BREAUX ACT

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
TECHNICAL COMMITTEE MEETING

AGENDA

April 15, 2009 9:30 a.m.

Location:
U.S. Army Corps of Engineers Office
7400 Leake Ave.
New Orleans, Louisiana
District Assembly Room (DARM)

Documentation of Technical Committee meetings may be found at:
http://www.mvn.usace.army.mil/pd/cwppra_mission.htm

Tab Number **Agenda Item**

1. **Status of Breaux Act Program Funds and Projects (Gay Browning, USACE) 9:30 a.m. to 9:40 a.m.** Ms. Gay Browning will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.

2. **Decision: Selection of Ten (10) Candidate Projects and up to Three (3) Demonstration Projects to Evaluate for PPL19 (Melanie Goodman, USACE/Kevin Roy, USFWS) 9:40 a.m. to 10:40 a.m.** The Technical Committee will consider preliminary costs & benefits of the Priority Project List 19 (PPL 19) Project and Demonstration Project Nominees listed below. The Technical Committee will select 10 projects and up to 3 demonstration projects as PPL 19 candidates for Phase 0 analysis.

Region	Basin	PPL19 Nominees
1	Pontchartrain	Fritchie Marsh-Northshore Marsh Creation and Terracing Project
1	Pontchartrain	Seven Lagoons/GIWW Marsh Creation, Shoreline Protection and Terracing
1	Pontchartrain	Labranche East Marsh Creation Habitat Enhancement
2	Mississippi River Delta	Pass a Loutre Restoration Project
2	Breton Sound	Monsecour Siphon
2	Breton Sound	Dedicated Sediment Delivery and Water Conveyance for Marsh Creation West of Big Mar
2	Breton Sound	Breton Marsh Restoration
2	Barataria	Bayou Dupont to Bayou Barataria Marsh Creation
2	Barataria	Bayou L'Ours Ridge Restoration and Terracing
2	Barataria	Chenier Ronquille Barrier Shoreline Restoratoin and Marsh Creation
3	Terrebonne	Lost Lake Marsh Creation and Hydrologic Restoration
3	Terrebonne	Terrebonne Bay Shoreline Restoration and Marsh Creation
3	Terrebonne	Madison/ Terrebonne Bay Marsh Creation
3	Atchafalaya	Bateman Island Sediment Retention and Marsh Restoration
3	Teche-Vermilion	Cote Blanche Freshwater/ Sediment Introduction and Shoreline Protection Project
3	Teche-Vermilion	Cheniere Au Tigre Headland Restoration
4	Mermentau	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East
4	Mermentau	Freshwater Bayou Marsh Creation
4	Calcasieu-Sabine	Cameron-Creole Watershed Grand Bayou Marsh Creation Project
4	Calcasieu-Sabine	Kelso Bayou Marsh Creation and Hydrologic Restoration

		PPL 19 Demonstration Project Nominees
Coastwide	DEMO	Rapidly Deployable Pre-cast Sediment Retention Barrier
Coastwide	DEMO	Ecosystems Wave Attenuator
Coastwide	DEMO	Bayou Backer Demo
Coastwide	DEMO	Floating Island Environmental Solutions Biohaven©
Coastwide	DEMO	Viperwall

3. **Discussion/Decision: Initial Discussion of FY10 Planning Budget Development (Process, Size, Funding, etc.) (Melanie Goodman, USACE) 10:40 a.m. to 10:55 a.m.** The FY10 Planning Program Budget development, including the PPL 20 Process, will be initiated.

4. **Discussion/Decision: Consideration for Phase II, Increment I Funding for Barataria Basin Landbridge Project (BA-27c(3)) 10:55 a.m. to 11:10 a.m.** The Technical Committee will consider the motion passed by the Task Force at the January 2009 meeting to approve Phase II, Increment I funding for a "feasible separable increment of the Barataria Basin Landbridge Project (BA-27c(3)), if sufficient funding is available. The Technical Committee will analyze the funds available in the Construction Program budget and make a recommendation to the Task Force on whether or not to approve the project for Phase II.

5. **Discussion/Decision: O&M Incremental Funding Correction for Little Lake Shoreline Protection/Dedicated Dredging near Round Lake (BA-37) (David Burkholder, OCPR) 11:10 a.m. to 11:20 am.** The Task Force approved an O&M incremental funding request in the amount of $65,124 for the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37) on November 5, 2008. However, an error was recently discovered, resulting in a shortfall of $48,615. The correct incremental funding request amount should have been $113,739. National Marine Fisheries Service (NOAA Fisheries) and the Louisiana Office of Coastal Protection and Restoration (OCPR) are requesting funding approval for the $48,615 shortfall.

6. **Report/Discussion: Status of the PPL 1 - West Bay Sediment Diversion Project (MR-03) (Tom Holden, USACE/ Kirk Rhinehart, OCPR) 11:20 a.m. to 11:45 p.m.** The Corps of Engineers will provide a status on the West Bay Project and efforts to develop a Work Plan with CPRA/OCPR to address the overall induced shoaling issue as directed by the Task Force at their November 5, 2008 meeting.

7. **Discussion: Project Update and Request for Project Scope Change for PPL 11- River Reintroduction into Maurepas Swamp Project (PO-29) (Tim Landers, EPA/Kirk Rhinehart, OCPR) 11:45 a.m. to 12:15 p.m.** The Environmental Protection Agency (EPA), in coordination with the State of Louisiana will provide a project update and request a change in project scope for the River Reintroduction into Maurepas Swamp project because the 30% Design revised cost estimate exceeds the original approved project cost estimate by more than 25%. The original approved estimated construction including a 25% contingency cost was $37,531,000. The revised 30% Design estimated construction including a 30% contingency cost is $151,725,000. EPA and the State are recommending continuing to work toward 95% Design, in collaboration with the Corps of Engineers and other CWPPRA partners, at which time the PO-29 project would be transferred to a different appropriation for construction funding.

**** BREAK ** → 12:15 p.m. – 1:00 p.m.**

8. **Report/Discussion/Decision: Status of Unconstructed Projects (Melanie Goodman, USACE) 1:00 p.m. to 1:20 p.m.** Melanie Goodman will provide an overview of the status of unconstructed projects on PPL's 1-14. The P&E may recommend individual project actions for the Technical Committee to consider. Emphasis will be on projects that have been delayed due to project related issues.

9. **Discussion/Decision: Funding Request for Post-Hurricane Operations and Maintenance on Sabine Structures Project (CS-23) (Darryl Clark, USFWS/ Kirk Rhinehart, OCPR) 1:20 p.m. to 1:35 p.m.** The U.S. Fish and Wildlife Service (USFWS) and the Louisiana Office of Coastal Protection and Restoration (OCPR) request Technical Committee approval for an O&M budget increase in the amount of $1,213,114, including incremental funding in the amount of $1,031,840 to cover post hurricanes Rita and Ike repairs and modifications. The incremental funding would be used to repair a gate, replace an actuator, and other work, and modify existing 1-stemmed gates to 2-stemmed gates. Electrical repairs were completed using federal post Hurricane Rita supplemental funding provided for the Sabine National Wildlife Refuge. The remaining post-hurricane supplemental funding was insufficient to complete the project and was returned to the USFWS regional office to be used on other hurricane related projects. Thus, there are no remaining supplemental funds to complete the remaining O&M and modification work. Funds previously provided by the Federal Emergency Management Agency were expended by OCPR for designs.

10. **Report/Decision: Scope Change Request for Little Pecan Bayou Hydrologic Restoration** (**ME-17) (Britt Paul, NRCS/Kirk Rhinehart, OCPR) 1:35 p.m. to 1:45 p.m.**

11. **Discussion/Decision: Proposed Revision of the Ecological Review CWPPRA Standard Operating Procedure Requirement (Clark, USFWS, Rhinehart, OCPR) 1:45 p.m. to 2:00 p.m.** The USFWS and OCPR request Technical Committee approval to revise the CWPPRA Standard Operating Procedures (SOP) to remove the Ecological Review (ER) requirement for most projects, with the exception that the State and/or Federal project sponsors would have the option of conducting an ER for: complex projects; projects for which there is little precedent to indicate whether or not they would be effective; or other projects as deemed necessary. Currently, the SOP requires that a draft ER be submitted at the 30% Design Review meeting [CWPPRA SOP Section 6(e)], and a final ER be submitted with Phase II materials (Appendix C SOP). Environmental Assessments, which are required for all Federal projects to satisfy National Environmental Policy Act (NEPA) requirements, typically contain information provided in the ER. Eliminating the ER for most projects, with the exceptions outlined above, would save time and costs without altering the effectiveness of the ecological review conducted during project development through the NEPA process.

12. **Report/Discussion: Status of the PPL 8 - Sabine Refuge Marsh Creation Project, Cycle 2 (CS-28-2) (Tom Holden, USACE) 2:00 p.m. to 2:10 p.m.** Mrs. Fay Lachney will provide a status on the changes to the Plans and Specifications and results of the bid opening for the construction contract for the Sabine Refuge Marsh Creation Project, permanent pipeline feature.

13. **Report/Discussion: Plaquemines Parish Master Plan (P.J. Hahn, Plaquemines Parish) 2:10 p.m. to 2:25 p.m.**

14. **Additional Agenda Items (Tom Holden, USACE) 2:25 p.m. to 2:35 p.m.**

15. **Request for Public Comments (Tom Holden, USACE) 2:35 p.m. to 2:45 p.m.**

16. **Announcement: Date of Upcoming CWPPRA Program Meeting (Melanie Goodman, USACE) 2:45 p.m. to 2:50 p.m.** The Task Force meeting will be held June 3, 2009 at 9:30 a.m. at the Estuarine Fisheries and Habitat Center, 646 Cajundome Blvd., Lafayette, Louisiana.

17. Announcement: Scheduled Dates of Future Program Meetings (Melanie Goodman, USACE) 2:50 p.m. to 2:55 p.m.

2009

June 3, 2009	9:30 a.m.	Task Force	Lafayette
September 9, 2009	9:30 a.m.	Technical Committee	Baton Rouge
October 14, 2009	9:30 a.m.	Task Force	New Orleans
November 17, 2009	7:00 p.m.	PPL 19 Public Meeting	Abbeville
November 18, 2009	7:00 p.m.	PPL 19 Public Meeting	New Orleans
December 2, 2009	9:30 a.m.	Technical Committee	Baton Rouge

18. Decision: Adjourn

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

STATUS OF BREAUX ACT PROGRAM FUNDS AND PROJECTS

Ms. Gay Browning will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

19TH PRIORITY PROJECT LIST

For Discussion/Decision:

The Technical Committee will consider preliminary costs & benefits of Priority Project List 19 (PPL 19) Project and Demonstration Project Nominees listed below. The Technical Committee will select 10 projects and up to 3 demonstration projects as PPL 19 candidates for Phase 0 analysis.

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1	Pontchartrain	Fritchie Marsh-Northshore Marsh Creation and Terracing Project
1	Pontchartrain	Seven Lagoons/GIWW Marsh Creation, Shoreline Protection and Terracing
1	Pontchartrain	Labranche East Marsh Creation Habitat Enhancement
2	Mississippi River Delta	Pass a Loutre Restoration Project
2	Breton Sound	Monsecour Siphon
2	Breton Sound	Dedicated Sediment Delivery and Water Conveyance for Marsh Creation West of Big Mar
2	Breton Sound	Breton Marsh Restoration
2	Barataria	Bayou Dupont to Bayou Barataria Marsh Creation
2	Barataria	Bayou L'Ours Ridge Restoration and Terracing
2	Barataria	Chenier Ronquille Barrier Shoreline Restoratoin and Marsh Creation
3	Terrebonne	Lost Lake Marsh Creation and Hydrologic Restoration
3	Terrebonne	Terrebonne Bay Shoreline Restoration and Marsh Creation
3	Terrebonne	Madison/ Terrebonne Bay Marsh Creation
3	Atchafalaya	Bateman Island Sediment Retention and Marsh Restoration
3	Teche-Vermilion	Cote Blanche Freshwater/ Sediment Introduction and Shoreline Protection Project
3	Teche-Vermilion	Cheniere Au Tigre Headland Restoration
4	Mermentau	Freshwater Bayou Marsh Creation
4	Mermentau	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East
4	Calcasieu-Sabine	Cameron-Creole Watershed Grand Bayou Marsh Creation Project
4	Calcasieu-Sabine	Kelso Bayou Marsh Creation and Hydrologic Restoration

		PPL 19 Demonstration Project Nominees
Coastwide	DEMO	Rapidly Deployable Pre-cast Sediment Retention Barrier
Coastwide	DEMO	Ecosystems Wave Attenuator
Coastwide	DEMO	Bayou Backer Demo
Coastwide	DEMO	Floating Island Environmental Solutions Biohaven©
Coastwide	DEMO	Viperwall

CWPPRA PPL19 Candidate Vote - Technical Committee

9-Apr-09

Region	Basin	Type	Project	COE	EPA	FWS	NMFS	NRCS	State	No. of votes	Sum of Point Score
4	CS	MC	Cameron-Creole Watershed Grand Bayou Marsh Creation Project	8	1	8	8	5	4	6	34
2	BA	MC/SP	Bayou Dupont to Bayou Barataria Marsh Creation	1	5	1	2	9	8	6	26
2	BA	BI	Chenier Ronquille Barrier Shoreline Restoration and Marsh Creation	3	9	3	9		6	5	30
1	PO	MC	LaBranche East Marsh Creation Habitat Enhancement	7	2	5		10	3	5	27
4	ME	MC	Freshwater Bayou Marsh Creation	6	6			8	10	4	30
2	BS	FD	Monsecour Siphon		10	6	5	7		4	28
3	TE	MC/HR	Lost Lake Marsh Creation and Hydrologic Restoration		3	9	10	4		4	26
1	PO	MC/TR	Fritchie Marsh-Northshore Marsh Creation and Terracing Project	9		4	6	2		4	21
2	BS	MC	Breton Marsh Restoration	4	4	7	3			4	18
2	BS	MC/OM	Dedicated Sediment Delivery and Water Conveyance for Marsh Creation West of Big Mar	2	7		7		1	4	17
2	BA	HR/TR	Bayou L'Ours Ridge Restoration and Terracing	10				1	7	3	18
3	TE	MC	Terrebonne Bay Shoreline Restoration and Marsh Creation	5		10				2	15
1	PO	MC/TR	Seven Lagoons/ GIWW Marsh Creation, Shoreline Protection and Terracing				4		9	2	13
3	TV	SP/FD	Cote Blanche Freshwater/Sediment Introduction and Shoreline Protection Project		8			3		2	11
4	CS	MC/HR	Kelso Bayou Marsh Creation and Hydrologic Restoration					6	2	2	8
3	TE	MC	Madison/Terrebonne Bays Marsh Creation				1		5	2	6
4	ME	SP	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East			2				1	2
2	MR	FD/MC	Pass a Loutre Restoration Project							0	0
3	AT	TR	Bateman Island Sediment Retention and Marsh Restoration							0	0
3	TV	MC	Cheniere Au Tigre Headland Restoration							0	0

NOTES:
- Projects are sorted by: (1) "No. of Votes" and (2) "Sum of Point Score"

CWPPRA PPL19 Demonstration Candidate Vote - Technical Committee

9-Apr-07

Project	COE	EPA	FWS	NMFS	NRCS	State	No. of votes	Sum of Point Score
Bayou Backer Demo		3	1	2	3		4	9
EcoSystems Wave Attenuator for Shoreline Protection Demo		1	3	1		3	4	8
Viperwall Demo	1		2		2	2	4	7
Rapidly Deployable Pre-cast Sediment Retention Barrier	2			3		1	3	6
Floating Island Environmental Solutions BioHaven©	3	2			1		3	6

NOTES:

- Projects are sorted by: (1) "No. of Votes" and (2) "Sum of Point Score"

CWPPRA PPL19 Nominees - SUMMARY MATRIX

8-Apr-09

Region	Basin	Type	Project			Potential Issues					
				Preliminary Fully Funded Cost Range	Preliminary Benefits (Net Acres Range)	Oysters	Land Rights	Pipelines/Utilities	O&M	Other Issues	Comments on Other Issues
1	Pontchartrain	MC/TR	Fritchie Marsh-Northshore Marsh Creation and Terracing Project	$20M - $25M	300-350			X		X	Gulf Sturgeon Critical Habitat
1	Pontchartrain	MC/TR	Seven Lagoons/ GIWW Marsh Creation, Shoreline Protection and Terracing	$25M - $30M	200-250					X	Gulf Sturgeon Critical Habitat
1	Pontchartrain	MC	LaBranche East Marsh Creation Habitat Enhancement	$30M - $35M	500-550						
2	MR Delta	FD/MC	Pass a Loutre Restoration Project	$30M - $35M	1,100-1,150			X		X	Issue with continued use of hopper dredge disposal area
2	Breton Sound	FD	Monsecour Siphon	$10M - $15M	1,150-1,200	X		X	X		
2	Breton Sound	MC/OM	Dedicated Sediment Delivery and Water Conveyance for Marsh Creation West of Big Mar	$20M - $25M	950-1,000			X	X		
2	Breton Sound	MC	Breton Marsh Restoration	$25M - $30M	350-400			X			
2	Barataria	MC/SP	Bayou Dupont to Bayou Barataria Marsh Creation	$25M - $30M	250-300			X	X		
2	Barataria	HR/TR	Bayou L'Ours Ridge Restoration and Terracing	$5M - $10M	100-150						
2	Barataria	BI	Chenier Ronquille Barrier Shoreline Restoration and Marsh Creation	$40M - $50M	200-250	X		X			
3	Terrebonne	MC/HR	Lost Lake Marsh Creation and Hydrologic Restoration	$25M - $30M	600-650			X	X		
3	Terrebonne	MC	Terrebonne Bay Shoreline Restoration and Marsh Creation	$25M - $30M	250-300	X		X			
3	Terrebonne	MC	Madison/Terrebonne Bays Marsh Creation	$15M - $20M	150-200	X		X			
3	Atchafalaya	TR	Bateman Island Sediment Retention and Marsh Restoration	$0M - $5M	50-100			X			
3	Teche-Vermilion	SP/FD	Cote Blanche Freshwater/Sediment Introduction and Shoreline Protection Project	$15M - $20M	550-600			X	X		
3	Teche-Vermilion	MC	Cheniere Au Tigre Headland Restoration	$5M - $10M	0-50	X		X			
4	Mermentau	MC	Freshwater Bayou Marsh Creation	$30M - $35M	250-300			X			
4	Mermentau	SP	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East	$35M - $40M	100-150			X	X		
4	Calcasieu-Sabine	MC	Cameron-Creole Watershed Grand Bayou Marsh Creation Project	$15M - $20M	500-550	X					
4	Calcasieu-Sabine	MC/HR	Kelso Bayou Marsh Creation and Hydrologic Restoration	$15M - $20M	100-150			X	X		

CWPPRA PPL 19 Nominee Demonstration Projects

Demonstration Project Name	Meets Demonstration Project Criteria?	Lead Agency	Estimated Cost plus 25% contingency **	Technique Demonstrated
Rapidly Deployable Pre-cast Sediment Retention Barrier	Yes	NMFS	$1,093,750	Evaluate the effectiveness of pre-cast concrete barriers as retention structures for dredged material as a potential alternative to earthen containment dikes.
EcoSystems Wave Attenuator for Shoreline Protection Demo	Yes	NMFS	$1,500,000	Evaluate the effectiveness of the EcoSystems Wave Attenuator as an alternative method of shoreline protection in areas where site conditions limit or preclude traditional methods.
Bayou Backer Demo	Yes	NMFS	$520,000	Evaluate the effectiveness of a bio-grass product in reducing shoreline erosion.
Floating Island Environmental Solutions BioHaven©	Yes	USACE	$1,835,000	Evaluate the effectiveness of floating marsh islands to reduce wave fetch, trap sediment, and establish floating marsh. In addition, evaluate their effectiveness as an alternative to earthern terraces in areas of poor soils.
Viperwall Demo	Yes	NRCS	$1,500,000	Evaluate the effectiveness of the Viper-Wall system to serve as a wave break and sediment collection system.

04/03/09

** Costs do NOT include a monitoring program and are NOT fully funded.

CWPPRA PPL 19 Nominees

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4	Calcasieu-Sabine	Cameron-Creole Watershed Grand Bayou Marsh Creation Project
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4	Mermentau	Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East

PPL19 PROJECT NOMINEE FACT SHEET

FINAL - March 26, 2009

Project Name: Fritchie Marsh-Northshore Marsh Creation and Terracing Project

Coastwide 2050 Strategy:

- Coastwide Strategy: Dedicated dredging to create, restore, or protect wetlands
- Regional Strategy 9: Marsh creation via dedicated sediment delivery

State Master Plan:

- **Planning Unit 1: East of the Mississippi River**

  • D 1-12. St. Tammany Marsh Restoration and Shoreline Protection: This measure will utilize dedicated dredging and vegetative plantings to provide shoreline protection and marsh creation along the north shoreline of Lake Pontchartrain. Approximately 11.7 miles of shoreline will be protected and approximately 326 acres of marsh will be created.

Project Location: Region 1 - Pontchartrain Basin, Pearl River Mouth mapping unit, Fritchie Marsh System, St. Tammany Parish. The Project Area is located approximately 3 miles southeast of Slidell, Louisiana, near the north shore of Lake Pontchartrain in St. Tammany Parish. The marsh is bounded by U.S. Highway 90 to the south and east, Louisiana Highway 433 to the west, and U.S. Highway 190 and additional marshland to the north.

Problem:

Although the CWPPRA PO-06 project was completed in 2001 and resulted in improved hydrology and marsh restoration throughout the area, a significant portion of the Fritchie Marsh was lost due to Hurricane Katrina. Now shallow open water areas dominate the landscape which reduces the effectiveness of the PO-06 project. Over 3,600 acres of this unit were lost in the past 50 years, and another 15% is expected to be lost over the next 50 years. The long-term loss rate is approximately 0.5%/yr; however, the loss rate jumped to 13% after the 2005 storms, as evidenced by satellite and aerial imagery collected by the USGS. This once stable land mass was severely damaged by the passing of Hurricane Katrina, to the effect that in some locations marsh was stacked over nine feet high along the tree line. These marshes cannot recover without replacement of lost sediment, which is critical if the northshore marshes are to be sustained.

Goals:

The goal of this project is to help restore the vital Fritchie Marsh ecosystem through marsh creation, terrace construction, and improving hydrology within the project area. The previous PO-06 project is helping to reconnect the project area to the Pearl River system; however, with so much marsh being physically removed after the storms, the benefits associated with PO-06 are limited. This project will reestablish the marsh that PO-06 is intending to benefit. As well, the additional culverts to be constructed under this proposal will only increase the freshwater and nutrients entering into, and ultimately sustaining, the restored marshes. Dredged material will

immediately create marsh to help this fragile ecosystem, and terracing will reduce wave fetch and have the potential to create marsh over the project life.

Specific goals of the project are:

- Create approximately 273 acres of intermediate marsh
- Vegetative plantings for marsh creation area
- Create approximately 100,000 linear feet of terraces with vegetation
- Reduce wave fetch and erosion of adjacent interior marshes
- Increase hydrologic connection with Pearl System

Proposed Solution:

Proposed project features include approximately 273 acres of marsh creation via hydraulic dredging and placement of 1.7 million cubic yards of material. Borrow areas will be determined during the planning phase of this project, but will be within the northern portion of Lake Pontchartrain. Water elevation in this area is approximately -1 ft NAVD and containment will be semi-confined. Target marsh elevation is +1.5 ft NAVD. Intermediate vegetation will be planted upon material compaction and settlement.

The installation of additional culverts under Hwy 190 will be investigated to help facilitate freshwater into the project area. During high water periods in the Pearl System water flows across Highway 190, and an additional culvert and small outfall channel could route this resource into the project area. The Fritchie Marsh watershed is large and improving water flow and capacity for riverine water to circulate through the restored marshes will contribute to the longevity and vitality of the project.

Approximately 100,000 linear feet of earthen terraces will be built to create a 1,300 acre terrace field. The water elevation in this area is approximately -1 ft NAVD and materials are conducive for terrace construction. Terraces will be constructed to a +3 ft NAVD, with a 10 foot crown and 1 on 5 slopes, and spaced approximately 500 ft apart from the center line of each terrace. Two rows of intermediate marsh plugs will be planted on the crown and two rows on each side of the terraces upon construction completion.

Preliminary Project Benefits:

1.) *What is the total acreage benefitted both directly and indirectly?*

Total 1,420 acres. Of this, approximately 273 acres is created marsh, 150 acres (69 acres emergent) are created terraces that will be directly constructed, and 1,000 acres of interspersed marsh and open water would be indirectly benefitted.

2.) *How many acres of wetlands will be protected/created over the project life?*
Approximately 325 net acres of created marsh and terraces will remain after 20 years assuming a loss rate of 0.5%/yr. The extent of currently existing marsh has not been quantified, but is irrelevant at this stage because the only difference in future with and without project is what is created under the project.

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

Using ENVWG convention, it is anticipated that the loss rate of the adjacent interior marsh would be reduced by 50%.

4.) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.?*
This project will help protect the integrity of the Lake Pontchartrain lake rim and shoreline from eroding from the north. Without dedicated delivery of sediment to this area, large expanses of former marsh adjacent to the lake shoreline will continue to erode and threaten the Lake's northern rim.

5.*) What is the net impact of the project on critical and non-critical infrastructure?*
It is expected that this project will have a net positive impact on non-critical infrastructure. Both the marsh creation and terrace field would help provide protection to U.S. Highways 90 and 190, key hurricane evacuation routes for New Orleans East and the areas surrounding the Fritchie Marsh Unit.

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

This project will function synergistically with the CWPPRA PO-06 Fritchie Marsh project that was completed in 2001. The PO-06 project restored hydrology to what was once a stable marsh system; however, the marshes that once benefitted from this project were decimated by Hurricane Katrina. The proposed project will re-establish the marsh, which will be sustained by improved hydrology constructed under PO-06.

Under St Tammany Parish's Wastewater Master Plan, the Parish is beginning preliminary engineering and design on a new Regional Treatment Plant to be located to the north west of the project area. The Parish has completed a Preliminary Feasibility Analysis and is currently conducting a Baseline Ecological Characterization to provide a preliminary characterization of the Fritchie Marsh's suitability for wastewater assimilation, an analysis of loading and assimilation capabilities of the wetland, landowner constraints, and other appropriate information. Introduction of secondarily treated wastewater and associated nutrients to the project area would provide a great source of freshwater and nutrients to the project area, and create synergy between the Parish's Coastal Restoration Vision and Wastewater Master Plan.

Identification of Potential Issues:

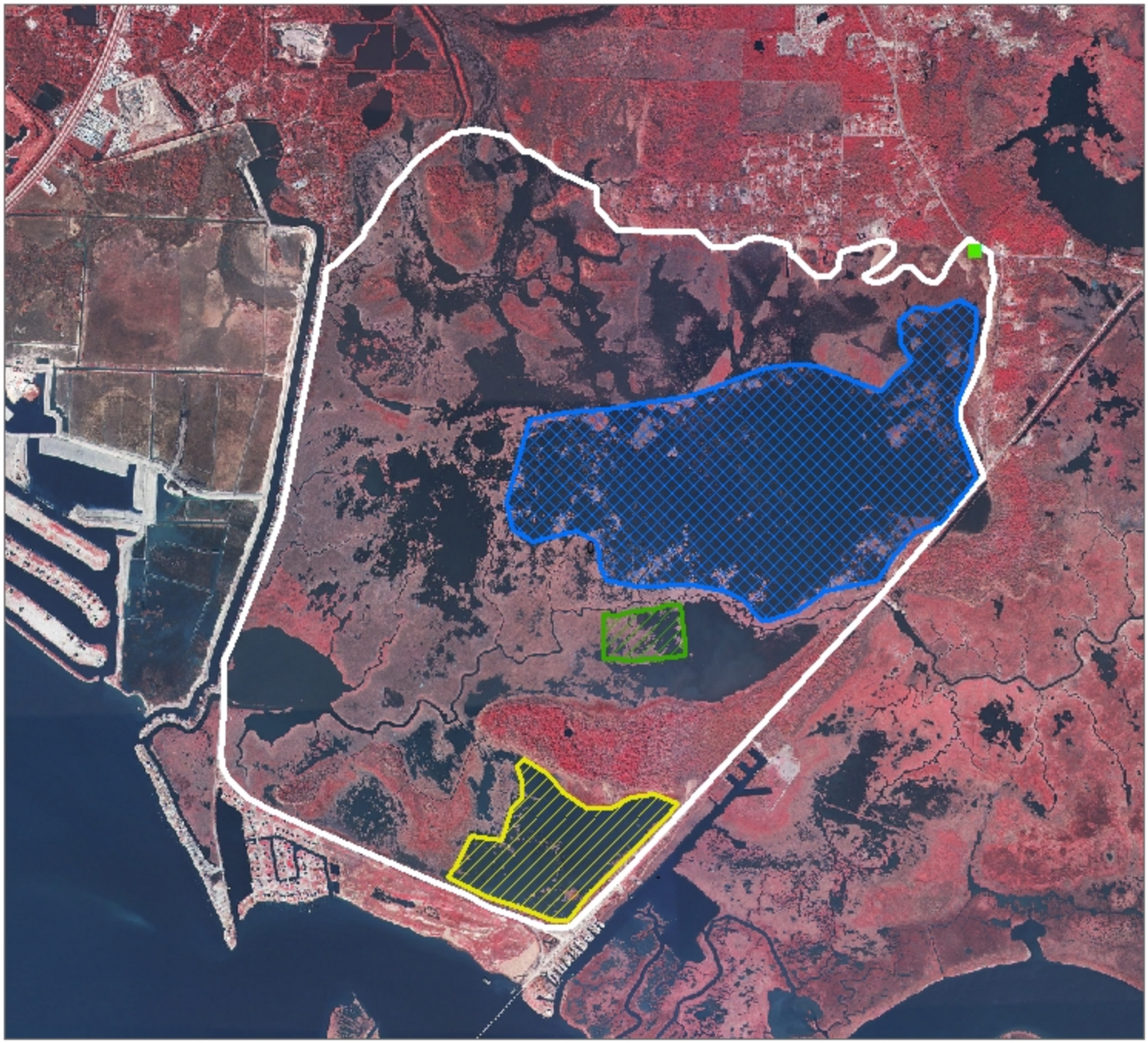
The Parish has already been in contact with the land owner for the marsh creation area, and has his full support for the project. There are a few pipelines in the area that will require project coordination with the pipeline owners. There are no known state-issued oyster leases in the project vicinity.

Preliminary Construction Costs:

The construction cost including 25% contingency is approximately $14,831,410. The estimated fully-funded cost range is $20M - $25M.

Preparer of Fact Sheet:

Brian Fortson, St. Tammany Parish, (985) 898-2552, mud@stpgov.org
Cheryl Brodnax, NOAA NMFS, (225) 578-7923, cheryl.brodnax@noaa.gov



Fritchie Marsh-Northshore Marsh Creation and Terracing Project CWPPRA PPL19 Nominee (January 2009)

- Culvert \ Pilot Channel
- Marsh Creation
- Marsh Nourishment
- Terracing
- Project Area

0 3,400 6,800 10,200

Feet

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project
Seven Lagoons/GIWW Marsh Creation, Shoreline Protection and Terracing

Coast 2050 Strategy
Regional Ecosystem Strategies 11 (maintain shoreline integrity of Lake Borgne) and 15 (maintain East Orleans landbridge).

Project Location
Region 1, Orleans Parish, shoreline of Lake Borgne between Unknown Pass and Rabbit Island.

Problem
The East Orleans Landbridge area is impacted by both shoreline erosion and interior wetlands loss. Interior wetlands in the project area appear to have been scoured/impacted by the 2005 storms, resulting in the formation of new ponds.

Wetland loss rates in the vicinity of the project are estimated at 1.92%/yr (Alligator Bend 2006 WVA extended boundary). Recent (1998 – 2007) shoreline erosion rate in the project area is 6'/yr as estimated by USGS. Review of aerial photography shows shoreline breaches into interior ponds during the last ten years and pond formation in interior marshes.

Goals
The project goals are to create and restore marsh and to maintain a continuous shoreline between the Gulf Intracoastal Waterway and Lake Borgne.

Proposed Solution
Dedicated dredging from Lake Borgne to create 85 acres and nourish 200 acres of marsh with target elevation of +1.5' NAVD using 1.4 M cy of sediment dredged from Lake Borgne. Half of the created marsh acreage will be planted.

A shoreline protection berm will be constructed along 19,000 ft of Lake Borgne shoreline using about 1.2 M cy of sediment dredged from Lake Borgne. The conceptual design is based on the Lake Hermitage shoreline protection feature. The proposed shoreline berm would have a crown height of +4' and width of 50' with 1:25 back-slope and 1:50 lake-side slope. Footprint of the berm at +1.0' NAVD will be about 275'. Based on the conceptual berm profile, at +1.0' NAVD, the berm will extend 200 ft into Lake Borgne resulting in the creation of 87 acres of berm seaward of the Lake Borgne shoreline. Containment dikes will be constructed to allow management of the fill material. The berm will be planted with four rows each of smooth cordgrass and seashore paspalum on five-foot centers. It is anticipated that borrow areas for marsh creation/nourishment and the shoreline protection feature would be located in Lake Borgne within one to three miles of the shoreline.

Additionally, 21,250' of terraces would be constructed in selected portions of the Seven Lagoons. Conceptual terrace design is +3' high, 20-foot wide crown with 1:5 slopes. Estimated terrace width at +1.0' NAVD is 40'. Terraces will be planted at five-foot centers with two rows smooth cordgrass plugs on each slope and three rows on the crown.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
The project will benefit a total of 392 acres. Marsh creation and nourishment will benefit 285 acres of marsh. The shoreline berm will create 87 acres ($\geq$ +1.0' NAVD) seaward of the existing shoreline and the terrace field will create 20 acres above +1.0' NAVD.

2) *How many acres of wetlands will be protected/created over the project life?*
About 219 total net acres of wetland to be protected/created over the project life.

It is estimated that 203 net acres (i.e., 295 acres – 94 acres) FWOP) of created/nourished marsh and shoreline berm will remain at TY20. At TY20, 16 acres of terraces would remain (assuming terraces lost at same rate as created/nourished marsh).

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).*
The marsh loss rate will be reduced by 50% and the shoreline erosion rate will be reduced by 75%.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
The project would maintain the integrity of the Lake Borgne shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project is anticipated to have marginal net positive impact on critical infrastructure (i.e., GIWW).

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project could have positive synergistic effects with the Alligator Bend project.

Identification of Potential Issues
The proposed project has the following potential issues: shoreline protection design.

Preliminary Construction Costs
The construction cost plus contingencies is approximately $18,376,599. The estimated fully funded cost range is $25 - $30 million.

Preparer(s) of Fact Sheet
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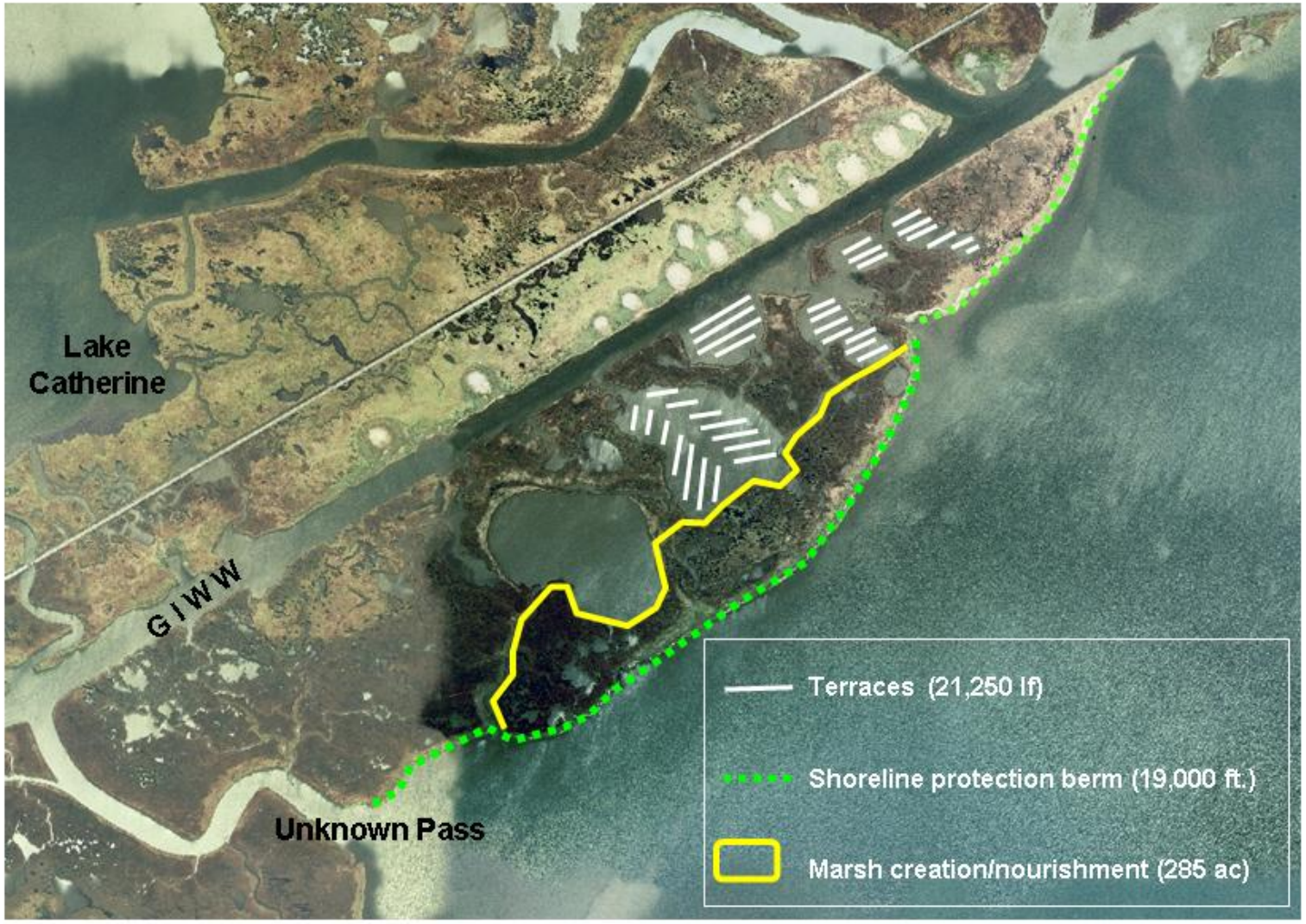
Seven Lagoons/GIWW Marsh Creation, Shoreline Protection and Terracing



PPL19 PROJECT NOMINEE FACT SHEET
FINAL – March 26, 2009

Project Name
LaBranche East Marsh Creation Habitat Enhancement

Coast 2050 Strategy
- Coastwide Common Strategies
  - Dedicated Dredging for Wetlands Creation
  - Vegetative Planting
  - Maintain or Restore Ridge Functions
- Region 1 regional ecosystem strategies
  - Dedicated delivery of sediment for marsh creation
- Region 1 mapping unit strategies
  - Dedicated Dredging

Project Location
Region 1, Pontchartrain Basin, St. Charles Parish, between Lake Pontchartrain and I-10, bounded to the west by the Fall Canal and the initial Bayou LaBranche Wetland Creation Project (PO-17) and to the east by a pipeline canal.

Problem
Dredging of access and flotation canals for the construction of I-10 resulted in increased salinity and altered hydrology that exacerbated the conversion of wetland vegetation into shallow open water bodies.

Goals
The primary goal is to restore the marsh that has been converted to shallow open water. Project implementation would result in an increase of fisheries and wildlife habitat acreage and diversity and improvement of water quality. The proposed project would provide storm buffer protection to I-10, the region's primary westward hurricane evacuation route, and to a lesser degree, the Canadian National Illinois Central Railroad line. Additional wetland storm buffer would complement the U. S. Army Corps of Engineers ongoing and contemplated hurricane protection measures in the area that include raising/enlarging the existing earthen levee and placement of a breakwater structure on the north side of the intersection of I-10 and I-310.

Proposed Solution
The proposed solution consists of the creation of $\pm$ 365 acres of emergent wetlands, $\pm$ 165 acres of shrub scrub wetlands, and $\pm$ 240 acres of subtidal water bottoms using dedicated dredging from Lake Pontchartrain. The marsh creation area would have a target elevation the same as average healthy marsh. Shrub scrub areas would have a target elevation of average healthy marsh plus one foot. The subtidal area would have a target elevation of average healthy marsh minus 2 feet. Containment dikes would be built to separate the marsh creation from the subtidal water bottom area, and unconfined dredged material would be delivered within the marsh creation site without containment

to build random shrub scrub wetlands resulting in a more cost effective project. Vegetative plantings would be utilized in the areas designated to be emergent marsh. Elevated areas, resulting from the point discharge of dredged material, would vegetate naturally with shrub scrub vegetation. Successful wetland restoration in the immediate area (PO-17) clearly demonstrates the suitability and stability of soil and material availability from a sustainable borrow area (outlet end of Bonnet Carre Spillway).

Project Benefits

This project would benefit 770 acres of intermediate marsh and open water. Approximately 365 acres of marsh and ±165 acres of shrub scrub habitat would be created. In addition, ± 240 acres of subtidal water bottoms would be improved. The project would result in a net of 519 acres over the project life.

Constructed in April of 1994, PO-17 has provided more than 14 years of wetland benefits and will likely continue to provide benefits well beyond its 20-year prescribed life expectancy. As with the PO-17 project, the proposed project would not only provide wildlife and fisheries and water quality benefits, but the restored wetland vegetation would buffer/weaken storm surge, providing additional protection to existing infrastructure including the Lake Pontchartrain and Vicinity Hurricane Protection Levee, I-10, the Canadian National Illinois Central Railroad embankment, aerial electrical lines, and non-essential infrastructure. The rail embankment and the two camps that are located south of PO-17 escaped significant damage from Hurricane Katrina while most of the camps and several portions of the rail embankment to the east were either lost or heavily damaged.

The current project would utilize data and lessons learned from PO-17. For example, the borrow area in the lake, used for PO-17, would be evaluated for re-use in an effort to save time and CWPPRA funding.

The project area's location north of I-10, makes it highly visible to motorists and would provide a readily discernible example of Louisiana's successful coastal restoration efforts. According to the Louisiana Department of Transportation and Development's Average Daily Traffic Count that was taken in 2005 for this segment of I-10, 54,687 vehicles a day pass this area. Because of its highly visible location near the New Orleans area, the project should be publicized as to its components and benefits.

Project Cost

The estimated construction cost plus 25% contingency for this project is approximately $21,989,000. The estimated fully-funded cost range is $30-$35 Million.

Preparers of Fact Sheet

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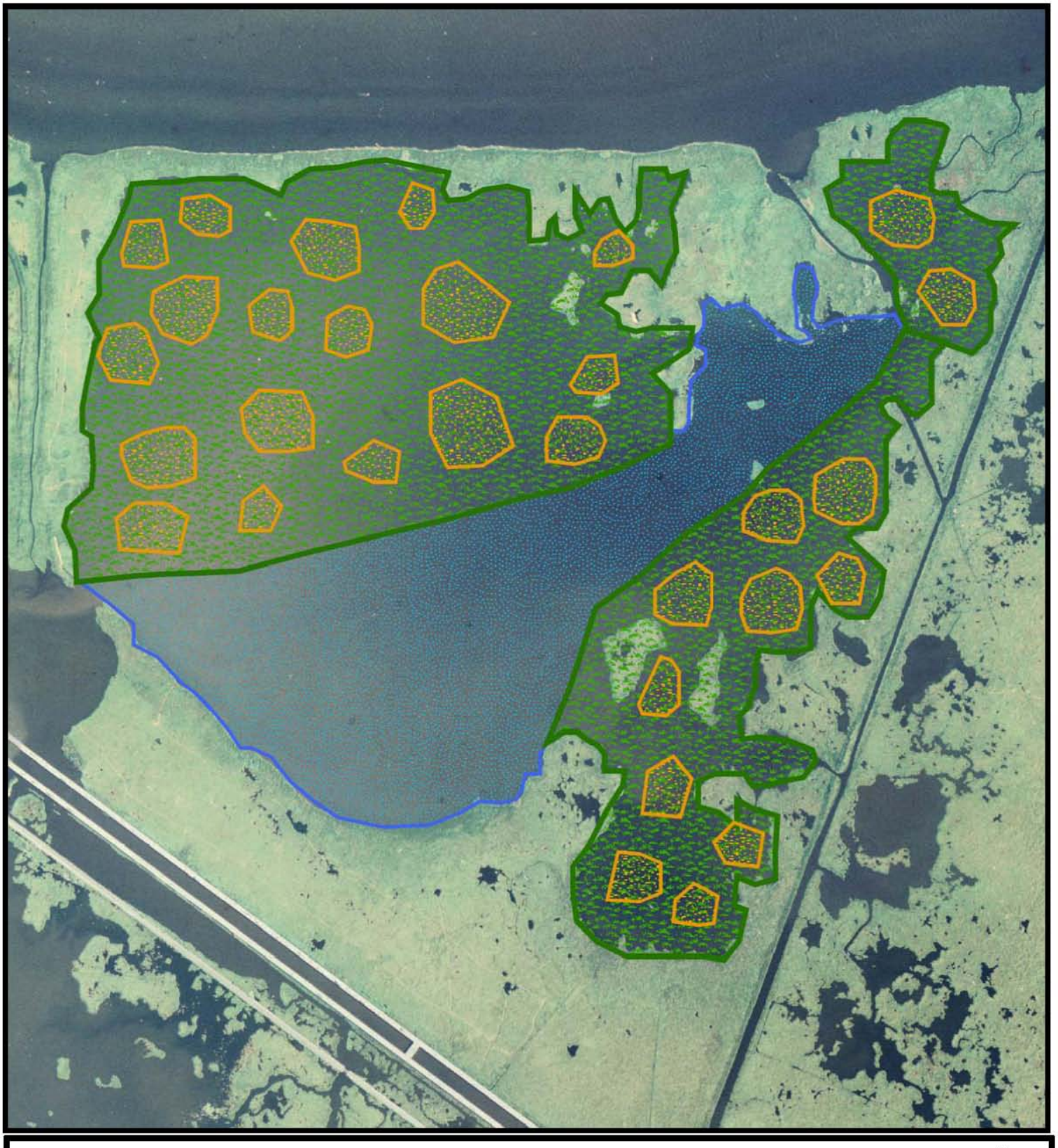

LaBranche East Marsh Creation Habitat Enhancement

Legend

- Subtidal - 240 ac.
- Shrub Scrub 165 ac.
- Marsh Creation 365 ac.

0 0.1 0.2 0.3 0.4 Miles

Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source:
2007 DOQQ Aerial Photography

Map Date: February 12, 2008

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Pass a Loutre Restoration

Coast 2050 Strategy
Regional Strategy – Continue building and maintaining delta splays

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

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

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

Specific goals of the project are: 1) Enhance marsh-building processes within the project area; 2) Create approximately 587 acres of marsh with dredged material from construction of a conveyance channel; and 3) Over the 20-year life of the project, create approximately 550 acres of marsh via the construction of 12 crevasses.

Proposed Solution

1) Pass a Loutre would be dredged for approximately 5.6 miles from Head of Passes to Southeast Pass. Preliminary design includes channel dimensions of -30.0ft NAVD88 by a 300-ft bottom width.

2) Approximately 5.0M yd^3 of material would be dredged during construction of the conveyance channel. That material will be used beneficially to create approximately 587 acres of marsh on Delta NWR and Pass a Loutre WMA.

3) Construction of 11 crevasses and cleanout of one existing crevasse. Crevasses will be constructed to a -8.0ft by 75-ft bottom width with 1(v):2(h) side slopes.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? Approximately 587 acres of marsh would be created from initial channel construction. Indirect benefits would occur over approximately 27,000 acres of marsh and open water habitats as a result of increased freshwater and sediment delivery (October 22, 2008 WVA).

2) How many acres of wetlands will be protected/created over the project life? Based on the PPL18 WVA, 1133 net acres of marsh would result from this project.

3*) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%)?* The assumed reduction in marsh loss over the entire project area would be between 25-49%.

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc? No.

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

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project would provide a synergistic effect with the Delta Wide Crevasses Project (PPL6) which constructed several crevasses south of Pass a Loutre. Many of the crevasses constructed under that project depend on the sediment load delivered by Pass a Loutre. This project would also have a synergistic effect with several other projects on the Mississippi River Delta – Venice Ponds Marsh Creation and Crevasses (PPL15), Spanish Pass Diversion (PPL13), Benneys Bay Diversion (PPL10), West Bay Diversion (PPL1), an LDWF crevasse project on Pass a Loutre, and several state mitigation projects that have been constructed on Pass a Loutre WMA.

Identification of Potential Issues

Several pipelines cross Pass a Loutre and would need to be avoided by dredging activities. The continued use of a hopper dredge disposal area at Head of Passes has raised some concerns over the longevity of the project.

Preliminary Construction Costs

The construction cost including 25% contingency is approximately $28,167,250. The fully-funded cost calculated for PPL18 was $34,383,309.

Preparer of Fact Sheet

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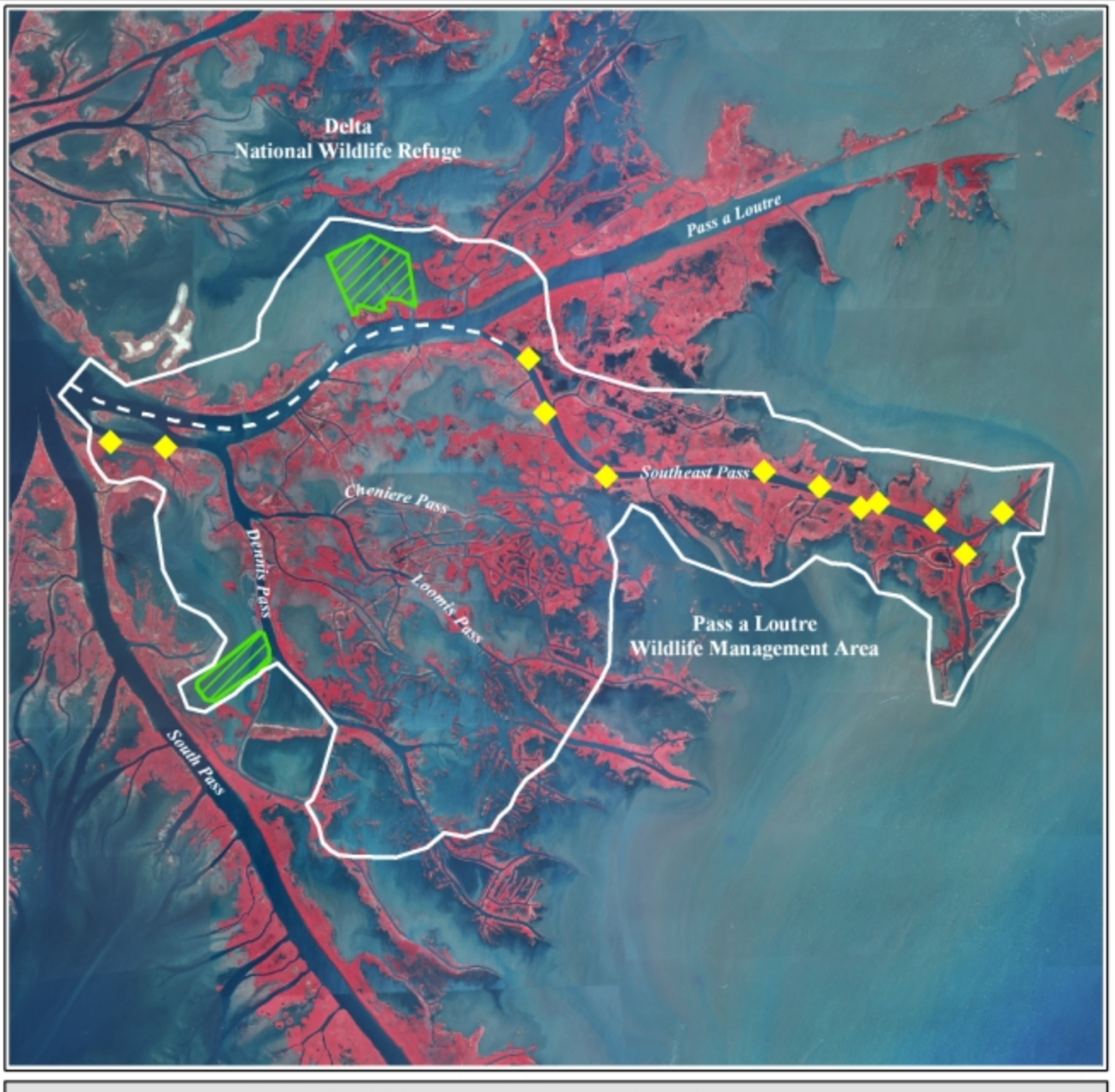

Pass a Loutre Restoration
(PPL18 Candidate)

Crevasse *

Dredged Channel *

Marsh Creation *

Project Boundary

* denotes proposed features

1 0 1
Kilometers
1 0 1
Miles

Scale 1:118,000

USGS
science for a changing world

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

Image Source:
2005 Digital Orthophoto Quarter Quadrangles

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

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Monsecour Siphon

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

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

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

Goals
Reduce rate of wetland loss. Restore fresh and intermediate marsh. Increase SAV cover.

