Region 2

Coastal Wetlands Planning, Protection and Restoration Act

21st Priority Project List

Region 2
Regional Planning Team Meeting

January 27, 2011

USACE New Orleans District, New Orleans, LA

1. Welcome and Introductions

RPT Region 2
Leader:
Travis Creel -USACE

Announcements

- PPL 21 Selection Process Packages

- PPL 21 RPT meetings to accept project nominees:
  - Region IV, Vermilion LSU Ag Center, Jan. 25, 2011, 1:00 pm
  - Region III, Morgan City Auditorium (W Concourse), Jan. 26, 2011, 9:00 am
  - Region II, New Orleans Corps of Engineers, Jan 27, 2011, 9:00 am
  - Region I, New Orleans Corps of Engineers, Jan 27, 2011, 1:00 pm

- Coast-wide Voting meeting to select project nominees for all basins:
  February 22, 2011, 10:00 am
  LA Department of Wildlife and Fisheries, 2000 Quail Dr., Baton Rouge

- 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 at the coast-wide voting meeting.

- CWPPRA agencies will be assigned responsibilities for preparing nominee fact sheets after the coast-wide voting meeting.

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

Mississippi River Basin
Plaquemines Parish

2. PPL 21 Process and Ground Rules

RPT Meetings

- Jan. 25-27, 2011 to accept project and demo proposals in 4 coastal regions broken into 9 basins (no limit on number of projects that can be proposed).
- Project proposals should support a Coast 2050 Regional or Coast-wide Strategy.
- A project can only be nominated in one basin (except for coast-wide projects- more info on coast-wides after the following "RPT Meetings" slide).
- Proposals that cross multiple basins, excluding coast-wide projects, shall be nominated in one basin only, based on the majority area of project influence.
- Coast-wide projects apply across basin boundaries; their benefits are not tied to one basin. They can be nominated from any basin and can be presented in all RPT meetings.

RPT Meetings

- Project presenters can split multi-basin or coast-wide projects into multiple individual projects. This must occur during the RPT meeting where the project is first presented. If a presenter does not choose a basin from which to propose a project, the RPT leaders, in conjunction with the CWPPRA Planning & Evaluation (P&E) Subcommittee, will decide collectively after the RPT meetings but before the Coast-wide Voting Meeting.

- Public comments on project proposals will be accepted orally during the RPT meetings and in writing by February 10, 2011.

- Limit project proposals to 3 to 5 minutes.

- Limit comments/questions during meeting to PPL 21 subject proposals and processes.

Coast-wide Voting Meeting

- Feb. 22, 2011: Coast-Wide Voting (CWV) Meeting.
- RPTs, consisting of CWPPRA Agencies & Coastal Parishes, will select 2 nominees per basin, except 3 each in Barataria, Terrebonne, & Pontchartrain & 1 in the Atchafalaya, plus 6 demos. If only 1 project is nominated for the Miss. River Basin, 3 nominees will be assigned to Breton Sound. If proposed, 1 coast-wide may be chosen for inclusion as a nominee.
- Selection will be by consensus if possible. If not, CWPPRA agencies and parishes will submit ranked votes by basin.
- Parishes vote only in basins they occupy. Parishes vote on all demonstration and coast-wide projects.
- No public comments taken during CWV meeting (Public comments will be heard today & written comments should be submitted by 2/10/2011 to the CWPPRA Program Manager, Ms. Melanie Goodman - POC details on next to last slide).

Nominee Project Evaluations

- Following the coast-wide voting meeting, an agency will be assigned to each project to prepare a Nominee Project fact sheet (1 page + map).

- CWPPRA Engineering & Environmental Workgroups review draft features and assign preliminary cost and benefit ranges.

- Work groups will also review demo & coast-wide projects and verify that they meet PPL 21 criteria.

- CWPPRA Planning and Evaluation Subcommittee prepares cost/benefit summary matrix for Technical Committee.

PPL 21 Candidate Project Selection

- CWPPRA Technical Committee meeting, April 19, 2011 (this date may change) at 9:30 am, New Orleans District Corps of Engineers.
- Technical Committee ranks nominees and votes to select ten candidate projects and up to three demos.
- Written public comments should be submitted to Corps of Engineers prior to TC meeting by April 5, 2011.
- Public comments also accepted orally during meeting.
- Technical Committee will assign CWPPRA agencies to develop Phase 0 candidate projects.

PPL 21 Candidate Project Evaluation

- Candidates evaluated between May and October

- CWPPRA Workgroups
  - Workgroups conduct site visits and meetings to identify needs and establish project baselines and boundaries.
  - Environmental Workgroup WVA meetings to calculate benefits.
  - Engineering Workgroup meetings to refine features and project costs.
  - Engineering and Environmental Workgroup meetings to develop demonstration project scopes and costs.
  - Economics Workgroup conducts economic analyses to develop fully funded cost estimates for 20 year project.

CWPPRA PPL 21 Selection

- 2 Public meetings to present Phase 0 Evaluation results:
  - Abbeville, Courthouse, Nov. 16, 2011, 7:00 pm
  - New Orleans, Corps of Engs, Nov. 17, 2011, 7:00 pm
- Technical Committee votes to select up to 4 candidate projects and up to 1 demo to recommend for Phase I.
  - Nov. 30, 2011, Baton Rouge, 9:30 am
- Task Force final decision to select PPL 21 in January 2012.

3. Region 2 Coast 2050 Regional Strategies

Projects nominated should be:

- consistent with the Coast 2050 Regional Ecosystem or Coastwide Strategies

Restore Swamps

- Construct small sediment-rich diversions with outfall management
- Restore natural drainage patterns
- Prevent diversion-related flooding by building local levees at the wetland/upland interface and local pumping; remove diverted waters from upper basin by raising Highway 90 and installing flap-gated culverts or other appropriate measures

Restore and Sustain Marshes

- Use existing or future locks (Harvey, Algiers or Empire) to divert as much water as possible
- Manage outfall of existing diversions
- Enrich existing diversions with sediment
- Continue building and maintaining delta splays
- Construct most effective small diversions (Upper Oak, Amoretta, East and West of Empire)
- Construct sediment trap in Miss. River south of Venice and pump out to build marsh
- Construct delta-building diversion in the Myrtle Grove/Naomi area (15,000 cfs)
- Construct delta-building diversion in Bastion Bay (about 15,000 cfs)

Restore and Sustain Marshes

- Construct delta-building diversion into Benny's Bay (50,000 cfs)
- Construct delta-building diversion into American Bay (20,000-100,000 cfs)
- Construct controlled crevasses to allow diversion into Quarentine Bay and control sediment with low levees (about 50,000 cfs)
- Prevent loss of bedload into deep Gulf waters by relocating the navigation channel, not thru Bastion Bay, to reallocate water and sediment for land-building near shore

Restore and Sustain Marshes

- Dedicated dredging to create marsh near La. Highway 1
- Dedicated dredging of sediment for marsh building in Caminada Bay
- Construct large conveyance channel parallel to B. Lafourche to divert 100,000 cfs to create a delta lobe in Caminada Bay
- Gap spoil banks and plug canals in lower bay marshes

Restore, Protect and Maintain Bay, Lake and Gulf Shorelines and Barrier Islands

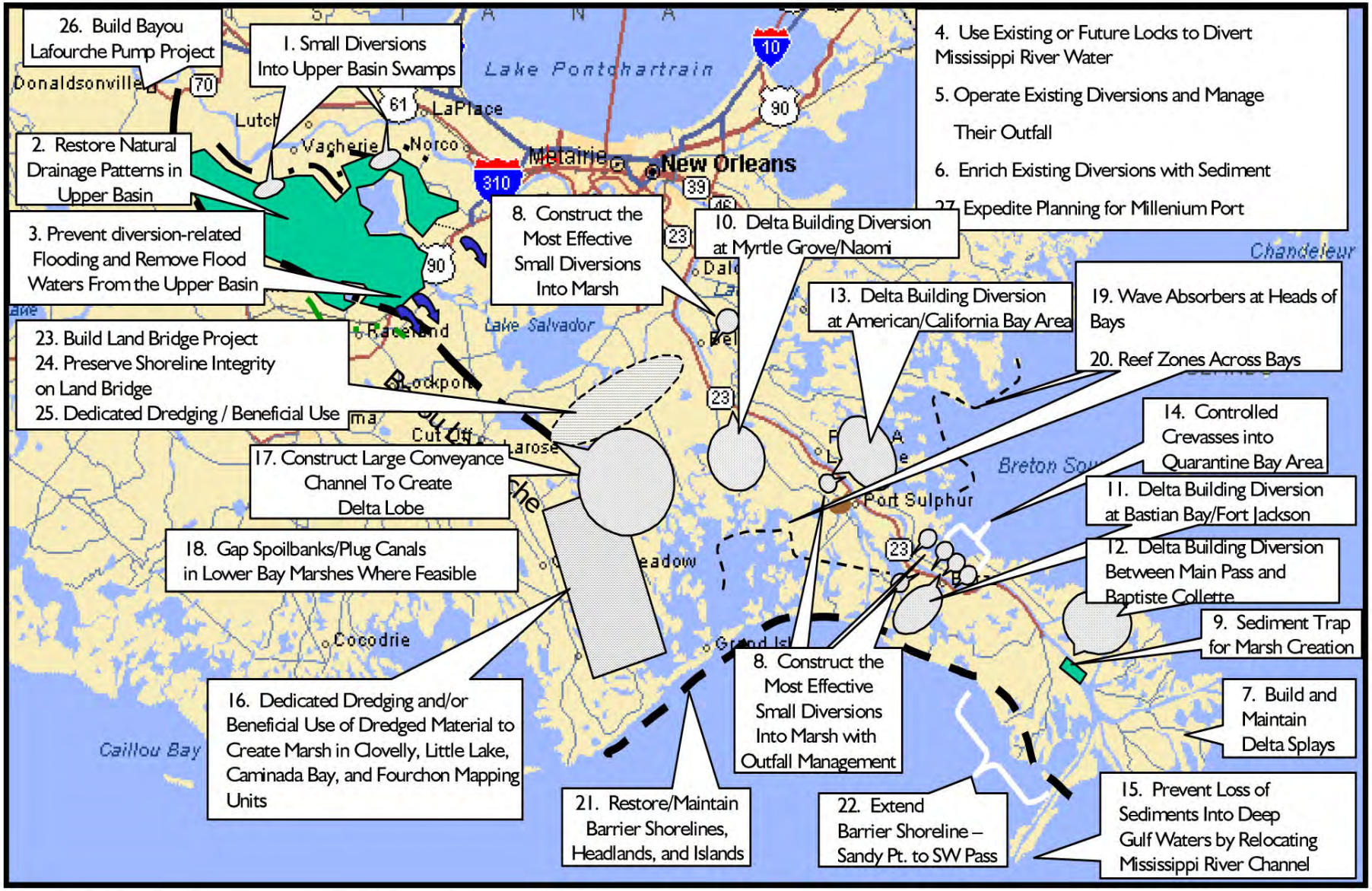
- Construct wave absorbers or low breakwaters at the head of bays
- Construct reef zones across bays
- Restore/maintain barrier headlands, islands and shorelines
- Extend and maintain barrier islands/shoreline from Sandy Point to Southwest Pass

Maintain Critical Landforms

- Build entire CWPPRA land bridge shore protection project
- Preserve bay/lake shoreline integrity on the land bridge
- Dedicated dredging to create marsh on the land bridge
- Build Bayou Lafourche siphon and pump project, if cost effective

Coast 2050 Coastwide Strategies

- Beneficial Use of Dredged Material
- Dedicated Dredging for Wetland Creation
- Herbivory Control
- Stabilization of Major Navigation Channels
- Management of Bay/Lake Shoreline Integrity
- Management of Pump Outfall
- Vegetative Planting
- Maintain or Restore Ridge Function
- Terracing



Coast 2050 Region 2 regional ecosystem strategies.

4. PPL 21 Project Nominations

Coast-wide Projects

- Proposes a technique applicable across the coast (e.g., vegetative plantings)
- Nominated at any RPT meeting
- All coastal parishes & agencies will vote on selection of coast-wide nominee
- Only one coast-wide nominee may be selected from the coast-wide nominee pool at the Coast-wide Voting Meeting on Feb 22nd
- The Technical Committee may or may not select a coast-wide project in April 2011.

Demonstration Projects

- Demonstrates a new technology
- Demonstrates a technology which can be transferred to other areas in coastal Louisiana
- Are unique and not duplicative in nature
- Engineering/Environmental Workgroups will validate that demos fit CWPPRA Standard Operating Procedures criteria and select sites for proposed demonstration projects
- The RPTs select 6 demos at the Feb. 22nd coast-wide voting meeting. The Tech. Comm. selects up to 3 demos in April 2011.
- Previous demo candidates must be ***re-nominated*** for PPL 21.

5. Announcement of Coast-wide Voting Meeting

Coast-wide Voting Meeting

• Feb. 22, 2011: meet in Baton Rouge to choose 2 project nominees per basin (except will choose 3 in Barataria, Terrebonne, and Pontchartrain Basins and 1 in Atchafalaya Basin). If only 1 project is nominated for the Mississippi River Basin, 3 nominees will be assigned to Breton Sound Basin. Plus, 1 coast-wide project and 6 demos may be selected.

•Parishes of each basin are asked to ***identify who will vote*** at the coast-wide meeting **TODAY**.

•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).

•No public comments accepted at the coast-wide meeting (public comments will be heard today and written comments must be submitted by 2/10/2011).

Coast-wide Voting Meeting

•Each officially designated parish representative, each Federal agency, & the State (OCPR) will have one vote.

• Voting will be by ranked vote.

• Each voting entity will be provided a ballot.

• Each voting entity will provide a ranked score for all projects – the highest ranking project will receive the highest vote and the lowest will receive a vote of “1”.

• Points will be totaled for all projects within each basin.

Coast-wide Voting Meeting: Coast-wide Category

- The two nominees per basin (three each in Barataria, Terrebonne and Pontchartrain, & Breton Sound Basins if only one in MR Basin, and one in Atchafalaya Basin) receiving the highest vote will be included in the list of 20 nominee projects. If a coast-wide project is selected, the total will increase to 21 nominees.
- All demo projects will be voted upon in same manner with one coast-wide ballot.
- 15 minutes will be allowed for voting in each basin, and for demos and coast-wide projects.

6. Announcements of Upcoming Meetings

PPL 21 Upcoming Meetings

Coast-wide Voting Mtg, Feb 22, 2011, Baton Rouge

20 basin-project nominees, 1 coast-wide nominee, and 6 demos selected

Technical Committee Mtg, in Apr '11, New Orleans

Selection of 10 candidates and up to 3 demos

Public Meetings

16 Nov 11, Abbeville

17 Nov 11, New Orleans

Technical Committee Mtg, 30 Nov 11, New Orleans

Recommend up to 4 projects for Phase I funding

Task Force Mtg, in Jan '12, New Orleans

Final selection of projects for Phase I funding

Send Written Comments on Projects & Demos Proposed Today to the CWPPRA Program Manager (Deadline: February 10, 2011)

Melanie Goodman
CWPPRA Program Manager
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Fax to 504-862-1892
Attn: Melanie Goodman

Email: Melanie.L.Goodman@usace.army.mil

7. Adjourn


COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
BREAUX-JOHNSTON ACT

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 27, 2011 9:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	U.S. Army Corps of Engineers District Assembly Room 7400 Leake Ave. New Orleans, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION II

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
[illegible] Power	Dir. Ecological Solutions Bio Engineering Group	610 592 7674
Doug Smith	Project Mgr Bioengineering Grp.	919-414-8091
Archis Smith	ConocoPhillips	985-853-3018
[illegible] Hardy	ConocoPhillips	337-540-8004
NED COURET	V.P. COASTLINE SOLUTIONS, LLC	(985) 705-0634
Craig Duos	CEO - Southeast Engrs	225-295-1080
KURT BOURGEAUX	CEO - BAM CONTRACTORS	985-879-2141
Eddie Fisher	Bus. Dev. Orion Marine Group	504-305-2635
Stuart Brown	OCPR - CRS	
Chris Allen	OCPR - Planning	225-342-4736
Jean-Paul Richard	Resolve Marine Group	
Corey Miller	USACE - CHART	(504) 444 0431
Don Blanchard	SEA LLC	(504) 302-0799
James Harris	USFWS	
Jeff DeBlieux	ConocoPhillips	985 853-3009
[illegible] Kimble	LCP Manager PPG	504.912.5973
JASON KROLL	NRCS	225 389 0347
Vickie Putnam	Shaw Coastal/JP	504-236-7811
Quin Kinler	NRCS	225-382-2047
HEATHER FINLEY	LDWF	
CHRISTY McDONOUGH	LDWF	
PATRICK AMEDEE	LAFOURCHE PARISH SCHOOL BOARD	985-446-4811

LMV FORM 583-R
JAN 88

* If you wish to be furnished a copy of the attendance record, please indicate so next to your name.

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 27, 2011 9:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	U.S. Army Corps of Engineers District Assembly Room 7400 Leake Ave. New Orleans, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION II

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
Kevin Roy	USFWS	337-291-3120
Charles Sasser	LSU	225 578 6375
Jim Fields	Chater Media filmmaker	985 446 5000
Kimeka Vinson	LALL	337 482 6966
LOLAND BROUSSARD	NRES	337-291-3069
WAYNE KELLER	GRAND ISLE PORT COMMISSION	504-415-0102
Robert Bourgeois	LDWF	225-765-0765
Gary Rauber	Citizen	504-486-9223
Angela Trahan	USFWS	337-291-8137
Jody Chenier	St James Parish	225-562-2262
SHANE LANDRY	ST. James Parish	225-562-2370
Brad Inman	USACE	504-862-2124
Scott Wandell	USACE	504-862-1878
Kimberly Clements	NOAA/NMFS	225 389 0508 ~~0505~~
John Boatman	NRCS	985-447-3871
Randy Moertle	Little Lake Land Co.	(985) 856-3630
Maggie Winter	Jeff. Parish	(504) 736-6443
Paul Kaspar	EPA	214 665 7459
Paige Murphy	Houpe	(318) 243-6877
PATRICK WILLIAMS	NOAA/NMFS	985/389-0508
Julie Whitbeck	NPS-Jean Lafitte NHP&P	(504) 589-3882
Dusty Poitevent	NPS	504 589-3882x119

LMV FORM 583-R
JAN 88

* If you wish to be furnished a copy of the attendance record, please indicate so next to your name.

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 27, 2011 9:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	U.S. Army Corps of Engineers District Assembly Room 7400 Leake Ave. New Orleans, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION II

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
Summer Martin	OCPR, Coastal Resources Scientist	225-342-1594 summer.martin@la.gov
HEATHER FINLEY	LDWF	225.765.2956
Ed Fike	Coastal Environment, Inc	225 383-7455 X 129
Gary Shaffer	Professor Southeastern	985-549-2865
Gayle Buckley	citizen	504-277-617[illegible]
Brian Forteson	St. Tammany Parish	985 898.2552
Barri Blanks	Environmental Management System	504-352-1341
Leslie Suazo	Brown & Caldwell	225-326-5047

LMV FORM 583-R
JAN 88

* If you wish to be furnished a copy of the attendance record, please indicate so next to your name.

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 27, 2011 1:00 P.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	U.S. Army Corps of Engineers District Assembly Room 7400 Leake Ave. New Orleans, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION I

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
HEATHER FINLEY	LDWF	225.765.2956
Paige Murphy	Loupe	318 243 6877
Marnie Winter	Jeff. Parish	504-736-6443
Michael Miner	BOEM	504 736 2700

LMV FORM 583-R
JAN 88

* If you wish to be furnished a copy of the attendance record, please indicate so next to your name.

Region 2– Barataria Basin

R2-BA-01	Northwest Turtle Bay Marsh Creation and Shore Protection
R2-BA-02	Bayou Grande Cheniere Marsh Creation
R2-BA-03	Grand Bayou Marsh and Ridge Restoration
R2-BA-04	Bayou Dupont to Bayou Barataria Marsh Creation
R2-BA-05	South Lake Salvador Shoreline Restoration and Protection
R2-BA-06	Bayou L'Ours Terracing
R2-BA-07	Bayou Villars Shoreline Stabilization Project
R2-BA-08	Bayou Dupont Sediment Delivery– Marsh Creation 3
R2-BA-09	West Pointe a la Hache Marsh Creation South
R2-BA-10	Home Place Siphon
R2-BA-11	Mississippi River Reintroduction North of Lac des Allemands (MR RiNOLDA)
R2-BA-12	Mississippi River Small Introduction (siphon) and outfall management east of Lac des Allemands
R2-BA-13	Rebuild the East Bank of the "Empire to Gulf of Mexico Waterway"

Region 2– Breton Sound

R2-BS-01	Terracing and Marsh Creation South of Big Mar
R2-BS-02	Lake Lery Shoreline Marsh Creation
R2-BS-03	40 Arpent Canal Outfall Management
R2-BS-04	Monsecour Siphon
R2-BS-05	White Ditch Marsh Creation Sediment Delivery
R2-BS-06	Wills Point Marsh Creation

Region 2– Mississippi River Basin

R2-MR-01	Pass a Loutre Restoration

Region 2-

Barataria Basin

R2-BA-01 Northwest Turtle Bay Marsh Creation and Shore Protection

R2-BA-01

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Northwest Turtle Bay Marsh Creation and Shore Protection

Coast 2050 Strategy
Region 2 Regional Strategy #24: Preserve bay and lake shoreline integrity on the landbridge
Region 2 Regional Strategy #25: Dedicated dredging and/or beneficial use of dredged material on the landbridge

Project Location
Region 2, Barataria Basin, Jefferson Parish, Turtle Bay

Problem
Excluding canals, about half (390 acres) of the project area (750 acres) has been converted to open water. USGS has estimated a 1985-2009 loss rate of -0.56% per year for the Three Bayou Bay LCA polygon. Shoreline erosion along the northwest shore of Turtle Bay is estimated to be approximately 10 feet per year.

Proposed Project Features
The proposed project would create approximately 390 acres and nourish approximately 360 acres of emergent marsh using sediment dredged from Turtle Bay or Little Lake. Existing canal spoil banks, emergent marsh, and limited segments of containment dikes will be used to guide distribution of deposited material. Any containment dikes constructed will be degraded as needed to reestablish hydrologic connection to adjacent wetlands. Newly constructed marsh will be assessed to determine if vegetative plantings will be necessary. The estimated cost includes funds to plant 50% of the created marsh acres (195 ac).

Approximately 8,350 feet of shoreline protection is proposed for the northwest shoreline of Turtle Bay.

Consideration will be given to the closure of three oil and gas access canals, pending discussion with the oil and gas operators(s) in the area. The purpose of these canal closures would be to limit the multiple exchange points with Little Lake, thereby partially restoring the hydrology of the area.

Goals
The goals of the project goal are to 1) create approximately 390 acres and nourish approximately 360 acres of emergent marsh using dredged sediment; and 2) eliminate shoreline erosion along the northwest shoreline of Turtle Bay, resulting in the protection of approximately 38 acres over 20 years. The goal of the proposed canal closures would be to partially restore the hydrology of the area.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? Approximately 750 acres of emergent marsh would be created or nourished.

2) How many acres of wetlands will be protected/created over the project life? The project would result in the protection/creation of approximately 383 net acres of marsh.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%). The anticipated land loss rate reduction throughout the area of direct benefits 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. 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 oil and gas wells, pipelines, and supporting infrastructure 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: coordination with oil and gas entities would be required so that some canals could be closed at the shoreline.

Preliminary Construction Costs
$ 19 million (including 25% contingency)

Preparers of Fact Sheet

Quin Kinler	Kevin Roy
USDA-NRCS	USFWS
225-382-2047	337-291-3120
quin.kinler@la.usda.gov	Kevin_Roy@fws.gov


Bayou Perot
Bayou Rigolettes
Little Lake
Turtle Bay
Legend
Shore_Protection
Potential Canal Closure
Marsh Creation and Nourishment
N
NW Turtle Bay
Marsh Creation/Shoreline Protection
Jefferson Parish, Louisiana
PPL-21
0
1,250
2,500
5,000
7,500
10,000
Feet

R2-BA-02 Bayou Grande Cheniere Marsh Creation

KZ-BH-02

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Bayou Grande Cheniere Marsh Creation

Coast 2050 Strategy
- Coastwide: Dedicated dredging to create, restore, or protect wetlands
- Coastwide: Utilize off-shore and riverine sand and sediment resources

Project Location
Region 2, Barataria Basin, Plaquemines Parish, near Lake Hermitage, along Bayou Grande Cheniere ridge

Problem
From 1932 to 1990, the West Point a la Hache Mapping Unit lost 38% of its marsh. Through 2050, 28% of the 1990 marsh acreage is expected to be lost. That loss is expected to occur even with operation of the West Point a la Hache Siphons. Significant marsh loss has occurred south of Lake Hermitage with the construction of numerous oil and gas canals.

Goals
The primary goal is to re-create marsh habitat in the open water areas and nourish marsh along the eastern side of the Bayou Grande Cheniere ridge. Terraces are proposed to reduce fetch in large open water bodies and to capture suspended sediment delivered via the West Pointe a la Hache siphons.

Proposed Project Features
1. Riverine sediments will be hydraulically dredged and pumped via pipeline to create approximately 500 acres of marsh in the project area.
2. Approximately 61,000 linear feet of terraces (50 acres) will be constructed to reduce fetch and turbidity and capture suspended sediment.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 1,500 acres would be benefited directly and indirectly. Direct benefits include 550 acres (500 acres of marsh creation/nourishment and 50 acres of terraces). Indirect benefits would occur to the Bayou Grand Cheniere ridge and within the 1,000-acre 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 430 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 to 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.* The project would help maintain the Bayou Grande Cheniere ridge.

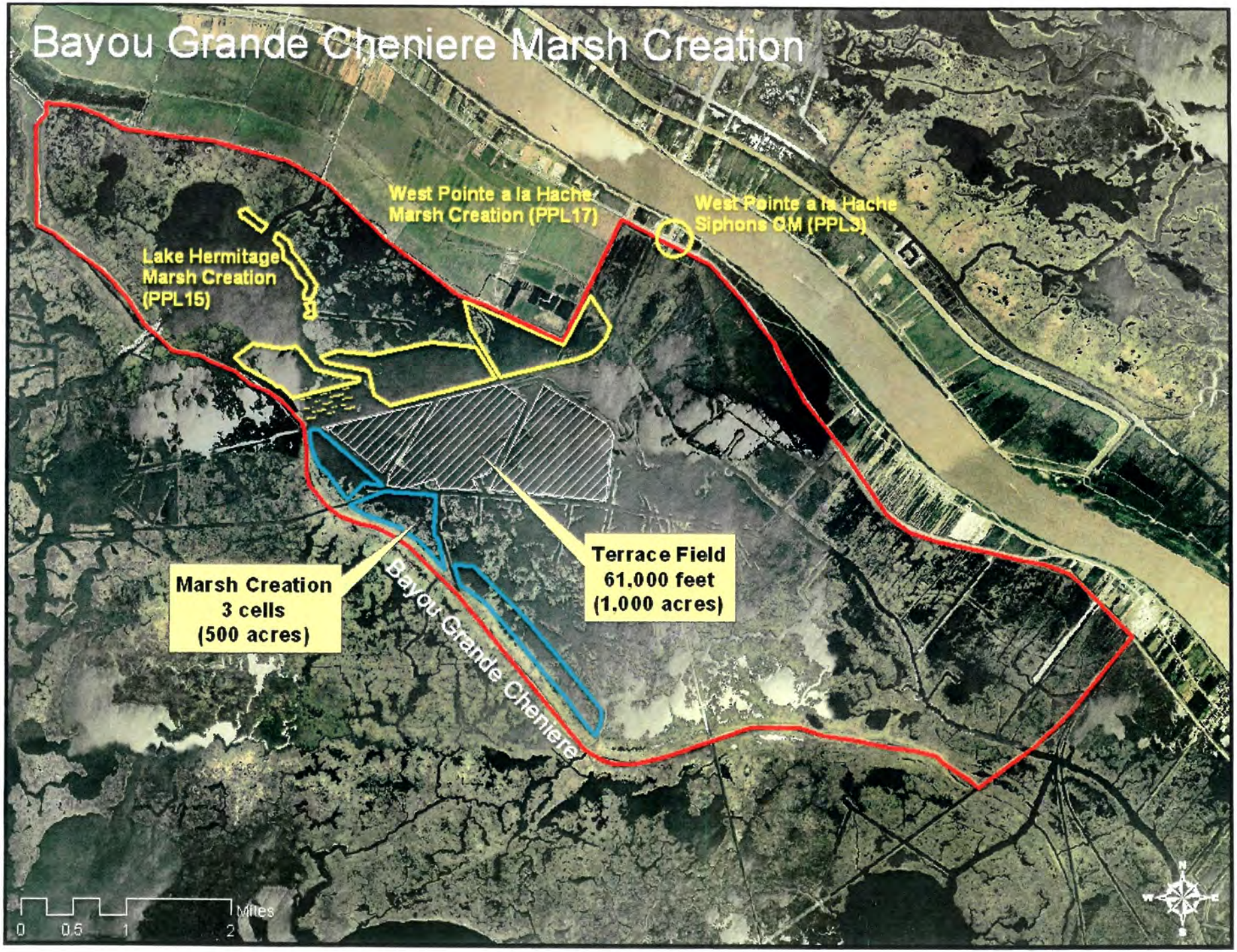
5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would not protect any significant infrastructure.

