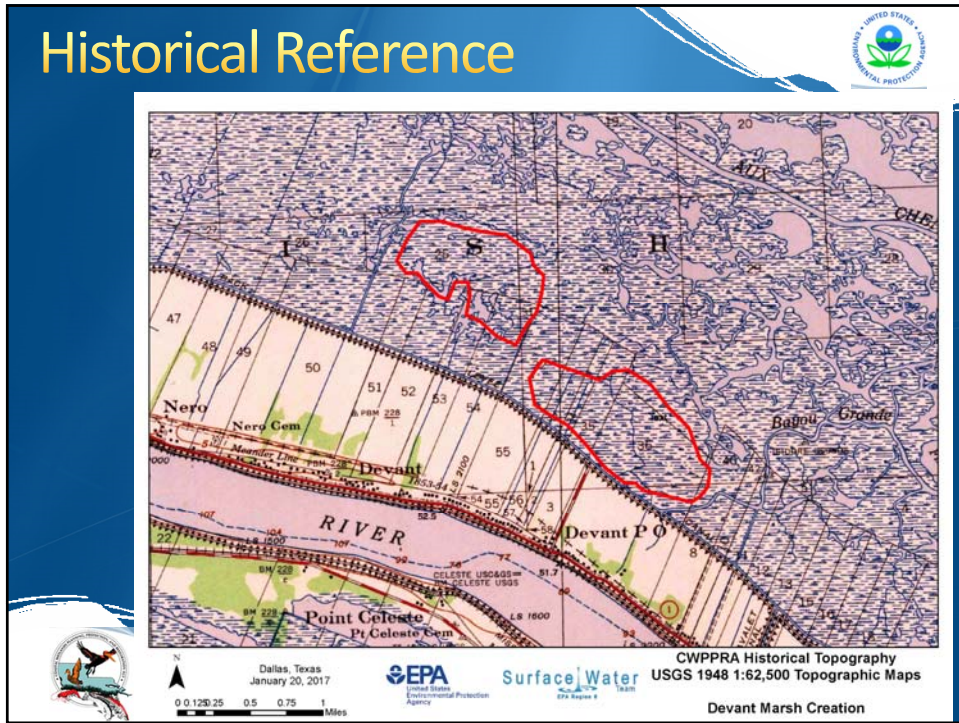
Devant (Back Levee Canal) Marsh Creation

Proposed Marsh Creation
 2017 Draft Master Plan

Base map: 2015 MAIP DOQQ Plaquemines Parish
 Produced by: EPA Region 6, Dallas, TX
 0 0.3 0.6 1.2 1.8 2.4 Miles

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).



Project Goals

- Create/nourish 354 acres emergent marsh with sediment from the Mississippi River
- Provide increased protection from storm surge and flooding
- Estimated preliminary cost w/25% contingency is \$26 million
- Fully funded cost range \$35-40M.



R2-BS-05

East Delacroix Marsh Creation and Terracing

BS-05

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name

East Delacroix Marsh Creation and Terracing

Project Location

Region 2, Breton Basin, St. Bernard Parish

Problem

Hurricanes Katrina and Rita 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 1985 to 2016 Tanasia Lagoon subunit loss rate is -0.61%/yr.

Goals

The project goal is to create and nourish approximately 375 acres of marsh (300 acres creation 75 acres nourishment) and construct approximately 13,860 linear feet of terraces (approximately 7 emergent acres) utilizing a layout to help protect the community of Delacroix.

Proposed Solution

The proposed project goals are to create approximately 300 acres and nourish 75 acres of marsh. Sediment would be mined from Lake Lery and placed east of Delacroix via pipeline. The borrow area would be designed to avoid adverse impacts to the existing shoreline of Lake Lery. In addition to marsh creation approximately 13,860 linear feet of terraces would be constructed. The terrace slopes and crown would be planted with appropriate marsh vegetation. During 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 573 ac.
- 2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 294 acres 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 protection of 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.

Considerations

The proposed project has potential utility/pipeline considerations.

Preliminary Construction Costs

The fully funded cost range is \$30M-\$35M.

Preparer(s) of Fact Sheet:

Twyla Cheatwood, NOAA Fisheries, 225-389-0508, ext 209, twyla.cheatwood@noaa.gov

Patrick Williams, NOAA Fisheries, 225-389-0508, ext 208, patrick.williams@noaa.gov

