REGION 4

Coastal Wetlands Planning Protection & Restoration Act

22nd Priority Project List

Region 4

Regional Planning Team Meeting

January 24, 2012
Abbeville, LA

1. Welcome and Introductions

- RPT Region 4 Leader: Darryl Clark - USFWS

Announcements

- PPL 22 Selection Process Packages
- PPL 22 RPT meetings to accept project nominees:
  - **Region IV, Vermilion LSU Ag Center, Jan. 24, 2012, 1:00 pm**
  - Region III, Morgan City Auditorium (W Concourse), Jan. 25, 2012, 9:00 am
  - Region II, New Orleans Corps of Engineers, Jan. 26, 2012, 9:00 am
  - Region I, New Orleans Corps of Engineers, Jan. 26, 2012, 1:00 pm
- Coastwide Voting Meeting to select project nominees for all basins:
  - February 15, 2012, 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 Coastwide Voting Meeting.
- CWPPRA agencies will be assigned responsibilities for preparing nominee fact sheets after the Coastwide Voting Meeting.

Region 4 Parishes

- Eligible parishes for basins in Region 4 include:
- Calcasieu-Sabine Basin
  - Cameron Parish
  - Calcasieu Parish
- Mermentau Basin
  - Cameron Parish
  - Vermilion Parish

2. PPL 22 Process and Ground Rules

RPT Meetings

- Jan. 24-26, 2012 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 Coastwide Strategy.
- A project can only be nominated in one basin (except for coastwide projects – more info on coastwide projects after the following “RPT Meetings” slide).
- Proposals that cross multiple basins, excluding coastwide projects, shall be nominated in one basin only, based on the majority area of project influence.
- Coastwide 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 coastwide 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 CWPRPA Planning & Evaluation (P&E) Committee, will decide collectively after the RPT meetings but before the Coastwide Voting Meeting.
- Public comments on project proposals will be accepted orally during the RPT meetings and in writing by February 3, 2012.
- Limit project proposals to 3 to 5 minutes.
- Limit comments/questions during meeting to PPL 22 subject proposals and processes.

Coastwide Voting Meeting

- Feb. 15, 2012: Coastwide Voting Meeting
- RPTs, consisting of CWPPRA agencies & coastal parishes, will select 2 nominees per basin, except 3 each in Barataria, Terrebonne, & Pontchartrain, and 1 in the Atchafalaya, plus 6 demos. If proposed, 1 coastwide 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 coastwide projects.
- No public comments will be allowed during the Coastwide Voting Meeting (public comments will be heard today & written comments should be submitted by 2/3/2012 to the CWPPRA Program Manager, Mr. Brad Inman – POC details on next to last slide).

Nominee Project Evaluations

- Following the Coastwide Voting Meeting, an agency will be assigned to each project to prepare a Nominee Project factsheet (1 page + map).
- CWPPRA Engineering & Environmental Workgroups review draft features and assign preliminary cost and benefit ranges.
- Work groups will also review demo & coastwide projects and verify that they meet PPL 22 criteria.
- CWPPRA Planning and Evaluation Committee prepares cost/benefit summary matrix for Technical Committee.

PPL 22 Candidate Project Selection

- CWPPRA Technical Committee meeting, April 19, 2012 at 9:30 am, New Orleans District Corps of Engineers.
- Technical Committee ranks nominees and votes to select 10 candidate projects and up to 3 demos.
- Written public comments should be submitted to Corps of Engineers prior to Tech Comm meeting by April 2, 2012.
- Public comments also accepted orally during meeting.
- Technical Committee will assign CWPPRA agencies to develop Phase 0 candidate projects.

PPL 22 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.

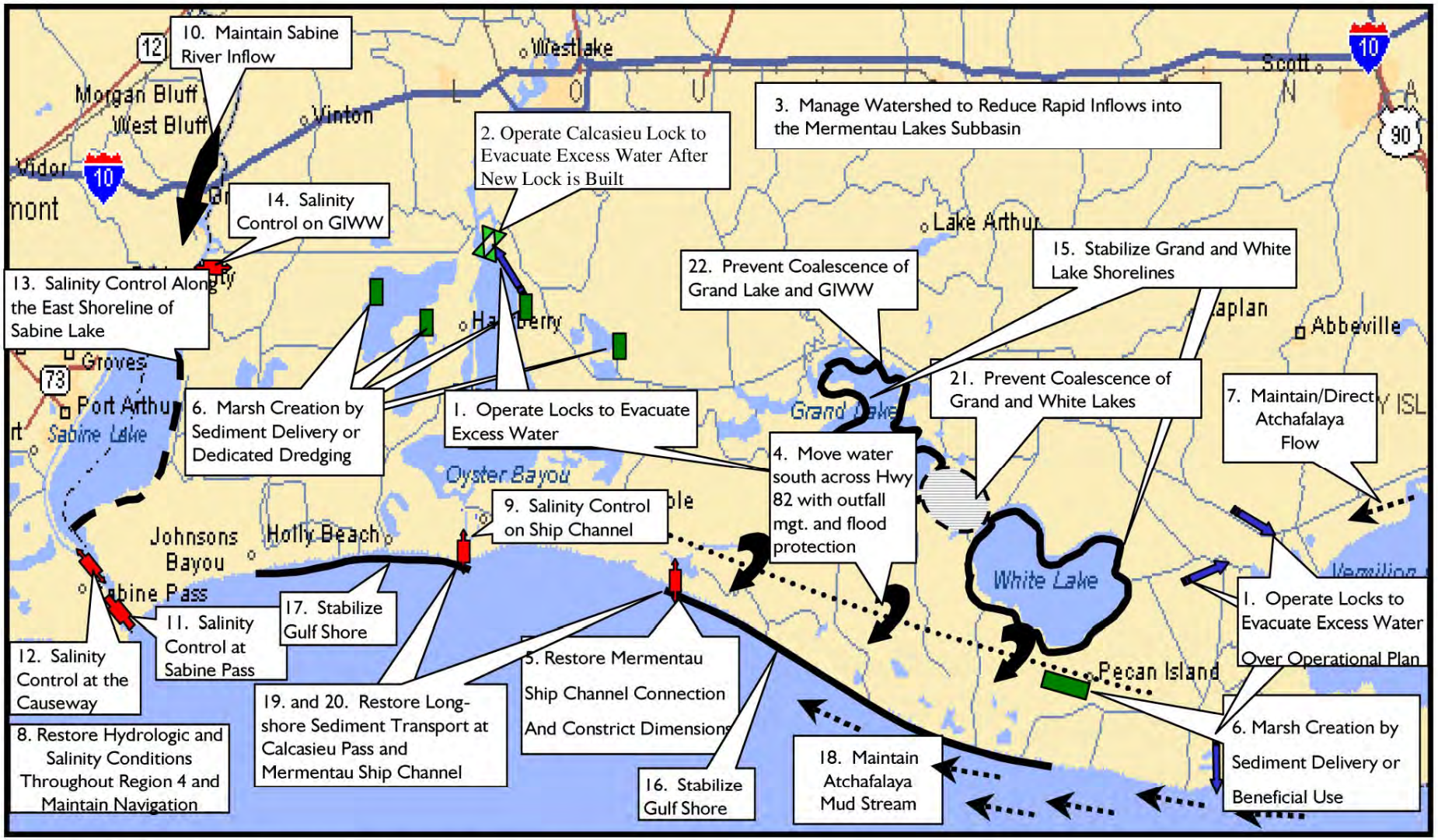
CWPPRA PPL 22 Selection

- 2 public meetings to present Phase 0 evaluation results:
  - Abbeville, Courthouse, Nov. 14, 2012, 7:00 pm
  - New Orleans, Corps of Engineers, Nov. 15, 2012, 7:00 pm
- Technical Committee votes to select up to 4 candidate projects and up to 1 demo to recommend for Phase 1.
  - Dec. 12, 2012, Baton Rouge, 9:30 am
- Task Force final decision to select PPL 22 in January 2013.

3. Region 4 Coast 2050 Regional Strategies

Coastwide 2050 Strategies

- Projects nominated should be consistent with the Coast 2050 Regional Ecosystem or Coastwide Strategies



Coast 2050 Region 4 regional ecosystem strategies.

4. PPL 22 Project Nominations

Coastwide Projects

- Proposes a technique applicable across the coast (e.g. vegetative planting)
- Nominated at any RPT meeting
- All coastal parishes & agencies will vote on selection of coastwide nominee
- Only one coastwide nominee may be selected from the coastwide nominee pool at the Coastwide Voting Meeting on February 15, 2012
- The Technical Committee may or may not select a coastwide project in April 2012.

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 Standing Operating Procedures criteria and select sites for proposed demonstration projects.
- The RPTs select 6 demos at the Feb. 15 Coastwide Voting Meeting.
- The Technical Committee selects up to 3 demos in April 2o12.
- Previous demo candidates must be ***re-nominated*** for PPL 22.

5. Announcement of Coastwide Voting Meeting

Coastwide Voting Meeting

- **Feb. 15, 2012**: meet in Baton Rouge to choose 2 project nominees per basin (except will choose 3 in Barataria, Terrebonne, & Pontchartrain Basins and 1 in Atchafalaya basin). If only 1 project is nominated for Mississippi River Basin, 3 nominees will be assigned to Breton Sound Basin. Plus, 1 coastwide project and 6 demos may be selected.
- Parishes of each basin are asked to ***identify who will vote*** at the Coastwide Voting 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 will be accepted at the Coastwide Voting Meeting (public comments will be heard today and written comments must be submitted by 2/3/2012).

Coastwide Voting Meeting

- Each officially designated parish representative, each Federal agency, and the State (CPRA) 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.

Coastwide Voting Meeting: Coastwide Category

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

6. Announcements of Upcoming Meetings

PPL 22 Upcoming Meetings

- **Coastwide Voting Mtg, Feb. 15, 2012, Baton Rouge**
  - **20 basin-project nominees, 1 coastwide nominee, and 6 demos selected**
- **Technical Committee Mtg, Apr. 19, 2012, New Orleans**
  - **Selection of 10 candidates and up to 3 demos**
- **PPL Public Comment Mtgs**
  - **Nov. 14, 2012, Abbeville**
  - **Nov. 15, 2012, New Orleans**
- **Technical Committee Mtg, Dec. 12, 2012, New Orleans**
  - **Recommend up to 4 projects for Phase 1 funding**
- **Task Force Mtg, Jan. 2013, New Orleans**
  - **Final Selection of projects for Phase 1 funding**

Written Comments

- Send written comments on projects & demos proposed today to the CWPPRA program manager
- **Deadline: February 3, 2012**

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

Fax: 504-862-2572
(Attn: Brad Inman)

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

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 24, 2012 1:00 P.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	Vermilion LSU Ag Center 1105 West Port Street Abbeville, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION IV

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
1-24-12	KEVIN LONG, LAKE ARTHUR HUNTING CLUB	318-221-3516 KEVIN@LONGPETRA
David Richard	Stream Co's	drichard@streamcompany.com 337-515-0855 COM
Tina Horn	Cameron Police Jury	337-775-5718
Laurie Cormier	Calcasieu Parish	337-721-3600
Erick Swenson	Research associate, LSU	225 578 2730 eswenson@lsu.edu
Mike Perry	USDA - NRCS	337-275-68
Ron Bourtaus	USDA-NRCS	337 291-3067
Pat Landry	CPRA	337 482-0680
Susan Hennington	USACE	504-862-2504

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.