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 Lake Hermitage Marsh Creation Project (PPL15), the West Pointe a la Hache Marsh Creation Project (PPL17), and the West Pointe a la Hache Siphon Enhancement Project (PPL3). All of these projects would work in conjunction to restore wetlands within the West Pointe a la Hache Mapping Unit.

Identification of Potential Issues
Numerous oil and gas canals; borrow site.

Preliminary Construction Costs
Preliminary construction costs are estimated at $36.2 million, which includes 25% contingency.

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


Bayou Grande Cheniere Marsh Creation
West Pointe a la Hache Marsh Creation (PPL17)
West Pointe a la Hache Siphons OM (PPL3)
Lake Hermitage Marsh Creation (PPL15)
Marsh Creation 3 cells (500 acres)
Terrace Field 61,000 feet (1,000 acres)
Bayou Grande Cheniere
0 0.5 1 2 Miles
N
W
E
S

R2-BA-03 Grand Bayou Marsh and Ridge Restoration

KZ-BA-03

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Grand Bayou Marsh and Ridge Restoration

Coast 2050 Strategy
- Coastwide: Dedicated dredging to create, restore, or protect wetlands
- Coastwide: Utilize off-shore and riverine sand and sediment resources

Project Location
Region 2, Barataria Basin, Plaquemines Parish, along Grand Bayou near the West Pointe a la Hache siphons

Problem
From 1932 to 1990, the West Point a la Hache Mapping Unit lost 38% of its marsh. Through 2050, 28% of the 1990 marsh acreage is expected to be lost. That loss is expected to occur even with operation of the West Point a la Hache Siphons. Significant marsh loss has occurred south of Lake Hermitage and along Grand Bayou with the construction of numerous oil and gas canals.

Goals
The primary goal is to re-create marsh and ridge habitat along Grand Bayou. Terraces are proposed to reduce fetch in large open water bodies and to capture suspended sediment delivered via the West Pointe a la Hache siphons.

Proposed Project Features
1. Riverine sediments will be hydraulically dredged and pumped via pipeline to create approximately 540 acres of marsh in the project area.
2. Approximately 43,000 linear feet of terraces (35 acres) will be constructed to reduce fetch and turbidity and capture suspended sediment.
3. A bottomland hardwood or shrub/scrub ridge (7,400 ft; approximately 5 acres) will be constructed along Grand Bayou.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 1,245 acres would be benefited directly and indirectly. Direct benefits include 580 acres (540 acres of marsh creation/nourishment; 35 acres of terraces; 5 acres of ridge). Indirect benefits would occur to the surrounding marshes and within the 700-acre 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 503 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 to 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.* The project would restore a bottomland hardwood or shrub/scrub ridge along Grand Bayou.

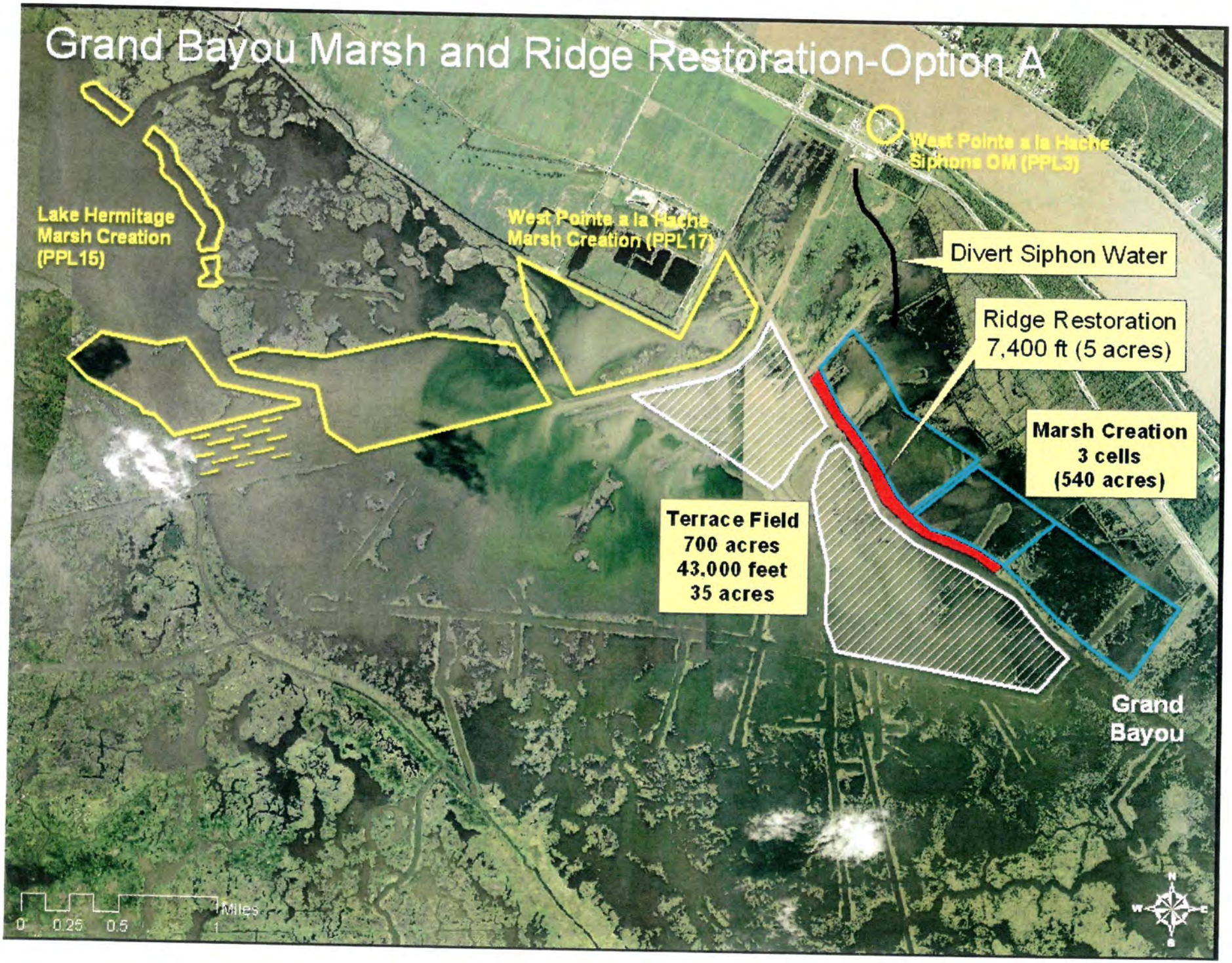
5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would afford some protection to flood protection levees east of the project area along Hwy. 23.

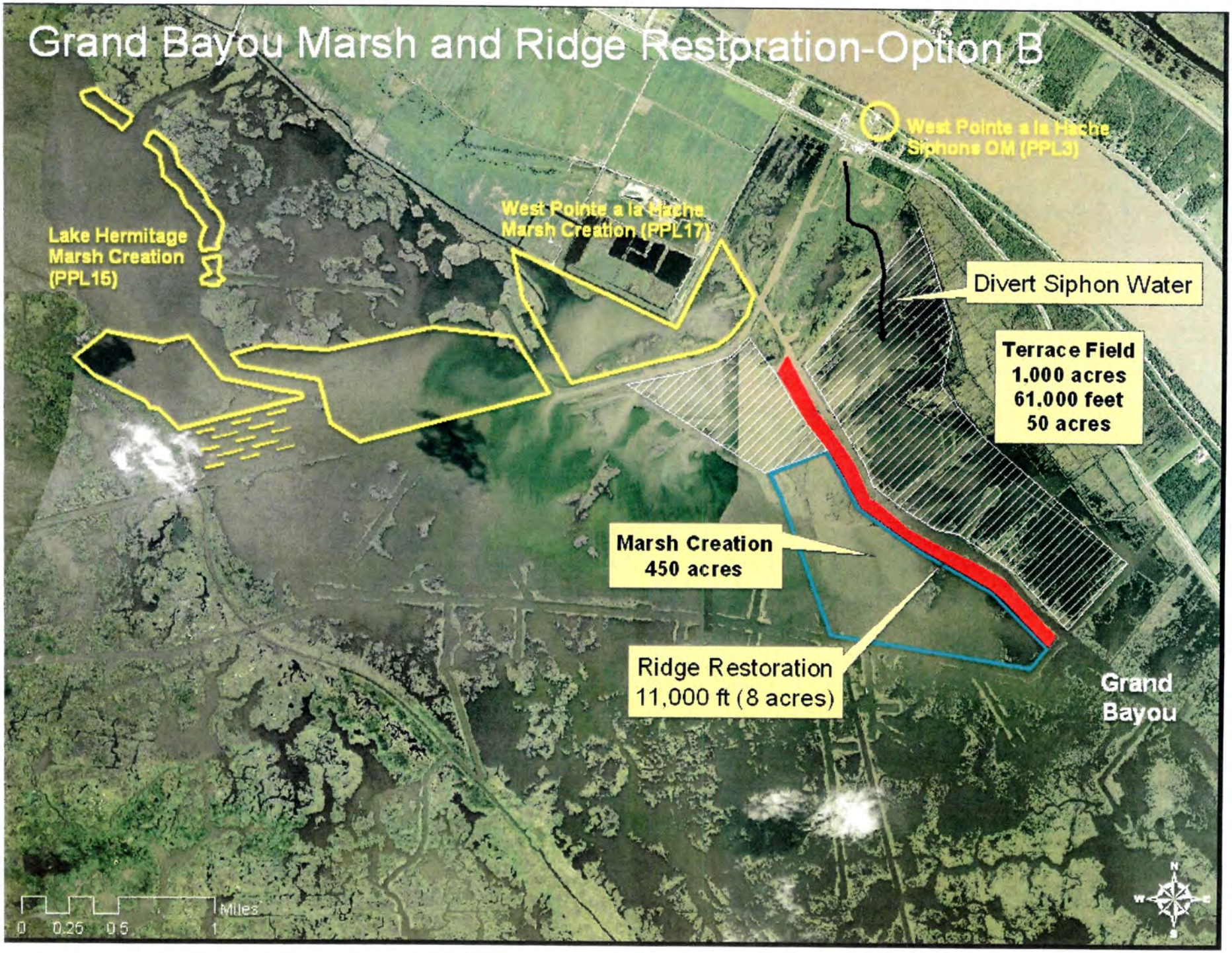
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would provide a synergistic effect with the Lake Hermitage Marsh Creation Project (PPL15), the West Pointe a la Hache Marsh Creation Project (PPL17), and the West Pointe a la Hache Siphon Enhancement Project (PPL3). All of these projects would work in conjunction to restore wetlands within the West Pointe a la Hache Mapping Unit.

Identification of Potential Issues
Oil and gas canals; borrow site.

Preliminary Construction Costs
Preliminary construction costs are estimated at $32.6 million, which includes 25% contingency.

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


Grand Bayou Marsh and Ridge Restoration-Option A
West Pointe a la Hache Siphons OM (PPL3)
Lake Hermitage Marsh Creation (PPL15)
West Pointe a la Hache Marsh Creation (PPL17)
Divert Siphon Water
Ridge Restoration 7,400 ft (5 acres)
Marsh Creation 3 cells (540 acres)
Terrace Field 700 acres 43,000 feet 35 acres
Grand Bayou
0 0.25 0.5 1 Miles
N
W
E


Grand Bayou Marsh and Ridge Restoration-Option B
West Pointe a la Hache Siphons OM (PPL3)
West Pointe a la Hache Marsh Creation (PPL17)
Lake Hermitage Marsh Creation (PPL15)
Divert Siphon Water
Terrace Field
1,000 acres
61,000 feet
50 acres
Marsh Creation
450 acres
Ridge Restoration
11,000 ft (8 acres)
Grand Bayou
Miles
0 0.25 0.5 1
N
W
E
S

R2-BA-04 Bayou Dupont to Bayou Barataria Marsh Creation

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Bayou Dupont to Bayou Barataria Marsh Creation

Coast 2050 Strategy
Region 2 Regional Strategy#26. Dedicated dredging to create marsh on the land bridge.

Project Location
Region 2, Barataria Basin, Jefferson Parish, extending southward from the PPL17 Bayou Dupont project (BA-48) to the Bayou Barataria ridge.

Problem
The marshes located between Bayou Dupont and Bayou Barartaria are very deteriorated. The deteriorated marsh, along with numerous canals, allows a level of tidal exchange that is considerably greater than historic conditions.

Goals
Create 311acres and nourish 200 acres of marsh between Bayou Dupont and Bayou Barataria. Restore 19 acres of the historic Bayou Barataria ridge. Protect approximately 1,740 feet of frontage of created marsh and restored ridge habitat from bankline erosion along Barataria Bay Waterway with a rock dike. The proposed marsh creation and nourishment will restore critical marsh acreage and re-establish a landmass between Bayou Dupont and Bayou Barataria. The ridge restoration component will aid in storm surge reduction and will provide bottomland hardwood habitat which is presently rare in the area. The restored marsh and ridge, coupled with the rock dike will partially restore the area's hydrology.

Proposed Solution / Features
Approximately 311 acres of marsh creation, 200 acres of marsh nourishment, and 19 acres of bottomland hardwood ridge restoration would be performed using dredged material. Target marsh creation and nourishment height is 1.4 NAVD88, requiring an estimated initial fill height of 2.9 NAVD88 in the northern site and 2.7 NAVD88 in the southern site. A marsh creation perimeter containment dike will be constructed to a height of 4.0 NAVD88. Marsh creation containment dikes will be breached as needed to re-establish tidal exchange at about year 3 post construction.

In the northern marsh creation area, initially 50% (about 129 acres) of the created marsh will be planted with marsh vegetation. During the O&M phase (approximately year 3), an additional 10% (about 26 acres) of the created marsh will be planted with marsh vegetation if necessary. In the southern marsh creation area, there will be no vegetative plantings due to small, narrow marsh creation areas and their interspersion with adjacent healthy marsh that will be nourished with a thin layer of fill material. During the O&M phase (approximately year 3), approximately 10% (about 5 acres) of the created marsh will be planted with marsh vegetation if necessary.

Ridge restoration will require a perimeter containment dike constructed of material taken from adjacent borrow areas that will be backfilled during the marsh creation - marsh nourishment - ridge restoration operation. The ridge perimeter containment dike will be constructed to height of 8.0 NAVD88, have a crest width of 5 feet, and outside slope of 6:1, and inside side slope of 4:1. Inside the containment dike, the ridge restoration target elevation is 6.0 NAVD88.

Ridge restoration will consist of two segments. The "West Segment" of the ridge will be approximately 2,900 feet long, have a fill height top width of approximately 75 feet, yielding a base width of 185 feet. Of this width, 161 feet will be planted to bottomland hardwood tree species (11 acres), and the outside containment dike toe (below 3.0 NAVD88, approximately 1 acre) with be planted with marsh species. The "East Segment" of the ridge will be approximately 2,200 feet long, have a fill height top width of approximately 40 feet, yielding a base width of 132 feet. Of this width, 120 feet will be planted to bottomland hardwood tree species (6 acres), and the outside containment dike toe (below 3.0 NAVD88, approximately 1 acre) with be planted with marsh species.

Along the east bank of the Barataria Bay Waterway, approximately 1,740 feet of rock dike bankline protection will be constructed. The rock dike will be constructed to a height of 4.0 NAVD88, with a crest width of 4 feet and side slopes of 2:1.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? 530 acres created, restored, and / or nourished.

2) How many acres of wetlands will be protected/created over the project life? The project would result in the protection/creation of approximately 300 net acres of marsh.

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%). 50%.

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc. The project will serve to re-connect Bayou Dupont and Bayou Barataria with a band of healthy marsh, partially restoring the area's hydrology. Ridge elevation will be re-established along the former Bayou Barataria ridge in the southern portion of the project area.

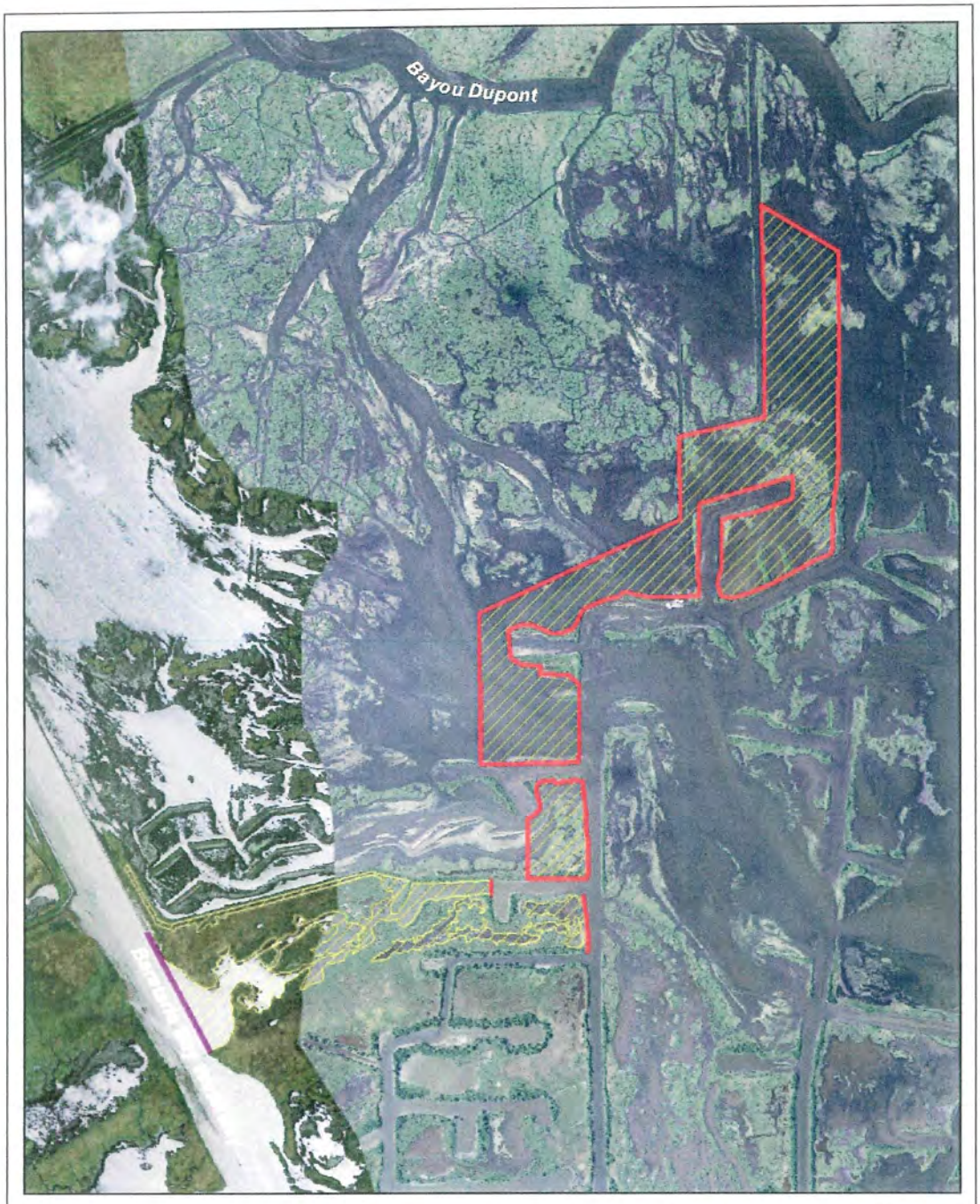
5) What is the net impact of the project on critical and non-critical infrastructure? Created and nourished marsh will reduce storm surge that would otherwise approach The Pen and the community of Lafitte unimpeded.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The proposed project's northern boundary is the southern boundary of the PPL17 Bayou Dupont Project. The proposed project's southern limit is in close proximity to a landowner / Duck's Unlimited sponsored terracing project that was constructed 2006-07 and ties into the CWPPRA BA-26 project.

Identification of Potential Issues
The proposed project has the following potential issues: no issues presently identified.

Preliminary Construction Cost
$30 million (including 25% contingency)

Preparer of Fact Sheet
Quin Kinler 225-382-2047
USDA-NRCS quin.kinler@la.usda.gov



Legend
- Rock_Dike
- Containment_Dike
- Marsh Creation

N

0 500 1,000 2,000 3,000 4,000
Feet

Bayou Dupont to Bayou Barataria
Marsh Creation
Jefferson Parish, Louisiana
PPL 21 Nominee

2010 DOQQ

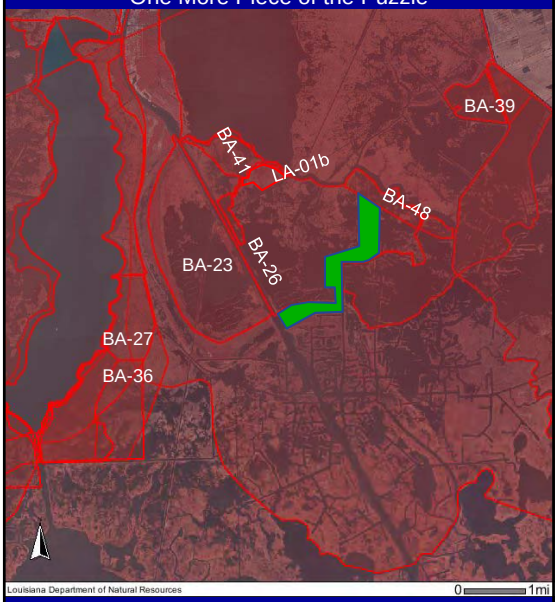
PPL 21
Regional Planning Team
January 27, 2011

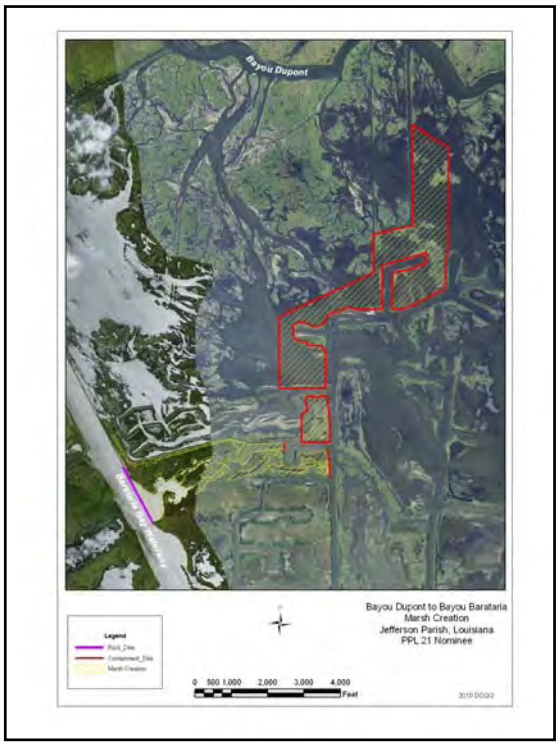
Region 2
Barataria Basin

Bayou Dupont to Bayou Barataria Marsh Creation

Bayou Dupont to Bayou Barataria Marsh Creation:

One More Piece of the Puzzle





Bayou Dupont to Bayou Barataria Marsh Creation

- 311 Acres of Marsh Creation
- 200 Acres of Marsh Nourishment
- Target elevation approximately 1.4 NAVD88
- 17 Acres of ridge restoration
- Target elevation approximately 6.0 NAVD88
- 1,740 feet of rock dike
- Dike constructed to 4.0 NAVD88, 4-foot crest, 2:1 slide slopes
- Preliminary Construction Cost (w/ 25% contingency): $30M

R2-BA-05 South Lake Salvador Shoreline Restoration and Protection

KL-BA-05

PPL 21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
South Lake Salvador Shoreline Restoration and Protection

Coast 2050 Strategy
Regional Strategy#25. Preserve bay and lake shoreline integrity on the land bridge

Project Location
Region 2, Barataria Basin, Lafourche Parish, south shore of Lake Salvador

Problem
This area of the Lake Salvador shoreline is eroding at approximately 10 feet per year, and the shoreline has nearly breached into the Gulf Intracoastal Waterway.

Goals
The proposed project would re-establish / widen Lake Salvador's rim where breaching into the GIWW is imminent and provide erosion protection for a portion the Lake Salvador shoreline.

Proposed Solutions
The proposed solution is to re-establish / widen approximately 2,500 feet of Lake Salvador's rim where breaching into the GIWW is imminent. The re-established rim would provide a minimum width between the lake and GIWW of 200 feet. This rim would consist of a high marsh, with a target elevation of 2.0 NAVD88, and comprise about 6 acres. Additionally, about 9,000 feet of offshore segmented breakwater would be constructed. Access channel material would be used for lake rim re-establishment, and the remaining material would be placed landward of the breakwater to create an additional 12 acres of marsh.

Preliminary Project Benefits
1) What is the total acreage benefitted both directly and indirectly? The re-established lake will be about 6 acres, approximately 12 additional acres would be created using access channel material, and about 45 acres would be protected from erosion over 20 years, for a total of 63 acres of direct benefit. Indirect benefits have not been estimated

2) How many acres of wetlands will be protected/created over the project life? At the end of 20 years, most of the 63 would remain due to the shoreline protection.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* >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.* Project features will maintain separation between Lake Salvador and the GIWW which was recognized as part of a Coast 2050 Regional Strategy.

5) *What is the net impact of the project on critical and non-critical infrastructure?* The proposed project would help maintain the integrity of the GIWW north bank. A breach to Lake Salvador could result in increased GIWW siltation and have an adverse impact on navigation.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* The proposed project would support the concept of maintaining the Barataria Basin Landbridge.

Identification of Potential Issues
No potential issues identified at this time.

