CWPPRA

Priority Project List 22

Candidate Project Evaluation Results

Public Meetings

November 14, 2012
Abbeville, LA

November 15, 2012
New Orleans, LA

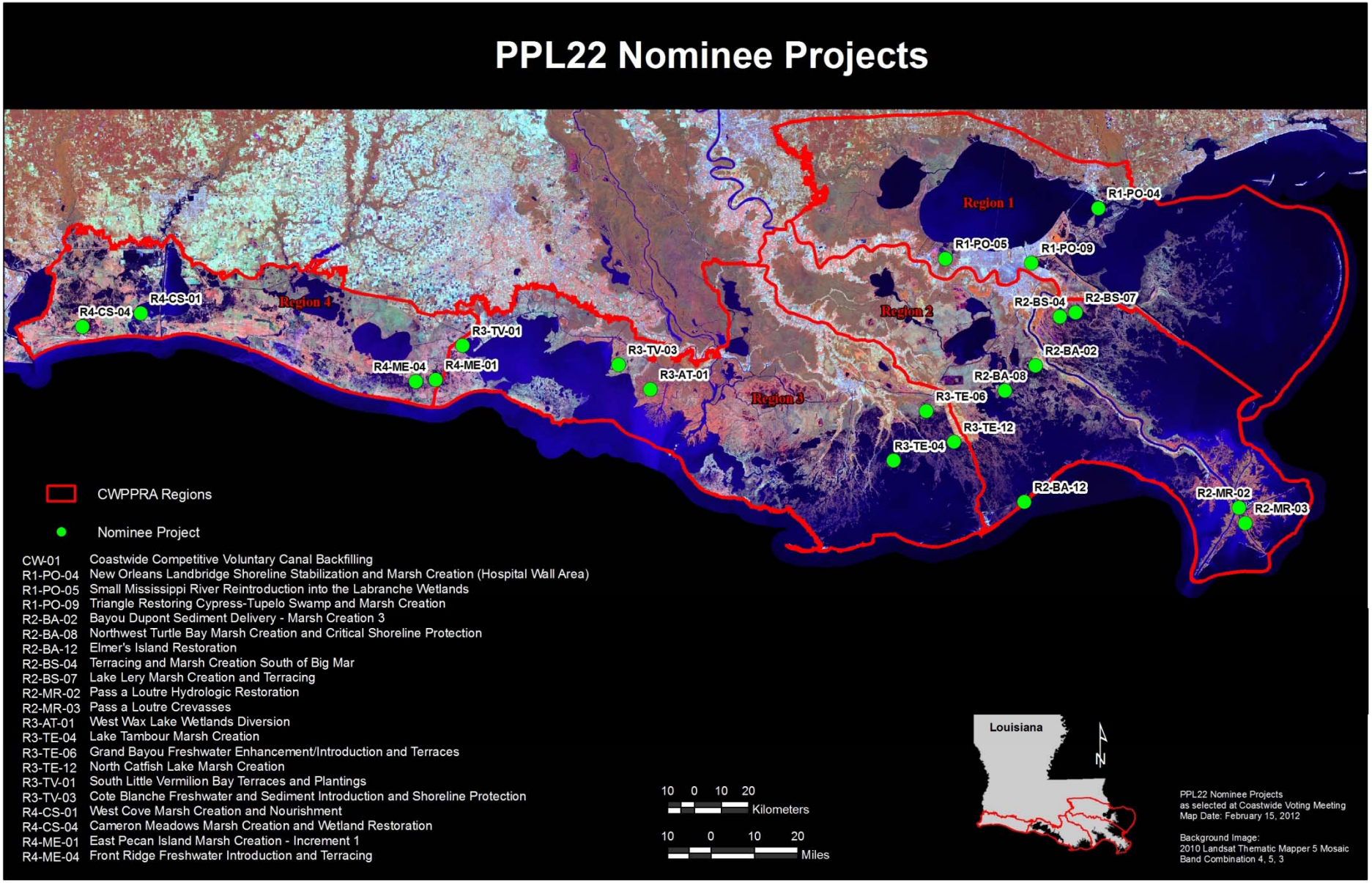
Ground Rules

- The public will be provided an opportunity to ask questions or provide comments on the candidate projects presented tonight
- The public should come to the microphone at the front of the room and state their name and any affiliation they may be representing

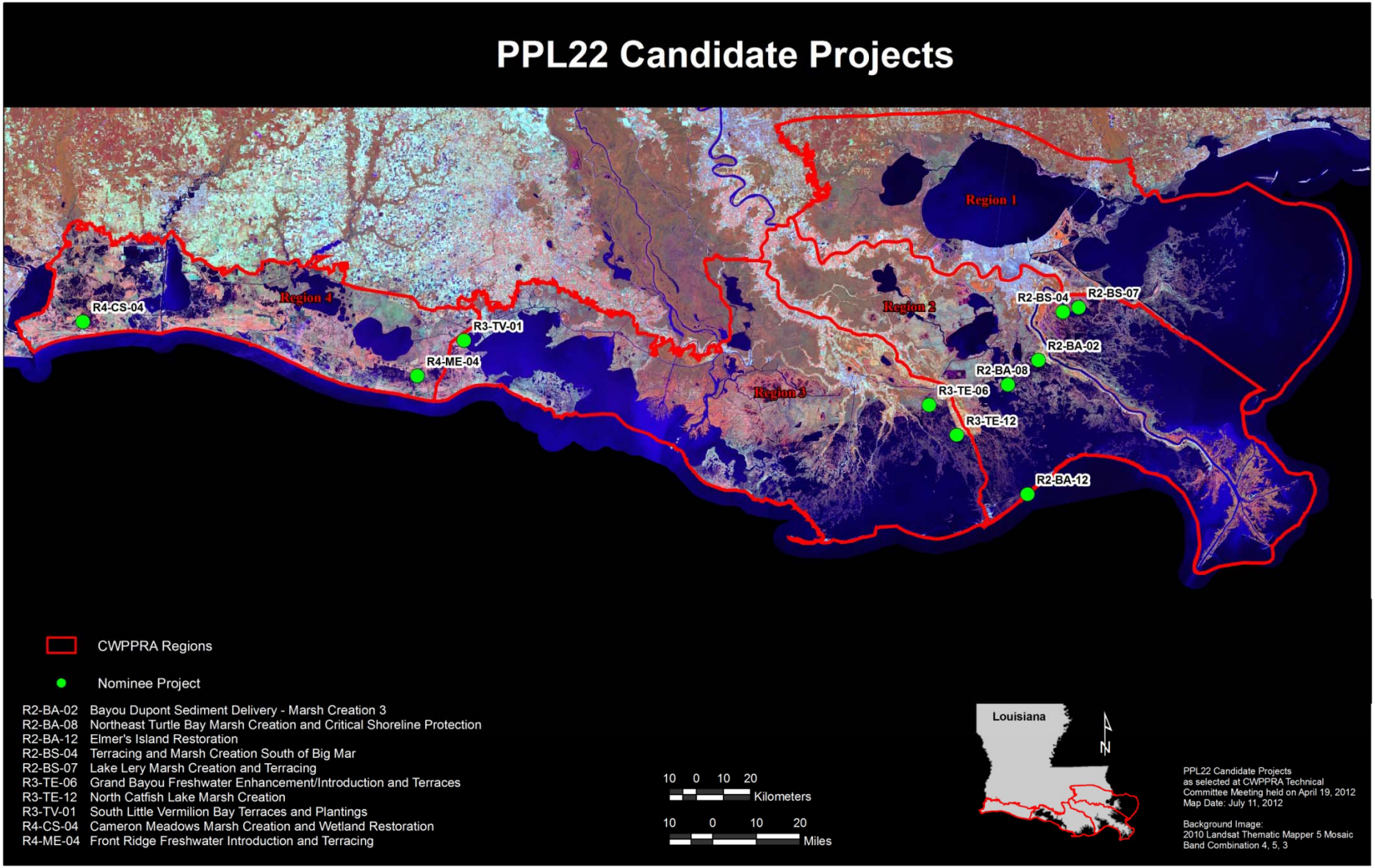
Overview of Project Nomination and Selection Process

- Regional Planning Team meetings were held January 24-26, 2012 (Abbeville, Morgan City, and New Orleans) to accept project ideas from the public and government participants.
- Regional Planning Teams voted on February 15, 2012 at a Coastwide Voting Meeting to select 21 nominee projects and 4 demonstration projects.
- The Technical Committee selected 10 candidate projects and 4 demo candidates for detailed evaluation on April 19, 2012.