Proposed Solution
Construct a siphon from the Mississippi River, with 2000 cfs maximum capacity (estimated average flow=1033 cfs). The project may require additional features for delivery and outfall management.

Preliminary Project Benefits
The total acreage benefited directly and indirectly is estimated to be 16,000 ac. We estimate approximately 1179 net acres will be protected/created/restored over the project life. The anticipated loss rate reduction throughout the area of direct benefits over the project life is >75%. No project features maintain or restore structural components of the coastal ecosystem. The project may have a significant positive net impact on the Mississippi River levee, which is critical infrastructure. The project will provide a synergistic effect with the Caernarvon Diversion project, Caernarvon Diversion Outfall Management (BS-03a), White Ditch Resurrection and Outfall Management (BS-12), Caernarvon Outfall Management/Lake Lery SR (BS-16), and Bertrandville Siphon (BS-18).

Identification of Potential Issues
The proposed project has potential oyster lease issues, pipeline issues, and O&M.

Preliminary Construction Costs
The construction cost including 25% contingency is approximately $6,727,490. The estimated fully-funded cost range is $10 M- $15 M.

Preparer(s) of Fact Sheet
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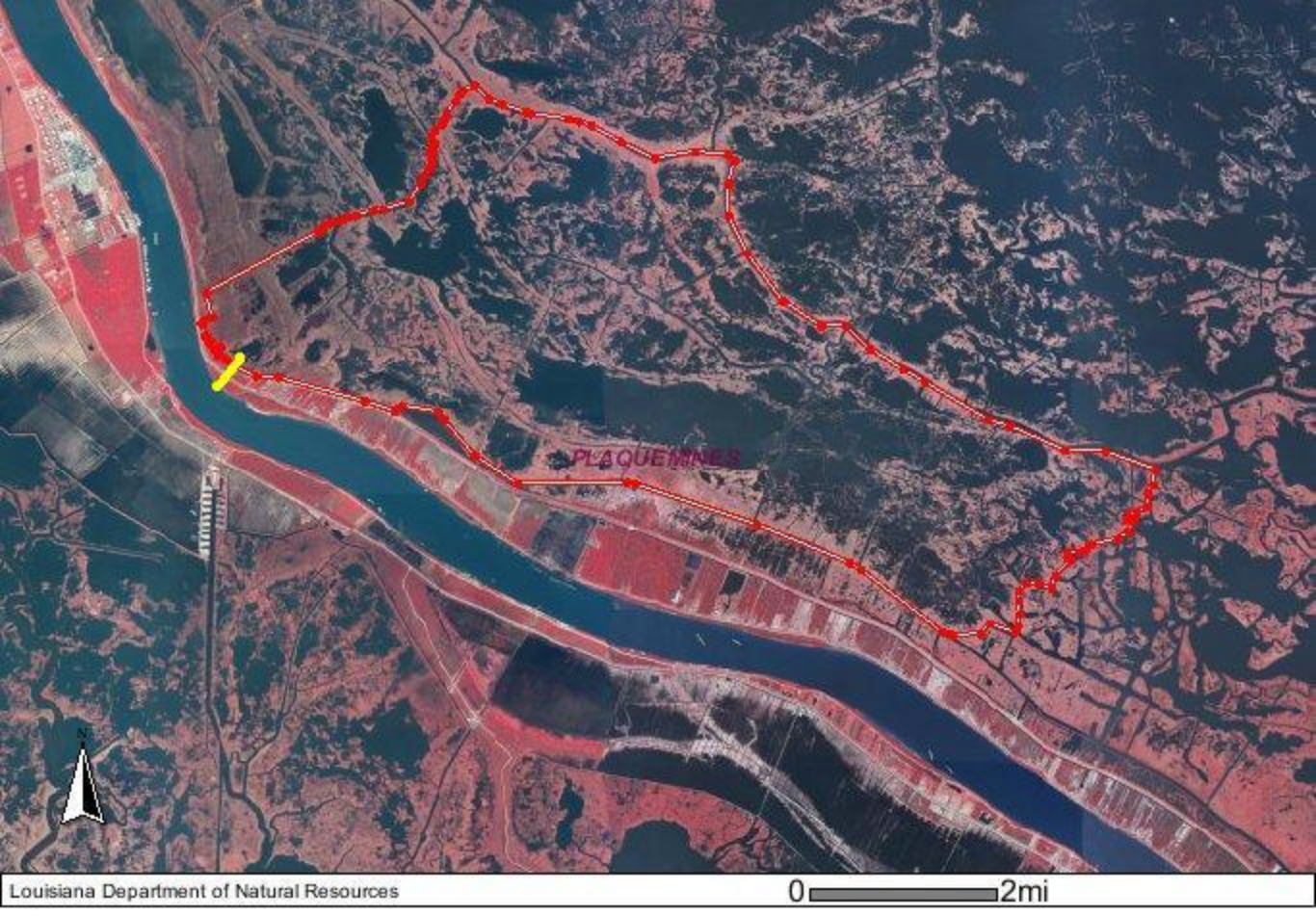

Proposed Monsecour Siphon benefit area.

Siphon

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name:
Breton Marsh Restoration Project

Coast 2050 Strategy:
- Dedicated dredging for wetland creation.

Project Location:
The project area is located in Region 2, Breton Basin, Plaquemines Parish, Caernarvon mapping unit, southeast of Delacroix, LA in an area south of Lake Lery between Bayou Terre aux Boeufs (near Delacroix) and River aux Chenes.

Problem:
The landfall of Hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats east of the Mississippi River. One of the areas most severely impacted was the Breton Sound Basin where it is estimated that 40.9 square miles of marsh were converted to open water. One of the most significant restoration tools used in this basin is the Caernarvon Freshwater Diversion. The operational plan of the Caernarvon Freshwater Diversion has proposed higher water discharge rates during the winter and spring to address hurricane impacts. Because much of the sediment and nutrients will be removed from the diversion water before it reaches the project area, the proposed increase in discharge rates will have little to no effect on project area's ability to rebuild. Without restoration, this region will begin to see the coalescence of water bodies, higher wave generated erosion rates, and a greater influence associated with the open brackish Black Bay system, especially during periods of reduced Caernarvon flow.

Goals:
The goal of this project is to restore marsh that was damaged by hurricane Katrina in 2005. Reestablishing this marsh would help restore marshes in the project area that once helped to moderate the effects of the brackish waters from the Black Bay system moving north into the more intermediate marshes.
Specific Goals: 1) Creation of 470 acres and nourishment of 148 acres of emergent marsh through hydraulic dredging. 2) Restore the western shoreline of Bayou Gentilly.

Proposed Solutions:
This project would create 470 acres of low salinity brackish marsh with the use of a hydraulic dredge. Renewable Mississippi River sediments that were deposited in Lake Lery as a direct result of the Caernarvon Diversion Project would be hydraulically dredged and pumped via pipeline to create marsh. Dredged material would be pumped to a height of between +1.5 to +2.0 ft NAVD 88 and contained with earthen dikes built from insitu material. These dikes would be gapped or degraded no later than three years post construction to allow for fisheries access. It is anticipated that water depths in the marsh creation cells are relatively shallow as they are the result of recent hurricane loss.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Direct benefits include creation and/or nourishment of 618 acres of marsh through hydraulic dredging.

2) How many acres of wetlands will be protected/created over the project life? This project would net approximately 381 acres of marsh throughout the life of the project.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%). The loss rate in the area of direct benefits would be reduced by >50-74%.

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. This project does not restore any structural components.

5) What is the net impact of the project on critical and non-critical infrastructure?
This project would provide protection to some oil and gas infrastructure.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with the Caernarvon Diversion and the Caernarvon Outfall Management/Lake Lery Shoreline Restoration Project (BS-16) that was recently been approved for Phase I funding.

Identification of Potential Issues:
There are several pipelines in the area.

Preliminary Construction Costs:
Construction costs including 25% contingency is approximately $18,179,711. The estimated fully-funded cost range is $25M - $30M.

Preparer(s) of Fact Sheet:
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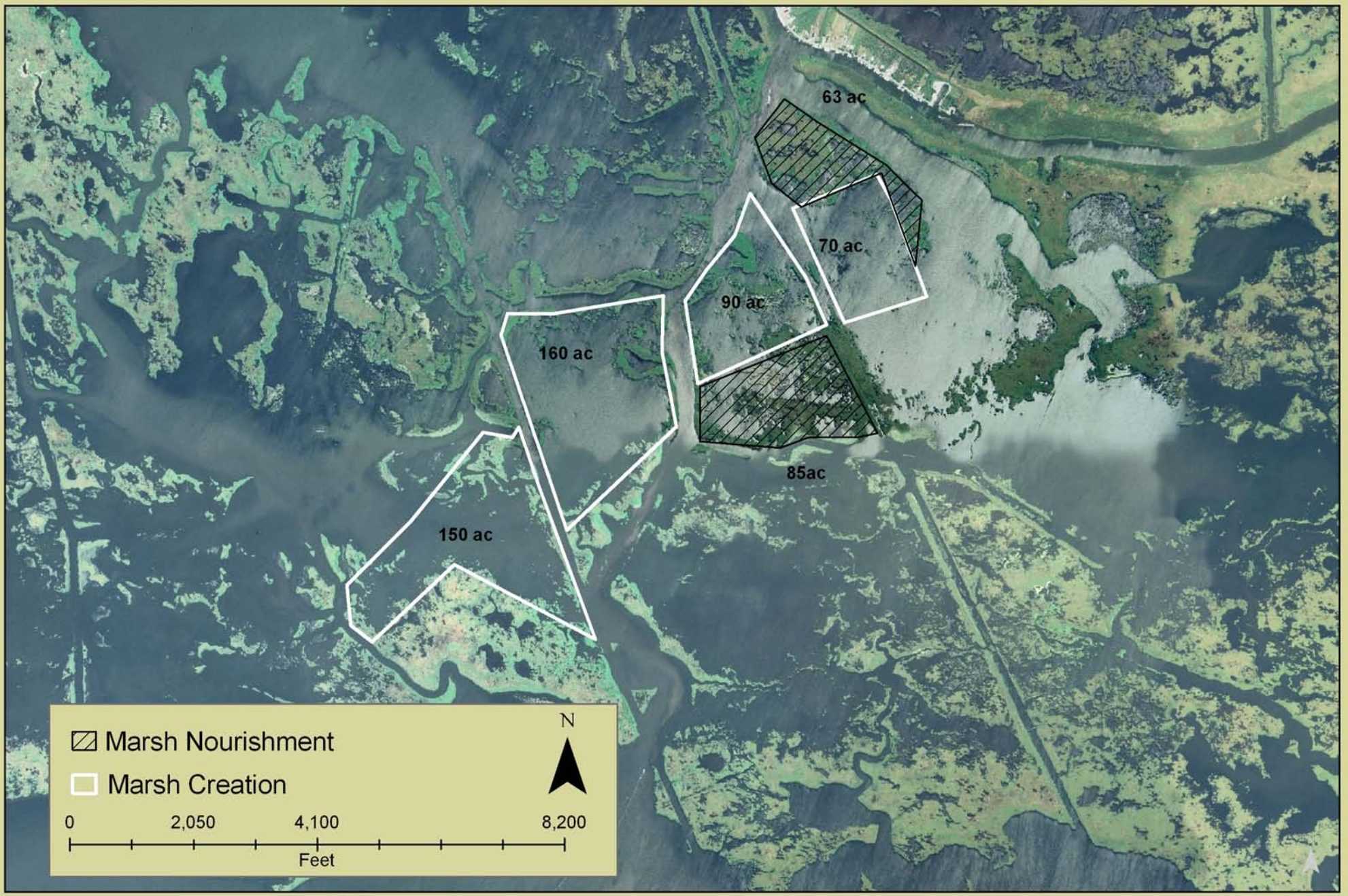
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Breton Marsh Creation and Nourishment Project



PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name:
Dedicated Sediment Delivery and Water Conveyance for Marsh Creation west of Big Mar

Coast 2050 Strategy:
Coastwide strategy: Dedicated dredging to create, restore, or protect wetlands
Regional Strategy 5: Manage outfall of existing diversions

Project Location:
Region 2. Caernarvon mapping unit; located to the west, southwest of Big Mar in upper Breton Sound, Plaquemines Parish.

Problem:
The upper Breton Sound marshes have long been subjected to subsidence, salt water intrusion, altered hydrology, and storm damage, which is heightened by the channelization of the Mississippi River. Construction and operation of the Caernarvon Freshwater Diversion Project is helping to reverse land loss in this area via re-introduction of river sediment, freshwater, and nutrients that at one time created much of coastal Louisiana. Opened in 1996, the structure has led to the infilling of Big Mar, a failed agricultural impoundment that serves as the structure's primary outfall area. As Big Mar fills in, flow that used, and is intended, to go down Delacroix Canal and into the marshes southwest of Big Mar is now taking the path of least resistance down Bayou Mandeville and into Lake Lery. Data collected by LSU has shown that of the flow entering Lake Lery, only a small portion exits the lake and is available for marshes further down the basin. After the passing of Hurricane Katrina in 2005, the Breton Sound marshes were devastated and land loss rates increased to 1.87%/yr (USGS) and 1.32%/yr in the upper sound. Considerable shearing has also occurred in the area resulting in the large-scale, direct removal of marsh. Reestablishment of the Breton Sound marshes is dependent upon both the direct reconstruction of lost marsh and optimizing the flow and outfall of the Caernarvon structure. The area west of Big Mar is currently receiving little Caernarvon flow from which to naturally rebuild marsh, and the flow to the west and southwest of Big Mar is becoming increasingly impeded with its infilling. This project will result in marsh creation in the areas not likely to rebuild on its own, and help facilitate flow back into the southwest wetlands of Breton Sound.

Proposed Solution:
Project features include approximately 500 acres of marsh creation via river mining and placement of 2.4 million cubic yards of material. In addition, a conveyance channel will be dredged from the northeast confluence of Delacroix Canal and Big Mar to the southwest corner of Big Mar where it joins with Delacroix Canal. Channel dimensions will be approximately 10,000 ft long, 100 ft wide and 5 ft deep requiring a total of 185,000 cubic yards of excavation. Material from the channel excavation will be beneficially used to create part of the marsh platform west of Big Mar. Construction of this channel will help redirect flow from the Caernarvon diversion to the southwest area of upper Breton Sound, which is currently taking the path of least resistance as Big Mar fills in through Bayou Mandeville into Lake Lery. The marsh

platform will be partially contained and vegetated with indigenous intermediate species upon compaction and dewatering.

Goals:

1. Create approximately 500 acres of intermediate marsh via sediment mining of the Mississippi River.
2. Excavate a channel 10,000 ft long, 100 ft wide, and 5 ft deep through the Big Mar to facilitate Caernarvon outfall to 10,400 acres of marshes west and southwest of Big Mar.
3. Reduce erosion of adjacent interior marshes.

Preliminary Project Benefits:

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

10,400 acre total project area. Approximately 500 acres of marsh platform will be constructed, and an area approximately 10,000 acres expected to be benefited from increased Caernarvon flow into southwest marshes.

2) *How many acres of wetlands will be protected/created over the project life?*

Total net of 991 acres after twenty years, split by 438 acres of created marsh at the end of twenty years, plus a net of 553 acres benefited from increased Caernarvon flow into southwest marshes (see attached models).

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

It is anticipated that the loss rate of the adjacent interior marsh would be reduced by 50%.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.*

This project will help fortify the hurricane protection levee and communities located along the northern boundary of Breton Sound. There are several areas where a marsh buffer no longer exists in front of the levee system, and breaches from storm activity have already been observed. Marsh creation under this project will, in part, target areas that provide direct protection to the hurricane protection levee.

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

It is expected that this project will have a net positive impact on critical infrastructure, specifically the Plaquemines Parish hurricane protection levee.

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

This project is part of the state master plan and will work in concert with several existing efforts in Breton Sound. Marsh creation sites will compliment the small USACE mitigation project near Braithwaite, and the channel excavation will facilitate flow to the outfall management structures constructed by the NRCS that depend upon flow down Delacroix canal.

Identification of Potential Issues:

No pipelines or oyster leases are in the project area. The borrow area will be the Mississippi River and a small portion of Big Mar for the purpose of facilitating diversion flow into Breton Sound. The landowners of both Big Mar and the surrounding marshes have been contacted and support the project concept.

Preliminary Construction Costs:
The construction cost including 25% contingency is approximately $16,872,519. The estimated fully-funded cost range is $20M - $25M.

Preparer of Fact Sheet:
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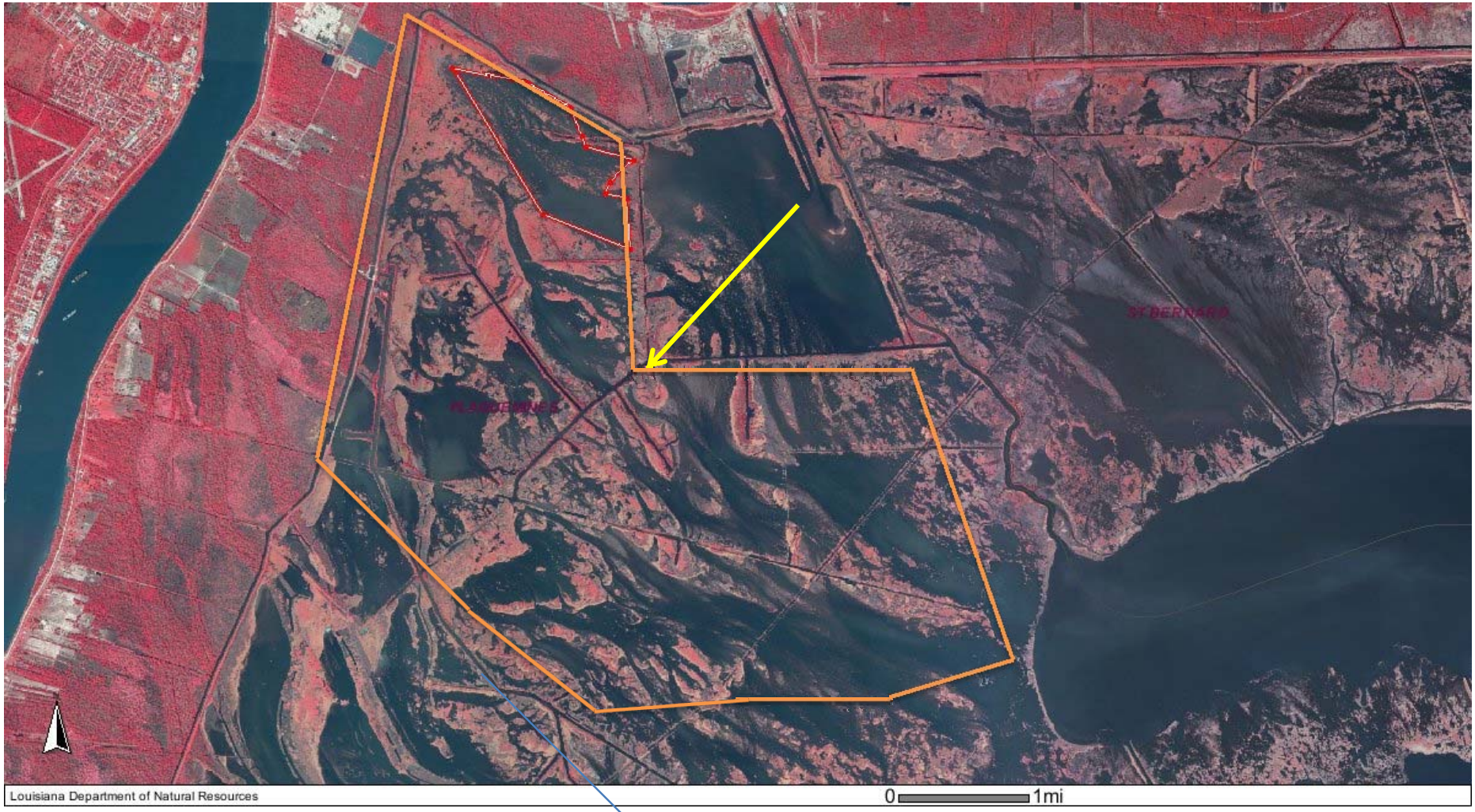
Dedicated Sediment Delivery and Water Conveyance for Marsh Creation west of Big Mar

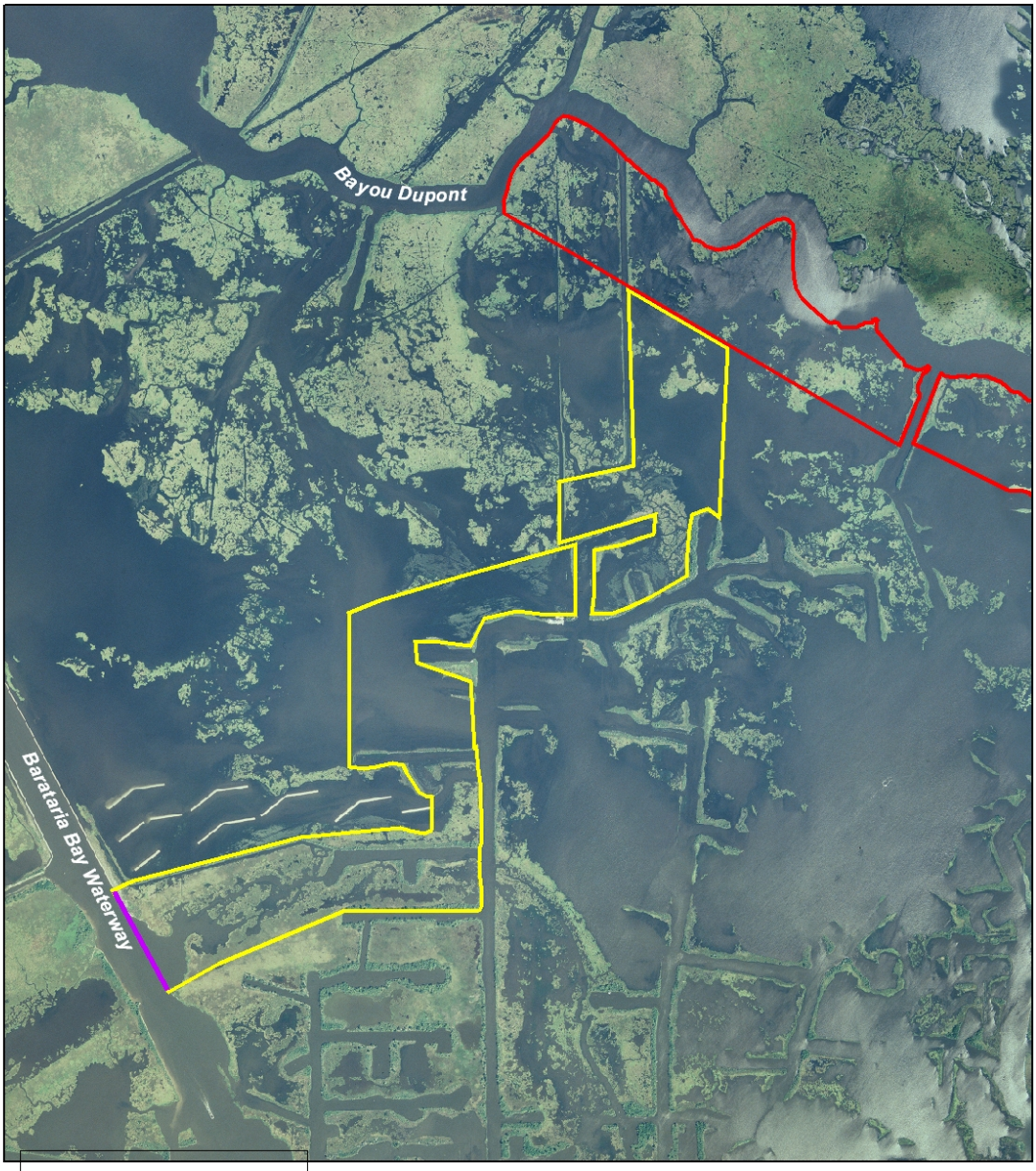
PPL-19 CWPPRA Nominee



Marsh creation site

Proposed conveyance channel

Area of added diversion influence



Legend

- Rock_Dike
- BA-48 Project Boundary
- Marsh Creation/Nourishment
  ~ 290 Ac. Marsh Creation
  ~ 215 Ac. Marsh Nourishment

2007 DOQQ

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Feet

Bayou Dupont to Bayou Barataria
Marsh Creation
Jefferson Parish, Louisiana
PPL 19

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 31, 2009

Project Name
Bayou L'Ours Ridge Restoration and Terracing

Coast 2050 Strategy
Coastwide: Maintain or Restore Ridge Functions
Terracing
Vegetative Plantings
Local and Common Strategies: Maintain function of Bayou L'Ours Ridge
Restoration of the Bayou L'Ours ridge is part of the State of Louisiana's Master Plan.

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

Problem
The gapping of the Bayou L'Ours ridge by pipeline canals has altered the hydrology of the area and contributed to the degradation of the marsh north of the ridge. Additionally, the tidal flow through these canals is causing the depth of these openings to increase. Also, portions of the marsh along the southern shore of the ridge are being eroded at a rate of about three feet per year.

Goals
The project will restore the function of the Bayou L'Ours ridge, partially restore the hydrology north of the ridge, and will halt the deepening of the gaps. Terraces will be created in areas near the ridge to help restore the ridge's natural function and prevent further erosion of the marsh immediately south of the ridge.

Proposed Solutions
Three of the gaps will be closed completely. Two additional gaps will be decreased in size and armored to prevent any further scouring. A 325-acre terracing field, consisting of approximately 30,000 linear feet of terraces will be constructed south of the ridge to provide additional protection to the ridge. The bankline of the canal south of closure 4 will be restored to prevent salt water intrusion into the terracing field.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The terraces will create 30 acres which will be directly benefited. The project area of approximately 8,000 acres, of which approximately 2,600 acres are land, will be benefited indirectly due to a decrease in salinity.

2) How many acres of wetlands will be protected/created over the project life? At the end of 20 years, 24 of the terrace acres will remain. Additionally, 7 acres of erosional loss will be prevented in the marsh south of the Bayou L'Ours ridge. Assuming a 10% reduction in the loss rate north of the ridge due to salinity reduction, 76 acres would be preserved over 20 years. Thus, the net acres benefited would be 107.

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

4*) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* restores the function of the Bayou L'Ours ridge by providing a barrier to salt water intrusion

5) *What is the net impact of the project on critical and non-critical infrastructure?* Provides additional storm surge protection for the Clovelly Dome Oil Storage Terminal, the Larose to Golden Meadow levee system, and communities along Bayou Lafourche.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* Reduces salt water intrusion to the area near the Little Lake Shoreline Protection (BA-37) Project. With increased usage of the Davis Pond diversion, the closure of the ridge will help restore the degraded marsh north of the ridge.

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

Preliminary Construction Costs
The construction cost including 25 % contingency is approximately $5,212,313. The estimated fully funded cost range is $5,000,000 to $10,000,000.

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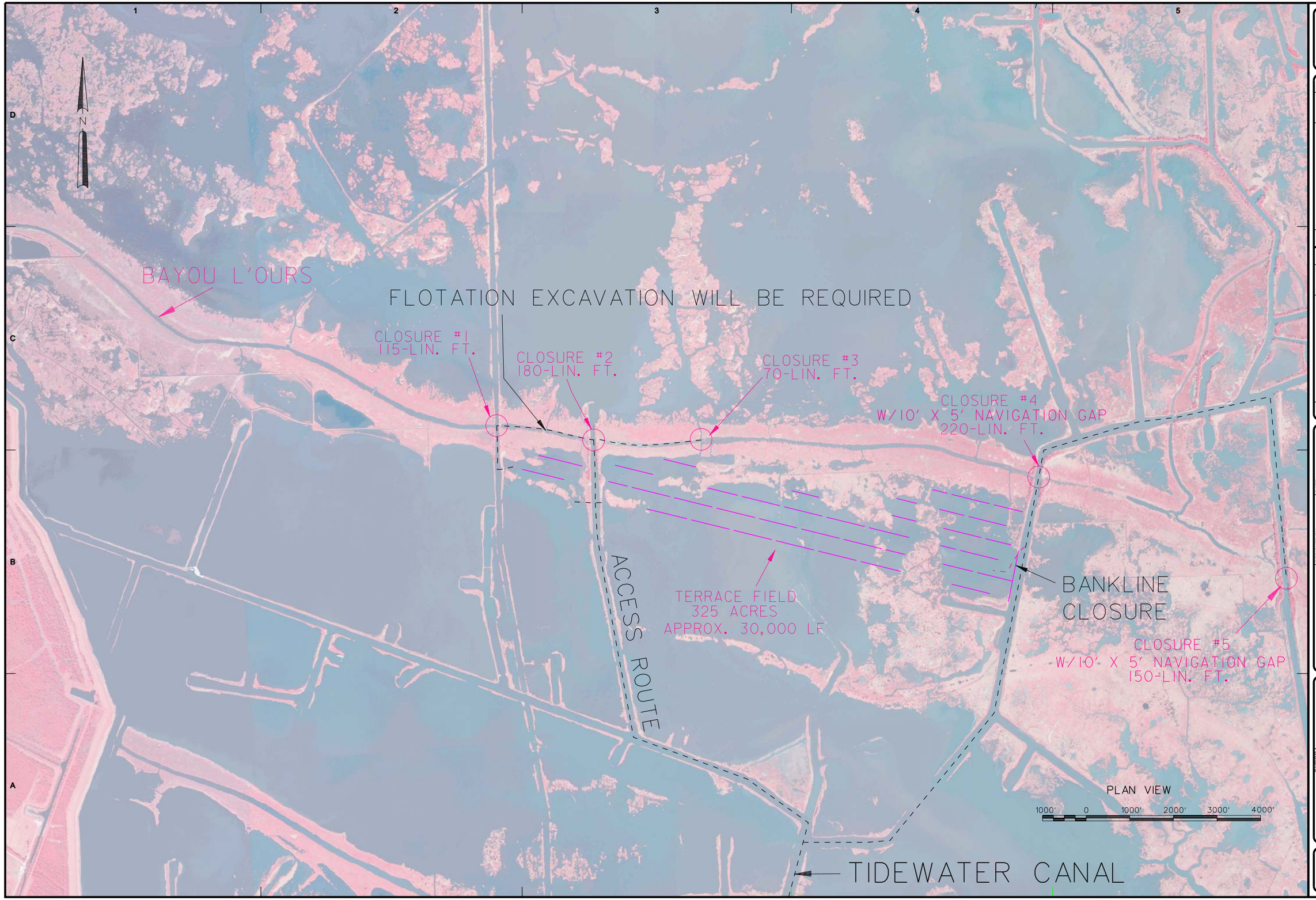

US Army Corps of Engineers
NEW ORLEANS DISTRICT

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U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT
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SHEET X OF XX

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Bayou Dupont to Bayou Barataria Marsh Creation

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

Louisiana's Comprehensive Master Plan for a Sustainable Coast - From page 52 of the Master Plan, "One way to accelerate the benefits of diversions would be to mechanically restore lost marsh by pumping sediments via pipeline from the bed of the Mississippi River, offshore, or from navigation channels. Combining land sustaining diversions and this type of mechanical marsh restoration could rapidly convert open water to wetlands and help the restored marsh remain viable. Pipeline conveyance of sediment is seen as a particularly good option for areas like Myrtle Grove and West Point a la Hache, where the Master Plan recommends situating land sustaining diversions. Together, diversions and pipeline conveyance of sediment could rebuild marsh quickly areas where land loss has reached crisis level.

See Figure 10, page 57 of the Master Plan (attached).

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

Problem
What problem will the project solve? The marshes located between Bayou Dupont and Bayou Barartaria are very deteriorated. The deteriorated marsh, along with numerous canals, allows a level of tidal exchange that is considerably greater than historic conditions. The proposed marsh creation and nourishment will restore critical marsh acreage; the restored marsh and rock dike will partially restore the area's hydrology.

What evidence is there for the nature and scope of the problem in the project area? 2005 aerial imagery confirms that the areas marshes are severely deteriorated.

Goals
Create 290 acres and nourish 215 acres of marsh between Bayou Dupont and Bayou Barataria. Prevent erosion of created marsh from Barataria Bay Waterway and partially restore area hydrology. Consideration will be given to re-establishing ridge elevation along the former Bayou Barataria ridge in the southern portion of the project area.

Proposed Solution
505 acres of marsh creation and nourishment. Material for marsh creation will be excavated from the Mississippi River. Consideration will be given to re-establishing ridge elevation along the former Bayou Barataria ridge in the southern portion of the project area.

1,740 feet of bankline protection along the east bank of the Barataria Bay Waterway.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? 505 acres created and / or nourished.

2) How many acres of wetlands will be protected/created over the project life? 273 acres

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%). Not determined yet.

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

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

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

Identification of Potential Issues

The project design will have to address pipelines within the project area. Maintenance will be required for the bank protection feature.

Preliminary Fully Funded Costs

The construction cost including 25% contingency is approximately $20,605,273. The estimated fully-funded cost range is $25M-$30M.

Preparer of Fact Sheet

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Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Direct benefits include creation and/or nourishment of 618 acres of marsh through hydraulic dredging.

2) How many acres of wetlands will be protected/created over the project life? This project would net approximately 381 acres of marsh throughout the life of the project.

3) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%). The loss rate in the area of direct benefits would be reduced by >50-74%.

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. This project does not restore any structural components.

5) What is the net impact of the project on critical and non-critical infrastructure?
This project would provide protection to some oil and gas infrastructure.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with the Caernarvon Diversion and the Caernarvon Outfall Management/Lake Lery Shoreline Restoration Project (BS-16) that was recently been approved for Phase I funding.

Identification of Potential Issues:
There are several pipelines in the area.

Preliminary Construction Costs:
Construction costs including 25% contingency is approximately $18,179,711. The estimated fully-funded cost range is $25M - $30M.

Preparer(s) of Fact Sheet:
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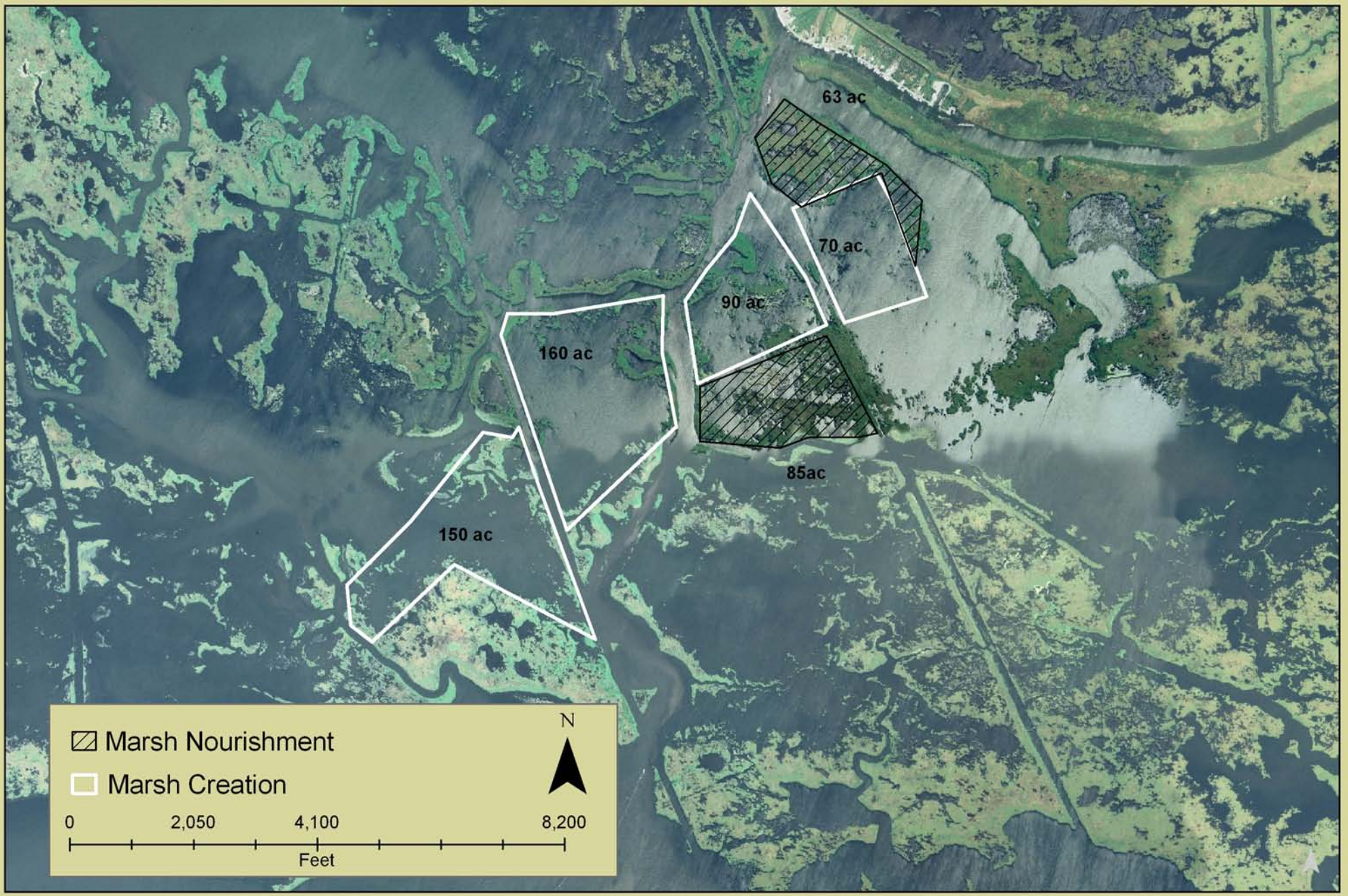
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Breton Marsh Creation and Nourishment Project



PPL19 PROJECT NOMINEE FACT SHEET
FINAL – March 26, 2009

Project Name
Chenier Ronquille Barrier Shoreline Restoration and Marsh Creation (RPT2-BA09)

Coast 2050 Strategy
Regional strategy 21 – extend and maintain barrier headlands, islands, and shorelines
Chenier Ronquille mapping unit strategy 15 – restore ridge function

Project Location
Region 2, Barataria Basin, Plaquemines Parish, between Quatre Bayou Pass and Pass Chaland

Problem
Chenier Ronquille is the most westerly extent of the lower Plaquemines shoreline and serves as the western anchor of that shoreline system. The area is undergoing shoreline erosion, interior wetland loss, and overwash. Coastal Research Laboratory/UNO (2000) reported shoreline erosion rates of 14.6 ft/yr for the Chenier Ronquille sub-reach. Shoreline erosion rates calculated by USGS for 1998 – 2007 averages 36 feet/year.

Project area marshes are also being converted to open water at an estimated rate of 3.16%/yr (derived loss rate from Coastal Research Laboratory/UNO (2000) report that evaluated short-term (1988 to 2000) land loss across the entire Barataria/Plaquemines shoreline. Data specific to the Chenier Ronquille sub-reach indicate average annual losses of 10.53 acres out of 334 acre area). This rate is similar to the loss rate of 3.76%/yr that can be derived from the Coast 2050 Chenier Ronquille mapping unit data for the period of 1983 – 1990.

Continued erosion of the western end of Chenier Ronquille directly contributes to enlargement of Quatre Bayou Pass. On-going shoreline erosion has caused the shoreline to intersect open water areas, resulting in overwash and breach formation and if unchecked will cause fragmentation of the shoreline and development of tidal inlets.

Goals
The project goal is to maintain shoreline integrity and create and restore saline marsh.

Proposed Solution
Dedicated dredging from nearshore Gulf deposits to create saline marsh in open water areas and nourish existing marshes in project area. About 11,000 ft of shoreline will be nourished through the creation of beach and dune (135 cy/ft fill density). Dune crest will be at +6 ft NAVD and 200 ft wide (backslope 1:30; foreslope 1:30 above +1.0' and 1:75 below +1.0'). The width of the shoreline nourishment at +1.0 NAVD will be 500 ft. Estimated in place beach and dune fill is 1.5 M cy. Based on experiences with losses of sand fencing during the 2008 storm season and the resultant debris field**,** it is proposed that intensive dune plantings be used in lieu of sand fencing

In addition to beach nourishment and dune restoration, 205 acres of marsh would be created and an additional 105 acres of marsh would be nourished (+1.6 ft NAVD final target elevation) using about 1.6 M cy of fine grained materials (the total polygon size for marsh creation and nourishment derived from SONRIS and marsh and water acres are based on ocular estimate). Collectively, both beach/dune and marsh fill will yield an overall fill density is 276 cy/ft. About 10,400 ft of marsh containment dike will be required. Half of the created marsh acres will be planted.

Based on current information, it is anticipated that about 3 M cy sand will remain in borrow areas investigated for the East Grand Terre that will not be used for construction of that project. These deposits are located about 16,000 to 18,000 ft from Chenier Ronquille and are sufficient to provide about 1.9 M cy of in place fill (assuming c:f of 1.6). After construction of East Grand Terre, some marsh material (1.6 M cy) will remain in investigated borrow areas; assuming c:f of 1:3, this remaining marsh material could provide 1.2 M cy of the required 2.0 M cy (in place) marsh fill. Consequently, additional marsh borrow areas would need to be cleared and it is anticipated that those borrow areas would be sited adjacent to the Quatre Bayou borrow area used for Chaland Headland. Based on pump distance for Chenier Ronquille and recent bid opening for East Grand Terre (slightly longer pump distance) it is proposed to use East Grand Terre in place unit costs as the basis for this estimate.

Preliminary Project Benefits

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

In total, the project will benefit 398 acres of beach, dune and saline marsh.
The project will benefit 310 acres of saline marsh (205 acres created and 105 nourished). The project will also benefit about 88 acres of Gulf shoreline through the restoration of beach and dune (11,000 ft in length, 350' created seaward at +1.0 ft NAVD).

2) How many acres of wetlands will be protected/created over the project life?

The total net benefit will be 228 acres remaining at TY20.

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 marsh loss rate will be reduced by 50% and the shoreline erosion rate will be reduced by 60% (consistent with Elmer's Island 2008 WVA assumption).

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 barrier shoreline landscape features.

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

The project is anticipated to have a moderate net positive impact on critical infrastructure (i.e., major natural gas transmission pipelines).

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

The project could have positive synergistic effects with the recently implemented Chaland Headland and Bay Joe Wise projects as well as the state's East Grand Terre Island CIAP project.

Identification of Potential Issues

Oyster leases and pipelines within the project area will need to be considered during project design.

Preliminary Construction Costs:

The construction cost plus contingencies is approximately $31,832,890. The estimated fully funded cost range is $40 - $50 million.

Preparer(s) of Fact Sheet:

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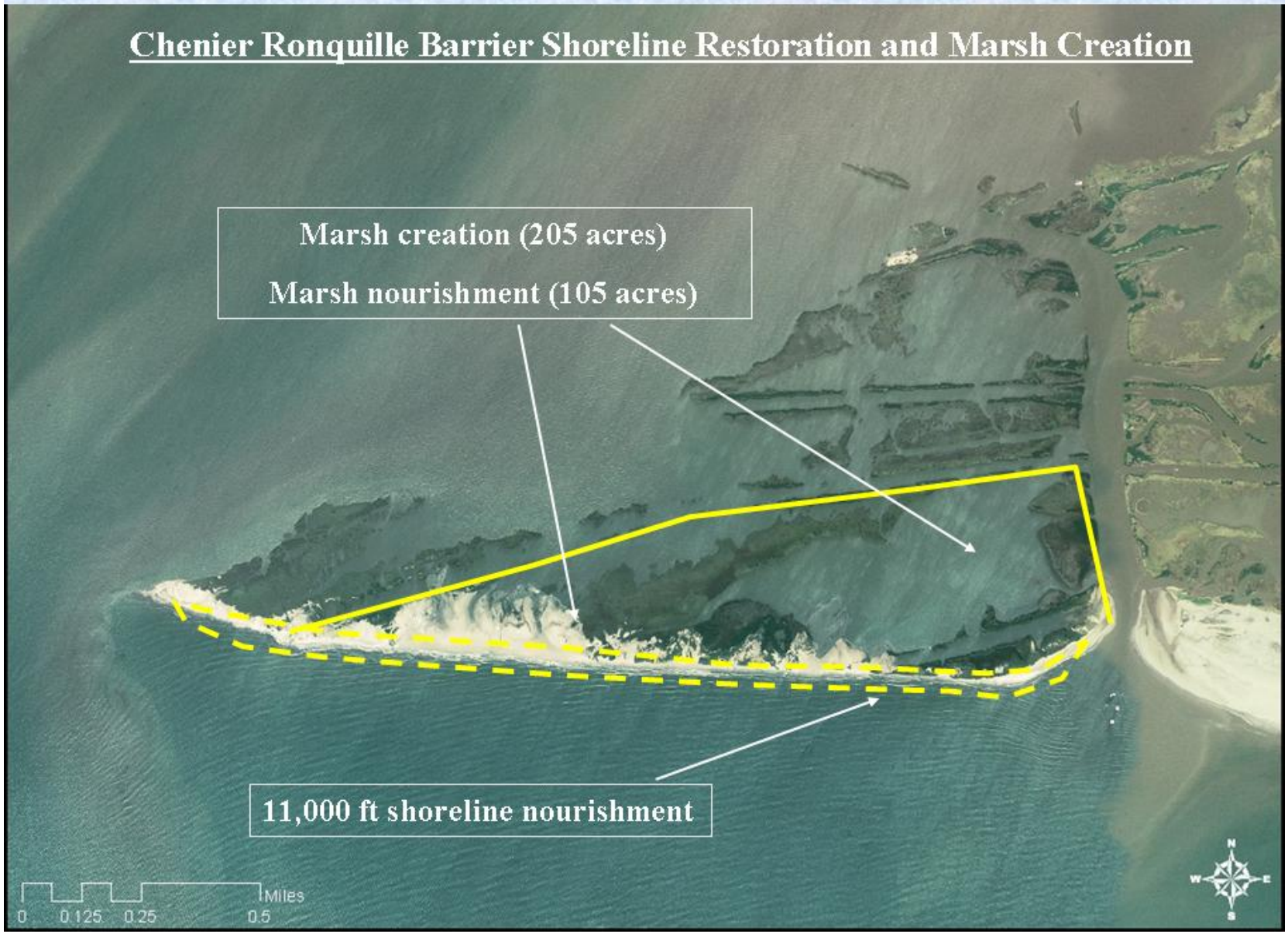
Chenier Ronquille Barrier Shoreline Restoration and Marsh Creation
Marsh creation (205 acres)
Marsh nourishment (105 acres)
11,000 ft shoreline nourishment
Miles
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PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Lost Lake Marsh Creation and Hydrologic Restoration

Coast 2050 Strategy
Regional Strategy – Dedicated delivery of sediment for marsh building
Regional Strategy – Increase transfer of Atchafalaya River water to lower Penchant tidal marshes

Project Location
Region 3, Terrebonne Parish, Terrebonne Basin, near the vicinity of Lost Lake

Problem
Significant marsh loss has occurred between Lake Pagie and Bayou DeCade to the point that little structural framework remains separating those two waterbodies. Northeast of Lost Lake, interior marsh breakup has resulted in large, interior ponds where wind/wave energy continues to result in marsh loss. West of Lost Lake, interior breakup has occurred as a result of ponding and the periodic entrapment of higher salinity waters during storm events.

Goals
1) Prevent the coalescence of Bayou DeCade and Lake Pagie and extend the landbridge function of the North Lake Mechant Landbridge Project.
2) Address interior marsh loss with terraces and marsh creation.
3) Increase fresh water and sediment delivery to marshes north and west of Lost Lake.

Proposed Solution
The proposed project consists of several features to protect marsh, create marsh, and extend the landbridge function of the North Lake Mechant Landbridge Project to the west. Marshes north, east, and west of Lost Lake serve an important function as an intermediate zone buffering fresh marshes to the north from the higher salinities to the south. Features include:

1) Marsh creation (300 acres) between Lake Pagie and Bayou DeCade to prevent the coalescence of those two waterbodies and restore/protect some key features of structural framework (i.e., lake rim and bayou bank) in the area. This feature will compliment features currently being built under the North Lake Mechant Landbridge Project. In addition, 150 acres of marsh will be created north of Bayou DeCade.

2) Terracing (approximately 30,000 linear feet or 24 acres) to reduce fetch in deteriorated marsh northeast of Lost Lake.

3) At certain times of the year, Carencro Bayou is an excellent source of fresh water and sediments from the Atchafalaya River/Four League Bay system. However, delivery of that water into the marshes west of Lost Lake is limited by a series of fixed-crest weirs which limit water exchange. An opportunity exists to increase freshwater and sediment delivery by removing some of the fixed-crest weirs and installing structures with bays/gates.

4) The Penchant Basin Natural Resources Plan Project will provide an additional 500 cfs of freshwater flow into Brady Canal which will increase flows into Carencro Bayou north of Lost Lake. An

opportunity exists to increase freshwater and sediment delivery south of Carencro Bayou and to take advantage of excess fresh water north of Carencro Bayou by removing some of the plugs and fixed-crest weirs and installing structures with bays/gates.

Preliminary Project Benefits

1) What is the total acreage benefited both directly and indirectly? The total acreage benefited directly would be 474 acres (450 acres of marsh creation/nourishment and 24 acres of terraces). Indirect benefits would occur over approximately 11,350 acres as a result of increased fresh water and sediment delivery.

2) How many acres of wetlands will be protected/created over the project life? The total net acres protected/created over the project life are estimated at 646 acres.

3*) What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%*). Background loss rates would be reduced by 50% in the marsh creation and marsh nourishment areas. Increased fresh water and nutrients would reduce marsh loss in the areas west and north of Lost Lake. The estimated reduction in marsh loss in those areas is approximately 19%. Overall, the reduction in marsh loss across the project area would be in the range of 25% to 50%.

4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc? The project would help maintain the Lake Pagie shoreline and the southern bank of Bayou DeCade.

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

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project would provide a synergistic effect with the North Lake Mechant Landbridge Restoration Project located to the east. The concept of protecting this important landbridge would be extended westward. Other CWPPRA projects which protect marsh in this important area include the Brady Canal Hydrologic Restoration Project and the Penchant Basin Natural Resources Plan. This project would work synergistically with those projects to protect marsh in this portion of the western Terrebonne Basin.

Identification of Potential Issues

There are pipelines in the project area that will have to be avoided. Also, the water control structures will require periodic maintenance.

Preliminary Construction Costs

The estimated construction cost with a 25% contingency is $18,606,206. The full-funded cost range is $25M - $30M.

