Region 3

Coastal Wetlands Planning, Protection and Restoration Act

21st Priority Project List



Region 3 Regional Planning Team Meeting



January 26, 2011 Morgan City Auditorium, Morgan City, LA

1. Welcome and Introductions



RPT Region 3 Leader: Ron Boustany-NRCS

Announcements

- PPL 21 Selection Process Packages
- PPL 21 RPT meetings to accept project nominees:
 - Region IV, Vermilion LSU Ag Center, Jan. 25, 2011, 1:00 pm
 - Region III, Morgan City Auditorium (W Concourse), Jan. 26, 2011, 9:00 am
 - Region II, New Orleans Corps of Engineers, Jan 27, 2011, 9:00 am
 - Region I, New Orleans Corps of Engineers, Jan 27, 2011, 1:00 pm
- Coast-wide Voting meeting to select project nominees for all basins: February 22, 2011, 10:00 am LA Department of Wildlife and Fisheries, 2000 Quail Dr. ,Baton Rouge
- Parish representatives must identify themselves during the RPT meetings and fill out a voting registration form, including contact information for the primary and secondary voting representatives that will cast votes at the coast-wide voting meeting.
- CWPPRA agencies will be assigned responsibilities for preparing nominee fact sheets after the coast-wide voting meeting.

Region 3 Parishes

Eligible parishes for basins in Region 3 include:

Terrebonne Basin St. Mary Parish Terrebonne Parish Assumption Parish Lafourche Parish Iberia Parish St. Martin Parish <u>Atchafalaya Basin</u> St. Mary Parish Iberia Parish Terrebonne Parish

<u>Teche-Vermilion Basin</u> St. Mary Parish Iberia Parish

2. PPL 21 Process and Ground Rules



RPT Meetings

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

RPT Meetings

- Project presenters can split multi-basin or coast-wide projects into multiple individual projects. This must occur during the RPT meeting where the project is first presented. If a presenter does not choose a basin from which to propose a project, the RPT leaders, in conjunction with the CWPPRA Planning & Evaluation (P&E) Subcommittee, will decide collectively after the RPT meetings but before the Coast-wide Voting Meeting.
- Public comments on project proposals will be accepted orally during the RPT meetings and in writing by February 10, 2011.
- Limit project proposals to 3 to 5 minutes.
- Limit comments/questions during meeting to PPL 21 subject proposals and processes.

Coast-wide Voting Meeting

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

Nominee Project Evaluations

- Following the coast-wide voting meeting, an agency will be assigned to each project to prepare a Nominee Project fact sheet (1 page + map).
- CWPPRA Engineering & Environmental Workgroups review draft features and assign preliminary cost and benefit ranges.
- Work groups will also review demo & coast-wide projects and verify that they meet PPL 21 criteria.
- CWPPRA Planning and Evaluation Subcommittee prepares cost/benefit summary matrix for Technical Committee.

PPL 21 Candidate Project Selection

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

PPL 21 Candidate Project Evaluation

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

CWPPRA PPL 21 Selection

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

3. Region 3 Coast 2050 Regional Strategies



Projects nominated should be:

 consistent with the Coast 2050 Regional Ecosystem or Coastwide Strategies

Restore Swamps

 Improve hydrology and drainage in Verrett Sub-basin

Restore and Sustain Marshes

- Maximize land building in Atchafalaya Bay
- Lower water levels in upper Penchant Marshes
- Increase transfer of Atchafalaya River water to lower Penchant tidal marshes
- Enhance Atchafalaya River water influence to central Terrebonne marshes
- Establish multipurpose control of HNC Lock (freshwater and sediment distribution, salinity control, hurricane protection and navigation)
- Stabilize banks of navigation channels for water conveyance and erosion control

Restore and Sustain Marshes

- Dedicated delivery of sediment for marsh building by any means feasible – deliver sand from offshore or the river to build land in Timbalier Bay area
- Construct large conveyance channel from the Mississippi River parallel to Bayou Lafourche to divert up to 100,000 cfs to create a delta lobe in upper Timbalier Subbasin, provided that any project related navigation feature not impede or interfere with the land building capacity of the channel

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

- Maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems, including Gulf shoreline
- Maintain shoreline integrity of Caillou, Terrebonne and Timbalier Bays
- Restore and Maintain the Isles Dernieres and Timbalier barrier island chains

Resolve Vermilion-Cote Blanche Bays salinity and turbidity

- Optimize GIWW flow into marshes and minimize direct flow into bays
- Maintain Vermilion, East and West Cote Blanche Bays as brackish
- Reduce sedimentation in bays
- Create artificial reef complex, including one from Pt. Chevreuil toward Marsh Island

Coast 2050 Coastwide Strategies



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



Coast 2050 Region 3 regional ecosystem strategies.

4. PPL 21 Project Nominations



Coast-wide Projects

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

Demonstration Projects

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

5. Announcement of Coast-wide Voting Meeting



Coast-wide Voting Meeting

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

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

•No additional projects can be nominated after the RPTs.

•No significant changes to projects proposed at the first round of RPT meetings will be allowed (this includes combining projects).

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

Coast-wide Voting Meeting

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

- Voting will be by ranked vote.
- Each voting entity will be provided a ballot.

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

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

Coast-wide Voting Meeting: Coast-wide Category

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

6. Announcements of Upcoming Meetings



PPL 21 Upcoming Meetings

Coast-wide Voting Mtg, Feb 22, 2011, Baton Rouge 20 basin-project nominees, 1 coast-wide nominee, and 6 demos selected

Technical Committee Mtg, in Apr '11, New Orleans Selection of 10 candidates and up to 3 demos

> Public Meetings 16 Nov 11, Abbeville 17 Nov 11, New Orleans

Technical Committee Mtg, 30 Nov 11, New Orleans Recommend up to 4 projects for Phase I funding

Task Force Mtg, in Jan '12, New Orleans Final selection of projects for Phase I funding Send Written Comments on Projects & Demos Proposed Today to the CWPPRA Program Manager (Deadline: February 10, 2011)

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

Fax to 504-862-1892 Attn: Melanie Goodman

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

7. Adjourn





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LOCATION SPONSORING ORGANIZATION DATE Morgan City Auditorium COASTAL WETLANDS PLANNING, PROTECTION January 26, 2011 728 Myrtle Street AND RESTORATION ACT 9:00 A.M. Morgan City, LA PURPOSE MEETING OF THE REGIONAL PLANNING TEAM REGION III PARTICIPANT REGISTER* PHONE NUMBER/EMAIL JOB TITLE AND ORGANIZATION NAME A75 765 2333 LDWF BARNY HUBENT 337 452 0636 Sermilion PANSZ $\mathcal{R} < \mathcal{B}$ Sherrill Sagnera 74826966 12Nebonne 9:5-973-639 Arotian oas nm P 504237-115 PSA - 540-88,04 985-853-3*0*09 VyBlieny Conocothi, ips 985-853-3018 ConocoPhillips dis'smith 225-383-7455×119 KAREN WICKER CONSTAL ENVIRONMENTS INC (985)856-3630 Mallhenny Kandy Moertk 985-6324616 CIFSL Cont 985-580-8145 OZM bONN.O. MilleR CR5 PR row 275 347-4446 CR 225-342-4736 OCPR USACE - PD-504 -862 -1171 reel Pout West Sit 337 -319-0676 Allain 214 665 7459 EPA DAR -373-0032 587 LDWF LENARC 337 -291-3067 USFWS 377-291-3120 985 447-71744 F"Boh" Blairdr PUBLIC LMV FORM 583-R

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


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ATTENDANCE RECORD



DATE	SPONSORING ORGANIZATION	LUCATION
January 26, 2011 9:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	Morgan City Auditorium 728 Myrtle Street Morgan City, LA
PURPOSE	ETING OF THE REGIONAL PLANNING TEAM REGION I	II.
	PARTICIPANT REGISTER*	
NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER/EMAIL
Ronny Paille	Fas	337-291. 3117
Nien Accordomo.	a trappedie svigen	337 824-5149
PAUL NAQUIN	St MARY PARish President	337-230-0374
FRANCIS FIGIDS	ADACHE LA MENERALS LLC	985-879-3528
Cinety Stuger	USDA NRES	225-319-0334
Ten ALCON	APACHE LOUISIMA MINERAS	785-879-3528
HEATHER FINLEY	LDWF	225.765.2956
Kimberly Clements	NUAA/NMFS	225.389.0508
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Leplie Suaso	Brown & Caldwell	825 - 326 - 5047
0		ISUAZO@BRWNCALd .