Preliminary Construction Costs
$4.6M (including 25% contingency)

Preparer(s) of Fact Sheet
Quin Kinler
USDA-NRCS
225-382-2047
quin.kinler@la.usda.gov

Legend

- Segmented Rock Breakwaters
- Lake Rim Re-establishment

N

South Lake Salvador
Shoreline Restoration and Protection
Lafourche Parish, LA
PPL 21

0 6251,250 2,500 3,750 5,000
Feet

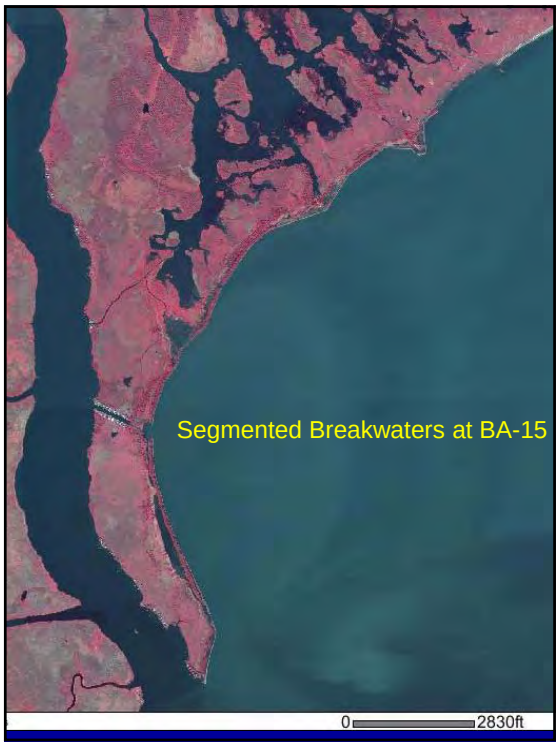
PPL 21
Regional Planning Team
January 27, 2011

Region 2
Barataria Basin

South Lake Salvador
Shoreline Restoration
and Protection

South Lake Salvador Shoreline Restoration and Protection

South Lake Salvador Shoreline Restoration and Protection



Segmented Breakwaters at BA-15

South Lake Salvador Shoreline Restoration and Protection

South Lake Salvador Shoreline Restoration and Protection

- 2,500 feet of lake rim restoration
- Target elevation approximately 2.0 NAVD88; minimum 200 foot separation from GIWW
- 9,000 feet of offshore breakwater
- 63 total acres
- Preliminary Construction Cost (w/ 25% contingency): $4.6M

R2-BA-06 Bayou L’Ours Terracing

KL-BA-06

PPL 21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Bayou L'Ours Terracing

Coast 2050 Strategy
Coastwide: Terracing
Vegetative Plantings
Maintain or Restore Ridge Functions
Local and Common Strategies: Maintain function of Bayou L'Ours Ridge

Project Location
Region 2, Barataria Basin, Lafourche Parish, east of Galliano and south of Little Lake

Problem
Areas located north and south of Bayou L'Ours and adjacent to the East Golden Meadow Hurricane Protection Levee have experienced marsh loss in the range of 8,000 to 10,000 acres. Because this location is a great distance from preferred sediment sources such as the Mississippi River, Gulf of Mexico, and even large bays and lakes, the now-customary practice of marsh creation using hydraulically dredged and deposited material presently does not seem feasible. And the use of more local borrow sources have not gained significant support. Thus, this critical area has been neglected from a restoration standpoint.

Goals
The proposed project would re-establish landmass in an area where land mass is scarce. This added landmass will help protect, extend the life expectancy, and help maintain the current function of the Bayou L'Ours ridge. The proposed project would also protect the Larose to Golden Meadow Hurricane Protection Levee.

Proposed Solutions
The proposed solution is to construct 140,000 linear feet of terraces. The terraces would have a target elevation of 2.0 NAVD88, 15-foot top width, and 4:1 side slopes. The terraces would produce about 80 acres of emergent marsh.

Preliminary Project Benefits
1) What is the total acreage benefitted both directly and indirectly? The terraces will create 80 acres. The terrace field is approximately 800 acres, and an additional 600 acres of the Bayou L'Ours ridge will be benefitted, for a total direct and indirect benefit of 1,400 acres.

2) How many acres of wetlands will be protected/created over the project life? At the end of 20 years, 73 to 77 acres of the terrace acres will remain.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* <25%

4*) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* Project features will help protect, extend the life expectancy, and help maintain the current function of the Bayou L'Ours ridge. The proposed project would also protect the Larose to Golden Meadow Hurricane Protection Levee.

5) *What is the net impact of the project on critical and non-critical infrastructure?* The proposed project would help protect the Clovelly Dome Oil Storage Terminal, the Larose to Golden Meadow Hurricane Protection Levee, and communities along Bayou Lafourche.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* The proposed project would provide additional landmass Gulfward of the Little Lake Shoreline Protection (BA-37) Project.

Identification of Potential Issues
Past projects in this area have had landowner issues, but landowners in the area, including the owners of the Tidewater Canal, have publicly expressed their support of the project.

Preliminary Construction Costs
$5M (including 25% contingency)

Preparer(s) of Fact Sheet
Quin Kinler
USDA-NRCS
225-382-2047
quin.kinler@la.usda.gov

Legend

Terraces

N

Bayou L'Ours Terracing
Lafourche Parish, Louisiana
PPL 21

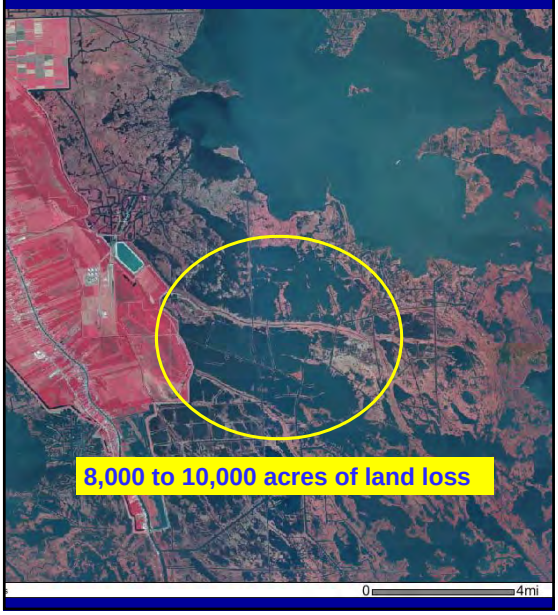
0 1,125 2,250 4,500 6,750 9,000 Feet

PPL 21
Regional Planning Team
January 27, 2011

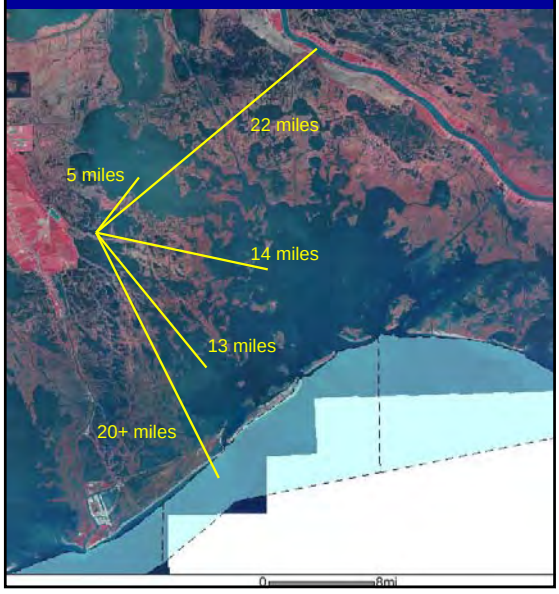
Region 2
Barataria Basin

Bayou L'Ours Terracing

Bayou L'Ours Terracing

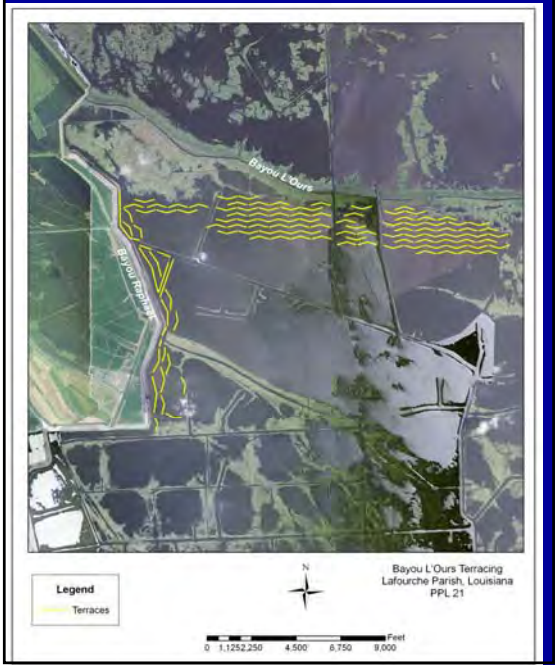


Bayou L'Ours Terracing



NO ACTION ?

Bayou L'Ours Terracing



Bayou L'Ours Terracing

- 140,000 Linear Feet of Terraces
- Target elevation approximately 2.0 NAVD88
- 15-foot top width
- 4:1 side slopes
- 80 Acres of Emergent Marsh
- Preliminary Construction Cost (w/ 25% contingency): $5M

R2-BA-07 Bayou Villars Shoreline Stabilization Project

R2-BA-07

PPL 21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name:
Bayou Villars Shoreline Stabilization Project

Coast 2050 Strategies:
Basin Strategies: 6) Stabilize shorelines to preserve marsh. Cataouatchie/Salvador Mapping Unit Strategy: "maintaining shoreline integrity along the lakes…"

Project Location:
The project is located in Region 2, in the Barataria Basin. The project site is located along the east portion of Lake Salvador near the Barataria Preserve of Jean Lafitte National Historical Park and Preserve and lands south of Bayou Villars in Jefferson Parish, Louisiana.

Problem:
Within the past 50 years, the project area has lost more than 650 acres of wetlands along the east shore of Lake Salvador. The opening of Bayou Villars at Lake Salvador has retreated approximately 5,100 feet into the Gulf Intracoastal Water Way (GIWW). Shoreline retreat and wetland loss were accelerated by winds and storm surge caused by Hurricanes Katrina and Rita. Within the project area, these storms eroded the shoreline 100 feet in places and interior marsh was compacted or torn apart creating open water ponds. Flooding of Crown Point, Jean Lafitte, and Barataria communities may be partially attributed to these high wetland losses. Stabilizing the shoreline and protecting the remaining marsh would protect natural coastal resources, communities and infrastructure.

The average shoreline retreat in the project area is approximately 38'year. Some areas have a shoreline retreat as great as 89'/year. The shoreline retreat along the southern bank of Bayou Villars is encroaching on the GIWW. Currently the opening at the GIWW is at 2,000 lf. The opening at Bayou Villars has the potential to open to approximately 10,000 lf in 20 years once the islands to the south of Bayou Villars are lost to shoreline retreat.

Proposed Project Features:
1. Install approximately 31,000 tons of rock along 5,500 linear feet of shoreline from existing pipeline crossing north of Bayou Villars the north bank of the mouth of Bayou Villars
2. Install approximately 44,000 tons of rock along 8,000 linear feet of shoreline from existing pipeline crossing south of Bayou Villars the south bank of the mouth of Bayou Villars

Goals:
1. Stop shoreline erosion.

Preliminary Project Benefits:
The following questions should be addressed:
1) What is the total acreage benefited both directly and indirectly?
Directly benefited: Approximately 200 acres protected.

2) How many acres of wetlands will be protected/created over the project life?
At the end of 20 years, approximately 200 acres should remain.

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

The anticipated loss rate reduction throughout the area of direct benefits over the project life would 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?

The project maintains a portion of the rims of Lake Salvador and Bayou Villars, which are structural components of the coastal ecosystem

.

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

One key feature of this project is the protection for local communities of Jean Lafitte, Barataria and Crown Point and adjacent infrastructure. The project site is located in a critical area 15 miles south of New Orleans that provides one of the last lines of defense against storm surge coming toward the Metropolitan Area from Lake Salvador and the Barataria Bay. The project also prevents Lake Salvador from continuing to break through into the GIWW. In addition, oil and gas infrastructure in the immediate area would be protected.

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

This project is synergistic with existing shoreline protection projects that have been constructed on the Barataria Preserve.

Identification of Potential Issues:

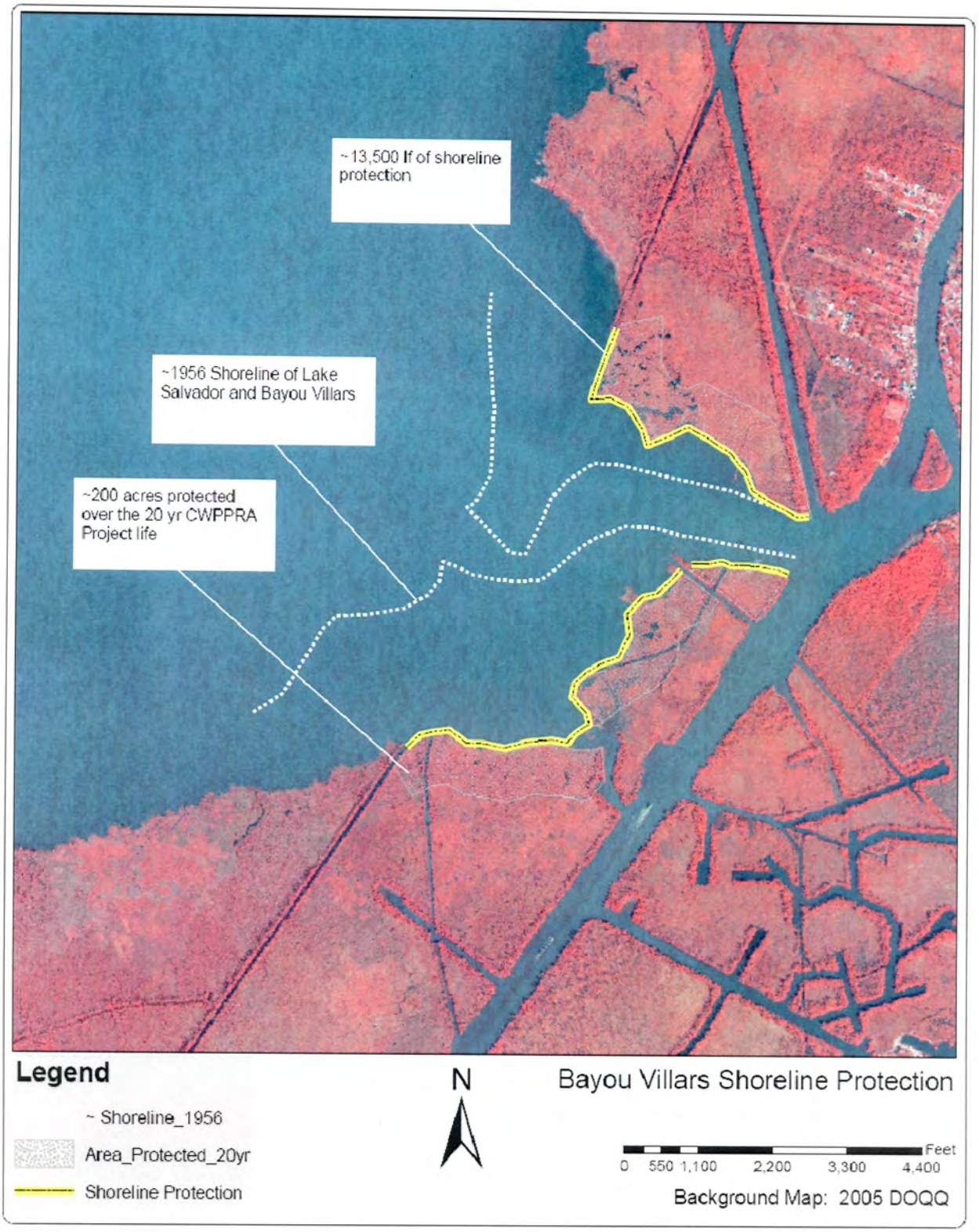
Rock shoreline protection projects historically require O&M.

Preliminary Construction Costs:

The construction cost including 25% contingency is approximately $10,000,000.

Preparers of Fact Sheet:

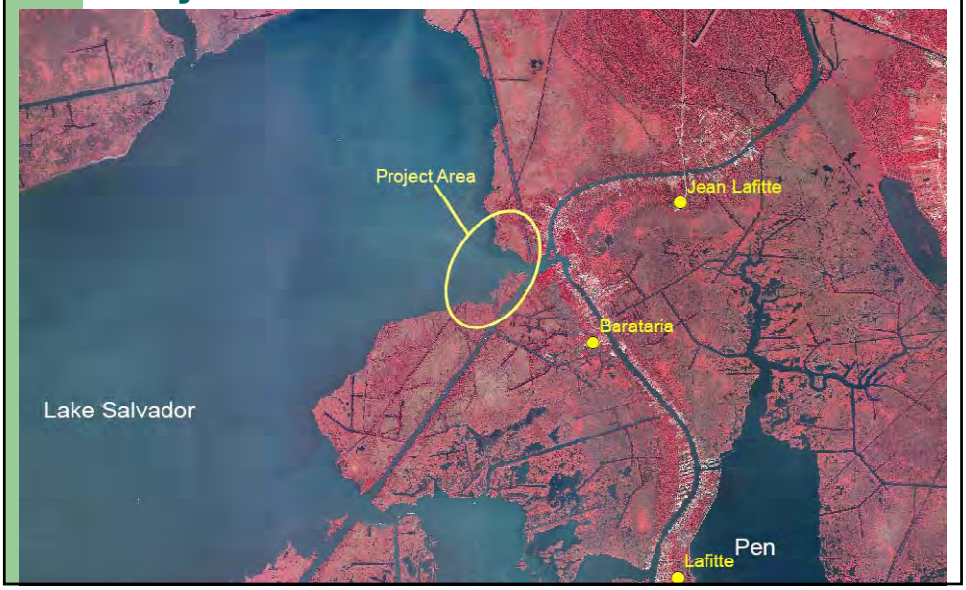
Travis Creel, USACE, 504-862-1071, Travis.J.Creel@usace.army.mil
Susan Hennington, USACE, 504-862-2504, Susan.m.Hennington@usace.army.mil


~13,500 lf of shoreline protection
~1956 Shoreline of Lake Salvador and Bayou Villars
~200 acres protected over the 20 yr CWPPRA Project life
Legend
~ Shoreline_1956
Area_Protected_20yr
Shoreline Protection
N
Bayou Villars Shoreline Protection
Feet
0 550 1,100 2,200 3,300 4,400
Background Map: 2005 DOQQ

Bayou Villars Shoreline Stabilization Project

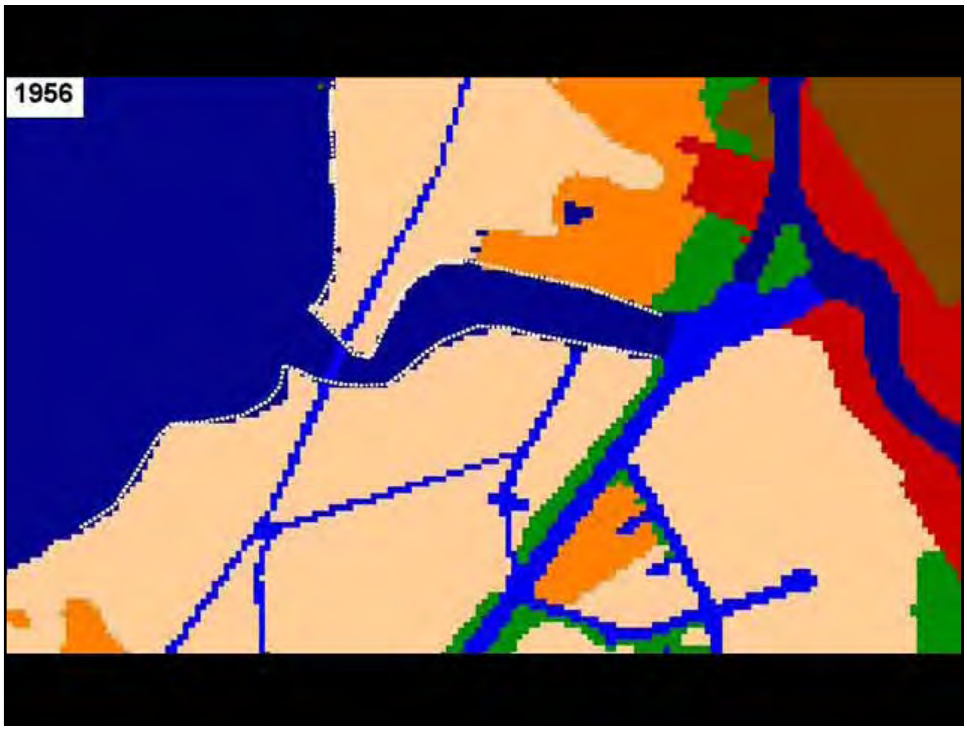
PPL 21
Region 2
Barataria Basin

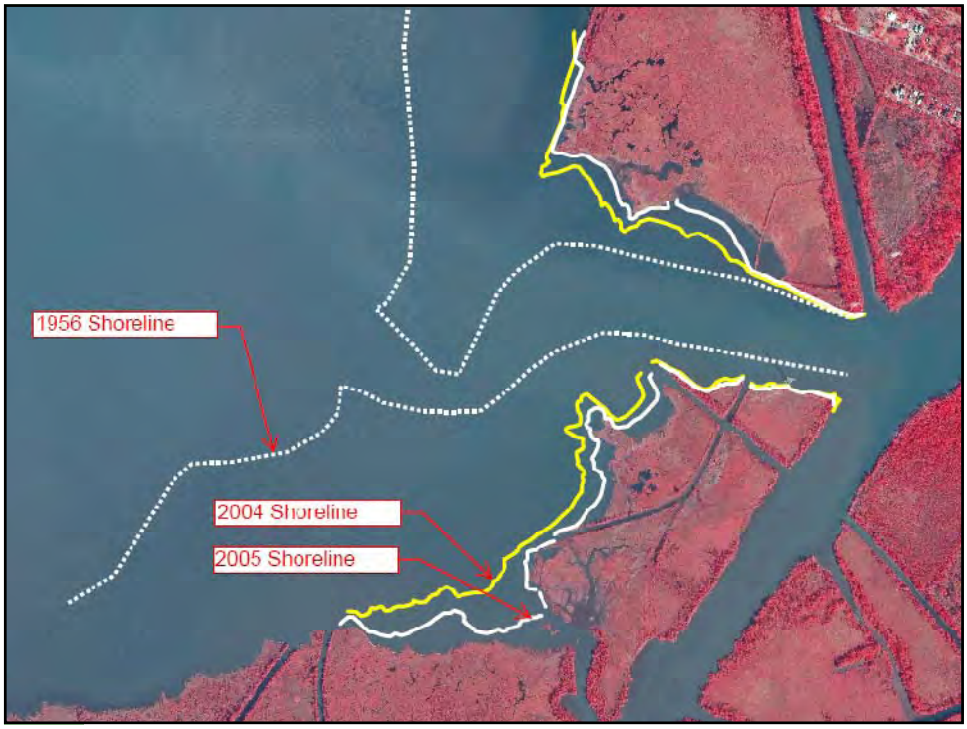
Project Area:

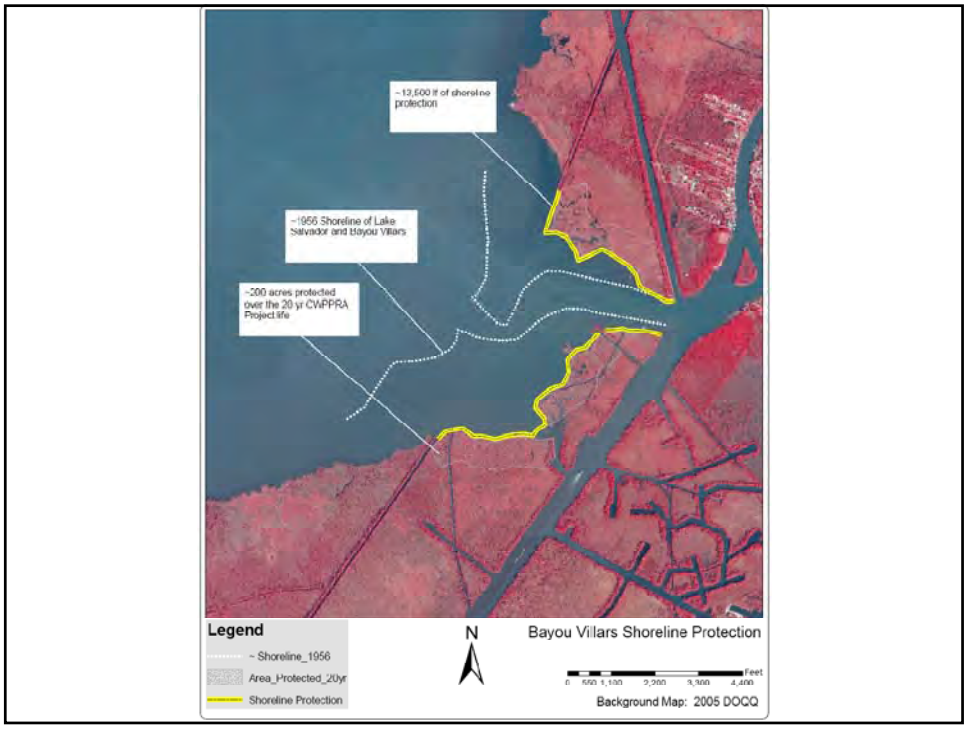


Problem:

- ~650 acres of wetlands lost along the east shore of Lake Salvador
- Bayou Villars at Lake Salvador has retreated ~ 5,100 feet into the GIWW
- Flooding of Crown Point, Jean Lafitte, and Barataria communities may be partially attributed to these high wetland losses
- Opening at the Bayou Villars currently at 2,000 lf.
- Has the potential to open to approximately 10,000, once the islands to the south of Bayou Villars are lost to shoreline retreat.
- Average shoreline retreat approximately 38'year




1956 Shoreline
2004 Shoreline
2005 Shoreline


~13,600 lf of shoreline protection
~1956 Shoreline of Lake Salvador and Bayou Villars
~200 acres protected over the 20 yr CWPPRA Project life
Legend
~ Shoreline_1956
Area_Protected_20yr
Shoreline Protection
N
Bayou Villars Shoreline Protection
Feet
0 550 1,100 2,200 3,300 4,400
Background Map: 2005 DOQQ

Proposed Project Features:

- 5,500 linear feet of shoreline protection from the existing pipeline crossing north of Bayou Villars the north bank of the mouth of Bayou Villars
- 8,000 linear feet of shoreline protection from existing pipeline crossing south of Bayou Villars the south bank of the mouth of Bayou Villars

Preliminary Project Benefits:

- Stop shoreline erosion
- Stabilize the Bayou Villars opening
- Protect approximately 200 acres
- Protect the Crown Point, Jean Lafitte, and Barataria communities

R2-BA-08 Bayou Dupont Sediment Delivery– Marsh Creation 3

R2-BA-08

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name:
Bayou Dupont Sediment Delivery – Marsh Creation 3

Coast 2050 Strategy:
Coastwide Common Strategies: Dedicated dredging to create, restore, or protect wetlands; Off-shore and riverine sand and sediment resources.
Region 2 Regional Ecosystem Strategies: Restore and Sustain Marshes.

Project Location:
Region 2, Barataria Basin, Plaquemines and Jefferson Parishes.

Problem:
The wetlands in the Barataria Basin were historically nourished by the fresh water, sediment and nutrients delivered by the Mississippi River and the many distributary channels. Following the creation of levees along the lower river for flood control and navigation, these inputs ceased. In addition, numerous oil and gas canals in the area contributed significantly to wetland losses. Data suggests that from 1932 to 1990, the basin lost over 245,000 ac of marsh, and from 1978 to 1990, Barataria Basin experienced the highest rate of wetland loss along the entire coast.