Preparer of Fact Sheet

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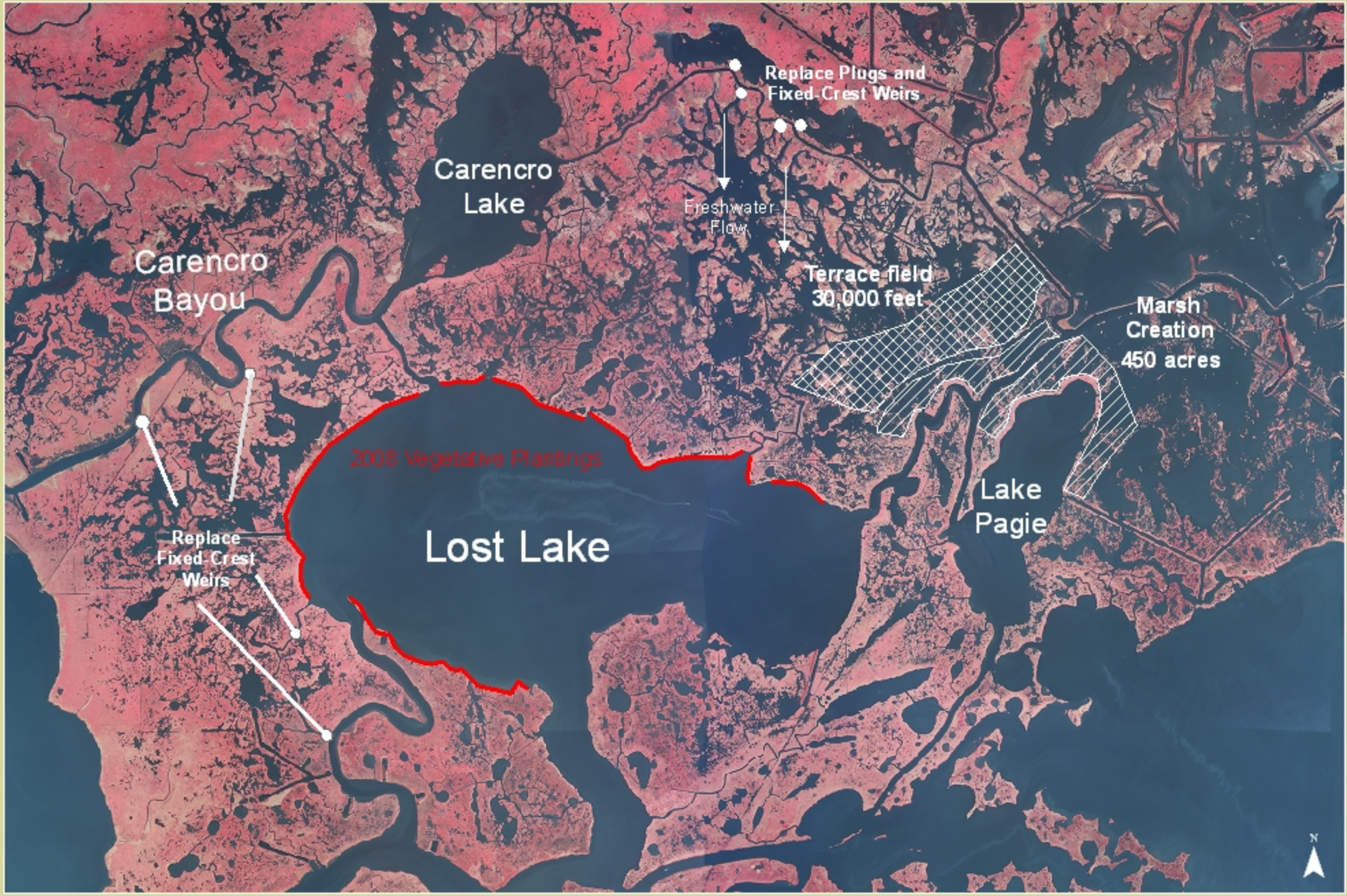
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Lost Lake Marsh Creation and Hydrologic Restoration



PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name:
Breton Marsh Restoration Project

Coast 2050 Strategy:
- Dedicated dredging for wetland creation.

Project Location:
The project area is located in Region 2, Breton Basin, Plaquemines Parish, Caernarvon mapping unit, southeast of Delacroix, LA in an area south of Lake Lery between Bayou Terre aux Boeufs (near Delacroix) and River aux Chenes.

Problem:
The landfall of Hurricane Katrina in southeast Louisiana destroyed thousands of acres of marsh and other coastal habitats east of the Mississippi River. One of the areas most severely impacted was the Breton Sound Basin where it is estimated that 40.9 square miles of marsh were converted to open water. One of the most significant restoration tools used in this basin is the Caernarvon Freshwater Diversion. The operational plan of the Caernarvon Freshwater Diversion has proposed higher water discharge rates during the winter and spring to address hurricane impacts. Because much of the sediment and nutrients will be removed from the diversion water before it reaches the project area, the proposed increase in discharge rates will have little to no effect on project area's ability to rebuild. Without restoration, this region will begin to see the coalescence of water bodies, higher wave generated erosion rates, and a greater influence associated with the open brackish Black Bay system, especially during periods of reduced Caernarvon flow.

Goals:
The goal of this project is to restore marsh that was damaged by hurricane Katrina in 2005. Reestablishing this marsh would help restore marshes in the project area that once helped to moderate the effects of the brackish waters from the Black Bay system moving north into the more intermediate marshes.
Specific Goals: 1) Creation of 470 acres and nourishment of 148 acres of emergent marsh through hydraulic dredging. 2) Restore the western shoreline of Bayou Gentilly.

Proposed Solutions:
This project would create 470 acres of low salinity brackish marsh with the use of a hydraulic dredge. Renewable Mississippi River sediments that were deposited in Lake Lery as a direct result of the Caernarvon Diversion Project would be hydraulically dredged and pumped via pipeline to create marsh. Dredged material would be pumped to a height of between +1.5 to +2.0 ft NAVD 88 and contained with earthen dikes built from insitu material. These dikes would be gapped or degraded no later than three years post construction to allow for fisheries access. It is anticipated that water depths in the marsh creation cells are relatively shallow as they are the result of recent hurricane loss.

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name:
Terrebonne Bay Shoreline Restoration and Marsh Creation

Coast 2050 Strategy:
Coastwide Strategy: Maintenance of Bay and Lake Shoreline Integrity
Region 3 Strategy #8; Dedicated Dredging for Wetland Creation, #11- Maintain shoreline integrity of marshes adjacent to Caillou, Terrebonne, and Timbalier Bays

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish. Beginning on the southernmost contiguous point along the east bank of Bayou Terrebonne, continuing east along the northern shoreline of Terrebonne Bay and ending at Bayou Chitique.

Problem:
Emergent marshes north of Terrebonne Bay have been eroding as fast or faster than almost any other marshes along coastal Louisiana with high interior landloss rates calculated to be 2% per year and moderate shoreline erosion rates calculated to be between 3 and 8 ft per year. Reasons for this include a lack of sediment input and a limited supply of freshwater coupled with past dredging of oil and gas canals. This rapid loss of land has dramatically increased the tidal prism north of Terrebonne Bay and directly contributes to the ongoing flooding problems of many communities along Bayou Terrebonne including the town of Montegut. This rapidly increasing tidal prism is also accelerating the interior marsh loss rates for those marshes directly north of Terrebonne Bay. These marshes also serve to slow the progress of high saline waters that threaten the lower saline marshes north and west of Madison Bay and even in Lake Boudreaux.

Goals:
The goal of this project would be to start reducing the tidal prism that has been increasing for many years. This overall goal would be realized by strengthening the northern shoreline of Terrebonne Bay, creating and nourishing the emergent marshes just north of Terrebonne Bay and reducing the cross section of two major bayous. All these components of the project would work synergistically to reduce water exchange between Terrebonne Bay and interior lakes during normal tidal events and small storm events
Specific goals: 1) Reduce shoreline erosion along 31,000 ft of the northern shoreline of Terrebonne Bay and create approximately 40 acres of marsh through the restoration of the northern shoreline of Terrebonne Bay. 2) Create 235 ac of emergent marsh and nourish an additional 300 ac of emergent marsh. 3) Reduce the channel cross section on two major bayous to further reduce tidal exchange between the bay and interior marshes.

Proposed Solution:
This project would propose to strengthen or restore approximately 31,000 ft of shoreline along the northern bank of Terrebonne Bay by creating a +2 ft high earthen berm with a 50 ft crown which would be planted with *Spartina alternaflora*. North of the shoreline, 235 acres of emergent marsh would be created and 300 acres of emergent marsh would be nourished by hydraulic dredge. Dredge material would be placed to a height of +1.5 NAVD 88. All constructed containment dikes would be sufficiently gapped or degraded no later than 3 years post construction to allow for fisheries access. This project would also reduce the cross section

of two major bayous that convey high saline waters directly from Terrebonne Bay into Madison Bay and Bayou Terrebonne. This would be done with sheet piles and would not reduce the depth of the bayou where the cross section is reduced. This could be one part of a phased comprehensive plan to protect the northern shoreline of Terrebonne Bay from further erosion. The project would also work synergistically with the previously constructed CWPPRA Terrebonne Bay Demonstration Project (TE-45) which is adjacent to this proposed project.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly*? Acres directly benefited by this project would be 575 acres of marsh. This would include the restoration of project area shorelines including the creation of approximately 40 acres if marsh. This would reduce the shoreline erosion rates by 50% from an average of 5.91 ft/yr (3 to 8 feet per year USGS - PPL 18) to 2.95 ft/yr. This project would also create 235 acres of marsh and nourish 300 acres of emergent marsh, reducing interior land loss rates 50% from 2.05% to 1.02% per year. Additional indirect benefits would be realized through the reduction of wind induced waves in the interior marsh ponds and a reduction of the tidal prism which could also reduce interior land loss rates affecting surrounding marshes.

2) *How many acres of wetlands will be protected/created over the project life*? This project would create/nourish approximately 270 ac of emergent marsh over the 20 year project life.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life*? This project would initially create/nourish 575 acres of marsh and the interior loss rate of 2% per year would be reduced by 50% to 1% per year as well as a 50% reduction in the shoreline erosion rate from 5.91 ft/yr to 2.95 ft/yr. If the proposed project were to be constructed marsh loss rates would be expected to be reduced by 50% to 74% throughout the area of direct benefits 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 rime, Cheniers, etc*? This project would restore and help maintain the Terrebonne Bay shoreline as well as many other small lakes and marsh ponds.

5) *What is the net impact of the project on critical and non-critical infrastructure*? This project would help protect several camps and some oil and gas infrastructure.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration project*? This project would work with the recently constructed CWPPRA Terrebonne Bay Demonstration Project TE-45.

Identification of Potential Issues:

Pipelines and oyster leases are potential issues with this project.

Preliminary Construction Costs:

Construction costs including 25% contingency is approximately $19,580,368. The estimated fully-funded cost range is $25M - $30M.

Preparer(s) of Fact Sheet:

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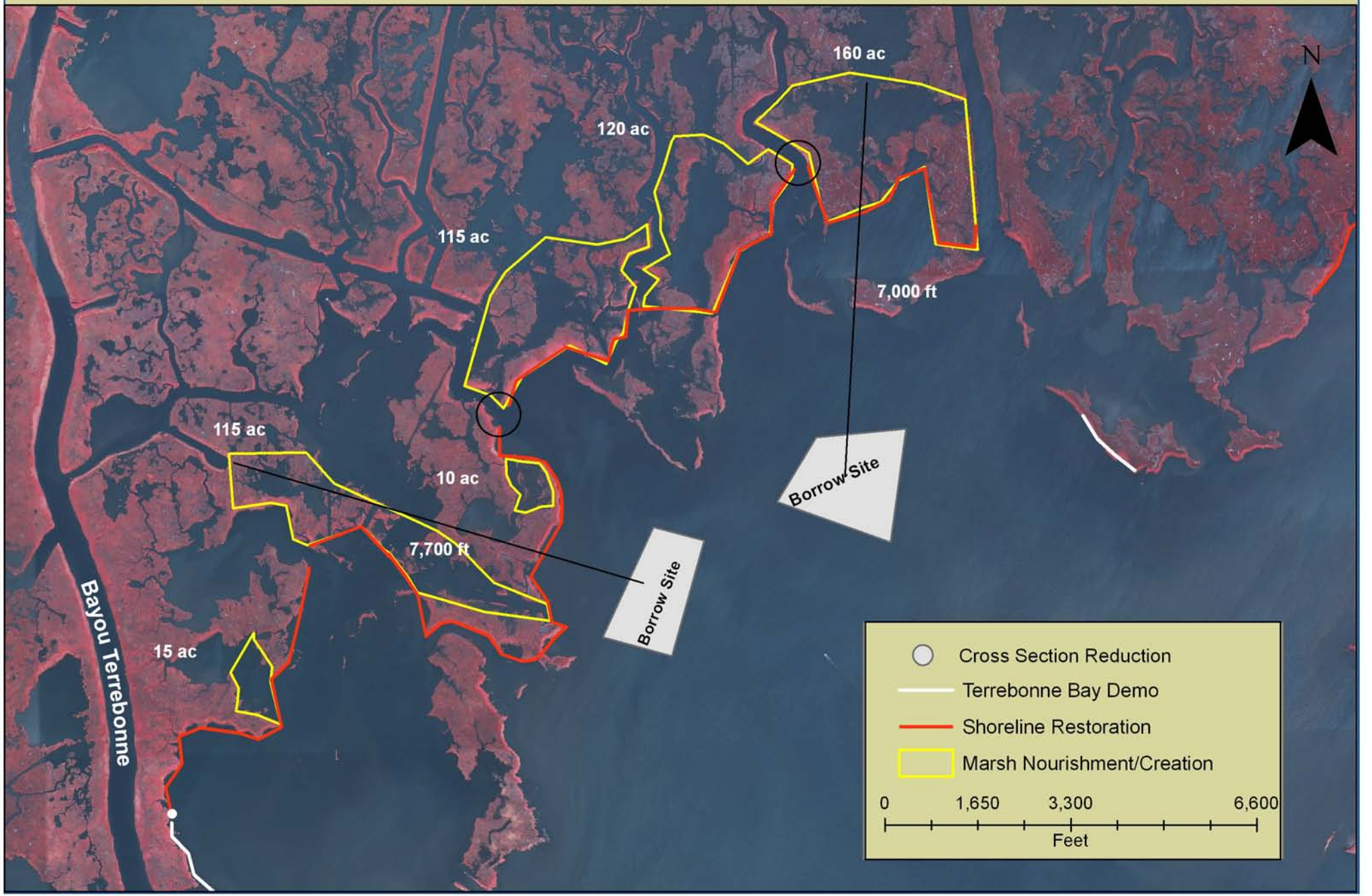
U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Terrebonne Bay Shoreline Restoration and Marsh Creation Project



PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Madison/Terrebonne Bays Marsh Creation

Coast 2050 Strategy
Regional Ecosystem Strategy 8 – dedicated delivery and/or beneficial use of sediments for marsh building. Terrebonne Marshes mapping unit strategies 15 (protect bay/lake shorelines) and 16 (beneficial use of dredged material)

Project Location
Region 3, Terrebonne Parish, west of Bayou Terrebonne/south of Madison Bay.

Problem
The remaining land mass between Madison Bay and Terrebonne Bay is undergoing rapid deterioration from both interior wetlands loss and shoreline erosion. Shoreline erosion on the northern banks of Terrebonne Bay has been calculated to be between 1 and 85 ft/yr and interior marsh loss has been calculated to be -2.05 % per year by USGS based on 1988 to 2005 extended boundary for the PPL18 Terrebonne Bay project.

This marsh rim forms the last barrier between Terrebonne bay and interior marshes and infrastructure south of Montegut. Water depths and erosion of the northern edge of Terrebonne Bay may make restoration south of the proposed project technically challenging and costly. Marsh creation/nourishment along the southern edge of Madison Bay would act to create an interior line of defense. Ideally, additional cells would be created to the east in future years to stabilize the land mass between Madison and Terrebonne bays.

Goals
The project goal is to maintain a continuous wetland mass between Madison and Terrebonne Bays to prevent coalescence of the bays.

Proposed Solution
Dedicated dredging from either Lake Barre or Madison Bay to create and restore 430 acres of saline marsh directly west of Bayou de Mangue. An estimated 1.94 M cubic yards of material will be needed for the creation of 200 acres and nourishment of 230 acres within two proposed cells in the project boundary area.

Approximately 31,574 ft of primary containment dikes will be constructed to manage fill deposition. As conceptualized, Bayou Chitgue will remain open, although cell configuration may be adjusted as needed to accommodate local hydrology, user access, etc. Vegetative plantings (*Spartina alterniflora*) will be used for 100 acres (50%) of the proposed created marsh.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? Direct project benefits include creation and nourishment of 430 acres of emergent marsh.

2) How many acres of wetlands will be protected/created over the project life? Approximately 198 net acres of emergent marsh would be created/protected 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 benefits over the project life would be 50-74%.

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 maintains a bay rim. However, marsh creation is not considered a structural framework in the Coast 2050 criteria if it is not sustaining a barrier island or ridge.

5) What is the net impact of the project on critical and non-critical infrastructure? There are no effects on critical or non-critical infrastructure.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project does not provide a synergistic effect with other approved and/or constructed restoration projects.

Identification of Potential Issues
The proposed project has oyster leases and pipelines within the project boundary and vicinity of potential borrow.

Preliminary Construction Costs
The construction cost including 25% contingency is approximately $13,580,721. The estimated fully-funded cost range is $15M - $20M.

Preparer(s) of Fact Sheet
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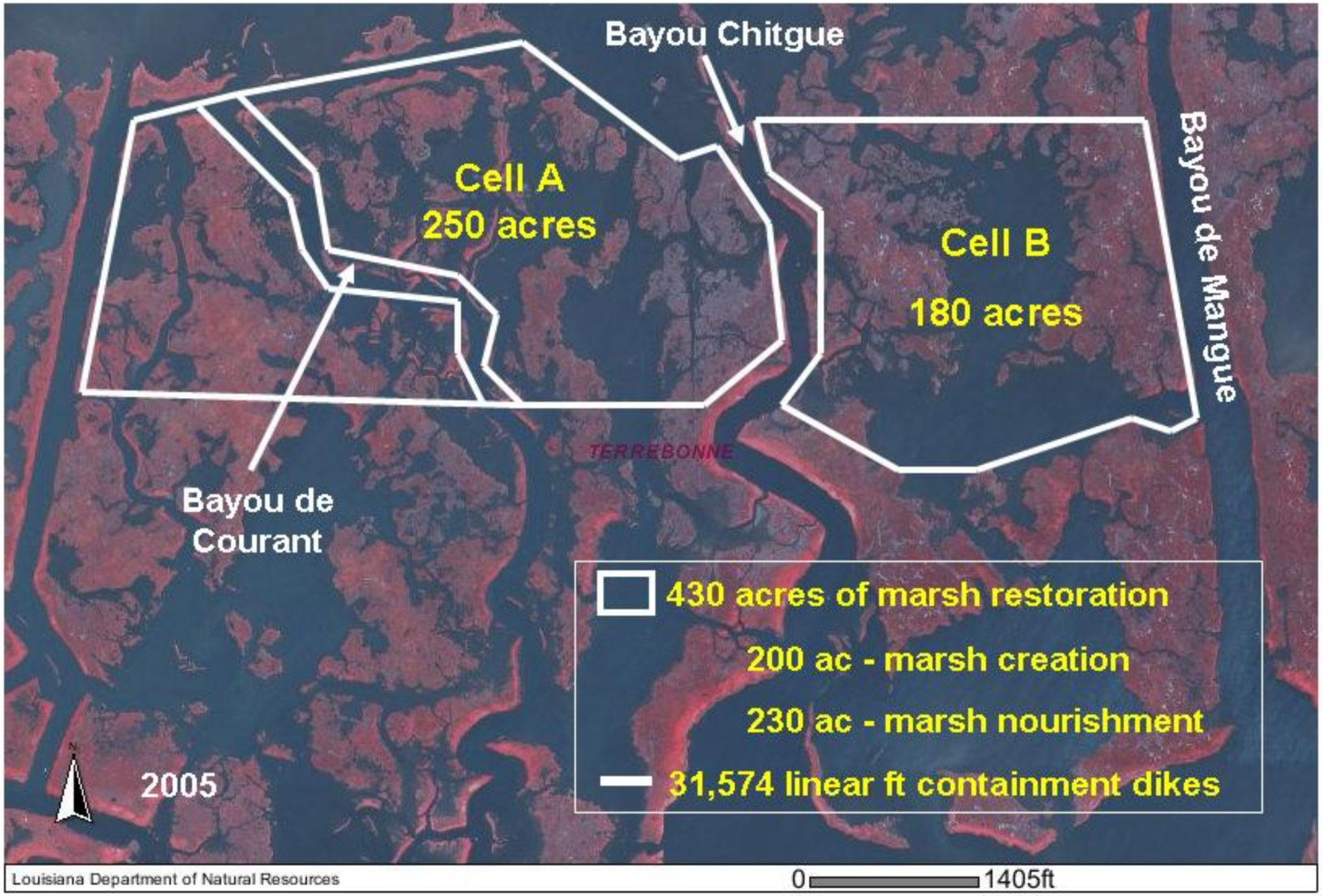
PPL19 Madison/Terrebonne Bays Marsh Creation



PPL 19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name:
Bateman Island Sediment Retention and Marsh Restoration

Coast 2050 Strategy:
Coast wide: Terracing
Regional: (#2) Increase deltaic land building where feasible.
(#8) Beneficial use of sediment for marsh building by any feasible means.

Project Location:
Region 3, Atchafalaya Basin, St. Mary Parish, between the Lower Atchafalaya River and Bayou Shaffer. The area is known as Bateman Island.

Problem:
Non-retention of readily available sediments and nutrients in a previously degraded marsh area. Shoreline erosion along the perimeter of Sweetbay Lake due to increasing open-water fetch conditions and marine traffic in Lower Atchafalaya River and Bayou Shaffer.

Goals:
Increase emergent wetlands in the southern area of Bateman Island by constructing earthen terraces and effectively trapping sediment and nutrients available from the Lower Atchafalaya River. Reduce shoreline erosion rates around Sweetbay Lake.

Proposed Solution:
Construct approximately 31,000 linear feet of terraces within the southern portion of Bateman Island in the vicinity of Sweetbay Lake.

Preliminary Project Benefits:
What is the total acreage benefited both directly and indirectly?
The total land acreage benefited both directly and indirectly is approximately 1094 acres.

How many acres of wetlands will be protected/created over the project life?
Approximately 21 acres of freshwater marsh would be immediately created by virtue of the constructed terraces (31,000 linear feet with 5:1 slopes, 10' crown, 2'above water). It's anticipated that 42 additional acres would be created via accretion of material adjacent to terraces and 4 acres would be loss due to erosion of the southern most terrace. Therefore, a **net acreage** of **59 acres** would result over the 20 year project life. This project would rebuild freshwater marsh habitat essential to wildlife resources and provide protection to oil and gas industry infrastructure.

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

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 proposed project would provide protection to oilfield canal levees that currently act as an artificial separation between interior freshwater wetlands and the ebb current effects of Bayou Shaffer and the Lower Atchafalaya River.

What is the net impact of the project on critical and non-critical infrastructure?
The proposed project would provide protection to critical oil and gas infrastructure.

To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? There are no other State-Only or CWPPRA projects within the immediate vicinity of this project.

Identification of Potential Issues:
No significant potential issues are expected from project implementation. Oil and gas industry wells are located in the project area from which gas and flow lines can be avoided.

Preliminary Construction Cost:
The construction cost plus contingencies for this project is approximately $1,080,571. The estimated fully funded cost range is $0 - $5 million.

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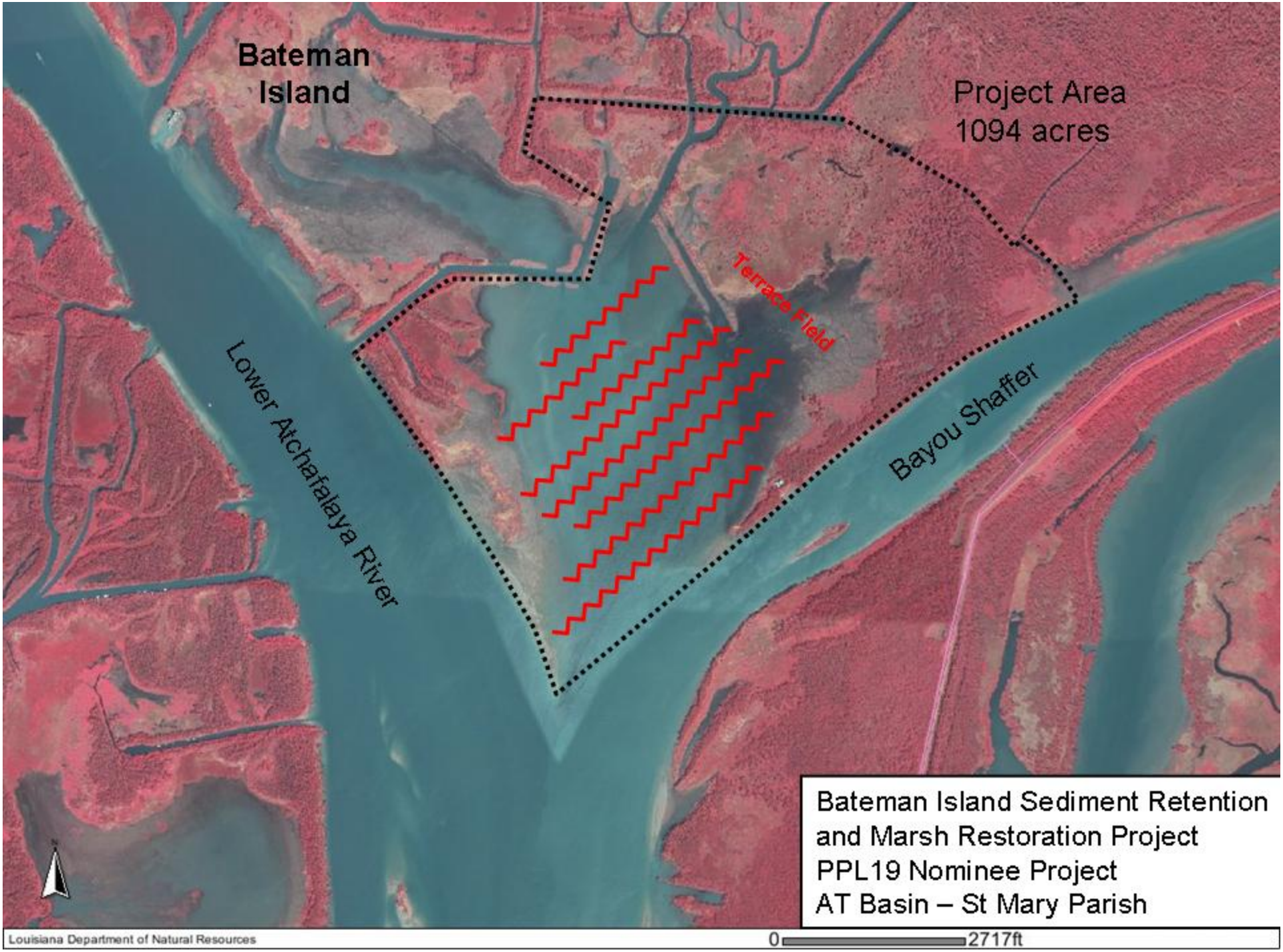
Bateman Island
Project Area 1094 acres
Terrace Field
Lower Atchafalaya River
Bayou Shaffer
Bateman Island Sediment Retention and Marsh Restoration Project
PPL19 Nominee Project
AT Basin – St Mary Parish
Louisiana Department of Natural Resources
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PPL 19 PROJECT NOMINEE FINAL FACT SHEET
3 Apr 09

Project Name: Cheniere Au Tigre Headland Restoration

Coast 2050 Strategy:

Coast-wide Common Strategy:

Maintenance of Gulf, Bay & Lake Shoreline Integrity

Maintain or Restore Ridge Functions

Beneficial Use of Dredged Material from Maintenance Operations

Region 3 Ecosystem Strategy (Teche-Vermilion Basin Strategy):

Strategy 10. Maintain shoreline integrity and stabilize critical areas of Teche-Vermilion Bay systems including the gulf shorelines.

Strategy 15. Reduce sedimentation in bays (by dedicated delivery of sediment as a construction alternative to shoreline protection).

Louisiana's Comprehensive Master Plan for a Sustainable Coast:

Page 60: Maintain basin integrity of freshwater reservoirs (stopping flow of saltwater into inland canals)

Page 64: Shoreline Stabilization (to protect surrounding marsh, cheniers, coastal prairie from wave-induced erosion.

Project Location: Cheniere Au Tigre stretches nearly 5 miles from Southwest Pass in the east to Freshwater Bayou in the west, 200 feet to a quarter of a mile wide, on the edge of the Gulf shore in the southernmost region of Vermilion Parish, about 40 miles south of Abbeville, LA.

Problem: Formation of breaches and scour areas along the gulf shoreline are undermining the structural integrity of the nearby chenier and its unique habitat. Protection provided by the chenier to the adjacent interior brackish marshes from increased salinity levels and the abrasive impacts of storms is threatened. In addition, nearby navigation channels or canals could serve as saltwater conduits inland should the land between them and the gulf become breached. The breach/scour areas mainly correspond to the locations of gaps in the segmented rock breakwaters located just offshore (these breakwaters were constructed via the CWPPRA demo project TV-16 and State Project CAT-01, in 2001 and 2005, respectively). Excessive water movement through these gaps during Hurricanes Rita and Ike removed accreted sediment & resultant vegetation landward of the rock structures; even more land was washed offshore through these gaps due to backwash as the storms passed and water retreated. The Paul J. Rainey Wildlife Sanctuary and the Louisiana Wildlife Management Area and Game Preserve are located in the vicinity of this problem.

Goals: Restore and maintain the Cheniere Au Tigre gulf shoreline and corresponding chenier formations. Prevent likelihood of increased saltwater intrusion into the brackish marshes and channels/canals north of the chenier. Minimize sediment loading into Vermilion Bay and work synergistically with the nearby TV-16 and CAT-01 projects through specific dredged material placement.

Proposed Solutions: Place dredged material linearly along the unvegetated portion of the gulf shoreline, in a continuous alignment roughly parallel to the existing rock breakwaters located about 200 ft offshore, for an estimated distance of 6000 linear ft (a distance somewhat greater than that of the TV-16 and CAT-01 projects combined). The material would either be hydraulically dredged from sand bars located gulfward of the rock breakwaters (approximately 1300 ft from shore), or from the Freshwater Bayou bar channel during its Federal maintenance dredging cycle, contingent upon timing, suitability of material, costs, etc. About 12,000 linear ft of containment dikes would be constructed as appropriate, with the dredged material placed to a final surface elevation of about 5 to 6 ft above the existing ground elevation on the dune or woody ridge creation side, sloping to an elevation conducive to marsh creation on gulf side (planting of filled areas optional).

Preliminary Project Benefits:
1) What is total acreage benefitted both directly and indirectly? Directly, 43 acres by rebuilding of barrier headland habitat; indirectly benefitting & protecting undetermined acreage of inland marsh & cheniers of the headland.
2) How many acres of wetlands will be protected/created over the project life? The total net benefit will be 43 acres of either dune or scrub/shrub, with marsh, remaining at TY20.
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%)? 25-49%
4) Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.? Yes, project features maintain both gulf shoreline and chenier stability.
5) What is the net impact of the project on critical and non-critical infrastructure? Dredged material placement will help prevent storm surge from adversely impacting areas cheneirs & marshes plus reduce the likelihood of increased breach development from the gulf into existing nearby channels & canals.
6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The proposed dredged material/dike placement alignment is situated on the shoreline just north of the already-constructedTV-16 and CAT-01 rock breakwater projects- the shoreline those breakwaters were designed to protect. Rebuilding headland thru dredged material placement in the vicinity of those projects will help recover accreted sediments lost during recent hurricane passages and further stabilize the area by providing a more stable shoreline to accrete against, plus thwart/delay new erosive gap/breach development during severe storm events.

Identification of Potential Issues: Oyster leases and pipelines.

Preliminary Construction Costs: The construction cost including 25% contingency is approximately $ 6,742,600. The estimated fully-funded cost range is $5M - $10M.

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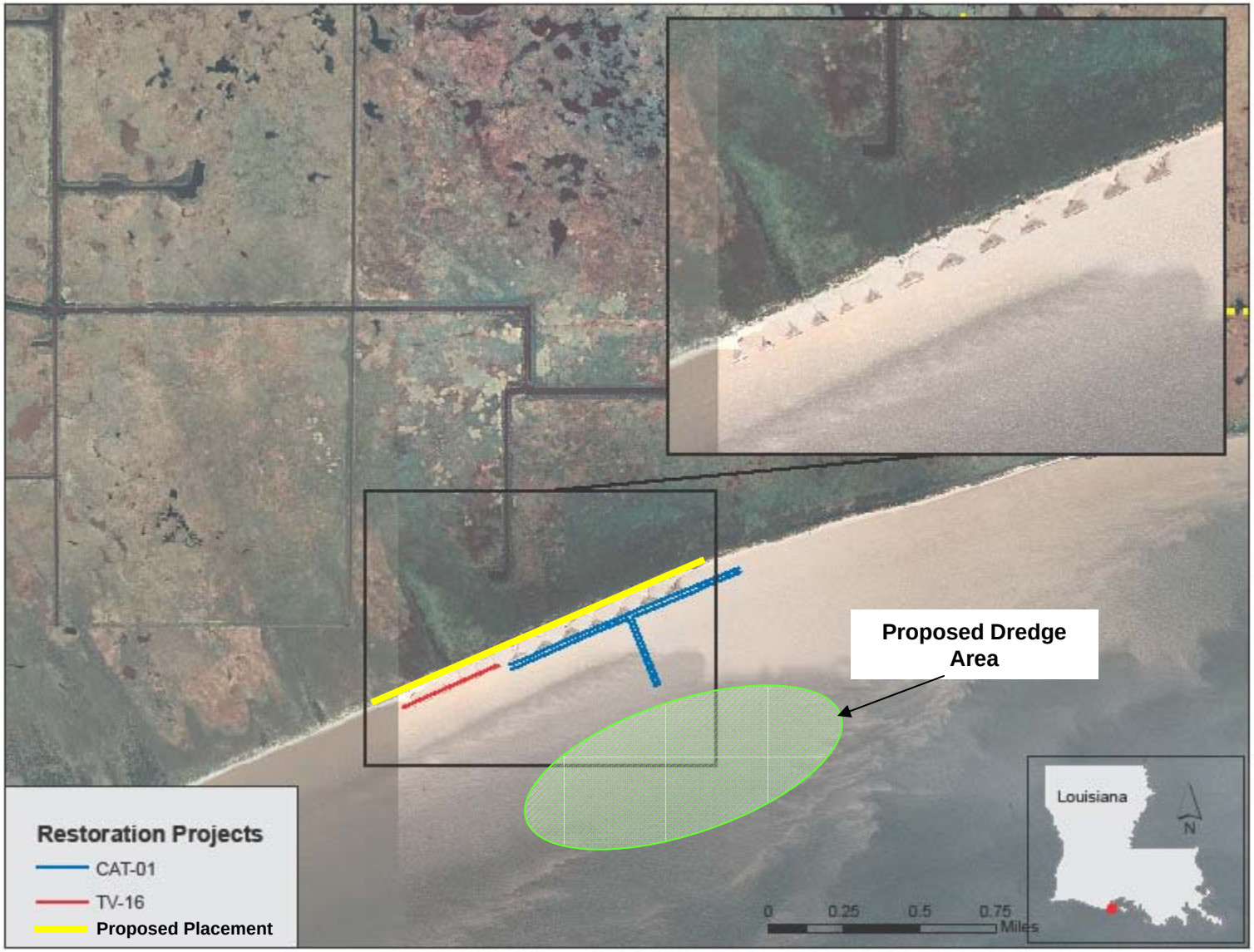

Cheniere Au Tigre Headland Restoration
PPL 19 Project Nominee

PPL 19 PROJECT NOMINEE FACT SHEET
FINAL – April 6, 2009

Project Name
Cote Blanche Freshwater & Sediment Introduction & Shoreline Protection Project

Coast 2050 Strategy
Coast wide: Goal 1 – Assure Vertical Accumulation to Achieve Sustainability
Strategy 5 – Maintenance of Gulf, Bay and Lake Shoreline Integrity
Strategy 11 – Diversion & Riverine Discharge

Regional: 12. Maintain shoreline integrity and stabilize critical shoreline areas of the Teche-Vermilion system
15. Optimize Atchafalaya River flow in Gulf Intracoastal Waterway into marshes and minimize direct flow into bays & Gulf of Mexico
17. Reduce sedimentation into bays

Mapping Units - Cote Blanche Wetlands, East Cote Blanche Bay, West Cote Blanche Bay:
80. Protect Bay/Lake Shorelines

Louisiana State Master Plan
Atchafalaya River Delta & Chenier Plain:
Managing Water & Sediment - Opportunistic use of GIWW to distribute existing Atchafalaya freshwater & sediment flows to interior marshes
Bay/Lake Shoreline Stabilization – Prevent expansion of bays & lakes and prevent wave erosion impacts to surrounding marsh.

Project Location
The project is located in Region 3, Teche/Vermilion Basin, St. Mary Parish, within the TV-4 Cote Blanche Hydrologic Restoration Project interior, and along portions of the northern shoreline of East Cote Blanche Bay and eastern shoreline of West Cote Blanche Bay.

Problem
Significant loss of emergent wetland, up to .45% per year, was occurring in the project interior prior to TV-4 Project construction. The TV-4 Project has reduced water level variability, thereby providing conditions that would facilitate sediment accretion and achieve the project objective of reducing the rate of interior marsh loss. However, Hurricane Lili caused direct removal of approximately 1,740 acres of emergent marsh within the project area (Barras 2004), which was followed by additional loss from Hurricane Rita (Barras 2005 in draft). In addition, the storms blocked some avenues that previously provided for freshwater and sediment flow to interior marsh areas, and in other areas, some flows that should be circulating through interior areas have been short-circuited back into the canal systems. The TV-4 project structures have continued to function as intended, however, increasing sediment inputs should help to accelerate accretion.

The targeted area of shoreline has historic and predicted shoreline erosion rates of 15-20 ft/year. If left unchecked, the rapidly eroding shoreline along East Cote Blanche Bay will lead to a

conversion of interior wetlands to open bay. Installing shoreline protection would preserve the hydrologic integrity of water control structures installed under the TV-04 Project.

Proposed Solution
Project features will include channel enlargement, spoilbank gapping, and/or structural measures where necessary to increase freshwater & sediment input from the GIWW into interior Cote Blanche marshes and optimize distribution through multiple avenues to further reduce emergent marsh loss and accelerate sediment accretion to promote land building.

Project features also include construction of approximately 26,000 linear feet of armored protection parallel to the northern shoreline of East Cote Blanche Bay. The proposed location of the shoreline protection feature is approximately 23,000 linear feet, starting from 3300 feet west of Humble Canal and extending around Marone Point, and approximately 3,400 feet to the east of the Humble Canal between the shoreline protection segments installed as part of the TV-04 Project.

Goals
Reduce and/or reverse shoreline erosion rates, reduce interior land loss and promote land building, protect critical marsh habitat and maintain lower energy hydrology of the East Cote Blanche Bay wetlands established through the TV-04 project. The marsh habitat provides important habitat for wintering migratory waterfowl, bald eagles, black bears, and other furbearers. These wetlands also provide vital protection to inland areas of St. Mary Parish from storm surges associated with hurricanes.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly?
The proposed shoreline protection feature would directly benefit approximately 209 acres by eliminating the annual shoreline loss of 17.5 ft/yr. Approximately 375 acres of intermediate marshes would benefit indirectly by preventing the breaching of, and tidal exchange through, several natural bayous and open water ponds lying adjacent to the E Cote Blanche Bay shoreline. Therefore the total acreage potentially benefitted by the shoreline protection would be 584 acres.

With the estimated additional flows and improved distribution, the freshwater and sediment introduction component is expected to benefit an approximate total of 11,150 wetland acres, of which approximately 9,500 acres is emergent marsh.
Therefore, for both project components, the total acreage benefitted would be approximately 11,735 acres.

2) How many acres of wetlands will be protected/created over the project life?
Approximately 209 acres would be protected at the end of the project life due to the shoreline protection component.

For the freshwater & sediment introduction component, a total of 337 acres of emergent wetlands is estimated to be protected/created over the project life. In addition, approximately 12 acres of emergent marsh would be created with the dredged material from channel enlargement.

Therefore, for both project components, a total of 558 acres would 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?
Shoreline protection will be provided by some form of armored structure which, when properly designed and installed, should reduce the shoreline erosion rates by 100% over the project's life.

The anticipated loss rate reduction over the project life due to the freshwater and sediment introduction component throughout the areas of direct benefit is estimated to range from 23% to 27%.

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?
Shoreline protection feature will provide protection and serve to maintain a significant critical section of the East & West Cote Blanche Bays' shoreline.

5) What is the net impact of the project on critical and non-critical infrastructure?
The project would serve to protect inland oilfield well locations from exposure to open bay conditions, and from increased wave energy generated by marsh fragmentation and expansion of interior open water areas.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
The project features will provide a synergistic effect with the TV-04 project, and TV-20 Bayou Sale Shoreline Protection Project by extending shoreline protection around the entire northern shore of East Cote Blanche Bay, and ultimately providing contiguous protection and promoting restoration to thousands of acres of deteriorating marsh in St. Mary parish.

Identification of Potential Issues
Potential issues are the possibility of interference with oil and gas infrastructure and O&M regarding the shoreline protection measures planned. St. Mary Parish and major landowners are in full support of the project.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $12,488,890, and the estimated fully funded cost range is $15M - $20M.

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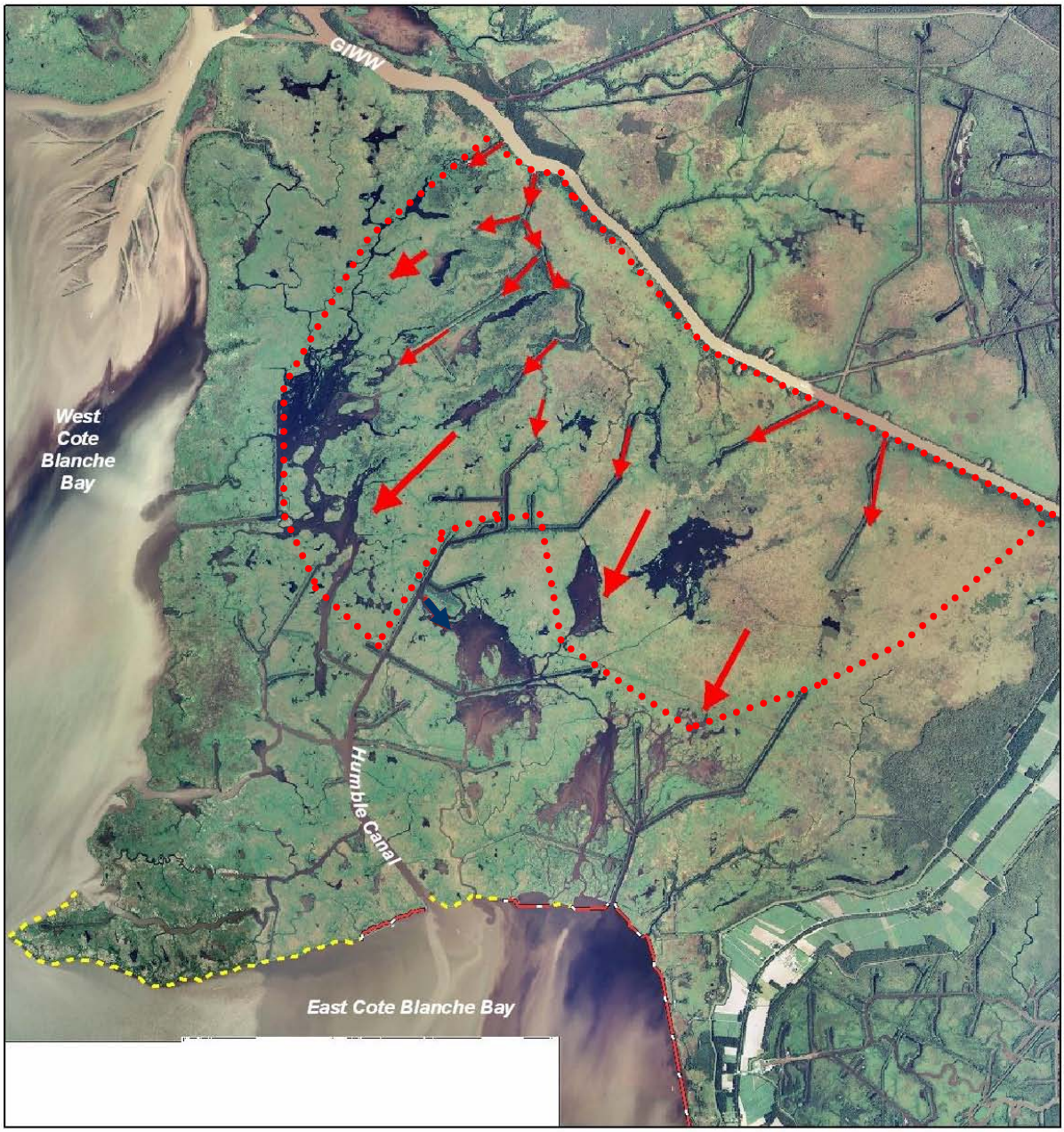

Legend

- Freshwater Introduction
- Proposed Shoreline Protection
- Existing and/or Authorized Shoreline Protection

2007 DOQ

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Cote Blanche
Freshwater/Sediment Introduction
and Shoreline Protection
St. Mary Parish, Louisiana
PPL-19

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Feet

PPL19 PROJECT NOMINEE FACT SHEET
FINAL – April 6, 2009

Project Name
Kelso Bayou Marsh Creation and Hydrologic Restoration

Coast 2050 Strategy
Use of sediment for wetland creation and restore historic hydrologic and salinity conditions throughout Region 4 to protect wetlands from hydrologic modification.

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

Problem
The most significant environmental problem affecting the marshes in this area is deterioration and conversion to open water. Between 1952 and 1974 the Black Lake and Brown Lake area marshes experienced an 81 percent marsh loss. Much of that loss occurred because the construction of the Calcasieu Ship Channel greatly increased the efficiency of water exchange through Calcasieu Pass. Freshwater retention was consequently reduced and saline water was able to enter Kelso Bayou in greater quantities and penetrate further north and west. Additionally, the ship channel acts as a conduit during storm events. Recent marsh loss and scouring at the mouth of Kelso Bayou from impacts related to Hurricanes Rita and Ike allow increased salt water exchange and storm surge impacts. The proposed project will be designed to reduce salt water intrusion and storm surge by repairing and armoring the mouth of Kelso Bayou. Currently, SAV habitat is also limited by salinity and tidal energy associated with the large opening at the ship channel.

Goals
The goal of this project is to restore and protect approximately 127 acres of critically important marsh and the numerous functions they provide. The proposed project will also reduce the artificial intrusion of Gulf marine waters into the Black Lake and Brown Lake area marshes and provide direct protection to Louisiana State Highway 27, the region's only northward hurricane evacuation route.

Proposed Solution
1) Approximately 127 acres of marsh will be created/nourished and planted to reestablish the natural meandering banks of Kelso Bayou between the Calcasieu Ship Channel and State Highway 27.

2) Approximately 2,500 linear feet of rock will be used to protect the marsh creation area and the existing shoreline along the Calcasieu Ship Channel.

3) The mouth of Kelso Bayou would be armored and the cross section reduced (approximately 80%) from over 430 feet wide and 10 feet deep to an approximate 100 foot top width and a 60 foot bottom width 6-8 feet deep.

Preliminary Project Benefits
The proposed project would utilize marsh creation techniques to create/nourish approximately 127 acres of marsh. That created marsh and a portion of the Calcasieu Ship Channel would be protected with a rock dike. The cross sectional area of Kelso Bayou would be reduced over 80% at the ship channel. It is estimated that reduction would lower salinity in the Brown Lake and Black Lake area marshes up to 15% and would be the foundation for existing and future restoration efforts in those areas.

1) What is the total acreage benefited both directly and indirectly? Approximately 127 acres of marsh would be created/nourished and planted using marsh creation. Indirect benefits would occur over approximately 16,767 acres of marsh and open water habitats as a result of reduced salinity and tidal exchange.

2) How many acres of wetlands will be protected/created over the project life? Based on preliminary estimates, 117 net acres of marsh would result from this project. Approximately 97 net acres from marsh creation and 20 net acres from salinity reduction.

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 would be approximately 50-74%. Interior shoreline erosion rates would be stopped and restored marsh would assume a 50% reduction in loss rate.

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 proposed project would repair a breach in the artificial levee ridge along the west side of the Calcasieu Ship Channel.

5) What is the net impact of the project on critical and non-critical infrastructure? Recent wetland loss in this area resulting from Hurricane Rita has left Highway 27 and Hackberry, Louisiana vulnerable to storm events. Currently, there is no barrier between those areas and the Calcasieu Ship Channel. Highway 27 and Hackberry, Louisiana both received record flooding from Hurricane Ike. The proposed project would protect and provide a wetland buffer to Hackberry and State Highway 27, which is the region's only northward hurricane evacuation route.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project would provide a synergistic effect with several thousand acres of recently completed and/or approved coastal restoration projects including; 1) the Brown Lake Hydrologic Restoration Project; 2) numerous North American Wetland Conservation Agreement (NAWCA) terracing projects totaling approximately 200,000 linear feet and including the recently announced partnership with Louisiana's Coastal Protection and Restoration Authority (CPRA) totaling 140,000 linear feet; and 3) the largest state-local beneficial use of dredge material project to rebuild approximately 440 acres in the Black Lake Marsh.

Identification of Potential Issues
Project managers have and will coordinate with the USACE to locate upland disposal sites or areas of the Ship Channel to be mined as a sediment source. Potential issues are the possibility

of interference with oil and gas infrastructure and O&M regarding the shoreline protection measures planned.

Preliminary Construction Costs
The construction cost including 25% contingency is approximately $9,301,000. The estimated fully funded cost range is $15M - $20M.

Preparers of Fact Sheet
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Legend

- Water_Control_Structure
- Shoreline_Protection
- Marsh_Creation

N

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Feet

Kelso Bayou Marsh Creation
Cameron Parish, Louisiana
PPL 19

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name: Cameron-Creole Watershed Grand Bayou Marsh Creation Project

Coast 2050 Strategy: Regional Strategy: Use dedicated dredging or beneficial use of sediment for wetland creation or protection.

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, 6 miles northeast from Cameron, LA, in the western portion of the Cameron-Creole Watershed on the Cameron Prairie NWR and Miami Corporation north of Grand Bayou.

Problem: 14,390 acres (32%) of the Cameron-Creole Watershed project (CCMP) marshes were lost to open water from 1932 to 1990 at an average loss rate of 248 ac/year (0.55%/year), due to subsidence and saltwater intrusion from the Calcasieu Ship Channel. The CCWP was implemented by the NRCS in 1989 to reduce saltwater intrusion and stimulate restoration through revegetation. The loss rate was reduced to only 37 ac/yr (0.12%/yr) by the CCWP prior to the 2005 hurricanes, but increased to 1.4%/year post-Rita (USGS 1988-2005). The Calcasieu-Sabine Basin lost 28 mi^2 (17,920 acres) (4.4%) as a result of H. Rita (Barras et al. 2006). Hurricanes Rita and Ike in 2005 and 2008 breached the watershed levee scouring the marsh and allowing higher Calcasieu Lake salinities to enter the watershed causing more land loss.

Goals: To restore approximately 515 acres of marsh via dredged material from Calcasieu Lake.

Proposed Solution: Place approximately 1.7 million cubic yards of material dredged from a Calcasieu Lake borrow site (2, 200 ft X 2,200 ft X 10 feet deep) located approximately 2,000 feet west of Grand Bayou, away from existing oyster reefs, into two marsh creation areas north of Grand Bayou to restore 515 acres and nourish 500 acres of brackish marsh. The hurricane-scoured marsh, within the project area, is very shallow (less than 1 foot deep) making it ideal for marsh restoration with sediment because more marsh per volume of dredged material could be restored. Following construction, retention levees would be degraded, man-made bayous (trenasses) constructed, and vegetation planted for estuarine fisheries access and to achieve a functional marsh.

Preliminary Project Benefits:

1) What is the total acreage benefited both directly and indirectly? The project would restore 515 acres and nourish 500 acres of brackish marsh in the 1,015-acre project area.

2) How many acres of wetlands will be protected/created over the project life? 505 net acres of marsh would result from this project over the 20-year project life (@ 50% of the 1.4% loss rate).

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 would be approximately 50-74%. Interior shoreline erosion rates would be stopped and restored marsh would assume a 50% reduction in loss rate.

