Priority Project List Number 14
Candidate Projects

Public Meetings -- November 2004

Abbeville New Orleans

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The 14th Priority List Planning Process

- Citizens nominated 11 projects across the Louisiana coastal zone at Regional Planning Team (RPT) meetings held in February 2004.

- At the direction of the CWPPRA Task Force, the Technical Committee selected 6 candidate projects for detailed evaluation on March 19, 2004.

- Interagency project site visits were conducted with the participation of interested landowners and local government representatives during the late spring and early summer.

- Members of the Environmental and Engineering Workgroups met to review project features, aerial videotapes, and field notes to determine project boundaries.

- Environmental Workgroup conducted Wetland Value Assessments (WVA) on each candidate project to estimate environmental benefits.

- Engineering Workgroup reviewed designs and cost estimates for each project.

- The work groups met jointly to prioritize the candidate projects.

- Economics Workgroup projected fully funded costs to construct, monitor and maintain each candidate project.

- Hold public meetings to present project evaluation results.

- On December 16, 2004, the Technical Committee will review project evaluation results and develop a recommendation to the Task Force for project selection.

- The CWPPRA Task Force will select the 14th Priority Project List on January 26, 2005.

Irish Bayou to Chef Menteur Pass Shoreline Protection and Marsh Creation

Coast 2050 Strategies:
Coastwide: Dedicated dredging to create, restore, or protect wetlands; Maintenance of Gulf, bay, and lake shoreline integrity.
Regional: Dedicated delivery of sediment for marsh building; Maintain shoreline integrity of Lake Pontchartrain to protect regional ecosystem values; Maintain Eastern New Orleans land bridge by marsh creation and shoreline protection.
Mapping Unit: Dedicated dredging; Maintain shoreline integrity.

Project Location:
Region 1, Pontchartrain Basin, Orleans Parish, East Orleans land bridge mapping unit, Point aux Herbes south along Lake Pontchartrain to Chef Menteur Pass.

Problem:
The project area consists of a relatively narrow segment of marsh and shallow open water between an existing Federal hurricane protection levee, Interstate-10, and Lake Pontchartrain. As the shoreline deteriorates and retreats, the threat to interior marsh and local infrastructure becomes elevated as they are exposed to the high-energy conditions of Lake Pontchartrain. The erosion rate along the shoreline of Lake Pontchartrain between Point aux Herbes and Chef Menteur Pass, based on an analysis of shoreline change, varies between 5 feet and 54 feet per year.

Goals:
The goals of the project are to stop shoreline erosion and create marsh behind the shoreline in two key areas of loss in order to prevent the lake shore from breaking into the interior marsh ponds.

Proposed Solution:
1. Approximately 20,700 linear feet of rock dike will be constructed along the –2.0 foot contour extending from Point aux Herbes to Chef Menteur Pass.

2. Approximately 46 acres of marsh will be created by hydraulically dredging material from the bottom of Lake Pontchartrain, and placing it into the confined marsh creation sites as shown on the project map.

Project Benefits:
The project would benefit about 249 acres of brackish marsh and open water. Approximately 147 acres of marsh would be created/protected over the 20-year project life.

Project Costs:
The total fully funded cost for the project is $13,252,000.