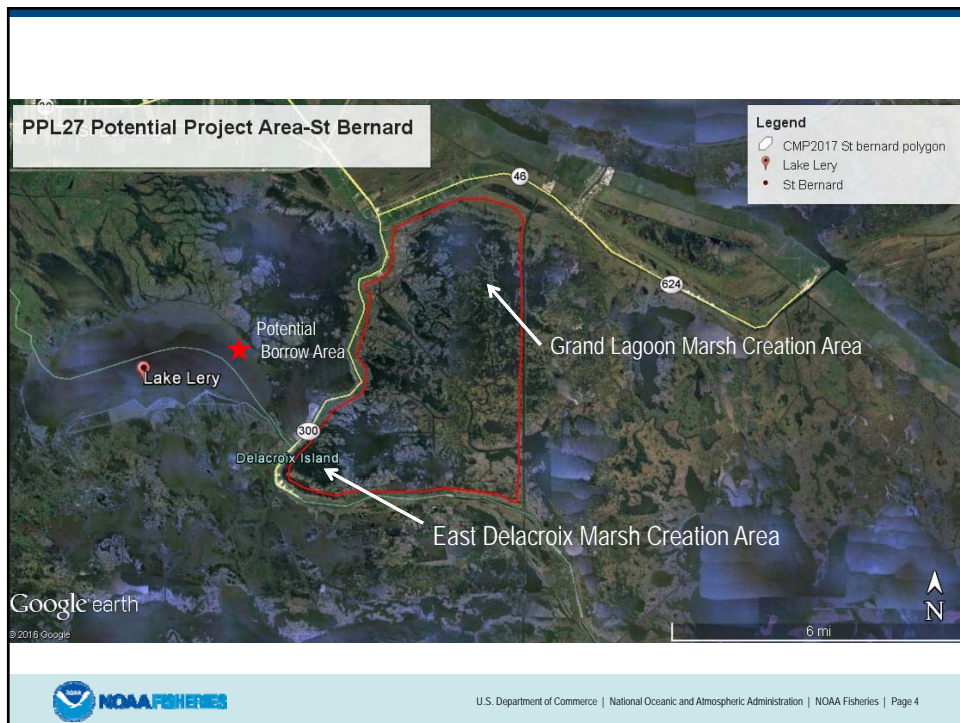
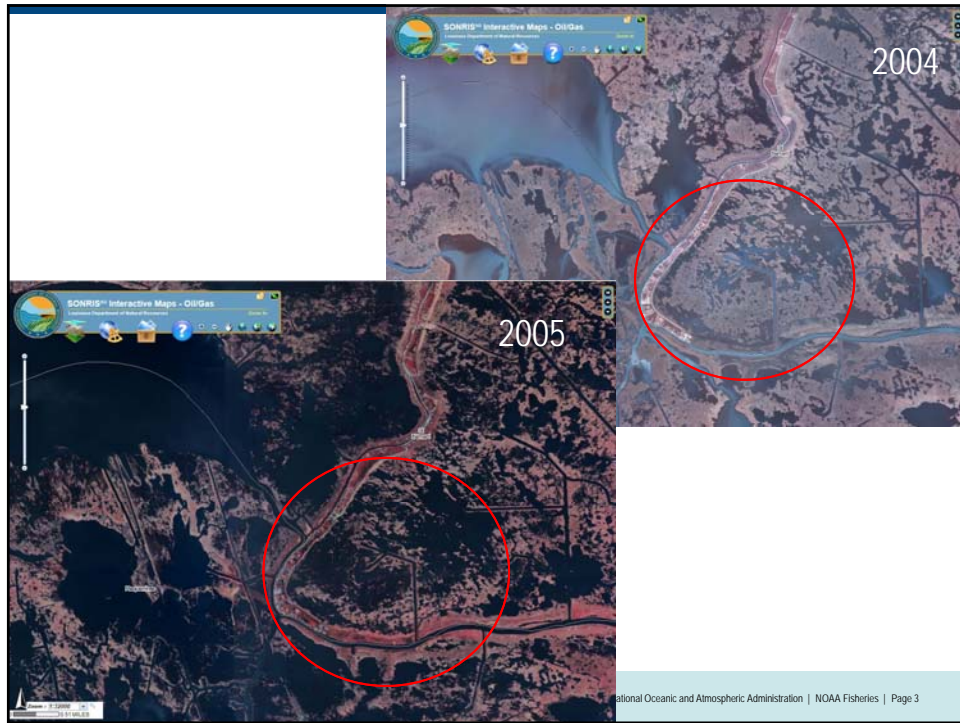
East Delacroix Marsh Creation and Terracing