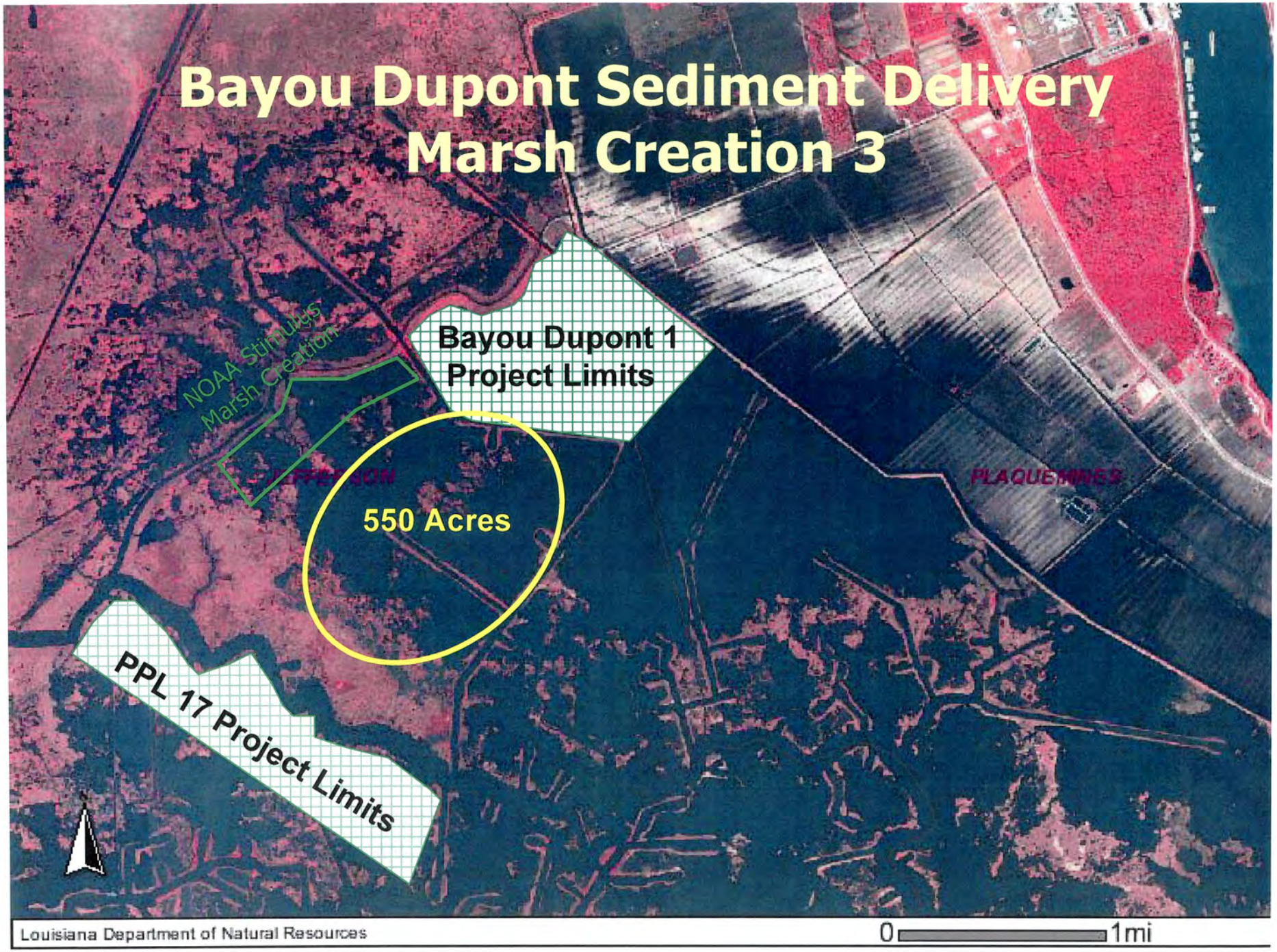
Goals:
The primary goal of this project is to create/nourish 522 ac of emergent intermediate marsh using sediment from the Mississippi River. In order to achieve this, specific project goals include (1) create 457 acres of marsh habitat using sediment from the Mississippi River, (2) nourish 51 acres of existing marsh habitat using sediment from the Mississippi River, (3) create approximately 10 acres of tidal ponds and approximately 10,000 linear feet of tidal creeks (Approximately 4 acres). This project will tie in to the previous BA-39 project and create/protect 436 ac of emergent intermediate marsh over the project's life.

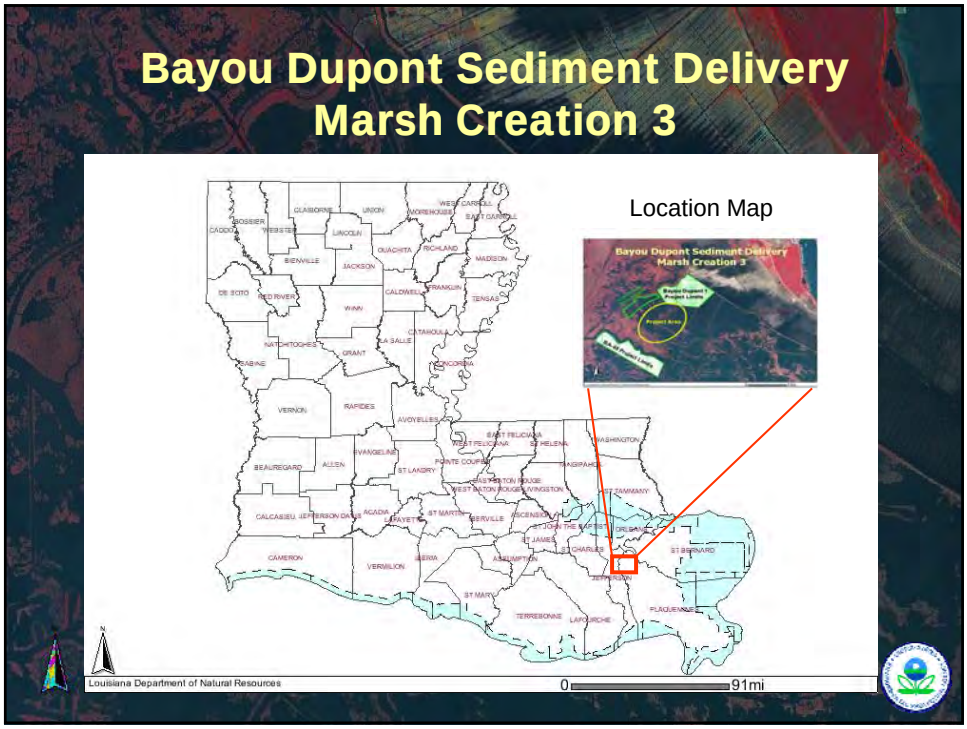
Proposed Solution:
Creation/nourishment of approximately 522 acres of emergent intermediate marsh by hydraulically pumping sediment from the Mississippi River via pipeline, create approximately 10 acres of tidal ponds and approximately 10,000 linear feet of tidal creeks, degrade and gap containment dike to hydraulically connect the constructed tidal creeks to the adjacent water, and plant appropriate marsh vegetation (funds are budgeted to plant 50% of the created marsh acres/229 ac).

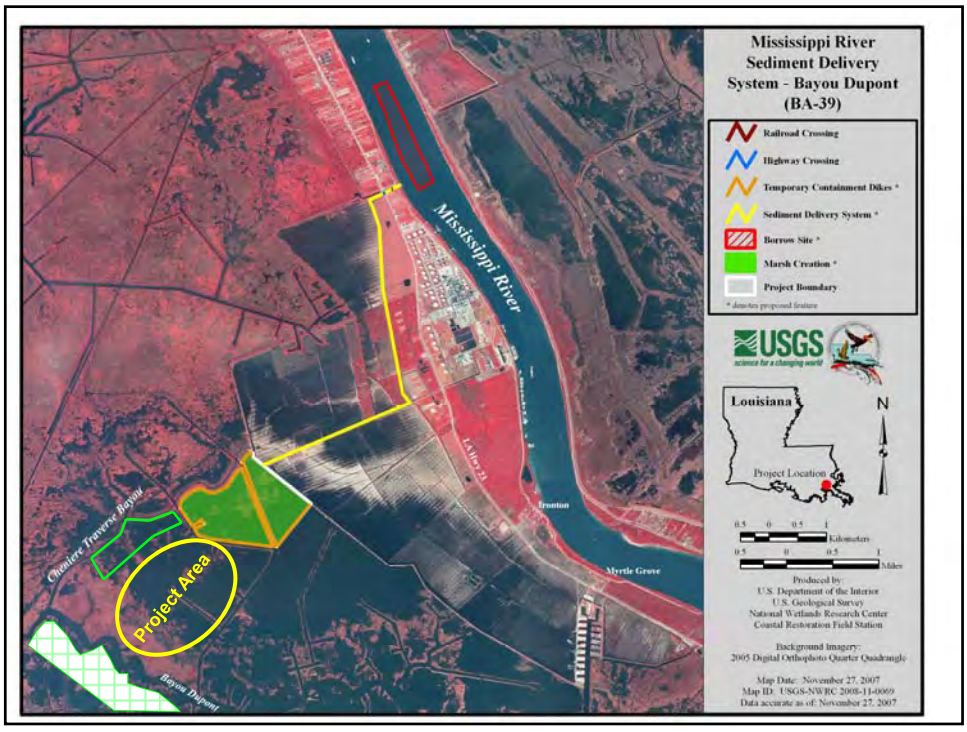
Project Benefits:
The project would result in approximately 436 net ac of emergent intermediate marsh at the end of the 20-year project life.

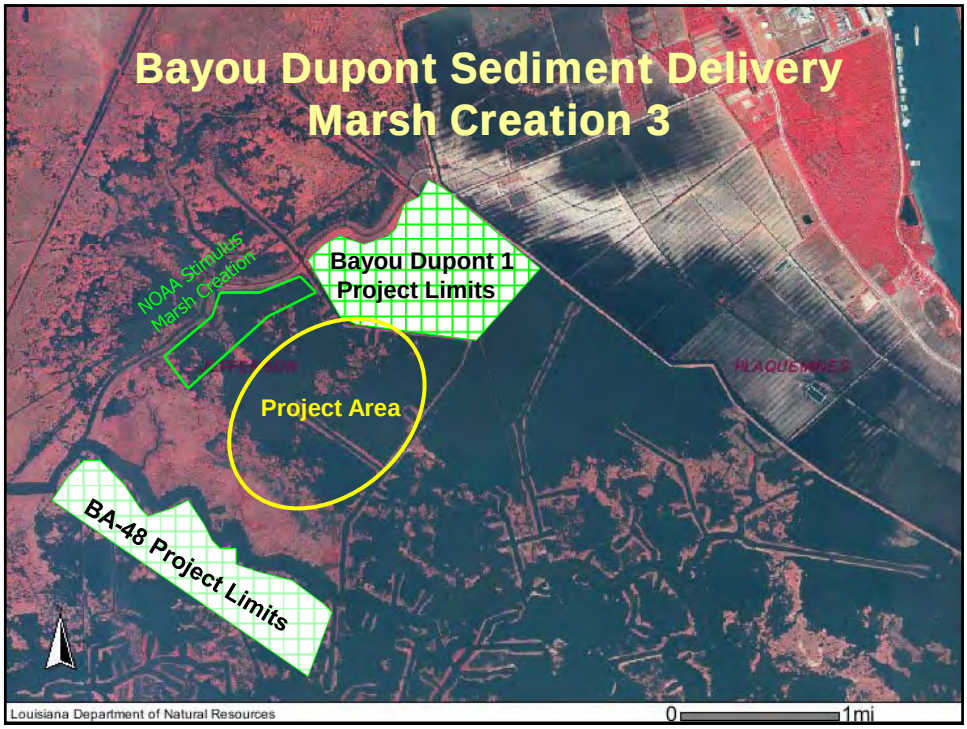
Project Costs:
The preliminary cost plus 25% is $31.7 Million.

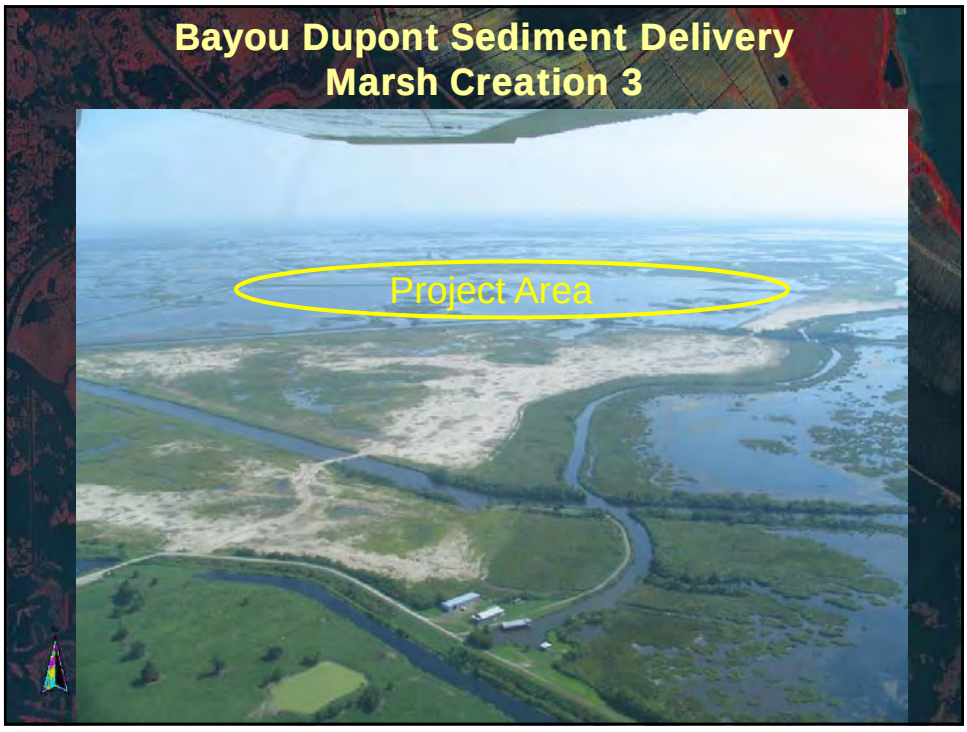
Preparer(s) of Fact Sheet:
Kenneth Teague, EPA, (214) 665-6687; teague.kenneth@epa.gov
Paul Kaspar, EPA, (214) 665-7459; kaspar.paul@epa.gov


Bayou Dupont Sediment Delivery
Marsh Creation 3
NOAA Stimulus
Marsh Creation
Bayou Dupont 1
Project Limits
550 Acres
PLAQUEMINES
PPL 17 Project Limits
Louisiana Department of Natural Resources
0
1mi


Bayou Dupont Sediment Delivery
Marsh Creation 3
Location Map
Louisiana Department of Natural Resources
0
91mi


Mississippi River
Sediment Delivery
System - Bayou Dupont
(BA-39)
Railroad Crossing
Highway Crossing
Temporary Containment Dikes *
Sediment Delivery System *
Borrow Site *
Marsh Creation *
Project Boundary
* denotes proposed feature
USGS
Louisiana
Project Location
N
Mississippi River
Project Area
Chaniere Traverse Bayou
Bayou Dupont
Irenton
Myrtle Grove
Produced by
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
2005 Digital Orthophoto Quarter Quadrangle
Map Date: November 27, 2007
Map ID: USGS-NWRC 2008-11-0069
Data accurate as of: November 27, 2007


Bayou Dupont Sediment Delivery
Marsh Creation 3
NOAA Stimulus
Marsh Creation
Bayou Dupont 1
Project Limits
Project Area
BA-48 Project Limits
PLAQUEMINES
Louisiana Department of Natural Resources
0
1mi


Bayou Dupont Sediment Delivery
Marsh Creation 3
Project Area

Bayou Dupont Sediment Delivery Marsh Creation 3

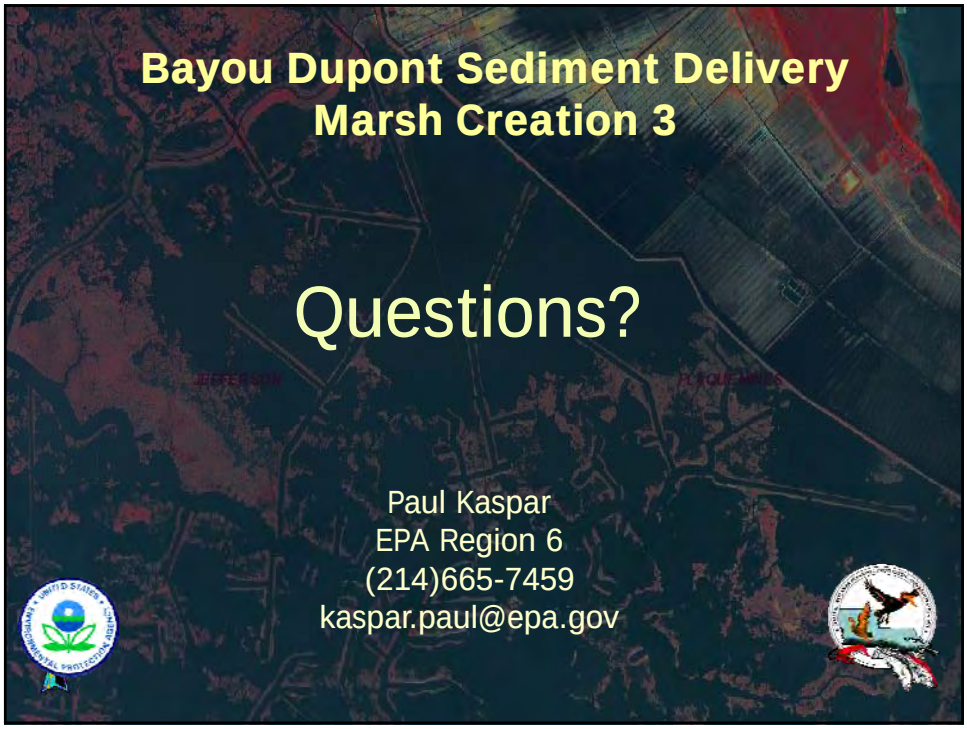
Bayou Dupont Sediment Delivery Marsh Creation 3

Goals:
- Create/Nourish 550 ac intermediate marsh

Preliminary Project Benefits:
- 363 net ac over 20 years

Identification of Potential Issues:
- Land rights and Utilities/Pipelines

Preliminary Construction Costs + 25%:
- $31.7 million


Bayou Dupont Sediment Delivery
Marsh Creation 3
Questions?
Paul Kaspar
EPA Region 6
(214)665-7459
kaspar.paul@epa.gov

R2-BA-09 West Pointe a la Hache Marsh Creation South

KZ-BA-09

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
West Pointe a la Hache Marsh Creation South

Coast 2050 Strategy
Coastwide Strategy: Dedicated dredging to create, restore, or protect wetlands: Off-shore and riverine sand and sediment resources.
Region 2 Regional Ecosystem Strategy: Restore and Sustain Marshes

Project Location
Region 2, Barataria Basin, Plaquemines Parish, in the southern portion of the West Pointe a la Hache siphon outfall area

Problem
An unintended consequence of the Mississippi River levee is the isolation of the West Pointe a la Hache wetlands from the historic overbank flooding of the river. Without continued sediment input, marshes couldn't maintain viable elevations due to ongoing subsidence. In addition, oil and gas canals disrupted hydrology and facilitated saltwater intrusion, further degrading the marsh. Beginning in 1993, the siphons at West Pointe a la Hache were operated to reintroduce Mississippi River water, fine sediments, and nutrients into this general area. However, land loss rates continue to be high. An opportunity exists to create marshes in the southern portion of the siphon outfall area using sediment from the nearby Mississippi River. The created marshes should benefit from the effects of the reintroduced Mississippi River water from the siphons.

Proposed Project Features
Create 240 ac of intermediate marsh using sediments dredged from the Mississippi River. Vegetative planting may be necessary. Funds are budgeted for this contingency.

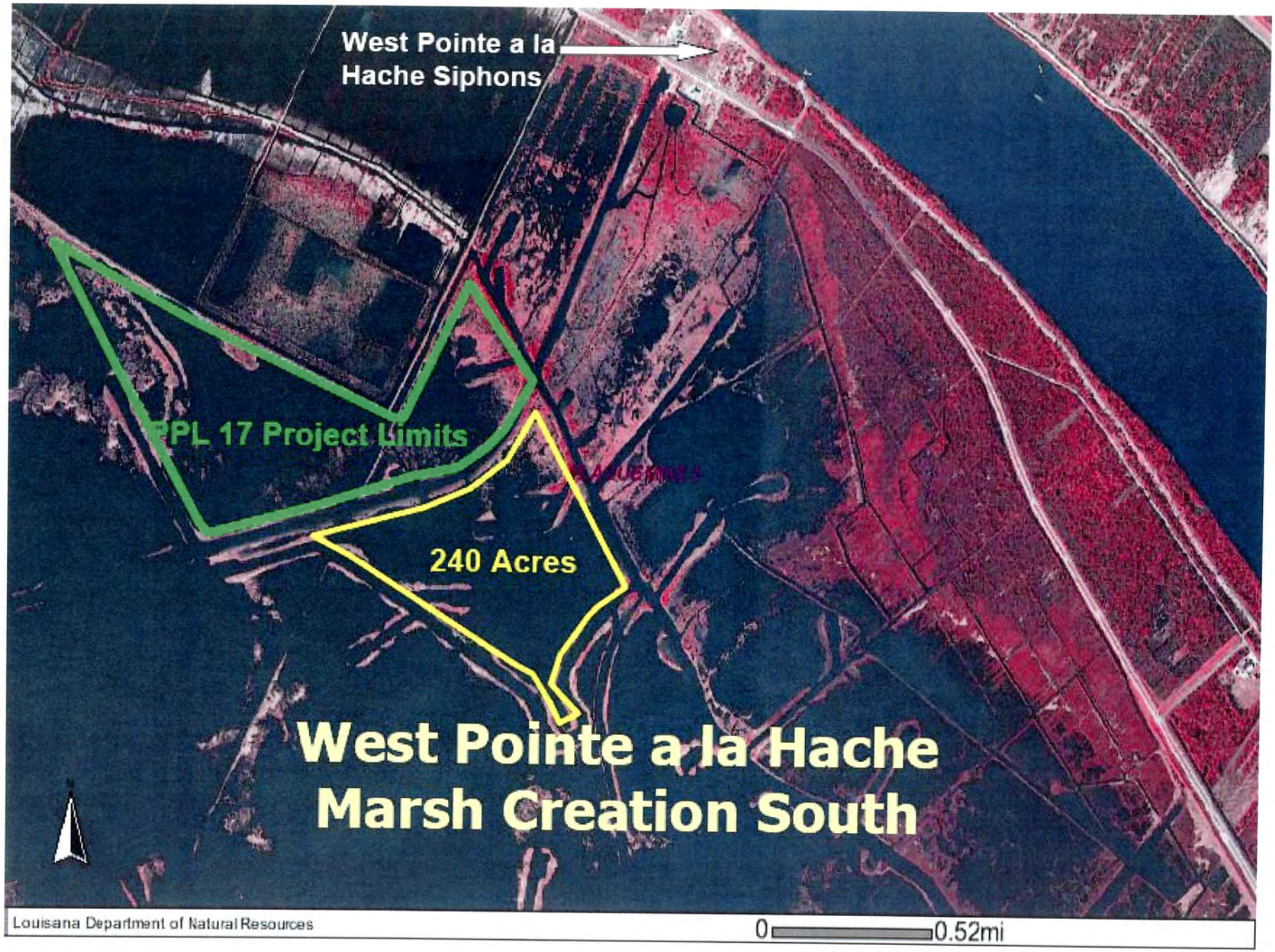
Goals
- Convert approximately 240 acres of open water habitat to intermediate marsh
- Maintain about 200 acres of created/nourished marsh over the 20-year project life

Preliminary Project Benefits
- Create 240 ac of intermediate marsh
- Maintain 200 ac of intermediate marsh over 20 years
- Protect the Mississippi River Levee in the vicinity of the project

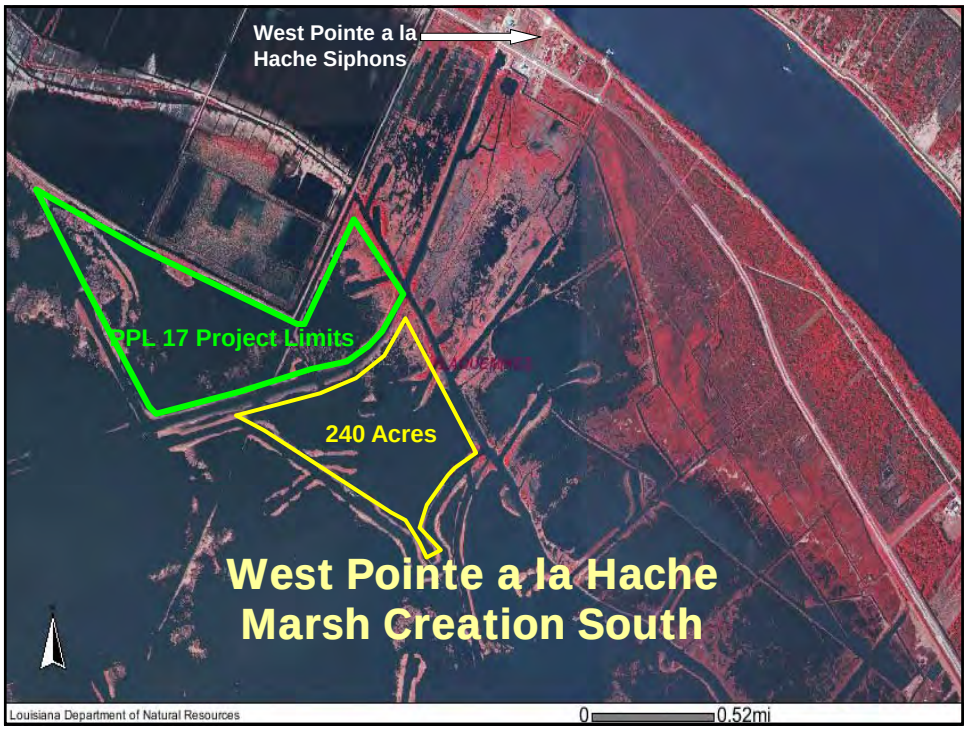
Identification of Potential Issues
The proposed project has potential land rights and utility/pipeline/oil&gas issues.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $13,000,000

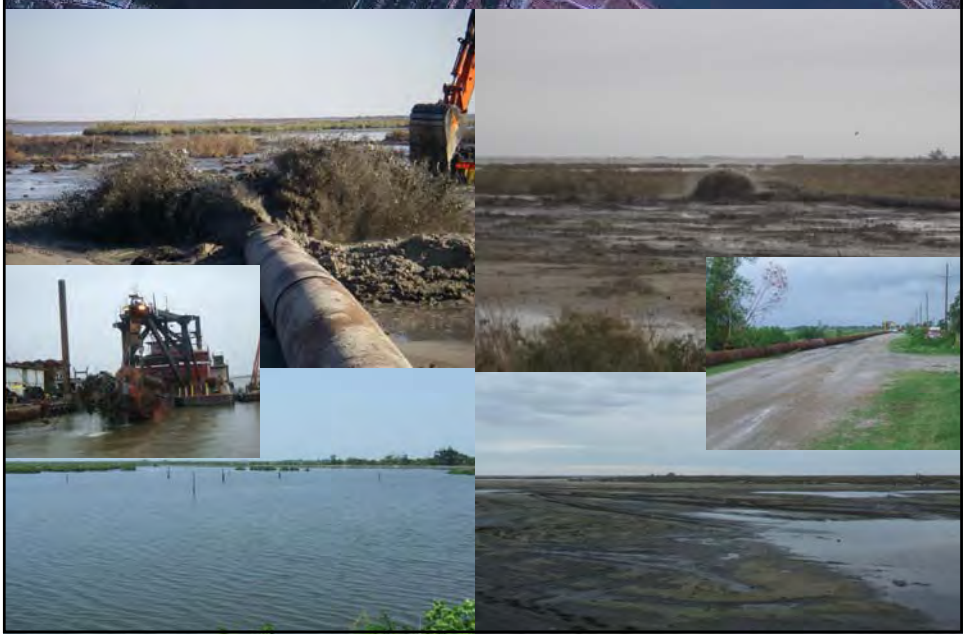
Preparer(s) of Fact Sheet:
Paul Kaspar, EPA Region 6, (214) 665-7459, kaspar.paul@epa.gov
Ken Teague, EPA Region 6, (214) 665-6687, teague.kenneth@epa.gov


West Pointe a la Hache Siphons
PPL 17 Project Limits
240 Acres
West Pointe a la Hache Marsh Creation South
Louisiana Department of Natural Resources
0
0.52mi


West Pointe a la Hache
Marsh Creation 2
Location Map
West Pointe a la Hache
Marsh Creation 2
Louisiana Department of Natural Resources
0
91mi


West Pointe a la
Hache Siphons
PPL 17 Project Limits
240 Acres
West Pointe a la Hache
Marsh Creation South
Louisiana Department of Natural Resources
0
0.52mi

Marsh Creation Using Sediment Delivery



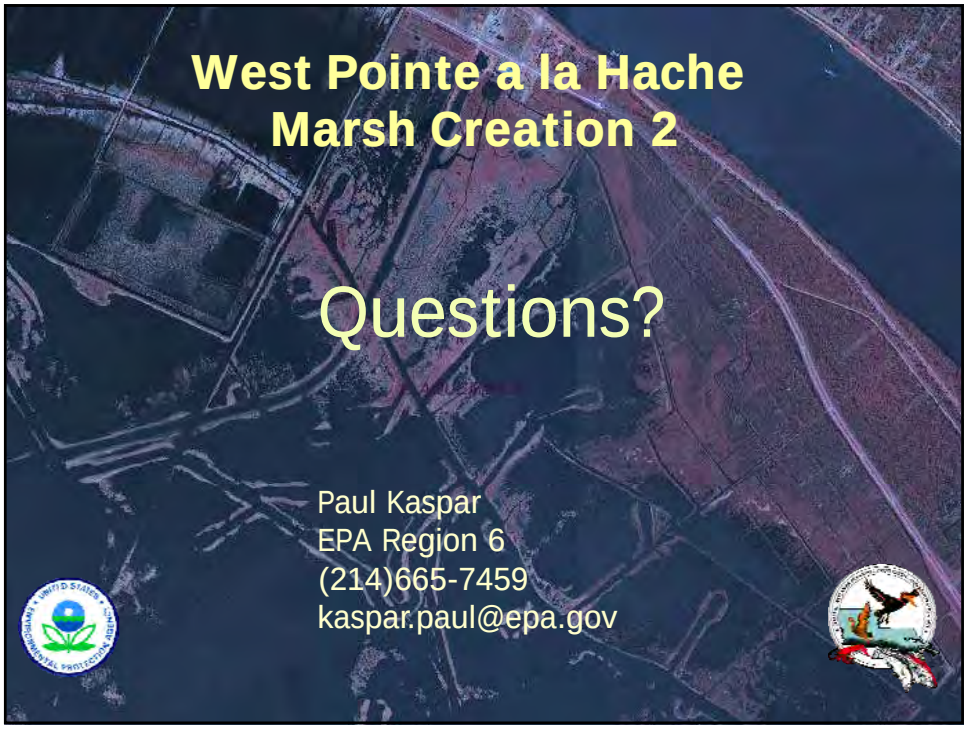
West Pointe a la Hache Marsh Creation 2

Goals:
- Create/Nourish ~240 ac intermediate marsh

Preliminary Project Benefits:
- 138 net ac over 20 years

Identification of Potential Issues:
- Land rights, Utilities/Pipelines/Oil & Gas

Preliminary Construction Costs:
- $10-$15 million


West Pointe a la Hache
Marsh Creation 2
Questions?
Paul Kaspar
EPA Region 6
(214)665-7459
kaspar.paul@epa.gov

R2-BA-10 Home Place Siphon

K.2-13A-10

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Home Place Siphon

Coast 2050 Strategy
Coastwide Strategies: Diversions and river discharge; Management of diversion outfall for wetland benefits.
Region 2 Regional Ecosystem Strategies: Restore and Sustain Marshes: #8: Construct most effective small diversions

Project Location
Region 2, Barataria Basin, Plaquemines Parish, West Bank of Mississippi River, near Port Sulphur, LA.