PPL 22 Nominee Projects



PPL 22 Candidate Projects



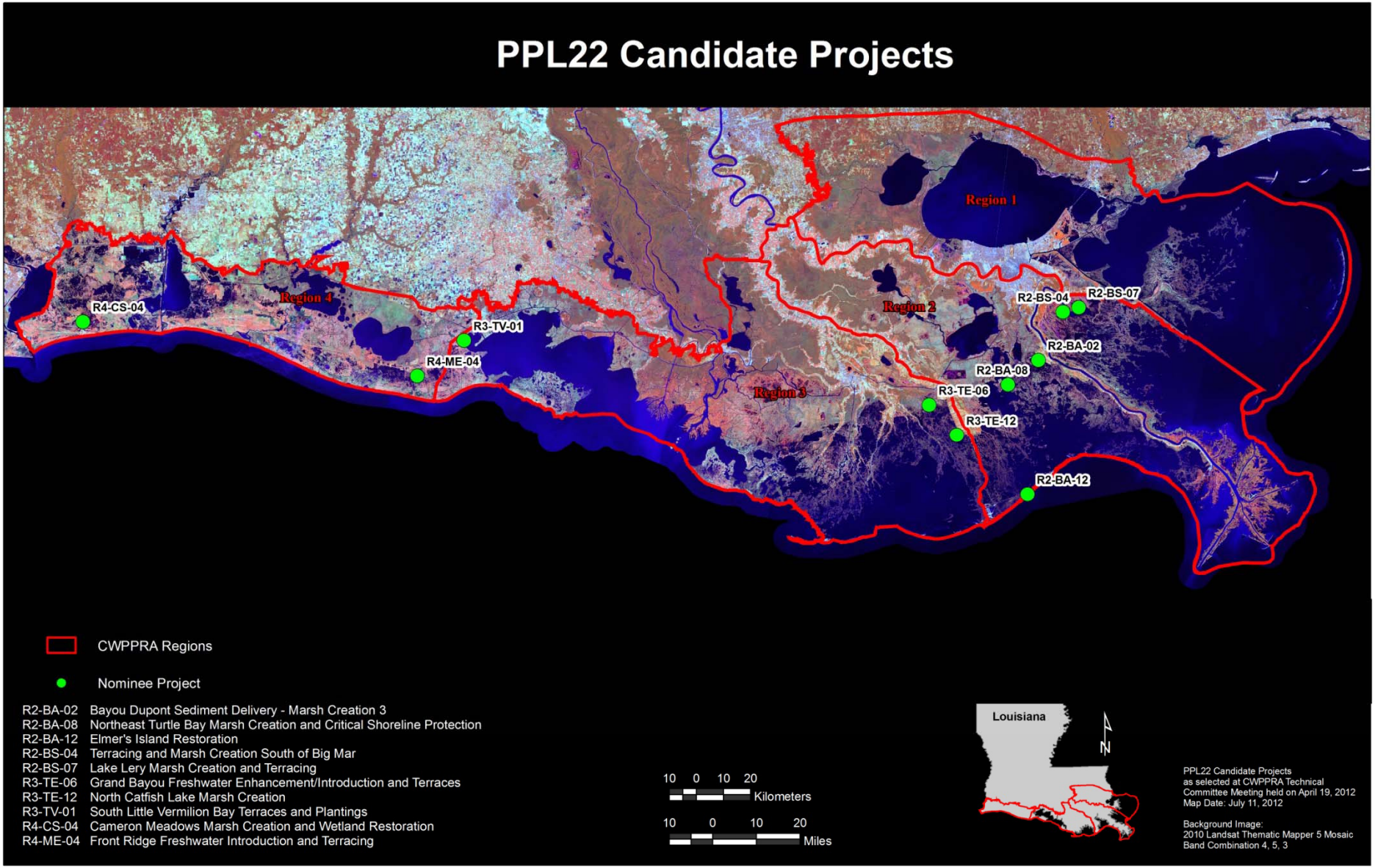
Project Evaluation Procedures

- Interagency site visits were conducted with landowners and local governments.
- The Environmental Workgroup conducted Wetland Value Assessments (WVA) to estimate wetland benefits.
- The Engineering Workgroup reviewed project designs and cost estimates for each candidate and demonstration project.
- The demonstration projects were also evaluated by the Environmental and Engineering Workgroups.
- The Economics Workgroup developed fully-funded costs for engineering and design, construction, and 20 years of operation, maintenance, and monitoring for each project.

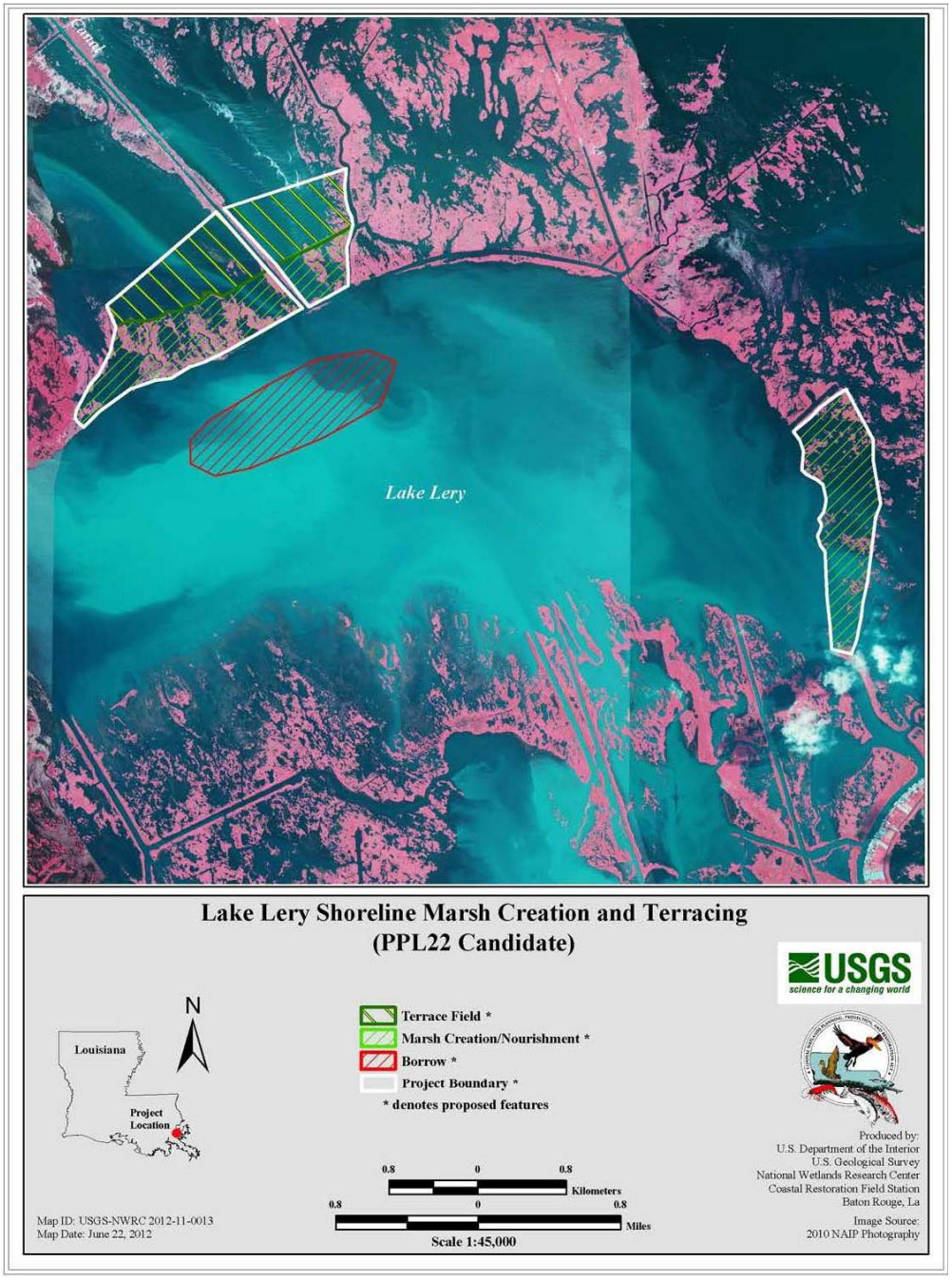
Region 2

- Lake Lery Shoreline Marsh Creation and Terracing
- Terracing and Marsh Creation South of Big Mar
- Bayou Dupont Sediment Delivery – Marsh Creation 3
- Northeast Turtle Bay Marsh Creation and Critical Area Shoreline Protection
- Elmer's Island Restoration

PPL 22 Candidate Projects



CWPPRA



560 ac of marsh creation

Restore approx. 3 mi of lakeshore rim

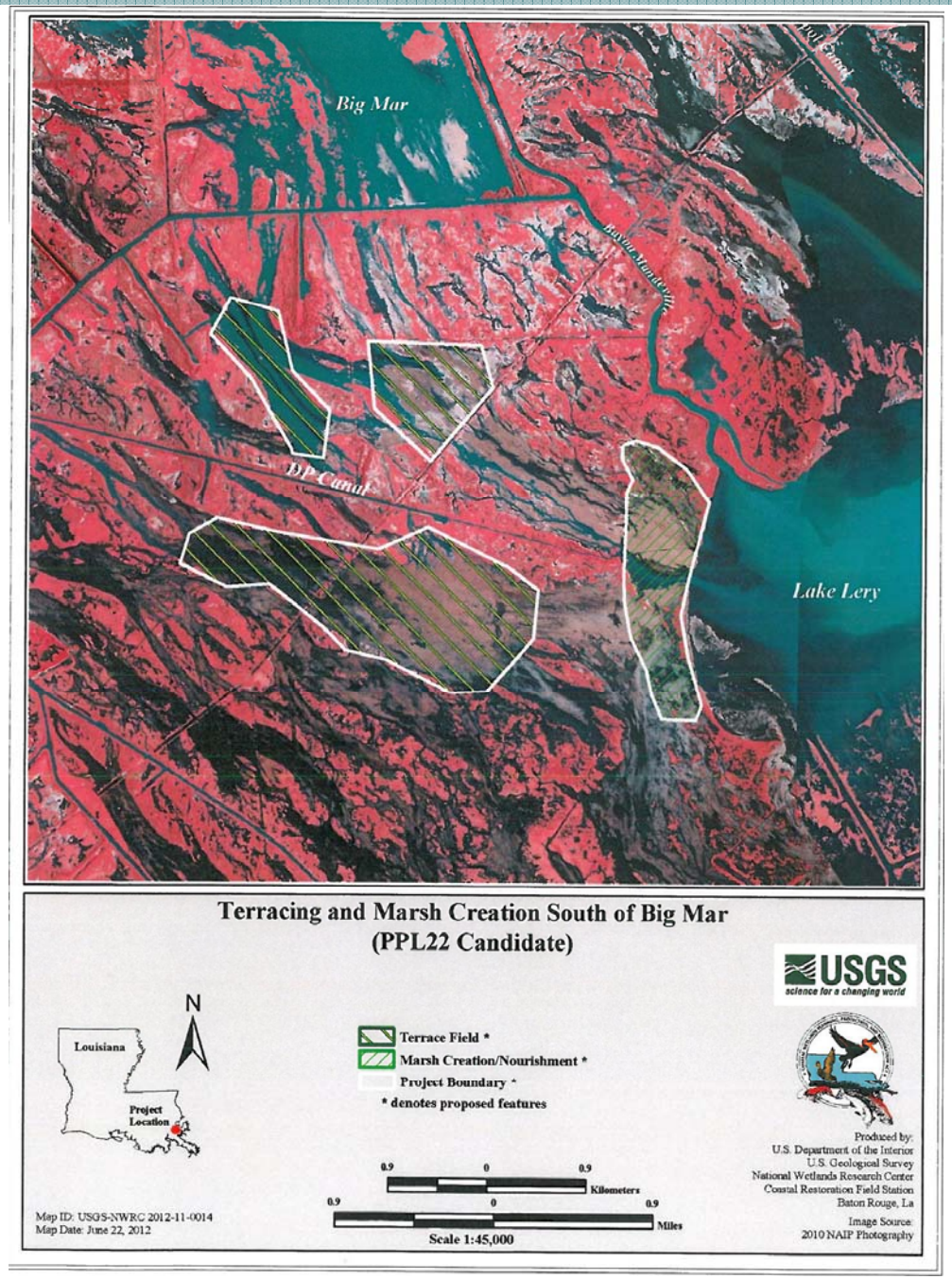
Construct terraces (21,000 ft)