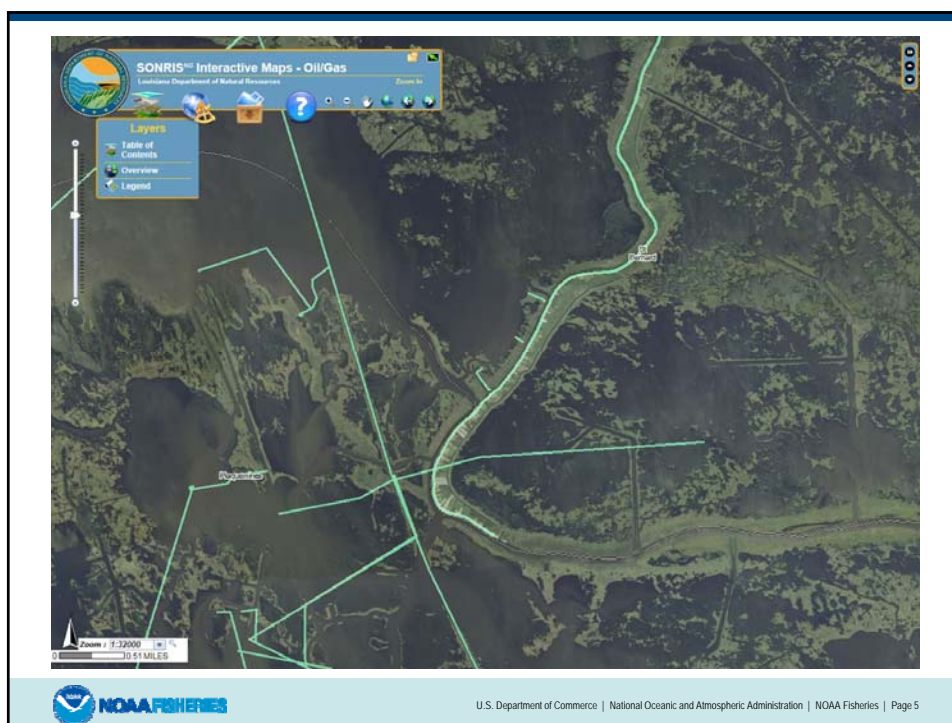
NOAA Fisheries/NMFS

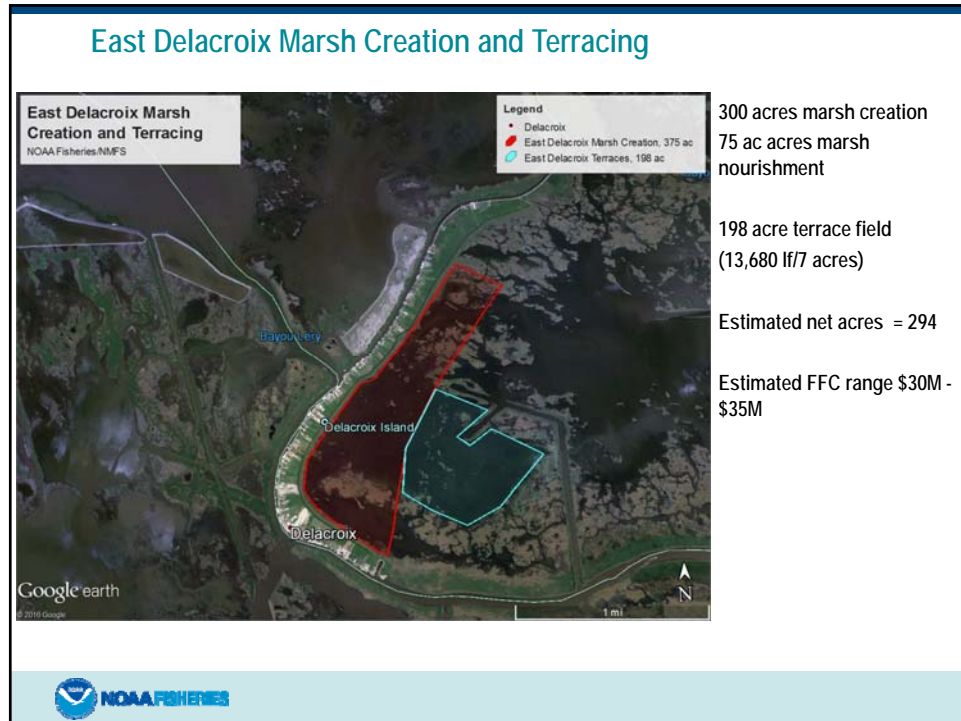
- Legend**
- Delacroix
 - East Delacroix Marsh Creation, 375 ac
 - East Delacroix Terraces, 198 ac











R2-BS-06

**Bayou Terre aux boeuf and Ridge Restoration and Marsh
Creation**

PPL27 PROJECT FACT SHEET
February 2, 2017

Project Name

Bayou Terre aux Boeuf Ridge Restoration and Marsh Creation

Master Plan Strategy

Master Plan 2017 (in Draft): Utilizes Ridge Creation 100 and Marsh creation .06a concepts.

Project Location

Region 1, Breton Basin, St. Bernard Parish and Plaquemines Parish.

Problem: Historic ridge habitat loss occurs in the form of subsidence and shoreline erosion along Bayou Terre aux Boeuf (TAB). The shoreline erosion is caused by recreational and commercial boat traffic. The Bayou TAB ridge is subsiding due to anthropogenic and natural processes. Ridge habitat consists of Live Oak Hackberry forest which is utilized by trans-gulf migratory bird species as a first and last stop when crossing the Gulf of Mexico. This critical habitat is rated as S1 and S2 priority by the state of Louisiana.

Interior marsh loss to the east of Delacroix is caused by subsidence, sediment deprivation and increased tidal prism due to construction of access canals. The integrity of this marsh and the TAB ridge provides a vital geomorphological barrier that impedes salinity impacts upon the fresh and intermediate marshes to the north. The TAB ridge also serves as a structural line of defense for Delacroix and the greater New Orleans area from highly erosional storm surge events.

Goal: Restore 3.2 miles of Live Oak Hackberry forest along the southern bank of Bayou TAB and construct 471 acres of marsh creation/nourishment east of Delacroix. The total project acreage will be 477 acres.

Proposed Solutions: Create approximately 3.2 miles of ridge equaling 6.4 acres of Live Oak Hackberry forest habitat along Bayou TAB. The ridge habitat will be built out into the shallow water of the bayou to minimize the impact on healthy adjacent marsh. The structure will have a +5 elevation and 50% of the newly created ridge will include vegetative plantings. The ridge habitat will be located on the Plaquemines side of Bayou TAB. The Delacroix site will create 377 acres of marsh and nourish approximately 94 acres of marsh (471 acres total) using sediment dredged from Lake Lery. The marsh creation will have a semi-confined south, east and north flank and a fully confined west flank. Containment will be degraded as necessary to re-establish hydrologic connectivity with adjacent wetlands.

Preliminary Project Benefits: Restore historical ridge ecosystem function and geomorphological barrier. Reduce the erosional potential of tidal fluctuations within degraded marshes utilized by numerous species. The proposed project will have significant synergistic effects with the South Lake Lery Shoreline Marsh Creation (BS-17) and institutes components of the MRGO Ecosystem Restoration Plan.

Identification of Potential Issues: The proposed project has the following potential issues: pipelines would have to be avoided for the borrow site and one oyster lease exists in the project site.

Preliminary Construction Costs: The estimated construction cost with 25% contingency is approximately \$26 million.

Preparer(s) of Fact Sheet:

Blaise Pezold, LDAF-CRVP, 985-447-3871 ext. 479, Blaise.Pezold@la.nacdn.net

Cody Colvin, USDA-NRCS, 225-665-4253 ext. 109, cody.colvin@la.usda.gov



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

Data Source: NAIP 2015
Map Date: JANUARY 18, 2017



PPL 27
BAYOU TERRE AUX BOEUF
RIDGE AND MARSH RESTORATION
ST. BERNARD AND PLAQUEMINES PARISH, LA

Legend

- MARSH_CREATION_BOUNDARY
- MARSH_NOURISHMENT
- RIDGE_CREATION

CWPPRA
PPL 27
Regional Planning Team
February 02, 2017

Region 1 Breton Basin

Bayou Terre Aux Boeuf Ridge Restoration and Marsh Creation

Conceived in the St. Bernard
Coastal Zone board meetings



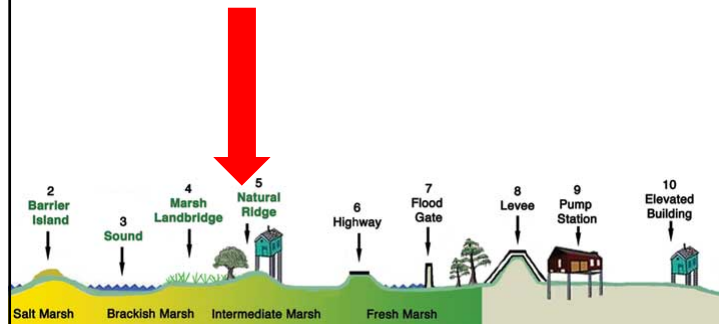
ST. BERNARD
PARISH GOVERNMENT



Ridge restoration was identified as
our community's first priority

Problems:

- Loss of Ridge habitat due to subsidence, access canals and sediment deprivation
- Loss of this structural landmass leaves coastal ecosystems vulnerable to rotational storm surge
- Ridge systems are an integral part of the Multiple lines of defense model



Bayou Terre Aux Boeuf Ridge Creation


- 3.2 miles of Ridge
- 6.4 acres of S1/S2 Live Oak Hackberry Forest Habitat

Delacroix Marsh Creation

- 377 acres of marsh creation
- 94 acres of marsh nourishment

Total cost + Contingency

=26 Million



Any questions?