Problem
Leveeing of the Mississippi River for flood control and navigation deprived the area of sediment needed to maintain elevation against subsidence, as well as freshwater to maintain low salinity marshes. Aerial photography clearly shows that much wetland loss has occurred in this area.

Proposed Project Features
Construct a 1,500-2,000 CFS Mississippi River siphon.

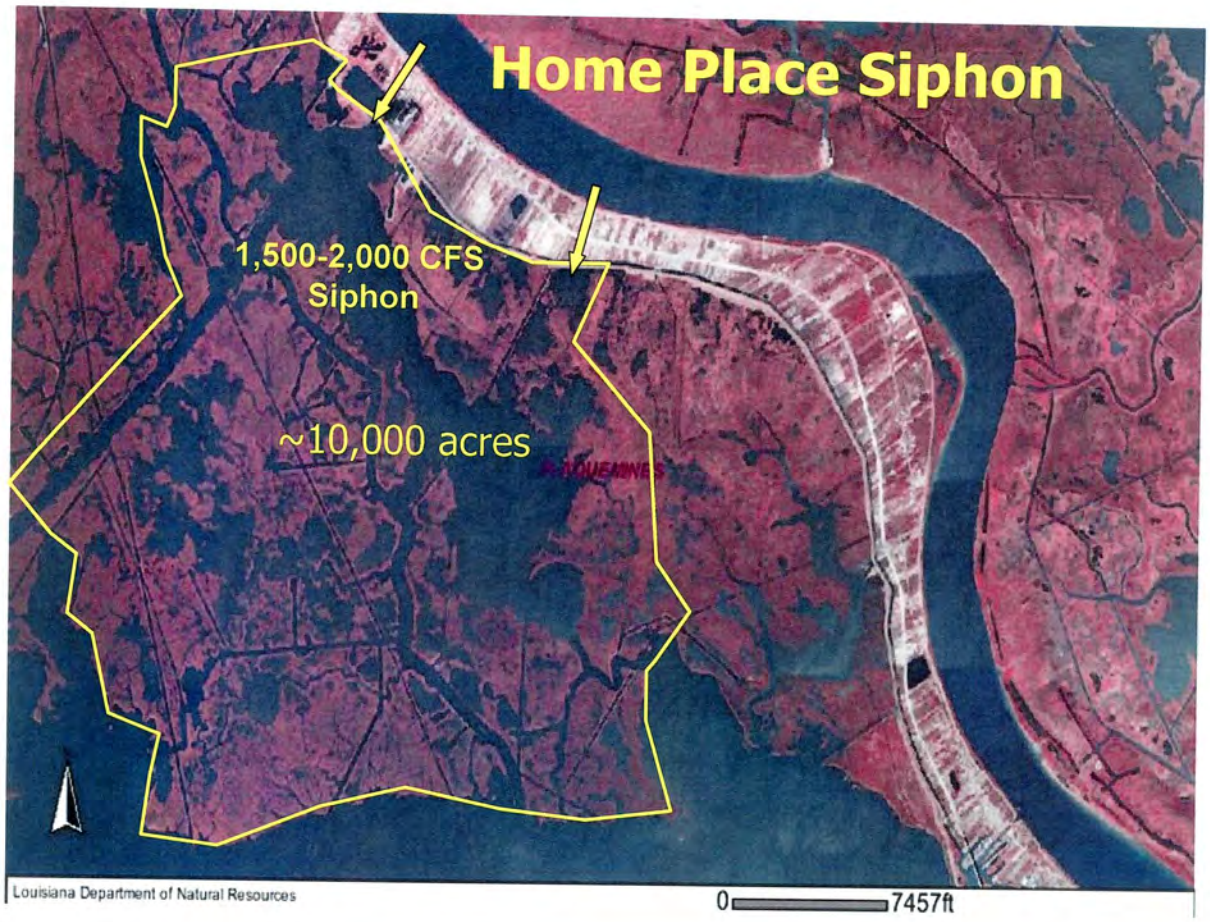
Goals
- Create marsh and/or reduce rate of marsh loss.
- Restore intermediate and fresh marshes.
- Increase SAV cover.

Preliminary Project Benefits
- Create and/or protect 500-750 ac of marsh
- The project will help protect the Mississippi River Levee in the vicinity of the project area.

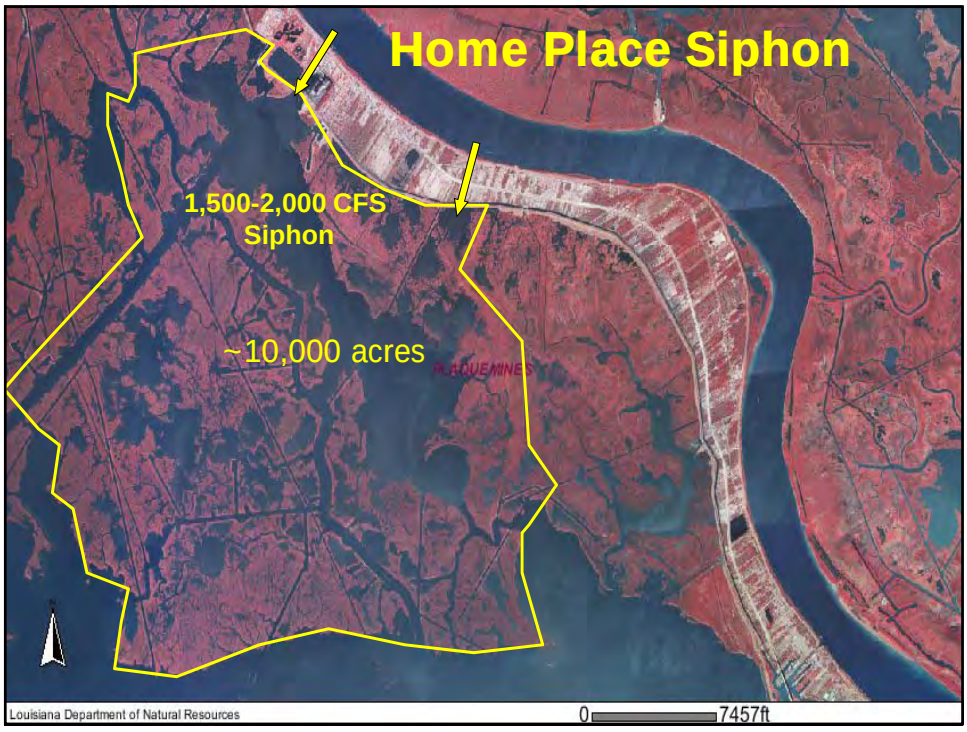
Identification of Potential Issues
The proposed project has potential land rights issues.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $16 Million

Preparer of Fact Sheet:
Kenneth Teague, EPA, 214-665-6687, **Teague.Kenneth@epa.gov**;
Brad Crawford, EPA, 214-665-7255, **Crawford.brad@epa.gov**


Home Place Siphon
1,500-2,000 CFS
Siphon
~10,000 acres
Louisiana Department of Natural Resources
0
7457ft


Home Place Siphon
Location Map
Louisiana Department of Natural Resources
0
91mi


Home Place Siphon
1,500-2,000 CFS
Siphon
~10,000 acres
PLAQUEMINES
Louisiana Department of Natural Resources
0
7457ft

Home Place Siphon

Goals:
- Create/maintain marsh
- Restore fresh/intermediate marsh

Preliminary Project Benefits:
- 750 net ac over 20 years

Identification of Potential Issues:
- Landrights

Preliminary Construction Costs + 25%:
- $16 Million
- FFC estimate = ~$23Million

Home Place Siphon

Questions?

Brad Crawford
EPA Region 6
(214)665-7255
crawford.brad@epa.gov

R2-BA-11 Mississippi River Reintroduction North of Lac des Allemands (MR RiNOLDA)

K 2-BA-11

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Mississippi River Reintroduction North of Lac des Allemands (MR RiNOLDA) (Bayou Becnel or Bayou Lassene)

Coast 2050 Strategy
Coastwide Strategies: Diversions and riverine discharge; Management of diversion outfall for wetland benefits
Region 2 Regional Ecosystem Strategies: Restore and Sustain Marshes: #8: Construct most effective small diversions

Project Location
Region 2, upper Barataria Basin, St. John the Baptist Parish, north of Lac des Allemands, Bayou Becnel or Bayou Lassene.

Problem
Swamps and marshes in the upper Barataria Basin have been isolated from the Mississippi River for many years now, which was historically their primary source of water, sediments, and nutrients. Swamps here are now dependent on local rainfall and runoff as their source of freshwater, sediment, and nutrients. Subsidence is moderate, and because of the lack of sediment input and low swamp productivity, there is an accretion deficit which results in increasing flooding of swamps. Some information indicates increased salinity in lac des Allemands, but it is not clear whether this is a significant risk yet or not.

Proposed Project Features
Divert 400-1000 cfs of Mississippi River water into the swamps northwest of Lac des Allemands via a siphon. If needed, gap spoil banks and install culverts as necessary to facilitate seasonal flooding and draining of the swamps (outfall management).

Goals

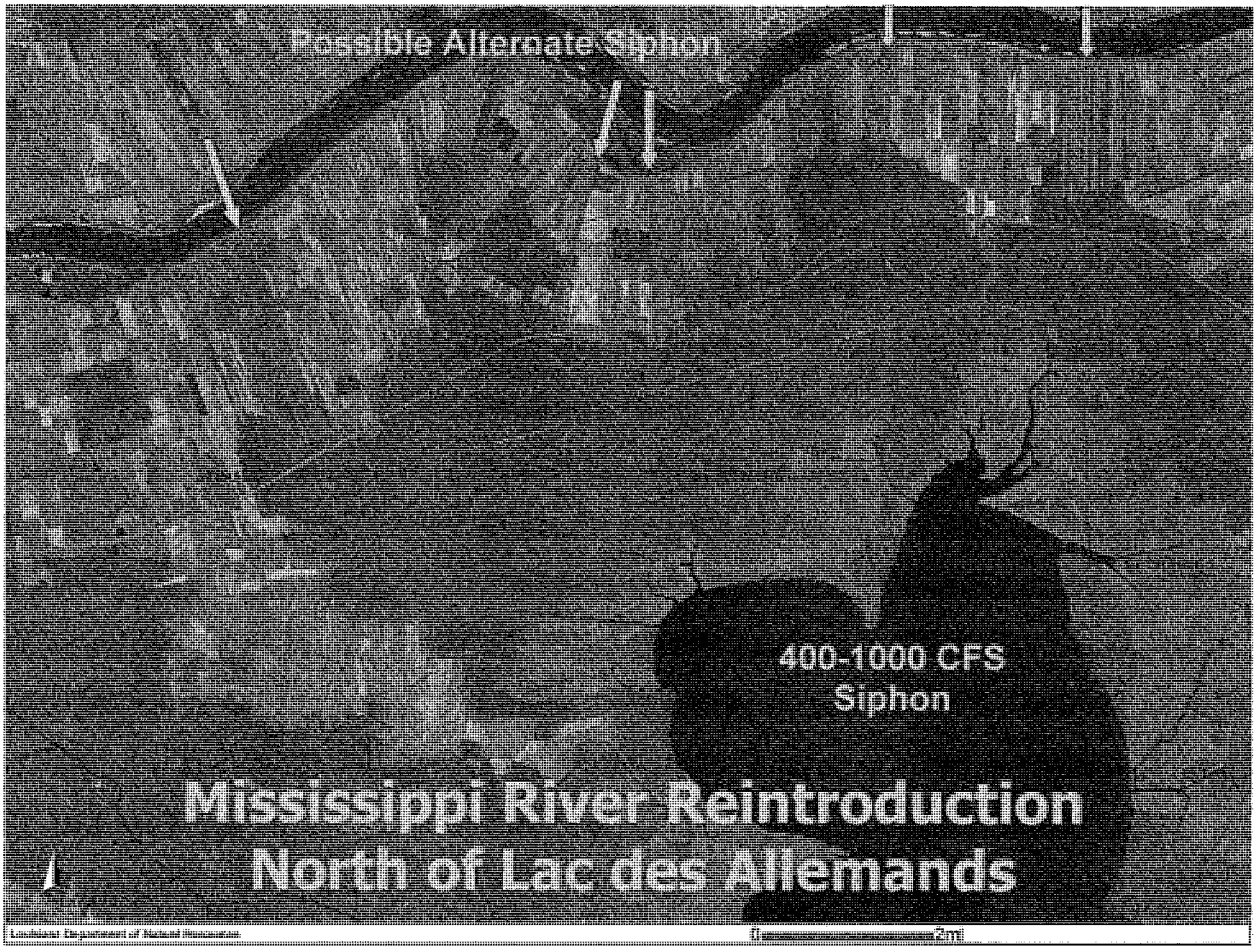
- Increase swamp productivity
- Increase regeneration of cypress and tupelo trees
- Increase sediment accretion in swamps.
- Reduce salinity if it is found to be a problem.
- Improve swamp forest stand structure
- Improve swamp water regime

Preliminary Project Benefits
This proposed project would not directly create wetland acreage. Wetland loss rates in this area are low compared to other wetland types, so loss rate reduction due to this proposed project would also be low. However, diversion of river water into these swamps would restore natural hydrologic regimes, increase nutrient availability, and restore some sediment input. This would result in increased productivity and increased sediment accretion (organic and some inorganic), which over time should also counter subsidence sufficiently to improve cypress and tupelo regeneration. Without the project, over a sufficiently-long period of time, swamp habitat is expected to be converted to open water, floating aquatic vegetation, and/or fresh marsh due to the effects of subsidence and the accretion deficit. The project would improve swamp forest stand structure and water regime. If salinity is a problem, the project would eliminate this problem.

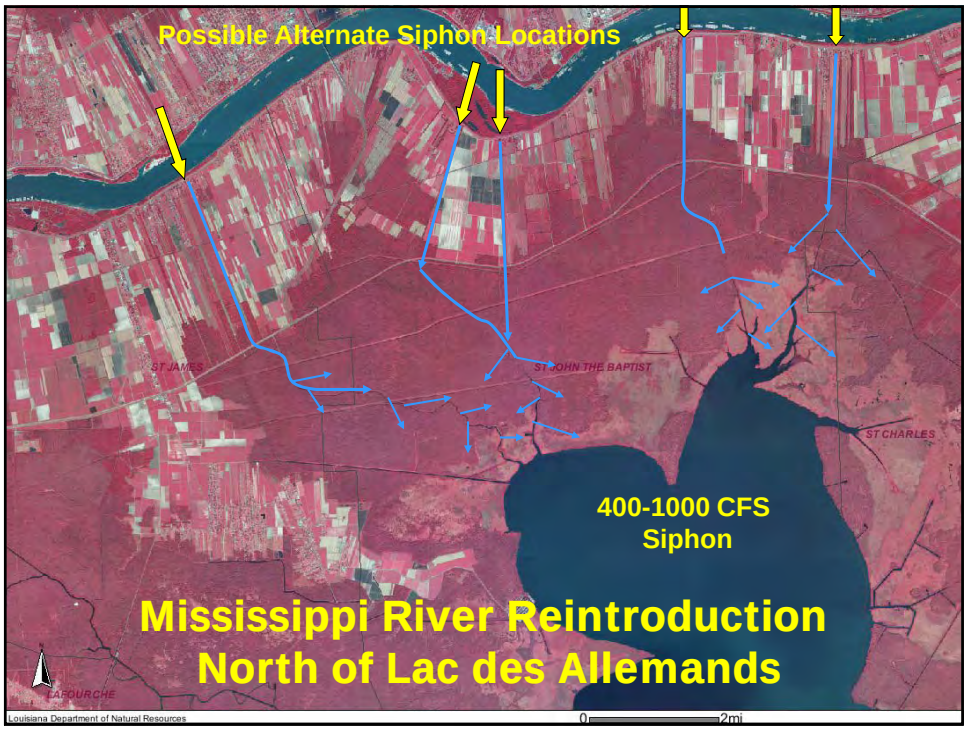
Identification of Potential Issues
Landrights

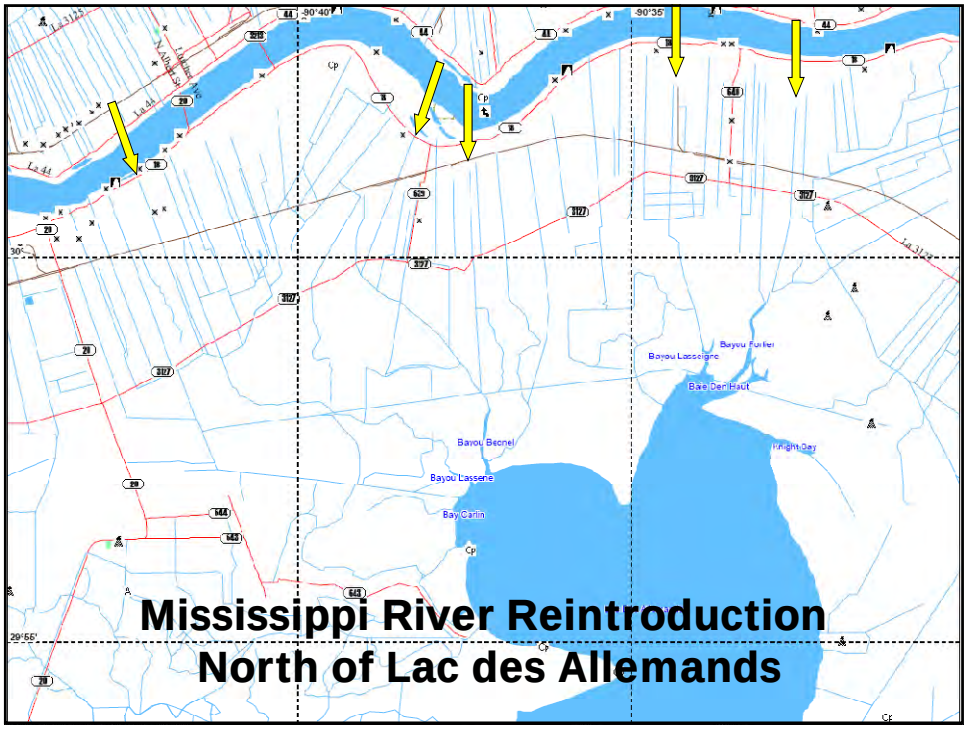
Preliminary Construction Costs
Total project costs (Phase I and II) are estimated to be $9,783,875, based on cost estimates for BA-34, PPL10, subtracting out costs for features not proposed for this project (e.g. tree planting, culverts). Actual cost estimates may be lower since the distance between the river and the swamps may be less for this project than for BA-34.

Preparer of Fact Sheet
Ken Teague, EPA, (214) 665-6687, teague.kenneth@epa.gov
Brad Crawford, EPA, (214) 665-7255, Crawford.brad@epa.gov


Possible Alternate Siphon
400-1000 CFS
Siphon
Mississippi River Reintroduction
North of Lac des Allemands
Louisiana Department of Natural Resources
0
2mi


Mississippi River Reintroduction
North of Lac des Allemands
Location Map
Louisiana Department of Natural Resources
0
91mi
Louisiana Department of Natural Resources
0
2mi


Possible Alternate Siphon Locations
ST JAMES
ST JOHN THE BAPTIST
ST CHARLES
400-1000 CFS
Siphon
Mississippi River Reintroduction
North of Lac des Allemands
LAFOURCHE
Louisiana Department of Natural Resources
0
2mi



Mississippi River Reintroduction North of Lac des Allemands

Goals:

- Ensure long-term maintenance of cypress-tupelo swamp
  - Increase cypress & tupelo productivity
    - Increase sediment accretion
    - Improve swamp forest stand structure
    - Improve swamp water regime
- Maintain fresh marsh
  - Increase fresh marsh vegetative productivity
    - Increase sediment accretion

Preliminary Project Benefit Area:

- 2000-5000 acres

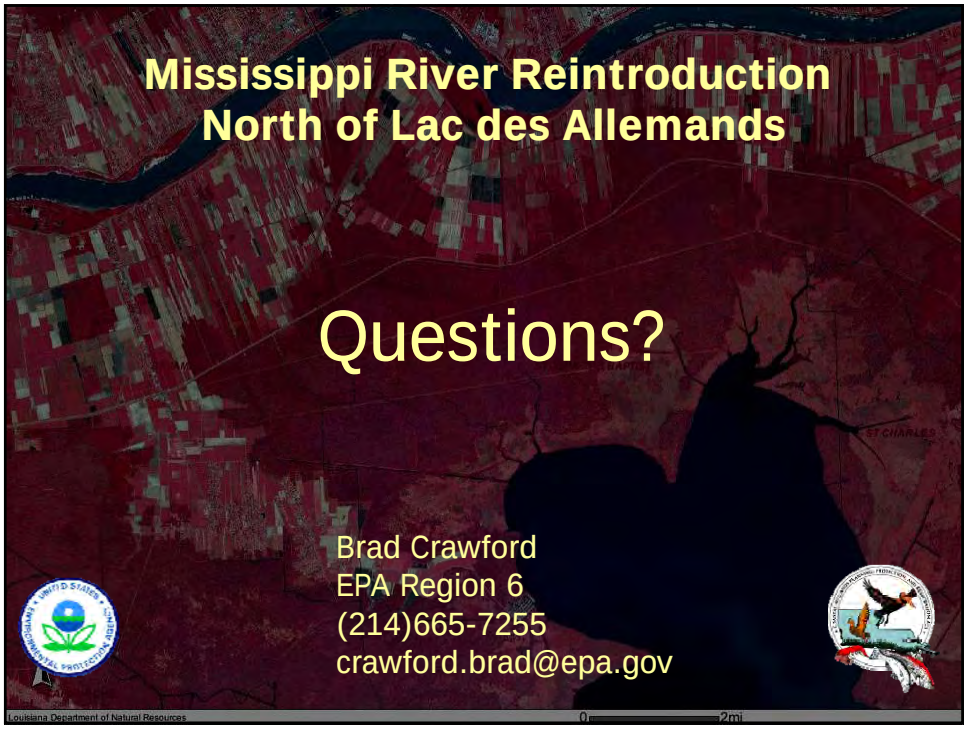
Identification of Potential Issues:

- Landrights

Preliminary Construction Costs + 25%:

- $15 Million

Louisiana Department of Natural Resources


Mississippi River Reintroduction
North of Lac des Allemands
Questions?
Brad Crawford
EPA Region 6
(214)665-7255
crawford.brad@epa.gov
Louisiana Department of Natural Resources
0
2mi

R2-BA-12 Mississippi River Small Introduction (siphon) and outfall management east of Lac des Allemands

RZ-BA-12

PPL15 PROJECT NOMINEE FACT SHEET
January 26, 2005

Mississippi River Small Reintroduction (siphon) and outfall management east of Lac des Allemands

Coast 2050 Strategy
Regional Ecosystem Strategy- 1. Construct small diversions with outfall management.

Project Location
The proposed project is located in Region 2, Barataria Basin, St. Charles Parish, east of Lac des Allemands.

Problem
Swamps and freshwater marshes in this area have experienced high loss rates, resulting in a large area of shallow open water. Presumably this has been caused by a combination of: 1) hydrologic isolation from the Mississippi River; and 2) localized impoundment due to spoil banks. These marshes are not receiving sufficient sediment and nutrient input, and wetland productivity is not sufficient to maintain longterm elevation.

Proposed Project Features
The proposed project would be a Mississippi River siphon south of Hahnville, LA, with 1000 cfs average discharge. The project would consist of 5- 6 ft diameter siphon pipes discharging into a diversion channel that would be constructed to transport the water in a southeasterly direction into the highly degraded swamp/marsh east of Lac des Allemands. The important drainage canal that runs perpendicular to the proposed diversion channel would not be blocked to accommodate the diversion channel. Rather, the diversion channel will intersect the drainage canal and the spoil bank on the opposite bank of the drainage canal gapped appropriately to facilitate diversion flow into the project benefit area. Appropriate and necessary remediation (outfall management) of hydrologic alterations (spoil bank gapping, culverts, canal plugs, etc) in the receiving area would also be designed and constructed. As water levels are reduced, the site will be evaluated to determine the need for vegetative plantings, and if needed appropriate species will be selected and planted.