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

Region 3– Terrebonne Basin

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R3-TE-01	Lake Decade Marsh Creation and Nourishment
R3-TE-02	Wine Island Barrier Island Restoration
R3-TE-03	Timbalier Island Shoreline Sediment Nourishment
R3-TE-04	East Island Beach and Backbarrier Marsh Restoration
R3-TE-05	Marsh Nourishment on Point au Fer Island by Beneficial Use of
	Dredged Material
R3-TE-06	Bay Raccourci Shoreine Restoration and Marsh Creation
R3-TE-07	Lake Tambour Marsh Creation
R3-TE-08	Lake Boudreaux Marsh Creation and Shoreline Protection
R3-TE-09	Caillou Lake Land Bridge Restoration
R3-TE-10	North Catfish Lake Rim Restoration Project
R3-TE-11	South East Bayou Terrebonne Marsh Creation
R3-TE-12	Carencro Bayou Freshwater Introduction Project

Region 3– Atchafalaya Basin

- R3-AT-01 West Wax Lake Wetlands Diversion
- R3-AT-02 Reef Restoration between Point au Fer and East Marsh Island

Region 3– Tech-Vermilion Basin

R3-TV-01	Cote Blanche Freshwater and Sediment Introduction and Shoreline
	Protection
R3-TV-02	Cole's Bayou Marsh Creation and Restoration
R3-TV-03	Southeast Marsh Island Marsh Creation and Nourishment

Region 3-

Terrebonne Basin

R3-TE-01 Lake Decade Marsh Creation and Nourishment

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PPL21 PROJECT NOMINEE FACT SHEET January 26, 2011

Project Name:

Lake Decade Marsh Creation and Nourishment

Coast 2050 Strategy:

Coastwide Stategy – Dedicated dredging to create, restore, or protect wetlands Regional Strategy – Dedicated delivery and/or beneficial use for marsh building by any means feasible means

Mapping Unit Strategy - Beneficial use of dredged material

Project Location:

Region 3, Terrebonne Basin, Mechant/Decade Mapping Unit, Terrebonne Parish, located along the shorelines of Lake Decade southwest of Theriot.

Problem:

The project would restore lake edge and interior wetlands that have been lost and fragmented. The marsh creation and nourishment areas would maintain delineation of the lake rim if the lake shoreline levees are no longer possible to be maintained. What problem will the project solve? Wetland loss rates are evidence for the nature and scope of the problem in the project area. The wetland loss rate for the Lake Decade polygon is -0.15%/year based on USGS data from 1985 to 1990. The lake shoreline breaches routinely even with efforts by the land owner. Generally, a breach or two develop in between the annual maintenance efforts to re-establish the integrity of the shoreline, but wouldn't last more than two years without breaching. Construction of the South Lake Decade project (Section B) is scheduled to commence within the next few weeks that will address the vulnerability of that reach of lake shoreline and will allow for project synergy.

Goals:

The conceptual project goals are to accomplish approximately 350 acres of marsh creation and 150 acres of marsh nourishment in strategic locations to enhance and maintain the structure integrity of the lake shorelines.

Proposed Solutions:

Sediment would be dredged from Lake Decade and placed in a semi- to confined manner in strategic locations along the lake shoreline to create and nourish intertidal intermediate and fresh marsh. Approximately half of the created marsh acres would be planted with appropriate wetland vegetation. The borrow area in Lake Decade would be located and designed in a manner to avoid and minimize environmental impacts (e.g., to submerged aquatic vegetation and water quality) to the maximum extent practicable.

Preliminary Project Benefits:

The following questions should be addressed: 1) The total acreage benefited both directly and indirectly is 500 acres. 2) Approximately 397 net acres are expected at TY 20. Note that this is a draft number subject to pro-rating revisions due to overlapping with the South Lake Decade TE-39. 3) The anticipated loss rate reduction throughout the area of direct impacts is 50-74%. 4) The marsh creation would help maintain the structural limits of Lake Decade, especially if the existing levees can not be maintained. 5) The project would have not significant impact on

critical or non-critical infrastructure. 6) The project would have direct synergy with the TE-39, . South Lake Decade Freshwater Introduction Project.

Identification of Potential Issues:

The proposed project has the following potential issues: utilities/pipelines, etc. The fill areas are located on Apache Corporation property and the conceptual features have been coordinated with them.

Preliminary Construction Costs:

The lump sum construction cost including 25% contingency is \$21,373,000.

Preparer(s) of Fact Sheet:

Patrick Williams, NOAA's National Marine Fisheries Service, (225)389-0508, ext 208, patrick.williams@noaa.gov



R3-TE-02

Wine Island

PPL21 PROJECT NOMINEE FACT SHEET January 26, 2011

Project Name:

Wine Island Restoration and Protection Project

Coast 2050 Strategy:

Regional: [14.] Restore and maintain barrier islands and gulf shorelines Mapping Unit: [33.] Isles Dernieres - Protect Bay/Gulf Shorelines

Project Location:

Region III, Terrebonne Basin, Terrebonne Parish, Isle Dernieres Barrier Islands

Problem:

The Isles Dernieres barrier island chain is experiencing some of the highest rates of erosion of any coastal region in the world. Past studies have revealed that the shoreline loss rate averages approximately 37 feet per year and as much as 195 feet per year during 1992 as a result of Hurricane Andrew (Penland et al. 2003 and McBride et al. 1989). In the early 1990s, Water Resource Development Act funds were used to recreate Wine Island of Isle Dernieres chain after it had eroded to a partially emerged sand shoal. Material from the Houma Navigation Canal was used to build the island to a +4' to +7' elevation during channel maintenance events in 1991 and 1993-94. The island was approximately 34 acres after completion. During the years of peak habitat conditions, Wine Island served as breeding bird habitat for a variety of avian species including brown pelicans, terns, gulls, and wading birds. During peak years of nest success, over 15,000 nests were documented at Wine Island. As a result of erosional processes (particularly hurricane activity over the past 10 years), Wine Island has degraded again to pre-1990s conditions. Over the past 10 years, only one Houma Navigation Canal maintenance event resulted in material being pumped at Wine Island. It was ineffective due to the low quality of material excavated from the canal. At present, the island is less than five acres and is at risk of being a subaqueous sand shoal in the near future. The island no longer serves as breeding bird habitat due to lack of elevation and rapid shoreline loss.

Goals:

The goal of this project is to restore Wine Island and expand its footprint to include a shallow sand shoal southeast of the island. The project will also include a shoreline protection feature to help fortify the island and possibly enhance habitat conditions over the life of the project.

Proposed Solutions:

Project features include the restoration of approx. 250 acres of barrier island habitat including beach, dune, swale, and salt marsh habitat types. The island would be recreated by depositing offshore dredge material in the vicinity of Wine Island and a subaqueous shoal southeast of Wine. Additionally, the construction of offshore, segmented rock breakwaters would be included to curtail erosion of the gulf shoreline. Vegetative plantings, both herbaceous and woody, will follow the construction of the dune/beach platform.

Preliminary Project Benefits:

Wine Island will be restored to productive avian habitat and expand the storm buffering capabilities of the Isle Dernieres barrier island chain. Approximately 25 acres will be dune habitat, 130 acres will become supratidal habitat, and 95 acres will comprise tidal/subtital habitat. There is also potential for the creation of additional acreage (tidal and supratidal shoal area) as a result of sand deposition between the proposed breakwaters and existing shoreline as a direct result of the segmented breakwaters.

Identification of Potential Issues:

There are no potential issues anticipated with this proposed project.

Preliminary Construction Costs:

The anticipated construction cost, with contingency, is \$15,000,000 to \$20,000,000.