Blaise Pezold, LDAF-CRVP, 985-447-3871 ext. 3, Blaise.Pezold@la.nacdn.net

R2-BS-07

Bayou La Chape Marsh Creation

PPL27 PROJECT FACT SHEET
February 2, 2017

Project Name

Bayou La Chape Marsh Creation

Master Plan Strategy

Breton Marsh Creation-Component A (2017 Master Plan 001.MC.06a): Creation of approximately 11,800 acres of marsh in the Breton Marsh east of Delacroix Island to create new wetland habitat and restore degraded marsh.

Project Location

Region 2, ~~Pontchartrain~~ 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, decreased sediment supply, oil and gas activity, and relative sea level rise. 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 ripping of the marsh or by marsh submergence. Hurricane Katrina devastated the area resulting in substantial marsh loss which has exposed infrastructure to open water conditions.

Proposed Solution

Create/nourish 406 acres of wetlands by converting open water into marsh and nourishing existing marsh remnants with sediment hydraulically dredged from a borrow source in Lake Borgne. Temporary containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access. Vegetative plantings will be used. Restoration in this area would build the area's defenses against hurricanes and flooding.

Project Benefits

Create/nourish 406 acres of emergent marsh with sediment dredged from Lake Borgne.

Project Costs

The preliminary project cost estimate with 25% contingency is \$18 million. The fully funded range is \$25M - \$30M.

Preparer(s) of Fact Sheet:

Sharon L. Osowski, Ph.D.; EPA: (214) 665-7506; osowski.sharon@epa.gov
Adrian Chavarria, EPA; (214) 665-3103; chavarria.adrian@epa.gov



2017 Draft Master Plan
Proposed Marsh Creation

N
Basemap: 2-15 NAIP DOQQ - St. Bernard Parish
Produced by: EPA Region 6, Dallas, TX
0 0.15 0.3 0.6 0.9 1.2
Miles



Bayou la Chape Marsh Creation



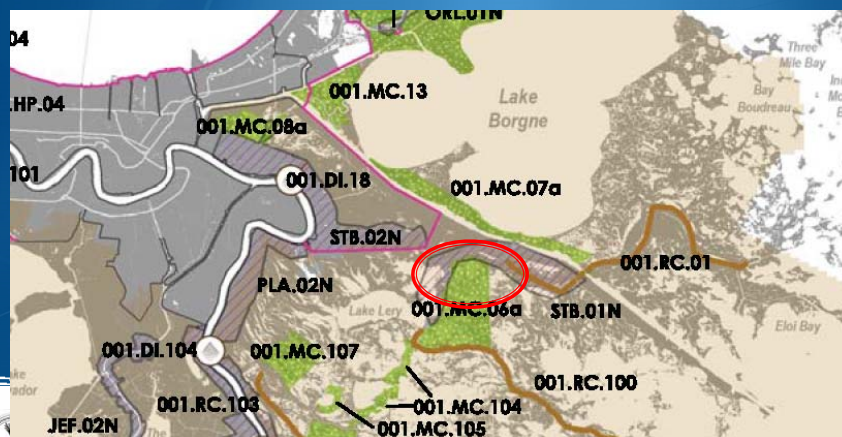
Coastal Wetlands Planning, Protection and Restoration Act