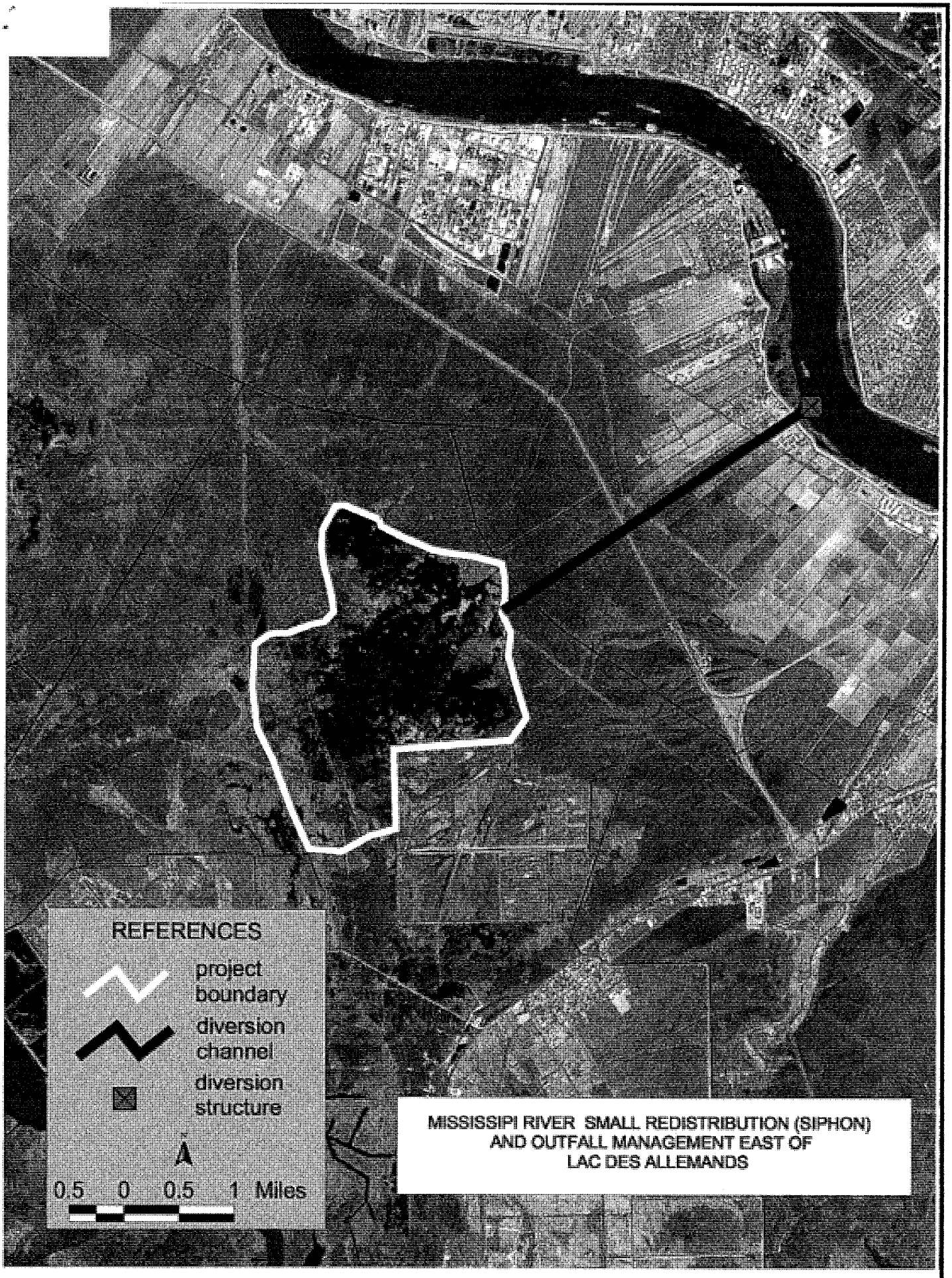
Goals
The proposed project would reduce swamp/marsh loss rates here (protect) and create approximately 500 acres of swamp and marsh by: 1) restoring hydrology (alleviating impoundment); 2) building emergent land by increasing accretion in shallow open water by increasing loading of fine-grained sediment; 3) maintaining elevation by increasing accretion in new emergent wetlands by increasing wetland productivity by increasing sediment bulk density, nutrient loading, increasing water flows, and by planting if determined to be necessary. The project would also have water quality benefits by increasing dissolved oxygen concentrations in the receiving area, and by reducing nutrient loading to the Inner Continental Shelf of the Gulf.

Preliminary Project Benefits
The total acreage benefited directly and indirectly is approximately 3000 acres. An estimated 500 acres of emergent land at wetland elevation will be created over the 20 year project life.

Identification of Potential Issues
The proposed project has the following potential issues: land rights, utilities, drainage.

Preliminary Construction Costs
Very rough estimate: $15 million

Preparer of Fact Sheet
Kenneth Teague, U.S. EPA, 214-665-6687, teague.Kenneth@epa.gov

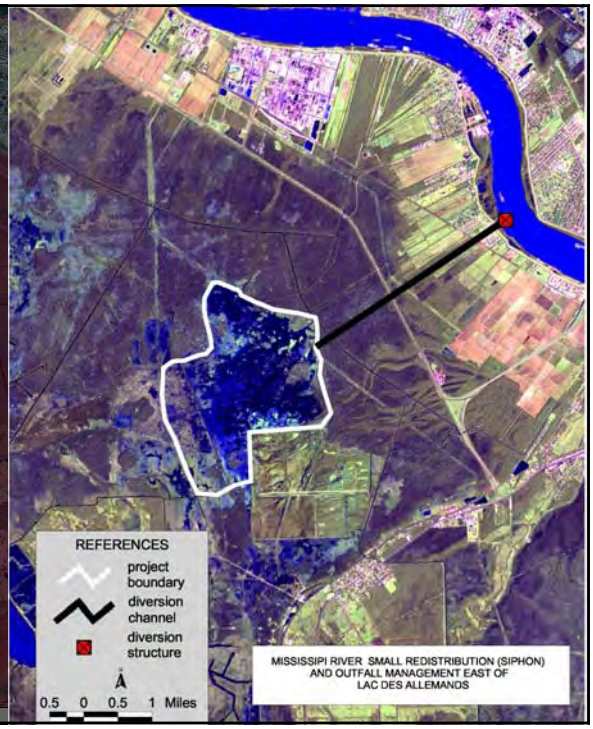


MISSISSIPI RIVER SMALL REDISTRIBUTION (SIPHON) AND OUTFALL MANAGEMENT EAST OF LAC DES ALLEMANDS

Mississippi River Reintroduction And Outfall Management East of Lac des Allemands

Louisiana Department of Natural Resources
0 1mi

Mississippi River Reintroduction And Outfall Management East of Lac des Allemands



Louisiana Department of Natural Resources


Louisiana Department of Natural Resources
0
1mi


Mississippi River Reintroduction
And Outfall Management
East of Lac des Allemands
Goals:
• Protect/create 500 ac of marsh
Preliminary Project Benefit Area:
• 3000 acres
Identification of Potential Issues:
• landrights, drainage
Preliminary Construction Costs + 25%:
• $15 Million
Louisiana Department of Natural Resources
0
1mi


Mississippi River Reintroduction
And Outfall Management
East of Lac des Allemands
Questions?
Kenneth Teague
EPA Region 6
(214)665-6687
Teague.kenneth@epa.gov
Louisiana Department of Natural Resources
0
1 mi

R2-BA-13 Rebuilding the East Bank of the “Empire to Gulf of Mexico Waterway”

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Empire Waterway East Bank Restoration Project

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore marsh, restore ridge functions
Regional: Restore and Sustain Marshes

Project Location
Region 2, Barataria Basin, Plaquemines Parish

Problem
Project area has severely eroded due to the extent that tidal patterns have changed. This has accelerated erosion due to rapid tidal exchange. This project will be a necessary step in rebuilding the inner ecosystem after the barrier island restoration is completed.

Proposed Solution
The proposed project's primary feature is to restore the East Bank of the Empire Waterway. In order to achieve this, sediment will be hydraulically pumped from the Empire Deepwater Channel and placed onto the eroded East Bank of the channel using the necessary base support for the spoil.

Goals
The project goal is to restore the East Bank of the Empire Waterway to alleviate impacts from rapid tidal exchange and protect the inner marsh.

Preliminary Project Benefits
Unknown

Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?
The project will restore the East bank ridge of the Empire Deepwater Channel.

Preliminary Construction Costs
Unknown

Preparer(s) of Fact Sheet:
Kenneth Ragas, Plaquemine Parish Landowner, (504) 453-0508


Empire Waterway
Bank Restoration
Legend
Empire Waterway East Bank Restoration Area
N
Miles
0 0.3 0.6 1.2 1.8 2.4

Region 2-

Breton Sound Basin

R2-BS-01 Terracing and Marsh Creation South of Big Mar

KZ-BS-01

PPL21 PROJECT NOMINEE FACT SHEET

Project Name: Terracing and Marsh Creation South of Big Mar

Coast 2050 Strategy

- Coastwide: Dedicated dredging to create, restore, or protect wetlands
- Coastwide: Terracing
- Coastwide & Regional Ecosystem Strategy: Manage outfall of existing diversions

Project Location

Region 2, Breton Sound Basin, Plaquemines Parish, south of Big Mar and west of Lake Lery.

Problem

From 1932 to 1990, the Caernarvon Mapping Unit lost 14,240 acres of its marsh. Prior to Hurricane Katrina, the greatest lost documented occurred between 1956 and 1974 and coincided with Hurricane Betsy and extensive canal building. Hurricane Katrina devastated the area resulting in substantial marsh loss. According to USGS Open File Report (2006-1274), approximately 39 square miles of marsh around the upper and central portions of Breton Sound were converted to open water by ripping of the marsh or by marsh submergence.

Goals

The primary goal is to create terraces in the shallow open water areas within the Caernarvon Diversion outfall area. Terraces will reduce wave fetch in the large open water areas and promote conditions conducive to growth of marsh vegetation and submerged aquatic vegetation. Additional benefits may be achieved through capturing suspended sediments. Marsh creation is also proposed in the open water areas adjacent to the Lake Lery Shoreline Restoration Project (BS-16).

Proposed Project Features

1. Approximately 65,000 linear feet of terraces (60 acres) will be constructed with in-situ material to reduce fetch and turbidity and capture suspended sediment.
2. Sediments will be hydraulically dredged from Lake Lery and pumped via pipeline to create approximately 388 acres of marsh in the project area.

Preliminary Project Benefits

1) The total acreage benefited directly would be 448 acres (388 acres of marsh creation/nourishment and 60 acres of terraces). Indirect benefits would occur within the 4 terrace fields which encompass approximately 900 acres.
2) The total net acres protected/created over the project life would be between 400-500 acres.
3) Background loss rates would be reduced by 50% in the marsh creation and marsh nourishment areas.
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.? See # 6.
5) What is the net impact of the project on critical and non-critical infrastructure?
   None identified.
6) This project will work synergistically with the following projects to 1) maintain the integrity of Lake Lery, 2)provide storm surge benefits to areas to the north, 3) protect and enhance fish and wildlife resources for Breton Sound Basin, and 4) better utilize sediments and freshwater delivered by the Caernarvon Freshwater Diversion:

   - Caernarvon Freshwater Diversion Project,
   - Caernarvon Diversion Outfall Management (BS-03a), and,
   - Caernarvon Outfall Mangement/Lake Lery Shoreline Restoration (BS-16).

Identification of Potential Issues

There are no known potential issues to this project. The major landowner, Delacroix Corp., is fully aware of the project concept and has voiced their support. There are pipelines in the area which should be avoidable with no issue. There are no oyster leases.

Preliminary Construction Costs

Preliminary construction costs are estimated at $15-$20 million, which includes 25% contingency.

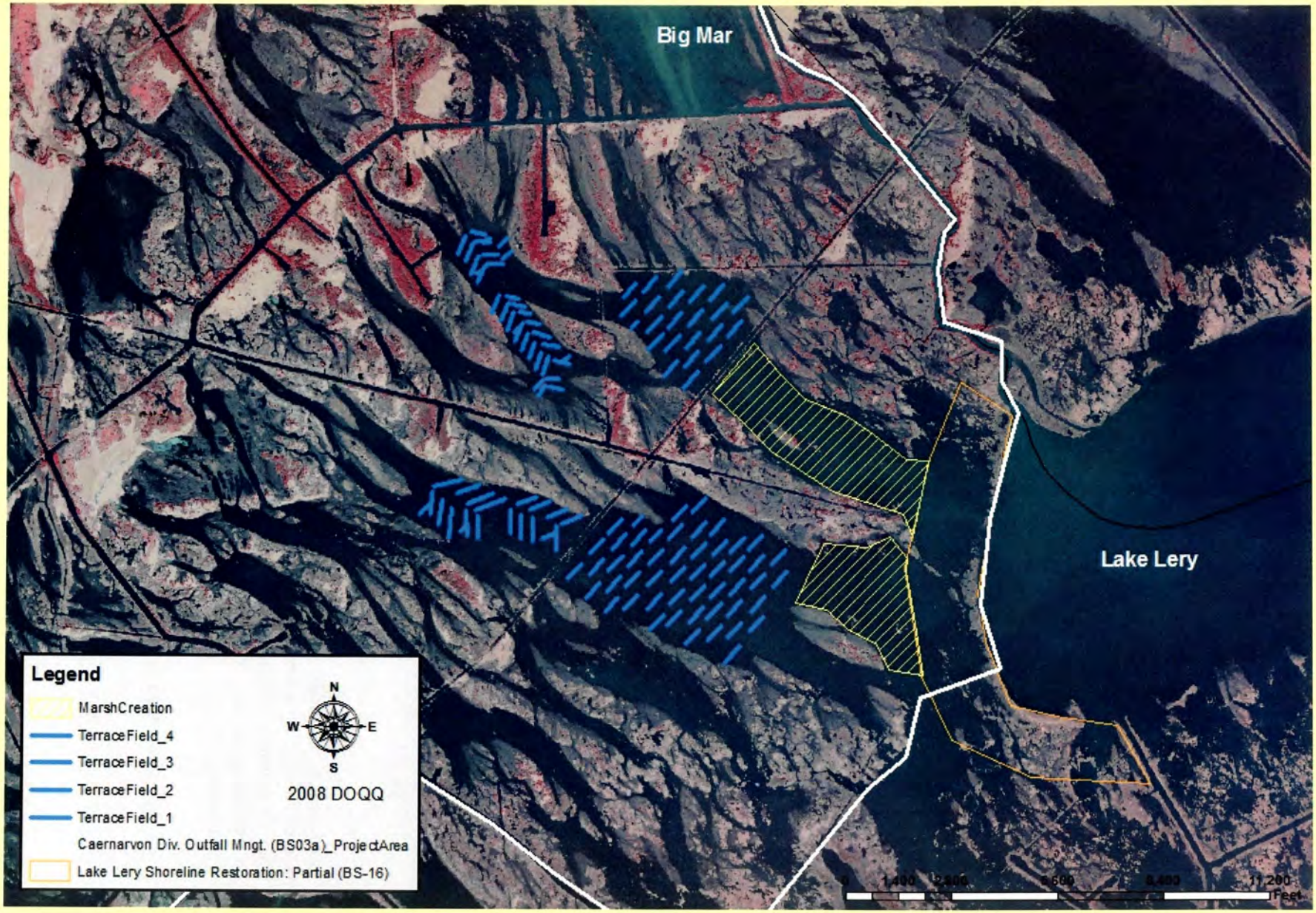
Preparer of Fact Sheet

Angela Trahan, USFWS, (337) 291-3137, Angela_Trahan@fws.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

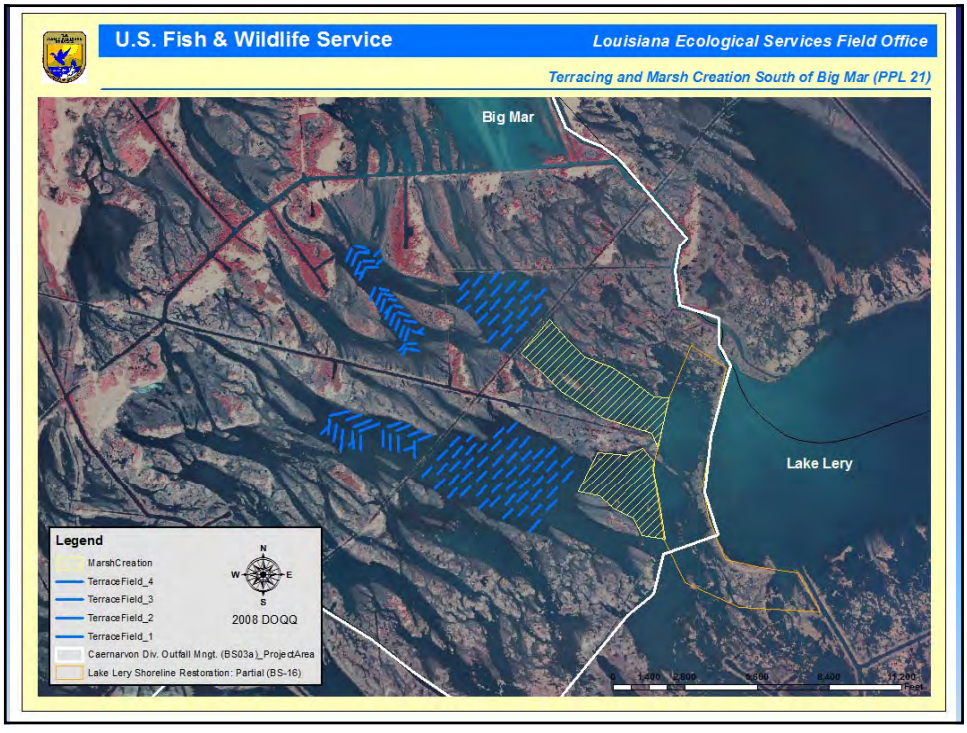
Terracing and Marsh Creation South of Big Mar (PPL 21)

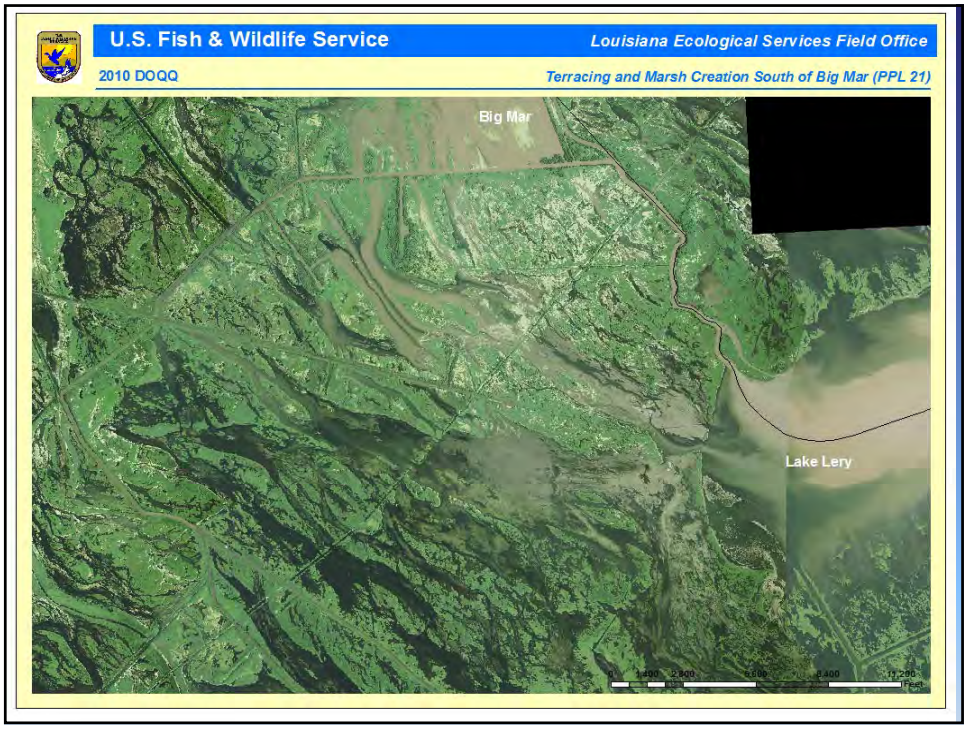


Terracing & Marsh Creation South of Big Mar

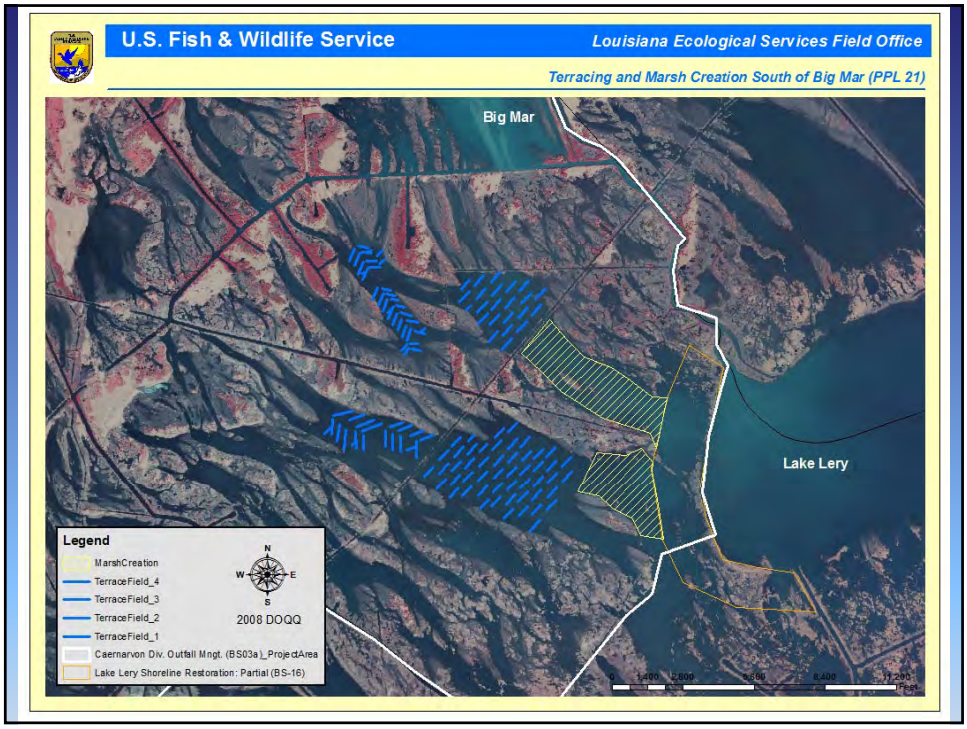
PPL 21

Region 2, Breton Sound Basin




U.S. Fish & Wildlife Service
Louisiana Ecological Services Field Office
2010 DOQQ
Terracing and Marsh Creation South of Big Mar (PPL 21)
Big Mar
Lake Lery


U.S. Fish & Wildlife Service
Louisiana Ecological Services Field Office
2010 DOQQ
Terracing and Marsh Creation South of Big Mar (PPL 21)


U.S. Fish & Wildlife Service
Louisiana Ecological Services Field Office
Terracing and Marsh Creation South of Big Mar (PPL 21)
Big Mar
Lake Lery
Legend
MarshCreation
TerraceField_4
TerraceField_3
TerraceField_2
TerraceField_1
Caernarvon Div. Outfall Mngt. (BS03a)_ProjectArea
Lake Lery Shoreline Restoration: Partial (BS-16)
N
W
E
S
2008 DOQQ
0 1,400 2,800 4,200 5,600 7,200
Feet


U.S. Fish & Wildlife Service
Louisiana Ecological Services Field Office
2004 DOQQ
Terracing and Marsh Creation South of Big Mar (PPL 21)
0 1,050 2,100 4,200 6,300 8,400
Feet

R2-BS-02 Lake Lery Shoreline Marsh Creation

R2-BS-02

PPL 21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name: Lake Lery Shoreline Marsh Creation

Coast 2050 Strategy:
Dedicated Dredging, to Create, Restore, or Protect Wetlands; Maintenance of Gulf, Bay and Lake Shoreline Integrity; and, Vegetative Planting (Coastwide Common Strategies)

Project Location:
Region 2, Breton Basin, St. Bernard Parish, along the northern and eastern rim of Lake Lery

Problem:
The marshes forming the northern and eastern shoreline of Lake Lery were severely deteriorated by Hurricane Katrina. Without directly rebuilding these marshes, the lake itself will likely continue to grow and will extend to Bayou Terre aux Boeufs.

Goals:

- Create/nourish 540 acres of marsh through dedicated dredging and vegetative plantings
- Restore/stabilize 3.15 miles of north/east shoreline of Lake Lery

Proposed Solutions:
This project would create 375 acres and nourish an additional 165 acres of marsh along the northern and eastern shore of Lake Lery using material dredged from Lake Lery. The target elevation for the marsh creation areas will correspond with the elevation of healthy marsh in the surrounding area (1.5 ft NAVD 88 according to PPL20 Lake Lery Candidate project WVA). An earthen berm will be constructed along approximately 16,600 feet of deteriorated lake shoreline. 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.

Preliminary Project Benefits:

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

2) *How many acres of wetlands will be protected/created over the project life?*
   344 acres (using USGS land loss estimates from PPL20 Lake Lery Candidate project WVA)

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?*
   50-74% per convention of the Environmental WG for interior marsh creation projects

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 will reestablish the northern/eastern rim of Lake Lery. This area was significantly damaged during Hurricane Katrina and is not being addressed under any restoration funding vehicle.

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

This project will have a moderate impact on non-critical infrastructure.

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

This project represents the final construction unit required to restore the Lake Lery shoreline. This project will complement the following projects:

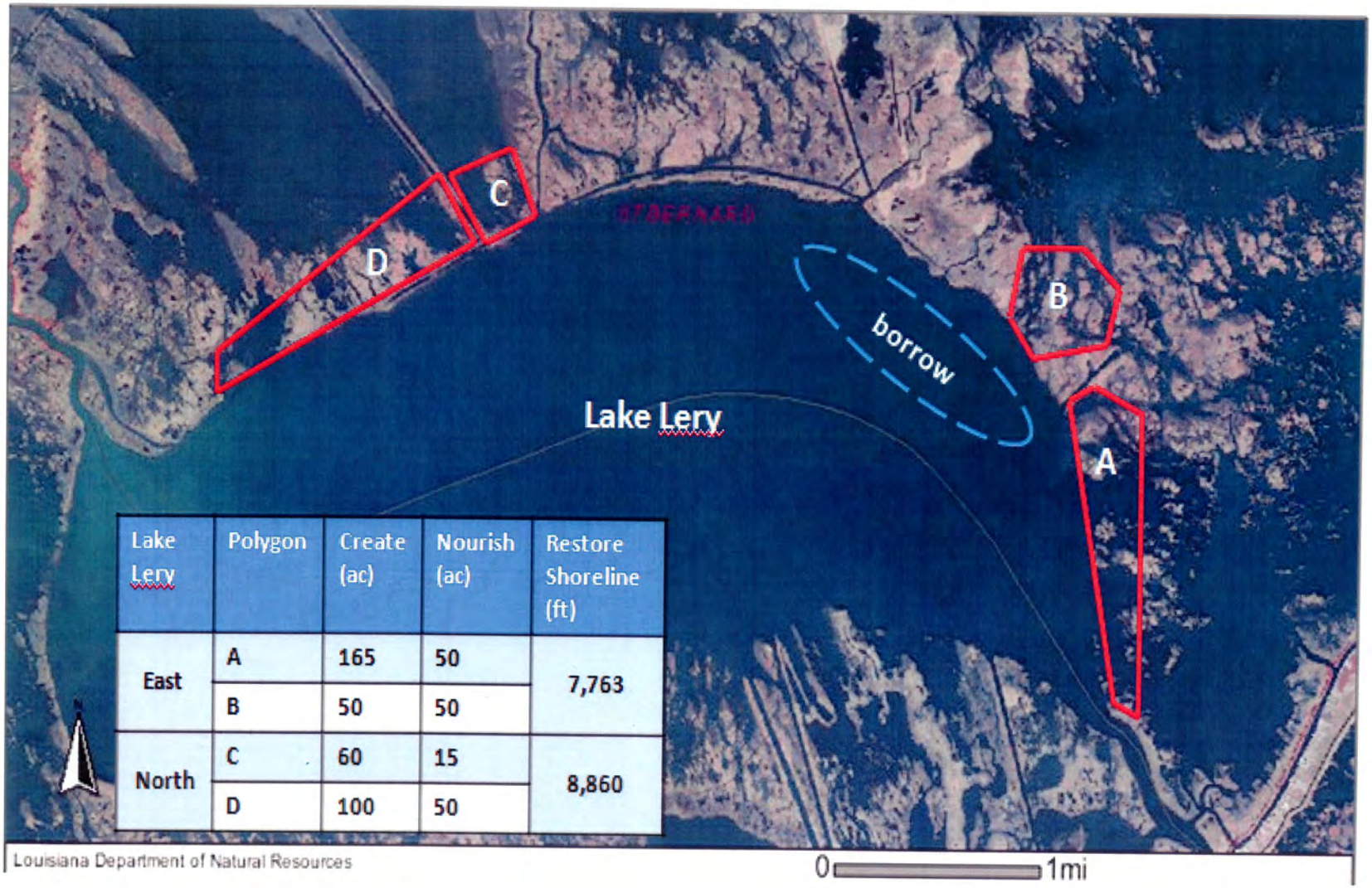
1) BS-16 Lake Lery Shoreline Restoration project, which will reestablish the west/south shoreline of Lake Lery through marsh creation;
2) CIAP project that will reinforce western bank of Bayou Terre aux Boeufs; and, 3) Caernarvon 4th Supplemental project which will a provide freshwater shunt
3) from Caernarvon to the 40 Arpent Canal to restore northwestern marshes of Lake Lery

Identification of Potential Issues:
There are no known potential issues to this project.