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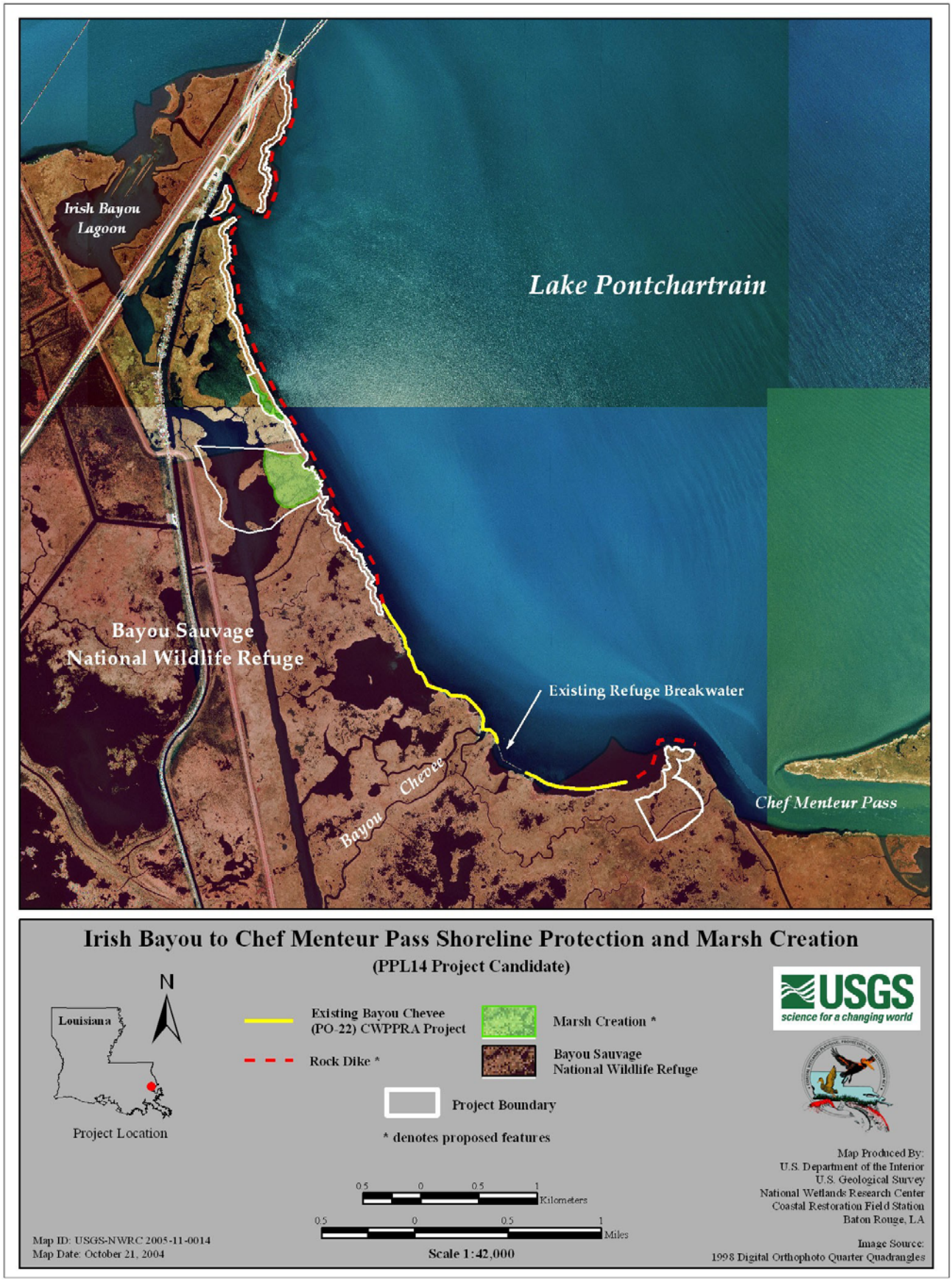
Irish Bayou Lagoon
Lake Pontchartrain
Bayou Sauvage National Wildlife Refuge
Existing Refuge Breakwater
Bayou Chevee
Chef Menteur Pass
Irish Bayou to Chef Menteur Pass Shoreline Protection and Marsh Creation
(PPL14 Project Candidate)
N
Louisiana
Project Location
Existing Bayou Chevee (PO-22) CWPPRA Project
Rock Dike *
Marsh Creation *
Bayou Sauvage National Wildlife Refuge
Project Boundary
* denotes proposed features
0.5 0 0.5 1 Kilometers
0.5 0 0.5 1 Miles
Scale 1:42,000
USGS science for a changing world
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
Image Source:
1998 Digital Orthophoto Quarter Quadrangles
Map ID: USGS-NWRC 2005-11-0014
Map Date: October 21, 2004

Riverine Sand Mining/Scofield Island Restoration

Coast 2050 Strategies:
Dedicated Dredging, to Create, Restore, or Protect Wetlands; Maintenance of Gulf, Bay and Lake Shoreline Integrity; Vegetative Planting; Off-shore and Riverine Sand and Sediment Resources; Extend and maintain barrier headlands, islands and shorelines; Beneficial Use of Dredged Sediment; Restore Barrier Islands

Project Location:
The project area is located between Scofield Bayou and where Bay Coquette has merged with the Gulf of Mexico along the Plaquemines Barrier Shoreline, in Plaquemines Parish, Louisiana. The project is located in Region Two, southeastern edge of Barataria Basin, Barataria Barrier Shorelines mapping unit or approximately 10 miles southwest of Venice.

Problem:
A large breach exists in the shoreline that developed early in 2003, after Hurricane Lili. The Gulfside erosion rate is 13.0 feet/year based on 1853 to 1989 and 13.2 feet/yr from 2000 to 2004. With the passage of Hurricane Lili in 2002 and the relative high frequency of tropical storms in 2003, it is expected that the shoreline erosion rates and percent loss per year have increased. Wetlands, dune, and swale habitats within the project area have undergone substantial loss due to oil and gas activities (e.g., pipeline construction), subsidence, sea-level rise, and marine and wind induced erosion causing landward transgression and more recently breaching and breakup.

Goals:
The goals of this project are to repair breaches and tidal inlets in the shoreline, reinforce the existing shoreline with sand, and increase the island width with back barrier marsh creation to increase longevity. The design approach is to maximize surface area habitat remaining after 20 years by preventing shoreline breaching through introduction of riverine sand and offshore fine sediment.

Proposed Solution:
The project features include construction of approximately 101 acres of dune and 328 acres of supratidal elevations of dune fore and back slopes and marsh platform. Of that acreage, approximately 278 acres would settle to intertidal back barrier marsh. The dune would be +6 feet high, approximately 250 ft wide along 12,700 feet of Gulf shoreline. A double row of sand fencing would be installed along the length of the dune concurrent with heavy construction. A tidal pond would be constructed in the marsh platform and approximately three years after construction, retention dikes would be gapped as needed to ensure tidal exchange with the marsh platform. Other tidal features would be incorporated during advanced design. The dune and marsh platforms would be planted over three years and would include 4-inch containers of bitter panicum, Gulf cordgrass, and marshhay cordgrass, and gallon containers of seaoats, multi-stem plugs of smooth cordgrass, 4-inch containers of matrimony vine, and tube-tainers of black mangrove. Additional woody species would be planted on the dune.

Project Benefits:
The project would benefit over 500 acres of dune, swale, saline marsh and open water habitat. Breaching would be prevented for 20 years resulting in the net of 234 acres of barrier shoreline habitat.

Project Costs:
The total fully funded cost for the project is $44,545,000.