Preparer(s) of Fact Sheet:

Loland Broussard, (337) 291-3060, <u>loland.broussard@la.usda.gov</u> Cassidy Lejeune, (337) 373-0032, clejeune@wlf.la.gov

Sources:

McBride, R.A., K. Westphal, S. Penland, B. Jaffe, and S.J. Williams. 1989. Erosion and deterioration of Isle Dernieres Barrier Island Arc, Louisiana: 1842-1988. AAPG Bulletin 73: 1182-1188.

Penland, S., C. Zganjar, K.A. Westphal, P. Connor, A. Beall, J.H. List, and S.J. Williams. 2003. Shoreline change posters of the Louisiana Barrier Islands, 1885-1996: U.S. Geological Survey Open-File Report 03-398, CD-ROM.

Pre-Construction Aerial



Post-Construction Aerial





















R3-TE-03 Timbalier Island Shoreline Sediment Nourishment

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PPL21 PROJECT NOMINEE FACT SHEET January 26, 2011

Project Name

Timbalier Island Shoreline Sediment Nourishment

Coast 2050 Strategy

<u>Coastwide Common Strategies</u>-Dedicated dredging to create, restore, or protect wetlands; Vegetative planting; Offshore and riverine sand and sediment resources. <u>Region 2 Ecosystem Strategies</u>- Restore and sustain marshes; 8) Dedicated delivery of sediment for marsh building by any feasible means; Restore barrier islands and Gulf shorelines; 12) Restore and maintain the Isles Derrieres and Timbalier barrier island chains, Marsh Island, Point au Fer, and Cheniere au Tigre (including back barrier beaches). <u>Mapping Unit Strategies</u> – 33) Protect bay/gulf shorelines

Project Location

Region 3, Terrebonne Basin, Terrebonne Parish, approximately 38 miles south of Houma, LA.

Problem

Barrier islands are the first line of defense against storm surge and protect the interior wetlands and infrastructure from open ocean wave effects. They ensure the estuaries behind them are low energy environments capable of supporting wetlands and emerging deltas. Timbalier Island is part of the Lafourche Delta headland and barrier island system, one of the rapidly deteriorating barrier shorelines in Louisiana averaging -13.1 ft/yr of erosion from 1990's thru 2005 in the proposed project area. Additionally, the pass east of Timbalier Island (Little Pass Timbalier) is moving westerly. Hurricanes Katrina, Rita, Gustav, and Ike have breached the island in the proposed project area and the closure of the breach should be done to prevent any attempt of the pass to shift westerly toward this point.

Proposed Project Features

This project will place sediment on the Gulf and bay side of Timbalier Island. Placing sediment on the bay side of Timbalier Island will increase the area of backbarrier marsh which will provide a stable platform which the island needs to migrate landward. Placement of dredge material on the Gulf side of Timbalier Island will provide sand that can be redistributed along the islands shoreline by currents and waves along the entire island's Gulf shore. Sediment fences and plantings will be utilized to manage new placed sediments.

Goals:

- Close the cut in the island from Hurricane Gustav to slow shifting of the tidal pass.
- Provide a backbarrier platform to enable sustainable and successful island migration
- Extend the life of this barrier island by increasing its width
- Create about 60 acres of intertidal marsh using new dredged material and vegetative plantings
- Fortify/protect the platform and marsh by creating 100 acres of beach.
- Protect Terrebonne estuary and vegetated wetlands against direct exposure to the Gulf of Mexico
- Add sand to this sand-starved barrier island system

Preliminary Project Benefits

- Creation of 160 ac of beach and marsh habitat
- Protect approximately 130 ac of barrier island habitat over 20 years
- Synergistic affects with other CWPPRA and LCA Terrebonne Barrier Shoreline restoration efforts

Identification of Potential Issues

None

Preliminary Construction Costs

The estimated construction costs including 25% contingency is \$30,525,000

Preparers of Fact Sheet:

Chris Llewellyn, EPA Region 6, (214-665-7239), llewellyn.chris@epa.gov Ken Teague, EPA Region 6, (214-665-6687), teague.kenneth@epa.gov







Timbalier Island Shoreline Sediment Nourishment

Goals:

- Close the cut in the island
- Create a backbarrier platform
- Increase the sustainability and life of this barrier island
 Fortify/protect the platform and marsh
- Add sand to this sand-starved barrier island system

Preliminary Project Benefits:

- Create 100 ac of beach and 60 ac of marsh habitat
- Protect ~130 ac of barrier island habitat over 20 years

Identification of Potential Issues:

None

Preliminary Construction Costs:

• \$30 million





R3-TE-04 East Island Beach and Backbarrier Marsh Restoration

PPL21 Project Nominee Fact Sheet January 26, 2011

R3-TE-04

Project Name

East Island Beach and Backbarrier Marsh Restoration

Coast 2050 Strategy

Coastwide Common Strategies-Dedicated dredging to create, restore, or protect wetlands; Vegetative planting; Offshore and riverine sand and sediment resources.

Region 2 Ecosystem Strategies- Restore and sustain marshes- #8. Dedicated delivery of sediment for marsh building by any feasible means; Restore barrier islands and Gulf shorelines-#12. Restore and maintain the Isles Dernieres and Timbalier barrier island chains, Marsh Island, Point au Fer, and Cheniere au Tigre (including back barrier beaches).

Mapping Unit Strategies- #33. Protect bay/gulf shorelines

Project Location

Region 3, Terrebonne Basin, Terrebonne Parish, part of the Isles Dernieres, approximately 38 miles south of Houma, LA

Problem

East/Trinity Island is part of the Isles Dernieres barrier island chain, one of the most rapidly deteriorating barrier shorelines in the U.S. These barrier islands ensure that the estuaries behind them are low energy environments capable of supporting wetlands and emerging deltas where Mississippi River water is reintroduced. These islands lack a stable subaerial backbarrier platform upon which the islands can migrate landward.

Proposed Project Features

Dredged material will be placed on the back side of the island creating additional backbarrier marsh, and along the Gulf shoreline. The former will provide a stable backbarrier platform on which the island can migrate landward, while the latter will provide additional sand for redistribution by currents and waves along the entire island's Gulf beach.

Goals

1) provide a backbarrier platform to enable successful island migration;

2) extend the life of this barrier island by increasing its width;

3) create 232 ac of vegetated intertidal marsh using new dredged material and vegetative plantings;

4) protect the Terrebonne estuary and vegetated wetlands against direct exposure to the Gulf of Mexico.

5) add sand to this sand-starved barrier island system

Preliminary Project Benefits

The project would benefit about 2148 acres of barrier island habitat. Approximately 272 acres of barrier island habitat would be created initially with an estimated 175 protected over the 20-year project life.

Identification of Potential Issues

None

Preliminary Construction Costs

The total fully funded cost for the project is \$15 - \$20 Million.

Preparers of Fact Sheet:

Kenneth Teague, EPA Region 6, (214) 665-6687, teague.kenneth@epa.gov Brad Crawford, EPA Region 6, (214) 665-7255, crawford.brad@epa.gov







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East Island Dune and Marsh Restoration

Goals:

- Create 272 acres intertidal
- Create 20 acres dune
- Create 10 acre of supratidal
- Total of 302 acre of BI habitat

Preliminary Project Benefits:

• 175 net ac over 20 years

Identification of Potential Issues: • None

Preliminary Construction Costs:

• \$15-\$20 million



R3-TE-05 Marsh Nourishment on Point au Fer Island by Beneficial Use of Dredged Material

PPL21 PROJECT NOMINEE FACT SHEET

January 26, 2011

Project Name

Marsh Nourishment on Point au Fer Island by Beneficial Use of Dredged Material

Coast 2050 Strategy

Coastwide Strategy: Restore/sustain marshes

Region 3 Regional ecosystem strategies: Dedicated delivery of sediment for marsh building by any feasible means. Point au Fer mapping unit strategies: Beneficial use of dredged material

Project Location

Region 3, Terrebonne Basin, Terrebonne Parish, Point au Fer Island

Problem

Brackish marshes on Pt. au Fer Island continue to be lost over time, presumably due to a combination of insufficient accretion and various effects from oil and gas canals. In addition, marsh management by semi-impoundment may play a role.