Lake Lery borrow site

403 net acres

$31,377,030

CWPPRA



334 ac of marsh creation

Restore western shoreline of Lake Lery

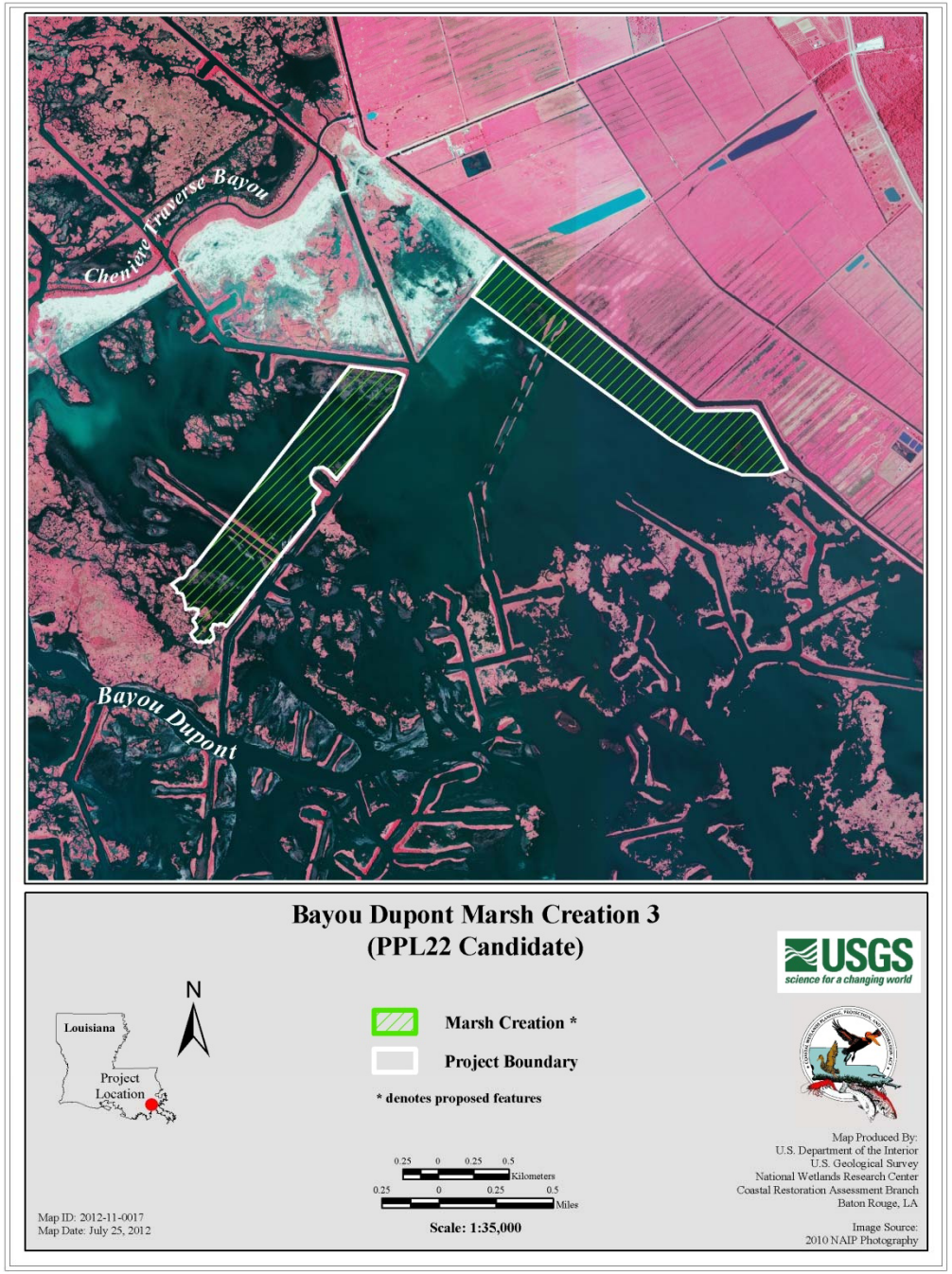
Construct terraces (65,000 ft)

Lake Lery borrow site

302 net acres

$23,692,705

CWPPRA



415 ac of marsh creation

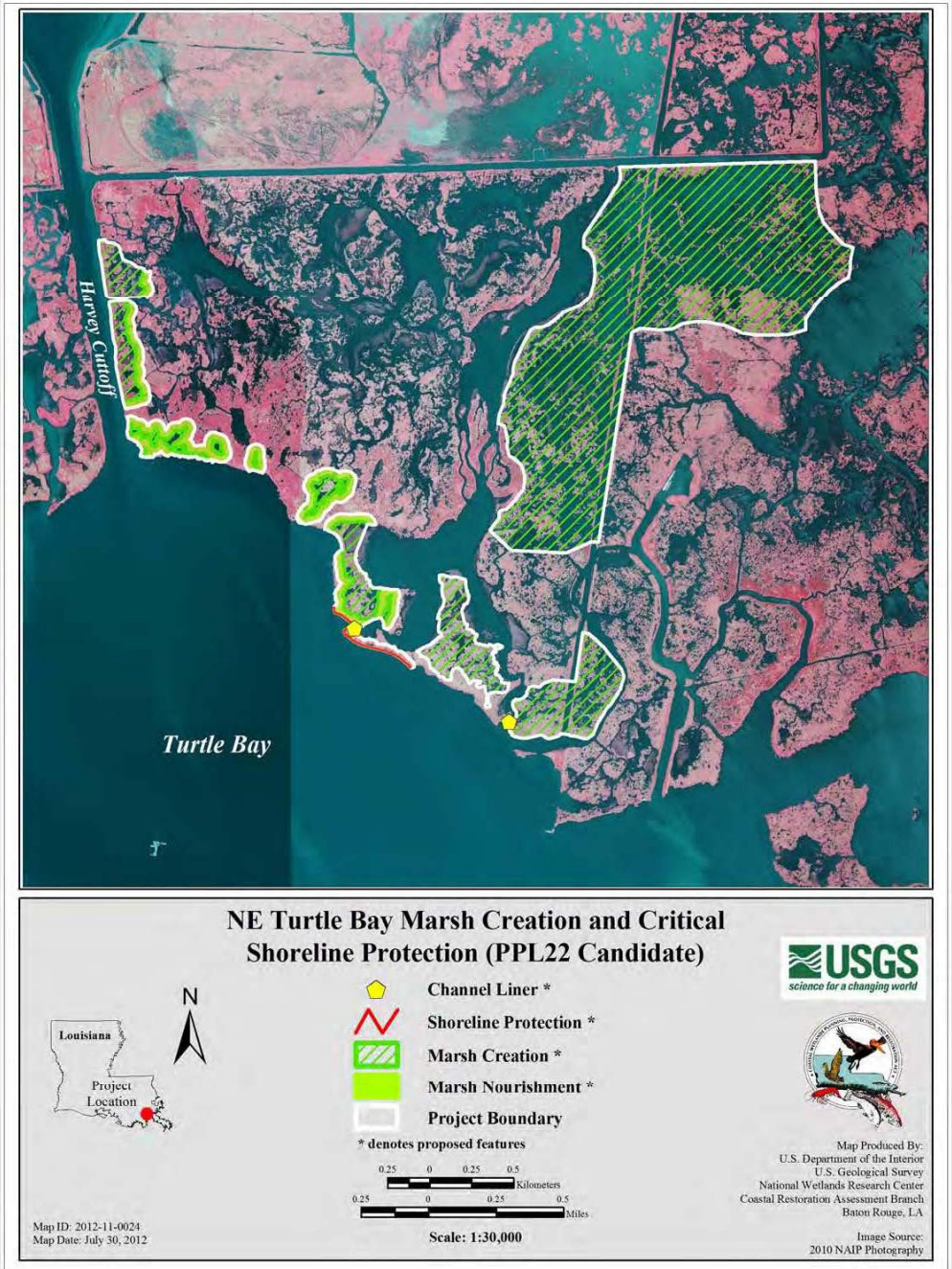
Create marsh and tidal creeks

Mississippi River borrow site

383 net acres

$38,279,163

CWPPRA



759 ac of marsh creation

Protect approx. 2,335 ft of critical shoreline

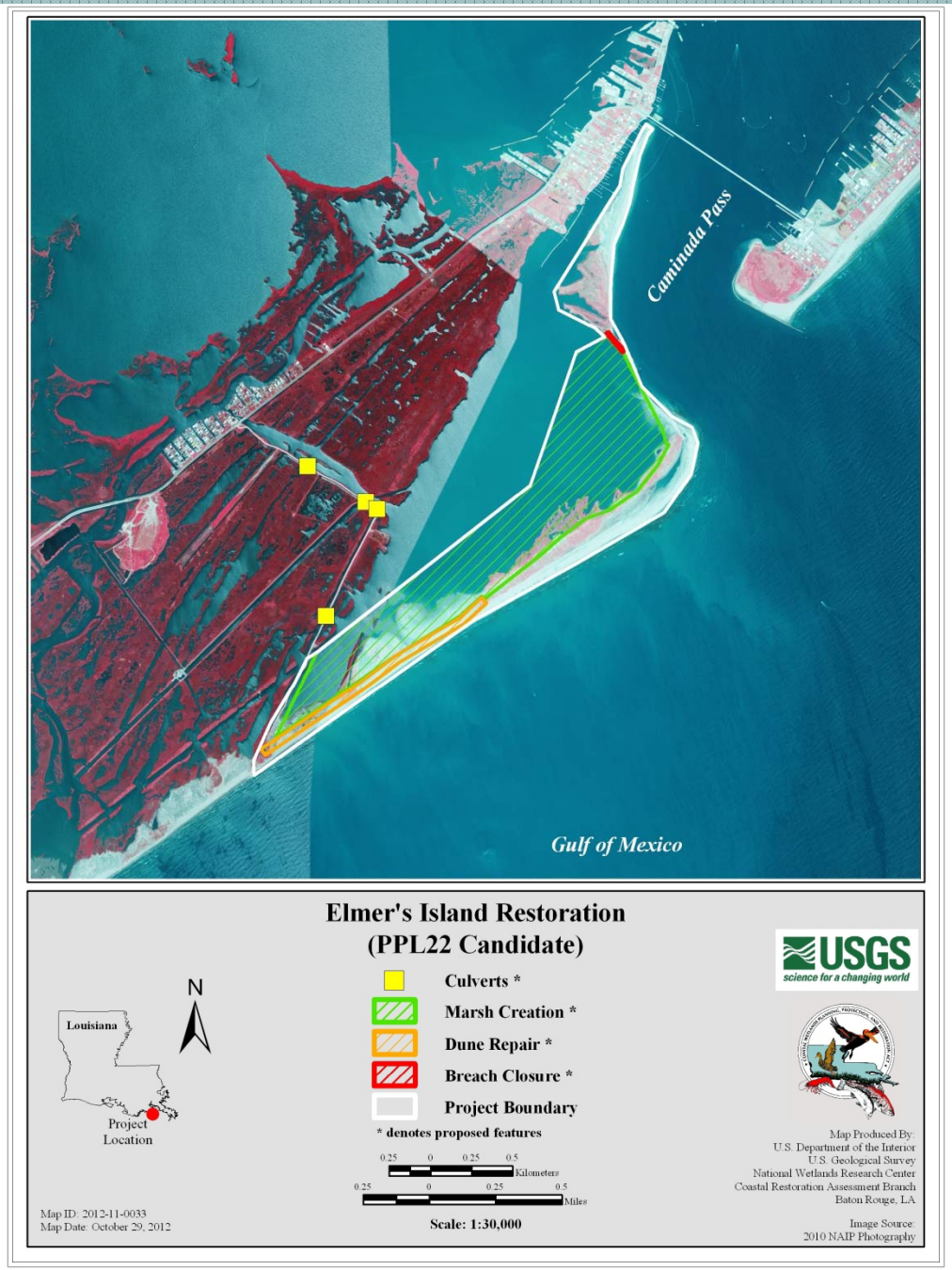
Prevent further enlargement of 2 primary water exchange points