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 not directly restore any of the above structural components, but it could help maintain the Cameron-Creole watershed levee by reducing wave energy from the east. Although the Cameron-Creole watershed levee could be maintained by the Cameron Creole Maintenance project (CS-04a), protection provided by this marsh creation project could reduce those maintenance costs.

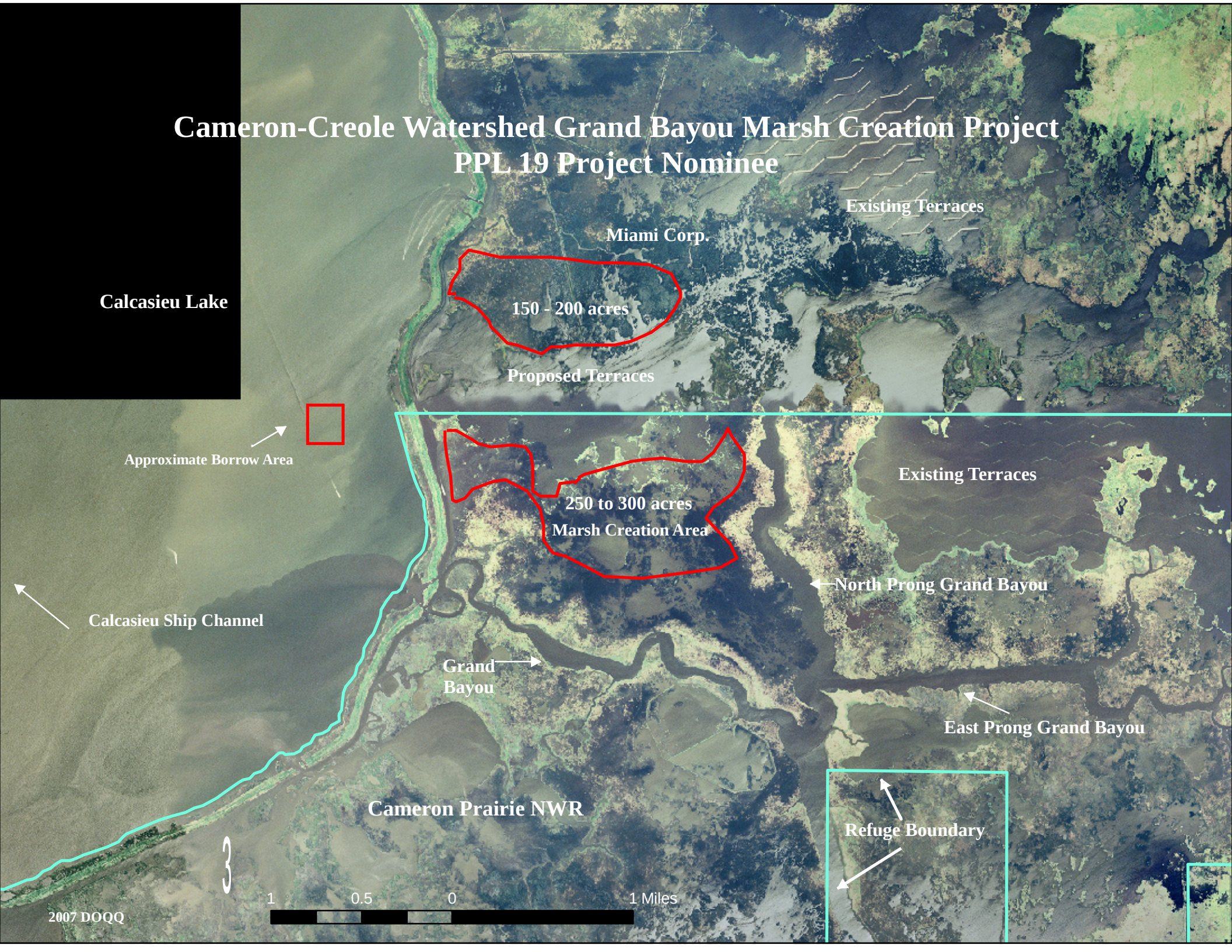
5) What is the net impact of the project on critical and non-critical infrastructure? The marsh creation project will help maintain the north-south portion of the Cameron-Creole Watershed levee near Grand Bayou by reducing wave energy and hurricane scour from the east.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? The project is synergistic with the NRCS-constructed Cameron-Creole Watershed Management Project, and the CWPPRA Cameron-Creole Plugs (CS -17), Cameron-Creole Maintenance (CS-04a), and Cameron-Creole Freshwater Introduction projects. These projects were implemented to reduce saltwater intrusion caused by the Calcasieu Ship Channel. Marsh would be reestablished in open water areas that have not revegetated since the implementation of the Cameron-Creole watershed project and have been further eroded by hurricanes Rita and Ike.

Identification of Potential Issues:
Project managers have and will continue coordinate with the LDWF to locate the borrow area to reduce turbidity impacts to oyster reefs in the southern portion of Calcasieu Lake.

Preliminary Construction Costs:
The estimated construction cost including 25% contingency is $13,402,895. The fully-funded cost range is $15M - $20M.

Preparer of Fact Sheet:
Darryl Clark, U.S. Fish and Wildlife Service, (337) 291-3111, Darryl_Clark@fws.gov


Cameron-Creole Watershed Grand Bayou Marsh Creation Project
PPL 19 Project Nominee
Existing Terraces
Miami Corp.
Calcasieu Lake
150 - 200 acres
Proposed Terraces
Approximate Borrow Area
Existing Terraces
250 to 300 acres
Marsh Creation Area
North Prong Grand Bayou
Calcasieu Ship Channel
Grand
Bayou
East Prong Grand Bayou
Cameron Prairie NWR
Refuge Boundary
3
1
0.5
0
1 Miles
2007 DOQQ

PPL19 PROJECT NOMINEE FACT SHEET
FINAL - March 26, 2009

Project Name
Freshwater Bayou Marsh Creation Project

Coast 2050 Strategy
Regional Strategy 6: Marsh Creation by Sediment Delivery or Dedicated Dredging.

Project Location
Region 4, Mermentau Basin, Vermilion Parish, Big Marsh Mapping Unit, area west of Freshwater Bayou and north of the Freshwater Bayou lock.

Problem
This area was damaged by Hurricane Rita and again by Hurricane Ike. Freshwater Bayou threatens to breach into the large interior open water area and establish a hydrologic connection that previously did not exist. This would exacerbate the environmental problems affecting marshes in this area. Interior marsh loss will likely increase without construction of the proposed project.

Goals
The goal is to create/maintain approximately 407 acres of marsh via beneficial use of maintenance dredged material from the mouth of Freshwater Bayou or other appropriate sources.

Proposed Solution
Beneficially use dredge material and/or dedicated dredge material to rebuild and nourish approximately 407 acres of marsh that was converted to fragmented marsh and open water by Hurricane Rita. Approximately 640,000 yds^3 of material is dredged from Freshwater Bayou (lock to the Gulf) every three years. The proposed project would beneficially use that material or material identified from other sources to create marsh in two areas. The North Area would include approximately 186 acres of mostly open water that is in immediate need of repair. The South Area would include creation and marsh nourishment of approximately 221 acres of fragmented marsh and shallow open water (identified in yellow on the map). Average water depths are approximately 2 ft. and the target marsh elevation would be 1.1 feet NAVD88. Mobilization and demobilization costs may be conserved depending on the location and availability of source material identified for each area.

Preliminary Project Benefits
The proposed project would create approximately 290 acres or more of interior marsh and nourish approximately 117 acres. That marsh would restore and maintain a wetland buffer between the open water of the Mermentau Basin and Freshwater Bayou.

What is the total acreage benefited both directly and indirectly?
A total of 407 acres of marsh, shallow water, and mud flats would be benefited.

How many acres of wetlands will be protected/created over the project life?
Approximately 275 net acres of marsh would result from this project.

What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%)?
Created and nourished marsh would assume a 50% reduction in loss rate; therefore, the anticipated loss rate reduction range would be 50-75%.

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.

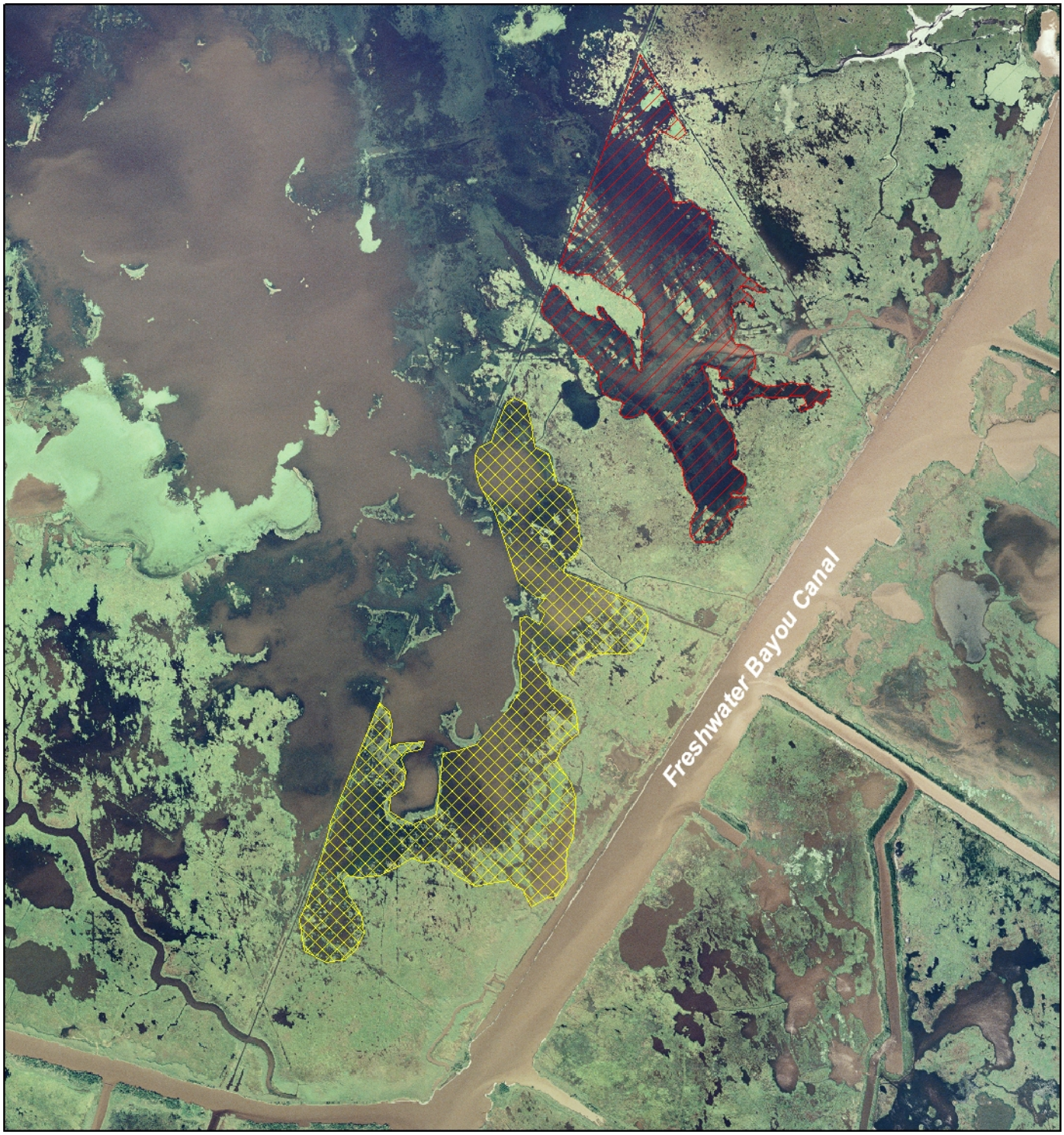
What is the net impact of the project on critical and non-critical infrastructure?
Breaches with Freshwater Bayou would eventually create an avenue for salt water intrusion into the Mermentau Basin. Protecting and creating these wetlands would assist in reducing storm damages and protect hydrologic basin boundaries.

To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
The proposed project is synergistic with the Freshwater Bayou Wetland Protection Project (ME-04), which was implemented to reduce tidal erosion of the organic soils.

Identification of Potential Issues
LDNR indicated that there are pipelines in the project area. However, complications from those are not anticipated.

Preliminary Construction Costs
The construction cost including 25% contingency is approximately $21,354,016.
The estimated fully-funded cost range is $30M - $35M.

Preparer of Fact Sheet
Troy Mallach, NRCS, (337) 291-3064, troy.mallach@la.usda.gov
Judge Edwards, Vermilion Corporation, vermilioncorporation@connections-lct.com



Freshwater Bayou MC/Nourishment
PPL 19
Vermilion Parish, Louisiana

Legend

- Marsh Creation/Nourishment North Area
- Marsh Creation/Nourishment South Area

N

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

PPL19 PROJECT NOMINEE FACT SHEET
FINAL – April 6, 2009

Project Name:
Rockefeller Gulf of Mexico Shoreline Stabilization, Joseph's Harbor East, ME-25.

Coast 2050 Strategy:
Regional: Dedicated dredging or beneficial use of sediment for wetland creation or protection (6) and Stabilize Gulf of Mexico Shoreline from Old Mermentau River to Dewitt Canal (16). Coast-wide Common: Maintenance of Gulf, Bay and Lake shoreline Integrity, and Maintain, Protect or Restore Ridge Functions.

Project Location:
Region 4, Mermentau Basin, Cameron/Vermilion Parish, LA. Along the Gulf shoreline from eastern bank of Joseph's Harbor (Rockefeller Refuge) eastward 10,000 feet.

Problem:
The project will be deigned to address Gulf shoreline retreat averaging 35' per year (Byrnes, McBride et al., 1995) with subsequent direct loss of saline emergent marsh.

Goal:
1) Reduce Gulf shoreline retreat and direct marsh loss at areas of need identified from Rockefeller Refuge east to Region 4 boundary, 2) protect saline marsh habitat, 3) Enhance fish and wildlife habitat.

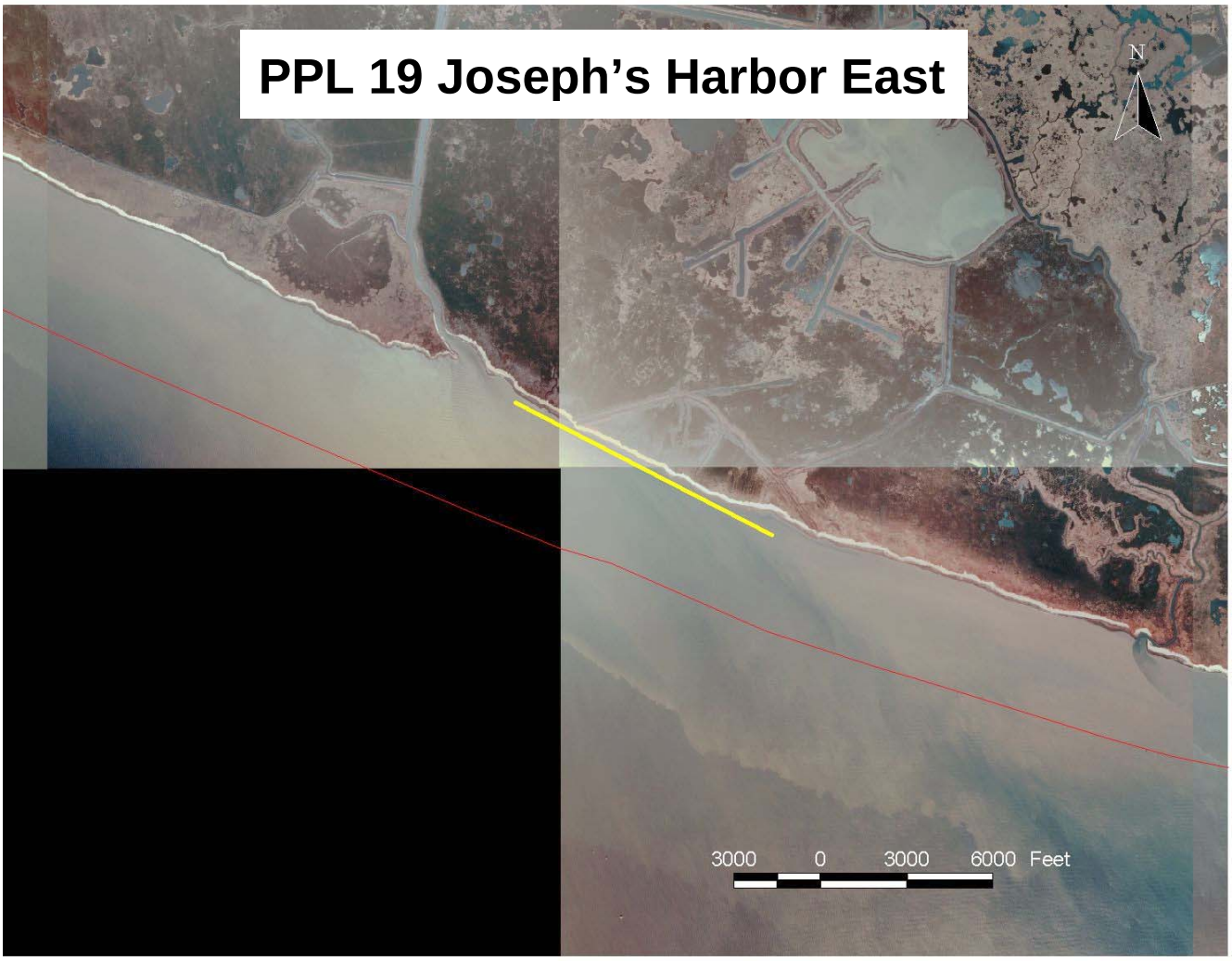
Proposed Solution:
The project would entail construction of a near-shore break-waters along the Gulf of Mexico shoreline. The break-water would extend from the eastern bank of Joseph's Harbor canal eastward for 10,000 feet. The proposed structure would be tied into the present shoreline at the point of beginning and ending. 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 –5' contour. The crest height of the proposed structure would be 8.5 feet above the Gulf floor (i.e., +3.5 ft above average water level), with an 18 foot crown and 1:2 slope on both sides. The proposed structure would consist of neutral buoyancy material encapsulated by 2,200 lb. class stone. The proposed design would include openings every 1000' to facilitate material and organism linkages. Excavation material for construction access would be placed on the landward side of the structures.

Preliminary Project Benefits:
1) The project is expected to influence approximately 125 acres directly. 2) 120 protected, 5 created, and a portion of 4,900 acres indirectly (Rockefeller Refuge Unit 5). This project is anticipated to benefit 125 acres (10K ln ft X 35 ft/yr X 20 yrs) X 0.75. The reduction efficiency was estimated by using 90% of the average wave transmission rates listed in the Rockefeller Refuge gulf Shoreline Stabilization Feasibility Study produced by Shiner Mosely and Associates (Table 6, page 4-19, methodology of Seabrook and Hall, 1998). Estimates for excavation are as follows; at the –5' contour, an additional 4' of material will be moved at a width of 80', for the 10,000 linear feet of the project or 118,500 cubic yards will be placed behind the rock structure. 3) Anticipated loss rate reduction for the segmented breakwater is 75%. 4) The project would protect and maintain chenier and beach function. 5) The project would have a net positive impact on non-critical infrastructure. This project would protect five existing pipelines that come ashore within the project area from continued erosion of the cover, which when uncovered, become a public and environmental hazard. This project would also protect properly plugged, land-based wellheads from erosion of the cover, thus becoming a public and environmental hazard. 6) The proposed project is designed as an eastward extension of the ME-18 (Rockefeller Refuge Gulf Stabilization Project).

Identification of Potential Issues:
There are 5 known pipelines in the proposed project area, and as determined by the CWPPRA planning working groups, this project may require a future maintenance event.

Preliminary Construction Costs:
The construction cost including 25% contingency is approximately $17,722,418.
The estimated fully-funded cost range is $35M - $40M.

Preparer of Fact Sheet:
John D. Foret, NOAA Fisheries Service, 337/291-2107; john.foret@noaa.gov


PPL 19 Joseph's Harbor East
N
3000 0 3000 6000 Feet

Demonstration Project Nominees

Coast-wide	DEMO	Rapidly Deployable Pre-cast Sediment Retention Barrier
Coast-wide	DEMO	Ecosystems Wave Attenuator for Shoreline Protection
Coast-wide	DEMO	Bayou Backer Demo
Coast-wide	DEMO	Floating Island Environmental Solutions BioHaven©
Coast-wide	DEMO	Viperwall Demo

PPL19 DEMONSTRATION NOMINEE FACT SHEET
March 26, 2009

Demonstration Project Name:
Rapidly Deployable Pre-Cast Sediment Retention Barrier Demonstration Project

Coast 2050 Strategy(ies):
Dedicated dredging of sediment for wetland creation

Potential Demonstration Project Location(s):
Any marsh creation location where earthen containment dikes are planned. Applicable Statewide

Problem:
Coastal Louisiana consists of areas with unstable soil conditions. The difficulty and expense of construction dikes on soft sediments are major obstacles to the routine use of dredged sediments to rebuild the marshes of coastal Louisiana. Further, dikes inhibit the natural exchange of water into and out of the newly created marsh, limiting the rate of colonization of desirable plant and animal species. Weirs and dike b reaches allow only limited tidal interchange, especially for the small lunar tides along the Louisiana coasts. In addition, earthen levees do not provide slope appropriate for fisheries use of t he created wetland.

Goals:
The primary goal of this demonstration is to manufacture, deploy and test an alternative method of retention structures of dredged sediments and marsh creation equivalent to traditional methods in areas where site conditions limit or preclude traditional methods.

Proposed Solution:
This project would demonstrate the use of specially designed pre-cast concrete barriers as retention structures for dredged material (Figure 1). With a typical width of 2-4 ft and a typical height of 4-8 ft, these sediment retention barriers can be constructed to any length compatible with their delivery and deployment (Figure 2 & 3). The barriers are strengthened by solid concrete columns on each end and on 5-10 ft centers along the length. Parallel baffles stretch between the columns. The baffles are lowest on the sediment side, rising toward the open water side at an angle of 30^0 to 60^0. The baffles are separated vertically by 0.5 to 1.5 ft as necessary to retain sediment while allowing appropriate water and biotic interchange.

Project Benefits:
If successful the project benefits include: 1) provide the restoration community with an equivalent alternative to traditional methods of marsh creation containment in areas of poor soil conditions; 2) facilitate the natural exchange of water into and out of the newly created marsh, enhancing the colonization of desirable plant and animal species.

Total Project Costs +25%: $1,093,750

Preparer of Fact Sheet:
John D. Foret. Ph.D., NOAA Fisheries Service, (337) 291-2107, john.foret@noaa.gov.

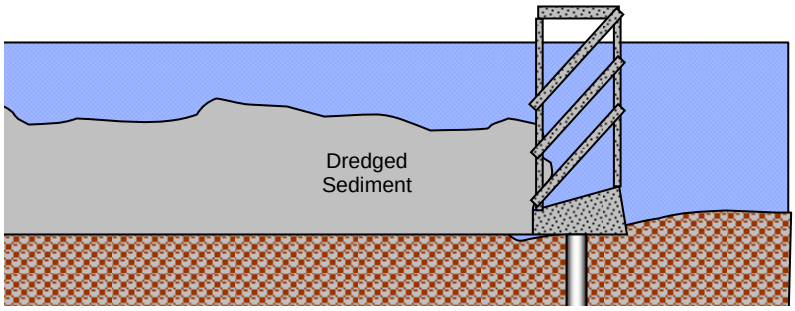


Figure 1. Side view of precast Rapidly Deployable Sediment Retention Structure; angled baffles retain dredged sediment while allowing bi-directional water flow.

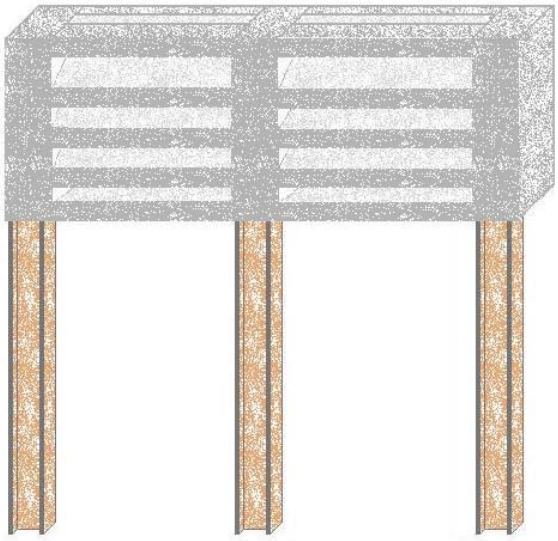


Figure 2. Sediment side view of pre-cast Rapidly Deployable Sediment Retention Structure; pilings provide stability while slanted panels holds sediment on one side and allow bi-directional water flow.

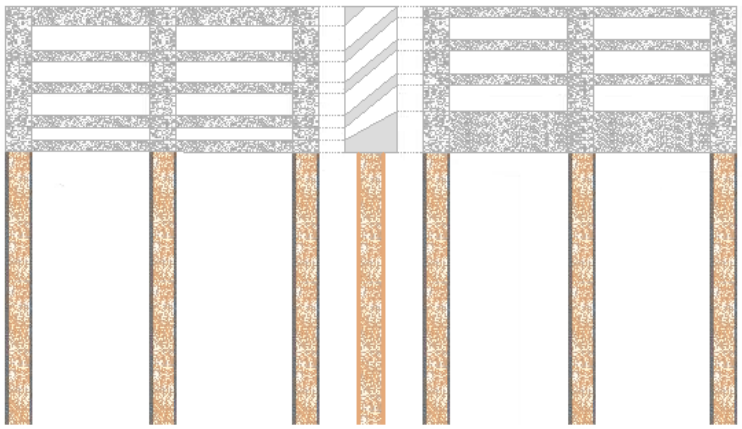


Figure 3. Other views of pre-cast Rapidly Deployable Sediment Retention Structure

PPL19 DEMONSTRATION NOMINEE FACT SHEET
March 26, 2009

Demonstration Project Name:
EcoSystems Wave Attenuator for Shoreline Protection Demo Project

Coast 2050 Strategy(ies):
Maintenance of Bay and lake Shoreline Integrity

Potential Demonstration Project Location(s):
Gulf, bay, or lake shorelines; specific site to be determined later. Applicable Statewide

Problem:
Coastal Louisiana consists of areas with unstable soil conditions, subsurface obstructions, accessibility limitations, etc. which limit the types of shoreline protection suitable to provide adequate relief of shoreline erosion. Traditional methods that have shown the most success are though the use of rock riprap. The major advantages of rock are the effectiveness and durability of protection that is provided. The disadvantages are the cost, supply, and site specific problems with placement and handling of material. However, the same problems are also associated with other "non-rock" alternatives that have been tried as substitutes t provide equivalent protection against shoreline erosion.

Goals:
The primary goal of this demonstration is to manufacture, deploy and test an alternative method of shoreline protection equivalent to traditional methods in areas where site conditions limit or preclude traditional methods.

Proposed Solution:
Walter Marine has developed a method of protection against shoreline erosion using the EcoSystems Wave Attenuator. This product is a unit of EcoSystems discs mounted on piling with an innovative achoring system, which dissipates wave action. The EcoSystems Wave Attenuator could be applicable for u se as a shoreline protection or in place of a channel plug. The intent of this demonstration project is to place the EcoSystems Wave Attenuator in an area where traditional restoration strategies would have used a cock plug or sheetpile for a channel closure. The project will evaluate the effectiveness of reducing wave energy and shoreline erosion.

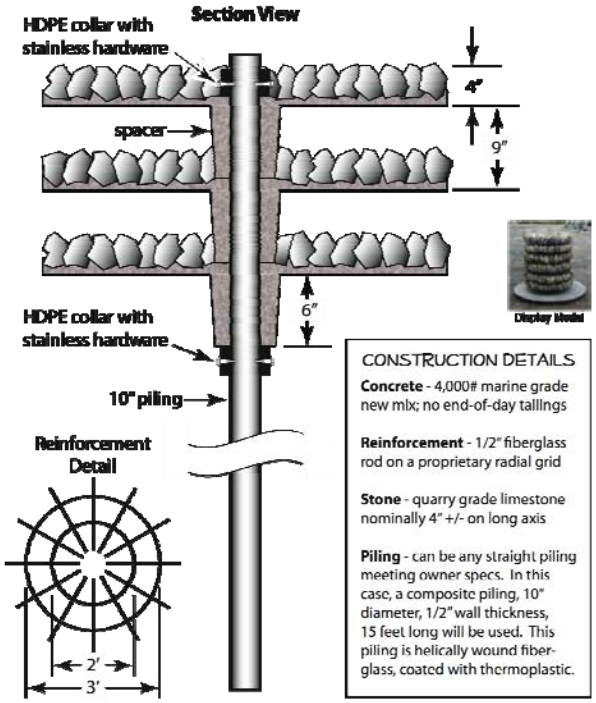
Project Benefits:
If successful the project benefits include: 1) reduction in shoreline erosion associated with wave energy; 2) information regarding deployment and installation of EcoSystems Wave Attenuator; 3) information obtained would allow a comparison with riprap structures; 4) identification of other applications of EcoSystems Wave Attenuators.

Total Project Costs +25%: $1.5M

Preparer of Fact Sheet:
John D. Foret. Ph.D., NOAA Fisheries Service, (337) 291-2107, john.foret@noaa.gov.

ECOSYSTEMS® WAVE ATTENUATION SYSTEM

Not to Scale



Display Model

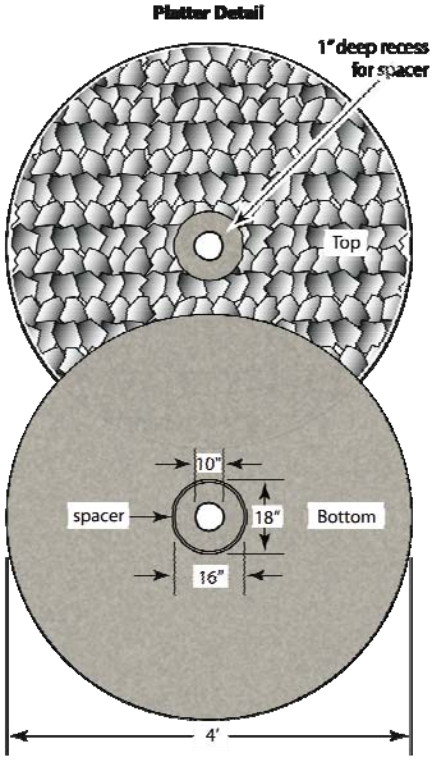
CONSTRUCTION DETAILS

Concrete - 4,000# marine grade new mix; no end-of-day tallings

Reinforcement - 1/2" fiberglass rod on a proprietary radial grid

Stone - quarry grade limestone nominally 4" +/- on long axis

Piling - can be any straight piling meeting owner specs. In this case, a composite piling, 10" diameter, 1/2" wall thickness, 15 feet long will be used. This piling is helically wound fiber-glass, coated with thermoplastic.



PPL19 DEMONSTRATION NOMINEE FACT SHEET
March 26, 2009

Demonstration Project Name:
Bayou Backer Demo

Coast 2050 Strategy(ies):
Maintenance of Bay and lake Shoreline Integrity

Potential Demonstration Project Project Location(s):
Vermilion Bay, Rockefeller Refuge, or Grand Isle shoreline

Problem:
Bayou Backer is a long lasting wave energy reducer that is suited for wetlands protection and re-vegetation. Plugs are dispensed from rolls of 3" to 6" wide corn oil based (bio-degradable) plastic strip. In very loose ground plugs up to 38' long are pushed 16' deep. This leaves two 3' long blades above the surface. Below the surface, a 16' long loop forms the anchor. The product is a low cost alternative to rock, dirt, and vegetative plantings, as it can be easily transported and installed compared with these other methods. It is expected to last several years in our waters, and assist in abating shoreline erosion to allow plants recovery and establishment time. Wave pool testing was recently performed at Louisiana State University and can be seen in photos and videos at http://www.grastic.com/backer

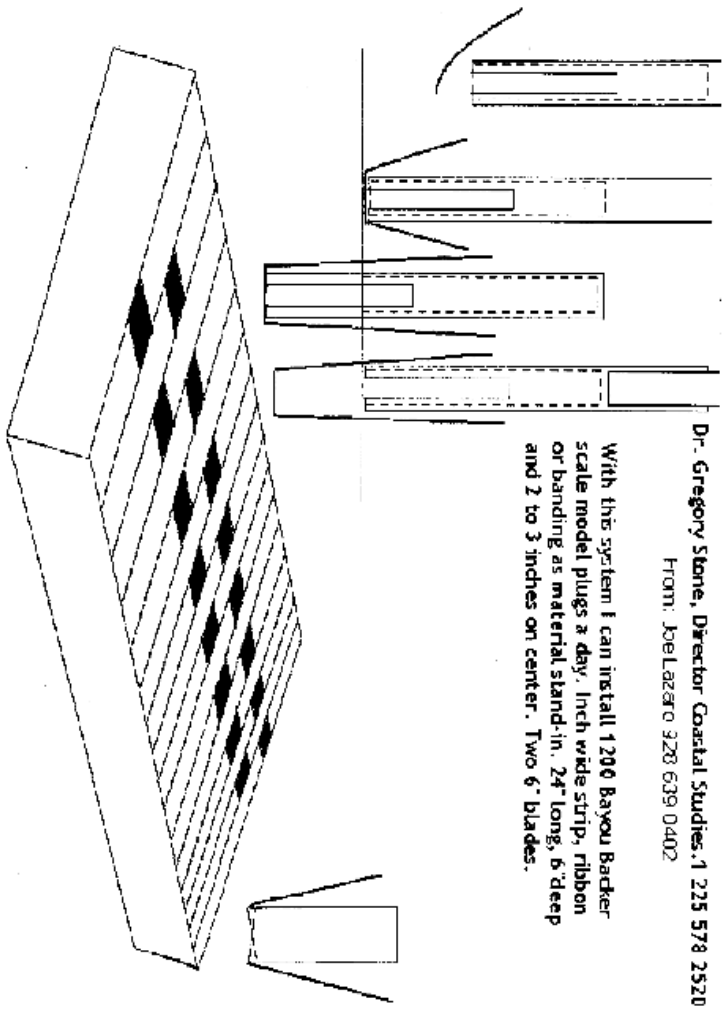
Goals:
(1) Test the effectiveness of the bio-grass to reduce shoreline erosion
(2) Determine the applicability of the bio-grass in coastal Louisiana shores.
(3) Test two spacing design for evaluation of shoreline protection versus cost effectiveness.

Proposed Solution:
Install triplicate plots of the following two spacing plans; 8 rows of plugs, 1 foot spacing, or 6,000 plugs, along approximately 750 linear feet of shoreline (8 rows at 1'OC = 8 plugs/ LF of shoreline * 750 LF of shoreline = 6,000 plugs). Each plug will be inserted to a 16 ft depth. A second, equivalent, section of shoreline, 5 rows of plugs will be spaced 3' OC (5 rows at 3'OC = 8 plugs/3 LF of shoreline * 750 LF of shoreline = 2,000 plugs). Total shoreline impacted is 4,500 linear feet with 8,000 plugs per treatment, times 3 treatments, or 24,000 plugs.

Project Benefits:
If successful the product could be a low cost option in shoreline protection, for initial terrace or marsh creation erosion control until vegetation establishes, direct creation of habitat in shallow waters where turbidity could be decreased, and used as an addition to both interior lake and exposed coastal bay shorelines and open bay waters.

Project Costs:
Construction costs + 25% contingency = $520,000

Preparer of Fact Sheet:
John D. Foret. Ph.D., NOAA Fisheries Service, (337) 291-2107, john.foret@noaa.gov.



Dr. Gregory Stone, Director Coastal Studies,1 225 578 2520

From: JoeLazaro 928 639 0402

With this system I can install 1200 Bayou Backer scale model plugs a day. Inch wide strip, ribbon or banding as material stand-in. 24" long, 6"deep and 2 to 3 inches on center. Two 6" blades.

PPL19 DEMONSTRATION PROJECT NOMINEE FACT SHEET
April 3, 2009

Demonstration Project Name:
Floating Island Environmental Solutions BioHaven

Coast 2050 Strategy(ies):

- Terracing- Provides nursery habitat, wave fetch reduction, and sediment trapping in addition to promoting conditions conducive to growth of submerged aquatic vegetation.
- Vegetative Planting
- Restore natural drainage patterns

Potential Demonstration Project Location(s):
Fresh and intermediate open water areas such as the Central Wetlands, and the Penchant Basin.

Problem:
What problem will the demonstration project try to solve?

- Terracing typically require shallow areas with soils of suitable mineral content to support the terracing structure. Terraces are also normally created with in-situ material resulting in an adjacent deep borrow area, which limits SAV, and emergent marsh growth in this area.
- Freshwater floating marshes can be loss due to increasing water levels and hydrologic modifications.

What evidence is there for the nature and scope of the problem in the project area?

- Constructability of terraces is severely limited in areas of poor load bearing, organic soils (Central Wetlands, Penchant Basin)
- During high water events, floating marshes can be subject to flows that could break up the floating marsh and carry them downstream by local currents

Goals:
What does the demonstration project hope to accomplish?

- Using the same configuration as a terrace field the demonstration project will hope to provide nursery habitat, reduce wave fetch, and trap sediment, in open water habitats with a poor substrates.
- Provide containment for floating marshes where they are susceptible to losses from man-made and natural waterways.

Proposed Solution:
Floating Island Biohavens will be joined together in and placed in a linear method to mimic a terrace field. The Floating Island Biohavens will then be planted with the native vegetation (See diagram). Various thicknesses of mats and dimensions would be tested.

Floating Island Biohavens would be placed across areas broken bank lines and canals, and serve as a containment system for interior freshwater floating marshes.

Project Benefits:

- Provide nursery habitat
- Reduce Wave Fetch
- Increase organic soil deposits
- Trap sediment
- Reduce interior marsh loss

Project Costs:
Estimated cost to implement demonstration project $ 1,835,000

Preparer(s) of Fact Sheet:
Travis Creel, USACE, 504-862-1071, Travis.J.Creel@usace.army.mil
TIGUE Bonneval, Floating Island Environmental Solutions, 225-445-0886, tiguebonneval@gmail.com

Floating Island Environmental Solutions BioHaven In the Vicinity of the Lake DeCade

Legend

Floating Island
~ 25 lf x 150 lf

N
W E
S

0 130 260 520 780 Feet

Map Produced By:
U.S. Army Corps of Engineers
New Orleans, La

Data Source:
2005 DOQQ Aerial Photography
Map Date: March 09, 2009
Map ID: Floating Islands_Examples.mxd

Floating Island Environmental Solutions BioHaven
Bayou Penchant/Espasa

Legend

N
W E
S

0 460 920 1,840 2,760
Feet

Map Produced By:
U.S. Army Corps of Engineers
New Orleans, La

Data Source:
2004 DOQQ Aerial Photography
Map Date: March 10, 2009
Map ID: Floating Islands_Examples.mxd

PPL19 DEMONSTRATION PROJECT NOMINEE FACT SHEET
24 March 2009

Viper-Wall:

Coast 2050 Strategy(ies): Coastwide Strategies to maintain bay and lake shoreline integrity and stabilize major navigation Channels.

Potential Demonstration Project Location(s): Coastwide

Problem: Excessive erosion of bay and lake rims expose thousands of acres of interior marshes to increased rates of erosion and severe hydrologic change. In addition, the loss of wetlands resulting from the direct effects of bank erosion along Louisiana's nine major navigation channels in the coastal zone was estimated by the Coast 2050 plan to be in excess of 35,000 acres. The need for stabilization in critical areas was noted in all four Coast 2050 regions.

Goals: The proposed demonstration project would halt or decrease shoreline erosion rates and maintain exchange and interface with estuarine systems.

Proposed Solution:
The Viper-Wall is a wave breaking sediment collection system that would absorb and deflect wave energy, protect vegetation, and support its own weight in soft soils without disturbing the estuarine gradient.

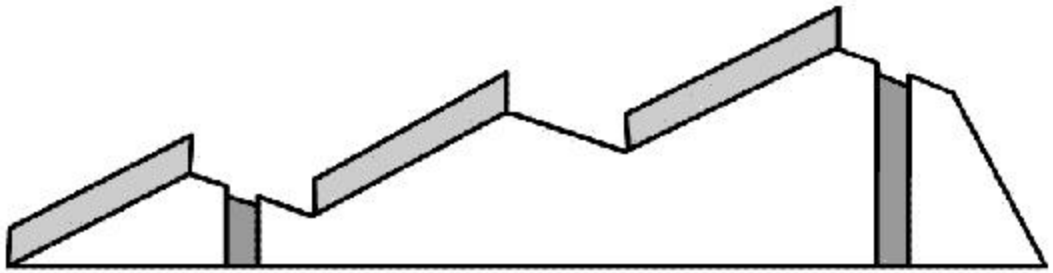
1. The Stepped Shapes reduce wave run up and minimize subsequent scour.
2. The Slopping Shapes provide for gradual dissipation; and
3. The Terracing breaks up one long slope into a number of short slopes allowing sediment time to settle.

Project Benefits:
The proposed project would:

1. absorb and deflect wave energy;
2. protect existing or planted shoreline vegetation;
3. allow ingress and egress of aquatic species;
4. collect sediment by reducing wave energy; and
5. is removable and reusable

Project Costs:
$1.5 million

Preparer(s) of Fact Sheet:
Troy Mallach, NRCS, 337/291-3064 troy.mallach@la.usda.gov



How It Works:
The basic system has multiply angled wall sections in a stepped shaped formation that tricks a wave into feeling a bottom that is not their. As it goes over the first wall section the wave is forced to rise in elevation, just as it would normally be forced to do along any shoreline. This causes the wave top to travel faster than its bottom and starts its breaking cycle early, but before it can break, an open section appears and drops down between the wall sections to the true bottom which forces the wave energy to fall downward.

As the wave's energy falls in a downward motion it forces the water within the open area to be displaced towards the shoreline forming a "new wave" since the first wall section prevents it from moving seaward. This new wave is only a fraction of the original wave which continues to move towards the shoreline with much less force under the other wall sections of the system. The original wave is still moving towards the shoreline but above the systems wall sections, these additional wall sections continue to dissipate and separated the old wave from the "new wave" preventing them from combining and regenerating.

LETTERS OF SUPPORT

PROTECTING YOU
AND YOUR FAMILY

The Board of Commissioners
OF THE
Pontchartrain Levee District

2204 ALBERT STREET • P.O. BOX 426 • LUTCHER, LA 70071
TEL: 225-869-9721 FAX: 225-869-9723 LA WATTS: 800-523-3148

April 2, 2009

Mr. Tom Holden
Deputy Chief Engineer, Chairman
CWPPRA Technical Committee
U. S. Army Corps of Engineers, New Orleans District
Office of the Chief
P. O. Box 60267
New Orleans, LA 70160-0267

RE: Landowner Support for the LaBranche East Marsh Creation Habitat Enhancement Project (R1-PO-9), PPL-19 Candidate Project; St. Charles Parish, LA

Dear Mr. Holden:

As a landowner and public agency, the Pontchartrain Levee District (PLD) is in full support of the LaBranche East Marsh Creation Habitat Enhancement Project. Not only is this project consistent with the restoration of marsh habitat in LaBranche as described in *Integrated Ecosystem Restoration and Hurricane Protection: Master Plan for a Sustainable Coast*, but we believe it will reduce storm surge and increase flood protection in St. Charles Parish.

As the result of Phase 0 CWPPRA evaluations, the PLD understands that project features and/or construction techniques may need to be revised in order to adjust and improve the project. To achieve wetland restoration within the current project scope, the PLD is supportive of adjustments to project features that may be beneficial and/or necessary in moving the project forward.

Please contact me if you need any additional information. Thank you.

Sincerely yours,

Steve Wilson
President

xc: Tom Holden, COE
Darryl Clark, USFWS
Kirk Rhinehart, State of Louisiana, OCPR
Richard Hartman, NMFS
Tim Landers, EPA
Britt Paul, NRCS
PLD, Board of Commissioners
Dwight Poirrier, PLD Counsel
Monica Salins, PLD Executive Director
Mona Nosari, GCR

ST.CHARLES LAND SYNDICATE

3453 Meadowlake
Houston, Texas 77027
March 23, 2009

Mr. Tom Holden
Deputy Chief Engineer
Chairman, CWPPRA Technical Committee
U. S. Army Corps of Engineers, New Orleans District
Office of the Chief
P. O. Box 60267
New Orleans, LA 70160-0267

RE: Landowner Support for the LaBranche East Marsh Creation Habitat Enhancement Project (R1-PO-9), CWPPRA PPL-19, St. Charles Parish, LA

Dear Mr. Holden:

As spokesman for the St. Charles Land Syndicate (SCLS), I am respectfully submitting this letter as documentation of SCLS's support for the aforementioned project.

It is our understanding that further CWPPRA evaluation may indicate that certain project features and/or construction methodologies may need to be changed in order to refine and enhance the project. While SCLS understands that the overall scope of the project will not change, we are supportive of adjustments that may be necessary in moving the project forward.

Regarding another matter, the St. Charles International Airport is no longer being pursued. Any future expansions of the existing airport would occur on lands far removed and not associated with the CWPPRA project area.

Should you have any questions and/or need additional information, please contact Ed Fike, Coastal Environments, Inc., (225) 383-7455, ext. 128. Thank you.

Sincerely yours,

William A. Monteleone, Jr.
St. Charles Land Syndicate

xc: Troy Constance, COE
Darryl Clark, USFWS
Kirk Rhinehart, State of Louisiana, OCPR
Richard Hartman, NMFS
Tim Landers, EPA
Britt Paul, NRCS

Association of Family Fishermen
P.O. Box 336
Barataria, LA 70036
504-689-7880 Office
504-689-7687 Fx
familyfishermen@cox.net

February 13, 2009

Melanie Goodman
CWPPRA Program Manager
New Orleans Dist. Corps of Engineers
Restoration Branch
P.O. Box 60267
New Orleans, LA 70160-0267

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

Re: PPL-19 Project Comments

Region 2: Bayou Dupont to Bayou Barataria Marsh Creation Project
Bayou Villars Shoreline Stabilization Project.
Region 1: Kenner Wetland Assimilation Project (divert treated sewerage effluent into LaBranche Wetlands).

The Association of Family Fishermen, Inc, would like to thank you for the opportunity to submit comments as it relates to the following proposed PPL-19 Coastal Restoration Projects in Jefferson Parish, Louisiana. Association of Family Fishermen is a non-profit citizen's organization made up of commercial fishermen dedicated to the sustainability of Louisiana's natural resources, culture and coastal communities. We are based in the Barataria Basin and our coastal communities are economically and culturally dependent on our natural resources and environment. The PPL-19 Projects in Region 2 are critical to the long term protection and sustainability of our community.

Bayou Villars Shoreline Stabilization Project
The Bayou Villars Shoreline Stabilization project located in Region 2 would reduce shoreline retreat and protect approximately 200 acres of marsh at the intersection of Bayou Villars and the Gulf Intracoastal Waterway. Protecting this shoreline is critical to preventing Lake Salvador from encroaching into the Gulf Intracoastal Water and to protecting the residents of Barataria and the valuable Jonathan Davis wetlands. It will also save approximately 4000 acres of cypress forest, which is undergoing regeneration. This shoreline is experiencing average shoreline retreat of approximately 38'/year, with some areas having a shoreline retreat as great as 89'/year. If the hurricanes seasons of 2005 and 2008 are any indication, this area may not survive another major hurricane. We also believe the Bayou Villars Site is suited for demonstration projects, as it requires different methods of protection due to the various types of ecosystems found in the same area. Therefore, for the members of Louisiana Bayoukeeper, who for the most part live and work in Barataria and Lafitte, the Bayou Villars Shoreline Stabilization project is the one project nominated to PPL-19 that cannot be delayed.

Bayou Dupont to Bayou Barataria Marsh Creation

The Bayou Dupont to Bayou Barataria Marsh Creation project located in Region 2 would use sediments from the Mississippi River to create 290 acres and nourish 215 acres of marsh between Bayou Dupont and Bayou Barataria. Restoring this band of marsh would help to re-establish the historic function of the Barataria Ridge, which once served to reduce saltwater intrusion into the upper areas of the Barataria Landbridge. We think this is a very important project, but there is a lesser degree of urgency involved as compared to the Bayou Villars Project.

Kenner Wetland Assimilation Project
We support the Kenner Wetland Assimilation project located in Region 1 which would divert treated sewerage water into the LaBranche wetlands, as it could provide needed freshwater and nutrients for marsh nourishment. However, we believe effluent discharged into marsh and water areas, where human contact occurs, must meet Clean Water Act standards. We base our concerns on an increased incidence of staff related illnesses in our community during the project conducted at the Jonathan Davis sewerage treatment plant in Barataria.

We look forward to further discussions and opportunities for input into future plans.

Sincerely,

Michael Roberts, Director
Association of Family Fishermen
P.O. Box 336
Barataria, LA 70036
504-689-7880 Office
504-689-7687 Fx
familyfishermen@cox.net

Bayou Segnette Community and Boaters Association, Inc.
760 Oak Avenue ■ Westwego, LA 70094 ■ (504) 236-4811

February 13, 2009

Colonel Alvin B. Lee
District Engineer, New Orleans
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Attention: Ms. Melanie Goodman, CWPPRA Program Manager

Subject: PPL-19 Candidate Projects

Dear Colonel Lee:

This letter is to express our support for the following projects:

- Bayou Dupont to Bayou Barataria Marsh Creation Project (Region 2)
- Bayou Villars Shoreline Stabilization Project (Region 2)
- Kenner Wetlands Assimilation Project (Region 1)
- Polders for Marshland Creation Project (Demo)

Restoring marsh from Bayou Dupont to Bayou Barataria, which will help to reduce rapid tidal exchange that is accelerating erosion north of the historic location of the Barataria Ridge, is our top priority, followed closely by stabilizing the Bayou Villars shoreline to prevent Lake Salvador from encroaching into the Gulf Intracoastal Waterway. The Kenner project will turn a waste stream into a resource, which is always a good thing. Additionally, we would love to see Polders for Marshland Creation demonstrated at Yankee Pond on Bayou Segnette.

We respectfully request that the members of the Planning and Engineering Subcommittee lend their support to the projects listed above.

Sincerely,

Vickie Duffourc
President

Ray Champagne
541 Westwood Drive
Marrero, LA 70072
(504) 347-2846

February 12, 2009

Colonel Alvin B. Lee
District Engineer, New Orleans
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Attention: Melanie Goodman

RE: CWPPRA PPL-19 Project Recommendation

Dear Colonel Lee:

This letter is to express my support for the ***Bayou Dupont to Bayou Barataria Marsh Creation*** project in Region 2. This project will restore a significant amount of marsh and continues the total restoration of the Barataria landbridge. It coincides with the previous project that rocked the channel and will create a band of marsh to help reduce storm surge and saltwater intrusion.

Additionally, I also support the ***Bayou Villars Shoreline Stabilization*** project on the southeast shore of Lake Salvador. The use of clam or oyster shells or some other natural resource should be considered to stabilize the shore. The existing shell mounds demonstrate that shells do provide shoreline protection.

In Region 1, I support the ***Kenner Wetland Assimilation Project*** to divert treated sewerage water into the LaBranche wetlands to enhance marsh growth.

These are all worthy projects, but the Bayou Dupont to Bayou Barataria Marsh Creation project should be given first priority, followed by the Bayou Villars project.

Thank you for this opportunity to provide input into the selection process.

Sincerely,

Ray Champagne

Ed Perrin
4634 Jean Lafitte Blvd.
Lafitte, LA 70067
February 12, 2009

Colonel Alvin B. Lee
District Engineer, New Orleans
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Attention: Melanie Goodman

RE: CWPPRA PPL-19 Project Recommendation

Dear Colonel Lee:

The Bayou Dupont to Bayou Barataria Marsh Creation project in Region 2 is a project that I strongly support. As a resident of Lafitte and an avid outdoorsman, I have witnessed the steady decline of this area since the Barataria Ridge was cut for construction of the Barataria Bay Waterway. This project will help to restore some of the function that the ridge once provided and will build marsh in areas that are now open water. The project will connect to other CWPPRA projects in the area and work together for the benefit of the central basin, and therefore receives my strongest support.