Proposed Project Features

This project would nourish existing degraded marshes by beneficially using dredged material from the Atchafalaya navigation channel to the west in Atchafalaya Bay and in the nearshore Gulf of Mexico. Dredged material from this channel is dominated by "fluff", which is extremely fine sediment and suspensions of water and sediment that is primarily water (colloidal). We estimate 10 million cubic yards of dredged material is removed from nearby (estimated 8 mi away) channel reaches, per year. However, due to cost considerations, this project would beneficially use only about 2-4 million cubic yards of dredged material. Dredged material would be discharged across the marsh surface without containment. We predict that the material would spread over a very large area, and nourish the marsh similar to other documented effects of placing dredged material on the marsh surface, but perhaps with somewhat less environmental benefit due to the large amounts of water involved.

Goals

- Nourish approximately 10,000 ac of brackish marsh using dredged material
- Temporarily increase accretion on the marsh
- Temporarily reduce marsh loss rates

Preliminary Project Benefits

- Nourish approximately 10,000 ac of brackish marsh with 1.5-3 in of dredged material
- Offset 9-18 years of subsidence (1.1- 2.0 ft/century) and landloss (0.28 percent per year, or 250-500 ac)

Identification of Potential Issues- Landrights, pipelines, environmental impacts of pipeline

Preliminary Construction Costs

The estimated construction cost including 25% contingency is \$20-40 million

Preparer of Fact Sheet

Kenneth Teague, EPA, (214) 665-6687; Teague.Kenneth@epa.gov







Marsh Nourishment on Point au Fer Island by Beneficial Use of Dredged Material

Goals:

- Nourish ~10,000 ac of brackish marsh using dredged material
- Temporarily increase accretion on the marsh
- Temporarily reduce marsh loss rates

Preliminary Project Benefits:

• Offset 9-18 years of subsidence (1.1- 2.0 ft/century) and landloss (0.28 percent per year, or 250-500 ac)

Identification of Potential Issues: • Landrights, pipelines

Preliminary Construction Costs:

\$20-40 million

Marsh Nourishment on Point au Fer Island by Beneficial Use of Dredged Material

Questions?

Ken Teague EPA Region 6 (214)665-6687 teague.kenneth@epa.gov R3-TE-06 Bay Raccourci Shoreine Restoration and Marsh Creation

PPL21 PROJECT NOMINEE FACT SHEET January 26, 2011

Project Name:

Bay Raccourci Shoreline Restoration and Marsh Creation

Coast 2050 Strategy:

Coastwide: Dedicated dredging for wetland creation; Maintenance of bay and lake shoreline integrity

Regional: Dedicated delivery of sediment for marsh building by any means feasible

Project Location:

Region 3, Terrebonne Basin, Mechant/de Cade Mapping Unit, Terrebonne Parish. This project is located between Lake Mechant and Bayou DeCade.

Problem:

Salinity spikes (during summer and fall) from Lake Mechant have directly contributed to the loss and/or conversion of much of the historically intermediate to low-salinity brackish marsh north of Lake Mechant. Much of the shoreline has succumbed to erosion and much of the interior emergent marshes have converted to open water. As more and more of these marshes convert to open water, the increased fetch will further accelerate interior marsh loss. The zone of intermediate marsh in this area is very narrow and is located directly north of Lake Mechant. This transition zone between brackish marsh and the very productive fresh marshes is a very unique zone that is becoming increasingly scarce along coastal Louisiana. The recently constructed North Lake Mechant Landbridge Restoration Project (TE-44) will help retain that transition zone by strengthening critical marshes directly north of the lake. It will also close some key water exchange points to further slow the movement of high salinity waters to the north. The largest exchange point between Lake Mechant and the lower salinity marshes to the north is Bayou Raccourci. Currently, water from the lake enters Bayou Raccourci continuing north a very short distance until it empties into Bay Raccourci. High salinity water within Bay Raccourci can flow unimpeded into lower salinity marshes in any direction. This project will reduce the number of exchange points by restoring the integrity of the Bay Raccourci shoreline through marsh creation and the construction of an earthen lakeshore berm.

Goals:

The goal of this project is to slow the northern movement of high salinity water that enters the low salinity brackish and intermediate marsh directly north of Bay Raccourci and to retain that zone of intermediate marsh that historically ran south of Lake Decade and north of Bay Raccourci.

Specific goals: 1) Create approximately 430 acres of intermediate/low salinity brackish marsh around the perimeter of Bay Raccourci. 2) Restore shoreline integrity by reconstructing the historic lake rim with some type of earthen embankment with a height no higher than +2.5 NAVD 88. 3) Plant 25,500 ft of newly constructed shoreline rim surrounding Bay Raccourci.

Proposed Solution:

This project would restore approximately 25,500 linear feet of the Bay Raccourci shoreline. Shoreline restoration would be accomplished by creating an earthen berm that would be built to a height of +2.5 ft NAVD 88. The bay side would be planted with *Spartina alterniflora* to quickly establish marsh and minimize initial erosion. Directly behind the shoreline restoration feature, approximately 430 acres of marsh would be created. Marsh would be created by dredging material from Lake Decade or Lake Mechant with a hydraulic dredge. Material would be pumped via pipeline and placed in cells to a target height of +1.5 ft NAVD 88. The material would be contained with earthen containment dikes which would be gapped or degraded between TY 1 and 3.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly*? 440 acres- 430 acres of marsh creation and an additional 10 acres of shoreline restoration. Indirect benefits could be realized from marshes to the west, north and east of the newly created marsh by reducing the exchange points for salinity spikes.

2) *How many acres of wetlands will be protected/created over the project life*? Approximately 360 net acres of emergent marsh would be 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 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 maintain and restore portions of the Bay Raccourci shoreline.

5) What is the net impact of the project on critical and non-critical infrastructure? This project would provide some protection to non-critical infrastructure (camps along Bayou Decade).

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? This project would work synergistically with several projects focused on protecting or restoring marsh within this critical region of the Terrebonne Basin. Those projects include the South Lake Decade Shoreline Protection Project (TE-39), Brady Canal Hydrologic Restoration Project (TE-28), North Lake Mechant Landbridge Restoration Project (TE-44), Penchant Basin Natural Resources Project (TE-34), and the Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72).

Identification of Potential Issues:

There are no known issues associated with this project.

Preliminary Construction Costs:

Estimated construction cost with 25% contingency is \$18.4M

Preparer(s) of Fact Sheet:

Robert Dubois U.S. Fish and Wildlife Service 337-291-3127 robert_dubois@fws.gov



R3-TE-07 Lake Tambour Marsh Creation
Project Name

Lake Tambour Marsh Creation

Coast 2050 Strategy

Coastwide: Dedicated dredging for wetland creation; Maintenance of bay and lake shoreline integrity

Regional: Dedicated delivery of sediment for marsh building by any means feasible; Maintain shoreline integrity in Caillou, Terrebonne, and Timbalier Bays

Project Location

Region 3, Terrebonne Basin, Terrebonne Marshes Mapping Unit, Terrebonne Parish. This project is located along the northern shoreline of Lake Barre/Terrebonne Bay from Bayou Chitique to the western shoreline of Lake Tambour.

Problem

Marshes north of Terrebonne Bay have experienced some of the highest erosions rates along coastal Louisiana. Reasons for this include subsidence, a lack of sediment input, and a limited supply of fresh water coupled with past dredging of oil and gas canals. As these marshes convert to shallow open water, the tidal prism will increase which will in turn increase the frequency and duration of tides north of Terrebonne Bay. This increasing tidal prism is likely to increase the future interior marsh loss rates for marshes north of Terrebonne Bay. These marshes are not only important for their habitat value but they also serve to slow the progress of highly saline waters that threaten the lower salinity marshes north and west of Madison Bay and even in Lake Boudreaux. The continued loss of these marshes has directly contributed to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut.