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PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
Rocky Arrell	EW Brown Jr Properties / Conway Bayou	(713) 782-5320
Frank Chapman	USDA NRCS Lk. Charles	frank.chapman@la.usda.gov
Doug Miller	Sweet Lake Land & Oil Co.	(337) 598-2376
MARTY FLOYD	LDWF Div of Wildlife	337 459-0445
Lynwood Sanders	R.E. Adams Lands	409-670-6516
Mark Shirley	LSU Ag Center	337 898 4335
Sherrill Sagrera	Vermilion Parish BCA	337 652 6634
Cole Ruckstuhl	CWPPRA Media Specialist	337-266-8542
Brac Salyers	LDWF, Rockefeller Refuge	337-491-2593
Curt Marcantel	Black Lake Land Co. LLC	337-802-9548
Adrian Chavarria	EPA - Engineer	214-665-3107
Jennela Visser	ULL	337 482 6966
Amber Robinson	ULL	337.962.0619
Kimberly Clements	NOAA/NMFS - Fishery Biologist	225-389-0508
Chris Allen	CPRA	225-342-4736
Kodi Collins	CPRA	225 342-4106
Stuart Brown	CPRA	225-342-4596
Penny Fredon	Congressman Charles Boustany	255-6327
Nathan Dayan	USACE	504-862-2530

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JAN 88

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MEETING OF THE REGIONAL PLANNING TEAM REGION IV

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
Ted Joanen	Wildlife Consultant	337-598-3236
Darryl Mark	USFWS ROT 4 Leader	337-291-3111
Chad Courville	Miami Corporation	337.264.1695
Bill Bruce	Odom Outdoors	409-883-3723
Barry Herbert	LDWF	225 765 0233
Scott Rosteet	APACHE LA minerals	337 515 5374
Rob Bourgeois	LDWF	225 765 -0765
Chris Llewellyn	EPA	214-665-7239
Sydney Dobson	CPRA	225 342 5374
Steve Traher	Land Owner	
JOHN FORET	NOAA/NMFS	337-291-2107 JOHN.FORET@NOAA.GOV
Zahid Muhammad	CPRA	225-342-4765 Zahid.Muhammad@la.gov
Wayne Henderson	Greenwing Prop. LLC	whenderson@pvepa.com 225 922 4612
Carol Biedenharn	self - landowner	601-832-1801

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 4 – CALCASIEU-SABINE BASIN

Project Number	Project Proposals
R4-CS-01	West Cove Marsh Creation and Nourishment
R4-CS-02	Marsh Creation in Calcasieu Lake – Beneficial Use
R4-CS-03	Lake Calcasieu Beneficial Use
R4- CS-04	Cameron Meadows Marsh Creation & Wetland Restoration
R4- CS-05	Black Bayou Terraces
R4-CS-06	Beneficial Use of Dredge Spoil at Sabine National Wildlife Refuge
R4-CS-07	Black Lake Shoreline Restoration
R4-CS-08	Black Lake/Gum Cove Terracing
R4- CS-09	Conway Bayou Hydrologic Restoration
R4- CS-10	Sweet Lake & Willow Lake North Shoreline Restoration
R4- CS-11	East Holly Beach Gulf Shoreline Protection

Region 4 – MERMENTAU BASIN

R4-ME-01	East Pecan Island Marsh Creation – Increment 1
R4-ME-02	Pecan Island Marsh Creation
R4-ME-03	Umbrella Bay Shoreline Protection
R4-ME-04	Front Ridge Freshwater Introduction and Terracing
R4-ME-05	Southwest White Lake Shoreline Protection

Region 4 – CALCASIEU-SABINE BASIN

R4-CS-01

West Cove Marsh Creation and Nourishment

R4-CS-01

PPL22 PROJECT FACT SHEET
January 24, 2012

Project Name
West Cove Marsh Creation and Nourishment

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands
Regional: Marsh Creation by Sediment Delivery or Dedicated Dredging

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
The Calcasieu Ship Channel, immediately east of the project area, provides an avenue for the rapid movement of high-salinity water into the marshes around Mud Lake. This movement increased salinity in the area, resulting in plant death and marsh loss. The marshes located between Mud Lake and West Cove were decimated by Hurricane Rita in 2005 and Ike in 2008. Marshes that once provided a buffer to the southwest rim of West Cove are now shallow open water areas.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 623ac of marsh (143 ac created, 479 ac nourished). In order to achieve this, sediment will be hydraulically pumped from offshore into the shallow water marsh creation area. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be made in the containment dike. Additionally, the newly constructed marsh will be assessed to determine if vegetative plantings will be necessary.

Goals
The project goal is to create and/or nourish approximately 623 ac of marsh (143 ac created, 479 ac nourished) of emergent brackish marsh using sediment from offshore.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 623 ac.

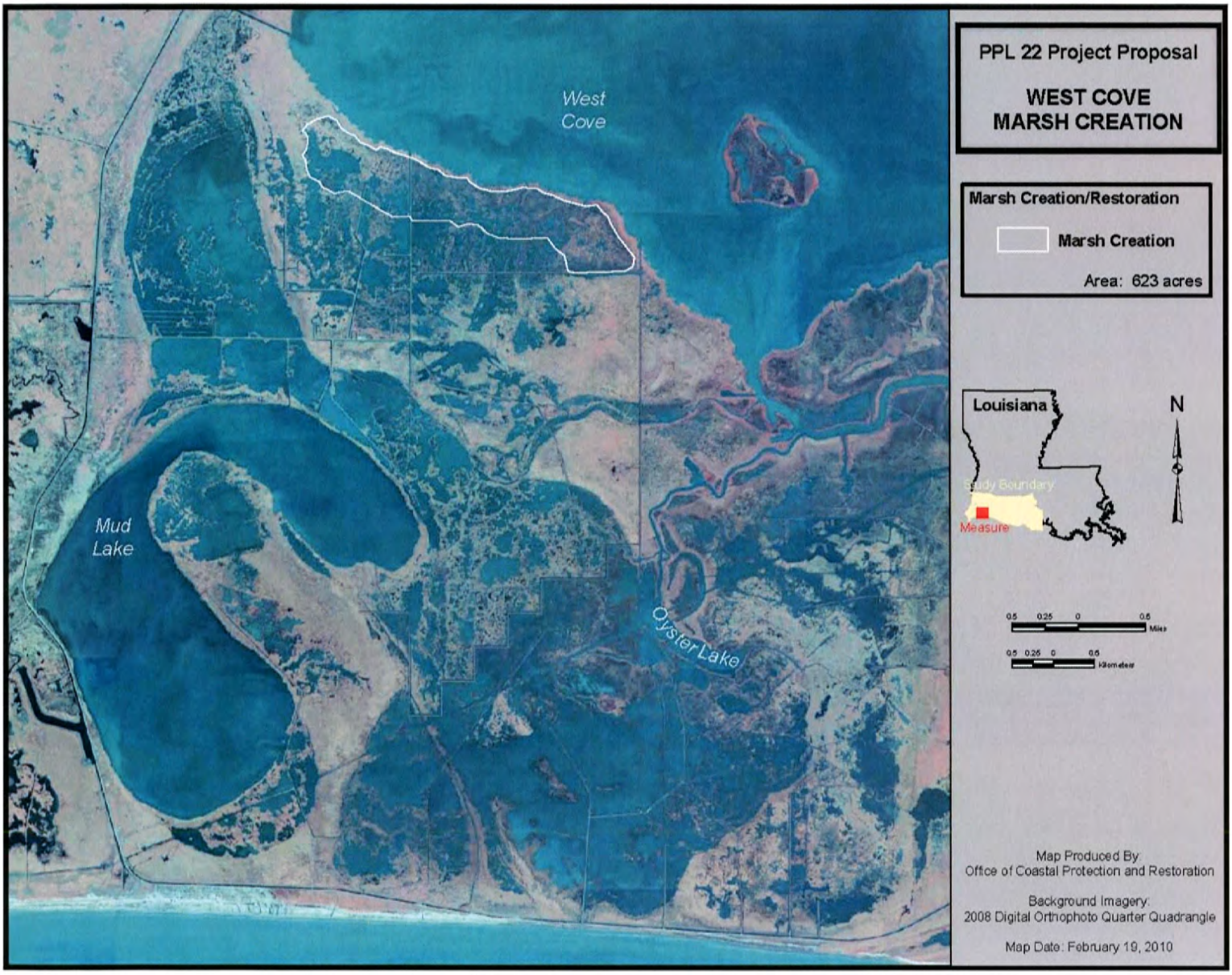
2) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
   Yes, helps to restore the rim of West Cove (west side of Lake Calcasieu) and prevent breaching of Lake Calcasieu into the adjacent marsh

3) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
   This project would have a synergistic effect with CWPPRA project CS-20, East Mud Lake Marsh Management, which was completed in 1997. The objective of that project is to

create a hydrologic regime conducive to restoration, protection, and enhancement of the Mud Lake area by using various types of water control structures and vegetation plantings. Structural components include culverts with flap gates, two variable crest weirs, three earthen plugs, and repair of an existing levee (CPRA, 2009).

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $17 million. $9.1 million incremental cost if constructed during maintenance event in Calcasieu River.

Preparer(s) of Fact Sheet:
Scott Wandell, USACE, 504-862-1878 Scott.F.Wandell@usace.army.mil


West Cove
Mud Lake
Oyster Lake
PPL 22 Project Proposal
WEST COVE MARSH CREATION
Marsh Creation/Restoration
Marsh Creation
Area: 623 acres
Louisiana
Study Boundary
Measure
N
0.5 0.25 0 0.5 Miles
0.5 0.25 0 0.5 Kilometers
Map Produced By:
Office of Coastal Protection and Restoration
Background Imagery:
2008 Digital Orthophoto Quarter Quadrangle
Map Date: February 19, 2010

R4-CS-02

Marsh Creation in Calcasieu Lake – Beneficial Use

R4-CS-02

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Marsh Creation in Calcasieu Lake-Beneficial Use of Upland-Disposed Dredged Material

Coast 2050 Strategy
Coastwide Strategy: Beneficial Use of Dredged Material from Maintenance Operations
Local/Common Strategy: Beneficial Use of Dredged Material

Project Location
Region 4, Calcasieu Basin, Cameron Parish, Calcasieu Lake, along the Calcasieu Ship Channel

Problem
Wetland loss in the Calcasieu-Sabine Basin has been, and continues to be significant. Marsh creation is one means of compensating for those losses. Sediment to create marshes can be obtained by dredging intentionally for the purpose of marsh creation, or it can be obtained as a by-product of dredging done to create and/or maintain navigation channels. It is obviously preferable to utilize sediments that are already being dredged for another purpose, rather than conducting additional dredging for the express purpose of marsh creation.

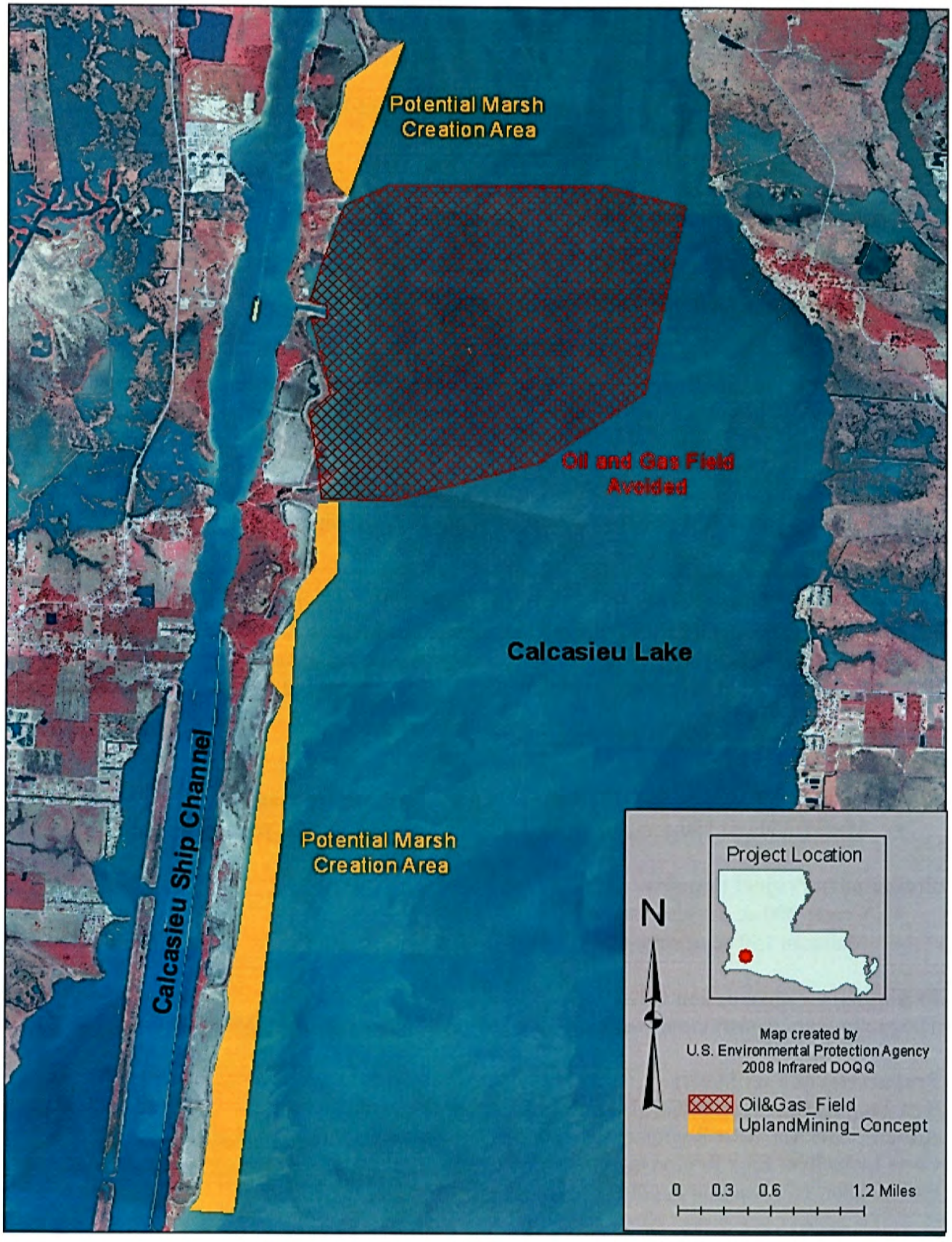
Proposed Project Features
Create 200 ac of saline marsh using soils stored in the Calcasieu Ship Channel Upland Confined Disposal Areas. Soil will be moved from high elevations in the confined disposal areas, to shallow, subtidal open water on the east side of the containment areas, probably using conventional heavy construction equipment. Create tidal creeks and ponds. Vegetative planting will probably be necessary.