Preparer of Fact Sheet:
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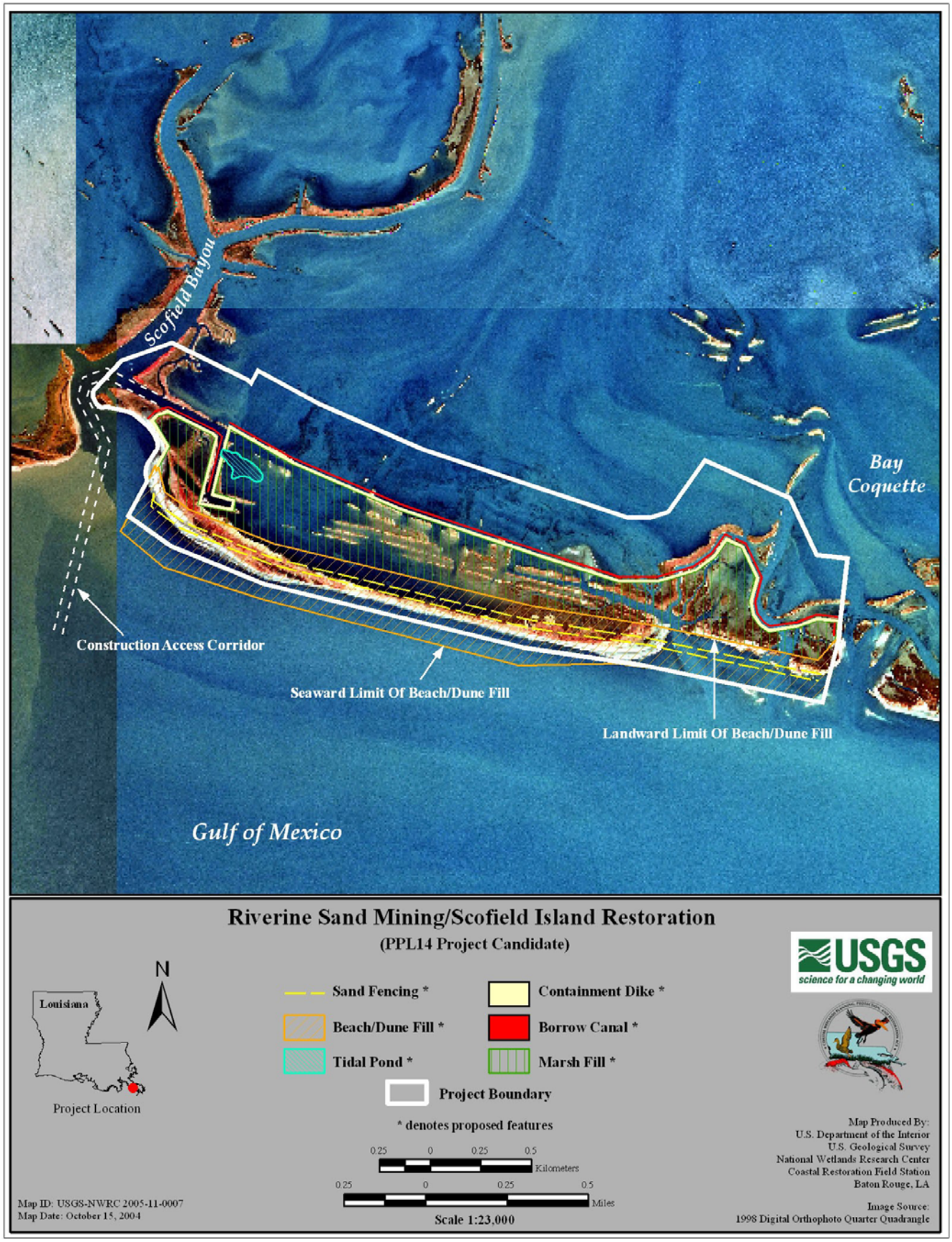
Scofield Bayou
Bay Coquette
Construction Access Corridor
Seaward Limit Of Beach/Dune Fill
Landward Limit Of Beach/Dune Fill
Gulf of Mexico
Riverine Sand Mining/Scofield Island Restoration
(PPL14 Project Candidate)
N
Louisiana
Project Location
Sand Fencing *
Containment Dike *
Beach/Dune Fill *
Borrow Canal *
Tidal Pond *
Marsh Fill *
Project Boundary
* denotes proposed features
0.25 0 0.25 0.5
Kilometers
0.25 0 0.25 0.5
Miles
Scale 1:23,000
USGS
science for a changing world
Map ID: USGS-NWRC 2005-11-0007
Map Date: October 15, 2004
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
Image Source:
1998 Digital Orthophoto Quarter Quadrangle

South Shore of The Pen Shoreline Protection and Marsh Creation

Coast 2050 Strategies:
Preserve bay and lake shoreline integrity on the landbridge
Dedicated dredging to marsh on the landbridge

Project Location:
Region 2, Barataria Basin, Jefferson Parish, South Shore of the Pen, Bayou Dupont, Barataria Bay Waterway.

Problem:
The triangular landmass bounded by the southern shoreline of The Pen, the Barataria Bay Waterway (Dupre Cut) and the Pipeline Canal is deteriorating due to shoreline erosion (ranging from 4 to 27 feet per year) and interior marsh loss. Loss of this protective landmass would provide a more direct connection between the marine/tidal processes of the lower Barataria Basin and the freshwater-dominated upper basin.

Goals:
The goals of this project are to stop shoreline erosion and to create (74 acres) and nourish (107 acres) of marsh located between The Pen and Barataria Bay.