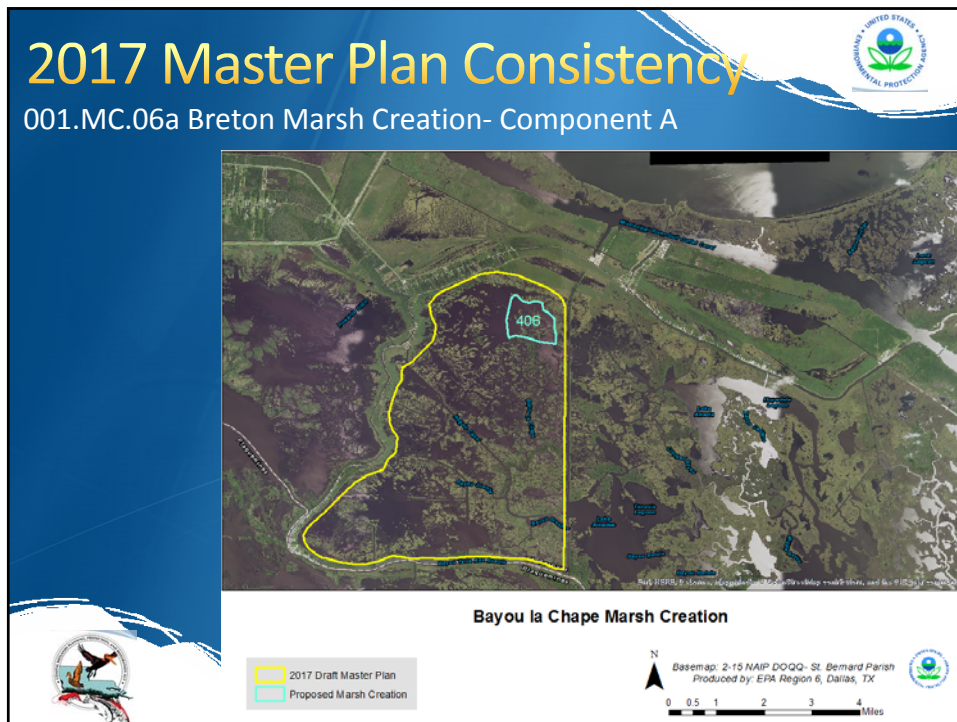


2017 Master Plan Solution



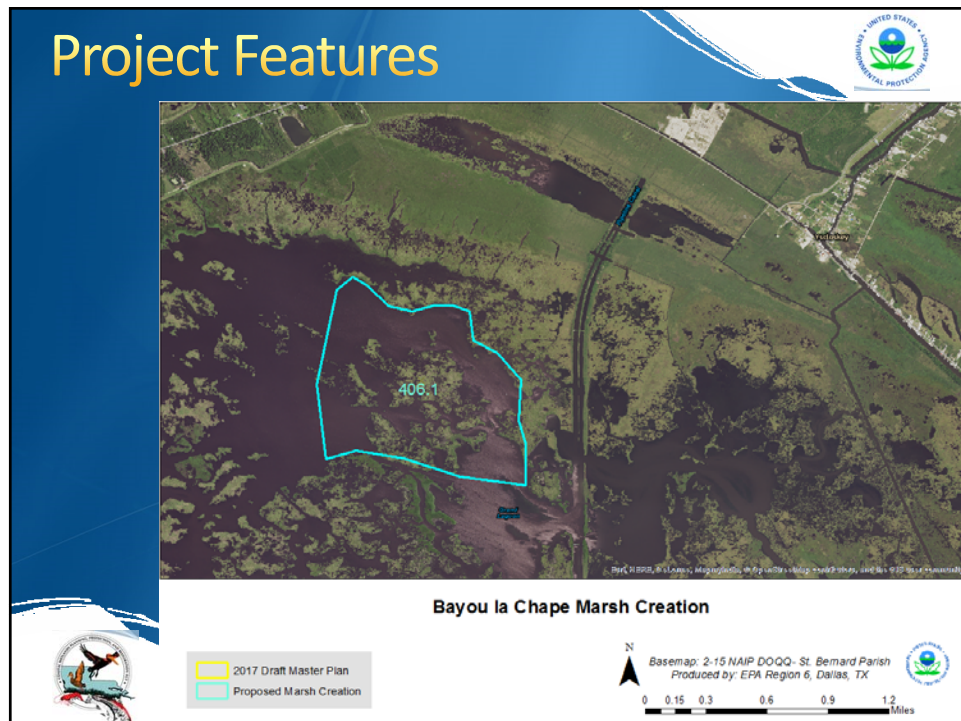
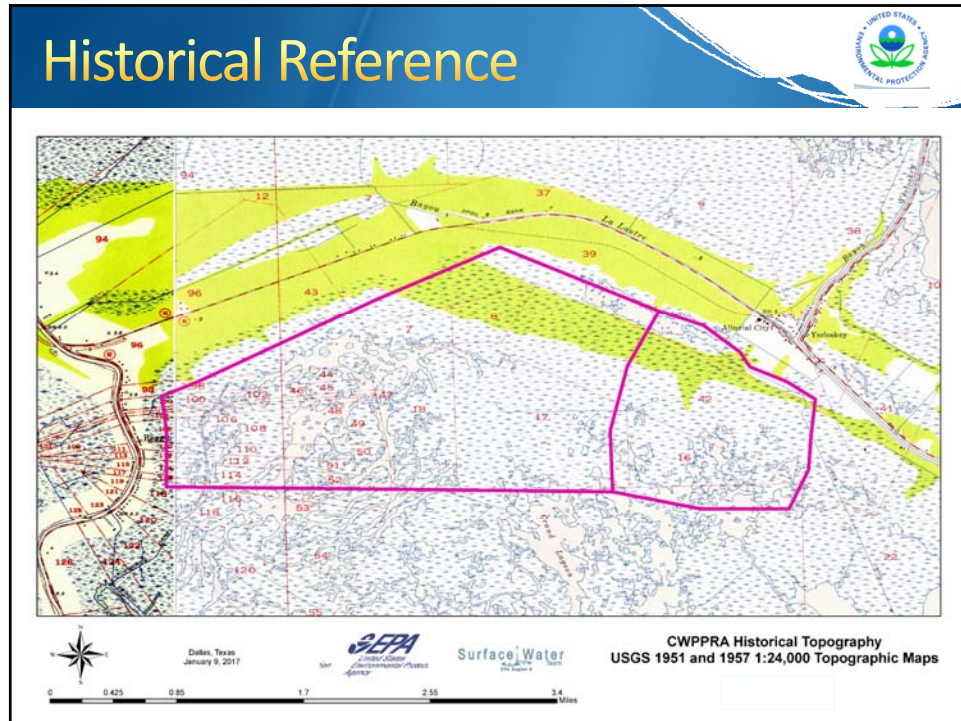
001.MC.06a Breton Marsh Creation- Component A: Creation of approximately 11,800 acres of marsh in the Breton Marsh east of Delacroix Island to create new wetland habitat and restore degraded marsh.





Problems

- This area has experienced wetland loss due to:
 - Storm impacts from Hurricane Katrina
 - Saltwater intrusion
 - Lack of sediment supply
 - Oil & gas activity
 - Subsidence & Sea-level rise
- St. Bernard Parish may experience some of the highest rates of wetland loss over the next 50 years (2017 MP)
- Locations outside the levees could experience increased storm surge flood risk.



Project Goals

- Create/nourish 406 acres emergent marsh with sediment from Lake Borgne
- Estimated preliminary cost w/25% contingency is \$18 million
- Fully funded cost range \$25-30 M.



R2-BS

~~Lake Lery Shoreline Marsh Creation and Terracing~~

(Not Consistent with 2012 or draft 2017 State Master Plans)

PPL27 PROJECT NOMINEE FACT SHEET
February 2, 2017

Project Name

Lake Lery Shoreline Marsh Creation and Terracing

Project Location

Region 2, Breton Basin, St. Bernard Parish

Problem

The marshes forming the northern and 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 and newly open waters north of the lake. The high loss rates are indicative of the magnitude of the problem. The 1984 to 2011 USGS project-specific loss rate is -1.17%/yr and the 1985 to 2016 loss rate is -1.35%/yr for the North Lake Lery mapping subunit.

Goals

The primary goals of the project are to 1) Create/nourish 560 acres of marsh through dedicated dredging and, 2) Restore/stabilize approximately 3 miles of Lake Lery shoreline, 3) Construct 15 acres of terraces.