Proposed Solution

The proposed features consist of filling approximately 482 acres of shallow open water with material hydraulically dredged from Terrebonne Bay/Lake Barre. The target settled elevation will be +1.4 NAVD 88, but will ultimately correspond to surrounding healthy marsh. Containment dikes would be constructed around each marsh creation site. Containment dikes located adjacent to naturally occurring marshes or small interior ponds would be sufficiently gapped within 3 years of construction to allow tidal exchange and estuarine organism access. Containment dikes adjacent to bays would be degraded to an elevation of +2.5 NAVD 88, creating a shoreline berm to reduce shoreline erosion. This project would be the second phase of a comprehensive plan to protect the northern shoreline of Terrebonne Bay and the interior marshes from further erosion and reduce the tidal prism.

Goals

Fill shallow open water areas north of Terrebonne Bay/Lake Barre to reduce the tidal prism north of Terrebonne Bay and reduce interior land loss from tidal scouring.

Specific Project Goals: 1) Create 482 acres of intertidal marsh in shallow open water areas to reduce water exchange between Terrebonne Bay and interior marshes; 2) Reduce shoreline erosion along 12,000 ft of the northern shoreline of Terrebonne Bay and major bayous.

Preliminary Project Benefits

- 1) What is the total acreage benefited both directly and indirectly? The project would directly benefit 482 acres.
- 2) How many acres of wetlands will be protected/created over the project life? Approximately 429 net acres of saline marsh will be 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 project life.
- 4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc? This project would restore and help maintain the Terrebonne Bay/Lake Barre shoreline.
- 5) What is the net impact of the project on critical and non-critical infrastructure? This project would help protect several camps and minor oil and gas infrastructure.
- To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
 This project would work synergistically with the recently approved Terrebonne Bay Marsh Creation-Nourishment Project (PPL20) and the Madison Bay Marsh Creation and Terracing Project (TE-51).

Identification of Potential Issues

Pipelines and inactive wells within the proposed borrow area could be an issue for dredging operations. However, no pipelines and only one inactive well were indicated on the Sonris database. There are numerous oyster leases within the project area.

Preliminary Construction Costs

Estimated construction cost with 25% contingency is \$22M.

Preparer(s) of Fact Sheet:

Robert Dubois U.S. Fish and Wildlife Service Robert_duboid@fws.gov (337) 291-3127



R3-TE-08 Lake Boudreaux Marsh Creation and Shoreline Protection

Project Name

Lake Boudreaux Marsh Creation and Shoreline Protection

Coast 2050 Strategy

Coastwide: Dedicated dredging for wetland creation; Maintenance of bay and lake shoreline integrity

Regional: Dedicated delivery of sediment for marsh building by any means feasible

Project Location

Region 3, Terrebonne Basin, Boudreaux Mapping Unit, Terrebonne Parish. This project is located in the Lake Boudreaux Basin along the western, northern, and eastern lake shorelines.

Problem

During summer and fall, high salinity water enters Lake Boudreaux via Robinson and Boudreaux Canals impacting the low salinity marshes north of Lake Boudreaux. This high salinity water, lack of sediment and freshwater inputs, coupled with the historic dredging of oil and gas canals have directly contributed to the loss and/or conversion of much of the historically fresh/intermediate marshes to brackish marsh within the basin. The zone of intermediate marsh is very narrow and is located directly north of the Lake. This transition zone between brackish marsh and fresh marsh is a very unique zone that is becoming increasingly scarce along coastal Louisiana. The soon to be constructed North Lake Boudreaux Freshwater Introduction Project (TE-32) and the Ward 7 Mitigation Project will help retain that transition zone by strengthening the critical marshes directly north of the lake and by protecting much of the lake shoreline.

The Lake Boudreaux shorelines have high erosion rates, some as high as 60 ft/year, thus several projects have been constructed to protect some of these shorelines. Within the proposed project area, several of those shoreline protection and mash creation projects have been completed and/or will be completed shortly. However, several stretches of vulnerable shoreline still exist. There are also several areas of shallow open water or highly deteriorated marsh adjacent to the shoreline.

Proposed Solution

The proposed features include 9,900 linear feet of rock revetment/dike in three sections along the western, northern, and eastern shorelines of Lake Boudreaux which should provide protection for approximately 131 acres of marsh along vulnerable shoreline. This would effectively complete the restoration and protection of that shoreline by physically tying together three projects into one continuous project. Adjacent to the proposed shoreline protection as well as behind existing shoreline protection, approximately 200 acres of marsh would be created. Sediment will be hydraulically dredged and pumped into the shallow water marsh creation areas to a target height of ± 1.4 NAVD88. Containment dikes will be constructed around the marsh creation sites. The containment dikes will be degraded to the marsh platform elevation and gapped, hydraulically connecting the created marsh with adjacent open water.

Goals

The goal of this project is to slow the northern movement of high salinity water that enters the low-salinity brackish and intermediate marshes north of Lake Boudreaux.

Specific goals: 1) Create approximately 200 acres of marsh around the perimeter of the northern shoreline of Lake Boudreaux and 2) Protect the 131 acres of fragile existing and newly restored marsh/shoreline and shallow water habitat by constructing a rock revetment/foreshore dike.

Preliminary Project Benefits

- What is the total acreage benefited both directly and indirectly? Approximately 331 acres would be directly benefited. The proposed project would directly create 200 acres of marsh and protect 131 acres from shoreline erosion. Indirect benefits (approximately 4,700 acres) could be realized by reducing the salinity spikes during the late summer and fall and reducing the overall tidal exchange between the interior marshes and the turbid waters of Lake Boudreaux.
- How many acres of wetlands will be protected/created over the project life? Approximately 217 net acres 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? The Lake Boudreaux shoreline would be considered a structural component of the coastal ecosystem, thus restoration and protection of that shoreline would fulfill that criteria.
- 5) What is the net impact of the project on critical and non-critical infrastructure? The project will have a net positive effect on critical flood protection levees and several oil and gas facilities.
- To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
 The project will have a synergistic effect with several approved and/or constructed restoration projects West Lake Boudreaux Shoreline Protection and Marsh Creation (TE 46), North Lake Boudreaux Freshwater Introduction Project (TE-32), the Ward 7 Mitigation Project, and other projects that placed rock for shoreline protection.

Identification of Potential Issues

The proposed project has potential utility/pipeline issues.

Preliminary Construction Costs

The estimated construction cost with 25% contingency is \$10,400,000.

Preparer(s) of Fact Sheet:

Robert Dubois U.S. Fish and Wildlife Service (337)291-3127 robert dubois@fws.gov



R3-TE-09 Caillou Lake Land Bridge Restoration

Project Name: Caillou Lake Land Bridge Restoration

Coast 2050 Strategy:

Dedicated Dredging, to Create, Restore, or Protect Wetlands (Coastwide Strategy); Maintain shoreline integrity and stabilize critical areas of Vermilion, East and West Cote Blanche, Atachafalaya, Caillou, Terrebonne, and Timbalier Bay systems including the gulf shoreline; (Regional Strategy 12); and, Construct interior islands and/or reefs to protect bay/lake shorelines and/or for restoring hydrology. (Regional Strategy 13)

Project Location:

Region 3, Terrebonne Basin, Terrebonne Parish

Problem:

The integrity of the Caillou Lake land bridge has been impacted by storm activity and oil/gas canal development. This landscape feature helps maintain a salt water gradient between Caillou Lake and the Gulf of Mexico. Expansion of Bayou Grand Caillou/Grand Bayou De Large has increased salt water intrusion from Gulf of Mexico into marshes north of the remaining land bridge.

Goals:

- Create/nourish 300 acres of marsh through dedicated dredging and vegetative plantings
- Restore 15,000 linear ft of Bayou Grand Caillou bankline
- Restore/stabilize two miles (10,560 linear ft) of Caillou Lake south shoreline

Proposed Solutions:

This project would create 225 acres and nourish an additional 75 acre of marsh within the Caillou Lake land bridge; and, restore 15,000 linear ft of Bayou Grand Caillou bankline using material dredged from the Gulf of Mexico and vegetative plantings. The target elevation for the marsh creation area will correspond with the elevation of healthy marsh in the surrounding areas. Temporary containment dikes will be constructed in situ around the marsh creation/nourishment area and will be gapped within three years of construction to allow greater tidal exchange and estuarine organism access.