Goals
- Convert approximately 200 acres of open water habitat to saline marsh
- Maintain about 150 acres of created saline marsh over the 20-year project life

Preliminary Project Benefits
- Create 200 ac of saline marsh
- Maintain 150 ac of saline marsh over 20 years

Preliminary Construction Costs
The preliminary construction cost including 25% contingency is $13.5 Million

Preparer(s) of Fact Sheet:
Ken Teague, EPA Region 6, (214) 665-6687, teague.kenneth@epa.gov
Adrian Chavarria, EPA Region 6, (214) 665-3103, chavarria.adrian@epa.gov
Chris Llewellyn, EPA Region 6, (214) 665-7239, Llewellyn.chris@epa.gov
Paul Kaspar, EPA Region 6, (214) 665-7459, kaspar.paul@epa.gov


Potential Marsh Creation Area
Oil and Gas Field Avoided
Calcasieu Lake
Calcasieu Ship Channel
Potential Marsh Creation Area
Project Location
N
Map created by
U.S. Environmental Protection Agency
2008 Infrared DOQQ
Oil&Gas_Field
UplandMining_Concept
0 0.3 0.6 1.2 Miles

R4-CS-03

Lake Calcasieu Beneficial Use

R4-CS-03

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name:
Lake Calcasieu Beneficial Use

Coast 2050 Strategy:
Coastwide Strategy: Beneficial Use of Dredged Material from Maintenance Operations
Region 4 Regional Ecosystem Strategy: Restore and Sustain Marshes.

Project Location:
Region 4, Calcasieu Basin, Cameron Parish, Calcasieu Lake, Adjacent to Calcasieu Ship Channel

Problem:
Maintenance dredging events in the Calcasieu Ship Channel create approximately 4,000,000 yd^3 of dredged material each cycle. Currently, the dredging cycle occurs every 2 years. Some of this material is disposed in upland disposal areas adjacent to the Calcasieu Ship Channel. We would like to see more of this material used beneficially in a cost effective approach to maximize restoration dollars spent.

Goals:
The goal of this project is to create designated placement areas in existing open water along the Calcasieu Ship Channel that will be converted to emergent marsh, through a partnership with USACE dredging operations.

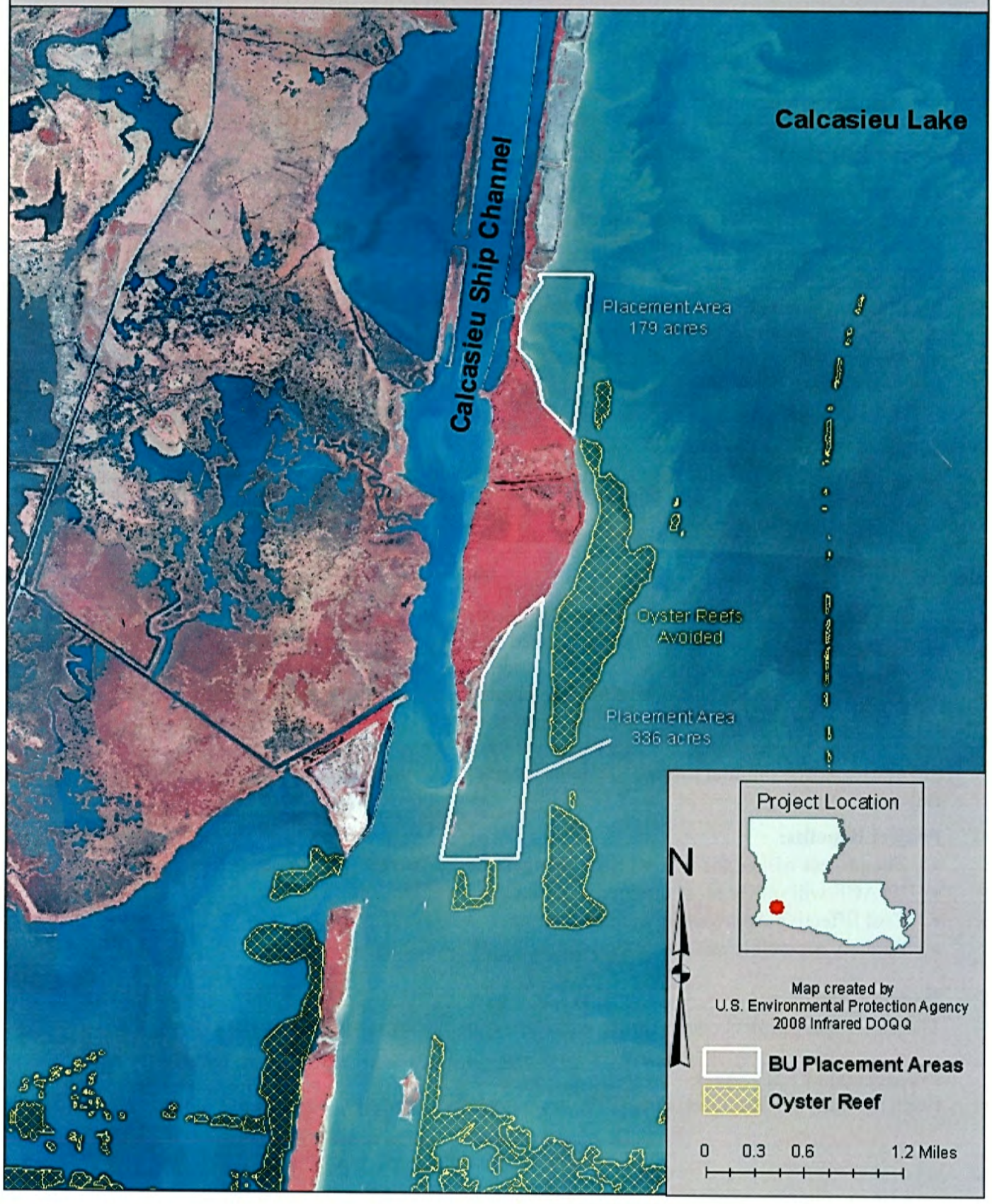
Proposed Solution:
In order to ensure that more material will be used beneficially along the Calcasieu Ship Channel, we propose to construct placement areas adjacent to the Ship Channel that the U.S. Army Corps of Engineers (USACE) would fill with dredged material during their routine dredging cycle. The project location will be within the USACE Federal Standard. This means that all dredging costs associated with creating marsh inside the placement area will be paid for using the existing USACE dredging operations budget. This partnership will limit CWPPRA funds to the construction of the containment dikes and post-construction operation, maintenance and monitoring costs. Similar projects have been constructed the Galveston Bay and Chesapeake Bay.

Project Benefits:
- The project will create 515 acres of emergent marsh habitat.
- USACE will utilize more dredged material beneficially
- Cost Effective Approach to Marsh Creation
- Publicly accessible marsh creation project (birding, fishing and paddling)

Project Costs:
The preliminary project cost estimate with 25% contingency is approximately $12 Million

Preparer(s) of Fact Sheet:
Chris Llewellyn, EPA, (214) 665-7239; llewellyn.chris@epa.gov

Calcasieu Ship Channel Beneficial Use



R4-CS-04

Cameron Meadows Marsh Creation & Wetland Restoration

R4-CS-04

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name:
Cameron Meadows Marsh Creation and Wetland Restoration Project

Coast 2050 Strategy:
Restore and Sustain Wetlands *(Regional Ecosystem Strategy)*
Dedicated Dredging for Wetlands Creation *(Coastwide Common Strategy)*
Terracing *(Coastwide Common Strategy)*
Vegetative Plantings *(Coastwide Common Strategy)*
Restore Hydrology in the Burton-Sutton Canal *(Mapping Unit Strategy)*

Project Location:
Region 4, Calcasieu/Sabine, Cameron Parish, approximately 18 miles West of Cameron, 5 miles north of Gulf of Mexico shoreline, northeast of Johnsons Bayou, immediately south of Cameron Meadows Gas Field.

Problem:
Significant marsh loss is attributed to rapid fluid and gas extraction beginning in 1931, Hurricanes Rita, Gustav and Ike. Rapid fluid and gas extraction resulted in a surface down warping of the marsh surface along distinguished geologic fault lines. In the decades that followed, organic matter filled the low area and an emergent marsh community became established. During the hurricanes of 2005 and 2008, the physical removal of the marsh coupled with low rainfall after Hurricane Ike has resulted in the conversion of intermediate to brackish emergent marsh to approximately 7,000 acres of shallow open water. In addition to these direct losses, significant interior marsh loss has resulted from saltwater intrusion and hydrologic changes associated with storm damage and blocked drainages. Habitat shifts and hydrologic stress reduce marsh productivity, a critical component of vertical accretion in intermediate wetlands. It is unlikely that many of these areas will recover unaided.

Goals:
(1) Create approximately 362 acres of marsh with dredge material and terraces,
(2) Restore coastal marsh habitat, and
(3) Reverse the conversion of wetlands to shallow open water in the project area through reestablishment of hydrologic connectivity.

Proposed Solutions:
Construct 350 acres of marsh in one or two areas utilizing dredge material from the Gulf of Mexico. Target marsh elevation is +1.4 feet NAVD 88. Construct 35,000 linear feet of earthen terraces (or 21 acres), oriented in such a way as to reduce wind generated wave fetch. Terraces would be constructed with +2.5 feet NAVD 88, 15 feet crown width and planted. Project features would include cleaning out over 30.000 linear feet of canals to re-establish drainage patterns filled in as a result of the hurricanes. In addition, the project would build upon an existing HD model to assist in the identification of those canal reaches that need clearing to restore this system. Water depths throughout the project area average 0.6-1.0 feet deep. In addition, the marsh creation areas would be planted with appropriate species of wetland vegetation to reestablish the plant productivity.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* The marsh creation and terrace footprint area is 371 acres. The overall project boundary including areas benefited from drainage improvements could total over 18,000 acres.
2) *How many acres of wetlands will be protected/created over the project life?* A 50% loss rate reduction in the background loss rate of -1.18% (1985-2009, LCA, Magnolia Subunit Polygon) terracing and marsh creation would result in 330 net acres after 20 years. Note that recent losses are attributed to the 2005 and 2008 hurricanes, and it is anticipated that the background loss rate could increase. In the event that benefits associated with the hydrologic connectivity are calculated, there could be an increase in anticipated net acres, but there would be some direct marsh impacts with disposal of canal debris/sediment.
3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* A 50% loss rate reduction is assumed for the marsh creation (from -1.18%/year to -0.59%/year). No loss was applied to the terraces. In the event that benefits associated with the hydrologic connectivity are calculated, there could be a minor decrease in anticipated loss rates for some portion of the 18,000 acre project area.
4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.?* No
5) *What is the net impact of the project on critical and non-*critical infrastructure? The project would provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. Two 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 may assist in reducing storm damages to oil and gas infrastructure. In addition, US Fish and Wildlife Service's Sabine Refuge boarders the project area to the north, and it would benefit from an increase in marsh acreage.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would provide a synergistic effect with the Holly Beach Sand Management Project (CS-31), which constructed approximately 300 acres of beach dunes on the Gulf of Mexico shoreline. The project would also provide a synergistic effect with the East Sabine Lake Hydrologic Restoration Project (CS-32), by increasing marsh acreage south of the CS-32 project.

Identification of Potential Issues:

Pipelines/utilities and operations and maintenance are potential issues. The landowner has offered $1M as a cost share.

Preliminary Construction Costs:

The estimated construction cost including 25% contingency is $25,792,061.

Preparer of Fact Sheet:

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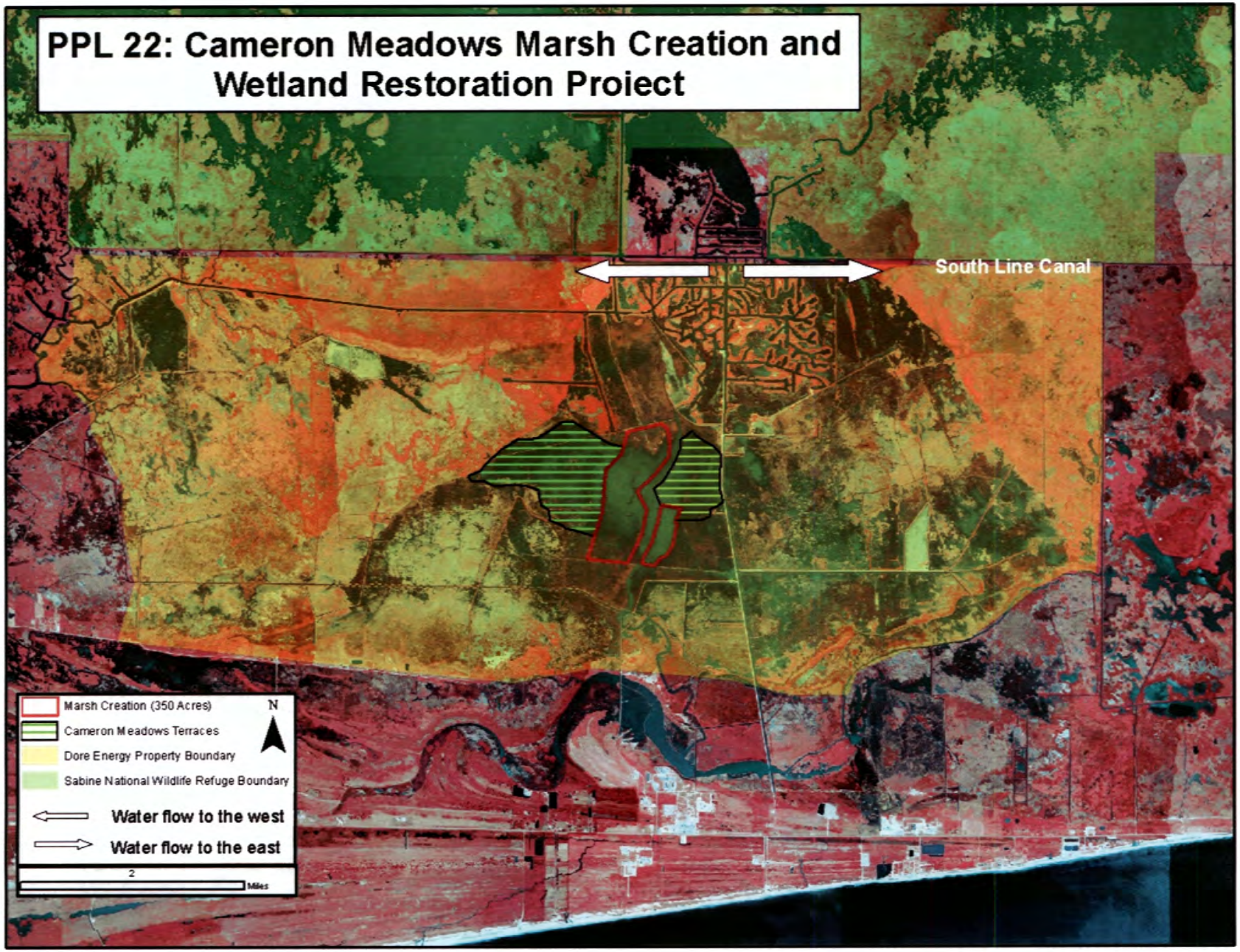
PPL 22: Cameron Meadows Marsh Creation and Wetland Restoration Project
South Line Canal
Marsh Creation (350 Acres)
Cameron Meadows Terraces
Dore Energy Property Boundary
Sabine National Wildlife Refuge Boundary
Water flow to the west
Water flow to the east
N
2
Miles