Turtle Bay borrow site

492 net acres

$40,494,122

CWPPRA



304 ac of marsh creation

Approx. 5,400 ft of dune repair (with plantings)

Breach closure (with plantings)

Installation of 4 culverts

Dredging from the ebb shoal of Barataria Pass for dune and breach repairs

Offshore borrow site for marsh creation

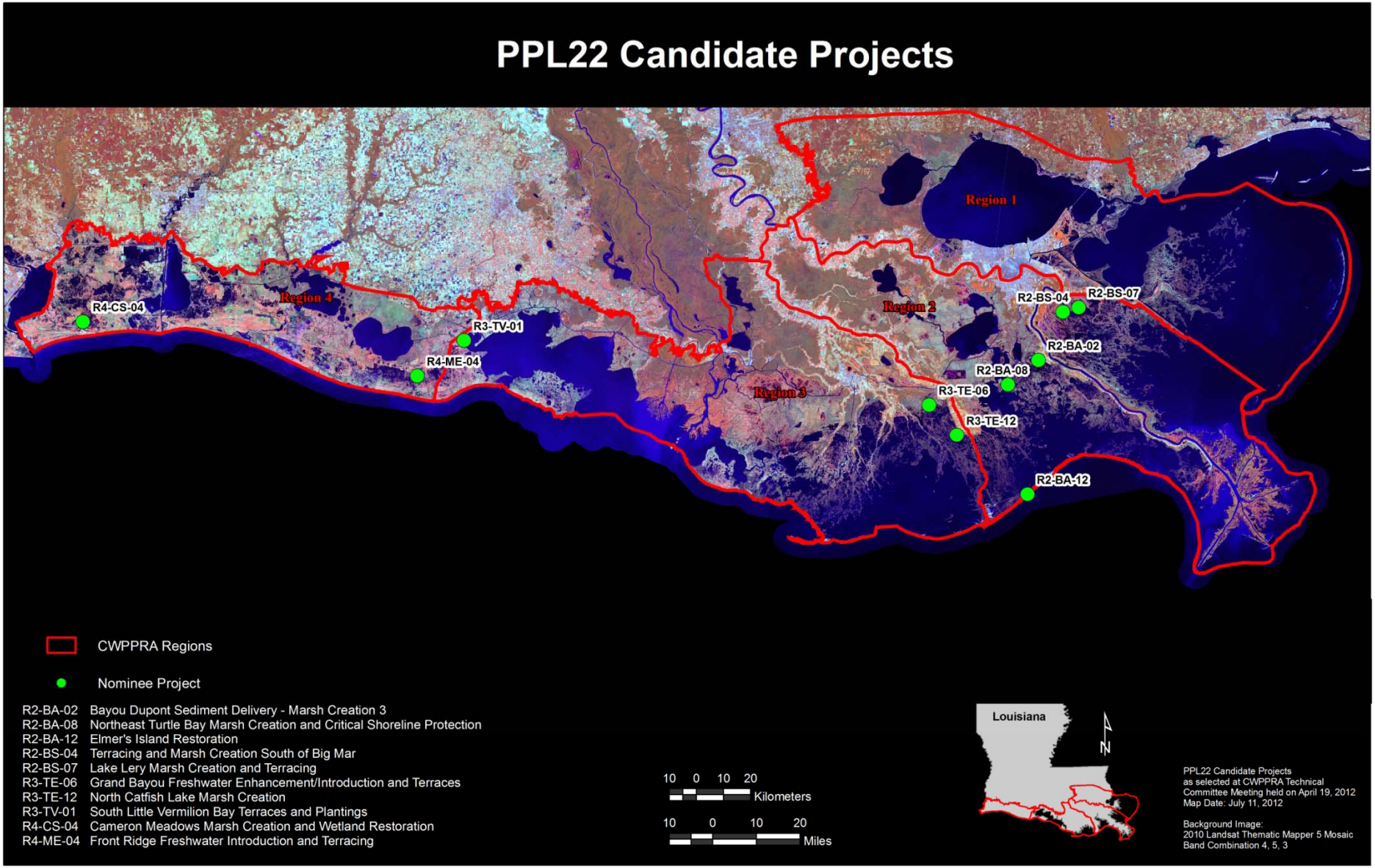
272 net acres

$35,745,200

Region 3

- North Catfish Lake Marsh Creation
- Grand Bayou Freshwater Enhancement and Terracing
- South Little Vermilion Bay Plantings and Terracing

PPL 22 Candidate Projects



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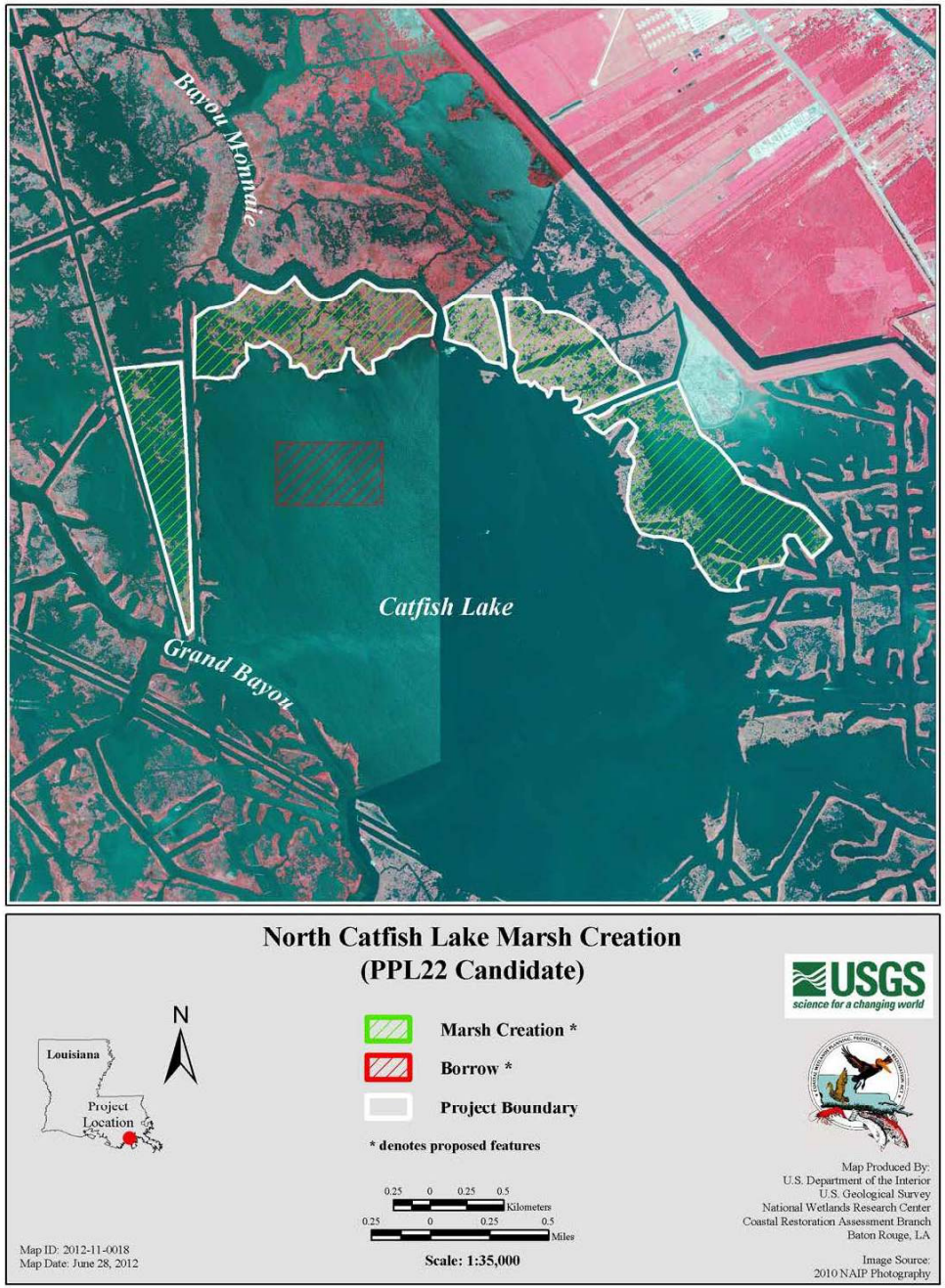