The Bayou Villars Shoreline Stabilization project is also a much needed project in Region 2. The banks of Bayou Villars are so severely eroded that the waterway is no longer recognizable and appears to be part of Lake Salvador. I support this project that would stabilize the shoreline to prevent further erosion.

I am also in support of the Kenner Wetlands Assimilation project in Region 1.

My strongest support goes to the Bayou Dupont to Bayou Barataria Marsh Creation project.

Sincerely,

Edward D. Perrin, Jr.

Ed Perrin

TOWN OF JEAN LAFITTE
OFFICE OF THE MAYOR

TIMOTHY P. KERNER
MAYOR

YVETTE CRAIN
TOWN CLERK

MARY JO HARGIS
CHIEF OF POLICE

2654 Jean Lafitte Blvd.
Lafitte, Louisiana 70067
Office: (504) 689-2208
Police: (504) 689-3132
Fax: (504) 689-7801

COUNCIL MEMBERS

SHIRLEY GUILLIE
MAYOR PROTEM

SLOANE KERNER
CHRISTY CREPPEL
VERNA SMITH
CALVIN LEBEAU

February 11, 2009

Colonel Alvin B. Lee
District Engineer, New Orleans
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Attention: Melanie Goodman
RE: CWPPRA PPL-19 Project Recommendation

Dear Colonel Lee:

The Town of Jean Lafitte is becoming increasingly vulnerable to storm surge due to the loss of valuable wetlands in the Barataria Basin. The Bayou Dupont to Bayou Barataria Marsh Creation project nominated for inclusion on the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) 19th Project Priority List (PPL-19) will restore 290 acres and enhance another 215 acres of marsh in an area of south of Lafitte that is critical to our coastal protection needs. The project is designed to mimic the historical function of the Barataria Ridge which once served as a barrier to reduce storm surge and saltwater intrusion into the upper reaches of the Barataria Basin. Saltwater intrusion has destroyed much of the coastal forests that once existed in this area. Siphons and diversions such as Naomi, Myrtle Grove and Davis Pond are providing freshwater to the area, but the deteriorated condition of the marsh retards freshwater retention in the central basin. The combined benefits of reduced saltwater intrusion and increased storm surge protection make this project the number one CWPPRA PPL-19 priority for the Town of Jean Lafitte.

The Town of Jean Lafitte also supports the Bayou Villars Shoreline Stabilization Project which is designed to prevent Lake Salvador from encroaching into the Gulf Intracoastal Waterway. If this marsh between the lake and the GIWW continues to erode, Lafitte will be soon be subjected to direct wave energy from Lake Salvador during northerly winds.

Accordingly, the Town of Jean Lafitte and its citizens request your assistance with securing funding for these much needed projects.

Sincerely,

Timothy P. Kerner

Timothy Kerner, Mayor
Town of Jean Lafitte

JEFFERSON PARISH
LOUISIANA
MARINE FISHERIES ADVISORY BOARD

February 11, 2009

Colonel Alvin B. Lee
District Engineer, New Orleans
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Attention: Melanie Goodman

RE: CWPPRA PPL-19 Project Recommendation

Dear Colonel Lee:

The Jefferson Parish Marine Fisheries Advisory Board fully supports the ***Bayou Dupont to Bayou Barataria Marsh Creation*** project in Region 2. This project will partially restore the historic ridge function that was provided by the Barataria Ridge prior to the construction of the Barataria Bay Waterway and will create 290 acres and nourish 215 acres of marsh between Bayou Dupont and Bayou Barataria. The Board has long been a proponent of utilizing sediments pumped from the Mississippi River to create and restore critical marsh habitat. Accordingly, the Bayou Dupont to Bayou Barataria Marsh Creation project is our top ranking project.

Additionally, we support the ***Bayou Villars Shoreline Stabilization Project*** which is also located in Region 2. The banks of Bayou Villars are so severely eroded that the waterway is no longer recognizable as a bayou. If swift action is not taken to reduce the erosion on the southern bank of Bayou Villars, Lake Salvador will soon encroach into the Gulf Intracoastal Waterway and threaten the Barataria community and the Jonathan Davis wetlands to the south.

The Board also fully supports the ***Kenner Wetland Assimilation Project*** in Region 1. This project would divert treated sewerage effluent into LaBranche Wetlands to nourish existing marsh. The LaBranche wetlands were cut off from the historic overbank flooding of the Mississippi River since the early days of development in the New Orleans area and would benefit greatly from this input of freshwater and nutrients.

Thank you for this opportunity to comment on this important coastal restoration effort.

Sincerely,

Jason Smith, Board Coordinator
Jefferson Parish Marine Fisheries Advisory Board

cc: Board Members
Marnie Winter

Wandell, Scott F MVN

From: Jean Landry [jlandry@TNC.ORG]
Sent: Friday, February 13, 2009 9:55 AM
To: Goodman, Melanie L MVN
Subject: PPL-19 comments

Good morning, Ms. Goodman.

As a resident of Grand Isle, Jefferson Parish and daily seeing land lose at an alarming rate, I wish to express my support of the following PPL-19 projects:

Bayou Dupont to Bayou Barataria Marsh Creation

The Bayou Dupont to Bayou Barataria Marsh Creation project located in Region 2 would use sediments from the Mississippi River to create 290 acres and nourish 215 acres of marsh between Bayou Dupont and Bayou Barataria. Restoring this band of marsh would help to re-establish the historic function of the Barataria Ridge, which once served to reduce saltwater intrusion into the upper areas of the Barataria Landbridge. The Barataria Ridge was severed by the construction of the Bayou Barataria Waterway and adjacent marsh has been extremely stressed due to saltwater intrusion and wake action from passing vessels. This project would work in conjunction with other projects that are planned or have been implemented in the area, and is a key component of the Barataria Landbridge restoration. Additionally, this project is located in Region 2, which has the highest land loss rate in the state.

Bayou Villars Shoreline Stabilization Project

The Bayou Villars Shoreline Stabilization project located in Region 2 would reduce shoreline retreat and protect approximately 200 acres of marsh at the intersection of Bayou Villars and the Gulf Intracoastal Waterway. Protecting this shoreline is critical to preventing Lake Salvador from encroaching into the Gulf Intracoastal Water and to protecting the residents of Barataria and the valuable Jonathan Davis wetlands.

Kenner Wetland Assimilation Project

The Kenner Wetland Assimilation project located in Region 1 would divert treated sewerage water into the LaBranche wetlands, providing much needed freshwater and nutrients for marsh nourishment.

Respectfully,

Jean Landry

P.O. Box 675

Grand Isle, LA 70358

985-688-3871

LOUISIANA BAYOUKEEPER®
Protecting & Preserving Louisiana's Bounty & Culture
Clean Water = Healthy Habitats = Edible Seafood = Sustainable Coastal Community

P.O. Box 207, Barataria, LA 70036 504-689-8849 Office 504-689-7687 Fx bayoukeeper@cox.net

February 13, 2009

Melanie Goodman
CWPPRA Program Manager
New Orleans Dist. Corps of Engineers
Restoration Branch
P.O. Box 60267
New Orleans, LA 70160-0267

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

Re: PPL-19 Project Comments

Region 2: Bayou Dupont to Bayou Barataria Marsh Creation Project
Bayou Villars Shoreline Stabilization Project.
Region 1: Kenner Wetland Assimilation Project (divert treated sewerage effluent into LaBranche Wetlands).

Louisiana Bayoukeeper, Inc, would like to thank you for the opportunity to submit comments as it relates to the following proposed PPL-19 Coastal Restoration Projects in Jefferson Parish, Louisiana. Louisiana Bayoukeeper, Inc is a non-profit citizens organization made up of recreational and commercial fishermen, charter captains, tourism businesses and other concerned citizens dedicated to protecting the health and sustainability of Louisiana's bayou's and coastal communities. We are based in the Barataria Basin and our coastal communities are economically and culturally dependent on our natural resources and environment. The PPL-19 Projects in Region 2 are critical to the long term protection and sustainability of our community.

Bayou Villars Shoreline Stabilization Project
The Bayou Villars Shoreline Stabilization project located in Region 2 would reduce shoreline retreat and protect approximately 200 acres of marsh at the intersection of Bayou Villars and the Gulf Intracoastal Waterway. Protecting this shoreline is critical to preventing Lake Salvador from encroaching into the Gulf Intracoastal Water and to protecting the residents of Barataria and the valuable Jonathan Davis wetlands. It will also save approximately 4000 acres of cypress forest, which is undergoing regeneration. This shoreline is experiencing average shoreline retreat of approximately 38'/year, with some areas having a shoreline retreat as great as 89'/year. If the hurricanes seasons of 2005 and 2008 are any indication, this area may not survive another major hurricane. We also believe the Bayou Villars Site is suited for demonstration projects, as it requires different methods of protection due to the various types of ecosystems found in the same area. Therefore, for the members of Louisiana Bayoukeeper, who for the most part live and work

in Barataria and Lafitte, the Bayou Villars Shoreline Stabilization project is the one project nominated to PPL-19 that cannot be delayed.

Bayou Dupont to Bayou Barataria Marsh Creation
The Bayou Dupont to Bayou Barataria Marsh Creation project located in Region 2 would use sediments from the Mississippi River to create 290 acres and nourish 215 acres of marsh between Bayou Dupont and Bayou Barataria. Restoring this band of marsh would help to re-establish the historic function of the Barataria Ridge, which once served to reduce saltwater intrusion into the upper areas of the Barataria Landbridge. We think this is a very important project, but there is a lesser degree of urgency involved as compared to the Bayou Villars Project.

Kenner Wetland Assimilation Project
We support the Kenner Wetland Assimilation project located in Region 1 which would divert treated sewerage water into the LaBranche wetlands, as it could provide needed freshwater and nutrients for marsh nourishment. However, we believe effluent discharged into marsh and water areas, where human contact occurs, must meet Clean Water Act standards. We base our concerns on an increased incidence of staff related illnesses in our community during the project conducted at the Jonathan Davis sewerage treatment plant in Barataria.

We look forward to further discussions and opportunities for input into future plans.

Respectfully Submitted,

Michael Hymel
Louisiana bayoukeeper, Inc
Coastal Restoration Program Director
P. O. Box 207
Barataria, LA 70036
504-689-8849 Office
504-689-7687 Fax
bayoukeeper@cox.net

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Tuesday, March 10, 2009 1:40 PM
To: Wandell, Scott F MVN; Hennington, Susan M MVN
Subject: CWPPRA PPL 19 Nominee Project Email Support

Scott, please include the below email in Tech meeting binder materials for PPL 19 Candidate Projects

-----Original Message-----
From: Shannon [mailto:shanrn@bellsouth.net]
Sent: Tuesday, March 10, 2009 12:00 PM
To: Goodman, Melanie L MVN
Subject:

Please support the proposed projects for Vermilion Parish Chenier Tig Headland Restoration and Fresh Water Bayou marsh Creation

These projects are important to the residence of Vermilion Parish and will lessen the impact of future storms.

Thank you
Shannon

VERMILION SOIL & WATER CONSERVATION DISTRICT
3221 Veterans Memorial Drive Suite H
Abbeville, LA 70510
Phone: (337) 893-5664 Ext. 3
Fax: (337) 893-9225

February 12, 2009

US Army Corp of Engineers
New Orleans District
Melanie Goodman
P O BOX 60267
New Orleans LA 70160-0267

Dear Ms. Goodman,

The Vermilion Soil and Water Conservation District is tasked to conserve our soil and water in our district and in the state of Louisiana. To achieve our mission we are in voicing our support of the Cheniere Au Tigre Headland Restoration Project on the PPL 19 list.

We are asking that you give favorable support to this project. If you have any questions, please feel free to contact our Vermilion Soil and Water Conservation District at 337-893-5664 ext 3.

Regards,

Ernest Girouard

Ernest Girouard
VSWCD Chairman

md

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Tuesday, March 03, 2009 10:38 AM
To: Wandell, Scott F MVN
Subject: Fw: HELP for VERMILION PAEISH

Follow Up Flag: Follow up
Flag Status: Red

Save with ppl 19 comments for april tec meeting

Message sent via my BlackBerry Wireless Device

From: Sue Neveaux
To: Goodman, Melanie L MVN
Sent: Tue Mar 03 08:48:15 2009
Subject: HELP for VERMILION PAEISH

Dear Ms. Goodman,
Please support the "Chenier Tig Headland Restoration" and the "Fresh Water Bayou Marsh Creation". These project are very important to our parish.
Thank You,
Sue Neveaux
10202 LA. HYW. 696
Abbeville, LA. 70510

ST. MARY PARISH GOVERNMENT

PAUL P. NAQUIN, JR., PRESIDENT
FIFTH FLOOR - COURTHOUSE
FRANKLIN, LOUISIANA 70538-6198

FRANKLIN
(337) 828-4100

FAX (337) 828-4092

E-mail. admin@parish.st-mary.la.us

OFFICE HOURS
8:00 A.M. TO 12:00 P.M.
1:00 P.M. TO 4:30 P.M.

April 7, 2009

Mr. Melanie Goodwin Corps of Engineers

Mr. Tom Holden — Corp of Engineers

Mr. Darryl Clark — US Fish & Wildlife

Mr. Kirk Rhinehart — La. Dept of Natural Resources

Mr. Richard Hartman — National Marine Fisheries

Mr. Tim Landers — Enviromental Protection Agency

Mr. Britt Paul — Natural Resources Conservation Service

RE: PPL 19 COTE BLANCHE FRESHWATER & SEDIMENT INTRODUCTION & SHORELINE PROTECTION PROJECT

Gentlemen:

I hereby and herewith request your support for the above captioned project up for consideration at your April 15, 2009 meeting in New Orleans . This important project for St. Mary Parish will help revitalize coastal marshland and stabilize an eroding shoreline that is critical to the interior wetlands.

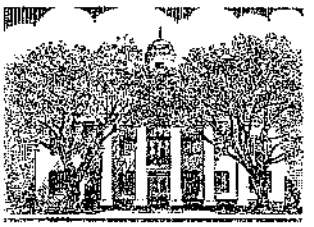
Enclosed herewith is a fact sheet and description of the proposed project. Thank you for your consideration and support in this matter.

Sincerely,

Paul P. Naquin, Jr. President

St. Mary Parish Government

Enclosure



VERMILION PARISH POLICE JURY
Courthouse Bldg.
100 N. State St., Suite 200
Abbeville, Louisiana 70510

337-898-4300
FAX 337-898-4310

February 12, 2009

Ms. Melanie Goodman
CORPS OF ENGINEERS
P.O. Box 60267
New Orleans, LA. 70160

RE: PPL 19 Projects

Dear Ms. Goodman:

The Vermilion Parish Police Jury supports the following PPL 19 Projects.

a) Cheniere Au Tigre Head Land Restoration Project as its No. 1 Priority for Region 3.

b) Freshwater Bayou Marsh Creation Project as its No. 1 Priority for Region 4.

Should you have any questions, or need additional information, please feel free to contact us.

Sincerely yours,

Chris P. Theriot
Administrator/Secretary-Treasurer

CPT/lld

Cc: Travis Creel

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Monday, April 13, 2009 8:51 AM
To: Wandell, Scott F MVN
Subject: FW: PPL Vermilion

Follow Up Flag: Follow up
Flag Status: Red

Please see below to include with binder material.

-----Original Message-----
From: Diana BOUDREAUX [mailto:agnesplantation@bellsouth.net]
Sent: Saturday, April 11, 2009 8:29 PM
To: Goodman, Melanie L MVN
Subject: PPL Vermilion

Melanie Goodman,
We feel it is imperative for you to consider the Chenier Tig Headland Restoration and the Fresh Water Bayou Marsh Creation. These projects are vital to Vermilion Parish because these are our first line of defense in protection against storm surge and salt water intrusion.

The Mermentau Basin is or was the largest fresh water basin in North America. It must be restored to protect our fresh water marshes and to supply agriculture with fresh water. The two projects work together to protect the Mermentau Basin from salt water.

Please help us protect our marshes and barrier islands that needs fresh water to survive. If we don't get help soon Vermilion Parish south of 82 will turn into the Gulf of Mexico. We need help.

Concerned citizens of lower Vermilion Parish John & Diana Boudreaux

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Monday, April 13, 2009 8:50 AM
To: Wandell, Scott F MVN
Subject: FW: Coastal Wetlands

Follow Up Flag: Follow up
Flag Status: Red

See below email to include with binder material

-----Original Message-----
From: jimtheall [mailto:jimtheall@bellsouth.net]
Sent: Saturday, April 11, 2009 5:28 PM
To: Goodman, Melanie L MVN
Subject: Coastal Wetlands

Melanie Goodman, I am writing in favor of the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA). The Chenier Tig Headland Restoration works is a barrier island that helps slow down storms so as not to cause so much damage to marshes and farm land in lower Vermilion Parish. Another project vital to our area is the creation of fresh water bayou marshes. Protect our marshes and barrier islands and then lower Vermilion Parish might not turn into open salty water.

James Theall

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Monday, April 13, 2009 8:50 AM
To: Wandell, Scott F MVN
Subject: FW: ppl 19 projects

Follow Up Flag: Follow up
Flag Status: Red

See below to include with binder material for PPL 19

-----Original Message-----
From: Shannon [mailto:shanrn@bellsouth.net]
Sent: Saturday, April 11, 2009 5:49 AM
To: Goodman, Melanie L MVN
Subject: ppl 19 projects

Please support these proposed PPL 19 projects!

*Chenier Tig Headland Restoration- (This is one of our barrier islands… It was cut open in places from hurricane Rita and Ike so that gulf water rushes in, even on high tide.)

*Fresh Water Bayou Marsh Creation

They are vital to Vermilion Parish.

They are our first lines of defense in protection against storm surge and salt water intrusion.

These two projects work together to protect the Mermentau Basin (our fresh water basin) from salt water.

We need this fresh water to support agriculture in lower Vermilion Parish.

I think its simple...Protect the marshes and barrier islands (which need fresh water to survive) and then Vermilion Parish south of 82 might not turn into open (Gulf of Mexico) water.

Thank you for your consideration

Shannon Neveaux

Wandell, Scott F MVN

From: Wandell, Scott F MVN
Sent: Tuesday, April 14, 2009 4:00 PM
To: Wandell, Scott F MVN
Subject: Kelso Bayou Marsh Creation and Hydrologic Restoration Project on the PPL-19 list

From: Kleckley, Rep. (District Office)
To: Holden, Thomas A MVN; 'darryl_clark@fws.gov' ; 'kirk.rhinehart@la.gov' ; 'richard.hartman@noaa.gov' ; 'parrish.sharon@epa.gov' ; 'britt.paul@la.usda.gov'
Cc: Geymann, Rep. (District Office) ; Danahay, Rep. (District Office) ; 'David Richard'
Sent: Tue Apr 14 14:41:11 2009
Subject: Kelso Bayou Marsh Creation and Hydrologic Restoration Project on the PPL-19 list

We, members of the Southwest Louisiana legislative delegation, would like to offer our support for the Kelso Bayou Marsh Creation and Hydrologic Restoration Project proposed on the PPL-19 list. Much of the marsh loss in the Cal/Sab Basin has occurred primarily from salt water intrusion resulting from the Calcasieu Ship Channel. Additionally, the ship channel acts as a conduit during storm events. Currently, there is no barrier between that conduit and State Highway 27 (the region's only northward hurricane evacuation route). The proposed project would project and provide a wetland buffer to the highway as well as the Black Lake and Brown Lake area marshes.

We believe that the proposed hydrologic restoration would also serve as the foundation for several restoration projects approved in the Black Lake and Brown Lake marshes including: 1) CWPPRA's Brown Lake Hydrologic Restoration Project; 2) numerous terracing projects such as the recently announced North American Wetland Conservation Agreement (NAWCA) partnership with Louisiana's Coastal Protection and Restoration Authority (CPRA) and 3) the largest state-local beneficial use of dredge material project to rebuild approximately 440 acres in the Black Lake Marsh. This project, is therefore, highly rated by the Southwest Louisiana's legislative delegation.

Sincerely,
State Representative Mike Danahay - District 33 State Representative Brett Geymann - District 35 State Representative Chuck Kleckley - District 36

Wandell, Scott F MVN

From: Wandell, Scott F MVN
Sent: Tuesday, April 14, 2009 4:06 PM
To: Wandell, Scott F MVN
Subject: Kelso Bayou Marsh Creation and Hydrologic Restoration Project on the PPL-19 list

From: Mount, Sen. (District Office)
To: Holden, Thomas A MVN; 'darryl_clark@fws.gov' ; 'kirk.rhinehart@la.gov' ; 'richard.hartman@noaa.gov' ; 'parrish.sharon@epa.gov' ; 'britt.paul@la.usda.gov'
Cc: Kleckley, Rep. (District Office) ; 'drichard@streamcompany.com'
Sent: Tue Apr 14 15:35:49 2009
Subject: Kelso Bayou Marsh Creation and Hydrologic Restoration Project on the PPL-19 list

As a member of the Southwest Louisiana legislative delegation, I would like to offer my support for the Kelso Bayou Marsh Creation and Hydrologic Restoration Project proposed on the PPL-19 list. Much of the marsh loss in the Cal/Sab Basin has occurred primarily from salt water intrusion resulting from the Calcasieu Ship Channel. Additionally, the ship channel acts as a conduit during storm events. Currently, there is no barrier between that conduit and State Highway 27 (the region's only northward hurricane evacuation route). The proposed project would project and provide a wetland buffer to the highway as well as the Black Lake and Brown Lake area marshes.

I believe that the proposed hydrologic restoration would also serve as the foundation for several restoration projects approved in the Black Lake and Brown Lake marshes including: 1) CWPPRA's Brown Lake Hydrologic Restoration Project; 2) numerous terracing projects such as the recently announced North American Wetland Conservation Agreement (NAWCA) partnership with Louisiana's Coastal Protection and Restoration Authority (CPRA) and 3) the largest state-local beneficial use of dredge material project to rebuild approximately 440 acres in the Black Lake Marsh.

Yours very truly,

Willie L. Mount
State Senator
District 27

Wandell, Scott F MVN

From: Wandell, Scott F MVN
Sent: Tuesday, April 14, 2009 4:03 PM
To: Wandell, Scott F MVN
Subject: Kelso Bayou Marsh Creation

From: Hill, Rep. (District Office)
To: Holden, Thomas A MVN
Sent: Tue Apr 14 14:56:56 2009
Subject: Kelso Bayou Marsh Creation

<mailto:thomas.a.holden@usace.army.mil>

April 14, 2009

USACE

Mr. Tom Holden (Chairman)

Deputy District Engineer

P.O. Box 60267

New Orleans, Louisiana 70160-0267

Dear Mr. Holden,

The Southwest Louisiana legislative delegation would like to offer our support for the Kelso Bayou Marsh Creation and Hydrologic Restoration Project proposed on the PPL-19 list. Much of the marsh loss in the Cal/Sab Basin has occurred primarily from salt water intrusion resulting from the Calcasieu Ship Channel. Additionally, the ship channel acts as a conduit during storm events. Currently, there is no barrier between that conduit and State Highway 27 (the region's only northward hurricane evacuation route). The proposed project would protect and provide a wetland buffer to the highway as well as the Black Lake and Brown Lake area marshes.

We believe that the proposed hydrologic restoration would also serve as the foundation for several restoration projects approved in the Black Lake and Brown Lake marshes including: 1) CWPPRA's Brown Lake Hydrologic Restoration Project; 2) numerous terracing projects such as the recently announced North American Wetland Conservation Agreement (NAWCA) partnership with Louisiana's Coastal Protection and Restoration Authority (CPRA); and 3) the largest state-local beneficial use of dredge material project to rebuild approximately 440 acres in the Black Lake Marsh. This project is, therefore, the Southwest Louisiana's legislative delegations top priority.

Sincerely,

Dorothy Sue Hill

State Representative

District 32

OFFICE OF THE PARISH PRESIDENT
TERREBONNE PARISH CONSOLIDATED GOVERNMENT
P. O. Box 6097
HOUMA, LOUISIANA 70361-6097

MICHEL H. CLAUDET
PARISH PRESIDENT

(985) 873-6401
FAX: (985) 873-6409
E-MAIL: mhclaudet@tpcg.org

November 18, 2008

Colonel Alvin B. Lee, District Commander
U.S. Army Corps of Engineers, New Orleans District
Executive Office
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Viper Wall System Applications/Demonstration

Dear Colonel Lee:

At the Terrebonne Parish Council Meeting of October 22, 2008, Mr. Vincent Liner, a resident of Terrebonne Parish and the inventor of the Viper Wall system gave a presentation regarding the possible applications of his product for coastal restoration and protection projects throughout coastal Louisiana, especially in Terrebonne Parish.

The members of our Parish Council were so impressed by the possibilities presented by Mr. Liner's product, that a motion to support Mr. Liner's efforts to secure funding for a demonstration of this product in Terrebonne Parish (e.g., a barrier island or interior shoreline protection project) was passed unanimously by the nine members present. In addition to his presentation to our Parish Council, previous discussions between Mr. Liner and members of our Coastal Zone Management and Restoration Advisory Committee and other area coastal advocacy organizations have generated positive interest in the device.

It is my understanding that the CWPPRA Program will begin its Project Priority List 19 Planning round in January of 2009. At that time, Mr. Liner intends to submit as a demonstration project, at least one application of the Viper Wall system. Mr. Liner's efforts have the full support of Terrebonne Parish, and as a member of the CWPPRA Task Force, we ask for your consideration and support as well.

Please do not hesitate to contact me should you have any questions or wish to discuss this matter further. Should you wish to review additional information on the Viper Wall

system prior to the January planning rounds, please visit Mr. Liner's website at http://viperwall.net.

Sincerely,

Michel Claudet
Terrebonne Parish President

MHC/hc

→ Melanie

OFFICE OF THE PARISH PRESIDENT

TERREBONNE PARISH CONSOLIDATED GOVERNMENT
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MICHEL H. CLAUDET
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November 18, 2008

Mr. Thomas A. Holden, Chairman
CWPPRA Technical Committee
U.S. Army Corps of Engineers
New Orleans, Louisiana

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Michel Claudet
Terrebonne Parish President

MHC/hc

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CWPPRA Technical Committee
U.S. Army Corps of Engineers
New Orleans, Louisiana

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Sincerely,

Michel Claudet

Wandell, Scott F MVN

From: Goodman, Melanie L MVN
Sent: Monday, April 13, 2009 3:00 PM
To: Wandell, Scott F MVN
Subject: FW: Demo Tech Evaluation on April 15th

Follow Up Flag: Follow up
Flag Status: Red

Scott, please include the below email with the PPL 19 comments for the binders.

Thanks,

Melanie

-----Original Message-----
From: JOSEPH LAZARO [mailto:grastic@msn.com]
Sent: Thursday, April 09, 2009 7:00 PM
To: Goodman, Melanie L MVN
Subject: Demo Tech Evaluation on April 15th

To the members of the Evaluation Committee Hello everyone. Thank you for the opportunity to express our demonstration projects' superiority.

1. Bio-Grass, Grastic or Bayou Backer all refer to long strips of high quality plastic inserted into riparian sediments to simulate plants.

Our current documentation of effectiveness includes an LSU wave tank study and a full scale test patch in Week's Bay. This site has been in place for more than six months. We expect significant accretion by the end of the year.

The land preserved by the Bayou Backer plugs is sustained by a tiny fraction of the oil pumped. Plastic has replaced everything 'real' for a good reason. Traditional materials are too expensive to compete on a grand scale. My cost per unit is very low. My methods of installation are manual through machine, using farm grade engineering. Our product will cover 2000 square feet of shoreline per ton. It provides immediate wave attenuation lasting ten years. When ultimately buried in regrowth it should be left.
The competition includes...

100 lb per cubic ft designer rock.

Cement making is carbon intensive and tears up terrain. Hauling dead weight around suited the 19Th century. If each ton of 'rock' covers 50 square feet, that's tiny relative to the footprint. To destroy one landscape (a cement plant and rock quarry), and haul it to the Gulf as 'habitat' is something George Carlin would appreciate.

Trees for wooden stumbling blocks.

A logging based method of grabbing sand with critical fabrication angles looks like furniture on a beach. Strung out or stacked, you cover a small space for your efforts. With miles of eroding shore, deforestation as your 'hole card' is a clear-cut loser.

My approach is simply better and smarter given the scale of the problem. A tough, off-the-shelf material that can be in the ground working before the bulldozers and sawmills burn a gallon on the other guys! Joseph Lazaro bayoubacker.com

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

INITIAL DISCUSSION OF FY10 PLANNING BUDGET DEVELOPMENT (PROCESS, SIZE, FUNDING, ETC.)

For Discussion:

The P&E Subcommittee will request guidance from the Technical Committee on initiating FY10 Planning Program Budget development, and the PPL 20 Process.

Coastal Wetlands Planning, Protection, and Restoration Act

Fiscal Year 2010 Planning Schedule and Budget

P&E Committee Recommendation,
Tech Committee Recommendation,
Approved by Task Force,

					CWPPRA COSTS											
TASK			Duration		Dept of Defense	Department of Interior			State of Louisiana			EPA	Deptartment of Agriculture	Deptartment of Commerce		
Task Category	Task No.	Description	Start Date	End Date	USACE	USFWS	NWRC	USGS BR	CPRA IT	LDWF	GOCA	EPA	NRCS	NMFS	Other	Total
PPL 19 TASKS																
PL	19600	TF Selection and Funding of the 19th PPL (1 meeting)	1/21/10	1/21/10												
PL	19700	PPL 19 Report Development	2/18/10	7/31/10												
PL	19800	Corps Upward Submittal of the PPL 19 Report	8/1/10	8/1/10												
PL	19900	Corps Congressional Submission of the PPL 19 Report	9/1/10	9/1/10												
		FY09 Subtotal PPL 19 Tasks			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PPL 20 TASKS																
PL	**20200**	**Development and Nomination of Projects**														
PL	20210	DNR/USGS prepares base maps of project areas, location of completed projects and projected loss by 2050. Develop a comprehensive coastal LA map showing all water resource and restoration projects (CWPPRA, state, WRDA projects, etc.) NWRC costs captured under SPE 18400.	10/13/09	1/5/10												
PL	20220	Sponsoring agencies prepare fact sheets (for projects and demos) and maps prior to and following RPT nomination meetings.	10/13/09	2/15/10												
PL	20230	RPT's meet to formulate and combine projects. Each basin nominates no more than 2 project, with exception of 3 in Barataria and Terrebonne [20 nominees] and up to 6 demos (3 meetings)	1/26/10	1/28/10												
PL	20240	RPT Voting meeting (20 nominees and up to 6 demos)	2/18/10	2/18/10												
PL	**20300**	**Ranking of Nominated Projects**														

Coastal Wetlands Planning, Protection, and Restoration Act

Fiscal Year 2010 Planning Schedule and Budget

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Tech Committee Recommendation,
Approved by Task Force,

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Task Category	Task No.	Description	Start Date	End Date	USACE	USFWS	NWRC	USGS BR	CPRA IT	LDWF	GOCA	EPA	NRCS	NMFS	Other	Total
PL	20320	Engr Work Group prepares preliminary fully funded cost ranges for nominees.	3/5/10	3/20/10												
PL	20330	Environ/Engr Work Groups review nominees	4/2/10	4/3/10												
PL	20340	WGs develop and P&E distributes project matrix	4/1/10	4/1/10												
PL	20350	TC selection of PPL 20 candidates (10) and demo candidates (up to 3)	4/15/10	4/15/10												
PL	**20400**	**Analysis of Candidates**														
PL	20410	Sponsoring agencies coordinate site visits for all projects	5/1/10	7/15/10												
PL	20420	Engr/Environ Work Group refine project features and determine boundaries	5/1/10	9/30/10												
PL	20430	Sponsoring agencies develop project information for WVA; develop designs and cost estimates (projects and demos)	5/1/10	9/30/10												
PL	20440	Environ/Engr Work Groups project-wetland benefits (with WVA)	5/1/10	9/30/10												
PL	20450	Engr Work Group reviews/approves Ph 1 and Ph 2 cost estimates from sponsoring agencies, incl cost estimates for demos	5/1/10	9/30/10												
PL	20460	Economic Work Group reviews cost estimates, adds monitoring, O&M, etc., and develops annualized costs	5/1/10	10/15/10												
PL	20475	Envr and Eng WG's prioritization of PPL 20 projects and demos	5/1/10	10/15/10												
PL	20480	Prepare project information packages for P&E.	5/1/10	11/10/10												
PL	20485	P&E holds 2 Public Meetings	11/17/10	11/18/10												
PL	20490	TC Recommendation for Project Selection and Funding	12/2/10	1/20/11												
		FY10 Subtotal PPL 20 Tasks			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Coastal Wetlands Planning, Protection, and Restoration Act

Fiscal Year 2010 Planning Schedule and Budget

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Task Category	Task No.	Description	Start Date	End Date	USACE	USFWS	NWRC	USGS BR	CPRA IT	LDWF	GOCA	EPA	NRCS	NMFS	Other	Total
Project and Program Management Tasks																
PM	20100	Program Management--Coordination	10/1/09	9/30/10												
PM	20110	Program Management--Correspondence	10/1/09	9/30/10												
PM	20120	Prog Mgmt--Budget Development and Oversight	10/1/09	9/30/10												
PM	20130	Program and Project Management--Financial Management of Non-Cash Flow Projects	10/1/09	9/30/10												
PM	20200	P&E Meetings (3 meetings preparation and attendance)	10/1/09	9/30/10												
PM	20210	Tech Com Mtngs (4 mtngs including three public and one off-site; prep and attend)	10/1/09	9/30/10												
PM	20220	Task Force mtngs (4 mtngs, including three public and one executive session; prep and attend)	10/1/09	9/30/10												
PM	20400	Agency Participation, Review 30% and 95% Design for Phase 1 Projects	10/1/09	9/30/10												
PM	20410	Engineering & Environmental Work Groups review Phase II funding of approved Phase I projects (Needed for adequate review of Phase I.) [Assume 8 projects requesting Ph II funding in FY09. Assume 3 will require Eng or Env WG review; 2 labor days for each.]	10/1/09	9/30/10												
PM	20500	Helicopter Support: Helicopter usage for the PPL process.	10/1/09	9/30/10									0			0
PM	20600	Miscellaneous Technical Support	10/1/09	9/30/10												
FY10 Subtotal Project Management Tasks					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FY10 Total for PPL Tasks					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Coastal Wetlands Planning, Protection, and Restoration Act

Fiscal Year 2010 Planning Schedule and Budget

P&E Committee Recommendation,
Tech Committee Recommendation,
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TASK			Duration		Dept of Defense	Department of Interior			State of Louisiana			EPA	Deptartment of Agriculture	Deptartment of Commerce		
Task Category	Task No.	Description	Start Date	End Date	USACE	USFWS	NWRC	USGS BR	CPRA IT	LDWF	GOCA	EPA	NRCS	NMFS	Other	Total
SUPPLEMENTAL PLANNING AND EVALUATION TASKS																
SPE	20100	Academic Advisory Group [NOTE: MOA between sponsoring agency and LUMCON available through FY19.] [Prospectus, page 6-7]	10/1/09	9/30/10												
SPE	20200	Maintenance of web-based project reports and website project fact sheets. [NWRC Prospectus, pg 8] [Corps Prospectus, pg 9] [LDNR Prospectus, pg 10]	10/1/09	9/30/10												
SPE	20300	Prepare Evaluation Report to Congress NOTE: next update in FY 09 budget	10/1/09	9/30/10												
SPE	20400	Core GIS Support for CWPPRA Task Force Planning Activities. [NWRC Prospectus, pg 11] [LDNR Prospectus, page 12]	10/1/09	9/30/10												0
SPE	20510	CWPPRA Program Capacity Evaluation Part I, Update Cost Estimates for Cash Flow Projects Not Approved for Construction	10/1/09	9/30/10								0	0	0		0
SPE	20520	CWPPRA Program Capacity Evaluation Part 2, Update Cost Estimates for Cash Flow Projects Approved or Otherwise Funded for Construction	10/1/09	9/30/10								0	0	0		0
SPE	20530	CWPPRA Program Capacity Evaluation Part 3, Update O&M Cost Estimates for Constructed Projects	10/1/09	9/30/10								0	0	0		0
SPE	20600	Report on The Gulf Intracoastal Waterway as a Distributary of Mississippi River Water to Coastal Louisiana Marshes	10/1/09	9/30/10												0
FY10 Total Supplemental Planning & Evaluation Tasks					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FY10 Agency Tasks Grand Total					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Otrch	20100	Outreach - Committee Funding	10/1/09	9/30/10												
Otrch	20200	Outreach - Agency	10/1/09	9/30/10												
FY10 Total Outreach					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grand Total FY10					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Disallowances																
Proposed Revised Grand Total FY10					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

APPENDIX A

PRIORITY LIST 19 SELECTION PROCESS

Coastal Wetlands Planning, Protection and Restoration Act Guidelines for Development of the 19th Priority Project List Final

I. Development of Supporting Information

A. COE staff prepares spreadsheets indicating status of all restoration projects (CWPPRA PL 1-18; Louisiana Coastal Area (LCA) Feasibility Study, Corps of Engineers Continuing Authorities 1135, 204, 206; and State only projects). Also, indicate net acres at the end of 20 years for each CWPPRA project.

B. DNR/USGS staff prepares basin maps indicating:

1) Boundaries of the following projects types (PL 1-18; LCA Feasibility Study, COE 1135, 204, 206; and State only).
2) Locations of completed projects,
3) Projected land loss by 2050 with freshwater diversions at Caernarvon and Davis Pond and including all CWPPRA projects approved for construction through January 2009.
4) Regional boundary maps with basin boundaries and parish boundaries included.

II. Areas of Need and Project Nominations

A. The four Regional Planning Teams (RPTs) meet, examine basin maps, discuss areas of need and Coast 2050 strategies, and accept nomination of projects by hydrologic basin. Nominations for demonstration projects will also be accepted at the four RPT meetings. The RPTs will not vote at their individual regional meetings, rather voting will be conducted during a separate coast-wide meeting. At these initial RPT meetings, parishes will be asked to identify their official parish representative who will vote at the coast-wide RPT meeting.

B. One coast-wide RPT voting meeting will be held after the individual RPT meetings to vote for nominees (including demonstration project nominees). The RPTs will select three projects in the Terrebonne, Barataria, and Pontchartrain Basins based on the high loss rates (1985-2006) in those basins. Two projects will be selected in the Breton Sound, Teche/Vermilion, Mermentau, Calcasieu/Sabine, and Mississippi River Delta Basins. Because of low land loss rates, only one project will be selected in the Atchafalaya Basin. If only one project is presented at the Regional Planning Team

Meeting for the Mississippi River Delta Basin, then an additional nominee would be selected for the Breton Sound Basin. A total of up to 20 projects could be selected as nominees. Each officially designated parish representative in the basin will have one vote and each federal agency and the State will have one vote. The RPTs will also select up to six demonstration project nominees at this coast-wide meeting. Selection of demonstration project nominees will be by consensus, if possible. If voting is required, officially designated representatives from all coastal parishes will have one vote and each federal agency and the State will have one vote.

C. Prior to the coast-wide RPT voting meeting, the Environmental and Engineering Work Groups will screen each demonstration project nominated at the RPT meetings. Demonstration projects will be screened to ensure that each meets the qualifications for demonstration projects as set forth in Appendix E.

D. A lead Federal agency will be designated for the nominees and demonstration project nominees to assist LDNR and local governments in preparing preliminary project support information (fact sheet, maps, and potential designs and benefits). The Regional Planning Team Leaders will then transmit this information to the P&E Subcommittee, Technical Committee and members of the Regional Planning Teams.

III. Preliminary Assessment of Nominated Projects

A. Agencies, parishes, landowners, and other individuals informally confer to further develop projects. Nominated projects should be developed to support one or more Coast 2050 strategies. The goals of each project should be consistent with those of Coast 2050.

B. Each sponsor of a nominated project will prepare a brief Project Description (no more than one page plus a map) that discusses possible features. Fact sheets will also be prepared for demonstration project nominees.

C. Engineering and Environmental Work Groups meet to review project features, discuss potential benefits, and estimate preliminary fully funded cost ranges for each project. The Work Groups will also review the nominated demonstration projects and verify that they meet the demonstration project criteria.

D. P&E Subcommittee prepares matrix of cost estimates and other pertinent information for nominees and demonstration project nominees and furnishes to Technical Committee and Coastal Protection and Restoration Authority (CPRA).

IV. Selection of Phase 0 Candidate Projects

A. Technical Committee meets to consider the project costs and potential wetland benefits of the nominees. Technical Committee will select ten candidate projects for detailed assessment by the Environmental, Engineering, and Economic Work Groups. At this time, the Technical Committee will also select up to three demonstration project candidates for detailed assessment by the Environmental, Engineering, and Economic Work Groups. Demonstration project candidates will be evaluated as outlined in Appendix E.

B. Technical Committee assigns a Federal sponsor for each project to develop preliminary Wetland Value Assessment data and engineering cost estimates for Phase 0 as described below.

V. Phase 0 Analysis of Candidate Projects

A. Sponsoring agency coordinates site visits for each project. A site visit is vital so each agency can see the conditions in the area and estimate the project area boundary. Field trip participation should be limited to two representatives from each agency. There will be no site visits conducted for demonstration projects.

B. Environmental and Engineering Work Groups and the Academic Advisory Group meet to refine project features and develop boundaries based on site visits.

C. Sponsoring agency develops Project Information Sheets on assigned projects, using formats developed by applicable work groups; prepares preliminary draft Wetland Value Assessment Project Information Sheet; and makes Phase 1 engineering and design cost estimates and Phase 2 construction cost estimates.

D. Environmental and Engineering Work Groups evaluate all projects (excluding demos) using the WVA and review design and cost estimates.

E. Engineering Work Group reviews and approves Phase 1 and 2 cost estimates.

F. Economics Work Group reviews cost estimates and develops annualized (fully funded) costs.

G. Environmental and Engineering Work Groups apply the Prioritization Criteria and develop prioritization scores for each candidate project.

H. Corps of Engineers staff prepares information package for Technical Committee and CPRA. Packages consist of:

1) updated Project Information Sheets;

2) a matrix for each region that lists projects, fully funded cost, average annual cost, Wetland Value Assessment results in net acres and Average Annual Habitat Units (AAHUs), cost effectiveness (average annual cost/AAHU), and the prioritization score.

3) qualitative discussion of supporting partnerships and public support; and

I. Technical Committee hosts two public hearings to present information from H above and allows public comment.

VI. Selection of 19th Priority Project List

A. The selection of the 19th PPL will occur at the Winter Technical Committee and Task Force meetings.

B. Technical Committee meets and considers matrix, Project Information Sheets, and pubic comments. The Technical Committee will recommend up to four projects for selection to the 19th PPL. The Technical Committee may also recommend demonstration projects for the 19th PPL.

C. The CWPPRA Task Force will review the TC recommendations and determine which projects will receive Phase 1 funding for the 19th PPL.

19th Priority List Project Development Schedule (dates subject to change)

December 2008	Distribute public announcement of PPL19 process and schedule
December 3, 2008	Winter Technical Committee Meeting, approve Phase II Baton Rouge)
January 21, 2009	Winter Task Force Meeting (New Orleans)
January 27, 2009	Region IV Planning Team Meeting (Rockefeller Refuge)
January 28, 2009	Region III Planning Team Meeting (Morgan City)
January 29, 2009	Regions I and II Planning Team Meetings (New Orleans)
February 18, 2009	Coast-wide RPT Voting Meeting (Baton Rouge)
February 19-March 13, 2009	Agencies prepare fact sheets for RPT-nominated projects
March 24-25, 2009	Engineering/ Environmental work groups review project features, benefits & prepare preliminary cost estimates for nominated projects (Baton Rouge)
March 26, 2009	P&E Subcommittee prepares matrix of nominated projects showing initial cost estimates and benefits
April 15, 2009	Spring Technical Committee Meeting, select PPL19 candidate projects (New Orleans)
May/June/July	Candidate project site visits
June 3, 2009	Spring Task Force Meeting (Lafayette)
July/August/ September	Env/Eng/Econ work group project evaluations
September 9, 2009	Fall Technical Committee Meeting, O&M and Monitoring funding recommendations (Baton Rouge)
October 14, 2009	Fall Task Force meeting, O&M and Monitoring approvals, announce PPL 19 public meetings (New Orleans)
October 14, 2009	Economic, Engineering, and Environmental analyses completed for PPL19 candidates
November 17, 2009	PPL 19 Public Meeting (Abbeville)
November 18, 2009	PPL 19 Public Meeting (New Orleans)
December 2, 2009	Winter Technical Committee Meeting, recommend PPL19 and Phase II approvals (Baton Rouge)
January 20, 2010	Winter Task Force Meeting, select PPL19 and approve Phase II requests (New Orleans)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

CONSIDERATION FOR PHASE II, INCREMENT I FUNDING FOR BARATARIA BASIN LANDBRIDGE PROJECT (BA-27c)

For Discussion/Decision:

The Technical Committee will consider the motion passed by the Task Force at the January 2009 meeting to approve Phase II, Increment I funding for a "feasible separable increment of the Barataria Basin Landbridge Project (BA-27c), if sufficient funding is available. The Technical Committee will analyze the funds available in the Construction Program budget and make a recommendation to the Task Force on whether or not to approve the project for Phase II.

CWPPRA Technical Committee Ranking for Phase II Approval, Dec 2008

PPL	Project No.	Project	DNR	COE	EPA	FWS	NMFS	NRCS	No. of Agency Votes	Sum of Weighted Score	Phase II, Increment 1 Funding Request	Cumulative Phase II, Increment 1 Funding	Amt Remaining	
15	BA-42	Lake Hermitage Marsh Creation	4	4	4	4	4	2	6	22	$36,678,120	$36,678,120	$50,868,572	$67,779,135 first 3
14	TV-21	East Marsh Island	3		3	2	2	4	5	14	$21,418,083	$58,096,203	$29,450,489	76363231 avail
14	BA-41b	South Shore of the Pen - CU 2	2	3		1	3	3	5	12	$9,682,932	$67,779,135	$19,767,557	$8,584,096 bal
9	BA-27c(3)	Barataria Basin Landbridge, Phase 3 - CU 7		2		3		1	3	6	$26,614,090	$94,393,225	-$6,846,533	-$2,775,040 less giww
11	TE-47	Ship Shoal: Whiskey Island West Flank Restoration		1	2		1		3	4	$48,237,344	$142,630,569	-$55,083,877	
10	TE-43	GIWW Bank Restoration of Critical Areas in Terrebonne	1		1				2	2	$11,359,136	$153,989,705	-$66,443,013	
											$153,989,705	$307,979,410	-$220,432,718	

NOTES:

- Projects are sorted by: (1) Agency Support or "Number of Yes Votes" and (2) "Sum of Weighted Score"
- The "Number of Yes Votes" and the Sum of the Total Point Score will be used by the Technical Committee to furmulate a recommendation to the Task Force within available funding limits.

RUN MACRO "sort" TO AUTOMATICALLY COMPLETE STEPS

STEP 1: Information from "VOTE" sheet is automatically copied into "SORT-Final Vote".

STEP 2: Sort columns A..P, descending, first by "No. of Yes Votes" (Column J) and second by "Sum of Point Score" (Column K).