Proposed Solution:
Approximately 1,000 feet of concrete pile and panel wall and 10,900 feet of rock revetment would be constructed along the south shore of The Pen and Bayou Dupont. Two existing bayous will remain open and a site-specific opening to The Pen will be incorporated at the eastern marsh creation site. Dedicated dredging would be used to create approximately 74 acres of marsh, and nourish an additional 107 acres of marsh, within the triangular area bounded by the south shore of The Pen, the Barataria Bay Waterway (Dupre Cut) and the Creole Gas Pipeline canal. Target elevation after compaction and settlement is 1.3 feet NAVD88. In the marsh nourishment zone, the target deposition thickness after compaction and settlement is 0 to 0.5 foot above existing marsh platform. Containment dikes constructed for marsh creation and nourishment will be degraded upon completion of construction.

Project Benefits:
It is estimated that the project would prevent the loss of 47 acres of marsh due to shoreline erosion, create 74 acres of marsh, and nourish 107 acres of intermediate marsh. Over the 20-year project life, it is estimated that the project will produce 116 net acres.

Project Costs:
The total fully funded cost for the project is $17,514,000.

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South Shore of The Pen
Shoreline Protection and Marsh Creation

(PPL14 Project Candidate)

Existing BA-26 Shoreline Protection

Shoreline Protection*

Marsh Creation*

Marsh Nourishment*

Project Boundary

* denotes proposed features

N

Louisiana

Project Location

1 0 1 Kilometers

1 0 1 Miles

Scale 1:20,000

USGS science for a changing world

Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station

Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle

Map ID: USGS-NWRC 2004-11-0497
Map Date: August 20, 2004

Venice Ponds Marsh Creation

Coast 2050 Strategy:
Dedicated dredging for marsh creation.

Project Location:
Region 2, Mississippi River Delta Basin, Plaquemines Parish, south of Venice, Louisiana, adjacent to the Red, Tiger, and Grand Passes.

Problem:
The Birdsfoot Delta is losing land at a rapid rate, mainly due to a high subsidence rate of 3-5 feet per century, lack of sediment input, and damage from hurricanes. In September 2004, Hurricane Ivan did additional damage to the delta marshes. The project would create marsh in ponds that were nearly solid wetlands in 1956 and are now mostly open water.

Goals:
The goals of the project are to create, maintain, nourish, and replenish existing deteriorating wetlands. The primary goal is to create over 700 additional acres of emergent marsh.

Proposed Solution:
1. Marsh will be created in Sites 1, 2 and 3 (see Project Map) by hydraulically dredging material from Grand and Tiger Passes. The target elevation after one year in the Sites will be a maximum of +3.0 ft. NGVD and a minimum of +1.0 ft. NGVD. Existing marsh boundaries will aid in the retention of dredged material and re-establishment of marsh habitat. Some earthen dikes will be constructed to contain and train the dredge slurry as needed.

2. A small crevasse channel, which will convey approximately 100 cfs, will be constructed to nourish the existing marsh, newly constructed marsh, and the wetland forest in Site 3.

3. A culvert will be constructed to maintain a hydrologic connection between Site 2 and the adjacent channel.

Project Benefits:
The project would benefit 919 acres of fresh marsh and open water. Approximately 710 acres of new marsh would be created. At the end of 20 years, there would approximately 593 acres of marsh remaining due to subsidence and other factors. This marsh would provide some additional protection to Venice during hurricanes.

Project Costs:
The total fully funded cost for the project is $20,172,000.

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Venice Ponds Marsh Creation

(PPL14 Project Candidate)

Culvert *

Crevasse *

Marsh Creation *

Project Boundary

* denotes proposed features

N

Louisiana

Project Location

0.25 0 0.25 0.5 Kilometers

0.25 0 0.25 0.5 Miles

Scale 1:21,500

USGS science for a changing world

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

Image Source:
1998 Digital Orthophoto Quarter Quadrangle

Map ID: USGS-NWRC 2004-11-0516
Map Date: October 25, 2004

White's Ditch Resurrection and Outfall Management

Coast 2050 Strategies:
Regional 5. Manage outfall of existing diversions.
Regional 8. Construct most effective small diversions.

Project Location:
Region 2, Breton Sound Basin, Plaquemines Parish, River aux Chenes Mapping Unit, White's Ditch.

Problem:
The area is not receiving any water from the Mississippi River since the siphon operation has been discontinued. The addition of another siphon doubles the amount of diversion able to reach the area.

Goals:
Reduce erosion rate by introduction of freshwater, nutrients, and to lesser degree sediment into interior marshes.

Proposed Solution:
1) Gated plug in the outfall channel (approx. two miles below siphon) to force water to enter interior marshes.

2) Install additional siphon of same size (existing – two 50 inch diameter steel pipes currently allow approximately 250 cfs).

Project Benefits:
The project would benefit 8,224 acres of fresh/intermediate marsh and open water. Approximately 189 acres of marsh would be created/protected over the 20-year project life.

Project Costs:
The total fully funded cost for the project is $14,845,000.

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White's Ditch Resurrection and Outfall Management

(PPL14 Project Candidate)

Project Location

N

Culvert

Siphon

Water Control Structure *

Siphon *

Project Boundary

* denotes proposed features

0.5 0 0.5 1 Kilometers

0.5 0 0.5 1 Miles

Scale 1:57,000

USGS science for a changing world

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

Image Source:
1998 Digital Orthophoto Quarter Quadrangle

Map ID: USGS-NWRC 2004-11-0498
Map Date: September 14, 2004

East Marsh Island Marsh Creation

Coast 2050 Strategies:
Dedicated dredging to create, restore or protect wetlands
Maintenance of gulf, bay and lake shoreline integrity
Vegetative planting

Project Location:
Region 3, Teche/Vermilion Basin, Iberia Parish, East end of Marsh Island Wildlife Refuge, SE of Lake Sand.