Preliminary Construction Costs:
$27 million, including 25% contingency. The estimated fully funded cost, using a 1.4 multiplier, falls in the $36-40M cost range.

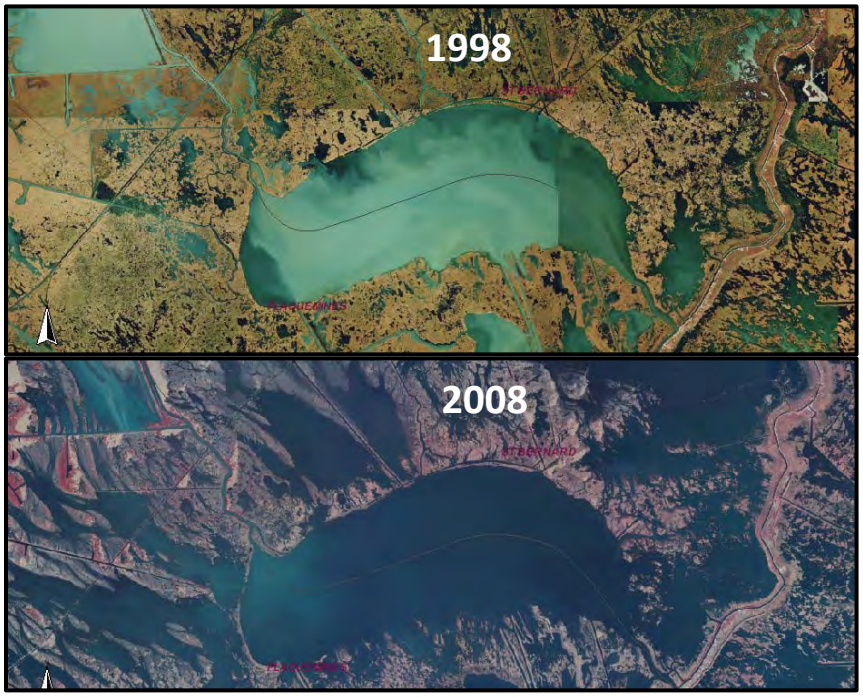
Preparer(s) of Fact Sheet:
Chris Allen, OCPR, 225.342.4736, chris.allen@la.gov
Kimberly Clements, NOAA NMFS, 225.389.0508 ext 204, Kimberly.Clements@noaa.gov

PPL 21 Lake Lery Shoreline Marsh Restoration

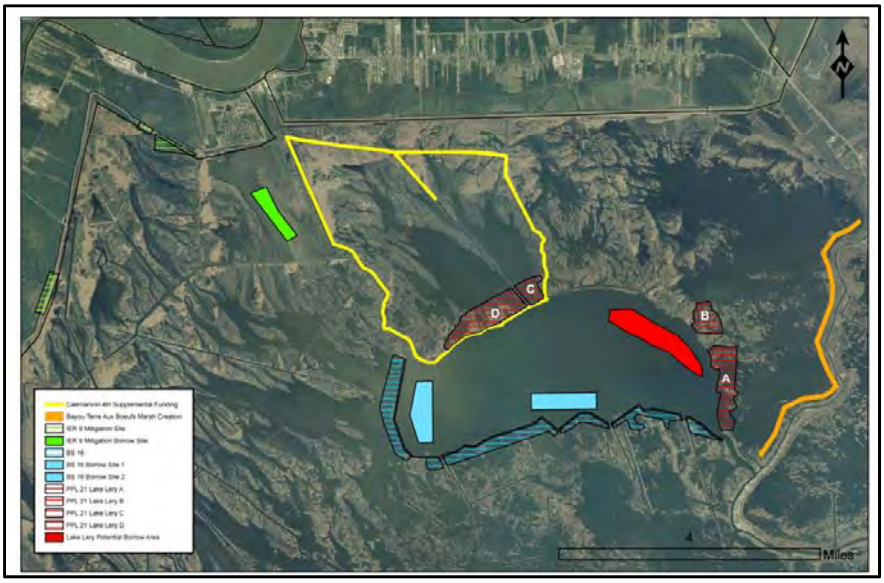


Lake Lery	Polygon	Create (ac)	Nourish (ac)	Restore Shoreline (ft)
East	A	165	50	7,763
	B	50	50	
North	C	60	15	8,860
	D	100	50	

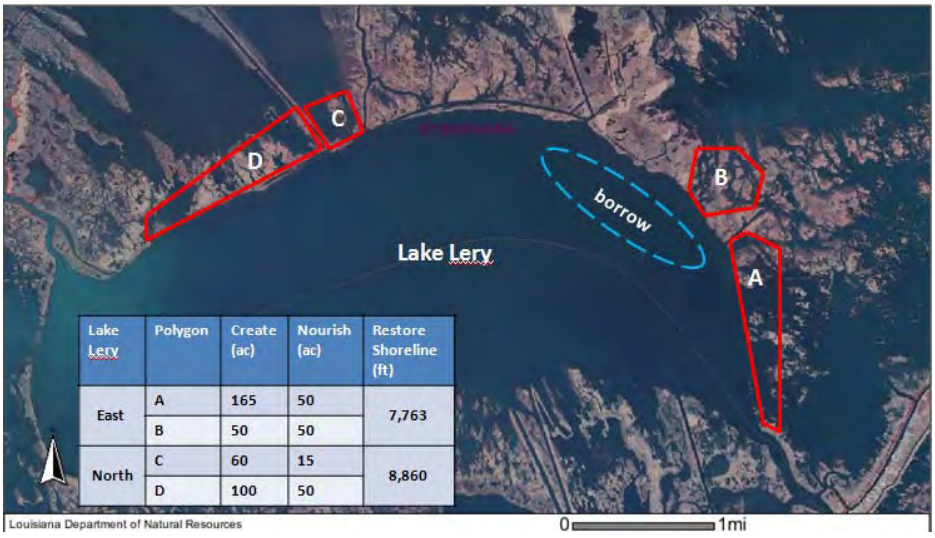

PPL 21 Lake Lery Shoreline Marsh Restoration
Louisiana Department of Natural Resources
0
11mi


1998
2008

2011 Revised Caernarvon Base Map

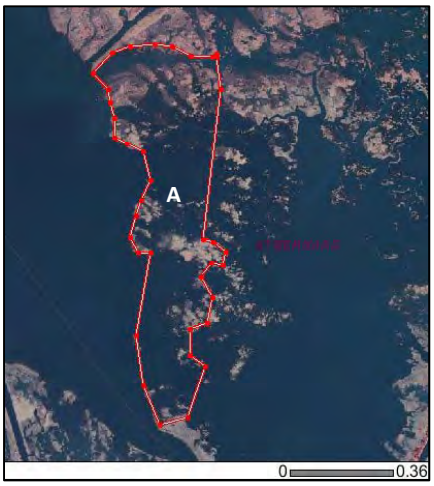


PPL 21 Lake Lery Shoreline Marsh Restoration



Lake Lery	Polygon	Create (ac)	Nourish (ac)	Restore Shoreline (ft)
East	A	165	50	7,763
	B	50	50	
North	C	60	15	8,860
	D	100	50	


A
0
0.36mi


A
0
0.36


B
0
0.43mi


B
0
0.43n


C
0
0.24mi


C
0
0.26mi


D


D

R2-BS-03 40 Arpent Canal Outfall Management

RZ-BS-03

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
40-Arpent Canal Outfall Management

Coast 2050 Strategy
- Region 2 - Restore and Sustain Marshes via Managing Outfall of Existing Diversions
- Coastwide – Dedicated dredging for wetland creation.
- Coastwide – Maintenance of bay and lake shoreline integrity.
- Coastwide - Vegetative Plantings

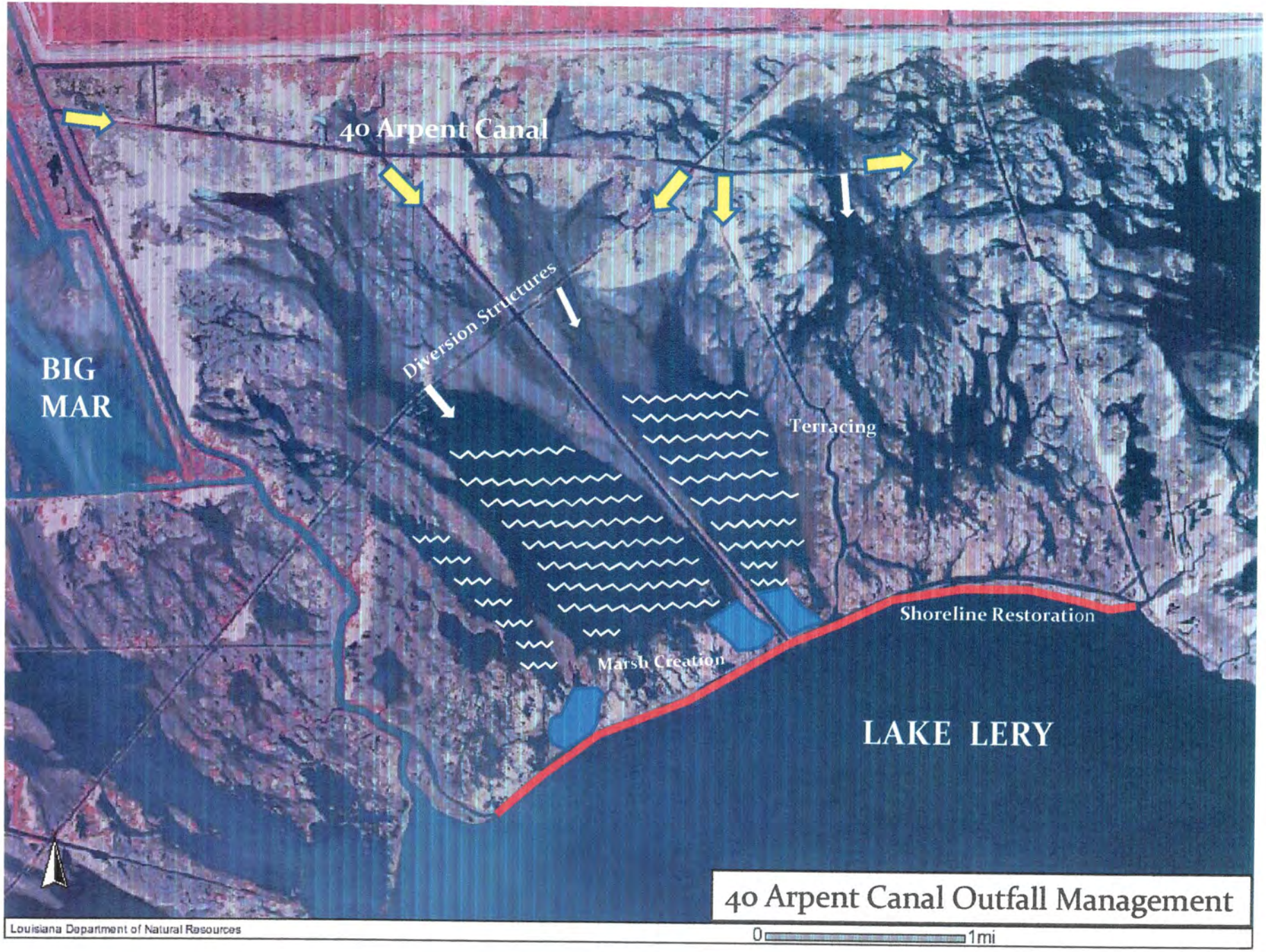
Project Location
Region 2, Breton Sound Basin, St. Bernard Parish, Caernarvon mapping unit, north of Lake Lery.

Problem
Wetlands surrounding Big Mar/Lake Lery were heavily damaged due to Hurricane Katrina in 2005. Most damaged areas resulted in large, shallow open water ponds as well as fragmented shorelines along the perimeter of Lake Lery. Since the storm, marshes east of Big Mar and north of Lake Lery have shown little to no recovery which could result in the expansion of Lake Lery and further loss of interior emergent vegetation. Those marshes have been deteriorating from increased salinities and a lack of freshwater from the diversion. After Katrina, the canals that transport limited amounts of freshwater eastward have been completely blocked with debris to a point where there is virtually no fresh water reaching those marshes. The Corps of Engineers has received congressional supplemental funding to address these problems however due to a lack of sufficient funds, only partial remediation measures can be implemented.

Goals
- Incorporate outfall management features south of the 40 Arpent Canal to further enhance the distribution of freshwater, sediment and nutrients provided by the Corps 4th Supplemental Project.
- Provide benefits to approximately 7,000 acres of fresh/intermediate marsh and shallow open water areas.

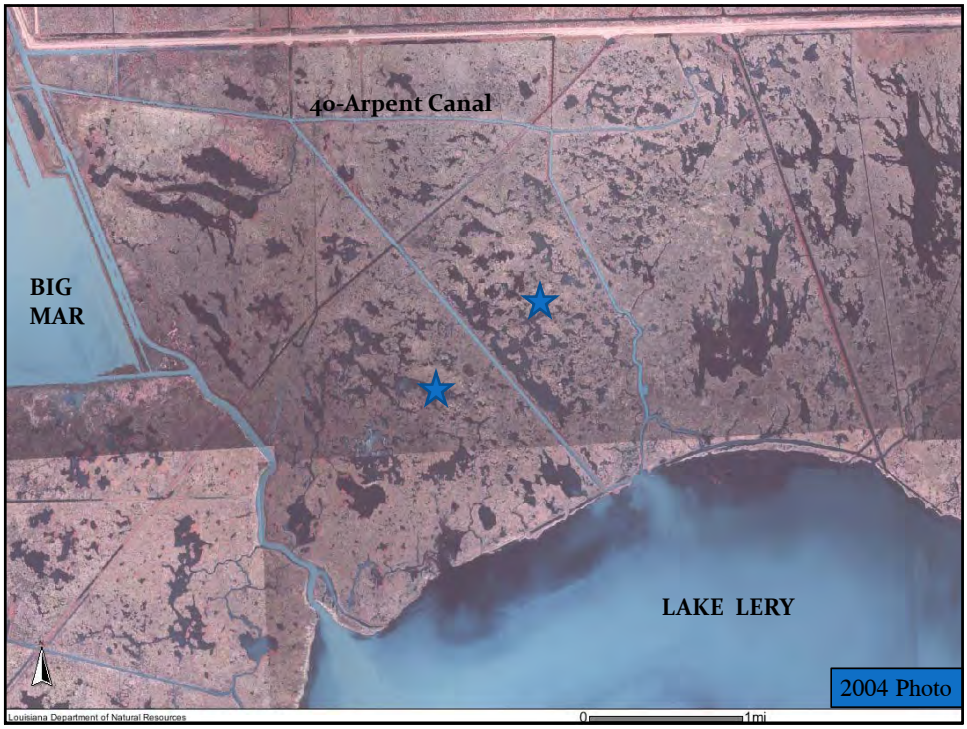
Proposed Project Features
1) Clean out distributary channels and install diversion structures in strategic locations to allow maximum river water flow into targeted marshes south of the 40 Arpent Canal, east of Caernarvon Canal/Bayou Mandeville, north of Lake Lery, and west of the pipeline canal.
2) Create approx. 100 acres of emergent marsh along the north perimeter of Lake Lery in interior open water areas that have breached into the lake and restore the land buffer.
3) Construct a series of earthen terraces in large open water areas to trap sediment, reduce fetch, and prevent channelization of diverted river water.
5) Restore the southern shoreline of Lake Lery and plant the lakeward edge.

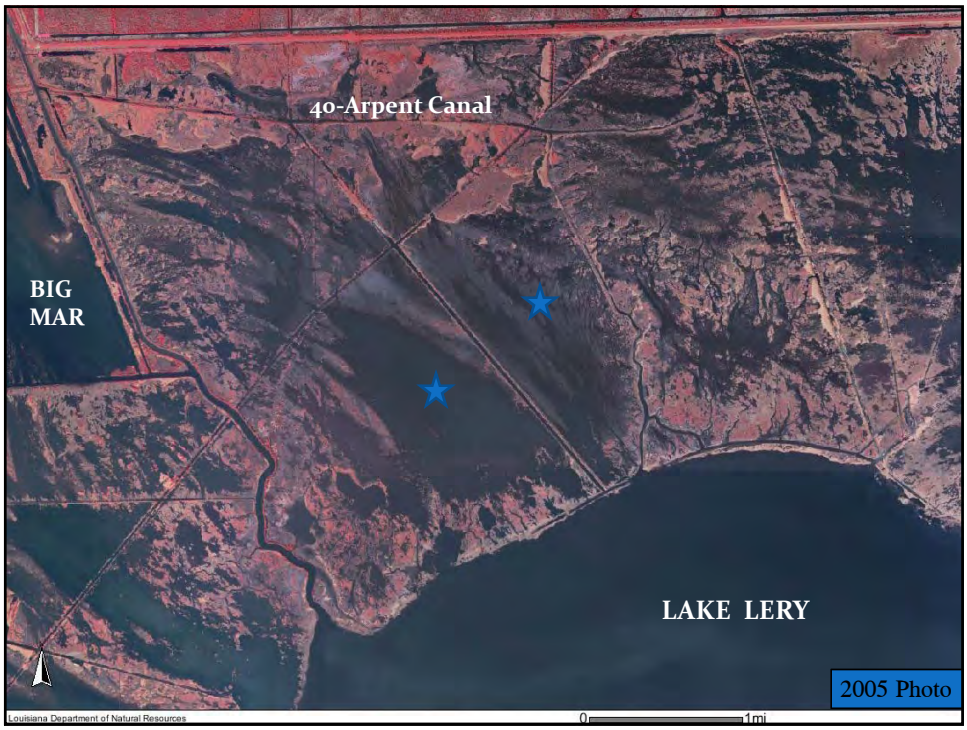
Preparer of Fact Sheet
Loland Broussard, NRCS, (337)291-3069, loland.broussard@la.usda.gov


40 Arpent Canal
Diversion Structures
BIG
MAR
Terracing
Shoreline Restoration
Marsh Creation
LAKE LERY
40 Arpent Canal Outfall Management
Louisiana Department of Natural Resources
0
1mi

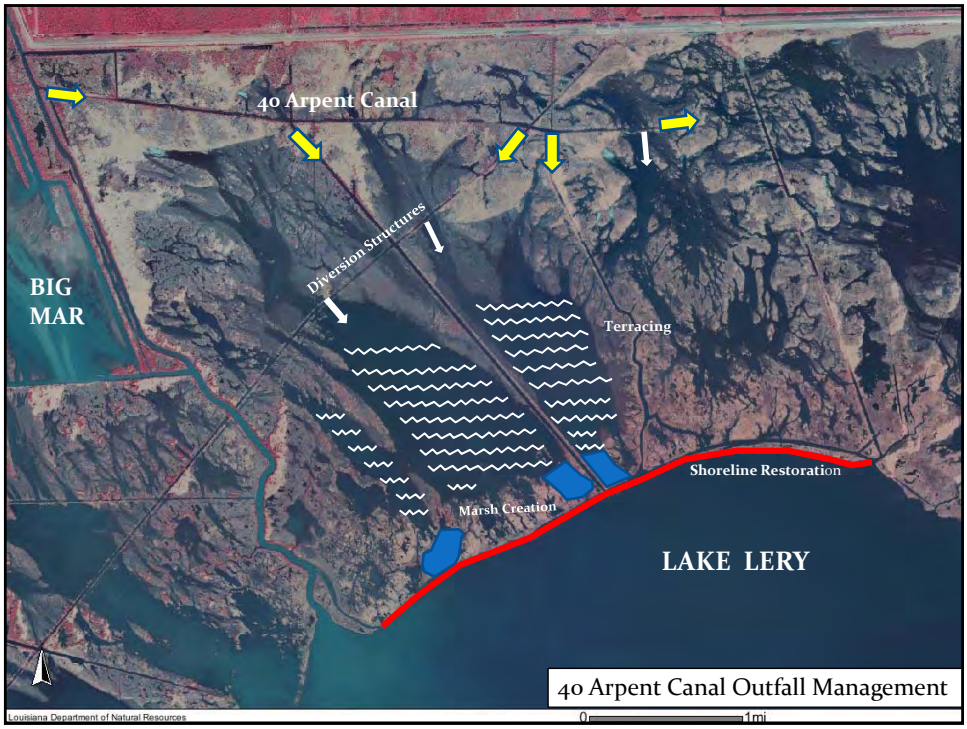
40-Arpent Canal Outfall Management Project

40-Arpent Canal Outfall Management Project


40-Arpent Canal
BIG
MAR
LAKE LERY
2004 Photo
Louisiana Department of Natural Resources
0
1mi


40-Arpent Canal
BIG
MAR
LAKE LERY
2005 Photo
Louisiana Department of Natural Resources
0
1mi

Caernarvon Diversion Outfall Area **2010 Photo**


40 Arpent Canal
Diversion Structures
BIG
MAR
Terracing
Shoreline Restoration
Marsh Creation
LAKE LERY
40 Arpent Canal Outfall Management
Louisiana Department of Natural Resources
0
1 mi

R2-BS-04 Monsecour Siphon

R2-BS-04

PPL20 PROJECT NOMINNE FACT SHEET
January 27, 2011

Project Name
Monsecour Siphon

Coast 2050 Strategy
Coastwide Common Strategies: Diversions and river discharge; Management of diversion outfall for wetland benefits.
Region 2 Regional Ecosystem Strategies: Restore and sustain marshes; Construct most effective small diversions.

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

Problem
This area has been disconnected from the Mississippi River since levees were constructed during the early 20th century. The lack of overbank flooding/crevasses ensures that wetlands here do not have sufficient sediment input to maintain elevation against subsidence. In addition, drainage canals and oil and gas canals and associated spoil banks probably create some undesirable impoundment and tidal scour/saltwater intrusion in the area. In addition to impoundment caused by canals and spoil banks, the area is probably somewhat naturally impounded due to natural ridges. Aerial photography clearly demonstrates the significant loss of marsh in this area.

Proposed Project Features:
Construct a siphon from the Mississippi River, with 2000 cfs maximum capacity (estimated average flow=1145cfs). The project may require additional features for delivery and outfall management.

Goals
The project goal is to protect approximately 990 ac of intermediate marsh by reducing wetland loss rates in turn by reintroducing an average of 1,145 cfs, and a maximum of 2,000 cfs, of Mississippi River water into the project area to increase sediment and nutrient loading.

Preliminary Project Benefits
The project would benefit 12,255 acres of intermediate marsh and open water. Approximately 990 net acres of intermediate and/or fresh marsh would be protected over the 20-year project life.

Identification of Potential Issues
None

Project Costs
The estimated construction cost with a 25% contingency is $ 5.48 million and a full-funded cost range is $10-15M.

Preparer(s) of Fact Sheet:
Kenneth Teague, EPA, (214) 665-6687; teague.kenneth@epa.gov
Paul Kaspar, EPA, (214) 665-7459; kaspar.paul@epa.gov
Brad Crawford, EPA, (214) 665-7255; crawford.brad@epa.gov

Monsecour Siphon (PPL19 Candidate)

Siphon *

Project Boundary

* denotes proposed features

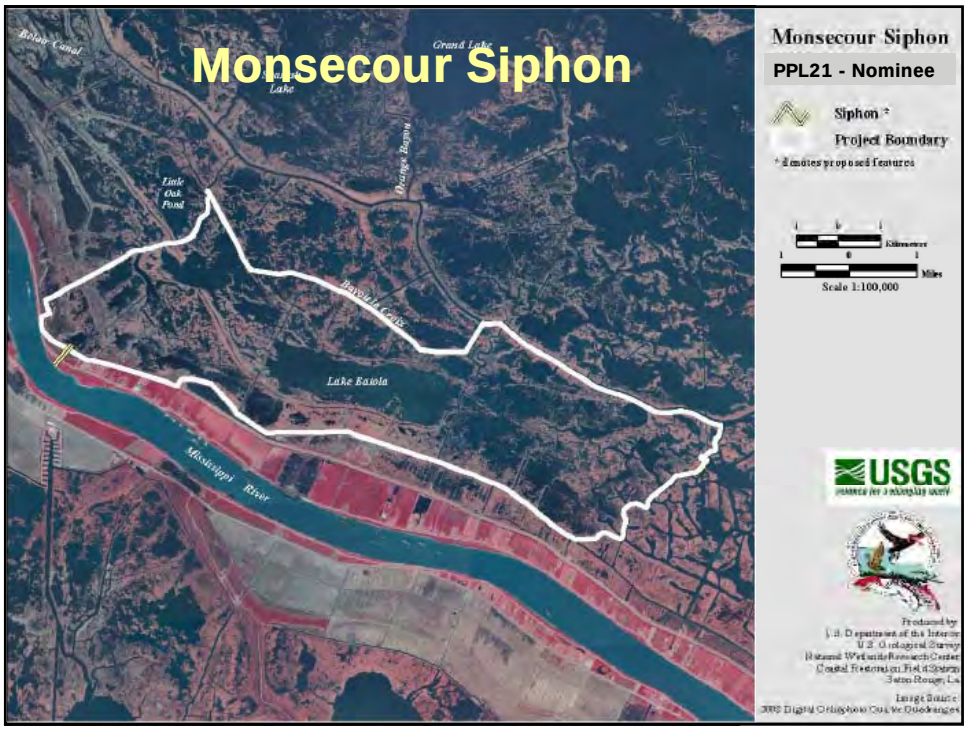
1 0 1
Kilometers
1 0 1
Miles
Scale 1:100,000

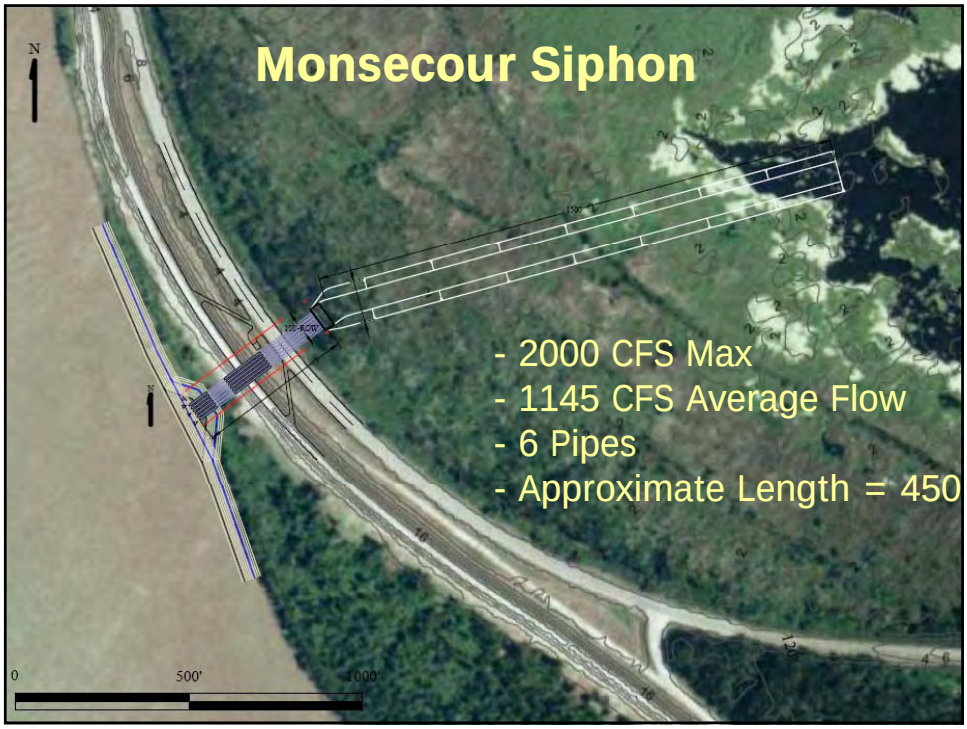
USGS
science for a changing world

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:
2008 Digital Orthophoto Quarter Quadrangles


Monsecour Siphon
Louisiana Department of Natural Resources
0
91mi


Monsecour Siphon
Grand Lake
Lake
Little Oak Pond
Drainage Basin
Bayou La Carpe
Lake Batola
Mississippi River
Monsecour Siphon
PPL21 - Nominee
Siphon *
Project Boundary
* denotes proposed features
Scale 1:100,000
USGS



Monsecour Siphon

Goals:
- **Reduce landloss**
- **Increase SAV**

•Project Benefits:
- •12,225 acres benefit area
- • 990 net ac over 20 years

Identification of Potential Issues:
- • Landrights

Preliminary Construction Costs + 25%:
- • $5.48 Million


Monsecour Siphon
Questions?
Brad Crawford
EPA Region 6
(214)665-7255
Crawford.brad@epa.gov

R2-BS-05 White Ditch Marsh Creation Sediment Delivery

R2-BS-05

PPL21 Project Nominee Fact Sheet
January 27, 2011

Project Name
White Ditch Marsh Creation Sediment Delivery

Coast 2050 Strategy
- Dedicated dredging to create, restore, or protect wetlands
- Off-shore and riverine sand and sediment resources

Project Location
The proposed project is located in Region 2, Breton Sound Basin, east of the Mississippi River in the vicinity of Belair, Louisiana in Plaquemines Parish.