STEP 3: Once projects are sorted, add in formula to add funding requests cumulatively (Column M)

Coastal Wetlands Planning, Protection and Restoration Act

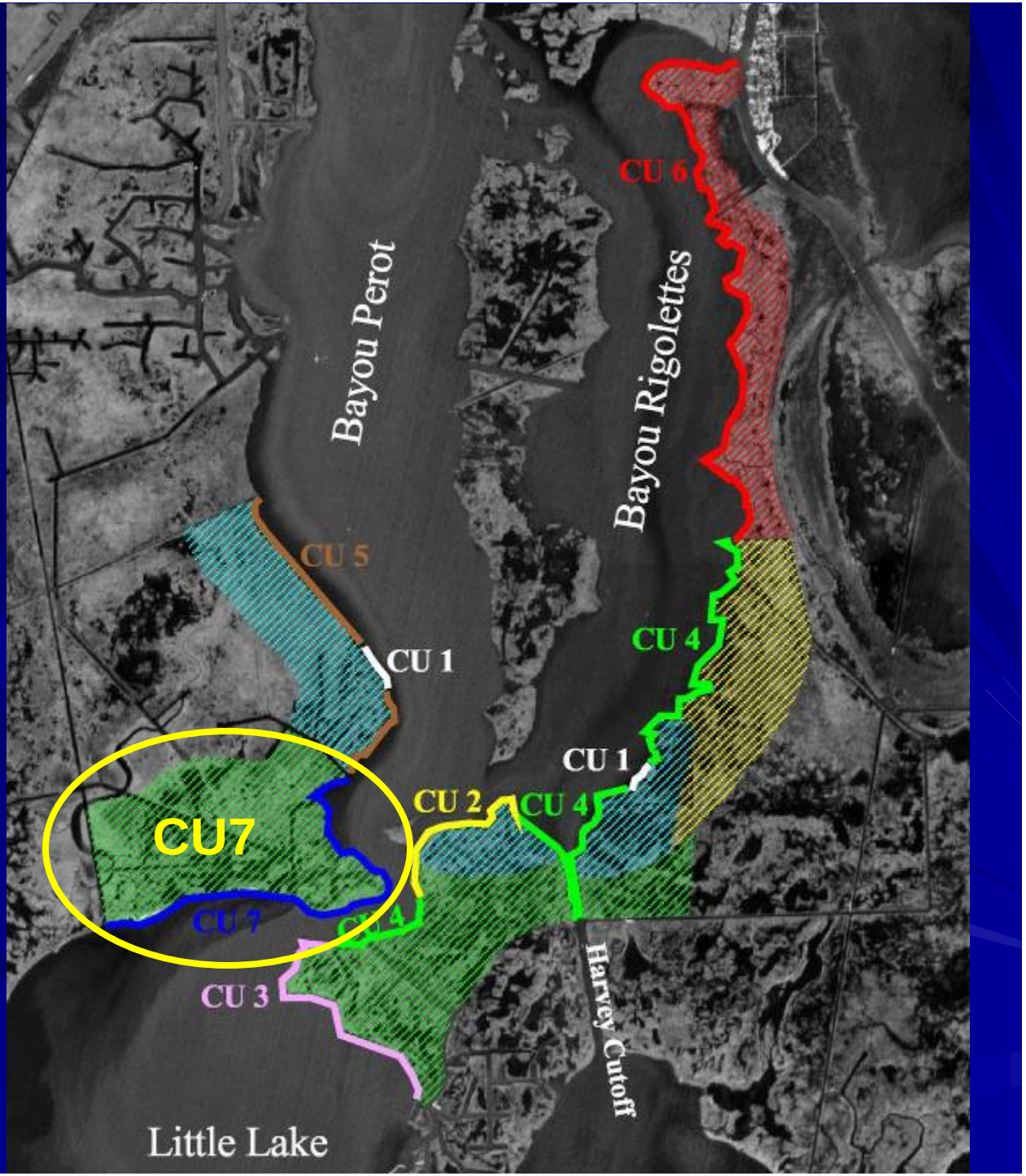
BARATARIA BASIN LANDBRIDGE SHORELINE PROTECTION PROJECT PHASE 3 (BA-27c)

POSSIBLE PARTIAL PHASE II APPROVAL OF CU7

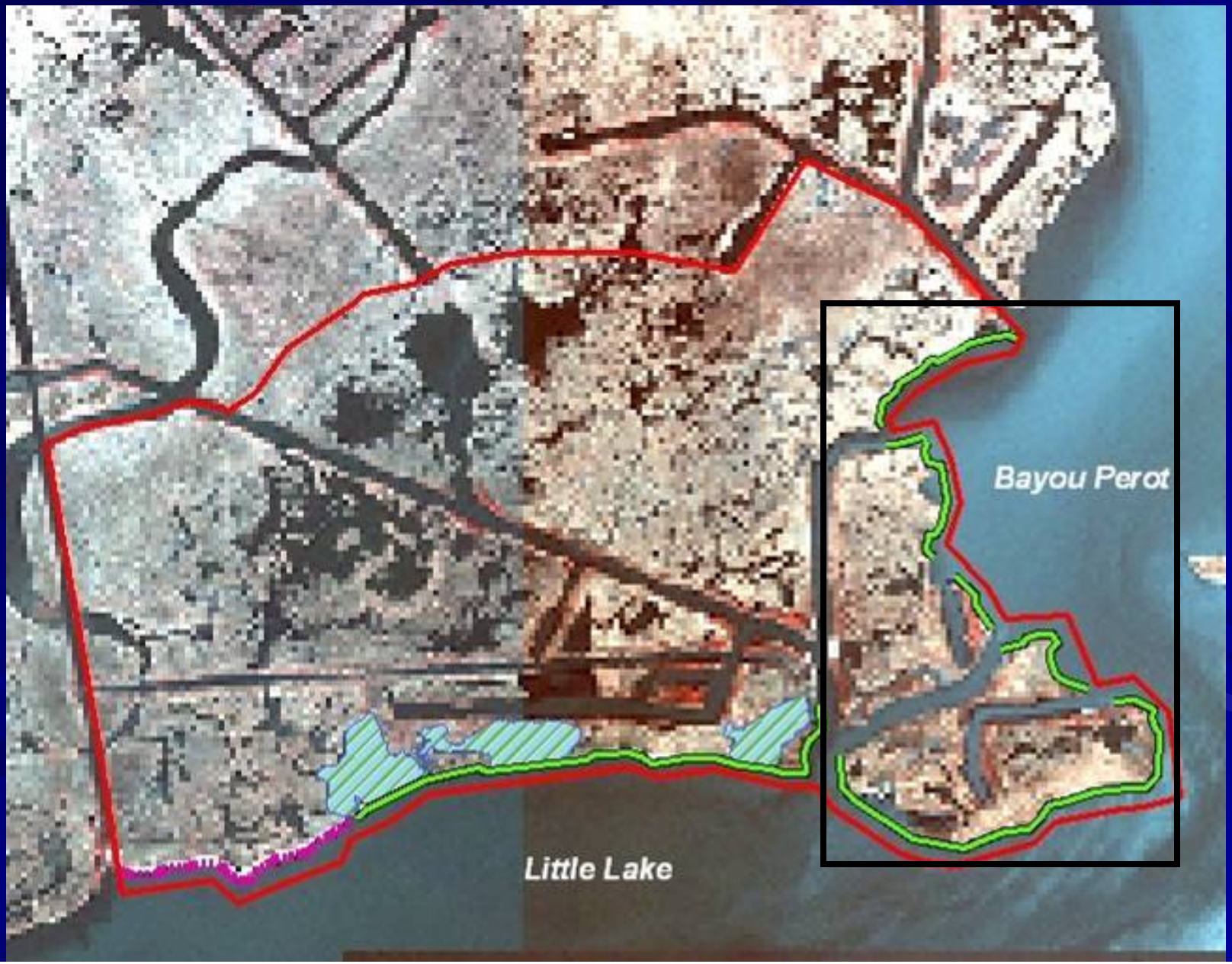
CWPPRA Technical Committee Meeting
April 15, 2008

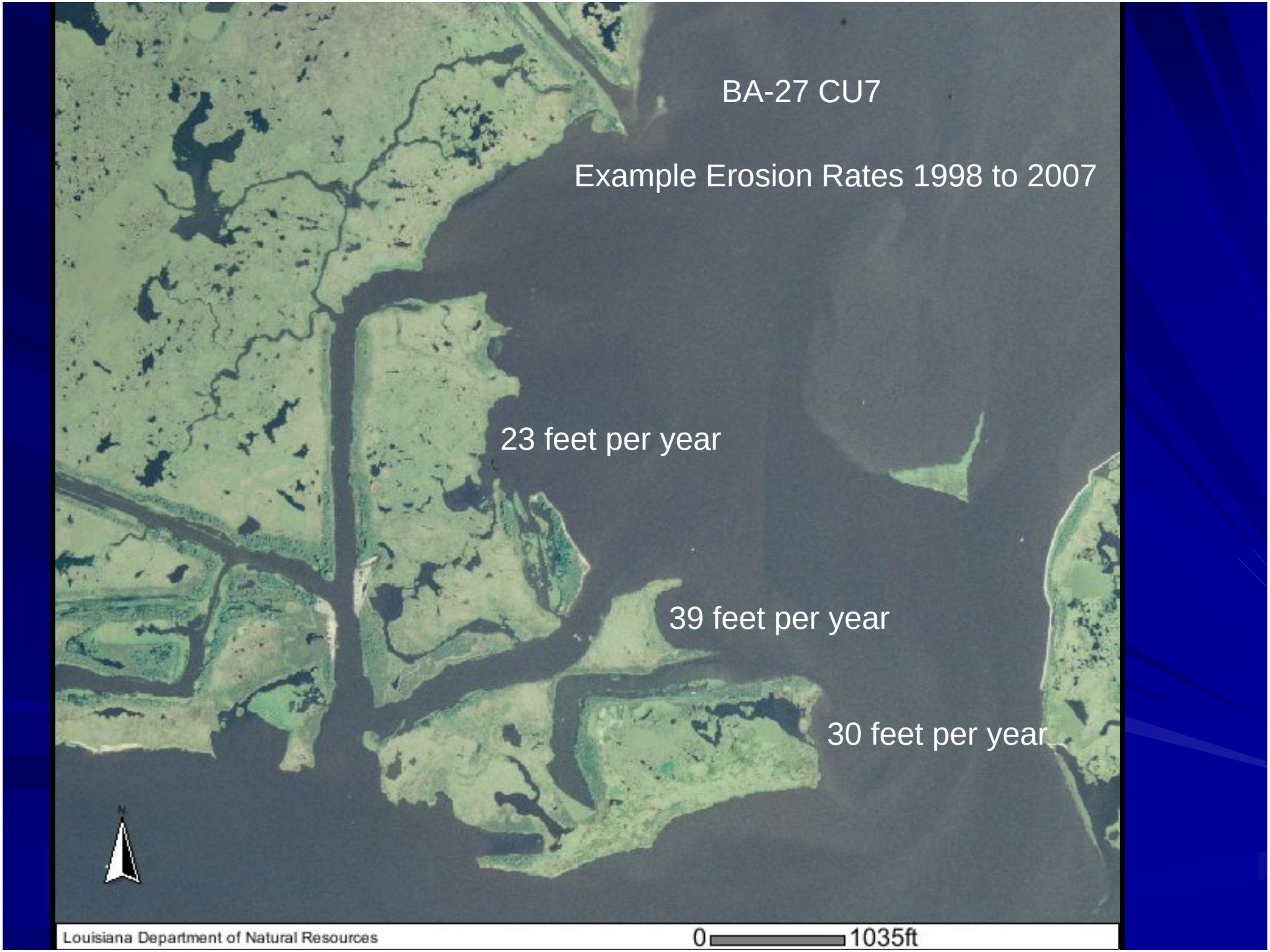
BARATARIA BASIN LANDBRIDGE SHORELINE PROTECTION

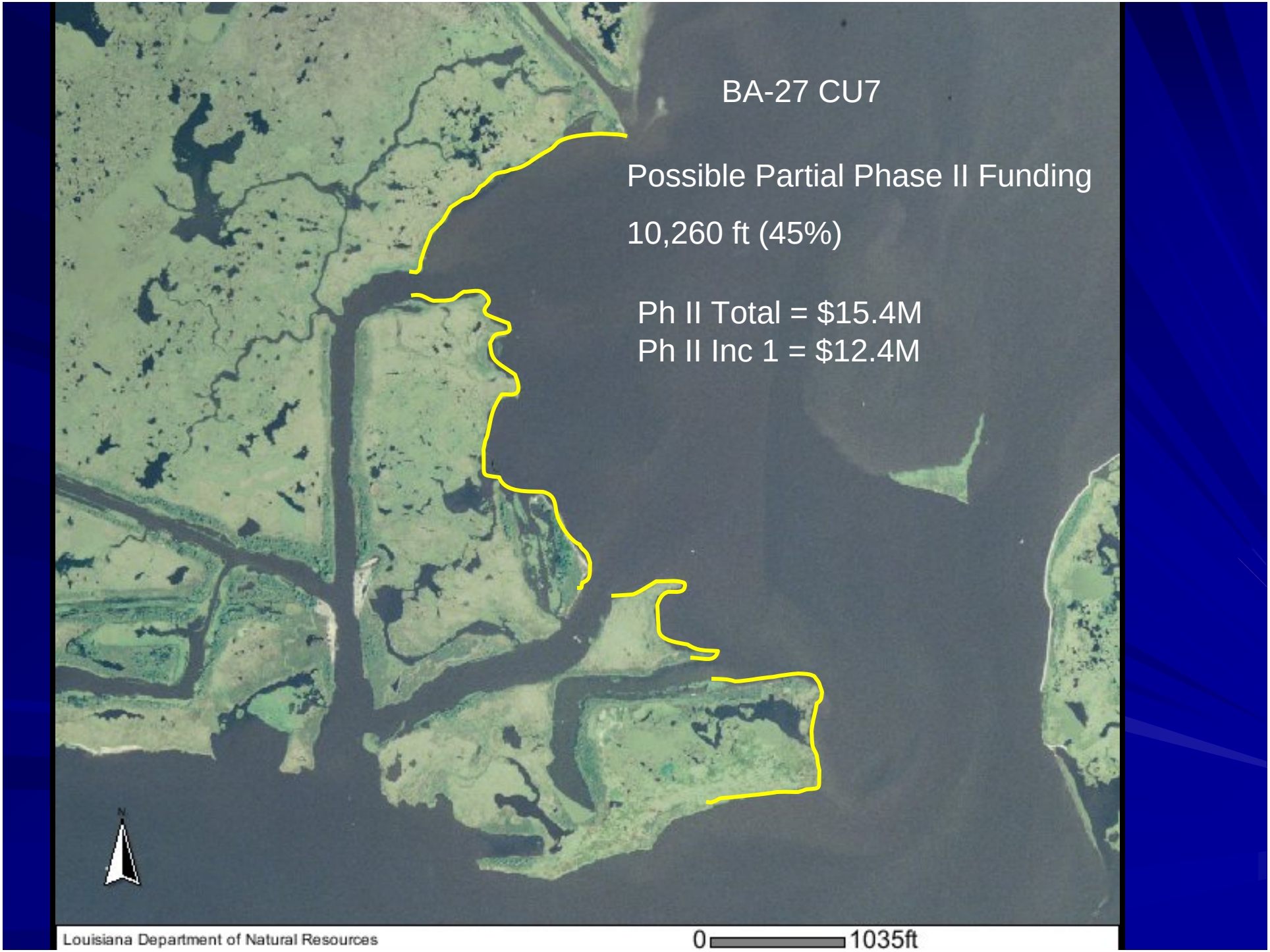
ALL PHASES AND CONSTRUCTION UNITS

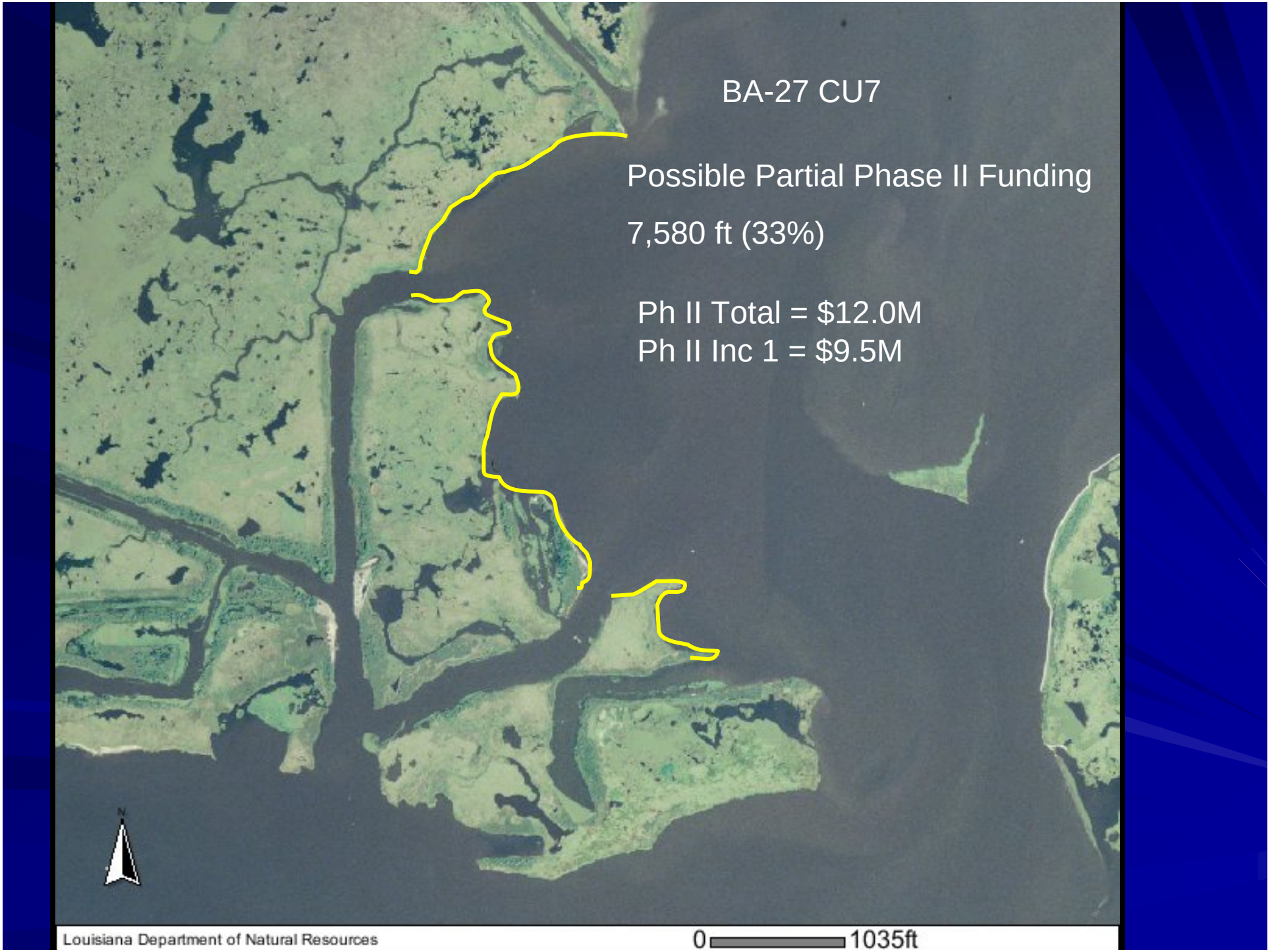


BARATARIA BASIN LANDBRIDGE PHASE 3 (BA-27c) CONSTRUCTION UNIT 7




BA-27 CU7
Example Erosion Rates 1998 to 2007
23 feet per year
39 feet per year
30 feet per year
N
Louisiana Department of Natural Resources
0
1035ft


BA-27 CU7
Possible Partial Phase II Funding
10,260 ft (45%)
Ph II Total = $15.4M
Ph II Inc 1 = $12.4M
Louisiana Department of Natural Resources
0
1035ft


BA-27 CU7
Possible Partial Phase II Funding
7,580 ft (33%)
Ph II Total = $12.0M
Ph II Inc 1 = $9.5M
Louisiana Department of Natural Resources
0
1035ft

Excerpt From January 21, 2009 CWPPRA Task Force Meeting Transcripts: Discussion on Allocation of Remaining Construction Funds

COLONEL LEE:
So, let me read that just to make sure that everybody is clear on what the motion is. Is there a motion -- the motion was to approve the Technical Committee's recommendation to approve Phase II authorization and Increment 1 funding for Lake Hermitage Marsh Creation Project in the amount of $36,678,120; the South Shore of the Pen South Project Construction Unit II in the amount of $9,682,932; and the East Marsh Island Marsh Creation Project in the amount of $21,418,803 for a total of $67.8 million. So, that's the motion that we voted on and approved. So, I just wanted to clarify that so that everybody was clear.

Okay. So, I guess what we'll do now, since we have approved that, is to open up any additional discussions on the remaining projects that were on the list by the Task Force. We do have a question and the question was: What is the balance of funds remaining? Melanie or Gay, can you tell me what that is?

GAY BROWNING:
I think, if those three are approved, I have $15.7 million.

COLONEL LEE:
So, $15.7 million remaining. Does that include some money that we were expecting to get returned from U.S. --

GAY BROWNING:
Yes, it does. It includes --

COLONEL LEE:
The $6 million. So, that's contingent on $6 million being returned from U.S. Fish and Wildlife.

GAY BROWNING:
That's correct and that's only an estimate. The project (inaudible) is not out yet.

COLONEL LEE:
Okay, approximately.

GAY BROWNING:
Yes.

COLONEL LEE:
Okay. I would just like to open it up for further discussion on the remaining funds and if there's any recommendations or direction on how we go with the expenditure of those remaining funds.

KEVIN NORTON:
Colonel, as part of the Technical Committee's recommendation they had recommended the GIWW Bank Restoration Project for funding. We understand there are some issues and concerns regarding the methods of treatment by some of the Task Force members. This is just offered as a matter of discussion. If the Task Force viewed not to proceed or vote not to accept the Technical Committee's recommendation on that, we would offer that the Landbridge, which was ranked fourth on the list, could be -- it is a linear project. It could be broken into segments and we would offer that we could break down the Landbridge project into a sizable chunk that could fit in with -- within the balance of the funds available.

COLONEL LEE:
Okay. Is there any additional discussion on that or questions regarding Kevin's recommendation here?

CHRIS DOLEY:

I have my own comments on maybe an alternative approach, but not on Kevin's recommendation.

COLONEL LEE:
Alright. Okay, go ahead, Chris. Chris, could you hold up, I guess Jim.

JIM BOGGS:
We took a look at this, as well, and we like the efficiency of the Barataria Landbridge. We also realize how important projects such as landbridge projects could be for future restoration of that same area. We would support that.

COLONEL LEE:
Okay. Chris, sorry. Go ahead.

CHRIS DOLEY:
I think the option of the Barataria project is a good one, although I guess I want to put my own cautions on the table about the timing of things. I am concerned about additional costs that will be associated with West Bay and where those funds will come from, the Work Plan and the implementation of those studies associated. As well as I'm aware of at least $120 to $150 million worth of projects that we have prior approved for Phase II construction that will be coming to bid over the next six to 12 months. My concern is that, based on recent history, that a percentage of those will probably experience some level of cost overruns and that we have sufficient funds to be able to address that if needed. So, I would like to ask the Task Force to maybe consider that we potentially delay consideration of Barataria or other projects on the list until the next Task Force meeting giving us time to look at how West Bay is coming along, as well as give the agencies an opportunity to get their bids in and back to see if we indeed are in need of additional funds to make those prior projects go.

COLONEL LEE:

And just to reaffirm what Chris just said is that, you know, one of the challenges we've had in the last several years, particularly since post-Katrina/Rita, is that we've seen a very big increase in construction costs. And, you know, we've tried to capture those costs as best we can in our cost estimates, but some of those costs are coming in higher than we have expected over the last three years and we're seeing that as a trend and we have not seen that stop yet. And I think, with all of the additional work that's going on in the area on the hurricane system, a lot of work that the State is doing in coastal restoration and other work that, you know, we just don't see that as something changing in the near future. So, I think what Chris is saying is a very valid comment and giving us some flexibility to deal with what we need to do with West Bay, and that's a very important decision I think the Task Force agrees on, and also giving us some flexibility to address any costs escalation that comes back in the bids that of course is under the 125 percent bid amount. Any other discussions on that?

JANE WATSON:
Yeah, I would just like to make one additional comment: Yeah, we would echo Mr. Doley's comments. We're very interested in seeing the outcome of the Work Plan that we've moved on earlier this morning. And we would like to defer considerations for future expenditures to see what is needed for that support because we see that work as kind of being the template for how the pilot -- the poster child, if you will, for how we deal with shoaling in the future. So, we would be interested in deferring decisions on expenditures of this additional $15 million until after that.

KEVIN NORTON:
The question we have is that we're talking about $15.7 million. Are y'all asking just to defer decisions completely and leave $15.7 million unallocated at this point? We also have the money we have set aside for West Bay at this point for year-three dredging and potential closure that this Technical Committee or the Task Force could reallocate to the study by vote also.

CHRIS DOLEY:

If we could get clarification on that because I thought that the additional money for West Bay was budgeted, but not allocated so it's not available for expenditure.

COLONEL LEE:
Melanie?

MELANIE GOODMAN:
That is correct. That the budgeted amount is the larger sum, but the funded amount is the smaller amount, the $10.9 million. And that is what's taken out the total program funding availability, not the whole budget. So, there's no money sitting aside for FY12 to deal with the next incremental event, which would be either dredging to keep it open or dredging to restore the anchorage area and close the diversion.

CHRIS DOLEY:
So, I guess in direct response, Kevin, the issue is to defer to the June meeting. It would be my recommendation to give us some time to work through the spring bid packages as well as the West Bay issue and then address Barataria at that point. I understand the issue of leaving money on the table, but for my eyes it's $9 million and not $15 million, because we don't have the money back from deauthorizations. So, we're still dealing with some uncertainty as well as the total amount of dollars available.

COLONEL LEE:
And I also think that will give us a clearer picture on any consequences of economic stimulus that may or may not come and how that could impact our program and that would give us an opportunity to also assess that at that time. Kevin, do you have any other questions or comments?

KEVIN NORTON:
No, I had a table that would break down the linear feet that we could do for the anticipated cost, but it appears that that's not even something that the Task Force wants to consider at this time.

COLONEL LEE:
Okay. I think based on what I've heard from the Task Force, I'll just ask: Is there a motion to defer the remaining -- tell me the remaining amount -- $15.7 million until the June CWPPRA Task Force meeting to allocate that funding?

CHRIS DOLEY:
I would like to put that motion on the table.

COLONEL LEE:
Okay. Is there a second for that motion?

JANE WATSON:
I second that motion.

COLONEL LEE:
Okay. I'll just ask the Task Force if they support this motion to vote aye.

CHRIS DOLEY:
Aye.

JANE WATSON:
Aye.

COLONEL LEE:
Aye. Okay. The motion is approved.

Yes, come up, Windell, I apologize for not allowing public comment here before we did that vote.

WINDELL CUROLE:

Windell Curole, South Lafourche Levee District. I understand the issue in trying to save some money, but could you amend the motion to say that if the money would still be available that it would go to that project. You know, right now we have an unlimited amount of saltwater, we're seeing both estuaries on both sides of the Lafourche Ridge. Really there's no separation now between the Gulf and almost Intercoastal. We are looking 40 miles inland before we're trying to ramp down that encroachment that we get from the Gulf of Mexico. Unlimited saltwater, limited freshwater from what we put from the river and when we have a rainfall. You know, these landbridges have become, I think, critical and if you could at least -- if you don't use that money, have that project and that portion of that project next in line if you don't see the need for some of the issues you've discussed already. That would be my suggestion.

COLONEL LEE:
Okay. Windell, I just want to address that because it's my understanding that's what we voted on that we would reconsider this in June, the Barataria Bridge Project in June, for funding.

MELANIE GOODMAN:
Specifically the Barataria Project and what to do with the remaining funds?

COLONEL LEE:
Maybe we weren't clear. It wasn't in the motion, okay. So, I guess what you're asking is an amendment to say that --

WINDELL CUROLE:
To say that that money if not used would go toward that project.

COLONEL LEE:
Okay. Thank you, Windell. Mark.

MARK SCHLEITSTEIN:

Mark Schleitstein, reporter with the Times Picayune. In that same vein of asking about the availability of funds in June, are you expecting money from the Economic Stimulus Package to be available for Breaux Act projects that might be acted upon in June?

COLONEL LEE:
We're not sure yet, but, you know, there have been requests and we've provided information to members of Congress who've asked, you know, about the CWPPRA Program, and we've provided information for that. Now, we don't know what that means, but that will be considered because, you know, we do have projects that could be executed in Phase II if they decide to give us money for those projects.

MARK SCHLEITSTEIN:
Let me ask it in a different way: Has the Corps of Engineers as among their suggestions to upper whatever included Breaux Act Task Force projects amongst those that might be -- that should be put into the Economic Stimulus Package?

TOM HOLDEN:
Colonel, I think the response that Mark is asking us for is if we've been asked to provide that up in our funding request and we've responded to what the Corps has asked us to do in various appropriations. But, Mark, what I can tell you is we have responded specifically to delegation requests on specific projects that are Breaux Act actionable in Phase II should they fund them. Without getting into the specificity of what and to whom, the answer could be: Yes, we don't know what the funding will look like right now other than the top line that you've seen in the paper and the general categories that describe where it may go into different accounts in which we have.

COLONEL LEE:
Yeah, because some of those decisions are national decisions and we are just not privy to those.

LESLIE SUAZO:

Leslie Suazo, Terrebonne Parish. I'm sorry to have to ask you for some clarification on the motion of the recommendation made at the December meeting. I was not able to be here at that time, regarding the GIWW Bank Stabilization Project in Terrebonne Parish relative to the motion today, because if your motion today is to refer back to the December recommendation, the GIWW project, I believe, would still be up at the next -- in the queue so to speak, unless that project is being withdrawn from consideration now by the Federal sponsor.

KEVIN NORTON:
It has not been withdrawn by the Federal sponsor. We'd divided it out because it isn't really the fourth priority project. The Landbridge is the fourth priority project coming out of the Technical Committee. It was moved up because of the $15.7 million balance and could have been funded inside of that $15.7 million. So, that's why the Technical Committee put it on the table. It still is on the table for the Task Force to consider and probably would be appropriate since that has been a Technical Committee recommendation for us to take action on whether it's going to be funded in this cycle or not. But at the Technical Committee meeting NRCS did not offer to reduce the size of the Landbridge request for Phase II funding, but we're willing to do that. We had that ability and can do that and it is a linear project. It can be and has been built in increments. And we could scale back the size of this one to fit within the $15 million or something less than that should the Task Force elect to do that. So, Colonel, we probably do need to deal with the GIWW recommendation of the Technical Committee as to whether we proceed with that because they did recommend approval of that project.

COLONEL LEE:
Well, I think the first thing we did was we passed a motion to separate the three projects and then we opened up discussion about the remaining projects on the list, and the motion, as I understood it, that came forward was to defer the balance until June and then we would reconsider the remaining projects. Maybe that's where we need to make the modification to the motion and update that so it's clear for everybody. But I want to finish public comment before we do that. Did that answer your question?

LESLIE SUAZO:
Yes.

KEVIN NORTON:
I do have one other comment on the GIWW. As we've worked with other members of the Technical Committee, that is designed for a certain type of protection, shoreline protection, and there are some discussions about alternative treatment methods that might be available and we're willing to go back and look at that and determine if there are some more cost effective methods to doing that kind of work. So, we have had some discussion with Technical Committee members and others about the planned structure for the GIWW.

COLONEL LEE:
Okay, thanks, Kevin. Senator Dupre.

SENATOR DUPRE:
Thank you, Colonel. Senator Reggie Dupre of Terrebonne and Lafourche Parishes. I would like to follow-up on Mark's question and comment. Obviously, coastal restoration projects can sometimes be split in component parts. You have these huge projects, such as the Bayou Lafourche Diversion Project, and the State is putting up $20 million for emergency dredging in the Donaldsonville area. So, the next logical component of that project, in my opinion, would be replacement, let’s say, of the Donaldsonville Railroad Bridge. Is it possible for those larger scale restoration projects, including CWPPRA projects, where we could pull out component parts and build with some of the stimulus money if Congress deems it would fit the category. Because I know generally you can not comingle Federal to Federal funds. However, what I'm suggesting is to be a little bit more creative than that. Yes, you have a component part built traditionally under your 85/15 formula under CWPPRA. But if you have an opportunity to go and build a component part of a CWPPRA project, pull it out and build it as a stimulus project, I think it would be very wise for us to at least consider that.

COLONEL LEE:
I know that we have pulled other projects out of CWPPRA and they have been executed through other program authorities, including, I think, the State has executed some projects that have been taken out of CWPPRA and the State has done that. Additionally, I think other projects in CWPPRA have been executed under other authorities.

SENATOR DUPRE:
I guess what I'm asking is going a little bit deeper than that. Can you take a CWPPRA project and actually split it when you can show -- and I just spent the last hour and a half from your regulatory people learning what the word independent utility means.

COLONEL LEE:
Okay.

SENATOR DUPRE:
If you can show an independent utility of a component part of a CWPPRA project, I think why not attempt it.

COLONEL LEE:
That's a NEPA regulatory issue though that you just talked about, right. Okay. Melanie? I'm going to let my experts answer this.

MELANIE GOODMAN:
We last year changed the scope of the South Shore of the Pen Project to remove the marsh creation component out because the Corps was looking at alternatives to use supplemental funds from the hurricanes -- Hurricane Katrina and Rita, and in order to do that, we had to go through, you know, the alternatives analysis that's required under the Civil Works Program according to the supplemental funding and agree to transfer that component of the project out of the CWPPRA Program. And that project is being developed under Fourth Supplemental, I believe.

SENATOR DUPRE:
So, you're saying that it is possible if you can show independent utility where the component part of the --

MELANIE GOODMAN:
Yes. And that is what we had to demonstrate is that the two different components were stand-alone and could stand alone on their own merit.

SENATOR DUPRE:
Okay, thank you.

COLONEL LEE:
Thank you. Are there any other public comments before we -- we are going to have some more discussion about modifying the motion. So, I just wanted to make sure that I provided an opportunity for the public to provide any additional comments. Okay. Jim?

JIM BOGGS:
Colonel, I would like to propose a modification to that past motion that we qualify that to specify that these funds would be set aside specifically for the Barataria Landbridge Project.

COLONEL LEE:
Okay. So, the motion before the Task Force is to modify the amendment to ensure that the funds are set aside -- the remaining funds are set aside for the Barataria Landbridge project. Is there a second for this motion?

KEVIN NORTON:
Second.

COLONEL LEE:

Okay. All of the members on the Task Force that are for this amendment to the motion, vote aye.

KEVIN NORTON:
Aye.

JIM BOGGS:
Aye.

COLONEL LEE:
Those opposed, vote no.

CHIRS DOLEY:
No.

JANE WATSON:
Nay.

COLONEL LEE:
Okay. I will vote aye to approve that motion.

CHRIS DOLEY:
As a point of clarification: Would that mean that the balance of funds available in June after any other actions would go to the Barataria Project, or would we have some discussion of how that Fed out with the units and how that'd actually mesh with the project itself?

COLONEL LEE:
I think we would definitely have to have some discussions about what you just brought up and the specifics of it before we move on with that decision. Melanie, do you have any discussion?

MELANIE GOODMAN:
Could you repeat the question, please?

CHRIS DOLEY:
Well, between now and June when we have the discussion on Barataria -- well, I guess now when the Barataria gets funding, the funding amounts will change. I'm just curious to see how we'll bleed down the money all the way down to zero? Is that what this motion says or would there be further discussion on how the money available at that time actually fits with the Barataria need?

MELANIE GOODMAN:
I think that's going to have to be a decision that the Task Force makes at the time because if we get to the June timeframe and it turns out that there's no money left over, basically by just approving the whole project now without any funding means that you're committing to funding it next year and, you know, this project has been requesting Phase II funds for -- this is the third or fourth year, I believe. The third?

CHRIS DOLEY:
The third year.

MELANIE GOODMAN:
The third year. So, basically you're making a commitment to construct the project with FY10 funds.

CHRIS DOLEY:
Okay. Is it clear that that's what the Task Force understood?

TOM HOLDEN:
Well, Melanie and I were discussing that. What we understood you did and perhaps we need you to tell us what we heard is what you meant. We understood that you committed

to fund the entire project by earmarking this as the increment to initiate it. If that's not your intent, we need to know because sitting here, that's what we believe just occurred.

CHRIS DOLEY:
My understanding was the balance of funds available as of June -- the next -- the June meeting would be applied to this project and no more than the balance available at that time. So --

MELANIE GOODMAN:
Well, that opens the question: If there's $2 million left over, is that feasible to construct anything that's meaningful or are you, just like Mr. Holden said, earmarking money up-front and making a commitment to spend next year's funds to complete construction of the project?

CHRIS DOLEY:
That was generally my question, thank you.

KEVIN NORTON:
I suspect from my understanding of the actions and the way funds are cycled in this Task Force project that by June, if there would be $2 million left, that would be unreasonable. That we're talking about $15.7 million balance here. We are going to have some cost overruns, we're also going to have funds returned to the program. So, we know we're somewhere going to be in a range of $10 plus million unless the price of fuel and the cost of construction goes through the roof. We have a segment here of 9,120 feet that we can estimate Phase I -- Phase II Increment 1, funding of $11.million. So, yes, there is a scale here that we would drop below that would not be beneficial to constructing a landbridge. But there is also an increment here that we could go ahead and do some work and provide the benefits to that Barataria Basin.

TOM HOLDEN:

Sir, what I would recommend -- this is a thought, that perhaps you may want to consider referring that to the Technical Committee to see if we could have a separable featured project with those funds to advise you when you revisit this in June?

COLONEL LEE:
I think what I want to do is have a break for about 10 minutes and we are going to draft is an amended motion so everybody's clear on what we're voting on, and I would appreciate the Technical Committee hanging around to provide your input so we're not saying something that we can not deliver. So, I would appreciate your patience on that, and we will take a 10-minute break to execute this. I'll ask the Technical Committee and the Task Force to remain in place so that we can get this knocked out. I need somebody on the computer.

(A RECESS WAS HELD.)

COLONEL LEE:
--ambiguity after the last motion we passed. So this is an attempt to clarify some of the ambiguity in the last motion. Since the last motion passed, this is a new motion. The motion that is being proposed is: "Defer action on the Barataria Basin Landbridge project until the June Task Force meeting. At that time, if there are available funds the Task Force will consider approving Phase II, Increment 1 funding for a feasible separable increment of the Barataria Basin Landbridge Project." Is that simple enough for you to understand?

KEVIN NORTON:
I second it.

COLONEL LEE:
Do we have a motion for this to go forward?

JIM BOGGS:

I would like to make that motion.

COLONEL LEE:
Is there a second? There is a second.

Now the Task Force will vote. Everybody in favor of this motion, vote aye.

TASK FORCE:
Aye.

COLONEL LEE:
The motion is approved.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

O&M INCREMENTAL FUNDING CORRECTION FOR LITTLE LAKE SHORELINE PROTECTION/DEDICATED DREDGING NEAR ROUND LAKE (BA-37)

For Discussion/Decision:

The Task Force approved an O&M incremental funding request in the amount of $65,124 for the Little Lake Shoreline Protection/Dedicated Dredging near Round Lake Project (BA-37) on November 5, 2008. However, an error was recently discovered, resulting in a shortfall of $48,615. The correct incremental funding request amount should have been $113,739. National Marine Fisheries Service (NOAA Fisheries) and the Louisiana Office of Coastal Protection and Restoration (OCPR) are requesting funding approval for the $48,615 shortfall.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

STATUS OF THE PPL 1 - WEST BAY SEDIMENT DIVERSION PROJECT (MR-03)

For Report/Discussion:

The Corps of Engineers will provide a status on the West Bay Project and efforts to develop a Work Plan with CPRA/OCPR to address the overall induced shoaling issue as directed by the Task Force at their November 5, 2008 meeting.

CWPPRA West Bay Sediment Diversion
Final Work Plan to
Evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area

U.S. Army Corps of Engineers and the
Louisiana Coastal Protection and Restoration Authority (CPRA)

07 April 2009

Introduction

The West Bay CWPPRA project is the largest constructed sediment diversion in Louisiana and is affording an extraordinary opportunity to the CWPPRA program. Through partnering with Federal and State agencies, the private sector and academia this work plan will provide cutting edge science and the latest technical advances in riverine sediment transport on the lower Mississippi River. The unprecedented knowledge and insight that will be gained from this effort is absolutely crucial to conduct study and analysis as outlined in the January 21, 2009 Task Force motion. The main focus of the motion is to determine if the West Bay Sediment Diversion induces shoaling in the Pilottown anchorage area and if so, the quantity of shoaling being induced as well as to assist in planning future diversion projects in Louisiana.

In October 2008 a West Bay budget re-analysis was conducted by the Corps of Engineers and indicated that an additional $118.5 million would be needed to maintain elevations in the Pilottown anchorage area (PAA) through the project life to 2023. The Corps of Engineers initiated a request to increase the project budget by this amount at the October 9, 2008 CWPPRA Technical Committee Meeting. However, due to concerns that the CWPPRA project would be paying to dredge sediment from the PAA that shoals naturally (i.e., not induced by the project), and concern that the cost is beyond the CWPPRA Program capacity, the Technical Committee did not recommend approval of the total budget. The Technical Committee recommended funding $10.99 M of the $118.5 M request to fund the immediate dredging of the Pilot Town Anchorage Area (PAA).

In a public meeting on November 5, 2008, the federal members of the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) voted unanimously on the following motion: *"To approve an O&M budget increase for the West Bay Sediment Diversion Project in the amount of $28,550,742, making the total approved budget through FY 12 for $50,863,503, and to approve incremental funding through FY 11 in the amount of $10,998,550. The incremental funding would be used to cover costs associated with dredging the Pilottown Anchorage Area in FY09. The remaining increased budget would be used in FY12 for possible closure of the diversion channel and/or dredging to restore the anchorage area. This motion includes a sunset clause requiring closure of the channel in FY12, unless alternative funding sources for anchorage maintenance are found. The motion also requires that the Corps develop a Work Plan with the Louisiana Coastal Protection and Restoration Authority (CPRA), Office of Coastal Protection and Restoration (OCPR) to address the overall induced shoaling issue; and that the project sponsors report on West Bay progress at each Technical Committee and Task Force meeting".*

On January 21, 2009 an additional motion was passed outlining specifically the purpose and guidelines for the West Bay work plan. The motion reads as follows:

"Motion to require the Corps of Engineers and State of Louisiana, with participation from the CWPPRA Technical Committee and consultation with the maritime industry, and other interested parties to finalize a work plan on river shoaling in the area of the CWPPRA West Bay Diversion Project by February 28, 2009. Provided Further, that the work plan include an analysis of current and historic bathymetry and other relevant data

on this region of the Mississippi River. Provided Further, that the work plan shall include a quantification of total historic and recent shoaling that has occurred in the area before and after the construction of the project. Provided Further, That the report resulting from the work plan shall include estimates on the volume of shoaling resulting from the project, shoaling from natural processes and an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion. Provided Further, that a final report resulting from the work plan be provided to the Task Force within six months. Provided Further, that the draft and final work plan and report be independently reviewed by a team of experts within 30 days of completion of each document. The independent review team should consist of the CWPPRA Academic Advisory Group and the LCA Science and Technology Program".

The following from the above motion "*an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion"*, will require additional time and cost beyond the 12 month effort. Please see Task 7 titled "Task Management", under 'Not included in work plan", for more information. However, the geomorphic assessment and additional bed material samples will provide some understanding of the sediment relationships in this part of the river. Work can be initiated upon receipt of funds for the total scope of work or by task. The 6- month time frame will start upon receipt of funds. The final report will be peer reviewed within 30 days of the 6-month completion date.

This Work Plan will address several issues related to the West Bay Project. Scopes of work included in this document will outline numerical modeling, data collection and reverine geomorphic assessment needed to improve on shoaling estimates in the PAA and the Mississippi River navigation channel being directly induced by the project. In addition to the Mississippi River impacts, West Bay project performance in both the conveyance channel and the receiving area will be evaluated through analysis of biological and engineering monitoring data already collected as part of the project as part of the project monitoring plan. University studies (Andrus, 2007) and Alex Kolker's (Tulane University) West Bay sediment accretion analysis completed during the Spring 2008 flood will also be utilized as appropriate. In addition to the University studies, the Louisiana Office of Coastal Protection and Restoration (LAOCPR) is conducting an independent West Bay study that includes a limited scale geomorphic riverine analysis as well as 1D modeling. This study is being conducted by LAOCPR's contractor Brown Cunningham and Gannuch (BCG). The scope and results of the BCG data analysis will be assessed and integrated with the Work Plan as appropriate.

Background

Multiple river diversions are included in Louisiana's State master plan, CWPPRA's Coast 2050 plan, the Louisiana Coastal Area Plan (LCA), and the Louisiana Coastal Protection and Restoration (LACPR) plan as a method for delivering water, sediment and nutrients to Louisiana's fragile estuarine environments.

The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), West Bay Sediment Diversion Project (MR-03) is located on the west bank of the Mississippi River, in Plaquemines Parish, Louisiana, 4.7 miles above Head of Passes. The project was designed to restore and maintain approximately 9,831 acres of fresh to intermediate marsh in the West Bay area by diverting fresh water and sediment from the Mississippi River over the 20-year project life through 2023. The diversion project benefits were based on construction of a 50,000 cubic feet per second (cfs) conveyance channel at the 50% duration stage of the Mississippi River, and construction of sediment retention enhancement devices (SREDS) in the receiving area. The conveyance channel was initially constructed in 2003 to deliver 20,000 cfs. It was intended that the conveyance channel would be mechanically enlarged to increase the flow capacity to 50,000 cfs after two to three years if it was determined that the channel would not capture the thalweg of the Mississippi River. The conveyance channel enlargement to 50,000 cfs has not occurred and the Shreds have not yet been constructed to date. However, after conducting a current day discharge analysis of the project conveyance channel, it was observed that the channel has approximately doubled in cross sectional area and flow capacity (See Task 9 on page 26 for more detail). An Environmental Impact Statement was completed in March 2002. CWPPRA West Bay project Task Force approval was provided in 1991 as part of the first CWPPRA PPL list. Final project plans and specifications were approved in September 2002. Project construction began in September 2003 and was completed in November 2003.

The diversion channel discharge has averaged 19,336 cfs over the past five years since it was constructed (See page 22 Task 6 for the current discharge capacity of the diversion channel). The diversion discharge in May 2008, during extreme high river flow, was 51,270 cfs. To date, no emergent marsh has accreted as a direct result of the sediment diverted though the channel. However, various investigators have indicated that measurable accretion has occurred in the receiving area (Andrus 2007).

The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan. The PAA extends from river mile 1.5 to 6.7 in the Mississippi River. After thorough negotiations with the navigation industry, an agreement for maintaining the PAA was developed and executed. As stated in the Cost Sharing Agreement executed between the State of Louisiana and the Corps of Engineers and the budget approved by the Task Force in 2002: “Included as a Project feature is the maintenance of the outermost (eastern) 250-foot wide strip of the Pilottown Anchorage area and the entire width of the adjoining access area between this strip of the Pilottown Anchorage area and the Mississippi River navigation channel. Advanced maintenance of the Pilottown Anchorage area shall be undertaken to account for the anticipated shoaling induced by the Project. Below the conveyance channel, the anchorage and access areas shall be maintained at the depths existing at the time the Phase One interim conveyance channel is constructed. Above the cut, three 45-foot deep by 1,500 feet long anchorage berths shall be constructed and/or maintained.”. The project is responsible for this channel maintenance as a direct project cost through the project life, which ends in 2023 unless a new project cost sharing agreement is negotiated and signed by the State of Louisiana and the Corps of Engineers.

The Corps of Engineers is specifically authorized to operate and maintain navigable channel depths in the Mississippi River[i]; however it is not specifically authorized to dredge the Pilottown Anchorage Area except through CWPPRA. The Corps of Engineers agreed to absorb the cost of dredging shoaled material from the navigation channel induced by the West Bay Diversion Project using its authorized Operations and Maintenance appropriations.

Several numerical sediment transport and hydrodynamic models were developed during the planning phase of the West Bay project, prior to construction. These models were useful to their specific intent of the original goals of their study, but had limited value in evaluation of the system-wide riverine response to the diversion.

Current West Bay Issues

Issues A: Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel? If so by how much? At what rate? If so, how does the induced amount/rate vary with river stage, flow, temperature etc. (i.e. transporting power) and sediment load on the rising, peak and falling hydrograph? If so, how does the induced shoaling amount/rate vary along the anchorage area, and with position across the river? How does what has been observed since 2003 related to a longer term perspective (scale of 20-50 years?)

Issues B: Is there a large space scale, longer-time scale sediment transport-morphology change event taking place in the river that is creating the observed shoaling? If so, what is attributable to the diversion and what to the background larger-scale process? What is the time and space scale of such a background process/event? How do observations since 2003 relate to a longer term perspective (scale of 20-50 years?)

Issues C: How much sediment passes through the diversion? What are the characteristics of the flow and sediment passing through, as a function of river stage and rising/falling limb? What is the current flow carrying capacity of the conveyance channel?

Issues D: How much sediment is retained within West Bay? What are the amounts/characteristics of sediment entering West Bay compared those leaving West Bay? How does the velocity and deposition regime within West Bay change spatially (down the long axis and along the fringes)? What is the rate of accumulation within West Bay, and how does it vary spatially? How do observations since 2003 relate to a longer term perspective (scale of 20-50 years?)

Issues E: What is the current assessment of the ecological benefits of the West Bay project? How close is the area to depositing subaerial "land"? Are there benthic areas that are currently shallow that have moved into the photic zone, thus encouraging epiphytic algae production or other signs of primary productivity? Are there areas that, though below the water surface now, can be expected to support emergent vegetation in the near future? How has the dredged material deposited in the area persisted? Is it now vegetated? Have the dredged material areas trapped more sediments and grown or have they eroded? How do these results fit within the anticipated receipt of environmental

benefits used to justify the cost of the projects? Are there activities that need to take place to update the project projections?

Comprehensive Approach to Evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area

TASK 1 - Field Data Collection & Analysis – Corps of Engineers Engineering Research Development Center (ERDC), University of Texas (Mead Allison) & Tulane University (Alex Kolker)

Data collection will serve as the primary foundation for increasing the usefulness of any additional modeling efforts. The new data will improve definition of boundary conditions for 1-dimensional and multi-dimensional models. The data will be essential for describing the ratio of diversion sediment to river sediment, which is critical information required for the 1-dimensional model. Also, the data are essential in calibrating and verifying the numerical model results. Without sufficient data for boundary conditions and calibration/verification, the confidence level of the model results will be significantly lower.

The main objective of the proposed data collection surveys is to determine the integrated transport of water and sediments through the non-controlled diversion at West Bay and the main channel of the Mississippi River in the region of the West Bay Diversion. The goal of integrated surveys is an understanding of the suspended and bed-load transport of sand and fines (silt and clay) through the structure and in the adjacent channel. Integrated surveys are needed 1) to ground-truth 1D and multidimensional modeling to determine the extent to which the diversion is influencing shoaling in adjacent navigational anchorages and 2) to determine sediment fluxes into the receiving basin (Barataria Bight). The later is necessary to ascertain if the diversion is operating as designed and to quantify the fraction of the total Mississippi River sediment load being diverted. Quantification of the diverted sediment load will also be valuable to future efforts to describe the model land building in the receiving basin.
The secondary objective is to calibrate historical West Bay discharge data collected by the Corps since 2003 to sediment sample data in an attempt to improve the sediment flux measurements for multiple hydrographs. These data will give a much better understanding of the historical performance of the diversion.

Data Collection Survey Design Considerations

Several issues impact how surveys should be conducted in this reach of the lower Mississippi River. The first involves the seasonal presence of a salt-water wedge, which enters the main stem at discharges below 8,500 m^3/s (Soileau et al., 1989). Recent observational studies have shown the wedge is an effective sediment trap for fine particulates in the channel thalweg of this reach, including adjacent to the West Bay entrance channel (Galler and Allison, 2008). A second factor is the limited available observational data in this reach, either measurements of sediment transport or detailed bathymetry (multi-beam/swath) necessary to plan an observational grid. This data limitation extends to the absence of nearby monitoring stations for anything but river

stage. The nearest real-time active monitoring station is at Belle Chasse (RM75.5), but the station record only extends to December 2007. Long-term monitoring data is unavailable below the station at Tarbert Landing (RM306.2), immediately below the Old River control structure. Given what has recently been learned about sediment storage and remobilization processes in the lower river due to a reduction in water surface slope in lower discharges, which extends upriver to the approximate tidal limit (at about Baton Rouge), predicting suspended sediment concentrations in the river at the diversion entrance is imprecise. This set of processes, and the likelihood that suspended sediment concentrations likely differ significantly from those at even Belle Chasse, mean a single integrated survey (combined with historical monitoring data) is unlikely to answer the objectives. Further, while bed-load measurements have recently been made in the lower river using modern techniques (Nittrouer and Allison, 2008), none of these measurements have been made at monitoring stations like Belle Chasse, making estimation of the bed-load component of sediment transport at West Bay difficult.

Survey Methods

Several one-time measurements are necessary to answer the objectives. In addition, other measurements are necessary at various river stages, given that sediment fluxes do not co-vary linearly with water discharge in the river adjacent to the diversion. At a minimum, we suggest 6 river surveys are necessary, preferably within a single flood year. However, hysteresis effects cause similar water discharges to have significantly different sediment fluxes during rising and falling limbs. A complete description of sediment fluxes in the study area, including seasonal variations and hysteresis effects, will require a long-term monitoring program outside of this scope of work.

Anecdotal information suggests bed material within the river above head of passes is primarily sand. If initial bed material sampling in areas of concern detects significant quantities of fine sediments, it may be necessary to obtain relatively undisturbed bed material cores and conduct Sedflume experiments to characterize credibility for proposed numerical model studies. Detailed sampling plans and cost estimates will be developed if required.

1. One-time Surveys

Multibeam Bathymetric Basemap A multi-beam (swath) bathymetric survey is proposed to extend bank-to-bank in the river channel for at least two river miles above and below the diversion entrance channel. This survey should extend through the diversion entrance channel and as far into the receiving basin as water depth allows—with overlap with any single-beam surveys being conducted in the receiving basin. This survey will serve twin purposes: to serve as a basemap for multidimensional numerical modeling of water and sediment processes in the vicinity of the structure (linked into the larger-scale USACE decadal navigational surveys) and will be used to select proper cross-section points for measuring water and sediment fluxes.

ERDC has just completed a survey for the lower portion of Southwest Pass that will be available for this work effort. The most recent condition/comprehensive survey data for the remaining portions of Southwest Pass and Head of Passes will suffice for the needed bathymetry for the geomorphic analysis. There should not be any additional cost associated with these data.

2. Stage Survey Measurements
On each survey, integrated (suspended + bed-load) sediment and water flux should be measured at four localities including a river cross-section immediately upriver of the diversion. Other possible locations include important adjacent anchorages, downstream of the diversion, and at several points within the exit channel of the diversion. The following measurements are proposed (Figure 1).

ADCP 1200 KHz, vessel mounted RDI ADCP will be used to calculate water discharge, and, measure acoustic backscatter data. The backscatter data converted to TSM, Total Suspended Material, can be coupled with the velocity information to achieve 2D sediment flux measurements. The RD unit yields data in 25-50 cm depth bins. Standard USGS methods will be followed: four repetitions of the cross-section in immediate succession with discarding the outlier if it falls outside statistical limits. In addition to the discharge measurements a plan has been laid out to identify the 3D nature of flow as it enters the diversion (Figure 2). This data set is proposed to identify the ability of the numerical technique to simulate the flow patterns that exist at the site.

To obtain detailed discharge data in the West Bay Diversion including cross-sectional flow information as a time history, horizontal ADCP (Hadcp) units could be installed that could collect discharge data in real time. Those installations usually require two to three piles to be driven. Piles usually cost about $3,000 each plus the mobilization cost for a pile driving crew which is typically around $10,000. For a one year deployment, the instrument is about $15,000 to purchase and the data logger is about $10,000 with modem service for the year. This additional data would provide more definition as to the flow characteristics for the diversion throughout the entire hydrograph. However, the 6 or 12 proposed discharge measurements in the diversion plus discharge data previously measured since the diversion was opened should be adequate to accurately define the discharge characteristics into the diversion, especially if the 6 or 12 discharge measurements can be obtained over a wide range of flows on the Mississippi River as described in this work plan.

P-61 Isokinetic Point Sampler A P-61 point sampler obtained from, and calibrated by the Federal Interagency Sedimentation Project (FISP) will be used to collect suspended sediment concentration samples from 0.1, 0.3, 0.5, 0.7, and 0.9 water depths at 3 or more verticals along each ADCP cross-section. Sediment will be filtered onto pre-weighed 0.4 μm filters after pre-sieving the sand (>63 μm) fraction. After drying at 60°C, samples will be weighed and % sand and fines (silt and clay) calculated. Suspended sediment flux (total and sand) will be calculated for each cross-section using the P-61 data and ADCP velocity profiles.