666 ac of marsh creation

Restore rim of Catfish Lake

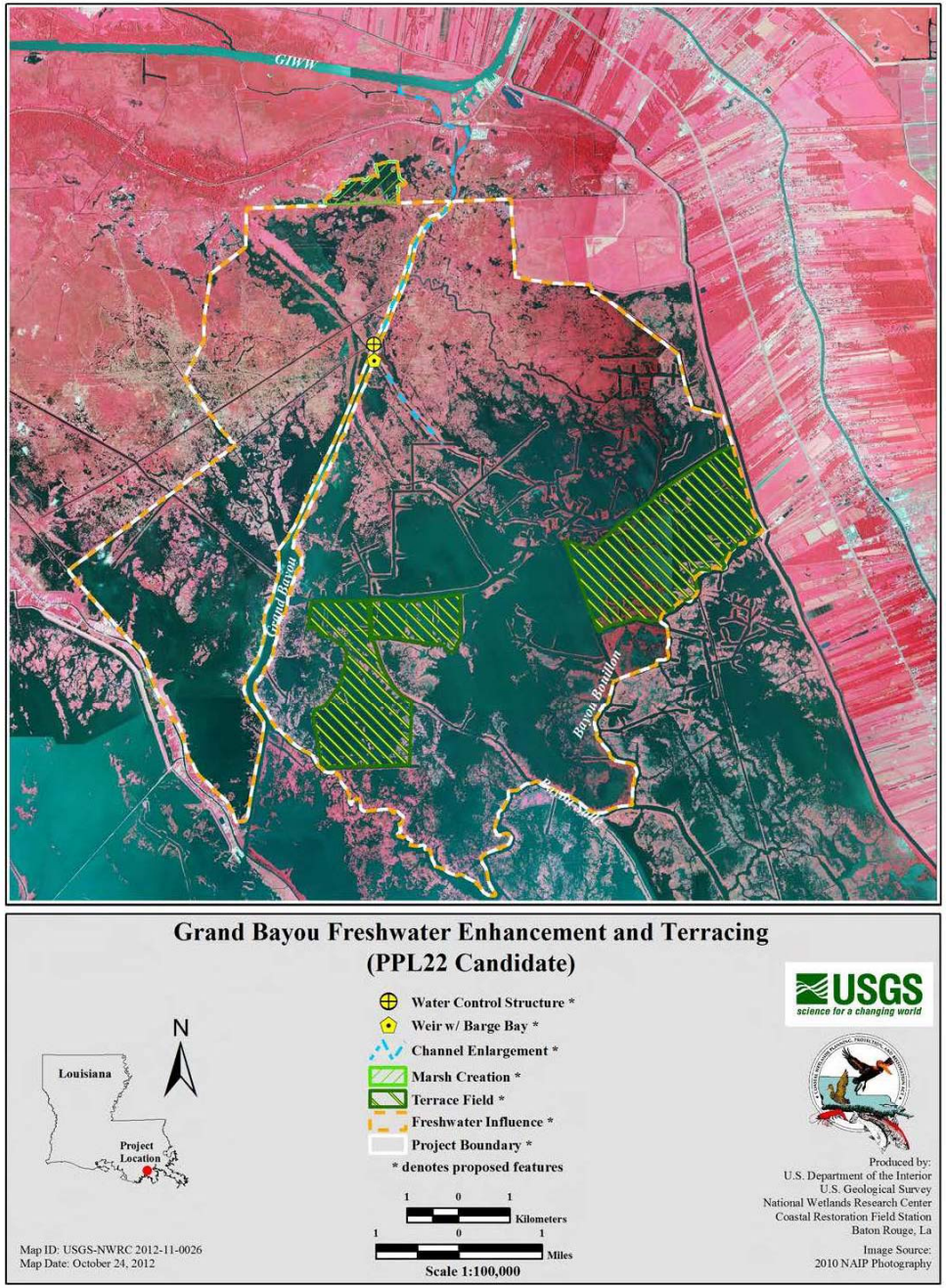
Shoreline plantings

Catfish Lake borrow site

401 net acres

$30,385,887

CWPPRA



Increase flow of freshwater from the GIWW from approx. 600 to 1,600 cfs

Redirect freshwater from Grand Bayou Canal (GBC) into the marshes east and west

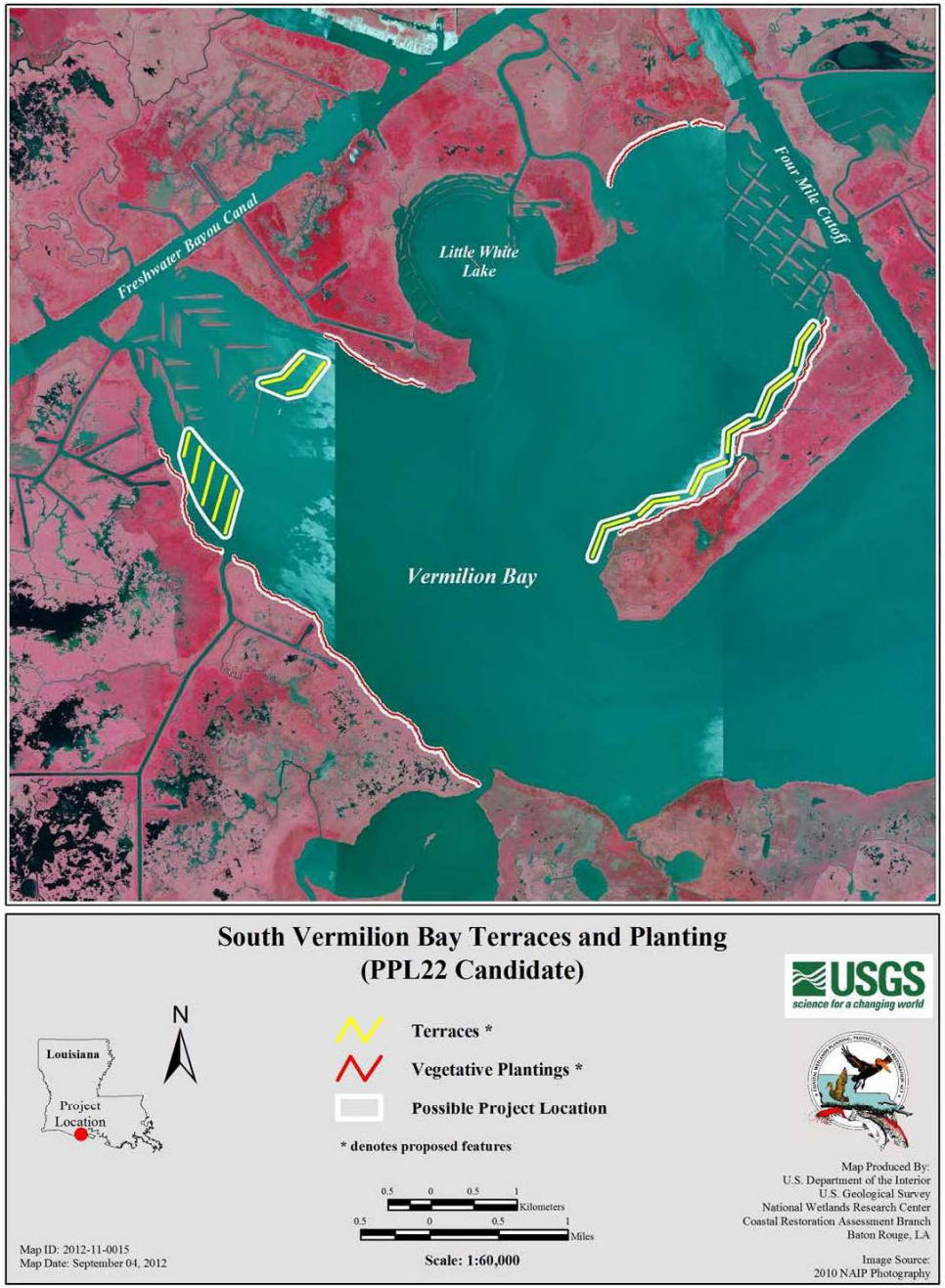
176 ac of marsh creation

Construct terraces (183,000 ft)

665 net acres

$30,344,992

CWPPRA



Create approx. 26,000 ft of distributary channels

Create approx. 22,000 ft of earthen terraces

Increase sediment deposition to create emergent marsh base

Vegetative plantings to stabilize approx. 46,695 ft of shoreline and create 14 acres of marsh

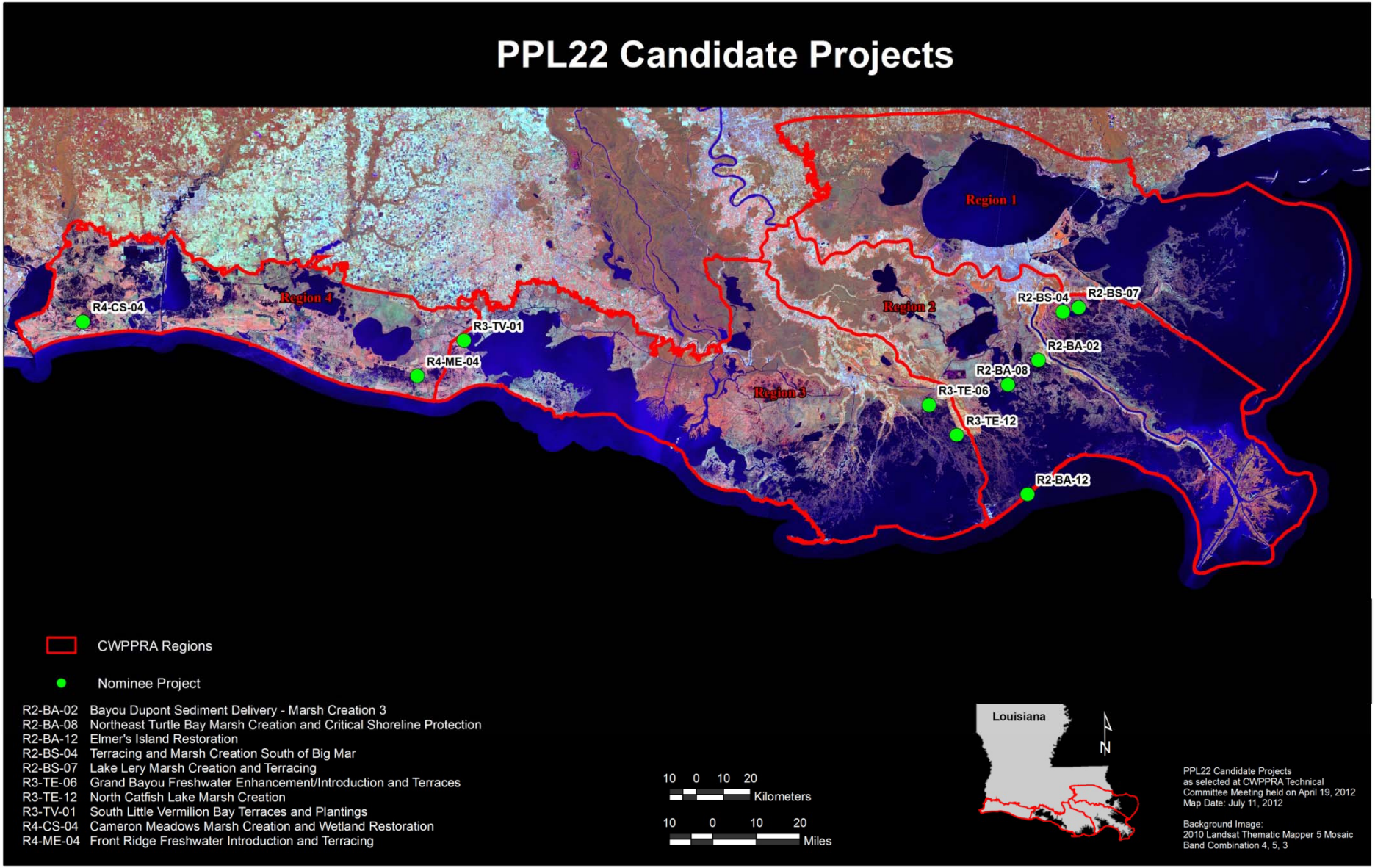
93 net acres

$6,506,921

Region 4

- Front Ridge Freshwater Introduction and Terracing
- Cameron Meadows Marsh Creation and Terracing