Problem:
Substantial areas of interior emergent marsh on Marsh Island have been converted to open water, primarily due to Hurricane Lili. Areas targeted by this project are those with the greatest historic land loss and within close proximity to East Cote Blanche Bay. Marsh creation was initially planned behind the existing two easternmost rock dikes constructed as part of TV-14 CWPPRA Project but was dropped from the project due to costs.

Goals:
Re-create brackish marsh habitat in the open water areas of the interior marsh primarily caused by hurricane damage. The project will also create marsh behind the two easternmost existing rock dikes.

Proposed Solution:
Create approximately 189 acres of interior emergent marsh with hydraulically dredged material from East Cote Blanche Bay. The created areas will be planted with plugs of smooth cordgrass on approximately 5-ft centers. Nourish an additional 189 acres of marsh adjacent to areas of dredge fill.

Project Benefits:
Approximately 189 acres of marsh will be created by completely filling in open ponds and planting the created areas. It is anticipated that an additional 189 acres of marsh will be benefited through marsh nourishment as a result of hydraulic dredging for marsh creation without containment dikes. This will allow additional finer material to flow throughout the adjacent marshes of the creation area and provide nourishment. This process will yield a total of 367 acres benefited over the project life. The loss rates for the interior ponded areas are estimated to be reduced by greater than 75%. This project provides a synergistic effect with the constructed TV-14 project.

Project Costs:
The total fully funded cost for the project is $16,824,700.

Preparer of Fact Sheet:
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East Marsh Island Marsh Creation

(PPL14 Project Candidate)

Rock Dike
Marsh Nourishment*
Marsh Creation*
Project Boundary

*denotes proposed features

N

Louisiana

Project Location

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

USGS science for a changing world

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

Image Source:
2001 Color Infrared Aerial Photography - Post Lili

Map ID: USGS-NWRC 2004-11-0461
Map Date: July 19, 2004

Scale 1:32,500

DEMONSTRATION PROJECTS

Section 303(a) of the CWPPRA states that in the development of Priority Project List, ". . . [should include] due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration."

The CWPPRA Task Force on April 6, 1993, stated that: "The Task Force directs the Technical Committee to limit spending on demonstration projects to $2,000,000 annually. The Task Force will entertain exceptions to this guidance for projects that the Technical Committee determines merit special consideration. The Task Force waives the cap on monitoring cost for demonstration projects."

What constitutes a demonstration project:

1. Demonstration projects contain technology that has not been fully developed for routine application in coastal Louisiana or in certain regions of the coastal zone.

2. Demonstration projects contain technology which can be transferred to other areas of the coastal zone.

3. Demonstration projects are unique and are not duplicative in nature.

PPL 14 Demonstration Project Candidates

The following proposed demonstration projects were evaluated for the 14th Priority Project List.

- Barrier Island Sand Blowing Demonstration Project
- Beneficial Use of Dredge Disposal Areas Demonstration Project
- Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demonstration Project
- Floating Wave Attenuator Demonstration Project
- Flowable Fill Demonstration Project
- Sand Fence Alternatives for Dune Formation and Colonial Nesting Bird Platforms on Barrier Islands Demonstration Project
- Wetland Enhancement via Treated Sewage Effluent Diversions Demonstration Project

Barrier Island Sand Blowing Demonstration Project

Coast 2050 Strategy:
Region 1 – revised strategy 14 - restore and maintain barrier islands.

Project Location:
It is recommended demonstrating this technology at Breton Island, although any other barrier island in Louisiana could be selected.

Problem:
Barrier islands are rapidly disappearing as a result of tropical storm and hurricane activity. Storms cause surge that over-wash and often breach the islands. Many times breaches or gaps form in the island that continue to erode and eventually form large cuts in the island. Closing barrier island breaches quickly with high quality sediments is the easiest and least expensive strategy to maintain shoreline integrity. One of the challenges in barrier island restoration is finding the most cost effective and highest quality borrow source available. When a source of sand is found it is often times encumbered by pipeline networks and covered by layers of silts or organics and/or may be too far from the restoration site for cost effective mining and placement.

Goals:
1. To demonstrate the use of the sand blowing technology for the purposes of mining sand sites in the dry and placing (unloading) the sand in the dry.
2. To demonstrate the cost effectiveness of using confined upland disposal sites as a potential source of sand for barrier island restoration projects.
3. To demonstrate the effectiveness of using this placement method to close newly formed gaps (breaches) and/or over-wash areas resulting from major storm events such as tropical storms and hurricanes.
4. To demonstrate the effectiveness of using this placement method to place high quality sediments in precise areas, such as breaches or beaches, on eroding barrier islands

Proposed Solution:
The demonstration project involves the mining of high quality sand (dry) from a USACE, Mobile District's upland confined disposal site using the sand blowing method. The sand will then be placed on a barge and towed to Breton Island. The sand will then be offloaded from the barges and placed on Breton Island using the sand blowing method. The sand will be used to close breaches or areas of over-wash on the island.

Project Benefits:
This project allows use of material not being used beneficially, would decrease impacts to water quality at the disposal site, and avoid impacts resulting from containment dike construction.

Project Costs:
The total fully funded cost for the project is $1,774,000.

Preparer of Fact Sheet:
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Beneficial Use of Dredge Disposal Areas Demonstration Project

Coast 2050 Strategy:
Dedicated dredging or beneficial use of sediment for wetland creation or protection, terracing, vegetation plantings, and beneficial use of dredge material.