R4-CS-05

Black Bayou Terraces

R4-CS-05

Region 4-RPT
PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name:
Black Bayou Terraces (R4-CS-01)

Coast 2050 Strategy:
Restore and Sustain Wetlands *(Regional Ecosystem Strategy)*
Terracing *(Coastwide Common Strategy)*
Vegetative Plantings *(Coastwide Common Strategy)*

Project Location:
Region 4, Calcasieu/Sabine Basin, Calcasieu and Cameron Parish, South side of the GIWW, West of Gum Cove Ridge

Problem:
Saltwater intrusion into the surrounding marsh and canals from the GIWW coupled with erosion caused by wave action from nearby boats, wind, and tides has caused the historical land loss within this area. Aerial photography since the late 1930's documents the conversion of approximately 2,700 acres of emergent marsh to open water within the proposed project area, or approximately 75% of the emergent marsh has converted to open water over the last 70 years within this proposed project area (ocular estimate from historical photography). The CWPPRA sponsored Black Bayou Hydrologic Restoration Project (CS-27) features addressed the saltwater intrusion problem, however the expansive open water area identified by this project continues to experience shoreline erosion and coalescence of smaller water bodies into one 2,700 acre pond. This expansion is threatening the integrity of the western levee boundary at this time. The CWPPRA sponsored Plowed Terrace Demonstration Project (CS-25), mitigation terraces, and terraces constructed by Ducks Unlimited within this area have shown the usefulness of terracing to reduce wave fetch, however more terraces are needed.

Goals:
(1) Restore coastal marsh habitat, and
(2) Reverse the conversion of wetlands to shallow open water in the project area.

Proposed Solutions:
Construct up to 183,000 linear feet of earthen terraces, oriented in such a way as to reduce wind generated wave fetch. Terraces would be constructed with +3' crown elevation, 15' crown width, 1:5 side slopes, and planted. Water depths throughout the project area average 1-1.5 deep. In addition, the terraces would be planted with appropriate species of wetland vegetation to reestablish the plant productivity needed to rebuild the organic peat for marsh vertical accretion and expansion. Planting density is projected to be double rows of plugs on each side of the terrace on a 5' spacing. Terrace construction is estimated to create about 150 acres of wetland.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* At 183,000 LF; 15 foot crown, 1:5 side slopes, 3' out of water; 183,000 LF * 35' = 6,405,000 square feet / 43,560 = 150 acres initially constructed, and approximately 500 acres of brackish to intermediate emergent marsh surrounding the open water will be benefited indirectly. Therefore, a total acreage potentially impacted would be 650 acres.
2) *How many acres of wetlands will be protected/created over the project life?* A 50% loss rate reduction is assumed for the direct and indirect acres benefited or; (-0.45% per year; Coast 2050 report for Black Bayou Unit 27% loss by 2050) 143 acres from terraces + 478 acres indirect benefits = 621 acres after 20 years.
3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?* A 50% loss rate reduction is assumed for the terraces.
4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.?* These terraces will maintain the levee boundaries of this 3,200-acre area through the reduction of wave-induced erosion.
5) *What is the net impact of the project on critical and non*-critical infrastructure? The project would provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. The Black Bayou Gas Field is immediately adjacent to the project area, and this project will re-establish and help stabilize the emergent marsh that adjoins this critical infrastructure. 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.
6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* This project would compliment the results of the Black Bayou Hydrologic Restoration (CS-27) and Plowed Terrace Demonstration (CS-25), as CS-27 reduced saltwater intrusion and CS-25 demonstrated the usefulness of terraces in this area. The proposed project would also work with the DU (NAWCA) funded terracing project adjacent to this project area.

Identification of Potential Issues:
No known issues at this time.

Preliminary Construction Costs:
Estimated construction costs range plus 25% contingency = $5M-$10M.

Preparer of Fact Sheet:
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PPL 22 **Black Bayou Terracing Project**

R4-CS-06

Beneficial Use of Dredge Spoil at Sabine National Wildlife Refuge

R4-CS-06

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Beneficial Use of Dredge Spoil at Sabine National Wildlife Refuge

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands
Regional: Restore and Sustain Marshes

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
Historically, the wetlands in this portion of Cameron Parish have been significantly altered by hydrologic modifications, saltwater intrusion, and conversion of marsh to open water. Anthropogenic factors such as the construction of the Calcasieu Ship Channel and LA Highway 27 have caused significant hydrologic changes to this system. These factors contributed to the weakening of the wetland plant community, such that the community could not respond to increasing salinities and flood duration. The conversion of wetlands to open water also occurred during increased tidal action (i.e. tropical events), the wetland vegetation is physically removed, leaving open water areas. Salinity levels and flood duration have been improved with time, however water depths are not conducive for the reestablishment of emergent vegetation. In addition, SAV habitat in the project is also limited by wave action within the large, open water area.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 550 ac (510 ac created, 40 ac nourished) of marsh, and approximately 10,000 linear ft of tidal creeks. In order to achieve this, sediment will be hydraulically pumped from the upland disposal areas of the Calcasieu Ship Channel into the shallow water marsh creation area. The project will utilize the existing Hog Island Gully channel as a pipeline corridor, and LA Highway 27 crossing. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping and the tidal creeks and ponds will be constructed. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be made in the containment dike, hydraulically connecting the constructed tidal creeks to the adjacent water. Additionally, the newly constructed marsh will be assessed to determine if vegetative plantings will be necessary. Funds are budgeted to plant 50% of the created marsh acres (275 ac).

Goals
The project goal is to create and/or nourish approximately 550 ac (510 ac created, 40 ac nourished) of emergent brackish marsh using sediment from the upland disposal areas along the Calcasieu Ship Channel and protect 344 ac of emergent brackish marsh over the project's life.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 550 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 344 ac of brackish marsh will be protected/created over the project life.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74%, and >75%)?*
The anticipated land loss rate reduction throughout the area of direct benefits 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?*
No.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
Reestablishing the critical wetland land bridge in an area that is quickly converting to open water (Calcasieu River/Calcasieu Lake to Black Lake).

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The proposed project would provide a synergistic effect with both CS-23 (Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully), and CS-28 (Sabine Refuge Marsh Creation).

Identification of Potential Issues
The proposed project has potential navigation issues that will have to be taken into account..

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

Preparer(s) of Fact Sheet:
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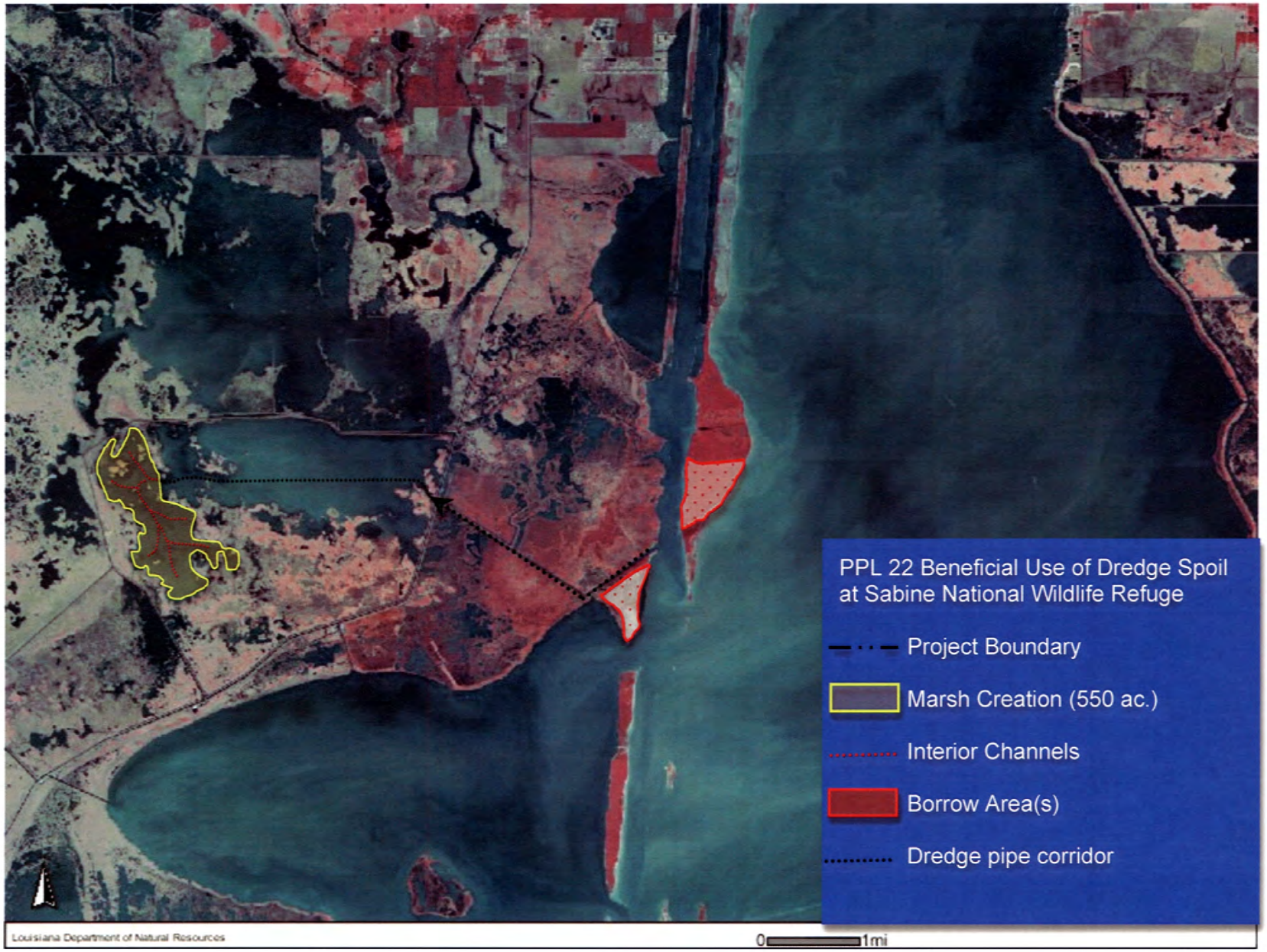
PPL 22 Beneficial Use of Dredge Spoil at Sabine National Wildlife Refuge
Project Boundary
Marsh Creation (550 ac.)
Interior Channels
Borrow Area(s)
Dredge pipe corridor
Louisiana Department of Natural Resources
0
1mi

R4-CS-07

Black Lake Shoreline Restoration

R4-CS-07

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Black Lake Shoreline Restoration

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands
Regional: Restore and Sustain Marshes
Mapping Unit: Beneficial Use of Dredged Material; Shoreline Stabilization

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
Historically, the wetlands in this portion of Cameron Parish have been significantly altered by hydrologic modifications, saltwater intrusion, and conversion of marsh to open water. Anthropogenic factors such as the construction of the Calcasieu Ship Channel and the Gulf Intracoastal Waterway have caused significant hydrologic changes to this system. These factors contributed to the weakening of the wetland plant community, such that the community could not respond to increasing salinities and flood duration. The conversion of wetlands to open water also occurred during increased tidal action (i.e. tropical events), the wetland vegetation is physically removed, leaving open water areas to the point that Black Lake is no longer delineated. This large open water area is now generating a wave environment that is threatening recent restoration efforts in this region.

Proposed Solution
The proposed project's primary feature is to recreate the northwestern shoreline of Black Lake with the construction of 9,500 of an earthen, armored terrace. The lake rim will be constructed to +5 NAVD, with a 25' crown, and 1:5 side slopes. Once the rim is constructed, approximately 100 acres of marsh platform would be constructed using dredge spoil from the Calcasieu Ship Channel.