Sediment Sampling and Analysis
Bottom samples will be taken each service trip over the entire site to quantify the seasonal changes due to the varying hydrograph. Figure 3 shows the approximate locations of the samples. The methods of collection will vary depending upon the depth of water and the method of laboratory analysis to be used on the resulting sample. The types of equipment to be employed are described below along with some of the methods

of analysis. Presently the sampling scheme stops at the southern most limit of the anchorage area. Additional samples will be added to the bed material sampling scheme to cover the region from the lower end of the Anchorage area through South West Pass all the way to the end of the Jetties. These samples will be collected on a one mile increment on either side of the channel. This will add almost three days to the sampling effort for the additional 50 samples.

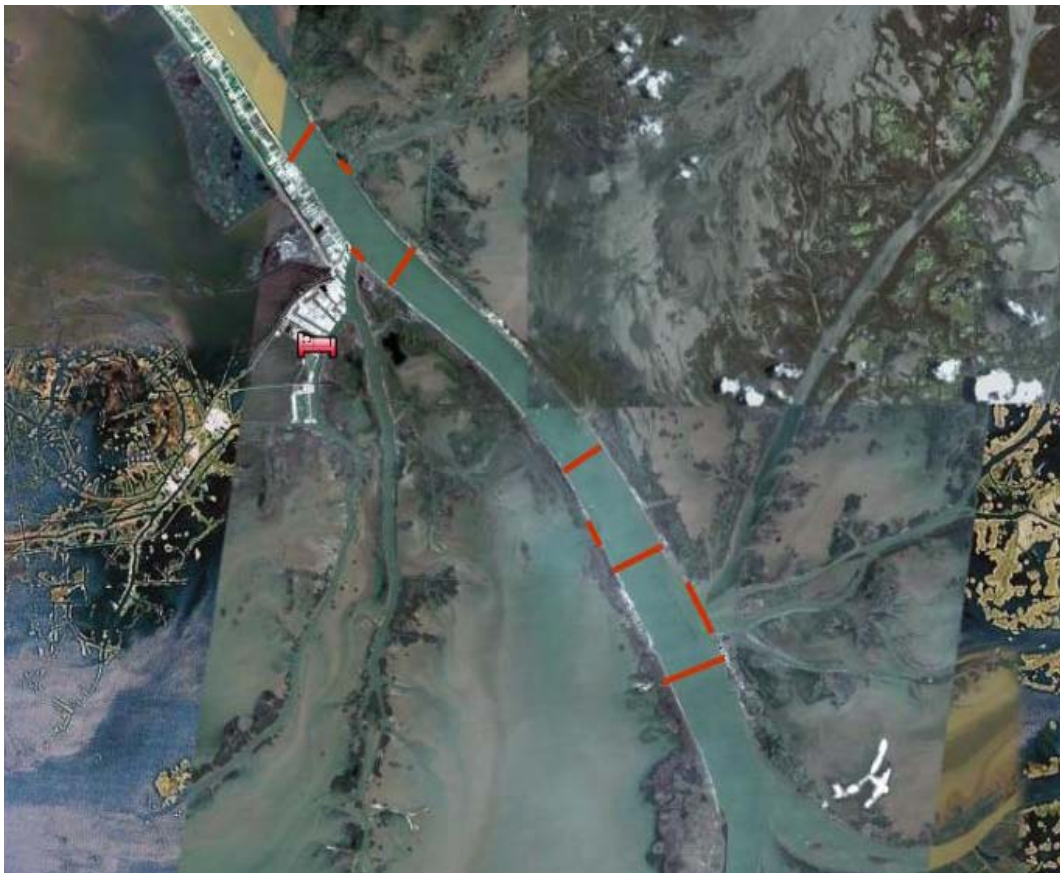


Figure 1 - Sediment Flux Measurement Cross-sections

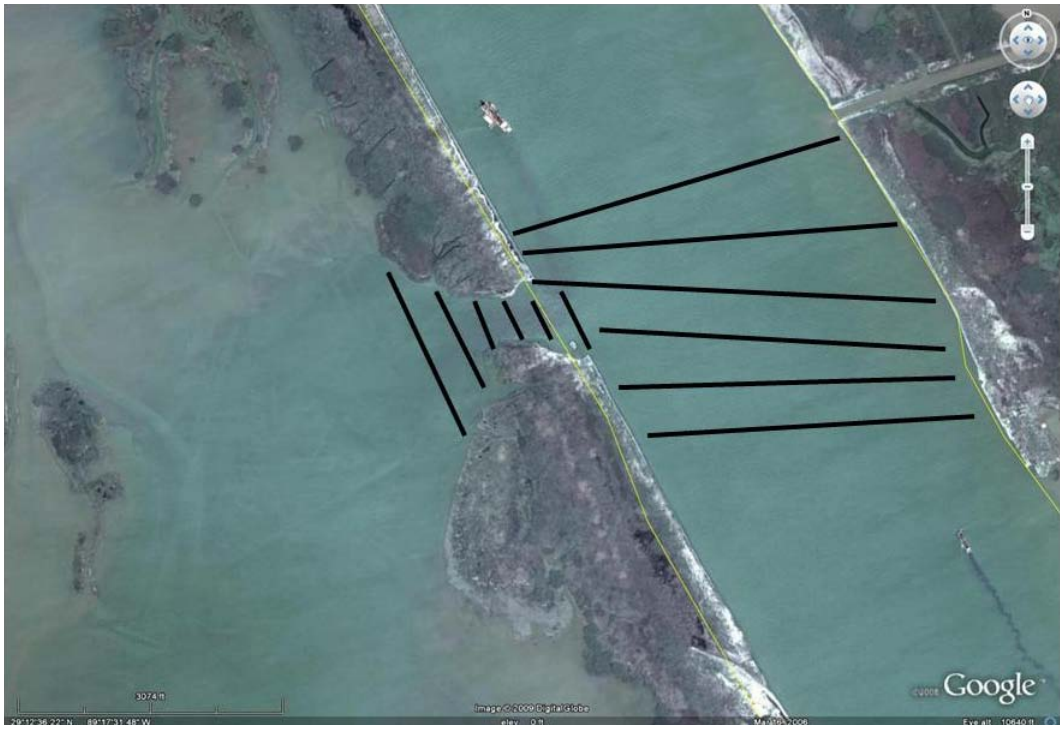


Figure 2 - 3D Velocity Mapping Measurements

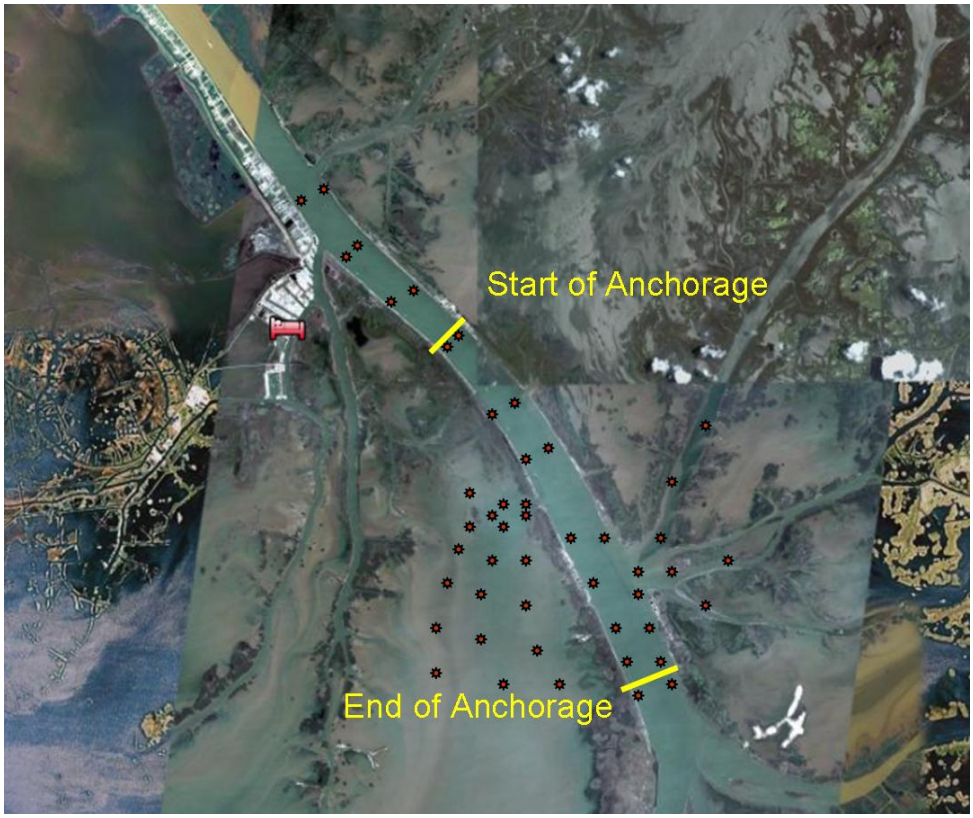


Figure 3- Approximate bed material sample locations

Push-core sampler

Bottom sediments are obtained using a push-core type sampler. The sampler consists of a 1.5-in.-diam PVC pipe, 18 in. in length. Attached to this is a smaller section of pipe with a valve attached at the upper end. The purpose of the valve is to create a reduced pressure holding the sample in the larger-diameter pipe. The samples are then brought to the surface and classified by visual inspection or transported back to ERDC for more detailed analysis. The push-core sampler is displayed in Figure 4. This sampling method is only good for water depths less than 15 feet in material that have a high clay/silt content. If the sample has a high sand content then it will not maintain integrity in the sampler as it is pulled out of the water.

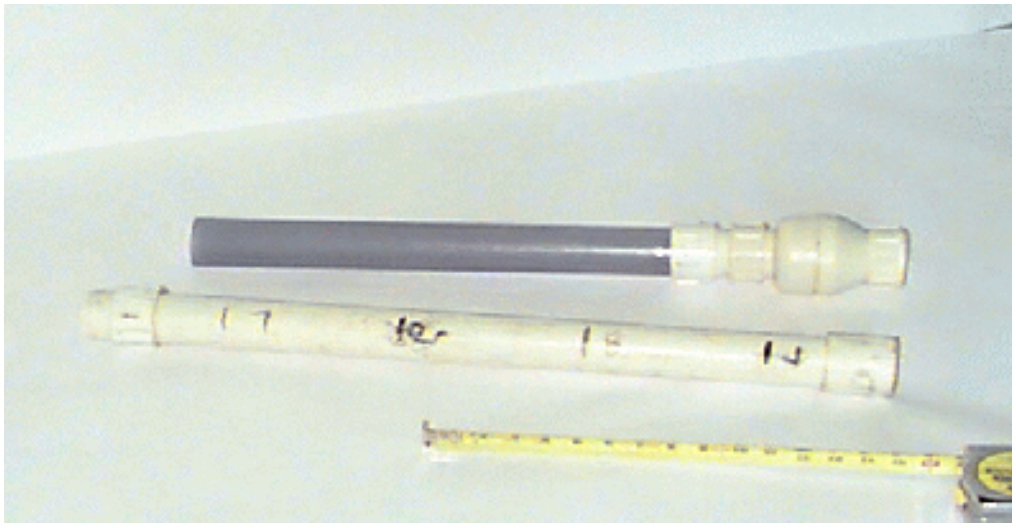


Figure 4 - Push-core sampler

Box- core samplers

The box-core sampler is very similar to the petite Ponar in its triggering mechanism and sampling technique. The main difference in the two samplers is where the sample is trapped. The box-core has clam-shell jaws that scoop the sediment into a clear plastic square tube. When the sampler is opened at the surface, the sample is visible from a top door on the sampler. From this top door, the trapped sample can be sub-sampled for more detailed analysis. Figure 5 is a picture of the box-core sampler. Our method of sub-sampling would be to scrape only the surface material for analysis each sampling trip because it will be the material recently deposited for the time between sampling efforts.

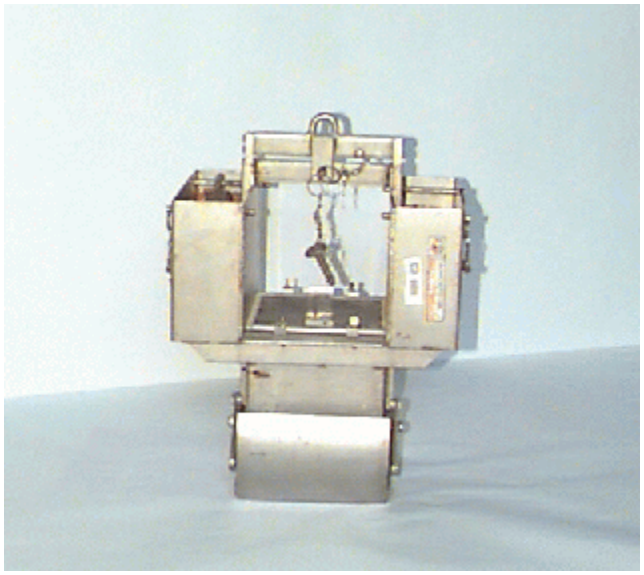


Figure 5 - Box-core sampler

Laboratory analysis for total suspended materials

Total suspended materials (TSM) are determined by filtration of samples. Nuclepore (Registered Trademark) polycarbonate filters with 0.40 micron pore size are used. They are desiccated and pre-weighed, and then a vacuum system (8-lb vacuum maximum) is used to draw the sample through the filter. After the filters and holders are washed with distilled water, the filters are dried at 60 °C for 1 hr and reweighed. The TSM are calculated based on the weight of the filter and the volume of the filtered sample.

Density analysis

A density analysis is done using wide-mouth, 25-cm constant-volume pycnometers. They are calibrated for tare weight and volume. A pycnometer is partially filled with sediment and weighed, then topped off with distilled water. Care is taken to remove any bubbles before the pycnometer is reweighed. The bulk density (BSG) of the sediment is then calculated by the equation:

$$BSG = \{ \{(\Delta) \} \{(\text{sed wt} - \text{tare wt})\} \} \text{ OVER } \{ \{ (\Delta) \} \{(\text{vol pyc}) \} + \{ (\text{sed wt}) \} - \{ (\text{sed + water wt}) \} \}$$

Where:

D = density of water at temperature of analysis

sedwt = Total weight of pycnometer and sediment

tarewt = tare weight of pycnometer

volpyc = volume of pycnometer

sed + waterwt = Total weight of pycnometer, sediment, and water

CTD/Transmissometer/OBS/ The seasonal presence of the salt wedge in the vicinity of the diversion requires salinity mapping. A conductivity-temperature-depth (CTD) profiler will be deployed on each ADCP cross-section to determine vertical stratification.

In addition to profiles of water column salinity and temperature, the Seabird is equipped to make several supplementary measurements. Optical profiles of turbidity will be made with an optical backscatter sensor (OBS).

Bed-load (sand) Transport Bed-load transport measurements should be made along each ADCP transect using repeated multi-beam bathymetric methods. This measurement requires the base-map survey for proper site selection. The resulting bed-load flux measurement will be integrated with suspended measurements for an integrated total and sand flux along each cross-section. This is a one time effort that has been included in the cost of the first survey trip and funded by the LCA Science and Technology (S&T) program. Cost estimates can be provided for additional bed-load transport measurements for each of the return trips should they be deemed necessary.

ADCP Backscatter Calibration for Historical Data since 2003

This effort addresses the long term performance of the West Bay diversion. It will show how much suspend sediment load actually passed through the main channel and through the diversion. The one ongoing discharge measurement has been conducted at West Bay as part of its monitoring plan. (both before and after construction) Acoustic Doppler current profiling (ADCP) above, below, and across the entrance channel have been collected periodically since 2003. While designed to measure water transport through the diversion, the backscatter information captured by the acoustic sensor can be calibrated to yield cross-sections of suspended sediment flux. Previous work has shown that this calibration is very specific to a sensor, sediment type and grain size. This means that the exact sensor used in these ongoing surveys needs to be calibrated against isokinetic samples of suspended sediment concentration at various levels in the water column. Given that isokinetic sampling is proposed for each survey, it should be possible to borrow this ADCP unit to run on with the stage surveys. Although a calibration can be done on a single survey, the limited range of concentration variability in the river at any given stage, suggests that this calibration should be ideally conducted over a range of river discharges to accurately derive a calibration curve. This calibration of the ADCP data for historical surveys is not figured in the costs but ERDC suggests that it should be done. ERDC plans to calibrate the ADCP data collected during the funded effort to suspended sediment concentrations samples. The longer term historical ADCP data collected by the District did not have suspended sediment samples associated with it to calibrate the acoustic backscatter. Our only choice would be to use the same instrument that they used when collecting the historical data and perform a back calibration based upon the current samples. ERDC discussed this approach with Meade Allison but while this would be useful and should be funded it has not been included in this work plan.

Data Collection Cost Estimate

This cost estimate includes the costs for the additional sediment samples. It does not include the historical ADCP calibration nor does it include the multiple bed-load transport measurements.

West Bay Data Collection Estimate				
	1 trip	**3 trips**	**6 trips**	**12 trips**
Labor in Field	36,907.88	95,723.64	191,447.28	382,894.56
Management	12,070.81	24,987.65	47,014.18	91,067.26
Mob/Demob & Planning	5,739.60			
Pd/Travel	9,720.00	29,160.00	58,320.00	116,640.00
Vehicle Expense	4,374.00	13,122.00	26,244.00	52,488.00
Contracts	0.00	0.00	0.00	0.00
Data Processing	22,136.80	33,205.20	66,410.40	132,820.80
Sample Analysis	9,676.80	29,030.40	58,060.80	116,121.60
Supplies/Equipment	0.00	0.00	0.00	0.00
Report writing	26,919.20	26,919.20	26,919.20	26,919.20
Report publishing	0.00	0.00	0.00	0.00
	127,545.09	**252,148.09**	**474,415.86**	**918,951.42**

Please note that the 6-month effort includes 6 data collection trips. If a multi-dimensional analysis that includes silts and clays is required at the end of the initial 6-month effort, then ERDC recommends collecting an additional 6 trips to support this effort.

A detailed data collection time line is difficult to develop as it is dependent on the stage of the river and funding. ERDC personnel can be mobilized as needed to accomplish this work plan.

TASK 2 - Large-Scale/Longer-Term Geomorphic Analysis – ERDC, LAOCPR Significant Engineering Activities on the Lower Mississippi River – MVN

LAOCPR, through its contractor BCG, is completing a limited scope geomorphic assessment that will support the below detailed assessment to evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area. The ERDC large-scale/longer-term detailed geomorphic assessment proposal includes an analysis of channel geometry, stage and flow data, dredging records, natural and anthropogenic influences and sediment data which evaluates changes in sediment loads, sources, and sizes. Changes in sediment characteristics are an important part of a geomorphic assessment. The integration of the analyses of all these geomorphic assessment data will provide the basis for the determination of both long term and short term sedimentation trends in the anchorage

area. Often times the analysis results of an individual dataset may conflict with the results of other analyses. Therefore, it is important to interpret all results in the context of the entire system and all data and events (natural and manmade) in order to make the most accurate description of the dominate processes that have influenced sedimentation in the study area. It is also important to remember that a geometric analysis of this nature focuses on observed data which gives a description of conditions at specific times. An observed change from one time period to another is a cumulative response resulting from all influencing forces acting on the system during that span of time. Careful engineering judgment must be exercised when attributing an observed system response to a specific cause or event, because the response may be due to multiple factors with varying degrees of influence.

For geomorphic assessments, both temporal and spatial limits are important. Analysis of channel geometry, stage and flow data, dredging records, sediment data, and natural and anthropogenic influences should be over a sufficiently long enough period of time and over a sufficiently large enough reach of river to determine long term, large scale geomorphic trends. Initial channel geometry analysis by the LAOCPR included annual channel condition surveys from 1997 through 2008 which extended a few miles upstream and a few miles downstream of the West Bay Diversion. In our opinion, this data does not have adequate temporal or spatial limits to determine if any long term, large scale geomorphic changes are impacting sediment deposition rates and patterns in the vicinity of the West Bay Diversion.

Geomorphic Assessment Description of Work

Task 2, Proposal #1, Lower Study Limit at Head of Passes

A detailed geomorphic assessment will be conducted for the lower Mississippi River from Belle Chase (RM 75) to Head of Passes (RM 0). Although the limits of this assessment will focus from Belle Chase to Head of Passes, it is anticipated that discharge and sediment data from Tarbert Landing (RM 306) will be included where relevant. The overall objective of the assessment is to utilize all available data to document the historic trends and changes in hydrology, sedimentation, and channel geometry for the lower Mississippi River, to summarize the local changes observed in the Pilottown anchorage since the opening of the West Bay diversion, and to evaluate the changes at Pilottown with regard to the documented historic trends. It is anticipated that the assessment will focus on the time period from 1960 to the present. The tasks required to accomplish this geomorphic assessment include, but are not limited to, the following:

1. *Data Compilation*. A comprehensive search of available data will be conducted, and pertinent data for the geomorphic assessment will be collected and assembled. Data to be collected will include river stage and discharge, suspended sediment measurements, bed material gradations, comprehensive hydrographic surveys and channel maintenance surveys, aerial photography, dredge records and previous study reports. MVN support with determination of availability and collection of data will be required.
2. *Geometric Data Analysis*. An analysis of channel geometry for the study reach will be conducted with the data from the hydrographic and channel maintenance surveys. Data from sequential surveys will be used to develop

comparisons of river channel form, pattern and profile. These comparisons will be used to determine sedimentation rates and patterns for the overall river reach and for the specific area of the anchorage. The results of the geometric data analysis will help determine the historic sedimentation trends at the Pilottown anchorage area for the pre- and post-construction time periods of the West Bay diversion.

3. *Gage and Discharge Data Analysis*. Data from gage stations within the study reach will be analyzed to determine hydrologic trends and to assess the effects of historic floods on the system morphology. This effort will utilize the historic stage and discharge data from the gage stations (including Tarbert Landing) as well as post-construction data at the West Bay diversion collected by MVN, and additional diversion data collected as part of this comprehensive study.
4. *Dredge Records Analysis*. Dredging records for the study reach will be used to construct a picture of deposition patterns and rates. These results will be used with results of the geometric data assessment to determine a more complete understanding of the sedimentation trends at the anchorage area for pre- and post- West Bay construction time periods. Characteristics of the sediment in the dredged areas will be evaluated dependent on available data.
5. *Sediment Data Analysis*. Suspended sediment measurements and bed material gradations will be analyzed to determine the characteristics of the sediment regime of the study reach. The results of this analysis will be used to assess the characteristics of the shoal material in the anchorage for pre- and post-construction periods and in comparison to the historic sediment load in the river.
6. *Events Timeline Analysis*. An understanding of the chronology of natural flood and storm events as well as anthropogenic (i.e., hopper dredge disposal at Pass a Loutre and South Pass, and normal dredging activities) influences for the study reach is important in the proper and accurate interpretation of the results of the geomorphic assessment. Therefore, an events timeline (see second paragraph below) will be developed documenting all significant events relative to the study reach.
7. *Integration of Results*. This task will integrate the results from all of the analyses conducted as part of the geomorphic assessment, and will form the basis for the comprehensive understanding of the study reach. The results from each analysis will be combined to establish the trends in river morphology and sedimentation from a historic perspective as well as for the post-West Bay construction time period. The integrated results will be evaluated to determine if observed shoaling trends in the Pilottown anchorage are within the influence of the large-scale, long-term morphological changes occurring within the study reach, or a specific result of the impact of West Bay diversion.

The estimated time required to complete Task 2 - Proposal #1 is 5 months. The estimated cost to complete the proposal is $84,500.

Task 2- Proposal #2 - Lower Study Limit at East Jetty on Southwest Pass

An alternative proposal involves extending the lower study limit of the geomorphic assessment to the east jetty on Southwest Pass (RM -20). Extending the lower study limit will allow evaluation of the sedimentation trends in Southwest Pass with regard to the impacts of the West Bay Diversion. The general sub-task requirements for this proposal will be the same as Proposal #1, with the primary change being the gathering of additional existing survey data and gage/discharge data for Southwest Pass. Additional bed material samples will be collected in Southwest Pass as part of Task #1, Field Data Collection and Analysis, to support this proposal.

The estimated time required to complete Proposal #2 is 5 months. The estimated cost to complete the proposal is $105,500.

Significant Engineering Activities on the Lower Mississippi River

The scope of work will include outlining the history of significant events that have occurred along the Mississippi River between Belle Chase, LA and the Gulf of Mexico between 1960 and present. This effort will include a file search at MVN, as well as other sources of reference to summarize the various phased development of the Mississippi River navigation system. Research will include the compilation of O&M data during this period, including reaches dredged through O&M, as well as construction (i.e. channel deepening events), and quantities of material removed (as available); method(s) of dredging performed and disposition of dredged materials; and cost information associated with said dredging contracts.

In addition to O&M data, data will be gathered and will summarize various channel improvement features installed along the river during this time frame. This could include a summary of revetment work performed along the river; channel training improvements in the Mississippi River – South West Pass, including but not necessarily limited to 1) lateral pile dikes, 2) foreshore dikes, 3) headland dikes, 4) borrow from portions of the Mississippi River below Venice, LA that were used as dedicated dredging borrow sources for bank nourishment behind foreshore dikes, and 5) other known Corps borrow and/or fill performed in the river. (i.e. the salt water barrier sill initial construction and maintenance) Will also present a brief summary of the developments/changes within the river between Venice, LA and Head of Passes during the 1990 – 2003 period (prior to Construction of the West Bay Diversion) as well post –West Bay

This information will be provided in report format that will also include any necessary plates and tables.

The estimated time to complete the **Significant Engineering Activities on the Lower Mississippi River** portion of Task 2 is 1 month at a cost of $15,000.

TASK 3 - 1D Sedimentation Modeling – ERDC, Corps of Engineers - Mississippi Valley Division (MVD) Vicksburg District (MVK) and LAOCPR

LAOCPR contractor Brown Cunningham and Gannuch (BCG) has developed a 1D computational analysis study. The Corps' has conducted an initial assessment of the

LAOCPR 1D model. The modeler, Mr. Tony Thomas, states that this model only provides the relative impact that different combinations of the alternatives would have on the volume of sediment that has been dredged in the study reach. Mr. Thomas also points out that this effort is not a study to compute the volumes of dredging. The results are presented as percentages of a base value. Therefore, the study is not classified as a Computational Model Study but it is classified as a Computational Analysis Study. It appears that a detailed calibration was not conducted for sediment.

Use of this model to quantify sediment deposition and dredging will require a detailed sediment calibration. The BCG 1D model will be further assessed and integrated with the Work Plan as appropriate, upon receipt of the model and supporting information.

Background

One-dimensional (1D) sediment routing modeling provides the opportunity of evaluating long-term channel changes and delivery of sediments at a regional spatial scale. One dimensional modeling also provides boundary condition input for multi dimensional modeling. The Vicksburg District is currently developing a HEC-6T model of the lower Mississippi River. The Vicksburg, Mississippi to the Gulf reach is scheduled for completion during February 2009. This model will contain sand size sediment only and does not include distributaries. The Vicksburg District has plans to incorporate silts and clays into the model. This work is scheduled for completion in April 2009. The model currently being developed by the Vicksburg District will allow for the evaluation of sediment deposition and scour trends through the reach of the Mississippi River that is impacted by the diversion of flow and sediment at West Bay. The anchorage areas along the Mississippi River channel experience varying rates of sediment deposition and require varying degrees of dredging. A 1D sediment routing model can be used to predict sediment deposition trends with and without the West Bay Diversion. These trends can be compared to determine the impacts of the West Bay Diversion.

Need For 1D Modeling

(Raphelt and Letter, 2003) state that a major deficiency of three of the previous West Bay Studies was the lack of a long-term multi year analysis of the system. Some previous 1D modeling has been conducted on the lower Mississippi River. However, this modeling did not include the West Bay Diversion. These modeling efforts are summarized in ERDC/CHL CHETN-VII-9, “River Diversions and Shoaling” by Joseph Letter, Fred Pinkard, and Nolan Raphelt, dated November 2008. In 1991, ERDC developed a TABS-1 1D model to evaluate dredging alternatives in the Cubits Gap and Head of Passes reaches. The study included evaluating several alternatives including over-depth dredging (advance maintenance), an in-channel sediment trap, and reduced outflow through Cubits Gap by some structural means. Model results indicated that reduced dredging at Cubits Gap and Head of Passes resulted from reducing flow through Cubits Gap. The report concluded that the shoal downstream from Cubits Gap is due primarily to reduced transport potential created by the distributary. Reducing the impact of the distributary by reducing its outflow also reduces the shoaling problem downstream. In 1992, ERDC developed a 1D TABS-1 model to evaluate long-term aggradation and degradation trends, the effect of various flow diversion schemes on dredging in Southwest Pass, the washout of a sediment sill at River Mile 63, and preliminary dike field schemes for Redeye Crossing at River Mile 224. In general, the model results for the major diversion schemes indicate that the effect of diverting water and sediment will

be increased deposition and dredging downstream because the reduced discharge will not be able to maintain the existing sediment concentration. No sediment data for the modeled diversions was available for either of these modeling efforts. The developers used a range of concentrations for the sand load exiting the river through the diversions. The currently proposed 1D modeling effort includes a sediment data collection program at the West Bay Diversion over a range of flow conditions. This measured data will be used in the model which should greatly improve the models capability to accurately predict sediment aggradation / degradation trends downstream.

1D Model Input Requirements

1. Channel Geometry – One-dimensional models require channel geometry which is obtained from hydrographic surveys plus channel bank and overbank topographic data. The HEC-6T model currently being developed by the Vicksburg District includes the channel geometry obtained from the New Orleans District's 1991-1992 comprehensive hydrographic survey. The most recent New Orleans District's comprehensive hydrographic survey was obtained in 2003-2004. By using the 1991-1992 channel geometry, the 1991 through 2004 hydrograph can be run through the model to calibrate the model to channel geometry contained in the 2003-2004 hydrographic survey.

2. Flow Data (Main Stem) – Sediment capabilities in HEC-6 are based on quasi-unsteady hydraulics. The quasi-unsteady approach approximates a flow hydrograph by a series of steady flow profiles associated with corresponding flow durations. An advantage of 1D modeling is that long term simulations can be run. A gage station with complete, long term stage and discharge data is required to develop the simulation hydrograph.

3. Sediment Data (Main Stem) – Sediment rating curves are required for the upstream boundary. These curves provide sediment loads for a range of flows. The model utilizes these loads with the flow hydrograph to determine sediment transport capacity and expected deposition / scour. HEC-6 calculates sediment loads based on grain size. Therefore, the sediment rating curves must be provided for each grain size. Also, bed material gradation is a model input parameter. Previous studies have shown that the bed material becomes finer on the Mississippi River the farther downstream you go. Therefore, bed material gradations and the locations where bed material gradations change are required.

4. Flow and Sediment Data (Through Diversion) – For each flow in the hydrograph, the model needs to know the amount of the total flow that is diverted through West Bay. Likewise, the model has to know the sediment load passing through the diversion.

5. Time Step - In general, the time step in HEC-6 is variable (usually correlated to flow) and dependent on stability considerations in the sedimentation computations and spatial resolution. For example, computed bed change during a single time step should not be large enough to significantly influence the flow field. As a practical matter when modeling long reaches of large rivers, it is often convenient to set the time step to 1 day and use mean daily flows in the boundary condition histogram (stepped hydrograph) for low to moderate flows with shorter time steps employed during periods of intense sediment transport during periods of high flow.

Changes in mainstem sediment concentrations at the diversion are a major factor in determining downstream sediment impacts. To date, sediment loads passing through the diversion have not been collected. The data collection program proposed by ERDC will provide this required information. Flow and sediment data are required for a wide range of flow conditions to develop a diversion rating curve.

1D Model Calibration

The HEC-6T model requires a calibration of water surface profiles as well as calibration of erosion/depositional trends. The water surface calibration is accomplished by running flow through the model to compute water surface profiles for known flow events. The erosion/depositional calibration is accomplished by running a known hydrograph through the model for the time period between the survey used for the model's channel geometry (1991-1992) and more recent channel surveys (2003-2004). Once the model is calibrated, a typical hydrograph which represents probable future hydrologic events can be run to predict future aggradational or degradational trends. A typical hydrograph is one that can reasonably be expected to occur within the model simulation period based on historical observations and known changes within the basin that would alter the magnitude of historical flows. A typical hydrograph usually includes a wide range of flow including low water and high water years. The length of the typical hydrograph varies but should be representative of conditions expected to occur in the future. Typical hydrographs are usually run several times to create a long term hydrograph.

1D Model Limits

The model for the evaluation of the West Bay Diversion should extend upstream to a location that has good data to develop boundary conditions. This includes historic flow and sediment data so that a good sediment rating curve can be developed. Also, the upstream boundary should be a sufficient distance upstream of the area of concern to allow the model to stabilize prior to reaching this area. The model currently being developed by the Vicksburg District extends from Vicksburg, Mississippi to East Jetty. We would propose to utilize the Belle Chase to Head of Passes reach of this model to evaluate the West Bay Diversion. The Vicksburg District model is a regional model that does not include distributaries. Therefore, a detailed model of the West Bay reach would include the addition of the major distributaries at Cubits Gap (RM 3.2), Grand Pass (RM 10.4) and Baptiste Colette Bayou (RM 11.4).

1D Model Simulations

HEC-6T allows for long term simulations. We propose to run a 50 year simulation. We would expect to have at a minimum, one low water year and one high water year within each 10 year period within the 50 year simulation. HEC-6T provides sediment deposition or scour trends for each time step in the hydrograph at each cross section. From this data, sediment deposition or scour trends can be determined for a given reach. By specifying the flow and sediment passing through the diversion, the impact of the diversion on downstream deposition trends can be identified. A simulation would be run without the West Bay Diversion to determine the deposition/scour trends that would be expected if the diversion had never been constructed. Another simulation would be run with the

West Bay Diversion to determine the deposition/scour trends that is expected to occur with the diversion in operation. A comparison of these simulations would provide an estimate of the impact of the diversion over the long term simulation period. HEC-6T contains a dredging option. Whenever and where ever dredging is required, a dredging template can be inserted into the model. At that point, the model will dredge the channel cross sections to the specified dimensions. This dredging option can be repeated as frequently as needed. Each time the dredging option is used, the model uses the dredged channel geometry to determine future scour and deposition.

The Vicksburg District is currently developing a HEC-6T model from Vicksburg, Mississippi to East Jetty. The model is scheduled to be completed and calibrated for the sand size sediment by the end of February 2009. For the West Bay Diversion reach, we believe a model that includes sand, silt, and clay size fractions is very important to accurately determine future deposition/scour trends.

Vicksburg District completed and calibrated model including sands, silts, and clays. With this model, we would run simulations for with and without West Bay Diversion. These simulations would include specified dredging requirements in the anchorage areas. Results would include a comparison between with and without diversion sedimentation rates throughout the Belle Chase to Head of Passes reach. Results would also identify both temporal and spatial changes in the sedimentation rates for both with and without diversion alternatives. These simulations would include a best estimate of sea level rise and subsidence over the 50 year simulation period. An extra $6,500 and 3 weeks will be required for this effort above the 10 week required for the 1D modeling effort.

This effort would require adding the distributaries at Cubits Gap, Grand Pass, and Baptiste Colette Bayou, inserting the measured water and sediment outflow through these distributaries and the West Bay Diversion into the model, model runs, analyses of model results, and report preparation. The location and extent of the shoaling will also be presented pictorially using a GIS format. A draft report would be produced at this time with a published final report to follow. The Mississippi Valley Division, the Vicksburg District, the LCA S&T Office and the CWPPRA Academic Advisory Group, will provide technical review mechanism.

The estimated time required to complete Task 3 is 5 months. The estimated cost to complete the proposal is $54,000 and an additional $9,600 for Vicksburg District (MVK) input, and $5,000 for Tony Thomas' input.

TASK 4 - 2D/3D Modeling – ERDC, LSU

Several studies have been conducted concerning sediment processes at West Bay using the CH3D sediment transport model. These studies have yielded valuable information concerning the impacts of the implementation of the West Bay diversion. However, model specific limitations and constraints, associated primarily with grid resolution and boundary condition specifications, have contributed to the limited usefulness of these modeling results.

The ADH sediment transport model (Berger and Stockstill, 1999) is equipped with several features that can serve to mitigate the limitations inherent in the previous efforts. These include the following:

- The model is a fully unstructured model, which allows very dense model resolution to be focused only in areas of interest. This means that the model mesh can be highly resolved in the study area, to capture local vortices and other flow features at the diversion site, and also extended well beyond the study area to cover a very large spatial domain. This spatial extent is important because model boundaries that are too close in proximity to the study area can essentially prescribe the results, if extreme caution is not taken in the selection and implementation of these boundaries.
- The sediment model is based on the CH3D sediment model, except that it is equipped with some improvements to more accurately simulate sediment processes. These include the ability to armor the bed more effectively, and the ability to include gravitational forcing in the direction and magnitude of bedload transport. This latter feature could be of significance with respect to determining how much (if any) bedload transport passes through the diversion.
- The model can simulate fine sediment as well as coarse sediment. This will enable the model to simulate sediment loads passing though the diversion, as well as the fate and transport of fine sediment within West Bay.

Each of these features fills a gap in the previous CH3D efforts, and hence each is desirable for the current effort. However, the ADH model is currently available only in a 2D depth-averaged modeling framework. Although 3D capability is currently being developed, it is not available at this time.

In general, the flow and sediment transport characteristics at a diversion exhibit decidedly 3-dimesional behavior. However, the further question of whether, and to what degree, the behavior at a specific diversion is characterized by the 3-dimeinsional nature of the flow is a question that cannot be answered from first principles. Rather, the question can be addressed via 2 different modes of analysis.

- Careful field data collection and analysis, to determine the nature of the observed flow and transport patterns in 3 dimensions.
- Comparative model studies, simulating the system with both 2D and 3D models simultaneously, to determine the relative impacts of the 3-dimesional processes.

With this in mind, it is proposed that we conduct simulations using both CH3D and ADH, in order to take advantage of the combined capabilities of each model.

- The ADH model can be used to provide more accurate boundary conditions to the CH3D model (since the ADH boundary will extend far beyond the study area)

- Comparison of the results from both models will provide quantitative and qualitative insights into the need for 3D modeling at West Bay diversion, by demonstrating what a 2D model can and cannot provide.

- Both models can provide insight into the dominant processes governing sediment deposition in the anchorage area, and can be used in conjunction to provide the best possible answers.

This effort will be done in partnership with LSU. Their modeling experience with ADH and West Bay and their corporate knowledge concerning sediment processes in the lower Mississippi make them an ideal partner for this effort.

The initial effort (Task 4 - Proposal 1) will be focused exclusively on shoaling in the anchorage area, and hence will be primarily focused on coarse-grained sediment transport processes. The further effort (Task 4 - Proposal 2) will also address the fine-grained sediment processes associated with sediment diversion, distribution, and retention within West Bay.

The modeling effort will include simulations of several different boundary conditions, each run both with and without the West Bay diversion included in the domain.

Task 4 - Proposal 1

Refinement of existing ADH mesh and CH3D grids. The existing ADH mesh and CH3D grid will be revisited and refined where necessary. The mesh/grid will be updated with the best available bathymetric data.

Development of boundary condition data sets using available data and 1D model output. Boundary condition data sets for both the CH3D and ADH models will be developed from both observed data and data taken from the 1D modeling effort.

Calibration and verification of models using existing data and data collected in 2009. The models will be calibrated and verified using existing and/or recently collected data, These data will include the observed current patterns at the division. The current patterns will be compared to model predictions to determine to what extent the models are able to simulate the complexities of the flow field at the diversion location. Sediment data to be used in the calibration/verification process include dredging records and grain size analyses. For Task 4 - Proposal 1, this calibration/verification will only include coarse grained sediment.

Simulation scenarios. Once the models are calibrated and verified, the models will be run for several different simulation scenarios. Each of these scenarios will involve 2 separate model runs for each model: one with the West Bay diversion in place, and one without it in place. The first 3 scenarios will be run using both the ADH and CH3D models, the 4th scenario will be run for ADH only.

- *Scenarios 1 and 2: Steady state runs.* These runs are designed to give general insight into the steady state processes that govern the sediment dynamics at the diversion. The models will be run for 2 separate flow rates. These flow rates will be energetic enough to mobilize the sediment in the study area. They will be run to an equilibrium bed condition.

- *Scenario 3: slug test.* This scenario is designed to investigate the possibility that an excess of sediment from some antecedent river condition is slowly migrating downriver, and is responsible for the increased shoaling in the anchorage area. One of the steady state flow rates will be chosen, and a "slug" of sediment will be added to the models upstream of the diversion site. They will be run until the slug reaches the diversion site, and the effect of the slug on sediment deposition will be investigated.

- *Scenario 4: Hydrograph.* A spring hydrograph (6 months) will be run though the ADH model, to determine how the disequilibrium conditions resulting from the passage of a flood hydrograph may affect shoaling and transport in the anchorage area and at the diversion site.

At this point the product will be a draft report with a finial report to follow.

The estimated time required to complete Task 4 Proposal 1 is 6 months. The estimated cost to complete Proposal 1 is $80,000.

Task 4 - Proposal 2

This proposal includes all of Task 4 - Proposal 1, with additional tasks to address issues associated with sediment passing through the diversion. The tasks outlined below will only be performed with ADH.

Calibration and verification of ADH model for fine sediment diversion. The calibration and verification of fine sediments will require extensive data collection in West Bay. These data will be used to determine the properties and distribution of the sediment, which in turn will be used to adjust parameters for the calibration and verification process.

Simulation of hydrograph to determine fine sediment transport and retention in West Bay. A year-long hydrograph will be run in ADH, together with a year long records of other boundary forcings (such as wind and tide). These will be used to determine the extent of sediment redistribution and retention within West Bay.

At this point the product will be a draft report with finial report to follow. ERDC will be in a better position to determine if Task 4 - Proposal 2 will be necessary as data is collected and analyzed.

The estimated time required to complete Task 4 Proposal 2 is 12 months. The estimated cost to complete the Proposal 2 is $60,000.

Task 5 - Sediment Budget - ERDC

Development of a sediment budget for the West Bay receiving area is beyond the scope of the 6 month Work Plan. An additional ERDC task is proposed for development of a sediment budget for the receiving area. Development of the sediment budget would

require additional sediment data collection in the receiving area along with the post-West Bay bathymetric survey scheduled to be conducted by OCPR. These data are required to determine the volume of sediment retained in the receiving area and to estimate the flux of sediment leaving the receiving area. Data collected as part of *Task #1, Field Data Collection and Analysis* will be used to determine the percentage of water and sediment diverted through the West Bay diversion channel. Additional bed core samples will be required throughout the receiving area in order to determine the history of sediment deposition/scour within the area (cost to be determined). Results from *Task #4, 2D/3D Numerical Modeling* will be used to estimate sediment flux leaving the receiving area.

The estimated time to complete the sediment budget for the West Bay receiving area is an additional 6 weeks over the 6 month work plan effort, at a cost of $25,500.

Task 6 – Sensitivity Analysis

Note that these scenarios described in Task 4 - Proposals 1 and 2 and in Task 3 do not include sensitivity runs, which could be used to correlate estimate of uncertainty in the boundary conditions and assumptions used in the modeling with uncertainty in the results. This type of analysis is necessary for a complete understanding of the results, since it can be used to quantify the accuracy that can be expected from the available tools and data. This analysis can be completed by utilizing analytic and statistical techniques to identify the uncertainty in the relevant forcing terms and process descriptions, and then using both the 1D and multidimensional models to ascertain the impacts of these variations on the model results. At a minimum, variations in Mississippi River sediment inflows, estimates of subsidence and sea level rise, and estimates of the sediment diversion ratio would be considered.

This work would require an additional 8 weeks over the 6 months outlined in the work plan and cost $39,200 to complete.

Task 7 – Task Management – MVN, ERDC and LAOCPR

MVN – The management of this involved work plan effort over such a short period of time will require a near full time effort of the MVN Project Manager. Tasks include: Gathering and providing existing data. Organizing and coordinating team meetings. Developing and providing updates at all CWPPRA meetings. Responding to general requests from partnering agencies. Coordinating all peer review. Travel for meetings with ERDC and other partnering agencies. Report writing. Ensuring that project remains on task and budget. Senior Project manager oversight.

Cost $100,000 for 6 months and $140,000 for 12 months

ERDC - A one person overall task manager and POC will be needed for this scope of work due to the number of branches within the Coastal and Hydraulics Laboratory involved, Division, Districts and academic institutions.

Cost $10,000 for 6 months and $16,000 for 12 months.

The completion of this work plan within the allotted 6 month time frame will be a difficult task. However, data acquisition has already started with funding provided by the LCA S&T office. The team will initiate the development of the 1D and 2D models as soon as funds become available. Some input assumptions will be made in the development of these models. As the new data is collected, it will be evaluated and changes to the models can be made at that time. This method of development provides the best chance of having the work completed within the 6 months.

ERDC regards the 6 month time frame as starting upon receipt of funds.

LAOCPR -

Not included in work plan

Southwest Pass: To the best of our knowledge, sedimentation processes in Southwest Pass, below Head of Passes, are strongly influenced by fine sediment flocculation, salinity, vertical mixing, and other physical processes that are not reproduced in the 1D model. In particular, the location of the saltwater wedge varies with Mississippi River discharge and is believed to influence the longitudinal distribution of fine sediment deposition within the Pass. For this reason, we do not recommend the application of the 1D model as the primary tool for evaluating the potential impacts of the West Bay Diversion on dredging in Southwest Pass.

A three-dimensional cohesive sediment model is required to properly represent the hydrodynamic and sedimentation processes believed to be occurring in Southwest Pass. Application of a suitable model, such as TABS-MDS or the 3D version of ADH currently under development, along with a significant expansion of the field data collection task to characterize hydrodynamics, salinity, and sedimentation in Southwest Pass is not considered feasible within the 6 or 12 month effort.

Adaptive Management: Various adaptive management options that would either limit sediment deposition in the anchorage area or capture greater amounts of sediment in the diversion could be evaluated. However, identifying, developing, and evaluating these options would increase the cost contained in the work plan and be in addition to the 6 month time frame for the work plan. Specific time and cost could vary significantly depending on the number and complexity of the options evaluated. If engineering analysis conducted during this study indicates that viable alternatives may exist, then appropriate study modifications will be recommended to the Technical Committee.

TASK 8 – Aerial and Bathymetric Spatial Change Analysis of West Bay Receiving Area – Corps of Engineers - Mobile District

Background and Problem Statement

The West Bay Sediment Diversion consists of a conveyance channel for large-scaled uncontrolled diversion of freshwater and sediments from the Mississippi River. The diversion site is located on the west bank of the Mississippi River, in Plaquemines Parish, Louisiana, 4.7 miles above Head of Passes. The project diverts Mississippi River water and sediments into West Bay. Marshes along the lower Mississippi River are subsiding and converting to open water because of a lack of riverine sediment inputs and fresh water. An updated aerial and bathymetric pre and post project analysis is needed to determine the land gain both aerial and subaqueous for the receiving basin.

Objectives

The objective of this proposal is to provide New Orleans District project management team: 1) an updated aerial analysis of land/water change both pre and post construction to include historical and present land loss rates, 2) a bathymetric survey comparison of pre construction and a pending new survey taken in FY09, 3) a historic assessment of subsidence, and 4) assess whether any historic topographic and/or bathymetric lidar exists for the project area in which analysis could be made for comparison.

Approach

The approach for the aerial analysis will be to compare all land/water data available back to 1956 to the present and record/display the land gain/loss rates at appropriate intervals pre and post construction. Using professional knowledge and expertise, data will be displayed relevant to major events (i.e., construction, storms, etc). The bathymetric survey comparison will be generated using a custom survey tool application to display the subaqueous land contours and profile. The historic assessment of subsidence will be documented for this area and the Mississippi Delta using existing published or professional knowledge. The Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) data and other's data will be mined for appropriate topographic and/or bathymetric lidar.

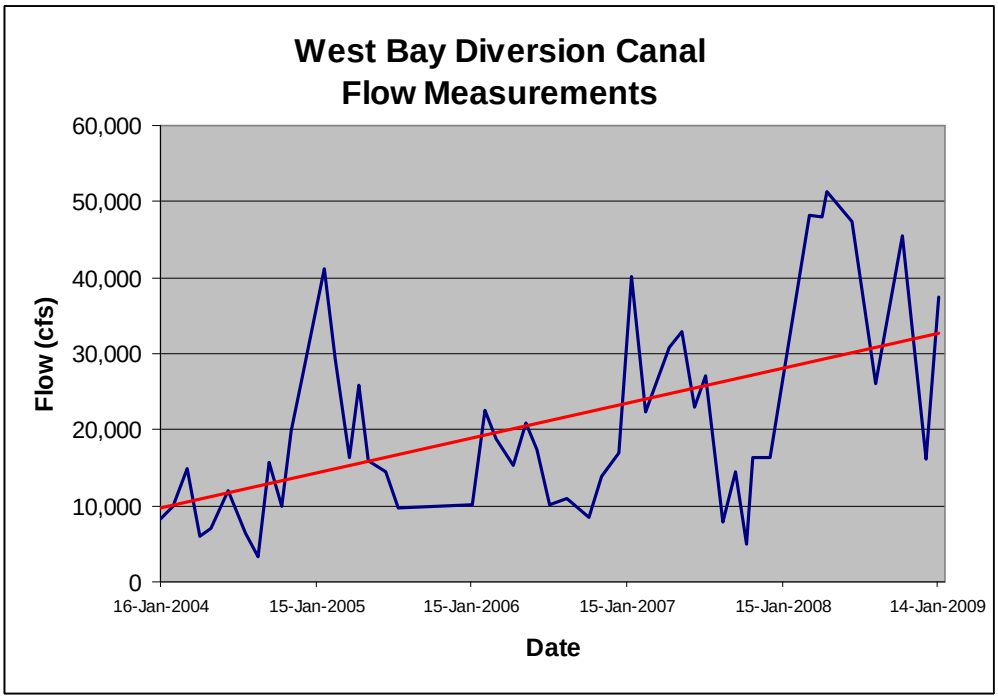
The estimated time to complete Task 8 is 3 months at a cost of $40,000. This cost is not included in this work plan but is part of the routine West Bay monitoring project costs.

TASK 9 – Current West Bay Conveyance Channel Discharge Analysis – Corps of Engineers - New Orleans District – **Please note that the information presented below is a completed technical analysis for information purposes and not a scope of work.

Since the completion of construction of the West Bay Diversion Channel in December 2003, there has been a noticeable difference in the channel morphology and its effect has been an increase in flows. There are many parameters that play a part in the amount of flow that is carried through the channel. Channel size, Mississippi River flows, the ability of the receiving area to hold or pass what comes through, the bathymetry of the river at the mouth of the channel and the unknown or unexpected. It is even more difficult to quantify the actual flow capacity at the 50% exceedance of the Mississippi River, since that's a moving target as time goes on. The original design criteria from the Land Loss and Marsh Creation, St. Bernard, Plaquemines, and Jefferson Parishes, LA Feasibility Study, Volume 2, Appendixes A-F, April 1990, Page B-46, Table B-3-5, the Typical Hydrologic and Hydraulic Parameters for Large-Scale Uncontrolled Sediment

Diversions at River Mile 7.5L above Head of Passes (at Venice), the 50% exceedance stage on the Mississippi is 2.48 ft NGVD, values are from Mississippi River at Venice (1964-1987) and Breton Sound near Gardner Island (1960-1987).