Problem
Historically, marshes in the area of the proposed project were intermediate to brackish. However, lack of freshwater input has resulted in their complete conversion to brackish marshes. These marshes were cut off from the historic overbank flooding of the Mississippi River since the early days of development in the New Orleans area. Much of the marsh in this proposed project area was originally converted to open water due to the failure of agricultural impoundments. Deterioration of the marshes has also resulted from the breakdown of an aging siphon built in 1963 which had ceased to deliver the freshwater and sediment necessary to sustain them, but was recently partly rehabilitated. Problems due to insufficient Mississippi River water, sediment, and nutrients, are exacerbated by the natural banks of the River Aux Chenes, which obstruct any freshwater that would otherwise be provided by the Caernarvon Freshwater Diversion, a Mississippi River diversion structure located north of the project area.

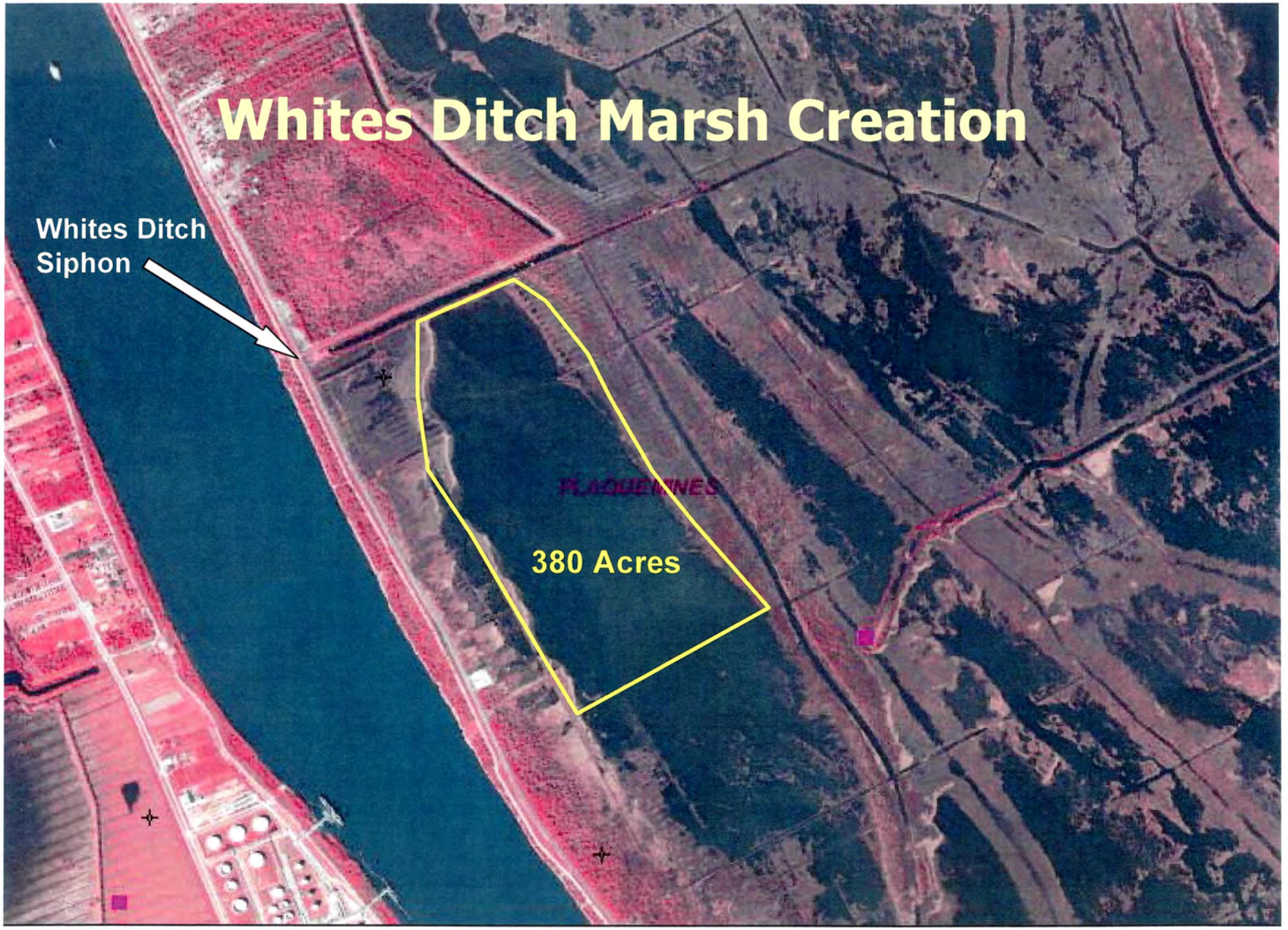
Proposed Project Features
Dredge sediments from the Mississippi River to create/nourish 380 acres of marsh. Vegetative planting may or may not be necessary. Funds will be budgeted for some planting in the event this is determined to be necessary. The project will complement the White Ditch Resurrection and Outfall Management project (BS-12) currently in the engineering and design phase. BS-12 is intended to provide freshwater inputs through the rehabilitation or replacement of the existing siphon at White Ditch and the construction of an additional siphon of similar size. Freshwater input from the White Ditch siphon would work synergistically to help sustain marsh created via sediment delivery from the Mississippi River.

Goals
- Create/nourish approximately 380 acres of intermediate marsh using sediment from the Mississippi River
- Maintain approximately 218 ac of intermediate marsh over 20 years

Preliminary Project Benefits
- Create approximately 380 ac of intermediate marsh initially
- Maintain approximately 218 acres of marsh over 20 years.

Preliminary Construction Costs
Preliminary construction cost + 25% contingency is $19.5 million.

Preparers of Fact Sheet:
Brad Crawford, P.E., EPA (214) 665-7255; Crawford.Brad@epa.gov
Kenneth Teague, EPA (214) 665-6687; Teague.Kenneth@epa.gov.


Whites Ditch Marsh Creation
Whites Ditch
Siphon
380 Acres
PLAQUEMINES
artment of Natural Resources
0
0.54mi


White Ditch Marsh Creation
Location Map
Louisiana Department of Natural Resources
0
91mi


White Ditch Marsh Creation
White Ditch Siphon
380 Acres
PLAQUEMINES
artment of Natural Resources
0
0.54mi

White Ditch Marsh Creation

Goals:
- Create/Nourish ~380 ac intermediate marsh

Preliminary Project Benefits:
- 218 net ac over 20 years

Identification of Potential Issues:
- Oil & Gas

Preliminary Construction Costs:
- $15-$20 million

White Ditch Marsh Creation

Questions?

Paul Kaspar
EPA Region 6
(214)665-7459
Kaspar.paul@epa.gov

R2-BS-06 Wills Point Marsh Creation

RZ-B2-06

PPL 21 PROJECT NOMINEE FACT SHEET
27 January 2011

Project Name
Wills Point Marsh Creation

Coast 2050 Strategy
Coastwide Strategy: Dedicated Dredging for Wetland Creation

Project Location
Region 1, Breton Sound Basin, Plaquemines Parish, east bank of Mississippi River, northeast of Wills Point and adjacent to local 40-Arpent levee.

Problem
The project area is mostly shallow water that appeared when marsh was lost between 1958 and 1974. Katrina caused some loss in the project area and extensive loss adjacent to it. The area lies between the natural ridge of Rive aux Chenes and Tigers Ridge. It is adjacent to the local 40-Arpent levee. Another hurricane could open the area more and impact the two natural ridges.

Proposed Project Features
Approximately 5.8 million CY of material would be mined from the Mississippi River from the point bar at Wills Point. It would be used to restore 630 acres of marsh near the Rive aux Chene and Tigers Ridges.

Goals
1. Restore 630 acres of marsh (478 acres created/152 acres nourished)
2. Provide additional protection to the 40-Arpent levee
3. Provide additional protection to the natural ridge of Rive aux Chene and Tigers Ridge.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly?
478 acres of marsh would be created immediately, and 152 acres of marsh would nourished

2) How many acres of wetlands will be protected/created over the project life?
Applying the half of the 0.42 % per year 1983-1990 loss rate from the Rive Aux Chenes Mapping Unit to 478 acres created for 20 years shows 458 acres remaining after 20 years.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%)?
50% loss rate reduction applied to the created marsh

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.
Project protects 40-Arpent Levee, natural ridge of Rive aux Chenes and Tigers Ridge.

5) What is the net impact of the project on critical and non-critical infrastructure?
Project protects 40-Arpent levee, which could be critical to inhabitants of Bertrandville and Wills Point.

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

The project provides synergy with the White Ditch project to the south, which also protects Rive aux Chenes.

Identification of Potential Issues

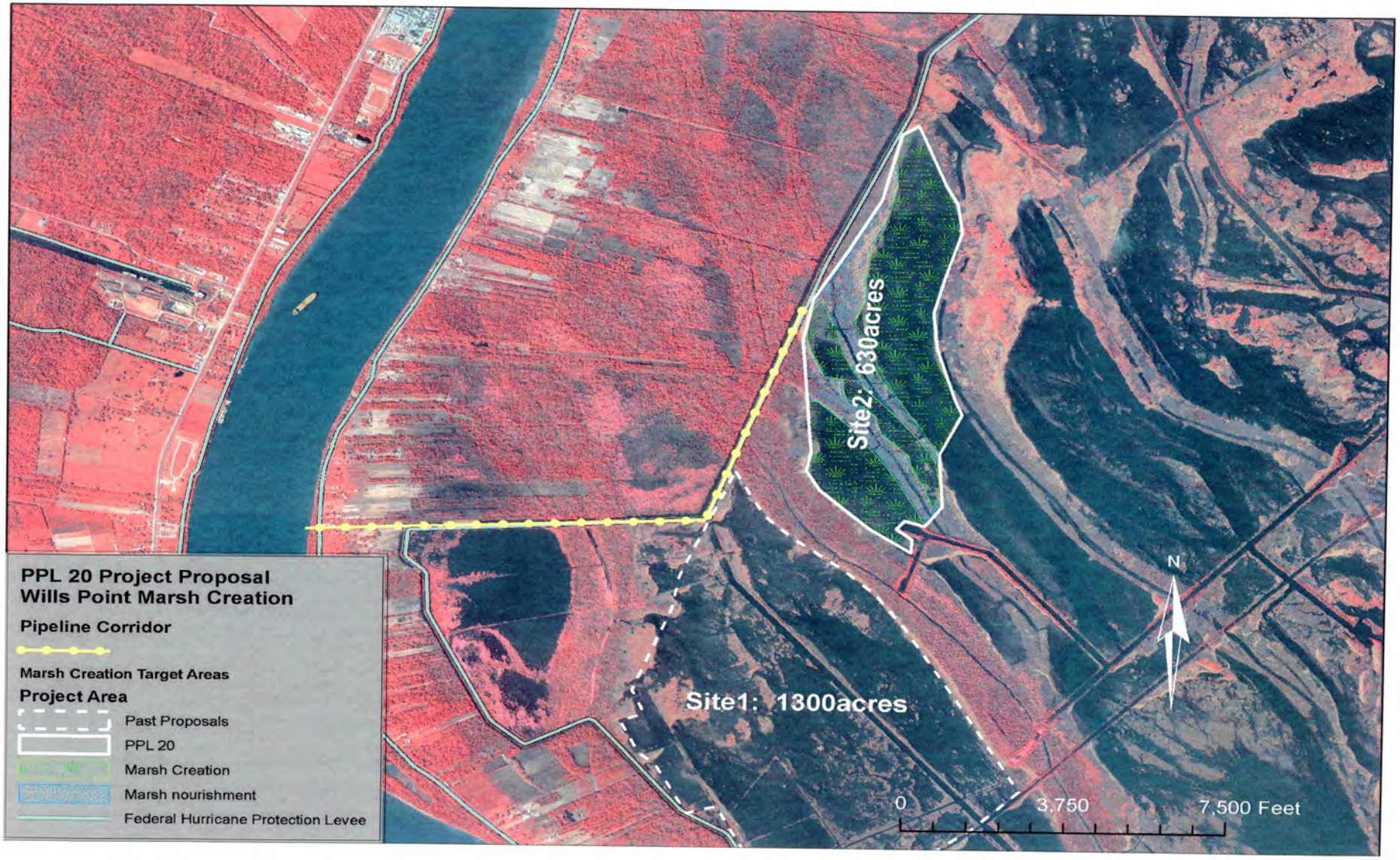
There are pipelines in the vicinity which could be a potential issue.

Preliminary Construction Costs

The construction cost including 25% contingency is approximately $28,000,000.

Preparers of Fact Sheet

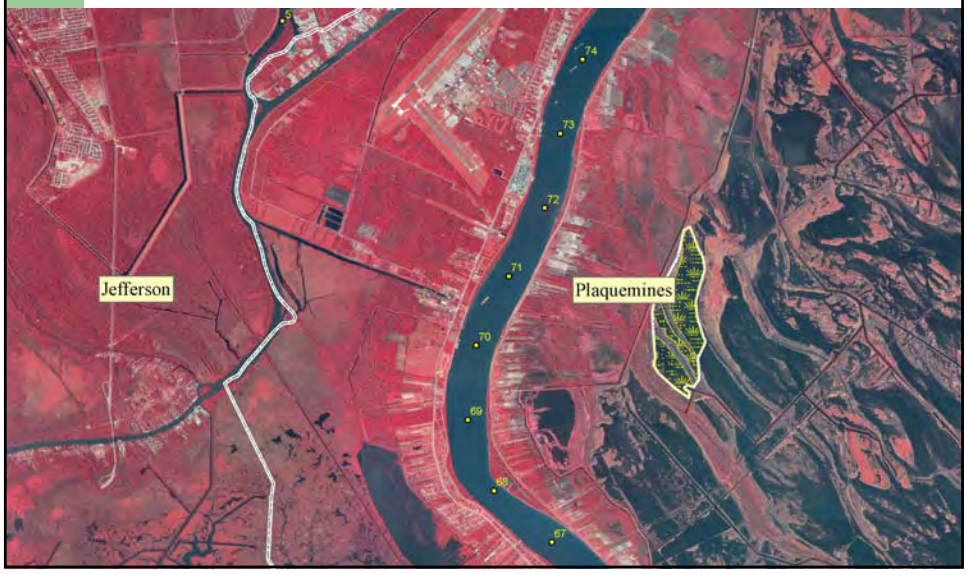
Scott Wandell, USACE, 504-862-1878 Scott.F.Wandell@usace.army.mil
Travis Creel, USACE, 504-862-1071 Travis.J.Creel@usace.army.mil


PPL 20 Project Proposal
Wills Point Marsh Creation
Pipeline Corridor
Marsh Creation Target Areas
Project Area
Past Proposals
PPL 20
Marsh Creation
Marsh nourishment
Federal Hurricane Protection Levee
Site2: 630acres
Site1: 1300acres
N
0
3,750
7,500 Feet

Wills Point Marsh Creation

PPL 21
Region 2
Breton Sound Basin

Project Area:

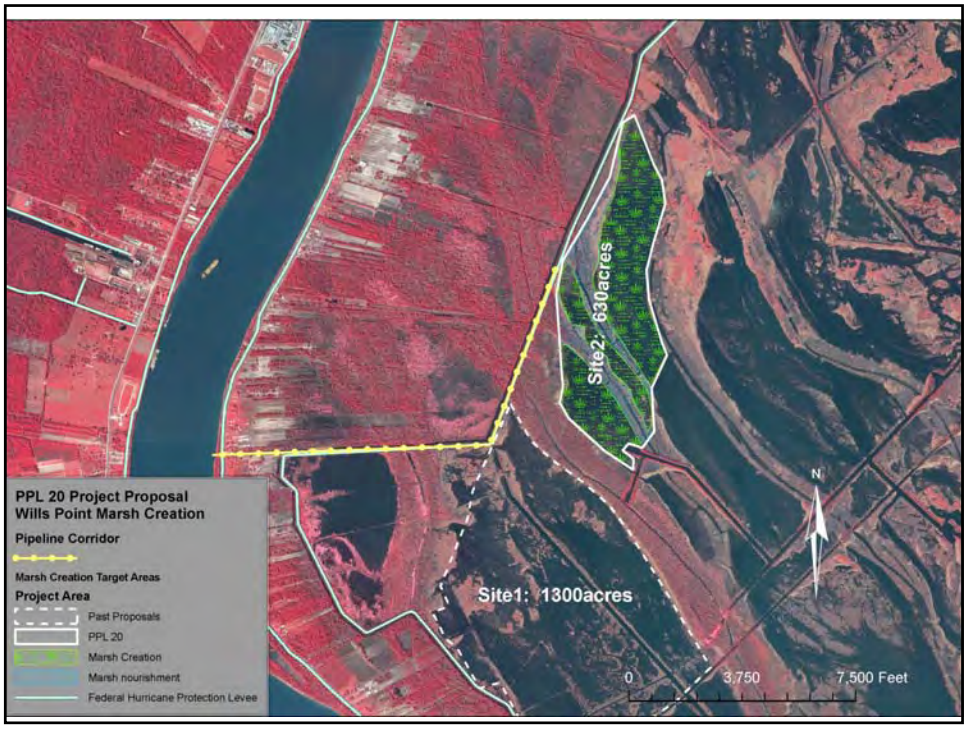


Problem:

- The project area is mostly shallow water that appeared when marsh was lost between 1958 and 1974.
- Katrina caused additional loss in the project area.
- The location is adjacent to the 40-Arpent levee, which provides storm protection to the communities of Bertrandville and Wills Point.

Proposed Project Features:

- Restore 630 acres of marsh (478 acres created/152 acres nourished)
- Approximately 5.8 million CY of material would be mined from the Mississippi River
- The existing canals and ridges would be used to contain the dredge material.
- Containment Dikes would be used on the southeast side of the marsh creation cell.



Preliminary Project Benefits:

- Create 478 acres of wetlands
- Nourish 152 acres of wetland
- Provide additional protection to the natural ridge of Rive aux Chene and Tigers Ridge.

Region 2-

Mississippi River Basin

R2-MR-01 Pass a Loutre Restoration

BL-MR-01

PPL21 PROJECT NOMINEE FACT SHEET
January 27, 2011

Project Name
Pass a Loutre Restoration

Coast 2050 Strategy
- Coastwide: Dedicated dredging to create, restore, or protect wetlands
- Coastwide: Utilize off-shore and riverine sand and sediment resources

Project Location
Region 2, Plaquemines Parish, Mississippi River Delta Basin, marshes north and south of Pass a Loutre on the Delta National Wildlife Refuge (NWR) and Pass a Loutre Wildlife Management Area (WMA).

Problem
Historically, Pass a Loutre was a major distributary of the Mississippi River. This pass carried sediments that created and maintained in excess of 120,000 acres of marsh. Pass a Loutre is not a maintained navigation channel and over time has filled in considerably and carries much less flow than it did historically. The Pass a Loutre channel has silted in and is now very shallow and narrow. The decreased channel size has much less capacity to carry fresh water and sediments and marshes historically nourished by the channel are now being starved and are subsiding at an alarming rate. In addition, a hopper dredge disposal site located at the head of Pass a Loutre has accelerated infilling of the channel.

Goals
The goal of this project is to restore an important distributary of the Mississippi River so that it will once again create new wetlands and nourish existing marsh. Dredged material will create marsh immediately and the increased fresh water and sediment carrying capacity of the channel will create marsh over time and increase the abundance and diversity of submerged aquatics.

Specific goals of the project are: 1) Enhance marsh-building processes within the project area; 2) Create approximately 587 acres of marsh with dredged material from construction of a conveyance channel; and 3) Over the 20-year life of the project, create approximately 609 acres of marsh via the construction of 12 crevasses.

Proposed Project Features
Pass a Loutre would be dredged for approximately 5.6 miles from Head of Passes to Southeast Pass. Preliminary design includes channel dimensions of -30.0ft NAVD88 by a 300-ft bottom width. Approximately 5.0M yd^3 of material would be dredged during construction of the conveyance channel. That material will be used beneficially to create approximately 587 acres of marsh on Delta NWR and Pass a Loutre WMA. In addition, 11 new crevasses would be constructed and cleanout of one existing crevasse.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? Approximately 587 acres of marsh would be created from initial channel construction. Indirect benefits would occur over approximately 27,000 acres of marsh and open water habitats as a result of increased freshwater and sediment delivery.

2) How many acres of wetlands will be protected/created over the project life? Based on the Wetland Value Assessment conducted for the PPL18 candidate project, 1,133 net acres of marsh would result from this project.

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 assumed reduction in marsh loss over the entire project area would be between 25-49%.

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc? The project would help maintain several natural levee ridges. The project would introduce sediment along several passes that have been sediment starved for several decades and are subsiding.

5) What is the net impact of the project on critical and non-critical infrastructure? Seven oil and gas companies have facilities and pipelines in this area which would benefit from an increase in marsh acreage. The loss of wetlands in this area exposes those facilities to open water wave energies resulting in expensive damages and oil spills. Protecting/creating wetlands in this area would also assist in reducing storm damages to oil and gas infrastructure and commercial development in nearby Venice, LA.

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 Delta Wide Crevasses Project (PPL6) which constructed several crevasses south of Pass a Loutre. Many of the crevasses constructed under that project depend on the sediment load delivered by Pass a Loutre. With Pass a Loutre restored, the sediment carrying capacity of the channel will be increased which will accelerate crevasse growth in the area. This project would also have a synergistic effect with an LDWF crevasse project on Pass a Loutre and several state mitigation projects that have been constructed on the WMA.

Identification of Potential Issues

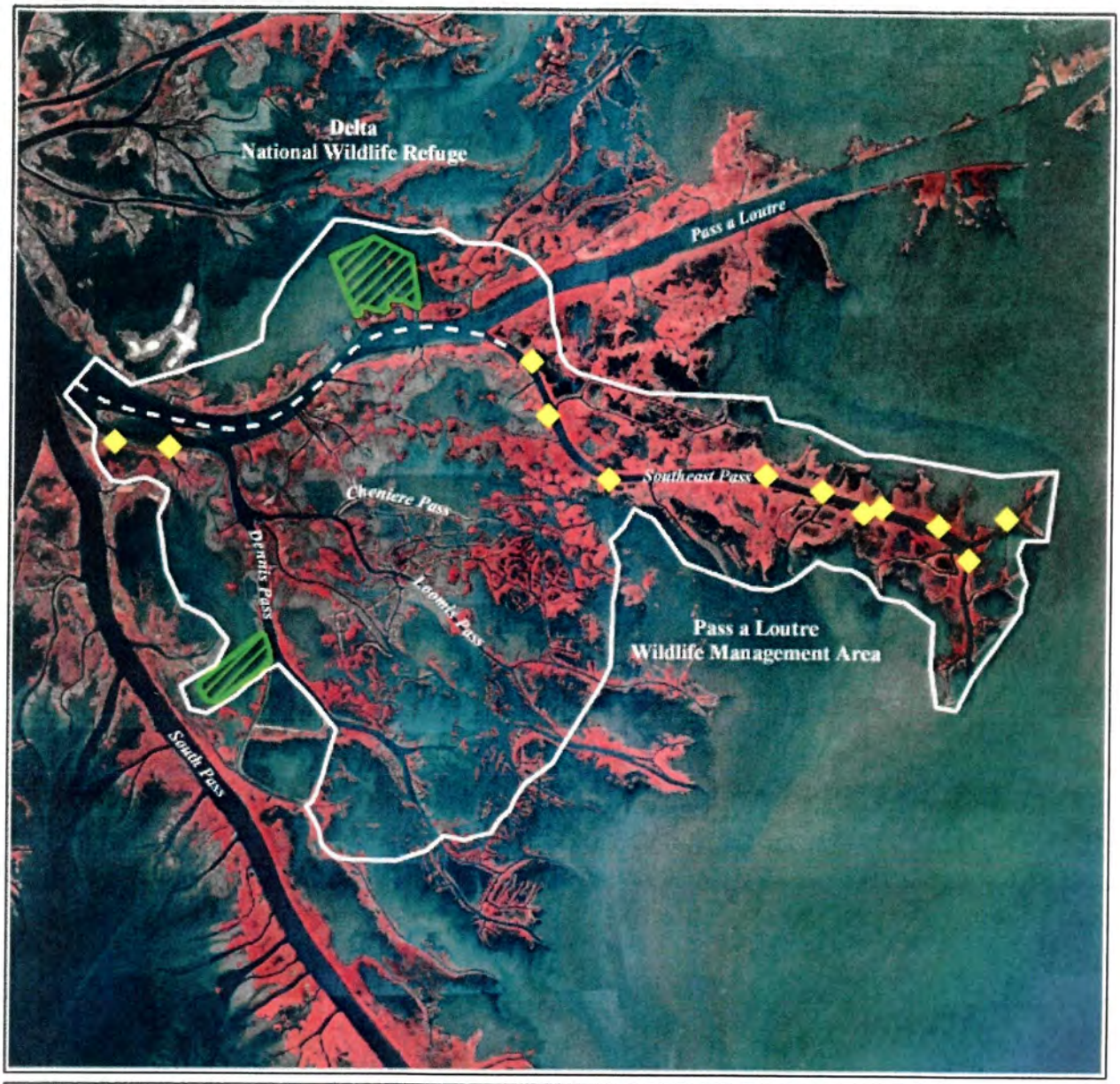
Several pipelines cross Pass a Loutre but should not significantly impact dredging activities. Impacts to the Mississippi River navigation channel would need to be investigated via modeling and other analyses.

Preliminary Construction Costs

The estimated construction cost including 25% contingency is approximately $28M.

Preparer of Fact Sheet

James Harris, USFWS, 985-882-2027 James_Harris@fws.gov



Pass a Loutre Restoration
(PPL18 Candidate)

Crevasse *

Dredged Channel *

Marsh Creation *

Project Boundary

* denotes proposed features

1 0 1
Kilometers
1 0 1
Miles

Scale 1:118,000

USGS
science for a changing world

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:
2005 Digital Orthophoto Quarter Quadrangles

Map ID: USGS-NWRC 2008-11-0340
Map Date: July 10, 2008