PPL 22 Candidate Projects



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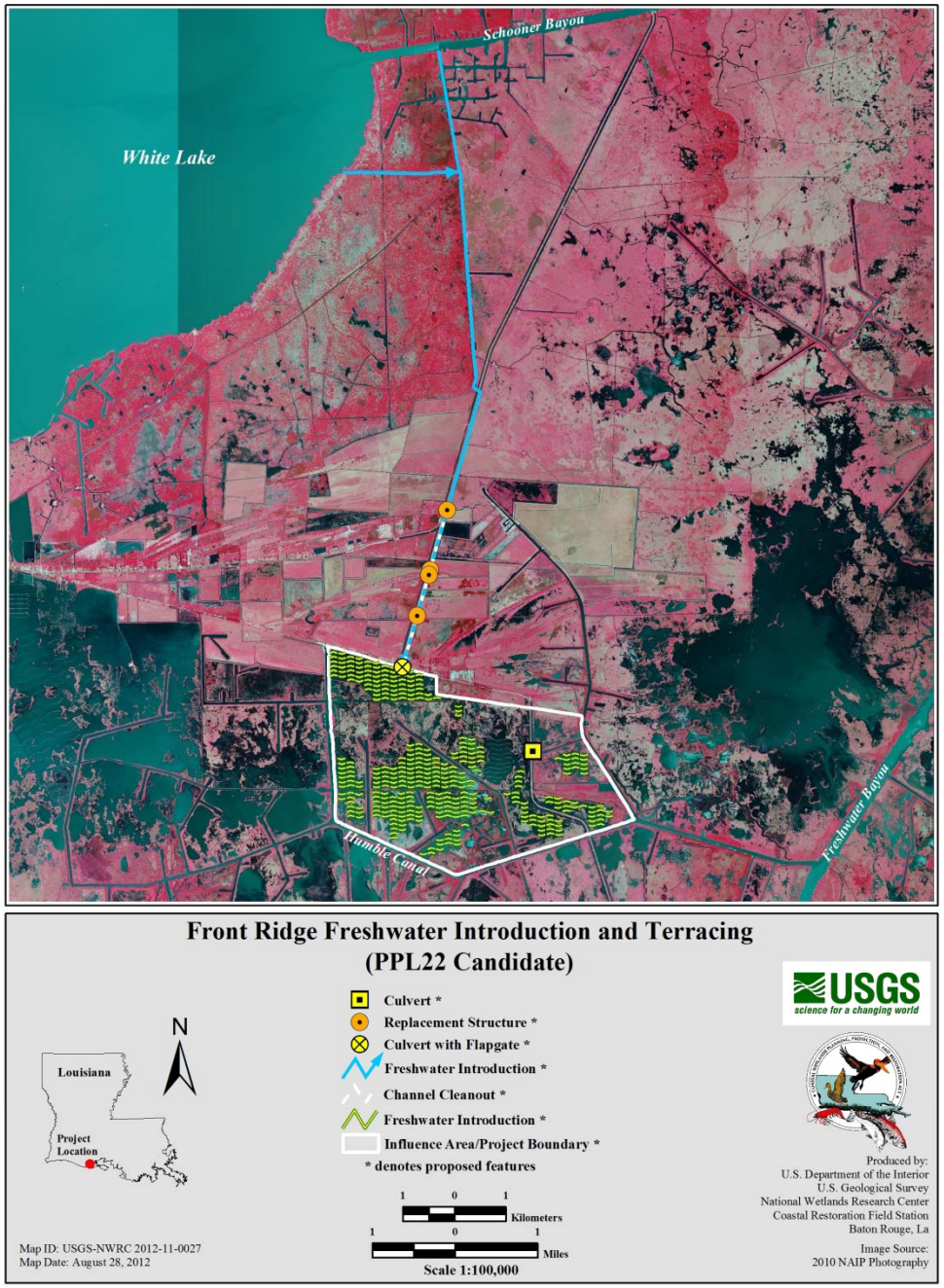


Approx. 181,500 ft of terracing and freshwater introduction

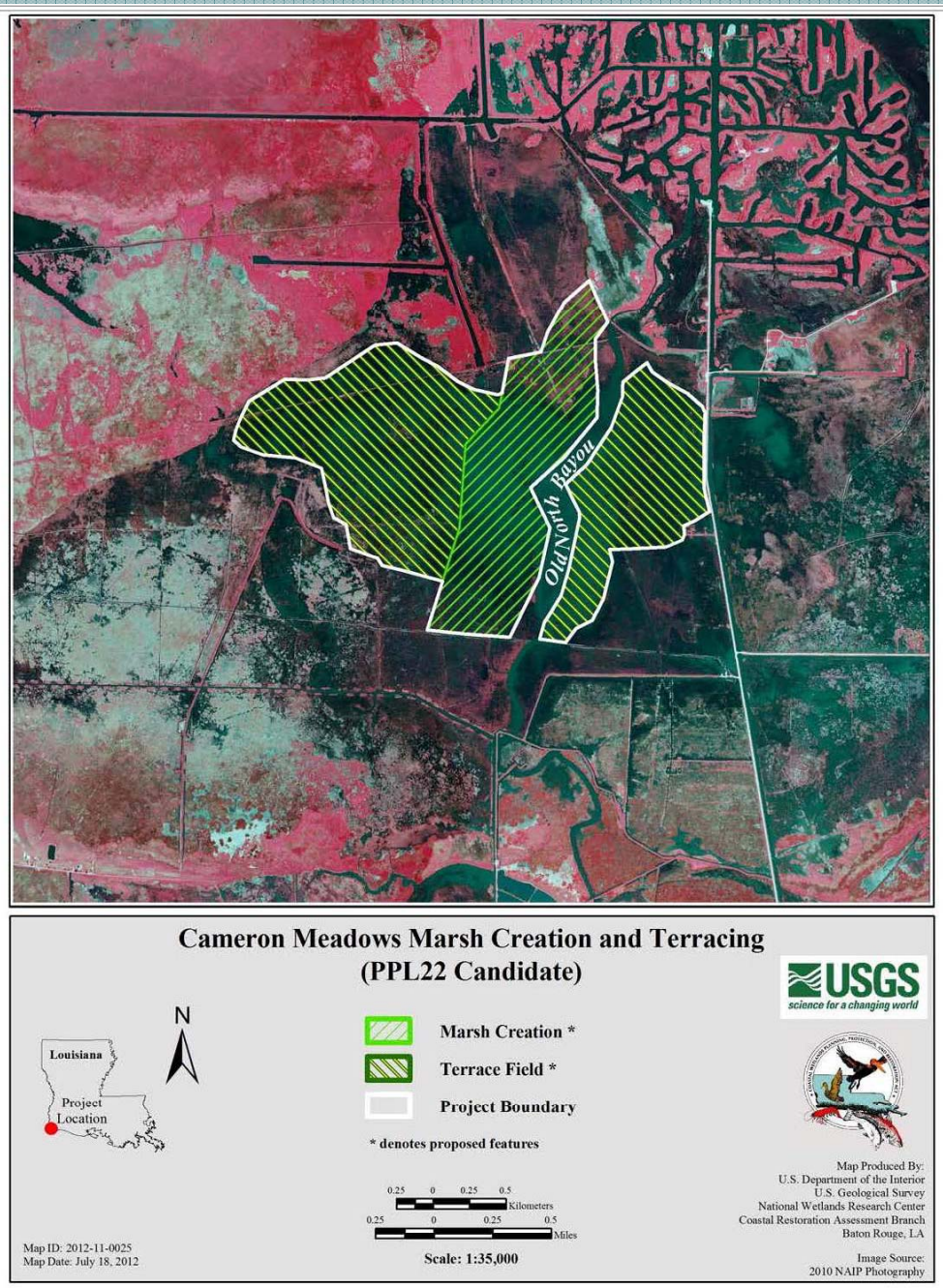
Majority of necessary infrastructure exists

Construct an outlet structure at Front Ridge

134 net acres

$13,622,423

CWPPRA



352 ac of marsh creation

Gulf of Mexico borrow site

Construct 35,000 ft of terraces

Cleaning out over 30,000 ft of canals

265 net acres

$27,685,820

PPL 22 Candidate Project Evaluation Matrix

Project Name	Region	Parish	Project Area (acres)	Average Annual Habitat Units (AAHU)	Net Acres	Total Fully Funded Cost	Fully-Funded Phase I Cost	Fully-Funded Phase II Cost	Average Annual Cost (AAC)	Cost Effectiveness (AAC/AAHU)	Cost Effectiveness (Cost/Net Acre)
Lake Lery Shoreline Marsh Creation and Terracing	2	St. Bernard	859	184	403	$31,377,030	$3,198,248	$28,178,782	$2,263,028	$12,299	$77,859
Terracing and Marsh Creation South of Big Mar	2	Plaquemines	1,396	80	302	$23,692,705	$2,308,599	$21,384,106	$1,717,292	$21,466	$78,453
Bayou Dupont Sediment Delivery-Marsh Creation 3	2	Plaquemines/ Jefferson	415	166	383	$38,279,163	$3,415,930	$34,863,233	$2,735,823	$16,481	$99,946
Northeast Turtle Bay Marsh Creation and Critical Area Shoreline Protection	2	Jefferson	769	282	492	$40,494,122	$3,474,110	$37,020,012	$2,897,273	$10,274	$82,305
Elmer's Island Restoration	2	Jefferson	494	146	272	$35,745,200	$3,974,176	$31,771,024	$2,549,848	$17,465	$131,416
North Catfish Lake Marsh Creation	3	Lafourche	666	256	401	$30,385,887	$3,216,194	$27,169,693	$2,201,005	$8,598	$75,775
Grand Bayou Freshwater Enhancement and Terracing	3	Lafourche	26,510	607	655	$30,344,992	$3,206,177	$27,138,815	$2,078,687	$3,425	$46,328
South Little Vermilion Bay Plantings and Terracing	3	Vermilion	392	17	93	$6,506,921	$777,158	$5,729,763	$436,858	$25,698	$69,967
Front Ridge Freshwater Introduction and Terracing	4	Vermilion	4,083	277	134	$13,622,423	$1,954,290	$11,668,133	$920,110	$3,322	$101,660
Cameron Meadows Marsh Creation and Terracing	4	Cameron	989	106	265	$27,685,820	$3,108,025	$24,577,795	$1,974,281	$18,625	$104,475

Candidate Demonstration Projects

- Hay Bale Demo
- Reconnection of Hydrologically Isolated Wetlands
- CREPS: Coastal Restoration and Energy Productions System
- Bioengineering of Shoreline and Canal Banks using Live Stakes

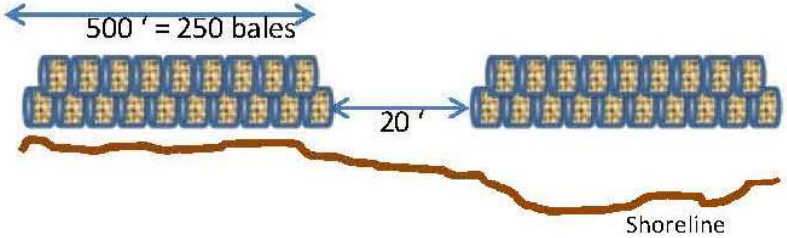
Hay Bale Demo

- Goals: (1) Deploy and test various approaches for restoring eroding marsh/banks/shorelines. (2) Demonstrate the versatility of hay bales in restoration, as an alternative to traditional methods.
- Features: "Barriers" of 800-lb round bales of hay will be constructed to suppress the erosive effects of wave action on shorelines forming a more "natural" barrier compared to traditional methods. Approximately 1500 ft of double row hay bales would be placed in a linear "barricade alignment" near shore, with 3 replicate 500-foot sections and 20-foot gaps in between each section. In addition, the utilization of hay bales as containment for dredged material will also be evaluated. This treatment is intended to investigate a different method of containment in areas unsuitable for earthen dike construction. Three 0.9-acre cells consisting of a double wall of hay bales will be constructed.
- Cost: The total fully funded cost is $2,126,843.