Goals

1. Recreate the northwestern shoreline of Black Lake through the construction of 9,500 LF of armored earthen terrace.
2. Create approximately 100 acres of emergent marsh platform immediately adjacent to newly created lake rim.

Identification of Potential Issues
The proposed project area has oil and gas infrastructure that will have to be taken into account.

Preliminary Construction Costs
The estimated construction cost range including 25% contingency is $5-$10M.

Preparer(s) of Fact Sheet:
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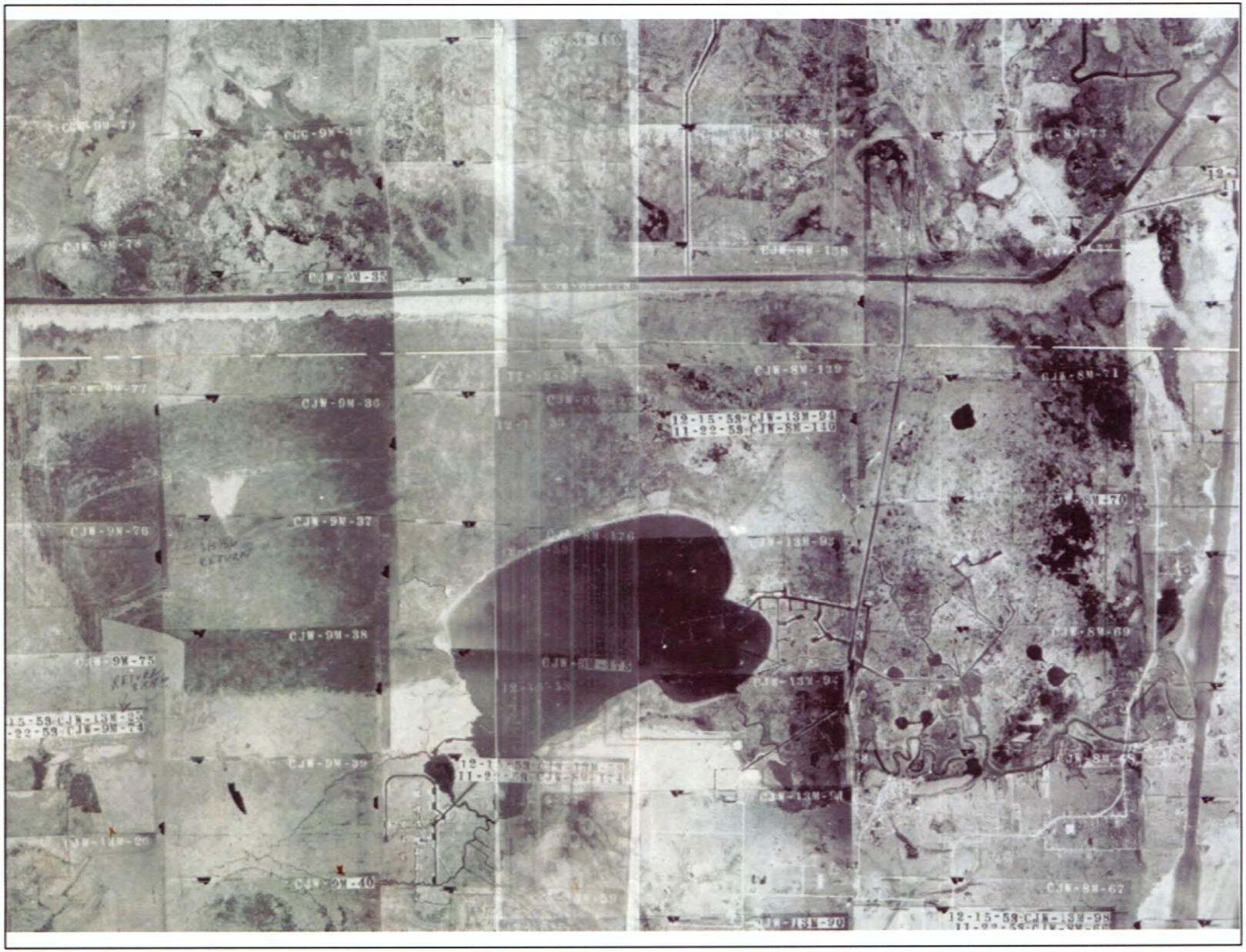
Black Lake Area - 1953




PPL 22 Black Lake Shoreline Restoration Project
Black Lake
1953
Features
•9,500 armored shoreline
•100 acres of marsh platform
Louisiana Department of Natural Resources
0
1mi

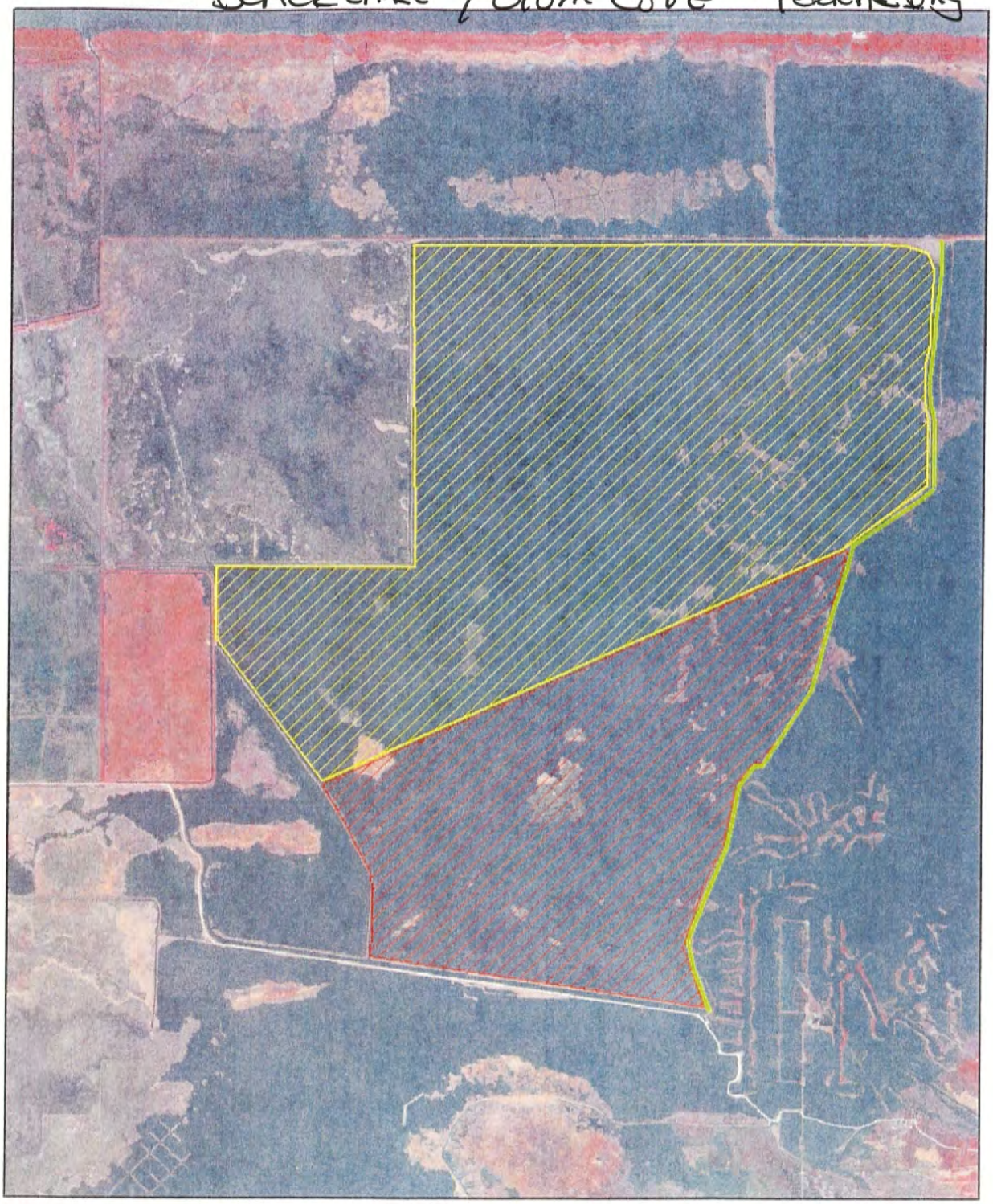
R4-CS-08

Black Lake/Gum Cove Terracing

LAND OWNER
CURT MARCANTEL
337-802-9548

R4-CS-08

BLACK LAKE / GUM COVE TERRACING



Legend
- Levee_Caps
- Terrace Field
- Ducks_Unlimited_Terracing_2009

N

Gum Cove Terracing
PPL 19
Calcasieu and Cameron Parishes, Louisiana

0 1,200 2,400 4,800 7,200 9,600
Feet

PPL 19 PROJECT NOMINEE FACT SHEET
1/27/2009

Project Name
Gum Cove Terracing

Coast 2050 Strategy
Use of sediment for wetland creation.

State Master Plan Strategy
Construct terraces for marsh restoration.

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, West Black Lake Mapping Unit, area east of Gum Cove and south of GIWW.

Problem
The most significant environmental problem affecting the marshes in this area is deterioration and conversion to open water. Between 1952 and 1974 this area experienced an 81 percent marsh loss. Much of that loss occurred because the construction of the Calcasieu Ship Channel greatly increased the efficiency of water exchange through Calcasieu Pass. Freshwater retention was consequently reduced and saline water was able to enter in greater quantities and penetrate further north. The proposed project area is bordered by a north/south levee that provides protection from water and salinity level fluctuations. However, because the organic soils have been lost from erosion, it is unlikely that emergent marsh will reestablish in the open water areas. SAV habitat is also limited by the energy associated with the large open water fetch.

Proposed Project Features
The project will construct approximately 250,000 linear feet of terraces with approximately 300 foot spacing and would compliment a Ducks Unlimited terracing project to be constructed this Spring.

Preliminary Project Benefits
The proposed terracing project will reestablish emergent marsh and create excellent SAV habitat by reducing wave energy associated with fetch.

Preliminary Construction Costs
$5 million

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Curt Marcantel, landowner (337) - 802-9548

RY-CS-08
(Cont.)

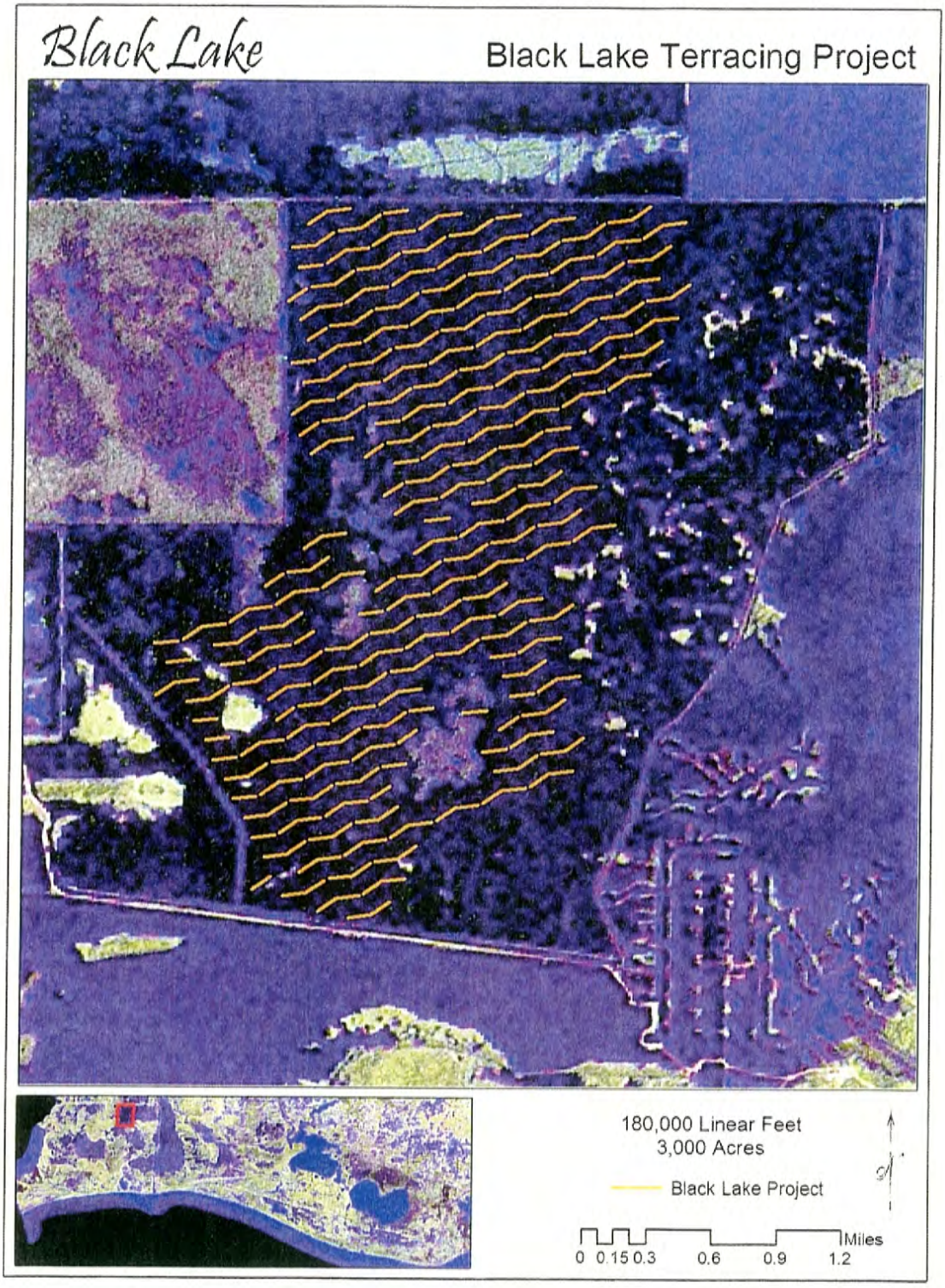

Figure 2. Proposed terraces for the Black Lake Terracing Project.