Proposed Solution

The project would create 422 acres and nourish an additional 138 acres of marsh along the northern and eastern shore of Lake Lery using material dredged from Lake Lery. The marsh creation/nourish will restore approximately 3 miles of the lake shoreline. The target elevation for the marsh creation areas will correspond with the elevation of healthy marsh in the surrounding area. No planting is included for the creation or nourishment. The project will construct 21,000 feet (15 acres) of terraces in a 299-acre area north of the lake rim. Terraces would be constructed to an elevation of +2.5 feet NAVD 88, with a 15-foot crown width, and would be planted with suitable marsh vegetation 2.5 feet apart with two rows on the crown and each slope.

Preliminary Project Benefits

- 1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 859 acres (560 acres marsh creation and nourishment + 299 acres terrace field).
- 2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 403 acres 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 reestablish the northern/eastern rim of Lake Lery. This area was significantly damaged during Hurricane Katrina.

- 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 a 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.

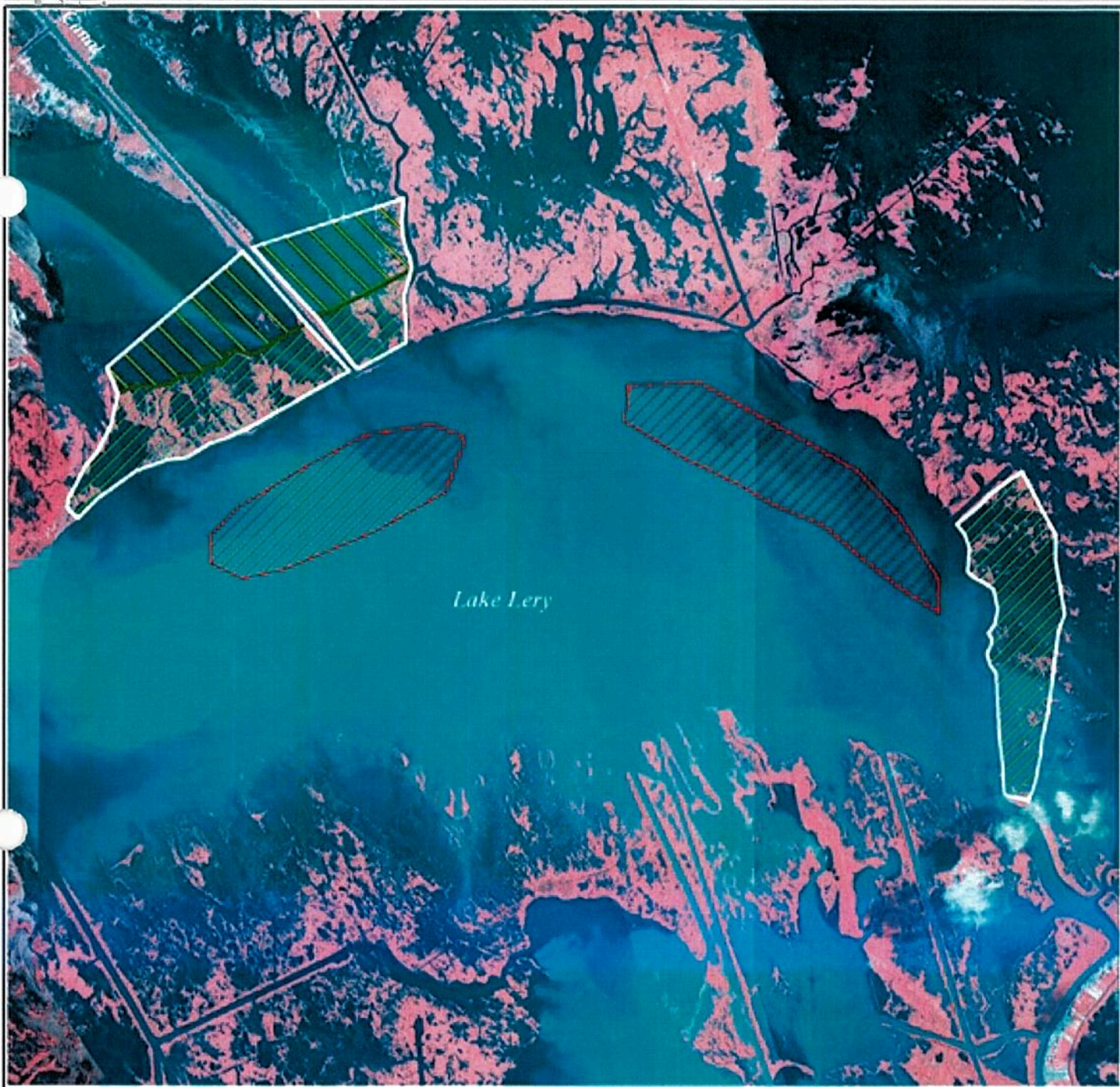
Preliminary Construction Costs

The fully funded cost range is \$30M-\$35M.

Preparer(s) of Fact Sheet:

Patrick Williams, NOAA Fisheries, 225-389-0508, ext 208, patrick.williams@noaa.gov