Hay Bale Demo

Placements Near Shore:

Figure 1: Nearshore Barricade- Double Row (3 reps = 750 bales total)



Round Hay Bales

Placements in Open Water Areas:

Figure 2: Double Row for Containment (3 reps = 1200 bales)

200' x 200' = 400 bales
(0.9 acres)

Reconnection of Hydrologically Isolated Wetlands

- Goals: (1) Assess the size or number of connections necessary to re-establish the hydrology within an isolated wetland and improve the connectivity to the surrounding marsh in order to restore ecological function. (2) Improve the soil chemistry by decreasing soil waterlogging. (3) Reduce stress on vegetation. (4) Improve fisheries access.

- Features: Re-establish the connectivity to the surrounding wetlands by opening hydrologic pathways. It is anticipated that 1-3 impounded locations will be used, each with a reconnected and non-reconnected control. Approximately 500 linear feet (ft) of gaps (or spoil bank degradation) would be constructed at each of the locations for a total of 3,000 ft. The gap lengths tested would include the present minimum standard of 25 ft being used on CWPPRA projects. Additional size and/or number of gaps or degrading would be tested.

- Cost: The total fully funded cost is $1,724,012.

Reconnection of Hydrologically Isolated Wetlands

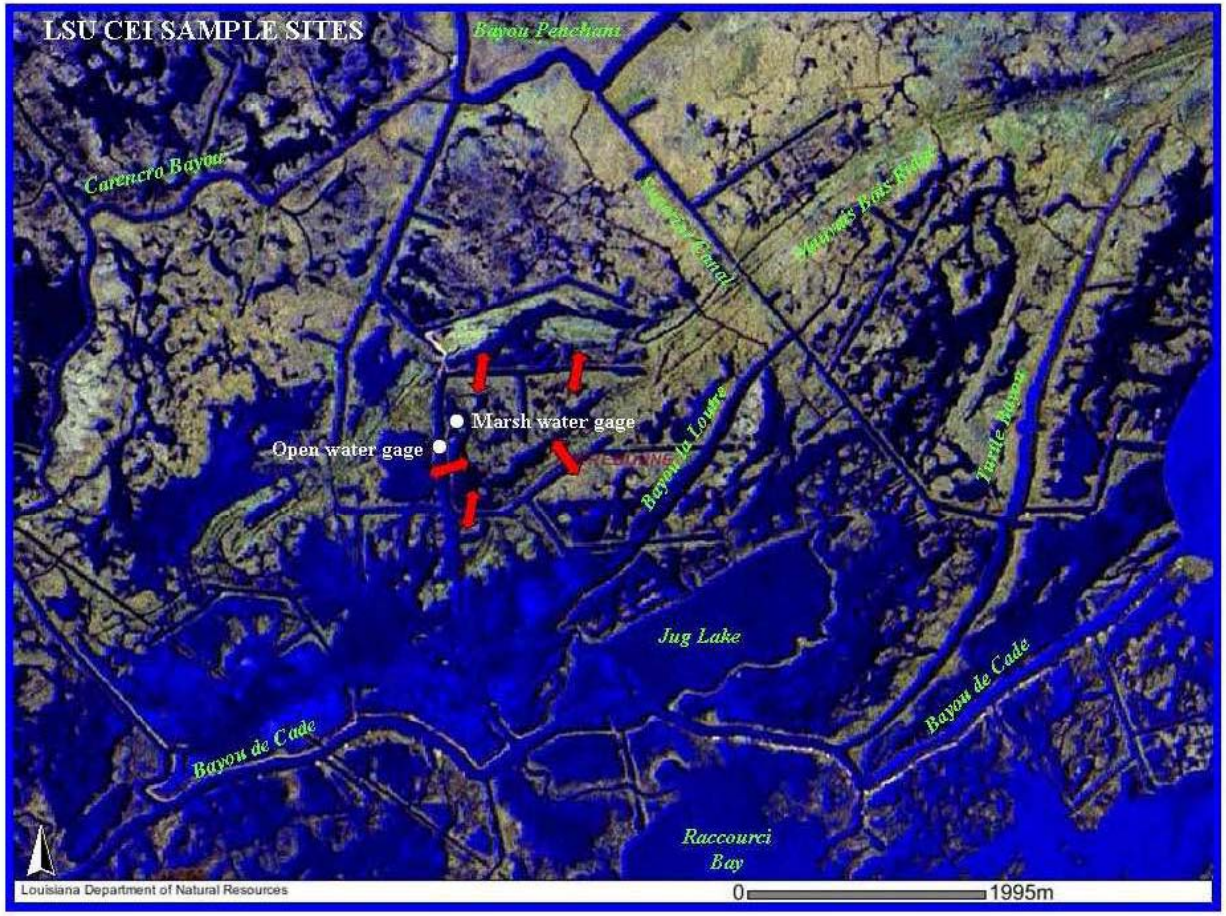


Figure 1. Example of an impounded site (surrounded by spoil banks) in an intermediate marsh in Terrebonne Parish. The red arrows indicate possible locations to gap (or degrade spoil banks) to re-establish hydrologic connectivity.

Reconnection of Hydrologically Isolated Wetlands

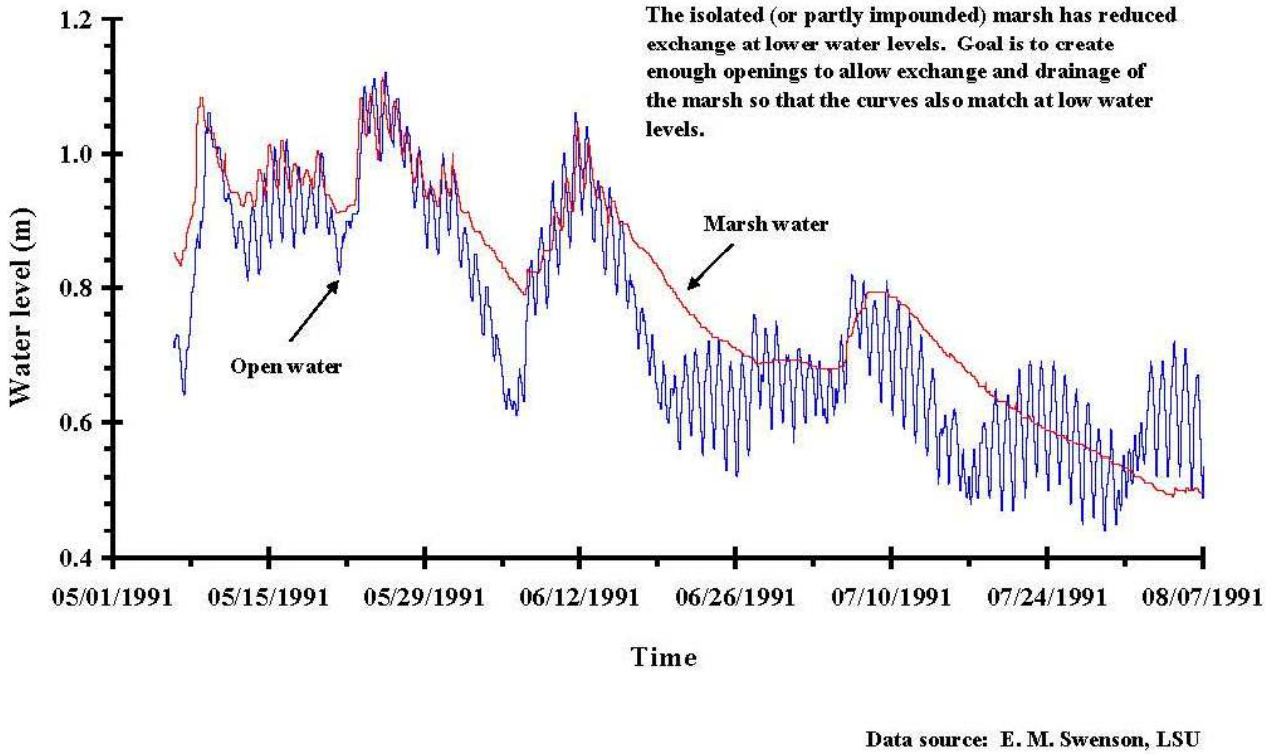
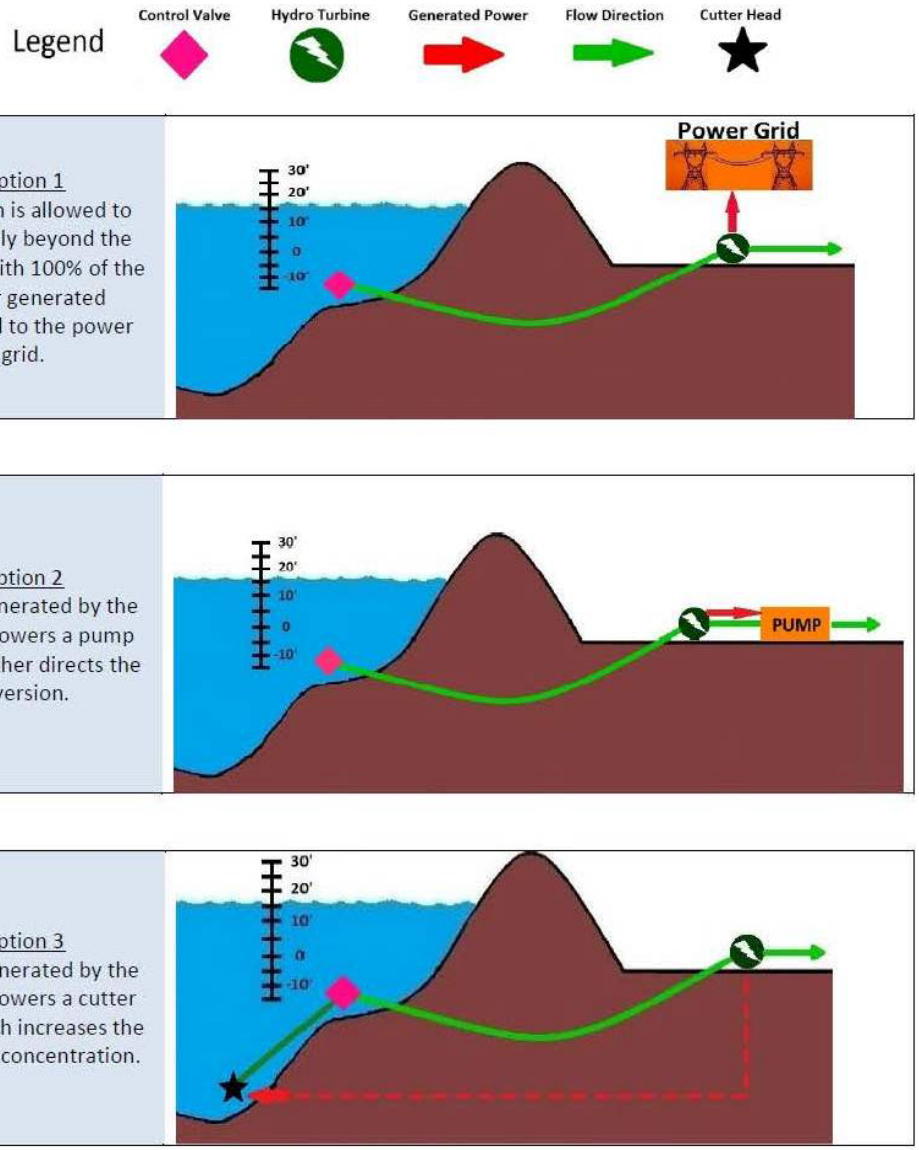