LAND OWNER
Curt Marcantel 337-802-9548

PPL17 PROJECT NOMINEE FACT SHEET
January 9, 2007

Black Lake Terracing

Coast 2050 Strategy
Ecosystem Management: Maintain estuarine gradient to achieve diversity. Reduce saltwater intrusion to re-establish a salinity gradient. A salinity gradient will create a gradation of fresh-intermediate-brackish-saline vegetation and associated variations in fish and wildlife habitat.

Regional: Dedicated dredging of sediment for wetland creation.

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, Black Lake Mapping Unit, north of the town of Hackberry, Louisiana.

Problem
The project will be designed to reduce salt water intrusion and marsh erosion by decreasing the amount of salt water entering the project area and disrupting the artificial circulation of that water. Additionally, the project proposes to recreate the north and west shoreline of Black Lake. According to Coast 2050 loss rates (1978-1990) of approximately 1.5% per year were calculated by USGS in this area.

Proposed Project Features
The project proposes approximately 3 miles of shoreline protection along the GIWW, approximately 39,000 linear feet (7.5 miles) of terraces, and water control structures in Black Lake Bayou and Alkali Ditch.

Goals
1.) Create marsh by beneficially using dredge material to build terraces
2.) Re-establish the north and west shoreline of Black Lake
3.) Reduce water exchange in Black Lake Bayou and Alkali Ditch

Preliminary Project Benefits
The project is designed to create emergent marsh and encourage SAV production. The proposed project restores the historic lakeshore and potentially provides containment for dredge material available through the BudMat program.

Preliminary Construction Costs:
$ 7.6 Million

Preparers of Fact Sheet
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LAND OWNER
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R4-CS-09

Conway Bayou Hydrologic Restoration

R4-CS-09

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Conway Bayou Hydrologic Restoration

Coast 2050 Strategy
Coastwide: Terracing, accompanied by vegetative plantings, is an effective means of marsh habitat creation in areas with soils of suitable mineral content;
Maintain, Protect, or Restore Ridge Functions; the objective of the project is to reduce tidal scour and protect the interior marshes west of Perry Ridge.

Regional: Hydrologic restoration is a local strategy recommended for nearly all of the Region 4 mapping units. The Habitat Objectives in the Calcasieu/Sabine Basin is to create fresher conditions by the year 2050. Freshwater introduction strategies are recommended where there is a source of freshwater to counteract the effects of increased salt water intrusion.

Project Location
Region 4, Calcasieu-Sabine Basin, Calcasieu Parish, north of the GIWW and consists of fresh/intermediate marsh.

Problem
Construction of the GIWW has greatly increased tidal exchange within the project area. This has resulted in interior marsh loss through increased saltwater intrusion and subsequent organic soil export. The project will be designed to promote freshwater drainage from the Sabine River south through Conway Bayou. Marsh loss has resulted in large open water areas that will be terraced to reduce fetch and promote submerged aquatic vegetation production.

Goals
Over the next 20 years the project will increase organic production within the project area and promote the expansion of emergent marsh vegetation throughout the project area. The terracing will be designed to reduce wave energies and promote growth of submerged aquatic vegetation.

Proposed Project Features
The project proposes approximately 50,000 linear feet of terracing similar to those constructed as part of the Perry Ridge West Bank Stabilization Project (CS-30). This project also consists of structures designed to promote the historic drainage of freshwater from the Sabine River through the project area south into Conway Bayou.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The total area benefitted is approximately 8,000 acres.

2) *How many acres of wetlands will be protected/created over the project life*? The project would protect/create approximately **500 net acres** based on results from the Black Bayou Hydrologic Restoration (CS-27) 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 anticipated loss rate reduction throughout the area of direct benefit is estimated to be *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 Perry 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 Perry Ridge Shore Protection (CS-24) and the GIWW Perry Ridge West Bank Stabilization (CS-30) projects. All of these projects would work in conjunction to protect and restore wetlands within the Perry Ridge Mapping Unit.

Identification of Potential Issues
There are no issues identified at this time.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $5 – 8 million.

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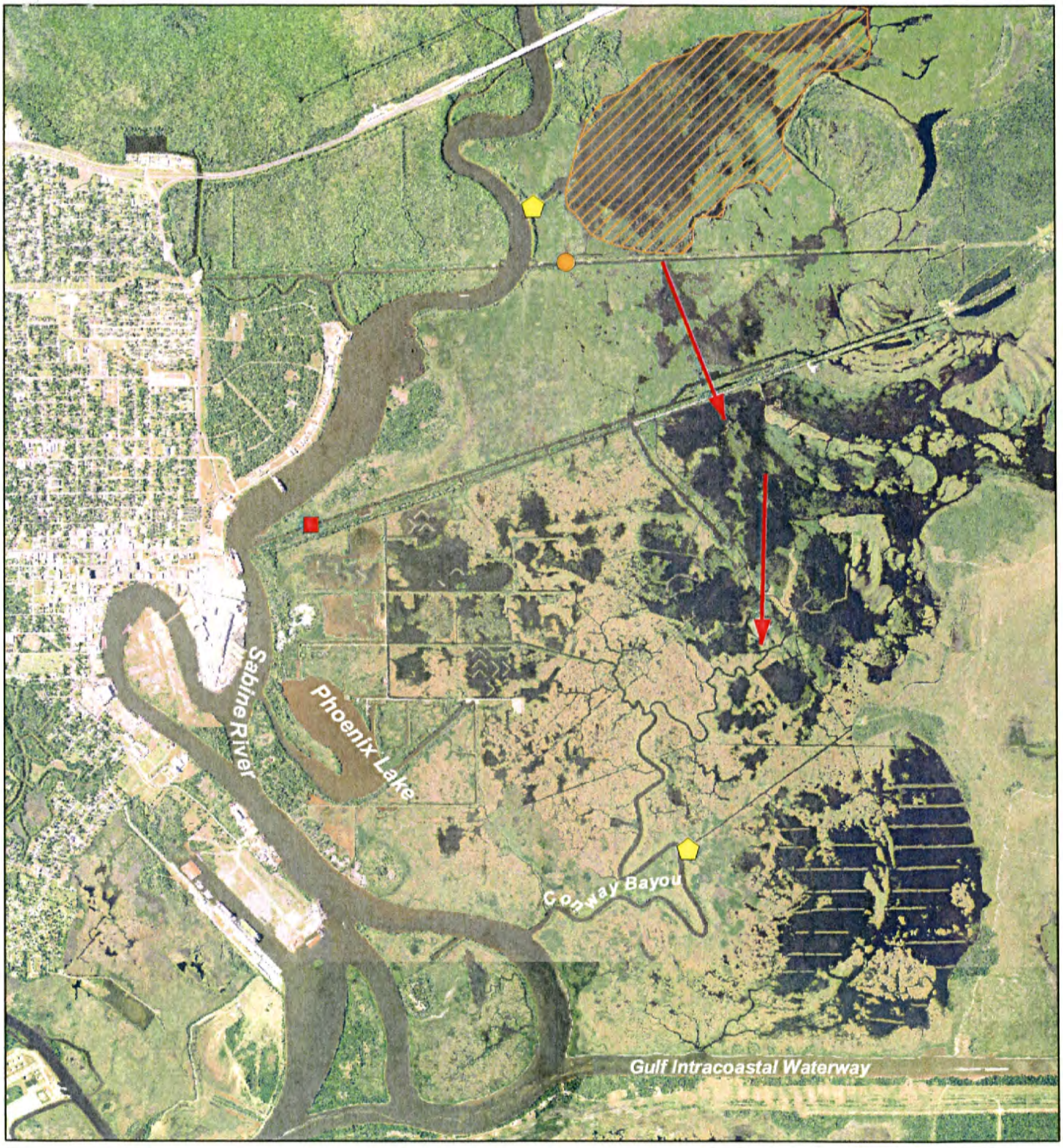

Legend

- Plug
- Culvert with flap gates
- Boat_Bay
- Freshwater_Introduction
- Terrace_Field

N

0 1,200 2,400 4,800 7,200 9,600

Feet

Conway Bayou
Calcasieu Parish, Louisiana
PPL 22

R4-CS-10

Sweet Lake & Willow Lake North Shoreline Restoration

R4-CS-10

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Sweet Lake and Willow Lake North Shoreline Restoration

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands
Regional: Reestablish or maintain the integrity of major natural landforms

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, Sweet/Willow Lakes Mapping Unit, area northeast of Calcasieu Lake and north of GIWW

Problem
Land loss from shoreline erosion, subsidence, and storm impacts is threatening the critical wetland area that separates Sweet and Willow Lakes from large open water areas and adjacent wetlands to the north. Without restoration Sweet and Willow Lakes will coalesce with open water areas and more than double in size threatening adjacent wetlands. Numerous restoration techniques ranging from planting a constructed terrace (CS-11b) and Christmas tree fencing have been attempted. However, it is clear that a more substantial restoration technique (shoreline restoration via marsh creation) is needed.

Goals
The primary goal is to re-create and nourish the degraded marsh that currently forms the north bank of Sweet and Willow Lakes to prevent additional loss to adjacent marshes and coalescing with adjacent open water areas.

Proposed Project Features
1. Dedicated dredging of sediment from Sweet and/or Willow Lake will be hydraulically pumped via pipeline to create approximately 508 acres of marsh in the project area.
2. Approximately 335 acres of existing shoreline will be reinforced with marsh nourishment.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 2,000 acres would be benefited directly and indirectly. Direct benefits include 843 acres (508 acres of marsh creation and 335 acres of marsh nourishment). Indirect benefits would improve SAV habitat and reduce land loss in the rapidly eroding Sweet and Willow Lakes mapping unit.

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 650 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 Sweet and Willow Lake rims.

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 Sweet Lake/Willow Lake Project (CS-11b). These projects would work in conjunction to restore and protect wetlands within the Sweet Lake/Willow Lake Mapping Unit.

Identification of Potential Issues
There are pipelines in the area.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $21.3 million.

Preparer of Fact Sheet
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Legend

Marsh Creation/Nourishment

N
W E
S

Sweet Lake and Willow Lake
North Shoreline Restoration
Cameron Parish, Louisiana
PPL 22

0 1,250 2,500 5,000 7,500 10,000

Feet

R4-CS-11

East Holly Beach Gulf Shoreline Protection

R4-CS-11

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Sweet Lake and Willow Lake North Shoreline Restoration

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands
Regional: Reestablish or maintain the integrity of major natural landforms

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, Sweet/Willow Lakes Mapping Unit, area northeast of Calcasieu Lake and north of GIWW

Problem
Land loss from shoreline erosion, subsidence, and storm impacts is threatening the critical wetland area that separates Sweet and Willow Lakes from large open water areas and adjacent wetlands to the north. Without restoration Sweet and Willow Lakes will coalesce with open water areas and more than double in size threatening adjacent wetlands. Numerous restoration techniques ranging from planting a constructed terrace (CS-11b) and Christmas tree fencing have been attempted. However, it is clear that a more substantial restoration technique (shoreline restoration via marsh creation) is needed.

Goals
The primary goal is to re-create and nourish the degraded marsh that currently forms the north bank of Sweet and Willow Lakes to prevent additional loss to adjacent marshes and coalescing with adjacent open water areas.

Proposed Project Features
1. Dedicated dredging of sediment from Sweet and/or Willow Lake will be hydraulically pumped via pipeline to create approximately 508 acres of marsh in the project area.
2. Approximately 335 acres of existing shoreline will be reinforced with marsh nourishment.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 2,000 acres would be benefited directly and indirectly. Direct benefits include 843 acres (508 acres of marsh creation and 335 acres of marsh nourishment). Indirect benefits would improve SAV habitat and reduce land loss in the rapidly eroding Sweet and Willow Lakes mapping unit.

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 650 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 Sweet and Willow Lake rims.

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 Sweet Lake/Willow Lake Project (CS-11b). These projects would work in conjunction to restore and protect wetlands within the Sweet Lake/Willow Lake Mapping Unit.

Identification of Potential Issues
There are pipelines in the area.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $21.3 million.

Preparer of Fact Sheet
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Steve Trahan, Cameron LNG, (337) 680-4526, strahan@sempraglobal.com

Legend

Marsh Creation/Nourishment

N
W E
S

0 1,250 2,500 5,000 7,500 10,000

Feet

Sweet Lake and Willow Lake
North Shoreline Restoration
Cameron Parish, Louisiana
PPL 22

Region 4 – MERMENTAU BASIN

R4-ME-01

East Pecan Island Marsh Creation – Increment 1

R4-ME-01

PPL 22 PROJECT NOMINEE FACT SHEET

Project Name
East Pecan Island Marsh Creation – Increment 1

Coast 2050 Strategy
Coastwide: Dedicated dredging to create, restore, or protect wetlands

Project Location
The project is located in Region 4, Mermentau Basin, Vermilion Parish, west of the Freshwater Bayou Navigation Channel.