The project would protect two miles (10,560 linear ft) of Caillou Lake shoreline utilizing artificial oyster reef. One of three treatments utilized from the Terrebonne Bay demonstration project would be evaluated and utilized based on shoreline conditions.

Preliminary Project Benefits:

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

339 acres (300 acres of marsh creation/nourishment + the 39 acres with oyster reef - using SONRIS 10 year shoreline loss rate of 6-14 ft/yr on south shoreline of Caillou Lake in the project area).

- How many acres of wetlands will be protected/created over the project life? 248 acres (219 marsh creation/nourishment acres – using USGS linear regression land loss rates from LCA Caillou Lake Land Bridge + the 29 acres of shoreline protected with reef)
- 3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life?
 - 50-74% per convention of the Environmental WG for interior marsh creation projects
 - 75% per convention of the Environmental WG for shoreline protection with oyster reef Terrebonne Bay demonstration project
- 4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.?

This project will protect/maintain the Caillou Lake land bridge between Caillou Lake and the Gulf of Mexico.

- 5) What is the net impact of the project on critical and non-critical infrastructure? This project will have a moderate impact on non-critical infrastructure.
- 6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?

This project would be synergistic to the Louisiana Coastal Area Caillou Lake Land Bridge Project which would plan to create/nourish marsh and provide Gulf of Mexico shoreline protection directly west of project area.

Identification of Potential Issues:

There are potential oil gas pipelines and oyster leases in the project area.

Preliminary Construction Costs:

\$28.6 million, including 25% contingency. The estimated fully funded cost, using a 1.4 multiplier, falls in the \$40-45 M cost range.

Preparer(s) of Fact Sheet:

Kimberly Clements, NOAA NMFS, 225.389.0508 ext 204, Kimberly.Clements@noaa.gov

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PPL21 CAILLOU LAKE LAND BRIDGE RESTORATION





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R3-TE-10 North Catfish Lake Rim Restoration Project

K3-7E-10

PPL 20 PROJECT NOMINEE FACT SHEET 1/26/2011

Project Name North Catfish Lake Rim Restoration Project

Coast 2050 Strategy Protect Bay and Lake and Gulf shorelines

Project Location

Region 3, Terrebonne Basin, Lafourche Parish, NE Shoreline of Catfish Lake

Problem

The northeastern shoreline of Catfish Lake has experienced average erosion rate of approximately 9.8 ft with some areas losing as much as 40 ft per year. Interior marsh loss along the lake rim has also formed a large pond on the east side of the lake shoreline that has breach and threatens to greatly accelerate wetland loss in the area.

Proposed Project Features

The project will create marsh along the northeastern lake rim of Catfish Lake using a small dredge. The small dredge approach will be used to limit the amount of borrow volume required and to reestablish a healthy and stable lake rim marsh community.

Goals

The goal of the project is to create marsh and reduce shoreline loss by reconstructing the lake rim of Catfish Lake.

Preliminary Project Benefits

The project will create 146 acres of marsh and nourish 167 acres of existing marsh. The project will also reduce shoreline loss rates by half from 9.8 ft per year to 4.9 ft per year resulting in an additional 45 acres of benefit.

Identification of Potential Issues

The proposed project has the following potential issues: oyster leases, utilities/pipelines

Preliminary Construction Costs

\$ 6.7 million

Preparer of Fact Sheet

Ron Boustany, NRCS, (337) 291-3067, ron.boustany@la.usda.gov













R3-TE-11 South East Bayou Terrebonne Marsh Creation

B-TE-11

Project Name

South East Bayou Terrebonne Marsh Creation

Coast 2050 Strategy

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

Project Location

Region 3, Terrebonne Basin, Terrebonne Parish

Problem

The wetlands in the Terrebonne Basin were historically nourished by the fresh water, sediment and nutrients delivered by the Mississippi River and the many distributary channels. Following the creation of levees along the lower river for flood control and navigation, these inputs ceased. In addition, numerous oil and gas canals in the area contributed significantly to wetland losses. As the marshes break up and tidal channels expand to interior marshes, saltwater intrusion penetrates deep into fresh areas and continues to degrade the marshes. An area of the Southeastern banks of Bayou Terrebonne adjacent to Lake Barre is heavily degraded and is breaching along its length. Without action, the lake and bayou will be coalesce resulting in more direct transmission of saline water deep into fresh areas.

Proposed Solution

The proposed project's primary feature is to create and/or nourish approximately 472 ac (354 ac created, 118 ac nourished) of marsh. In order to achieve this, sediment will be hydraulically pumped from the Terrebonne Bay into the shallow water marsh creation area. Containment dikes will be constructed around the marsh creation area to keep material on site during pumping and the lake-front side of the dikes will be armored with revetment to protect the shoreline of the newly created marsh. 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 to reestablish tidal connections. 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 (177 ac).

Goals

The project goal is to create and/or nourish approximately 472 ac (354 ac created, 118 ac nourished) of emergent brackish marsh using sediment from Terrebonne Bay.

Identification of Potential Issues

The proposed project has potential land rights and utility/pipeline issues.

Preliminary Construction Costs: \$19.4 million

Preparer(s) of Fact Sheet:

Ron Boustany, Natural Resources Conservation Service, ron.boustany@la.usda.gov



R3-TE-12 Carencro Bayou Freshwater Introduction Project

Project Name

Carencro Bayou Freshwater Introduction Project

Coast 2050 Strategy

Regional: Lower water levels in upper Penchant Marshes; Increase transfer of Atchafalaya River water to lower Penchant tidal marshes

Project Location

Region 3, Terrebonne Basin, Terrebonne Parish

Problem

The potential to flow water from the Atchafalaya River into the Penchant Basin has increased over the past few decades through the GIWW from the north and west through Bayou Chene and into Bayou Penchant. Although the Pechant Basin Plan project will do much to increase flow to the south through Bayou Copesaw into Brady and Superior Canals, much of the water flowing through Bayou Penchant short-circuits back to the Atchafalaya Bay area through Palmetto, Plum and Carencro Bayous. Therefore, the fresh water rich in nutrients and sediments never reaches the marshes of Central Terrebonne where it is most needed.

Proposed Solution

The Carencro Bayou FW Introduction project would open critical pathways through existing canals to allow increased flow of riverine water to reach areas where salinity intrusion has devastated previously vibrant fresh and intermediate marshes north of Bayou Decade. The project would evaluate various pathways and existing plugs and structures to determine the most advantageous routes to move water in areas of greatest need. The goal would be to reestablish flows to areas of high loss and subsidize existing restoration efforts in an area recognized as one of great need.

Goals

The goal would be to reestablish flows to areas of high loss and subsidize existing restoration efforts in an area of high loss.

Preliminary Benefits

The project would capture approximately 10% of current flow capacity affecting approximately 21,563 acres and sustain 270 acres of wetlands over 20 years.

Identification of Potential Issues: None known

Preliminary Construction Costs: \$5.5 million

Preparer(s) of Fact Sheet:

Ron Boustany, Natural Resources Conservation Service, ron.boustany@la.usda.gov





PPL-21 Carencro Bayou Freshwater Introduction Project

Problem:

The flow of water from the Atchafalaya River has increased over the past few decades into the Penchant Basin thought the GIWW from the north and west through Bayou Chene and into Bayou Penchant. Although the Pechant Basin Plan project will do much to increase flow to the south through Bayou Copesaw into Brady and Superior Canals, much of the water flowing through Bayou Penchant short-circuits back to the Atchafalaya Bay area through Palmetto, Plum and Carencro Bayous. Therefore, the fresh water rich in nutrients and sediments never reaches the marshes of Central Terrebonne where it is most needed.

Project Goals:

The Carencro Bayou FW Introduction project would open critical pathways through existing canals to allow increased flow of riverine water to reach areas where salinity intrusion has devastated previously vibrant fresh and intermediate marshes north of Bayou Decade. The project would evaluate various pathways and existing plugs and structures to determine the most advantageous routes to move water in areas of greatest need. The goal would be to reestablish flows to areas of high loss and subsidize existing restoration efforts in an area recognized as one of great need.