Project Location:
Region 4, Cameron Parish, just north and west of Black Lake.

Problem:
This mapping unit has experienced significant land loss, 65%, since 1932, most of which has been attributed to altered hydrology. Increased salinities within the project area have caused interior marsh breakup. As ponds have coalesced, water bodies have grown which exacerbated marsh breakup from wave action.

Goals:
Create emergent marsh; reduce wave energy; establish submerged aquatic vegetation; increase fisheries habitat.

Proposed Solution:
The proposed project will demonstrate the use of dredging technologies to mine upland disposal areas, and improving the design of single point discharge fields for maximum with marsh edge in marsh creation. If taken separately, earthen terraces and hydraulically placed dredge spoil are not new to those involved in wetland restoration. However, the mining of existing dredge spoil uplands as the dredge spoil source while using earthen terraces as perimeter protection has previously been untested in LA and these techniques are potentially applicable across the coastal zone. For this demonstration, a 50-acre area of open water adjacent to existing broken marsh would be used. Approximately 2,700 linear feet of terraces would be constructed for wave suppression during the placement of dredge spoil mounds. Earthen perimeter terraces would have approximate 5' crowns with a 1:5 side slope, and spoil mounds would have a 24-foot diameter. Through the project life, it is anticipated that an additional 7 acres of emergent marsh would become established as a result of the vertical accretion of spoil mound edges by organic matter production. The project would increase the colonization of submerged aquatic vegetation by reducing wave fetch.

Project Benefits:
The project would benefit about 50 acres of intermediate-to-brackish marsh and open water. Approximately 41 acres of marsh would be created/protected over the 5-year project life.

Project Costs:
The total fully funded cost for the project is $2,375,000.

Preparer of Fact Sheet:
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Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demonstration Project

Coast 2050 Strategy:
Stabilize Gulf of Mexico shoreline from old Mermentau River to Dewitt Canal, preserve and stabilize the gulf shoreline, maintain integrity of Gulf of Mexico shoreline where needed.

Project Location:
Region 4, Mermentau Basin, Cameron/Vermilion Parish, Rockefeller Refuge west of Rollover Bayou

Problem:
Louisiana's coastline has received national attention for the past 2-3 decades due to its rapid erosion rates. Poor soil load bearing capacities is one example that could limit the use of more traditional restoration techniques along many areas of coastal Louisiana.

Goals:
The goal of this project is to investigate specific designs of bioengineered reefs and their ability to mitigate erosion. Additional goals focus on environmental benefits both at the time of installation and over the development life of the oysterbreak; and investigation of stability and growth of the structures over time.

Proposed Solution:
Many locations in coastal Louisiana would be appropriate. Because this is intended to be a biologically dominated engineered structure, there is a need for sufficient oyster spat and appropriate growing conditions. Maturity will be influenced by oyster growth rates. Thus, areas of high oyster growth would be preferred. The technology termed an "oysterbreak" is designed to stimulate the growth of biological structures in the shape of submerged breakwaters. The project would entail construction of a near-shore break-water along the Gulf of Mexico shoreline. The break-water would extend from the western bank of Joseph's Harbor canal westward for 600 feet. It would be designed to attenuate shoreline retreat along this stretch of Gulf shoreline, as well as promote shallowing, settling out, and natural vegetative colonization of over-wash material landward of the proposed structure. The resultant design would be placed offshore along the –3' contour. The crest height of the proposed structure would be 6 feet above the Gulf floor, with a 10 foot crown and 1:3 slope on both sides.

Project Benefits:
This project is anticipated to benefit 2.4 acres of saline marsh (600 ln ft X 35 ft/yr X 5 yrs).

Project Costs:
The total fully funded cost for the project is $1,308,000.

Preparer of Fact Sheet:
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Floating Wave Attenuator Demonstration Project

Coast 2050 Strategies:
Coastwide Common Strategy; Maintenance of Bay and Lake Shoreline Integrity, Stabilization of Major Navigation Channels
Region 1 Regional Ecosystem Strategy; Maintain shoreline integrity of Lake Borgne and Biloxi Marsh, Maintain Eastern Orleans Land Bridge by marsh creation and shoreline protection, Stabilize the entire north bank of the MRGO
Region 2 Regional Ecosystem Strategy; Construct wave absorber at the heads of bays, Build entire Breaux Act land bridge shore protection project, Preserve bay and lake shoreline integrity
Region 3 Regional Ecosystem Strategy; maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems including the gulf shorelines, Maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays
Region 4 Regional Ecosystem Strategy; Stabilize Grand Lake and White Lake shorelines, Stabilize Gulf of Mexico shoreline in the vicinity of Rockefeller Refuge, Stabilize Gulf of Mexico shoreline from Calcasieu Pass to Johnson's Bayou

Project Location:
There are multiple projects planned and ongoing that fit within the strategies listed above. One possible application is in Region 1, Pontchartrain Basin, St. Bernard Parish, EPA's Lake Borgne Shoreline Protection Project (PO-30) near Bayou Dupre.

Problem:
Shorelines throughout coastal Louisiana are eroding and exposing the interior marsh to breaches that form channels to convey saltwater into the interior marshes. The most common means of addressing this situation is installation of expensive rock dikes on or near the eroding shorelines, but poor soils that are common throughout the area result in the rock dikes sinking, requiring maintenance and rebuilding in many cases. In addition, the installation of rock dikes often requires dredging of flotation channels, which can be problematic when there are submerged cultural or ecological resources in the area.