Problem
The marshes to the west of the Freshwater Bayou Navigation Channel have experienced severe land loss and habitat conversion. What was once a productive fresh water marsh has been converted to open water due to the negative effects of exchange from the Freshwater Bayou Navigation Canal on soils followed by major hurricane impacts.

Goals
The primary goal of this project is to create marsh through dedicated dredging and vegetative plantings on the western side of the Freshwater Bayou Navigation Channel. This project will also help to reduce the potential for exchange between the target marshes and the Freshwater Bayou Navigation Channel by working synergistically with the ME-31 Freshwater Bayou Marsh Creation Project.

Proposed Solution
This project intends to create and nourish 511 acres of marsh using approximately 3.9M C.Y. of marsh fill material borrowed from offshore within state waters and will utilize the Freshwater Bayou Navigation Canal as the pipeline corridor. Some historical ponds will be retained and creeks may be included to promote exchange with the surrounding marsh and provide marsh functionality. Half of the acreage will be planted to encourage rapid vegetation. Earthen containment dikes will be gapped upon construction completion and included in the operations and maintenance.

Project Benefits
The project would result in approximately 450 net acres of intermediate marsh over the 20-year project life.

Project Costs
The preliminary cost is estimate including 25% contingency is $35,077,410.

Preparer of Fact Sheet
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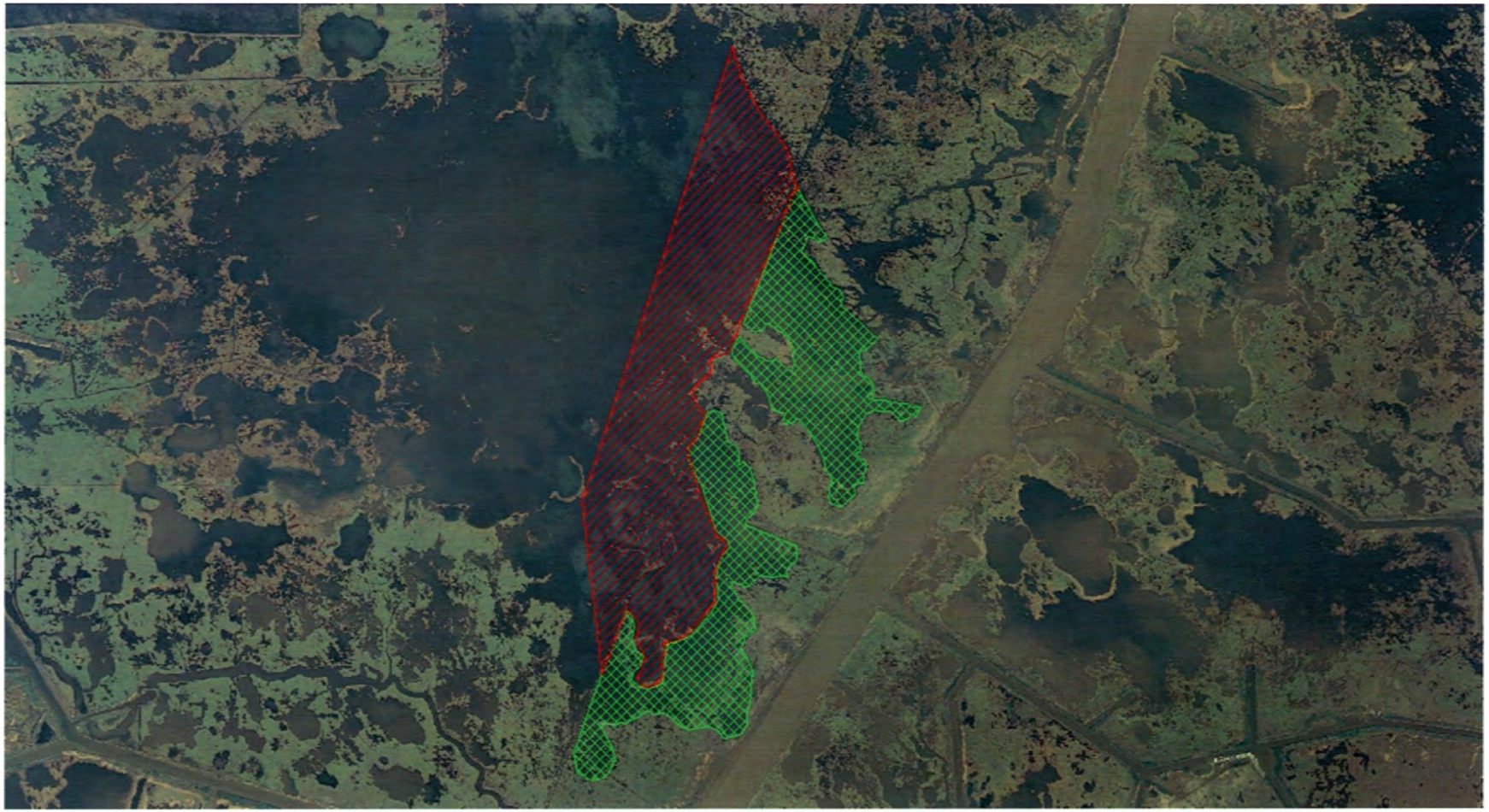

Red hatched area = PPL 22 nominee East Pecan Island Marsh Creation

Green cross hatched area = Approved NRCS PPL 19 Freshwater Bayou Marsh Creation Project

Red hatched area = PPL 22 nominee East Pecan Island Marsh Creation

Green cross hatched area = Approved NRCS PPL 19 Freshwater Bayou Marsh Creation Project

Blue box = proposed borrow area

R4-ME-02

Pecan Island Marsh Creation

R4-ME-02

Region 4-RPT
PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name:
Pecan Island Marsh Creation Project

Coast 2050 Strategy:
Restore and Sustain Wetlands *(Regional Ecosystem Strategy)*
Dedicated Dredging, to Create, Restore, or Protect Wetlands *(Coastwide Common Strategy)*
Dedge fill in open water areas with either White Lake or Gulf spoil *(Mapping Unit Strategy)*
Vegetative Plantings *(Coastwide Common Strategy)*

Project Location:
Region 4, Mermentau Basin, Vermilion Parish, South of Pecan Island

Problem:
Project area wetlands are undergoing losses from shoreline erosion, subsidence, and coalescence of interior ponds. Future land loss will most likely occur in areas of existing loss and may become more apparent along Louisiana Highway 82. Disturbances to the landscape from hurricanes and herbivory have resulted in the breakup and export of large sections of interior marsh. The ensuing erosion creates water turbidity within the interior ponds, this coupled with increased pond depth, decreases the coverage of submerged aquatic vegetation. Additionally, recent hurricanes have resulted in large and wide-spread losses. It is unlikely that many of these areas will recover unaided.

Goals:
(1) Create approximately 500 acres of intermediate-to-brackish emergent marsh by creation; and
(2) Protect interior marshes from erosion.

Proposed Solutions:
Sediment would be mined from the Gulf of Mexico and placed in multiple disposal areas to create between 400 to 500 acres of intermediate-to-brackish marsh. The proposed borrow area would be approximately 1.5 miles offshore. The proposed dredge pipe corridor would be an existing pipeline right of way. The preliminary costs were calculated as a "typical" marsh creation project, however, there is an abandoned 36" gas pipeline within the proposed dredge pipe corridor, and the use of that pipeline as a delivery mechanism will explored during Phase 1. Target marsh elevation is +1.4' NAVD.

Identification of Potential Issues:
Oil and gas infrastructure is within the project area and would need to be avoided by dredge/fill activities.

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

Preparer of Fact Sheet:
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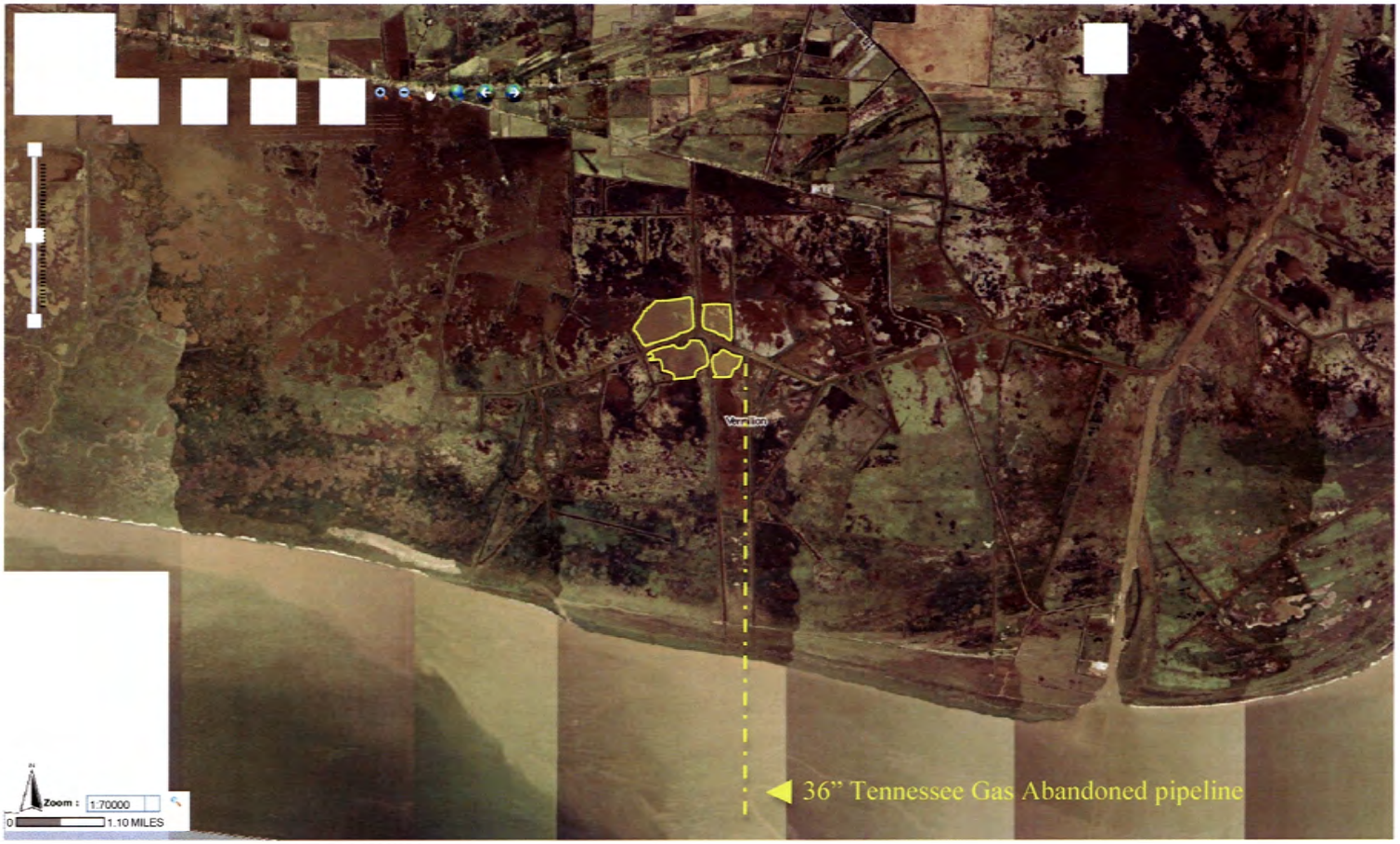
Pecan Island Marsh Creation, PPL 22



R4-ME-03

Umbrella Bay Shoreline Protection

R4-ME-03

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Umbrella Bay Shoreline Protection Project

Coast 2050 Strategy
Coastwide Strategy – Maintenance of bay and lake shoreline integrity
Regional Strategy – Stabilization of the Grand Lake shoreline
Mapping Unit Strategy – Shoreline stabilization along Umbrella Bay in Grand Lake

Project Location
Region 4, Cameron Parish, eastern Grand Lake-Umbrella Bay shoreline

Problem
The project area experiences shoreline erosion estimated at an average of 15 feet per year (4 feet to 30 feet/year, based on 1952 to 2008 GIS analysis). Approximately 275 acres of marsh will be lost over the next 20 years at this rate. Shoreline breaches have already caused small interior lakes to be made part of Grand Lake and continued shore loss will increase connectivity with Grand Lake and introduce greater energy to the interior marsh.

Goals
1) Reduce or halt shoreline erosion along the eastern Grand Lake and Umbrella Bay shorelines. 2) Prevent shoreline breaches into interior ponds.

Proposed Project Features
The proposed project consists of approximately 40,000 linear feet (7.5 miles) of foreshore segmented rock breakwater placed at the 1 to 2 foot depth contour with gaps approximately every 1,000 feet and access channel dredged material placed shoreward to restore marsh.

Preliminary Project Benefits
1) The total net marsh acreage benefited directly over the 20-year project life would be approximately 275 acres assuming an erosion rate of 15 ft/yr. 2) Shoreline erosion along the Umbrella Bay and Grand Lake shorelines would be reduced by 100% assuming that the structure is completely effective at stopping erosion from wave energy. 3) The rock dike would prevent breaches that would connect interior ponds to Grand Lake. 4) The project would maintain a portion of the Grand Lake-Umbrella Bay shoreline which is a structural component of the coastal ecosystem. 5) The project would combine with the existing Grand-White Lakes Landbridge Shoreline Protection Project to the south to protect the eastern Grand Lake shoreline.