Figure 2. Example of marsh water levels (red) in an impounded marsh and in the adjacent open water (blue) at an intermediate marsh site in Terrebonne Parish (Figure 1). The site floods and drains during high water level events but drainage is limited (by spoil banks) at lower water levels leading to increased waterlogging.

CREPS: Coastal Restoration & Energy Production System

- Goals: (1) Demonstrate the potential use of the CREPS diversion technology for supplying degraded wetlands with fresh water and sediment. (2) Investigate the potential capture and utilization of hydroelectric power from the diversion.
- Features: CREPS consists of a 30-inch pipe horizontally drilled under a levee system (>8 ft below the levee), with input on the river side and the output outside of the levee. Because the average level of the river is higher in elevation than the wetlands, hydrostatic forces will force river water through the pipe. A hydrokinetic turbine will be fixed to the output and generate power. This electricity can then be used to power pumps to further direct the diverted river water or uploaded to the transmission grid to generate revenue.
- Cost: The total fully funded cost is $3,357,745.

CREPS: Coastal Restoration & Energy Production System

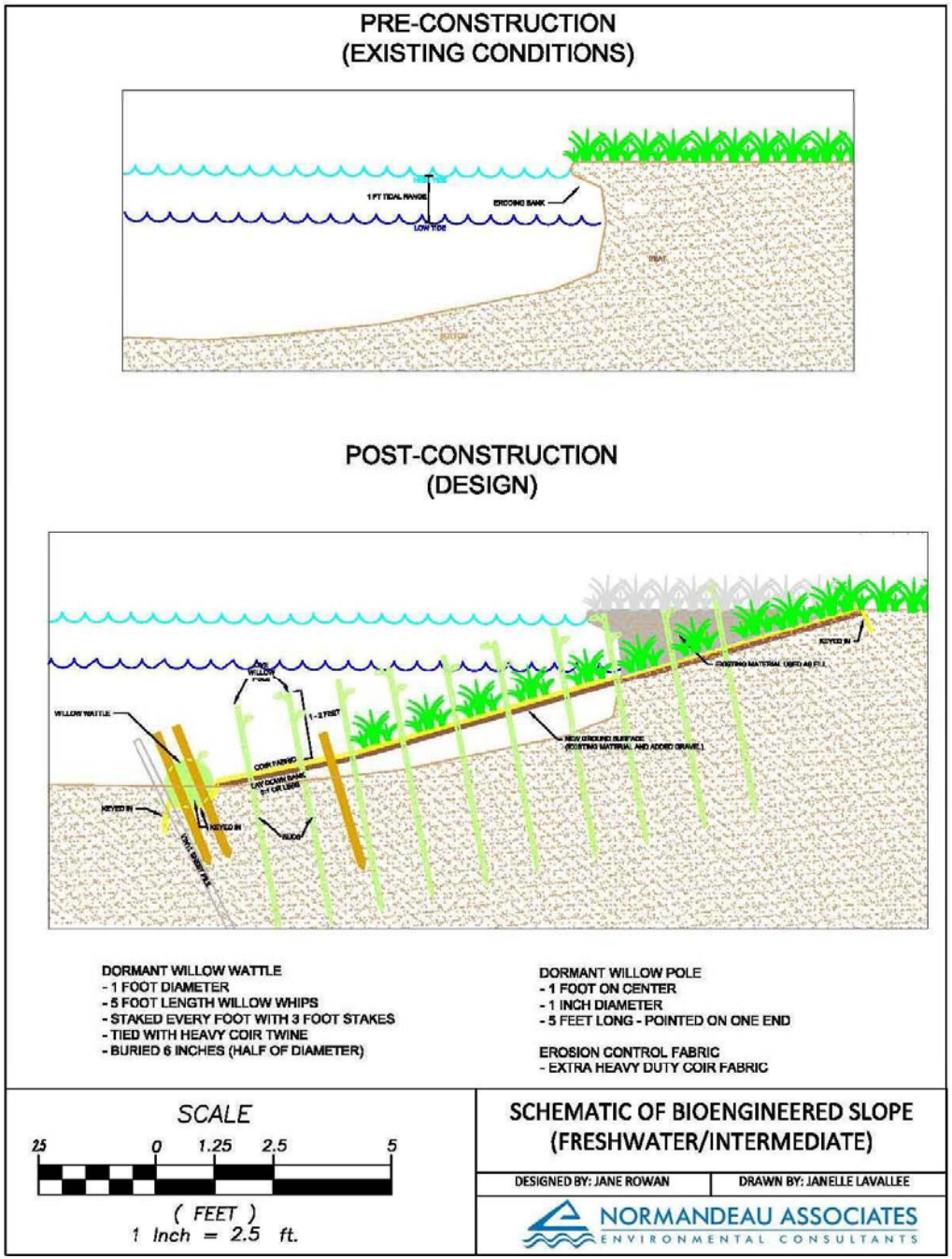


Bioengineering of Shoreline & Canal Banks using Live Stakes

- Goal: Demonstrate an alternative to traditional shoreline protection techniques – an ecological engineering approach to stabilization of existing shoreline features and attenuation of shoreline retreat.

- Features: The stabilization materials have a variety of application possibilities that can be adjusted to best suit many different types of coastal environments. A staggered terrace-like orientation can break up wave action, reduce turbidity, and allow sediment to settle, potentially accreting and creating marsh. The use of native woody materials ensures the use of native plants and provides a relatively inexpensive source of plant materials. In combination with the erosion control materials, a variety of configurations in planting the shallows, shoreline, and near shore areas will begin the reestablishment of a native plant community. The demonstration would include the selection of 3 diverse application sites for treatment. Each treatment would include 3 replicate 500-foot sections for a total project installation of 4,500 linear feet.

- Cost: The fully funded cost is $2,562,494.



Bioengineering of Shoreline & Canal Banks using Live Stakes

PPL 22 Demonstration Project Evaluation Matrix

10/30/2012

(Parameter grading as to effect: 1 = low; 2 = medium; 3 = high)

Demonstration Project Name	Lead Agency	Total Fully Funded Cost	Parameter (P_n)						Total Score	Averaging of Agency Scores
			P_1 Innovativeness	P_2 Applicability or Transferability	P_3 Potential Cost Effectiveness	P_4 Potential Env Benefits	P_5 Recognized Need for Info	P_6 Potential for Technological Advancement		
Hay Bale Demo	USACE	$2,126,843	2	2	2	2	2	1	**11**	11.6
Reconnection of Hydrologically Isolated Wetlands	NMFS	$1,724,012	1	2	2	3	1	1	**10**	11.0
CREPS: Coastal Restoration & Energy Production System	CPRA	$3,357,745	2	1	1	2	1	2	**9**	8.9
Bioengineering of Shorelines & Canal Banks using Live Stakes	EPA	$2,562,494	2	2	2	2	2	1	**11**	11.3

"Total Score" calculation: Individual parameter scores were determined from the score having the majority of the vote.
Example - if 4 agencies cast a vote of "3" and 3 agencies cast a vote of "2", then a score of "3" was given.

"Averaging of Agency Scores" calculation: Calculated by averaging the Total Scores from each Agency.

Demonstration Project Parameters

(P_1) *Innovativeness* - The demonstration project should contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone. The technology demonstrated should be unique and not duplicative in nature to traditional methods or other previously tested techniques for which the results are known. Techniques which are similar to traditional methods or other previously tested techniques should receive lower scores than those which are truly unique and innovative.

(P_2) *Applicability or Transferability* - Demonstration projects should contain technology which can be transferred to other areas of the coastal zone. However, this does not imply that the technology must be applicable to all areas of the coastal zone. Techniques, which can only be applied in certain wetland types or in certain coastal regions, are acceptable but may receive lower scores than techniques with broad applicability.

(P_3) *Potential Cost Effectiveness* - The potential cost-effectiveness of the demonstration project's method of achieving project objectives should be compared to the cost-effectiveness of traditional methods. In other words, techniques which provide substantial cost savings over traditional methods should receive higher scores than those with less substantial cost savings. Those techniques which would be more costly than traditional methods, to provide the same level of benefits, should receive the lowest scores. Information supporting any claims of potential cost savings should be provided.

(P_4) *Potential Environmental Benefits* - Does the demonstration project have the potential to provide environmental benefits equal to traditional methods? somewhat less than traditional methods? above and beyond traditional methods? Techniques with the potential to provide benefits above and beyond those provided by traditional techniques should receive the highest scores.

(P_5) *Recognized Need for the Information to be Acquired* - Within the restoration community, is there a recognized need for information on the technique being investigated? Demonstration projects which provide information on techniques for which there is a great need should receive the highest scores.

(P_6) *Potential for Technological Advancement* - Would the demonstration project significantly advance the traditional technology currently being used to achieve project objectives? Those techniques which have a high potential for completely replacing an existing technique at a lower cost and without reducing wetland benefits should receive the highest scores.

Project Selection

- CWPPRA Technical Committee meets on December 12 in Baton Rouge at the State Library's Seminar Center (1st floor).
  - 4 projects will be selected by agency vote for Phase 1 (E&D) funding
  - 1 demonstration project may be selected for funding
- CWPPRA Task Force meets on January 24 in New Orleans at the Corps of Engineers.
  - Project selection by the Technical Committee is usually accepted

Comments

Written comments may be provided no later than November 28, 2012 to the CWPPRA Task Force by mail, fax or email to:

Mail: Colonel Edward R. Fleming
District Engineer, New Orleans
c/o: Brad Inman
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