Goals:
Test several floating wave attenuation systems with different mooring systems to determine if the products can protect the shoreline in a low to moderate wave energy application.

Proposed Solution:
Install three or four 500-foot long sections of floating wave attenuator systems as part of a project. Each product should be installed according to the manufacturer's installation recommendations, visually inspected once a year for structural integrity, sediment accretion, and wave energy reduction.

Project Benefits:
If successful, the systems will protect the shorelines at a cost comparable to rock dikes, with less site disturbance and perhaps less operation and maintenance costs. In some cases, the system may be manufactured locally within Louisiana rather than importing stone from other states, resulting in a more environmentally preferred and sustainable alternative.

Project Costs:
The total fully funded cost is $1,278,000.

Preparer of Fact Sheet:
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Flowable Fill Demonstration Project

Coast 2050 Strategies:
Maintenance of Gulf, Bay and Lake Shoreline Integrity; Stabilization of Major Navigation Channels; Stabilize Banks and/or cross-sections of Navigational Canals; Maintain Shoreline Integrity.

Project Location:
This project has two distinct locations within Coast 2050, Region 3. The first will be on one of the existing terraces on TV-12 Little Vermilion Bay Sediment Trapping Project located on the north side of Vermilion Bay, Vermilion Parish, Louisiana. The second site will be the rock structure associated with the TV-11b Freshwater Bayou Bank Stabilization Project also located in Vermilion Parish, Louisiana.

Problem:
Several post constructed projects suffer from high maintenance due to rock slippage caused by storms, incessant wave energy or high tides coupled with high wake energy which shear off the top-most part of rock structures. Rock structures have also been subject to vandalism by the removal of material. Fresh spoil used to construct the seaward face of terraces or other earthen structures are very vulnerable to erosion until such time that protective vegetation on the terrace is established.

Goals:
To test a technique whereby rock structures have increased integral strength without adding to overall structure weight, and earthen works are afforded protection from erosion on the windward edge of the project in the period immediately following initial and post construction.

Proposed Solution:
For rock structures, slippage can be controlled by injecting/applying a flowable, fill material consisting of Portland cement, sand, water, and a plasticizer. This material will bond rocks together and reduce the incidence of re-working or adding new material to the structure due to rock loss. This Flowable Fill can also be applied to the erosive face of freshly constructed and existing earthen works to provide protection against wave energy. This material will set-up and cure in underwater applications. Flowable Fill could eliminate or reduce maintenance on existing and future projects.

Project Benefits:
Eliminate or minimize post construction or yearly maintenance of structures built for the control of shoreline erosion. The application of flowable fill over existing or new rock type structures will assist in bonding the structure together resulting in less rock slippage and eventual loss which diminishes the effectiveness of the structures designed use and results in increased costs during the operation/maintenance phase of the project. A layer of flowable fill on the erosive face of earthen terraces will extend the life of the structure allowing for increased sedimentation within protected areas, which, over time which may allow the formation of emergent marsh vegetation.
Successful demonstration of this project may also have ramifications for inclusion on new projects, especially rock structures whereby planned or additional structure height may be achieved with flowable fill instead of rock material. The substitution of flowable fill, in place of rock, could possibly lower project costs or increase structure coverage. The flowable fill material does not pose any inherent human or environmental health risks and is non-toxic to fish and wildlife.

Project Costs:
The total fully funded cost for the project is $1,243,000.

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Sand Fence Alternatives for Dune Formation and Colonial Nesting Bird Platforms on Barrier Islands Demonstration Project

Coast 2050 Strategy:
Restore Barrier Islands and Gulf Shorelines

Project Location:
Raccoon Island and Whiskey Island (proposed)

Problem:
The Isles Dernieres barrier island chain is one of the most rapidly deteriorating barrier shorelines in the United States. Raccoon Island, which is documented to host the largest Brown Pelican nesting colony in the State of Louisiana, is estimated to be eroding at a rate of 54 feet/year in some areas and previous estimates suggested that future without action would result in complete loss of the island as early as 2007. Eight breakwaters were installed in 1997 on the eastern Gulf end of the island, which have successfully created large sand flats (tombolos and salients) extending as much as 300 feet from the breakwaters to the original coastline. However, no dune habitat currently exists and colonial seabird nesting numbers are declining as a result. Observations indicate that vegetation and other surface anomalies tend to cause sand accumulation and promote dune formation. Creating artificial obstructions on the large sand flats may promote rapid dune formation as well as provide additional platforms for nesting colonies of seabirds.

Goals:
To test the use of natural materials in the development of sand accumulation and dune formation and the ability of the material to secondarily provide additional nesting platforms for colonies of nesting seabirds on the barrier island.

Proposed Solution:
The newly formed sand flats that have recently developed behind the breakwaters on Raccoon Island consist largely of loose sands with very little vertical development towards dune formation. Although sand fences are often used to promote dune formation, the low elevation of Raccoon Island makes them vulnerable during storms and the fences may actually be a hazard to the high density of nesting birds. The use of biodegradable oyster shell sacks stacked in various experimental formations along with vegetative plantings of select dune plants may provide a much more feasible temporary structure on the sand flats to capture sands and promote dune formation as well as provide additional nesting platforms for an already space-limited colonial seabird nesting site.

Project Benefits:
The demonstration project will test an innovative alternative to sand fencing for creating sand dunes on barrier islands. The advantages of the proposed methodology is that it is very cost effective, the materials are readily available, the materials used are composed of a biodegradable burlap sacks and naturally occurring oyster shells, and may provide additional erosion prevention during super-tidal events.