Twyla Cheatwood, NOAA Fisheries, 225-389-0508, ext 209, twyla.cheatwood@noaa.gov



Lake Lery Shoreline Marsh Creation and Terracing PPL27 Nominee

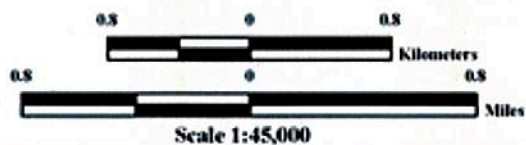


Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, La

Image Source:
2010 NAIP Photography

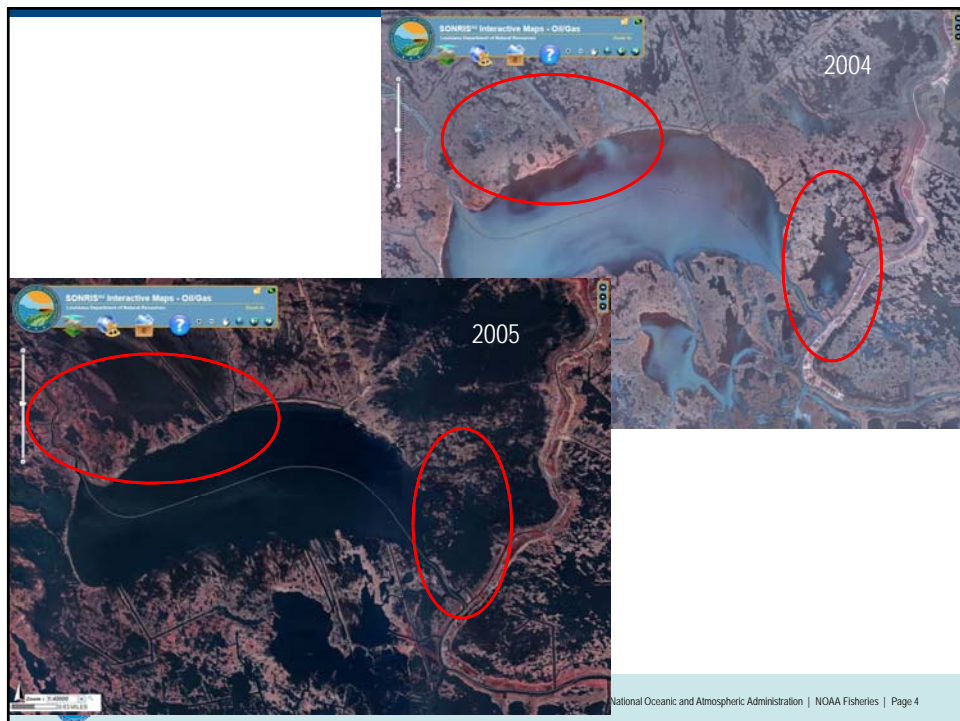
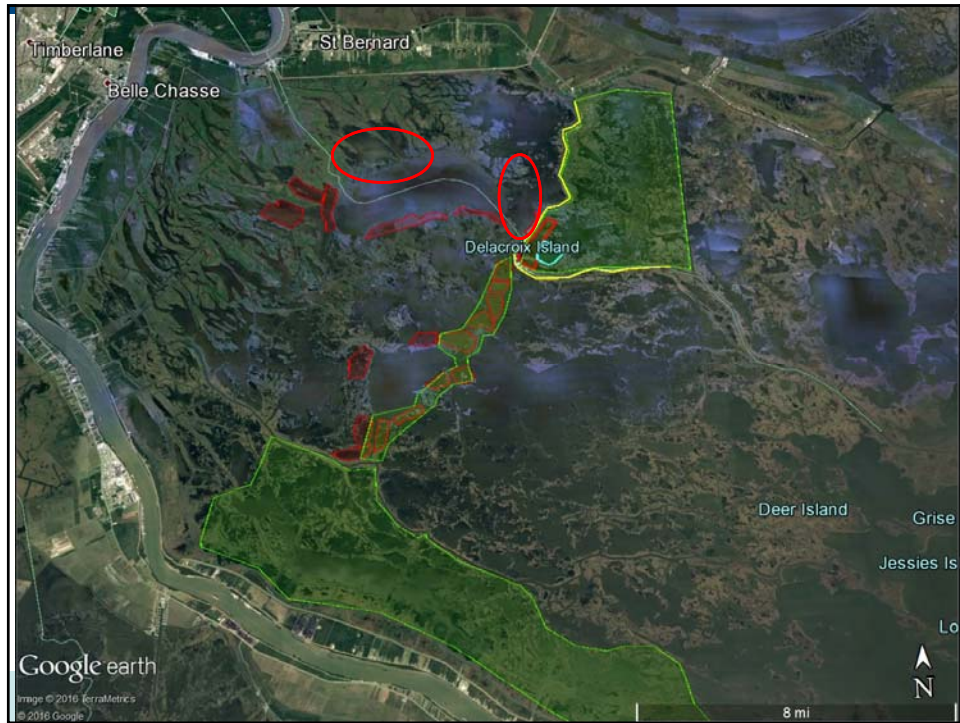


- Terrace Field *
- Marsh Creation/Nourishment *
- Borrow *
- Project Boundary *
- * denotes proposed features

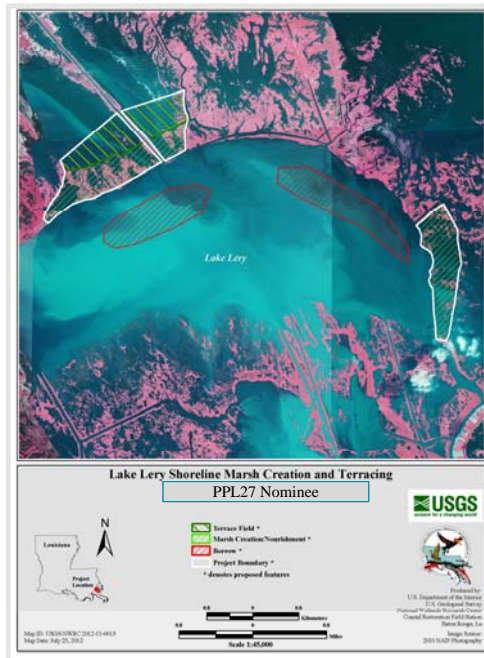


Map ID: USGS-NWRC 2012-11-0013
Map Date: July 25, 2012









- 422 ac marsh creation
- 138 ac acres marsh nourishment
- 299 ac terrace field
- (21,000 lf/15 acres)
- Estimated net ac = 403
- Estimated FFC range \$30M - \$35M



R2-BS

~~North Lake Lery Wetland Restoration~~

(Not Consistent with 2012 or draft 2017 State Master Plans)

PPL27 PROJECT NOMINEE FACT SHEET

January 29, 2016

Project Name: North Lake Lery Wetland Restoration

Project Location:

Region 2, Breton Sound Basin, St. Bernard Parish, West of Bayou Terre aux Bouef, North and East of Lake Lery

Problem:

According to USGS-NWRC mapping, much of the wetlands surrounding Lake Lery were heavily damaged along with the Lake Lery shoreline due to Hurricane Katrina. Since 2005 this area has been hit with 4 Hurricanes (Gustav, Ike, Ida, Issac) and at least 1 Tropical Storm (Lee). The marshes in the area have never had time to completely heal before the next major storm hit. Wind induced waves are now damaging the interior marshes north of the Lake causing accelerated interior marsh loss. At this point, there is no shoreline along the eastern side of Lake Lery and much of the marsh is also gone. Because of the severe damage from Hurricane Katrina and the repeated damages from the other storms, it is highly unlikely that this area will recover without immediate restoration efforts.