Identification of Potential Issues
At this time, no significant issues have been identified for this project.

Preliminary Construction Costs
The estimated construction cost (assuming $300 per linear foot) is $12 M to $15 M.

Preparer of Fact Sheet
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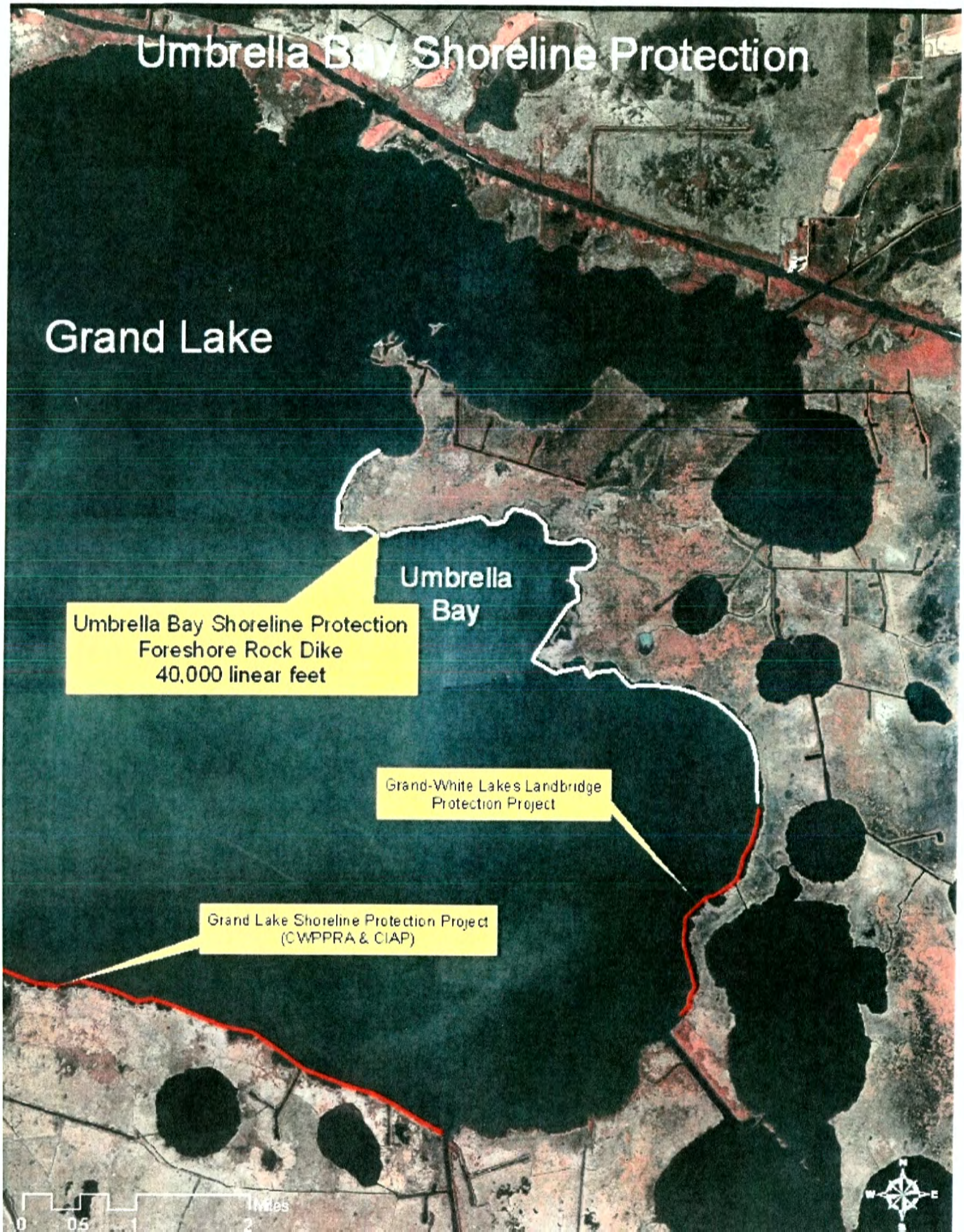
Umbrella Bay Shoreline Protection
Grand Lake
Umbrella Bay
Umbrella Bay Shoreline Protection
Foreshore Rock Dike
40,000 linear feet
Grand-White Lakes Landbridge
Protection Project
Grand Lake Shoreline Protection Project
(CWPPRA & CIAP)
Miles
0
0.5
1
2

R4-ME-04

Front Ridge Freshwater Introduction & Terracing

R4-ME-04

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Front Ridge Freshwater Introduction and Terracing

Coast 2050 Strategy
Coastwide Common Strategies: *Maintain, Protect, or Restore Ridge Functions; Terracing, accompanied by vegetative planting, is an effective means of marsh habitat creation.*

Regional Strategy 4: *Move water from Lakes Subbasin across Highway 82 with including outfall management and flood protection where needed. Restore historic hydrologic and salinity conditions throughout Region 4 to protect wetlands from hydrologic modification.*

Project Location
Region 4, Mermentau Basin, Vermilion Parish, east of Pecan Island and south of Highway 82.

Problem
Virtually all of the project area marshes have experienced increased tidal exchange, saltwater intrusion, and reduced freshwater retention associated with the Freshwater Bayou Canal and Humble Canal. Highway 82 traverses cheniers wherever possible, however, low spots between cheniers historically allowed drainage from the Lakes Subbasin south into the Chenier Subbasin. Currently, Highway 82 forms a hydrologic barrier that isolates those sub basins.

Goals
The project goals are two-fold: 1) to evacuate excess water from the Lakes Subbasin; and 2) to provide freshwater to the Chenier Subbasin. The project would restore/improve hydrologic conditions and promote the expansion of emergent marsh vegetation throughout the project area. The terracing will be designed to reduce wave energies and promote growth of submerged aquatic vegetation.

Proposed Project Features
The project proposes approximately 133,000 linear feet of terracing and freshwater introduction.

The proposed freshwater introduction would restore/improve hydrologic conditions by allowing water from the Lakes Subbasin to drain south across Highway 82 into the Chenier Subbasin. The majority of the necessary infrastructure is existing and would only require cleanout and construction of an outlet structure under the gravel road at Front Ridge.

Coastwide Reference Monitoring Stations indicate average salinities in the Lakes Subbasin near the freshwater introduction source were 2.9 ppt (CRMS 1130) in 2010 and salinities in the Chenier Subbasin near the receiving area were 6.6 ppt (CRMS 1965)

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The total area benefitted is approximately 4,350 acres.

2) *How many acres of wetlands will be protected/created over the project life*? The project would protect/create approximately **200 net acres** based on terrace construction and preliminary results from the Boustany Model.

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 *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 protect the Front Ridge Chenier.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect Louisiana Highway 82.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would provide freshwater introduction across Highway 82 and benefit existing mitigation terracing projects.

Identification of Potential Issues
There are no issues identified at this time.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $8 – 10 million.

Preparer of Fact Sheet
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Legend

- Culvert_w_Flapgate
- Culvert
- Freshwater Introduction
- Terrace_Field
- Area_of_Influence

N

0 0.5 1 2 3 4 Miles

Front Ridge
Freshwater Intro & Terracing
Vermilion Parish, Louisiana
PPL 22

R4-ME-05

Southwest White Lake Shoreline Protection

R4-ME-05

PPL22 PROJECT NOMINEE FACT SHEET
January 24, 2012

Project Name
Southwest White Lake Shoreline Protection

Coast 2050 Strategy
Stabilize Grand Lake and White Lake shorelines

Project Location
Region 4, Mermentau Basin, Vermilion and Cameron Parish, White Lake Mapping Unit, southwest shoreline.

Problem
This portion of the White Lake shoreline is experiencing significant erosion of approximately 15 ft/yr (ME-22 Design Report). In some areas the historic lake rim is completely lost and interior organic soils are exposed to high wave energies. Shoreline protection of the lake rim is expected to preserve a major amount of marsh by 2050. This project would complete the protection of the southern shoreline and protect small interior ponds from coalescing with the lake.

Goals
The proposed project will protect emergent marsh and interior ponds from high wave energies associated with White Lake. The shoreline feature would protect approximately 242 acres from erosion and the terraces would create an additional 28 acre of wetlands. According to the ME-22 Design Report, project surveys and geotechnical investigations have revealed that sufficient material would be available from dredging the floatation channel to raise the substrate behind the rock dike to marsh elevation. The recommended best-fit alignment should provide approximately 90 acres of marsh creation behind the dike.

Proposed Project Features
The project will construct approximately 35,200 linear feet of rock breakwater shoreline protection and approximately 45,000 linear feet of terracing with 300 ft. spacing in the adjacent interior open water body.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The total area benefitted is approximately 550 acres.

2) *How many acres of wetlands will be protected/created over the project life*? The project would protect/create approximately **360 marsh acres** (242 protection + 90 created + 28 terrace).

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 >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 would protect the southwest shoreline of White Lake and the landbridge between White Lake and Grand Lake.

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 have a synergistic effect with the constructed ME-22 White Lake shoreline protection project.

Identification of Potential Issues
There are no issues identified at this time.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $8 – 10 million.

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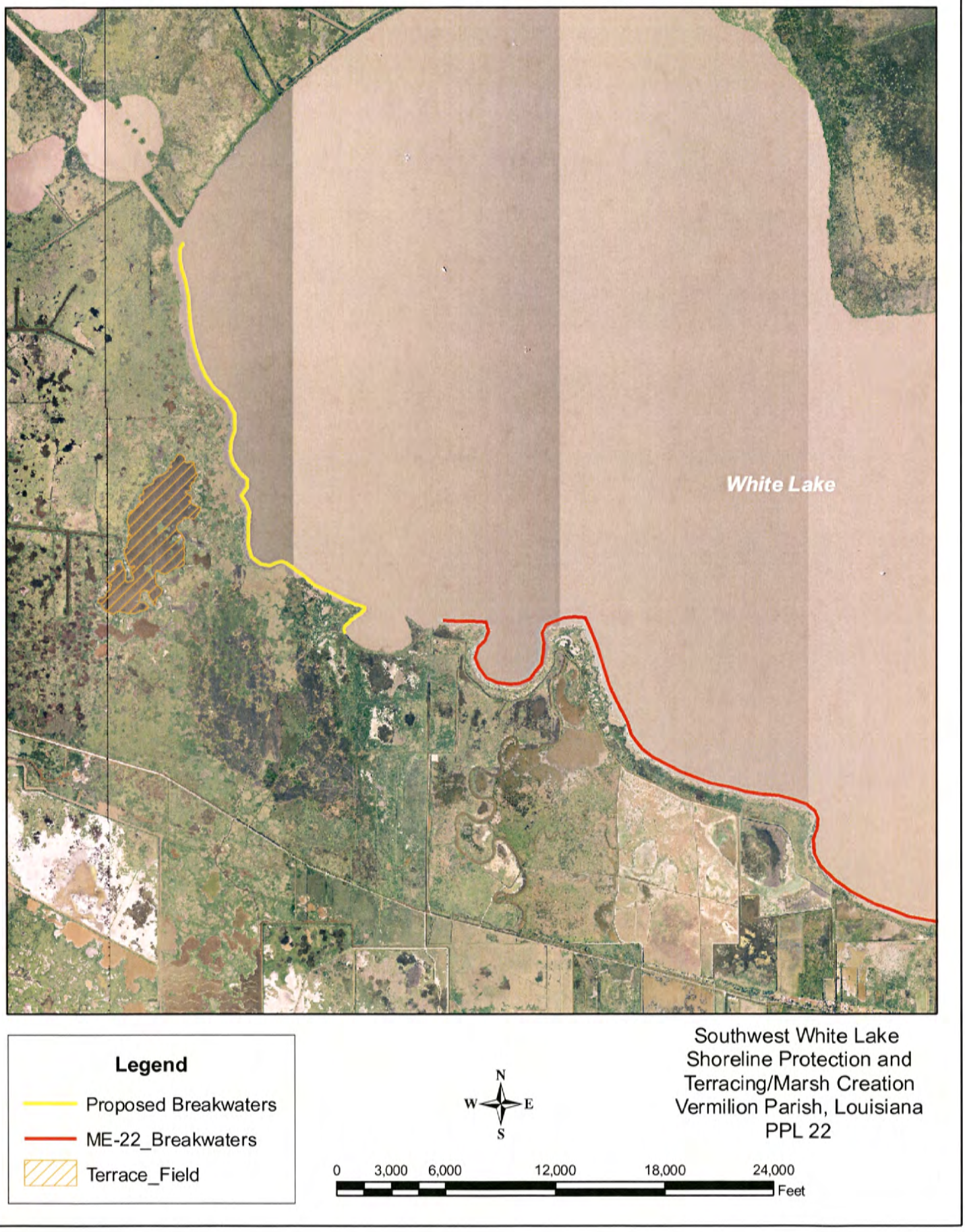
White Lake
Legend
Proposed Breakwaters
ME-22_Breakwaters
Terrace_Field
N
W
E
S
0
3,000
6,000
12,000
18,000
24,000
Feet
Southwest White Lake
Shoreline Protection and
Terracing/Marsh Creation
Vermilion Parish, Louisiana
PPL 22