Project Cost:
The total fully funded cost for the project is $491,000.

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Wetland Enhancement via Treated Sewage Effluent Diversions Demonstration Project Demonstration Project

Coast 2050 Strategies:
Management of pump outfall for wetland benefits; Construct small diversions with outfall management; Enhance coastal water quality

Project Location:
Region 2, Barataria Basin, Jefferson Parish. The Rosethorne Terminus, Highway 45 at Highway 3134, south of the Intracoastal Canal

Problem:
There are deteriorating wetlands in the Barataria Basin that are critical and sensitive in terms of salt water intrusion and vegetative deterioration. "…Wetlands in the project area are increasingly threatened by a transition to more tidally influenced conditions that produce high rates of wetland loss in these low salinity marshes because of their highly organic, soft soil conditions…." (LACWCRTF, October 2003). There are not enough opportunities for small scale freshwater diversions to attack the problem.

Goals:
The proposed project envisions re-routing wastewater (sewage) treatment plant effluents to adjacent wetlands. Elevated concentrations of N and P in the effluent discharge stream would serve as a fertilizer, enhancing the growth of the indigenous flora on approximately 2,500 acres of wetland in the case of Rosethorne location. The relatively long detention time of the flow stream through the wetlands would enable significant solids capture and BOD reduction. Also, the assimilative capacity of the soil and biota of the ecosystem would significantly reduce the metals and organic concentrations in the discharged effluents.

Proposed Solution:
The Rosethorne Sewage Effluent Diversion would consist of upgrading the capacity of the existing effluent system and installing approximately 1,700 feet of force main. Water control structures and a flow distribution system would also be constructed to channel the flow through the wetlands. The outlet of the discharge line would be placed at the most hydrologically upstream point of the target wetland feasible to insure that the maximum area of the wetland is benefited and the highest nutrient removal is achieved. The output flow stream from secondary treatment process of the Rosethorne Wastewater Treatment facility is currently discharged into the Intracoastal Canal. The proposed project involves re-routing the treated effluent from its current outfall into Intracoastal Canal to a distributed discharge structure constructed along the wetland area. The pump station upgrade would involve replacing the existing pumps with larger capacity pumps and upgrading the electrical and instrumentation equipment. The force main would be made of PVC pipe and installed underground, terminating in a distribution header. The water control structures would consist of earthen berms and swales designed to channel the flow down gradient.

Project Benefits:
A network of treated sewage effluent diversions can provide an opportunity to combine both freshwater and nutrient availability. Opportunity exists for utilizing the assimilative capacity of the wetlands. This would simultaneously benefit the wetlands by supplying needed nutrients and in a smaller scale mitigating the effects of saltwater intrusion.

Project Costs:
The total fully funded cost for the project is $1,111,000.

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PPL 14 Candidate Project Evaluation Matrix

Project Name	Region	Parish	Project Area	Average Annual Habitat Units (AAHU)	Net Acres	Prioritization Score	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)
Irish Bayou to Chef Menteur Pass Shoreline Protection and Marsh Creation	1	Orleans	249	53	147	51.1	$13,252,000	$968,775	$12,283,225	$944,000	$17,811	$90,150
Riverine Sand Mining/Scofield Island Restoration	2	Plaquemines	746	229	234	55	$44,545,000	$3,221,887	$41,323,113	$3,602,200	$15,730	$190,363
South Shore of The Pen Shoreline Protection and Marsh Creation	2	Jefferson	193	51	116	50.25	$17,514,000	$1,311,146	$16,202,854	$1,327,900	$26,037	$150,983
Venice Ponds Marsh Creation	2	Plaquemines	918	330	593	60.5	$20,172,000	$1,027,462	$19,144,538	$1,675,700	$5,078	$34,017
White's Ditch Resurrection and Outfall Management	2	Plaquemines	8,224	107	189	52.5	$14,845,000	$1,595,676	$13,249,324	$1,101,800	$10,297	$78,545
East Marsh Island Marsh Creation	3	Iberia	378	117	189	35.5	$16,824,700	$1,193,606	$15,631,094	$1,345,700	$11,502	$89,020

PPL 14 Demonstration Project Evaluation Matrix

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

Demonstration Project Name	Objectives	Lead Agency	Total Fully Funded Cost	Parameter (P_n)						Total Score
				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	
Barrier Island Sand Blowing Demo	Habitat Creation	USACE	$1,774,000	3	2	2	3	3	2	15
Floating Wave Attenuator Demo	Shoreline Protection	EPA	$1,278,000	3	2	2	2	2	2	13
Evaluation of Bioengineered Reefs Performing as Submerged Breakwaters Demo	Shoreline Protection	NMFS	$1,308,000	2	2	2	2	2	3	13
Sand Fence Alternatives for Dune Formation and Colonial Nesting Bird Platforms on Barrier Islands Demo	Habitat Creation	NRCS	$491,000	2	2	1	3	2	2	12
Flowable Fill Demo	Shoreline Protection	NRCS	$1,243,000	3	1	1	2	1	2	10
Beneficial Use of Dredge Disposal Areas Demo	Habitat Creation	NMFS	$2,375,000	1	2	1	3	1	1	9
Wetland Enhancement via Treated Sewage Effluent Diversions Demo	Wetland Enhancement	USACE	$1,111,000	1	2	2	1	1	1	8

Demonstration Project Parameters:

(P1) 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.

(P2) 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.

(P3) 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.

(P4) 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.

(P5) 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.

(P6) 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.