Region 3-

Atchafalaya Basin

R3-AT-01 West Wax Lake Wetlands Diversion

K3-AT-01

PPL-21 PROJECT NOMINEE FACT SHEET

January 26, 2011

Project Name: West Wax Lake Wetlands Diversion

Coastwide 2050 Strategy:

- Coastwide Strategy: Dedicated Dredging for Wetland Creation
- Regional Strategies: Restore and Sustain Marshes Maximize Atchafalaya Land Building
- Mapping Unit Strategies (Wax Lake Wetlands Unit):
 - #61 Beneficial use of dredged material
 - #62 Maintain distributaries(e.g., Hog Bayou, Leopard Bayou and Bayou Blue)

State Master Plan:

- Planning Unit 3b: Atchafalaya and Teche-Vermilion Basins
 - Atchafalaya River Diversion Freshwater (nutrients & sediments) Conveyance
 - D3b-9 Increase Sediment Transport Down Wax Lake Outlet (and distributaries)
 - D3b-14 Convey Atchafalaya River Water Westward via GIWW (and distributaries)

Project Location: Region 3b - Atchafalaya Basin, Wax Lake Wetlands (West side), St. Mary Parish, LA.

Problem: Three Wax Lake Outlet bayous (Hog, Leopard and Blue) are becoming blocked by development of the Outlet's west bank natural levee (evidenced through airphoto analysis and depth changes between 1941 outlet construction and the present) and are reducing diversion of fresh water, nutrients and sediment to the West Wax Lake Wetlands east of Bayou Sale.

Goals: 1) Restore and maintain three major bayou openings and promote through-flow of fresh water, sediments and nutrients to create and sustain freshwater marshes and swamps and promote firmer marsh substrate and natural levee development along distributary channels; 2) Offset tidal influence and substrate erosion associated with access canals in western portion of subunit by maintaining a westward moving head of fresh water and introduction of sediments and nutrients that promote vigorous plant growth and sustain wetlands; 3) facilitate infilling of abandoned access canals off of major bayous with distributary channel sediments; 4) create wetlands with material dredged for channel maintenance.

Proposed Solutions: Restore and maintain hydrologic connection between Wax Lake Outlet (Atchafalaya River water) and distributary channels to sustain hydrologic processes and wetlands.

Preliminary Project Benefits: 1) Restore/maintain hydrologic connection between Wax Lake Outlet and distributary channels; 2) Create directly ~64 ac of freshwater wetlands through deposition of dredged material from channels; 3) Create indirectly ~55 ac of freshwater wetlands through accretion in access canals and shallow ponds adjacent to distributary channels; 4) Benefit ~20,480 ac of freshwater wetlands through input and through-flow of sediments, nutrients and fresh water; 5) Improve water quality in interior wetlands and water bodies through regular flushing associated with flood pulses, 6) Promote natural levee formation, 7) Has no apparent impact on infrastructure, 8) Contributes to planning efforts of local, state and federal governments and private landowners to create and sustain landscape integrity, maintain hydrologic processes and water quality and sustain natural land-building processes associated with freshwater and sediment diversions.

Identification of Potential Issues: There do not appear to be any potential issues at this time.

Preliminary Construction Costs: Preliminary construction cost estimate not determined.

Preparer of Fact Sheet:

Karen Wicker, Ph.D., Coastal Environments, Inc., for SM-Energy, (225) 383-7455 x 119, kwicker@coastalenv.com










- DREDGE NEW, DIRECT CHANNEL (-15') FROM WLO TO BAYOU BLUE
- DREDGE NEW, DIRECT CHANNEL (-15') FROM WLO TO LEOPARD BAYOU
- DEEPEN/MAINTAIN EXISTING, DIRECT CONNECTION FROM WLO TO HOG BAYOU
- USE DREDGED MATERIAL TO CREATE MARSH & LOW LEVEE ALONG NEW/DEEPENED CHANNEL REACHES





















R3-AT-02 Reef Restoration between Point au Fer and East Marsh Island

PPL21 PROJECT NOMINEE FACT SHEET

Project Name

Point Au Fer to Marsh Island breakwater

Location

Region II, Atchafalaya Basin, Gulf of Mexico between Point Au Fer Island and East Marsh Island.

Coast 2050 Strategy

Restore Natural tidal hydrology to the Atchafalaya Bay

Problem

Low tide reef from Point Au Fer to Marsh Island was mined for its shells. Without that protection, tidal and storm surges have had a greater impact on the estuary's shores and marshes.

Proposed Solution

Replacement of the shell reef with a breakwater would restore the pre-industrial hydrology of the region. Onshore and inland restoration projects would be augmented by protection from surges.

Goals

Protect the central Louisiana Coast from tidal and storm surges.

Preliminary Benefits

The project will capture a greater portion of silt from the Atchafalaya River and Wax Lake outlet. It should also help reduce the size of Louisiana's offshore dead zone.

Identification of Potential Issues

Gaps will be necessary every few miles for navigational requirements.

Preliminary Construction Costs

The break water could begin as a sheet metal structure to be augmented with riprap.

Preparer of Facts Sheet

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Region 3-

Teche-Vermilion Basin

R3-TV-01 Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection

R3-TV-01

PPL 20 Cote Blanche Freshwater & Sediment Introduction & Shoreline Protection

Coast 2050 Strategy:

Coastwide: Maintenance of Bay and Lake Shoreline Integrity; Assure vertical accumulation Regional: Maintain shoreline integrity and stabilize critical shoreline areas of the Teche-Vermilion Bay systems; Optimize riverine flows from GIWW into marshes and minimize direct flow into bays; Reduce sedimentation in bays

Project Location:

Region 3, Teche/Vermilion Basin, St. Mary Parish.

Problem:

Substantial loss occurred in the project area due primarily to significant increases in hydrologic energy and marine impacts within highly vulnerable, organic marsh following oil and gas canal installation. The TV-4 Project implementation reduced water level variability and the rate of marsh loss, and is also promoting the accretion of sediment entering the interior from the adjacent bays. Hurricanes Lili and Rita however caused severe impacts along with direct removal of more than 1,800 acres of emergent marsh within the project area (Barras 2004 and 2005). Significant quantities of fresh water and sediment are available from the GIWW but only a small portion currently reaches the adjacent interior marshes for a number of reasons. The targeted Marone Point shoreline experienced historic erosion rates that varied from 9-20 ft/year. If left unchecked, the rapidly eroding shoreline along East Cote Blanche Bay will lead to a conversion of the highly organic interior wetlands to open water.

Goals:

The primary goals are to 1) tap the freshwater and sediment flow available in the GIWW to cease emergent marsh loss and promote land building, and 2) halt and/or reverse shoreline erosion.

Proposed Solution:

A total of 37,043 linear feet of flow improvements along various reaches of existing channels and the installation of a structural measure to provide a net flow increase of 930 cfs diverted from the GIWW. The freshwater and sediment input would be distributed through multiple avenues to optimize flow delivery to isolated damaged areas. Project features also include 27,150 linear feet of shoreline protection along the northern shoreline of East Cote Blanche Bay.

Project Benefits:

The project would result in 763 net acres protected and/or created over the 20-year project life.

Project Costs:

The total fully funded cost for the project is \$33,380,676.