Goals:

The project goals are to 1) restore approximately 8,000 feet of shoreline, 2) create 110 acres of intermediate marsh habitat, and 3) clear an 80 ft. by 25,000 ft. channel of debris to allow water from the Caernarvon Outfall Canal to flow in an eastward direction.

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

Proposed Solutions:

The proposed project would: 1) Restore 8,000 ft of shoreline along the eastern bank of Lake Lery with a bucket dredge. The material would be stacked to a settled height of +2.5 and a width of 30ft. The shoreline would be planted with two rows of bullwhip along the -1.0 ft. contour. Adjacent to the newly constructed shoreline 110 acres of intertidal marsh would be created with material dredged from Lake Lery water bottoms. Finally, an 80 ft. channel would be cleared of debris using a bucket dredge along 25,000 LF. This would allow water from the Caernarvon Freshwater Diversion Outfall Canal to flow toward the east.

Preliminary Project Benefits:

1) What is the total acreage benefited both directly and indirectly? Approximately 7,000 acres would be benefited.

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 103 acres from construction of 9,000 ft. of shoreline and 110 acres of marsh. An undetermined amount of benefits would come from the introduction of the freshwater from Caernarvon Freshwater Diversion Canal.

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%). Loss rate reduction should be >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.* Creating 9,000 ft. of shoreline would restore a portion of the Lake Lery shoreline.

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

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

Identification of Potential Issues:

The proposed project has the following potential issues: There could be pipelines in the project area.

Preliminary Construction Costs:

The estimated construction cost including 25% contingency is \$10.7 M.

Preparer(s) of Fact Sheet:

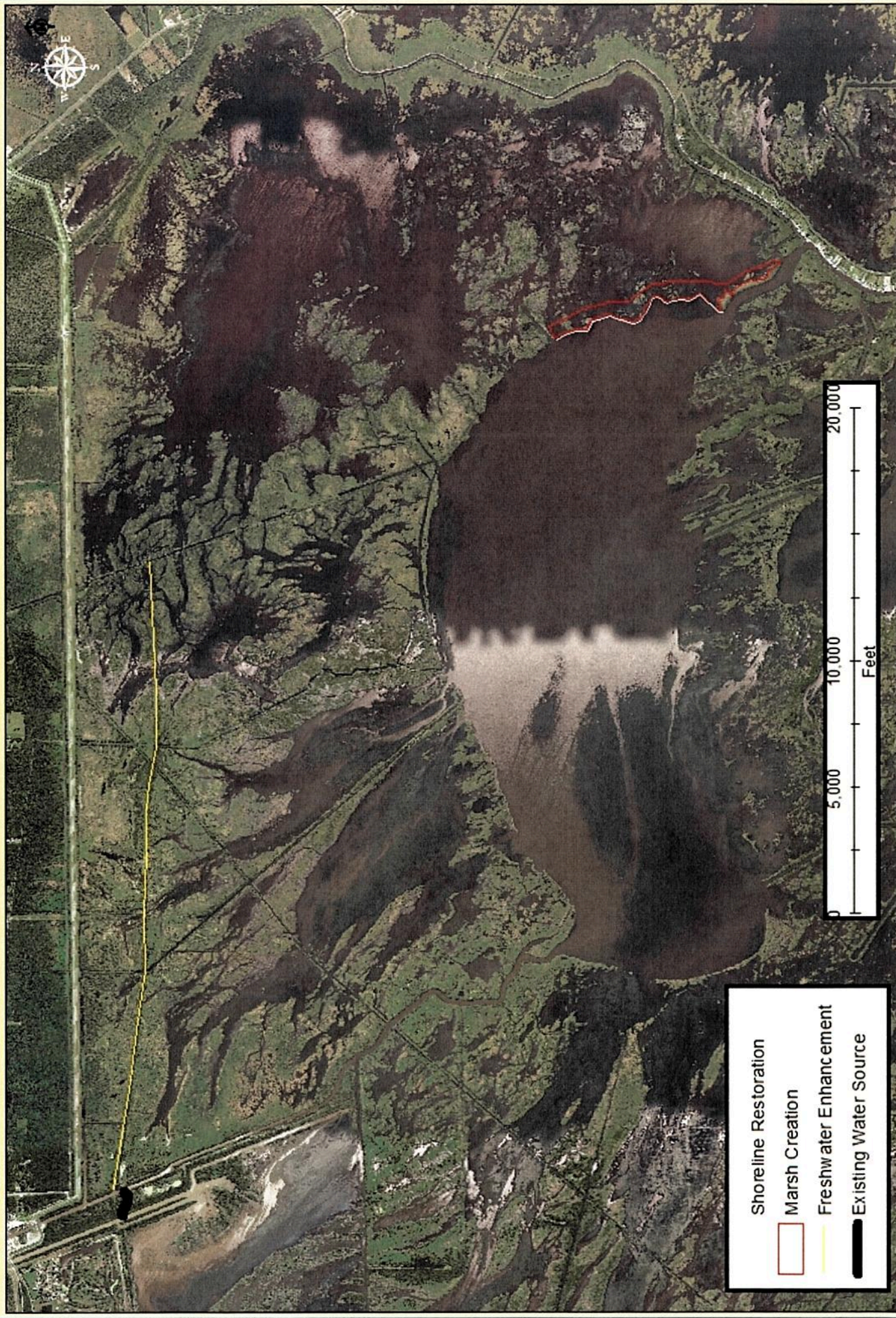
Robert Dubois (337) 291-3127 robert_dubois@fws.gov



U.S. Fish & Wildlife Service

Louisiana Ecological Services

PPL27 North Lake Lery Wetland Restoration



- Shoreline Restoration
- Marsh Creation
- Freshwater Enhancement
- Existing Water Source