Preparers of Fact Sheet:

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REGION III - Teche/Vermilion Basin Cote Blanche Freshwater & Sediment Introduction & Shoreline Protection Project Coastal Wetlands Planning Protection and Restoration Act











2/1/2011







Net F	ncre	ASA

Estimated Flows (cfs)				
	Existing	FWP	Net to Interior	
Site 1	37	146	110	
Site 2	0	146	146	
Site 3	259	934	674	
Total	296	1226	930	









R3-TV-02 Cole's Bayou Marsh Creation and Restoration

Region 3-RPT PPL20 PROJECT NOMINEE FACT SHEET January 5, 2011

Project Name:

Cole's Bayou Marsh Creation and Restoration

Coast 2050 Strategy:

Restore and Sustain Wetlands (*Regional Ecosystem Strategy*) Dedicated Dredging, to Create, Restore, or Protect Wetlands (*Coastwide Common Strategy*) Terracing (*Coastwide Common Strategy*) Vegetative Plantings (*Coastwide Common Strategy*)

Project Location:

Region 3, Teche/Vermilion Basin, Vermilion Parish, Eastern Bank of Freshwater Bayou, Schooner Bayou South approximately 3.85 miles

Problem:

Project area wetlands are undergoing losses at rates between -0.2 and -0.5 %/year based on analyses conducted through 2006; these loss rates do not reflect the effects of 2008 storms and may be lower than updated analyses would reveal. Marshes in this area are subject to losses from shoreline erosion, subsidence/sediment deficit, and interior ponding. Shoreline erosion along the Freshwater Bayou Canal has resulted in direct wetland loss as the canal has widened from an authorized width of less than 200 feet to 800 feet. In addition to these direct losses, significant interior marsh loss has resulted from salt water intrusion and hydrologic changes associated increasing tidal influence. As hydrology within this area has been modified, habitats have shifted to more of a floatant marsh type, resulting in increased susceptibility to tidal energy and storm damages. Habitat shifts and hydrologic stress reduce marsh productivity, a critical component of vertical accretion in intermediate wetlands. 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.

As evidenced from aerial photography the project area is part of a larger feature of weakened interior marsh from the project area south and west to include those marshes south of Pecan Island. If left to deteriorate, the project area would eventually open Vermilion Bay into Freshwater Bayou. This would then threaten the integrity of Freshwater Bayou, exposing a larger interior marsh area to conversion to open water.

In the specific project area, erosion of the eastern bankline of Freshwater Bayou has resulted in formation of two breaches, allowing boat wakes and hydrologic action to adversely affect the interior marsh east of the canal. The wakes from passing vessels and tidal action are causing the export of organic material from the project area. Large areas of interior marsh in the western and central part of the project area are breaking apart and turning into open water.

Goals:

(1) Plug breaches,

- (2) Maintain limited hydrologic connection between Freshwater Bayou Canal and interior marshes,
- (3) Improve freshwater and sediment inflow into interior wetlands,
- (4) Create approximately 345 acres of intermediate emergent marsh by creation and terraces and
- (5) Protect interior marshes from erosion.

Proposed Solutions:

Create 314 acres intermediate marsh in existing open water areas via dedicated dredging. Target marsh elevation is +1.4' NAVD. Borrow is proposed from Vermillion Bay; although not considered "external" source of material, significant sediment inflows into this area may result in re-filling of the borrow area. Approximately 30,000 feet of terraces are proposed in shallow open water areas to reduce pond enlargement. Terraces would be constructed with +3', 20' crown width and planted. Terrace construction is estimated to create about 30 acres of wetland. Project features would also include two 300 foot-long rock dikes with a top height of +3.5' NAVD each located at an existing breach along the eastern shore of Fresh Water Bayou. As proposed, the dike would be constructed along the -2' contour with 5' wide crown and 3:1 side slopes. Conceptual dike design based on Belle Isle Bayou to the Lock (TV-11b).

Additionally, sediment-laden freshwater is often available at the northern reaches of the project area. It is proposed that flap-gated culverts be installed at locations along Freshwater Bayou Canal and through spoil banks in the northwestern portion of the project area to provide conduits for freshwater and sediment introduction. It may be necessary to conduct limited excavation of Coles Bayou and access canals to optimize sediment and freshwater introduction. It is anticipated that flapgated structures would also be replaced/installed in the southern portion of the area to provide drainage and encourage water intake from the north. It is expected that all structures will remain fully open except during extreme events.

Preliminary Project Benefits:

- 1) What is the total acreage benefited both directly and indirectly? Throughout the area of direct benefits, approximately 345 acres of marsh would be created from initial dredged material placement and terrace construction. In addition, over the 20-year project life. Indirect benefits may occur over some portions of the 4,400 project area as a result of freshwater and sediment introduction.
- 2) How many acres of wetlands will be protected/created over the project life? Assuming a 50% reduction in the background loss rate of -0.528%/year (Port Of Iberia) terracing and marsh creation would result in 290 net acres after 20 years. However, as evidenced in the photography pre- and post- 2008, project specific loss rates may be much higher; i.e. similar to the trend observed with the PPL 19 Freshwater Bayou Marsh Creation Project, extended boundary. A 100% loss rate reduction is assumed for the shoreline protection. In the event that benefits associated with the freshwater and sediment introduction are calculated, there could be a minor increase in anticipated net acres.
- 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 and marsh creation (from 0.528%/year to -0.264%/year). In the event that benefits associated with the freshwater and sediment introduction are calculated, there could be a minor decrease in anticipated loss rates for some portion of the 4,400 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 both critical (i.e., Freshwater Bayou Canal) and non-critical

(i.e., minor oil and gas facilities) infrastructure. As evidenced from aerial photography the project area is part of a larger feature of weakened interior marsh from the project area south and west to include those marshes south of Pecan Island. If left to deteriorate, the project area would eventually open Vermilion Bay into the Freshwater Bayou Canal, posing a moderate threat to critical infrastructure. This would then threaten the integrity of Freshwater Bayou Canal banks, exposing a larger interior marsh area to conversion to open water. 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. In addition, Audubon Society, Rainey Refuge boarders the project area to the south, and it would benefit from an increase in marsh acreage 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 Little Vermilion Bay Sediment Trapping Project (TV-12), which constructed approximately 110 acres of earthen terraces. The project would also provide a synergistic effect with the Freshwater Bayou Bank Stabilization Project (TV-11), by increasing marsh acreage East of the TV-11 project.

Identification of Potential Issues:

Oil and gas infrastructure is within the project area and would need to be avoided by dredge/fill activities. Operations and maintenance could also be an issue for this project, however, previous shoreline projects along the Freshwater Bayou Canal has resulted in the adaptation of larger stone classes to reduce such events.

Preliminary Construction Costs:

The estimated construction cost including 25% contingency is \$21,508,521. The fully-funded cost range is \$30M - \$40M.

Preparer of Fact Sheet:

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2/1/2011











R3-TV-03 Southeast Marsh Island Marsh Creation and Nourishment

3-TV-03

PPL21 PROJECT NOMINEE FACT SHEET January 26, 2011

Project Name:

Southeast Marsh Island Marsh Creation and Nourishment

Coast 2050 Strategy:

Coastwide Common Strategies: Dedicated dredging to create, restore, or protect wetlands; Offshore and riverine sand and sediment resources. Region 3 Regional Ecosystem Strategy: Restore and Sustain Marshes.

Project Location:

Region 3, Teche-Vermillion Basin, Iberia Parish, Southeast end of Marsh Island Wildlife Refuge.

Problem:

Areas of emergent marsh in Marsh Island interior have been converted to open water, primarily due to hurricane activity and subsidence. Marsh Island has been projected to lose 12.9% of its marsh habitat through 2050. Areas targeted by this project are those with the greatest historic land loss and are proximal to East Cote Blanche Bay.

Goals:

Create and restore brackish marsh habitat in the open water and deteriorated areas of the interior marsh primarily formed by hurricane damage and to nourish the surrounding marsh. The marsh nourishment component of this project will be completed with minimal or limited containment. Borrow material will be targeted from the state offshore area to limit water quality impacts and minimize impacts to potential oyster bed areas.

Proposed Solution:

The project would utilize hydraulic dredging from an offshore borrow site to create/nourish approximately 1300 acres of brackish marsh by completely filling in open water and deteriorated areas and use unconfined or limited confinement techniques allowing finer material to flow through the interior marsh areas and provide nourishment. This project would complement the constructed TV-14 and TV-21 projects on the east-end of Marsh Island.

Project Benefits:

The project would benefit approximately 1300 acres of brackish marsh.

Project Costs:

The preliminary cost plus 25% is \$25 Million.

Preparer(s) of Fact Sheet:

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Southeast Marsh Island Marsh Creation and Nourishment

Goals:

Create/Nourish 1300 ac brackish marsh

Proposed Solution:

- Hydraulic dredging from offshore borrow source
- Utilize unconfined/limited confinement techniques

Identification of Potential Issues:

• Land rights and Utilities/Pipelines

Preliminary Construction Costs + 25%:
• \$25 million