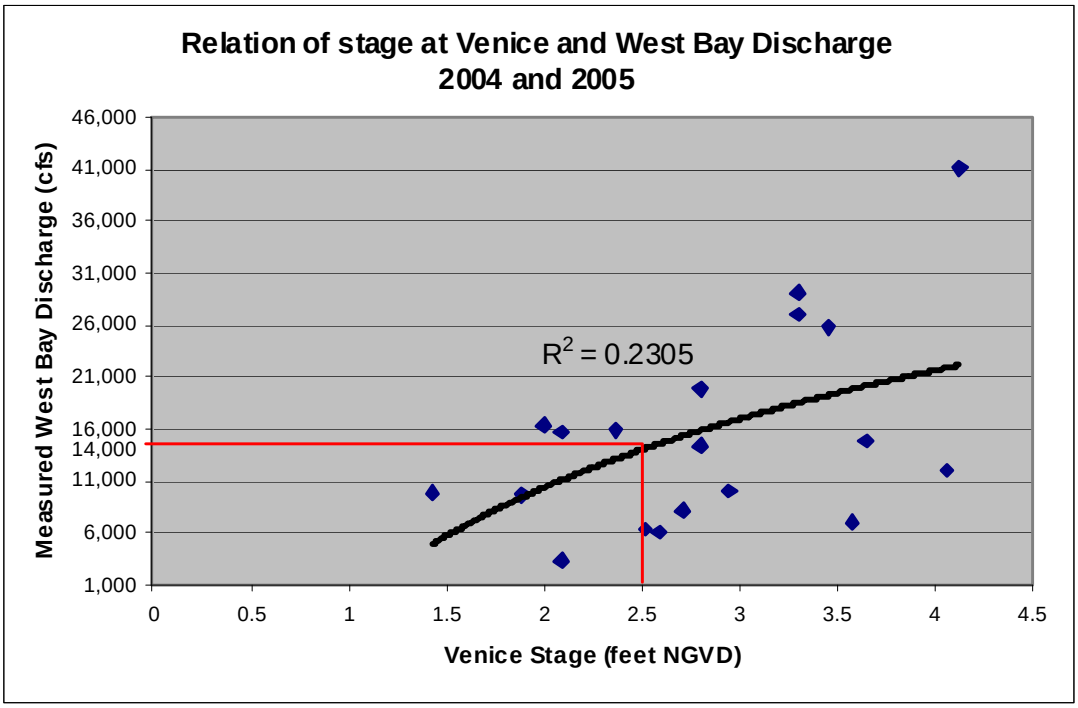
A linear look at the overall trend (see graph below) of all the flow measurements in the diversion channel taken since completion of construction to January 2009 shows a continued increase in flows through the diversion channel.



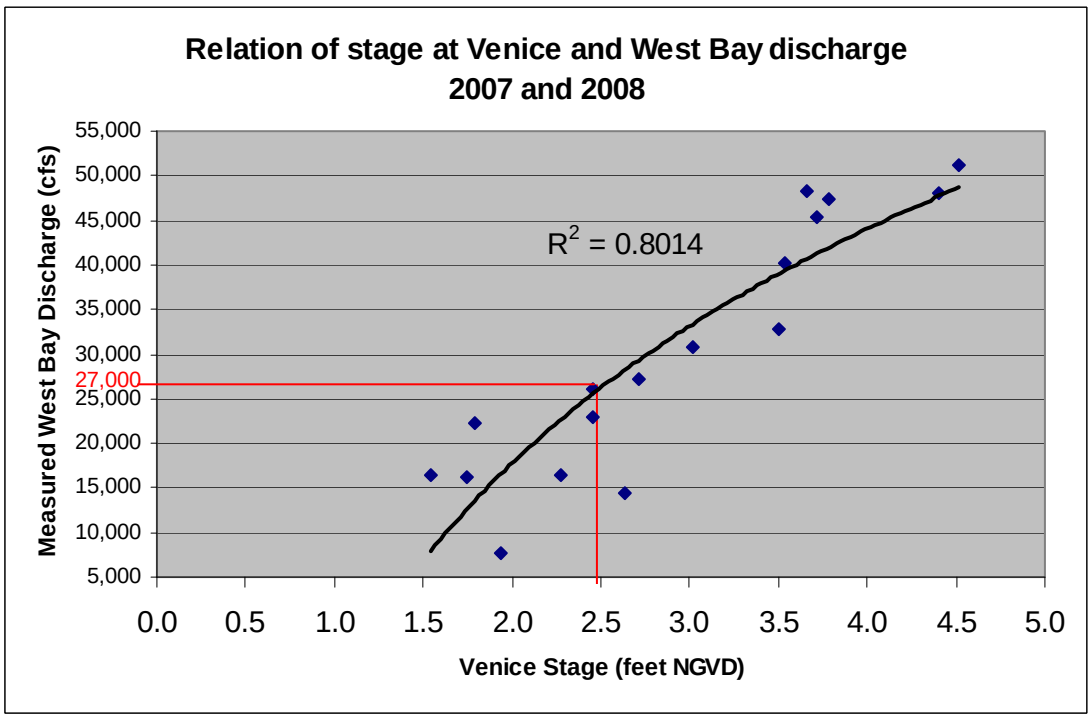
As part of the West Bay monitoring effort, MVN collects flow data monthly at the entrance of the West Bay Diversion Canal and processes the data. Using that data, a relationship was developed between the measured discharges in the diversion canal and the stage at Venice.

In 2004 and 2005 there was significant growth in the diversion channel, over the 2 years, the value was approximately 14,000 cfs. Two years were used because there were not enough points in 2004 to create a relationship. Although an R^2 of 0.2305 is not a good approximation, it is enough, when using the same methodology, to show a significant growth of the diversion channel since its conception.

It is concluded after completion of the discharge analysis, that the conveyance channel has approximately doubled in cross sectional area and flow capacity.



The R^2 for the 2007 and 2008 relationship is 0.8014 and shows the channel almost doubling in capacity with a 27,000 cfs average at the correlated 50% exceedance stage (graphs above and below).



TASK 10 – External Peer Review - CWPPRA Academic Advisory Group and the LCA Science and Technology Office

Preliminary review of this work plan and subsequent work will be organized in conjunction with the CWPRRA Academic Advisory Group (AAG) and the LCA Science and Technology Office's Science Board (See detailed scopes below). It is our initial understanding that the AAG is primarily composed of ecologists, so that we would recommend the addition of a local hydrodynamic modeler, who is currently also involved with developing a larger scale regional water and sediment model for the lower Mississippi River. The LCA S&T modelers are of national reputation from outside of Louisiana but have familiarity with Louisiana issues. It is also recommended that we conduct a "close-in review" which would convene the review group to review the workplan, and then "assign" individual reviewers to participate with particular aspect of the work that they are well-trained in as the project moves along, so that the review is concurrent with project execution, thus avoiding a long period of review at the end of the project. This methodology was employed in the IPET project and was highly successful. In addition, Peer review of final report and recommendations will be provided.

CWPPRA AAG

This review expects the reviewers to work closely with the Corps of Engineers research teams on each Task. The effort is expected to include two meetings as the task is developed, a review of the draft report and one meeting before the final report. The reviewers' responsibility is to provide constructive review.

TASK 1 - Field Data Collection & Analysis

The main objective of the proposed data collection surveys is to determine the integrated transport of water and sediments through the non-controlled diversion at West Bay and the main channel of the Mississippi River in the region of the West Bay Diversion.

Embedded reviewer assigned: Erick M. Swenson, coastal hydrologist, LSU.

TASK 2 - Large-Scale/Longer-Term Geomorphic Analysis

The overall objective of the assessment is to utilize all available data to document the historic trends and changes in hydrology, sedimentation, and channel geometry for the lower Mississippi River, to summarize the local changes observed in the Pilottown anchorage since the opening of the West Bay diversion, and to evaluate the changes at Pilottown with regard to the documented historic trends.

Embedded reviewer assigned: Erick M. Swenson, coastal hydrologist, LSU.

TASK 3 - 1D Sedimentation Modeling

One-dimensional (1D) sediment routing modeling provides the opportunity of evaluating long-term channel changes and delivery of sediments at a regional spatial scale.

Embedded reviewer assigned: Larry Rouse, coastal oceanographer, LSU.

TASK 4 - 2D/3D Modeling

Embedded reviewer assigned: NONE no appropriate reviewer available from AAG

TASK 5 – Significant Engineering Activities on the Lower Mississippi River

This task documents the history of significant events that have occurred along the Mississippi River between Belle Chase, LA and the Gulf of Mexico between 1960 and present.

Embedded reviewer assigned: Erick M. Swenson, coastal hydrologist, LSU.

TASK 6 – Aerial and Bathymetric Spatial Change Analysis of West Bay Receiving Area

This task evaluates the ability of the project to provide the expected ecological benefits and estimates the amount of sediments captured in the receiving area.

Embedded reviewer assigned: Charles E. Sasser, coastal ecologist, LSU.

Budget

5 Reviewer Tasks ($6000 per task)	30,000
LUMCON overhead (10%)	3,000
Total	33,000

Science Board, LCA Science and Technology Program

At the request of the Director of the LCA Science and Technology Program, the following Scope of Services has been developed for the purpose of providing constructive review of the proposed CWPPRA-funded study to Evaluate the Effects of the West Bay Sediment Diversion. Members of the Science Board will be involved in reviewing six tasks that were identified in the Draft Work Plan:

TASK 1: Field data collection and analysis to determine the integrated transport of water and sediments through the non-controlled diversion at West Bay and the main channel of the Mississippi River in the region of the West Bay Diversion.

TASK 2: Large-scale and longer-term geomorphic analysis to document the historic trends and changes in hydrology, sedimentation, and channel geometry for the lower Mississippi River that may affect the Pilottown anchorage.

TASK 3: 1D sedimentation modeling to provide evaluation of long-term channel changes and delivery of sediments at a regional spatial scale, and to provide boundary condition input for multi-dimensional modeling.

TASK 4: 2D/3D modeling to define model grids, develop boundary conditions, calibrate and verify models using existing data since 2009, and run simulation scenarios including simulation of hydrograph to determine fine sediment transport and retention in West Bay.

TASK 5: Documentation of significant engineering activities on the lower Mississippi River between 1960 and present, including channel improvements from dredging and construction.

TASK 6: Spatial analysis of aerial and bathymetric change in the West Bay region that compares all land/water data back to 1956 using a custom survey tool to display subaqueous land contours and profile.

The Science Board review will be accomplished by working closely with project teams as they develop final plans for the observational work and the modeling. At least one trip to Vicksburg of 2-3 days' duration is anticipated early in the project and a site visit to the field site is desirable. The review will also include examination of, and comments on, the results as they are being acquired, and the interpretations and conclusions as they are being developed.

Review Team

Three members of the Science Board will participate in the review. Level of effort will vary among the participants and be determined at initiation of the project. Based on composition of the Science Board and the above Scope of Services, we anticipate the review team will include three of the following four members: Dr. Robert Dean, Professor Emeritus, Department of Civil and Coastal Engineering, University of Florida (Coastal Engineering; Hydraulics); Dr. Joseph Fernando, Director, Center for Environmental Fluid Dynamics, Arizona State University (Sediment Transport Processes; Modeling); Dr. Peter Goodwin, Professor, Center for Ecohydraulics Research, University Idaho (Hydraulic Engineering; Modeling); and, Dr. John Wells, Director of the Virginia Institute of Marine Science, College of William and Mary (Sedimentation; River Processes; Delta Morphology).

Budget

3 Reviewers from Science Board	$30,000
Travel to Vicksburg and to West Bay	$6,000
USGA Overhead for contract processing (12%)	$4,320
	$40,320

Add On -

Review by AAG and the LCA S&T Office of the BCG 1D sedimentation modeling - $10,000

How Do The Tasks Address The Issues?

Address Issues A:

Issue A: Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel ? If so by how much? At what rate? If so, how does the induced amount/rate vary with river stage (i.e. transporting power) and sediment load on the rising, peak and falling hydrograph? If so, how does the induced shoaling amount/rate vary along the anchorage area, and with position across the river? How do observations since 2003 relate to a longer term perspective (scale of 20-50 years?)

The increased shoaling observed in the anchorage area could result from any of several causes, such as

- Sediment deposition induced by the recent flood events on the river
- Transport of existing sediment depositional loads from further upstream (i.e. "legacy" events from previous floods and/or changes to the configuration of the river
- Shoaling induced by local changes to the river configuration (i.e. West Bay diversion)

To investigate the relative contributions of each of these potential causes to the observed shoaling in the anchorage area, it is necessary to first interrogate the available data. Where does the shoaling occur? What types of sediment are present? What are the antecedent stage, flow, and sediment loading conditions? What historical conditions and/or changes to the river configuration might have resulted in the development of a slug of sediment in the river? These and other questions can be used to infer likely candidates for the sources of the sediment, which in turn can inform the process of ascertaining the cause of the deposition.

Next a multi-dimensional sediment transport model will be used to gain specific insight into the role of the West Bay division itself in causing deposition. The model can be run for various sediment loading conditions, both with and without the division included. These simulations can be used to provide qualitative insight into the expected changes in erosional and/or depositional trends in the anchorage area that result from the West Bay diversion. The model can also be used to yield quantitative insight into the expected sediment deposition in the anchorage areas as a function of observable parameters (i.e. stage, discharge, sediment load).

Address Issues B

Issues B: Is there a large space scale, longer-time scale sediment transport-morphology change event taking place in the river that is creating the observed shoaling? If so, what is attributable to the diversion and what to the background larger-scale process? What is the time and space scale of such a background process/event? How do observations since 2003 relate to a longer term perspective (scale of 20-50 years?)

The dominant morphological processes that drive the observed changes in the lower Mississippi River and delta system can operate over very large spatial and temporal scales. There are many factors, both natural and man induced, that can contribute to these processes. The effects of large floods and storms, changing sediment loads and characteristics, channel maintenance activities, dredging practices, diversions (natural

and man-made), subsidence and relative sea level rise are just a few such factors, but are not a comprehensive list. In terms of temporal scales that are typically associated with river morphology, the diversion at West Bay has been operating for a very short time period. The question must be asked to what degree the observed shoaling at the Pilottown anchorage is a result of large-scale, long-term river morphology, or a direct result of the impacts of the West Bay diversion. It is therefore important to establish the long-term morphological trends that are occurring in this reach of the river and to evaluate the observed shoaling at the Pilottown anchorage with regard to these trends. These morphological trends are determined by means of a geomorphic assessment.

A geomorphic assessment brings together all the known information about a river reach, and provides an understanding of how the river works and has responded to changes in a historical perspective. Methods and tools typically used in a geomorphic assessment can include analysis of discharge and sediment data, specific gage records, and analysis of channel geometry including form, pattern and profile. Each part of the geomorphic assessment provides additional clarity to the overall understanding of the dominant processes that have shaped and formed the system. Insight derived from this analysis can often be used to predict and assess future conditions. In addition, the geomorphic assessment can provide information of baseline conditions necessary for development, application and interpretation of numerical models.

A geomorphic assessment provides a qualitative evaluation of the factors that impact channel morphology. This type of assessment answers the "why" are changes occurring questions. However, water and sediment routing models provide a quantitative evaluation which answers the "how much" questions. A 1D sediment routing model provides for a long term simulation of sedimentation impacts. These models can simulate both with and without diversion conditions which allows for a comparison of the direct impact of a particular diversion over an extended period of time. However, utilizing a 1D model in a 3-dimensional environment does not allow for the site specific, detailed quantitative analysis available through the use of multi –dimensional analysis. While the geomorphic assessment provides the morphologic changes required as input for 1D modeling, the 1D model output provides the boundary conditions required for the more detailed multi-dimensional modeling effort.

Address Issues C

Issues C: How much sediment passes through the diversion? What are the characteristics of the flow and sediment passing through, as a function of river stage and rising/falling limb?

Previous 1D modeling of the lower Mississippi River has included various diversions. These models require the user to specify the concentration of sediment passing through the diversion. To date, no sediment load measurements have been acquired in the diversions. Therefore, the previous efforts were more sensitivity evaluations with sediment concentrations of sand ranging from 100 percent of those in the Mississippi River to no sediment being diverted through the diversions. This range results in significant differences in the quantities and location of sediment deposition downstream. The current scope of work includes acquiring sediment measurements on the Mississippi River as well as at the diversion/distributary sites. These include West Bay, Cubits Gap, Grand Pass, and Baptiste Colette Bayou. Since sediment loads vary depending on the flow, the scope of work includes measuring the sediment over a wide range of flows.

This data collection effort will provide the sediment data required in the modeling effort to allow for a more accurate simulation of long term diversion impacts.

Address Issues D

Issues D: How much sediment is retained within West Bay? What are the amounts/characteristics of sediment into West Bay compared those leaving West Bay? How does the velocity and deposition regime within West Bay change spatially (down the long axis and along the fringes)? What is the rate of accumulation within West Bay, and how does it vary spatially? How do observations since 2003 relate to a longer term perspective (scale of 20-50 years?)

This effort requires the modeling of silts and clays through the multidimensional modeling effort outlined in Task 4. Because this effort will require 6 months alone, it will only be conducted upon completion of the initial 6 month work plan effort, if deemed necessary after the field data collection, and only if the project performance in the receiving area still requires additional analysis to determine future benefits. Further development of the modeling capabilities may be required to forecast the subsequent development of the delta, or the development can be modeled in conjunction with other analytic or empirical forecasts of channel bifurcation.

Sediment retention and redistribution within West Bay can be investigated using both available data and model predictions. The available data sets can be used to ascertain information about the governing processes that have impacted the West Bay diversion so far. These include:

- Sediment loads into the Bay
- Sediment deposition within the Bay
- Sediment deposition resulting from the 2008 storm event.
- Sediment sorting within the Bay
- Wind loads and wind wave conditions within the Bay
- Subsidence within the bay, and local values of relative sea level rise (both current and anticipated)

Using these process descriptions, anticipated trends for the West Bay can be developed. These trends can be investigated in a multi-dimensional numerical model, to determine how different forcings and conditions might alter the trends in the future, and to estimate the total sediment retention in the Bay (i.e. loading minus losses to wind wave resuspension and recirculation).
All of these insights can be used together to forecast the life cycle of the West Bay diversion.

Address Issues E

Issues E: What is the current assessment of the ecological benefits of the West Bay project? How close is the area to depositing subaerial "land"? Are there benthic areas that are currently shallow that have moved into the photic zone, thus encouraging epiphytic algae production or other signs of primary productivity? Are there areas that, though below the water surface now, can be expected to support emergent vegetation in

the near future? How has the dredged material deposited in the area persisted? Is it now vegetated? Have the dredged material areas trapped more sediments and grown or have they eroded? How do these results fit within the anticipated receipt of environmental benefits used to justify the cost of the projects? Are there activities that need to take place to update the project projections?

The initial attempts to address Issue E should be coordinated with the State of Louisiana by utilizing the existing CWPRRA monitoring plan. The planned "re-surveying" of the West Bay receiving area should more forward rapidly. However, some consideration needs to be given to the seasonality of this surveying. Is it possible that sediments are being deposited into the receiving area as suggested by Kolker et al., and then resuspended during storm events and low water events? Additionally a group can be developed to evaluate whether the rate at which ecological benefits are being accrued from the project has changed enough from the original project planning to require a re-calculation of the benefits.

Path Forward

Any additional studies that do not resolve previous modeling and analysis limitations will not ultimately add further insights and will remain vulnerable to debate. The goal of this work plan is to provide a comprehensive modeling approach using all of the tools in a carefully designed way that overcomes all previous limitations. Such an approach would serve to clarify the issue of the impacts of the diversion while removing flaws in the approach that reduce its defensibility.

Please see Time and Cost Estimate Below

Time and Cost Estimate for the Work Plan

Work can be initiated upon receipt of funds for the total scope of work or by task. The 6-month time frame will start upon receipt of funds. The final report will be peer reviewed within 30 days of the 6-month completion date.

Task		Duration	Cost
Task 1	Field Data Collection and Analysis (addition SWPass bedload samples/analysis included)	Dependent on the stages of the river. Could be as much as 5.5 month effort.	1 Trip $127,545 3 Trips $252,148 6 Trips $474,416 12 Trips $918,952
Task 2	Large-scale/longer-term geomorphic analysis – Proposal 1 – Head of Passes Large-scale/longer-term geomorphic analysis – Proposal 1 – East Jetty <u>Significant Engineering Activities on the Lower Mississippi River</u>	3.5 month effort. Duration 5 months 4.5 month effort. Duration 5 months 1 month	$84,500 $105,500 $15,000
Task 3	1D modeling - Proposal 1 (additional sea level rise analysis included)	13 week effort. Duration 5 months (coordination needed with 2D/3D modeling)	$54,000 (plus Tony Thomas input ($5,000) (plus Districts/Ron's input $9,600)
Task 4	2D/3D modeling - Proposal 1 2D/3D modeling - Proposal 2	6 month effort 12 month effort	$80,000 $60,000
Task 5	Sediment Budget – receiving area	6 weeks – this is in addition to the 6 month effort	$25,500 plus data collection
Task 6	Sensitivity analysis (1D and 2D/3D effort)	2 months – this is in addition to the 6 month effort	$39,300
Task 7	Task Management 6 month effort – MVN, ERDC and LAOCPR 12 month effort	6 months 12 months	$110,000 $156,000
Task 8	Aerial and Bathymetric Spatial Change Analysis of West Bay Receiving Area	3 months	-
Task 9	Current West Bay Conveyance Channel Discharge Analysis	Complete	-
Task 10	Peer Review	Ongoing	$83,320

References

Raphelt, N. and Letter, J. 2003. Review on the West Bay Diversion Study Document. Memorandum of Record, US Army Corps Engineering Research and Development Center, Vicksburg, MS.

Andrus, T.M. 2007. Sediment flux and fate in the Mississippi River Diversion at West Bay: Observation study. M.S. Thesis, Louisiana State University

Berger, R.C. and Stockstill, R.L. "A Finite Element System for Flows," Proceedings of the 1999 Water Resources Engineering Conference, Seattle, WA, American Society of Civil Engineers, August 1999.

Galler, J.J. and Allison, M.A**.**, 2008. Estuarine controls on fine-grained sediment storage in the lower Mississippi and Atchafalaya Rivers. *Geological Society of America Bulletin* 120:386-398.

Nittrouer, J.A., Allison, M.A., and Campanella, R., 2008. Evaluation of bedload transport in the lower Mississippi River: implications for sand transport to the Gulf of Mexico. *J. Geophysical Research-Earth Surface Processes* 113, F03004, doi:10.1029/ 2007JF000795.

Soileau, C.W., Garrett, B.J., and Thibodeaux, B.J., 1989. Drought induced saltwater intrusion on the Mississippi River, *in* Magoon, O.T., et al., eds., Proceedings of the sixth symposium in coastal and ocean management: New York, *Proceedings, 6th Symposium on Coastal Zone Management, American Society of Civil Engineers*, p. 2823–2836

[i] The Corps of Engineers is authorized to operate and maintain navigable channel depths in the Mississippi River, Baton Rouge to the Gulf of Mexico through the River and Harbor Acts of 1945, Sec 2 (PL 79-14) and 1962, Sec 101; (PL 87-874); Supplemental Appropriations Act of 1985, (PL 99-88); and WRDA of 1986, Sec 201 (PL 99-662) The Pilottown anchorage area dredging is authorized through CWPPRA (PL 101-646)

Corps' West Bay Work Plan Responses to the Agency Wide Work Plan Comments
April 2, 2009

No.	US Fish and Wildlife Service	Corps' Response
1	The Task Force Motion should be placed in the Work Plan Introduction (page 1) to give everyone an overview of the exact nature of the Task Force charge to the project sponsors (Corps and State). The Task Force at its January 21, 2009, meeting stated that the Work Plan should include, 1) an analysis of current and historic bathymetry and other data and a quantification of total historic and recent shoaling before and after West Bay construction, 2) estimates of the volume of shoaling resulting from the project, natural processes, and sediment removed from the river by the diversion resulting in less sediment moving downriver, and 3) provided that the final report be completed within 6 months.	**Concur. The motion has been added to the Introduction on Pages 1 & 2.**
2	The work plan should be revised to include a review of the data and findings Mitch Andrus' recent (2007) thesis, "Sediment Flux and Fate in the Mississippi River diversion at West Bay: Observation Study", in addition to the State's current effort with BCG to update river bathymetry and other historic studies. Those items being completed by the State through the BCG study should be described in the work plan, and if adequate, no additional CWPPRA effort needs to be made in those areas. If existing information (i.e., Andrus 2007), and the State BCG report are able to provide answers to many of the Task Force (TF) requests, then the work plan can be reduced considerably. We recommend that the study boundary limits be extended to SW Pass in order to provide data for modeling the effects of the WB diversion in possibly reducing sedimentation in that area. And finally, much of the "materials and methods" discussion concerning sampling devices could be relocated to an appendix.	**Concur - We will review the Andrus (2007) thesis to determine what data contained in that document can be used for this work.** **See Comments 22 and 24 below.**

No.	US Fish and Wildlife Service	Corps' Response
3	Page 1, First Paragraph, Last Sentence - Knowledge from this West Bay (WB) effort would benefit other future diversions, but the main purpose for this effort is to analyze those items specifically mentioned in the January TF motion above.	**Concur. Changes to Page 1, first paragraph have been made.**
4	Page 1, Paragraph 2, Last Sentence - Add the following sentence, "The Technical Committee recommended funding $10.99 M of the $118.5 M request to fund the immediate dredging of the Pilot Town Anchorage Area (PAA)."	**Concur. Added to Page 1, Paragraph 2, last sentence.**
5	Page 1, Paragraph 3, First Sentence - The sentence should be revised to state that the Task Force approved $28.6 M for the West Bay project that includes $10.9 M for immediate PAA maintenance dredging with the remainder ($17.7 M) for PAA dredging and possible closure in 2012.	**The exact motion is quoted in this paragraph. The paragraph was modified so that the motion is in quotes.**
6	Page 1, Paragraph 4 - Insert the January 2009 Task Force motion (or a summary) as paragraph 4 or earlier.	**Concur – Added as paragraph 4.**
7	Page 1, Last Paragraph, Sentence 2 - The existing WB CWPPRA monitoring program should be assessing project performance with no need for additional monitoring. Project performance is not specifically mentioned in the January 2009 Task Force request. The most effective monitoring activity is the measurement of accretion in the WB receiving area. The current State OCPR study to be completed by April 2009 includes receiving area bathymetric surveys. Keith O'Cain stated at the West Bay Work Plan meeting that the Corps is performing monthly cross sections of the WB channel and MR channel adjacent to the WB diversion. This information should be incorporated into the final report.	**This sentence refers to the utilization of existing monitoring data to evaluate project performance. The sentence was modified for clarification.**
8	Page 1, Last Paragraph, Last Sentence - The Corps should incorporate data from Andrus (2007), the current State BCG	**Concur – End of Paragraph modified to include the specific academic studies and the BCG effort. Reference has been added to the end of the document.**

No.	US Fish and Wildlife Service	Corps' Response
	study, and others.	
9	Page 2, Background, First Paragraph - Revise the sentence to state that Mississippi River diversions are also in CWPPRA's Coast 2050 plan, the Louisiana Coastal Area Plan (LCA), and the LACPR plan.	**Concur – Changes made**
10	Page 2, paragraph 2, Second to Last Sentence - Revise sentence to add, ". . . CWPPRA West Bay project Task Force approval was provided in 1991 as part of the first CWPPRA PPL list."	**Concur – Changes made**
11	Page 2, Paragraph 3, Last Sentence - Add Andrus' 2007 thesis citation to the sentence	**Concur – Changes made**
12	Page 2, Paragraph 4, First Sentence - Revise sentence to, ". . . and the PAA the extent of this WB induced shoaling is currently unknown." The purpose of pre and post elevation surveys in the channel and PAA is to determine how much shoaling has actually been induced by the WB project. Models can project, but pre and post survey data can show us what is actually happening in the field. Even though surveys may indicate that the PAA shoaled after WB construction, this doesn't mean that the WB diversion caused a part or all of that shoaling. Four major hurricanes, and high river water events, have hit the LA coast since 2005 which could have contributed greatly to any shoaling.	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan".**
13	Page 2, Paragraph 4, Sentence 6 -Revise to, "Above the cut, three 40-feet deep by 1,500 long. . ." Presently the sentence states this as "4-foot" deep berths.	**Concur/Non Concur – Made changes to "45-foot deep"**
14	Page 2, Last Paragraph, First Sentence - Revise sentence to, ". . . not specifically authorized to dredge the Pilot Town Anchorage Area except through CWPPRA." The Corps has authorization through CWPPRA.	**Concur – Changes made**

No.	US Fish and Wildlife Service	Corps' Response
15	Page 2, Last Paragraph, Last Sentence - There is a high probability that the WB diversion is reducing the amount of dredging needed in Southwest Pass thus saving Corps' maintenance dredging funds in that area.	**Non Concur – Operations Division has not experienced a reduction of material in Southwest Pass since the construction of West Bay. We will utilize the 1D effort to look at shoaling trends in SW Pass as they relate to West Bay.**
16	Page 3, Prior to Current West Bay Issues - The Corps and OCPR should include the major elements of the January 21, 2009, Task Force motion either in the Background section above or in a new section entitled, "CWPPRA Task Force West Bay Tasks" either in the Introduction, after the Background Section, or on page 4 in the Comprehensive Systems Approach. "Mr. Graves made a motion to require the USACE and State of Louisiana, with participation from the CWPPRA Technical Committee and consultation with the maritime industry and other interested parties, to finalize a Work Plan on river shoaling in the area of the CWPPRA West Bay Diversion Project by February 28, 2009. "The Work Plan shall include *(note: numbering and separation added)*; 1) an analysis of current and historic bathymetry and other relevant data on this region of the Mississippi River 2) and a quantification of total historic and recent shoaling that has occurred in the area before and after the construction of the project. 3) The report resulting from the Work Plan shall include estimates on the volume of shoaling resulting from the project, shoaling from natural processes, and an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion.	**Concur – The motion has been added to the Introduction.**

No.	US Fish and Wildlife Service	Corps' Response
	4) A final report resulting from the Work Plan shall be provided to the Task Force within six months. 5) The motion also requires that the draft and final Work Plan and report be independently reviewed by a team of experts within 30 days of completion of each document. The independent review team should consist of the CWPPRA Academic Advisory Group and the LCA Science and Technology Program. Dr. Watson seconded. The motion was approved by the Task Force." (January 21, 2009, CWPPRA Task Force Meeting)	**Concur.**
17	Page 3, Current West Bay Issues, Issues B, Paragraph 2, Sentences 2 and 3 - These sentences seem to be a repeat of the same items in Issue A above, consider removing them or incorporating them into Issue A.	**Non Concur – Issue B is a different Issue from Issue A**
18	Page 3, Current West Bay Issues, Issues C, Paragraph 3, Last Sentence - The current carrying capacity of the conveyance channel is known. Those flow rates were reported by Amena Henville and Keith O'Cain at the Task Force meeting and the recent West Bay meeting.	**Concur – But it should remain in document. We will include the discharge capacity results in the West Bay work plan report.**
19	Page 3, Current West Bay Issues, Issues D, Paragraph 4, Sentence 2 - Most of the questions in this section refer to information we need to determine the WB diversion's current success. Sentence 2 refers to the amounts and characteristics of sediment entering the WB area. The Task Force did not request a detailed analysis of WB sediment characteristics, but if that characterization could be done economically it would provide helpful information. The TF wanted the study to focus on the volume of WB receiving area sediment and to determine how much sediment would not travel to SW Pass to possibly be dredged there.	**Concur – Once the multidimensional model is constructed to evaluate shoaling in the lower Miss. River this effort can be done economically.** **We will include SW Pass in both the 1D and the multidimensional effort. The 1D effort will be utilized to assess large scale sediment transport/deposition in SW Pass.**
20	Page 3, Current West Bay Issues, Issues	**Andrus' Thesis does provide this information up to**

No.	US Fish and Wildlife Service	Corps' Response
	E, Last Paragraph - The questions listed here all refer to the main question, "Is the WB receiving area shallowing, and if so to what degree?" Mitch Andrus (2007) answered this question up to 2006 in his thesis, and the State BCG report should provide current data on this issue that should be incorporated in the WB report.	**2006. It is our current understanding that the BCG effort will not evaluate the receiving area.**
21	Page 4, Task 1, First Full Paragraph - Pre and post shoaling data in the PAA and WB receiving areas is an important item in this task to determine if shoaling occurred in the PAA prior to WB implementation. OCPR through its contractor BCG is currently analyzing this data to be made available in a final report in April 2009. The Corps should integrate the State's efforts and thus reduce Work Plan tasks by eliminating those items being done by the State to minimize duplication and expense.	**This paragraph refers to new data collection not existing data** **A specific objective of the geomorphic analysis is to determine if large scale, long-term changes are occurring in the reach, and to determine if observed shoaling in the anchorage is influenced by these processes. The scope and results of the BCG data analysis will be assessed and integrated with the Work Plan as appropriate, but additional analysis will be required to address any long-term morphological adjustments.**
22	Pages 5 to 10, Survey Methods, First Paragraph - Pages 5 to 10 discusses very well but in detail the various parameters to be measured. We recommend that the survey methodology be listed and briefly described in the main report with the detailed methodology with photos placed in the appendix to make the plan more readable.	**This document is a proposal, not a technical report. While we appreciate layout suggestions, the addition of an appendix that contains the photos seems unnecessary. Appendices will be provided in the technical report.**
23	Page 5, No. 1 One-Time Surveys, Paragraph 3, First Sentence; Page 7 Figures 2 and 3 - We recommend that bathymetric and other surveys extend to Southwest Pass if economically feasible and not limited to +/- 2 miles of the WB diversion.	**The surveys can easily be extended to include Southwest Pass. However, extending the limits of the surveys will increase the time and cost.**
24	Page 10, Task 2, Last Paragraph, First Sentence - We recommend that the detailed geomorphic assessment be continued southward of Head of Passes into SW Pass in order to provide data for modeling the effects of the WB diversion on reducing sedimentation in that area.	**The purpose of the geomorphic assessment is to determine the long term, large scale morphologic changes impacts plus the impacts of operation of the West Bay Diversion on sediment deposition and subsequent dredging in the Pilottown Anchorage Area. The downstream limits of the geomorphic assessment can be extended to include SW Pass. Extending the**

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		work beyond the original limits of the study will increase the cost and time to complete.
25	Page 11, First Partial Paragraph, First Sentence - This section describes some of the Task Force's main issues it wanted investigated, namely the documentation of the lower MR historic trends in hydrology, sedimentation and channel geometry.	**Concur**
26	Page 11, No. 6., Events Timeline Analysis, Last Paragraph, First Sentence - Revise sentence to, ". . . as well as anthropogenic influences (i.e., hopper dredge disposal at Pass a Loutre and South Pass, and normal dredging activities). . ."	**Concur – Changes made**
27	Page 12, No. 7, First Paragraph - We support gathering information to help answer one of the TF's main requests, "How much PAA shoaling is due to the WB diversion?"	**Concur**
28	Page 13, First Incomplete Paragraph, Last Sentence - We support the collection of sediment data to greatly improve 1D modeling in the West Bay area.	**Concur**
29	Page 13, No. 1, Channel Geometry, Second Paragraph - Current channel geometry in the WB vicinity to SW Pass should also be determined.	**The initial survey has been completed (March 2009). The limits of that survey extended to two miles below the diversion. Extending the work beyond the original limits of the study will increase the cost and time to complete.**
30	Page 13, No. 4 Flow and Sediment Data, Last Paragraph, Second Sentence - Andrus (2007) may have measured sediment loads passing through the diversion.	**Concur - We will review the Andrus (2007) thesis to determine what data contained in that document can be used for this work.**
31	Page 14, Second Paragraph, 1D Model Limits, Sentence 5 - We recommend that the study boundary limits extend south of Head of Passes to the SW Pass jetties in order to determine possible diversion effects on sedimentation in SW Pass.	**Concur - The modeling effort will be extended to include that reach.**
32	Page 14, Paragraph 3, 1D Model Simulations, Sentences 5 and 6 - HEC-6T modeling to predict deposition/sour trends	**Non Concur - "After the diversion" observed bathymetry would show the sedimentation at that point in time. The purpose of the 1D model would be**

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	with and without the WB diversion would be interesting, but before and after bathymetry would show the sedimentation present before and after the diversion. However, it would not provide information concerning what caused the shoaling; the WB diversion and/or other factors (i.e., hurricanes, river modifications, river stage).	**to use a 50-year simulation to predict long term sedimentation impacts of the diversion not just what has occurred to date. Observations can be used to validate the model, by determining whether and how well the model can predict the observations. The model, in turn, can be run with and without project features to yield information concerning the causes of the observed changes, provided that the model is sufficiently robust to represent the physics of all of the relevant processes correctly.**
33	Page 15, First Paragraph, Task 3 - Proposal 1, Sentence 4 - The reach should extend below Head of Passes to SW Pass.	**The purpose of the proposed 1D modeling effort was strictly to evaluate the impact of the West Bay Diversion on sediment deposition and subsequent dredging in the Pilottown Anchorage Area. That is the reason that we proposed the downstream limit of the model to be at Head of Passes. If we also want to look at the impacts in Southwest Pass, then the model could be extended to include that reach.**
34	Page 15, Second Paragraph, Last Sentence - Drafts should also be reviewed by the CWPPRA Technical Committee, Academic Advisory Committee, and LCA S&T Program.	**Concur – Changes made to document**
35	Page 17, Second-to-Last Paragraph, Task 4 - Proposal 2 - Proposal 2 deals with predicting fine sediments passing through the WB diversion using the ADH model. We do not know if this degree of modeling is necessary because this question may also be answered by measuring the composition of fine sediments that currently exist in the diversion outfall area.	**These measurements are vital to understanding what types of sediment are retained in the outfall area, but they will not yield complete information concerning the quantity and nature of the sediments that are diverted. This is because some fraction (as yet unknown) of the sediments do not accumulate, but rather are lost to tide or are re-suspended and transported away by wind wave action. Modeling can be used in conjunction with these observations to evaluate the trapping efficiency of West Bay, and to determine what, if any, action can or should be taken to improve this trapping efficiency. The composition of sediment deposits usually does not provide sufficient information to determine how the concentration and composition of sediments diverted from the river varies with flow and stage. Process based models, such as ADH, can be used in conjunction with field measurements of suspended sediment load, flow, bed material composition, etc. to improve estimates of the diverted sediment load, a key parameter to understanding the diversion impacts on downstream**

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		sedimentation.
36	Page 18, Task 5, Paragraph 4 - Summarizing the historic engineering activities that have been completed in the lower MR would be helpful in understanding the system and projecting other potential causes of PAA and MR channel shoaling.	**Concur**
37	Page 19, Paragraph 3, Approach, First Sentence - West Bay land/water analysis from 1956 to the present may have been completed according to Clint Padgett's WB Work Plan meeting presentation. Sentence 3 - The bathymetric survey comparison will be very valuable.	**We will coordinate with Mobile District (Clint Padgett) to avoid duplication of effort.** **Concur**
38	Page 20, First Paragraph, First Incomplete Sentence - We do not agree that modelers of national reputation from outside of Louisiana are necessarily needed to review this effort unless they are already a part of the LCA S&T Program. Sentence 3 - The "close-in review" is a good idea as long as it doesn't slow the data collection and draft report preparation.	**The "modelers of national reputation outside of Louisiana" are a part of the LCA S&T program.**
39	Page 20, Paragraph 2, Address Issues A, First Sentence - This sentence re-states one of the main TF questions for this effort. The TF requested an estimate of shoaling from the WB project, natural processes and the estimate of sediment removed from the MR which could result in decreased shoaling downstream. The OCPR BCG study may provide answers to many of these issues and should be incorporated in the final report.	**Concur – The scope and results of the BCG data analysis will be assessed and integrated with the Work Plan as appropriate, but additional analysis will be required to determine if large-scale, long-term morphological adjustments are occurring in the study reach which may be influencing shoaling in the anchorage area.**
40	Page 20, Last Paragraph, Sentence 3 - Bathymetric data will show how much shoaling has occurred in the PAA but will not be able to determine what caused that shoaling.	**Concur**
41	Page 21, Paragraph 3, Sentences 1 to 3 - We do not agree that bathymetric data answers the question "why" and modeling	**The geomorphic assessment is not just a review of recent bathymetric data. It is a more comprehensive analysis directed at identifying long-term, large-scale**

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	answers the question "how much" concerning WB diversion shoaling. Data will tell us how much shoaling is occurring. Models can simulate, based on data, what may happen under different circumstances, but actual data can tell what is actually occurring or has occurred.	**processes influencing the study area, an essential component of "why". Within that context, models can be used to estimate "how much" is attributable to various processes at shorter time-scales. Data can only tell us how much shoaling is occurring or has occurred to the present. A 1D model provides a means to predict shoaling trends for the long term.** **Observations can be used to validate the model, by determining whether and how well the model can predict the observations. The model, in turn, can be run with and without project features to yield information concerning the causes of the observed changes, provided that the model is sufficiently robust to represent the physics of all of the relevant processes correctly.**
42	Page 21, Last Paragraph - Andrus (2007) may have collected some data on the characteristics of flow and sediment passing through the diversion.	**Concur - We will review the Andrus (2007) thesis to determine what data contained in that document can be used for this work.**
43	Page 22, First Paragraph, Second-to-Last Sentence - We agree that measuring sediment concentrations over a wide range of flows would be valuable, but question whether we have the time in this study to do so.	**Concur - A long term measurement program is needed. However, even a limited dataset will be valuable to the proposed effort, and we have to start somewhere. Previous model studies have indicated that the sediment diversion ratio is a significant variable. The proposed field data collection effort should reduce the uncertainty in current estimates.**
44	Page 22, Address Issues D, Paragraph 2, First Sentence - Although we understand the value of gathering this information, the proof of WB sediment retention is in measuring accretion rates within the WB receiving area. The Task Force did not specifically request this information in their January 2009 West Bay motion, however, Andrus (2007) (page 107) discusses sediment retention in the WB receiving area and may provide information for this issue.	**Non Concur – The Corps' position is that Issue D should remain as an option for completion after the initial 6 month effort. This issue will be investigated through Task 4, Proposal 2, which is the silts and clays portion of the multidimensional modeling effort. This component is critical to determining the project's anticipated National Ecosystem Restoration benefits which assist in determining if the project is economically justified. We will modify the language in the document to reflect this.** **Andrus (2007) is not a modeling effort that can predict outcomes under various sediment loading conditions through West Bay into the receiving area.**
45	Page 22, Last Paragraph - The current ecological benefits of West Bay are related to the degree of accretion in the	**Concur – We are not planning to gather this type of data. This statement is referring to an attempt to answer these questions with existing information.**

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	WB receiving area, the amount of subaerial marsh (land) produced by the diversion, and any submerged aquatic vegetation present currently but not present prior to the diversion. Accretion in the WB receiving areas is currently being measured by the OCPR BCG contract and has been proposed in the Work Plan. Water depths and accretion data will show if any submerged sediments have moved to the "photic zone" and thus has contributed to increased area productivity. We do not feel that measurements of epiphytic or bottom algae is warranted as part of this study. Proof of the WB project's ecological success will ultimately be the amount of marsh it restores.	
46	Page 23, First Incomplete Paragraph, Sentences 1 to 3 - These questions have been and will be answered by Andrus (2007), the current State BCG study, and current project CWPPRA monitoring and these sources should be acknowledged in the Work Plan (WP) and report. Last Sentence - This question has also been answered in that "SHREDS" were originally planned to be incorporated into the project design to aid in trapping sediment in the WB receiving area. We are pleased that a dredged material "island" is planned to be placed to retain sediment in the WB receiving area as a result of beneficial use of the 2009 PAA maintenance dredging cycle.	**Concur – We will utilize and reference Andrus (2007), the State BCG effort and the existing monitoring data where it is warranted.** **Concur – We are currently in coordination with the State on the placement of 2009 PAA dredge material. The State would like to place the material adjacent to the bank while the Corps' position is to place the material as an "island" in the middle of West Bay to slow velocities, bifurcate flows and increase sediment retention.**
47	Page 23, Paragraph 2, Sentence 2 - The WB receiving area OCPR BCG study bathymetric results should be incorporated in the WP and report. Last Sentence - The project sponsors in coordination with the CWPPRA Environmental Work Group can evaluate the current project benefits and compare those benefits to those estimated when the project was initially approved in 1992. However, the main benefits relate to the amount of marsh	**Concur – The State bathymetric survey of the West Bay receiving area is not part of the OCPR BCG effort. This survey is a component of the project monitoring.** **Concur – The revised benefits analysis is dependant on the results of the receiving area survey. It will only be necessary of it appears that we are not accumulating land at the "rate" that was originally predicted and if we are not anticipating the diversion to build marsh over the next 15 years.**

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	restored by the diversion. At present, the only marsh restored is that resulting from the PAA beneficial use events of 2003 and 2006.	

No.	OCPR	Corps' Response
1	The OCPR West Bay Shoaling Assessment, initiated in 2008 by OCPR and independent of CWPPRA, is expected to be completed within the next couple of weeks. As OCPR and many of the commenting CWPPRA partners have indicated, it is evident that much of the information, data, conceptual approaches, and subject matter proposed in the CWPPRA Draft Work Plan are either very similar or at the least overlapping with the soon-to-be completed OCPR assessment. As such, OCPR would recommend - as other partner comments have affirmed - that it would be most efficient to include the OCPR Assessment efforts into the CWPPRA Work Plan.	**Concur – The 1D modeling effort being conducted by BCG can potentially be utilized for work plan efforts as long as we receive the model and supporting information in sufficient time.** **The geomorphic assessment in the work plan is not a duplication of the BCG geomorphic assessment. The work plan effort (Task 2) is a large-scale/long term geomorphic assessment whereas the BCG effort is a local West Bay assessment using channel surveys. This analysis is limited spatially and temporally and is not considering long term changes in the river.**
2	OCPR would recommend that the most practical manner to accomplish this would be to insert a Task into the beginning of the CWPPRA Work Plan as a "pre-step" that allows the CWPPRA Technical Committee, the Academic Advisory Group, the LCA Science an Technology Program, and other independent third party review entities an opportunity to evaluate and review the OCPR Assessment. At the conclusion of this Task, the necessity of the remaining Tasks in the Work Plan would be reevaluated by these parties so as to eliminate any duplicity and to determine if any or all portions of the remaining Tasks are essential to satisfy the requirements outlined by the Task Force Decision. OCPR believes that this approach will allow the CWPPRA Effects Evaluation to fully realize benefits from the previous work conducted by the OCPR Assessment without delaying or hindering progress	**In order to meet the 6 month timeline required in the Task Force Motion, the work plan efforts should proceed as soon as we obtain final approval and funding.** **ERDC has reviewed the BCG geomorphic assessment and determined that the work plan effort is not a duplication of effort. Please see comment #5 and #9.** **The Corps' has conducted an initial assessment of the State's 1D model. The modeler, Mr. Tony Thomas, states that this model only provides the relative impact that different combinations of the alternatives would have on the volume of sediment that has been dredged in the study reach. This is not a study to compute the volumes of dredging. The results are presented as percentages of a base value. Therefore, the study is not classified as a Computational Model Study. It is classified as a Computational Analysis Study. ERDC believes that this means that a detailed calibration was not conducted for sediment. To use this model to quantify sediment deposition and dredging it will require a detailed sediment**

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	toward completion.	**calibration.** **The Corps submitted a request to the State through the West Bay PM, Robert Routon, to send the 1D model and supporting hydraulic information to ERDC, the LCA S&T Peer Review Members and the CWPPRA Academic Advisory Board for further review. If ERDC and reviewers deem the model sufficient to address the West Bay objectives outlined in the January 21 Task Force Motion, it can be utilized as the base 1D model as part of the work plan effort. ERDC can then perform a detailed calibration of the model to quantify sediment deposition. This model can also be utilized as input to the multidimensional modeling effort.** **The State has responded that they will provide the model in 2 weeks, which is April 16, 2009. We are still requesting full funding for the work plan 1D modeling effort because adjustments and additional runs will be required for the State's model as is required for the Corps' MVD 1D model.**
3	OCPR is concerned that the existing Draft Work Plan possibly places too much emphasis on new multi-dimensional modeling efforts that also require new data collection, both of which can be expensive and time-consuming. OCPR would propose, as some of the initial Tasks in the Draft Work Plan outline, that existing measured data from the Mississippi River and West Bay area be fully analyzed prior proceeding with further modeling. A perfect example that illustrates this point is a statement made by Dr. Ehab Meselhe at the recent Diversion Summit, "Models are an approximation of reality".	**The Corps' position is that the multidimensional modeling as well as the data collection efforts are justified to overcome previous shoaling prediction limitations. Sediment transport is a multi-dimensional problem due to spatial variation of suspended sediment concentration, both horizontally and vertically and spatial variation of water flux, and sediment mass transport, both horizontally and vertically.** **Existing measured data is limited and new Miss. River field data is needed to determine how much sediment is leaving through the West bay conveyance channel. Please see the work plan for more supporting information.**
4	As per the 01/21/09 CWPPRA Task Force Decision, the core of the issue at hand is whether or not the West Bay Diversion is inducing sediment deposition within the navigation channel, access area, and anchorage area. OCPR agrees with the Task Force Decision and direction that the issue is best addressed by analyzing the existing bathymetric data from the Mississippi River hydrographic survey	**Please see comment #3.** **Observations can be used to validate the model, by determining whether and how well the model can predict the observations. The model, in turn, can be run with and without project features to yield information concerning the causes of the observed changes, provided that the model is sufficiently robust to represent the physics of all of the relevant processes correctly.**

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	books and channel condition surveys. A large amount of this data exists for both pre and post construction time frames. The changes in channel geometry and volume of sediment deposited or eroded from the area(s) in question are the parameters that the proposed modeling strives to reproduce. OCPR contends that a multi-dimensional numerical model is not necessary when an accurate, graphical representation of the channel geometry through time can be constructed from the existing data.	
5	Because dense bathymetric data is readily available, as well as gage records of river stage and duration, flow data in the main channel and at major outlets, tropical storm history, and knowledge of anthropogenic influences (dredging/disposal, channel training structures, etc.), OCPR believes that an analysis of the empirical data should be the cornerstone of this investigation. The geometric analysis will reveal long and short term erosion/deposition trends. These trends can then be examined and explained in the context of natural and anthropogenic influences that are operating in the larger system of the bird foot delta.	**Concur. The plan outlined by the State is certainly a part of the detailed geomorphic assessment proposed by ERDC in the CWPPRA West Bay Sediment Diversion Draft Plan to Evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area. However, the ERDC geomorphic assessment proposal also includes an analysis of sediment data which evaluates changes in sediment loads, sources, and sizes. Changes in sediment characteristics are an important part of a geomorphic assessment.** **The integration of the analyses of all these geomorphic assessment data will provide the basis for the determination of both long term and short term sedimentation trends in the anchorage area. Often times the analysis results of an individual dataset may conflict with the results of other analyses. Therefore, it is important to interpret all results in the context of the entire system and all data and events (natural and manmade) in order to make the most accurate description of the dominate processes that have influenced sedimentation in the study area. It is also important to remember that a geometric analysis of this nature focuses on observed data which gives a description of conditions at specific times. An observed change from one time period to another is a cumulative response resulting from all influencing forces acting on the system during that span of time. Careful engineering judgment must be exercised when attributing an observed system response to a specific cause or event, because the response may be due to multiple factors with varying degrees of influence.** **For geomorphic assessments, both temporal and spatial limits are important. Analysis of channel geometry, stage and flow data, dredging records, sediment data, and natural and anthropogenic influences should be over a sufficiently long enough period of time and over a sufficiently large enough reach of river to determine long term, large scale geomorphic trends. Initial channel geometry analysis by the State included annual channel condition surveys from 1997 through 2008 which extended a few miles upstream and a few miles downstream of the West Bay Diversion. In our opinion, this data does not have adequate temporal or spatial limits to determine if any long term, large scale geomorphic changes are impacting sediment deposition rates and patterns in the vicinity of the West Bay Diversion.**

No.	OCPR	Corps' Response
6	OCPR agrees with USEPA's comments in that Issues A and B, as defined on page 3 of the current Draft Work Plan, are the heart of the "induced" shoaling issue. Issues C-E, while important issues - deserving of further study in order to increase our overall knowledge of sediment diversions - focus more on the performance of the sediment diversion and are not necessary to satisfy the Task Force Decision request to address the issue of "induced" shoaling in the Mississippi River near the West Bay Diversion.	**Efforts C-E are part of the project existing monitoring process. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan.**
7	**Background** The fourth paragraph, first sentence of the Draft Work Plan reads, "*The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation* *channel and the PAA.*" It is OCPR's understanding of the Task Force Decision that the intended purpose of this Work Plan, as outlined under "Issues A" within the Draft Work Plan, should be to determine the validity and degree of accuracy of this very statement. As such, OCPR would request that this conclusion be removed from the work plan background.	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan".**
8	Task 1 The stated goal of this data collection task is to serve as the primary foundation for increasing the usefulness of any additional modeling efforts. OCPR has not yet concluded that additional advanced modeling is required to answer the questions set forth in the Task Force Decision and therefore is unsure as to the necessity of this Task. In addition, OCPR has concerns that the data collection proposed would provide only a "snap shot" of conditions that exist in one flood year. This effort may not capture interannual variation of the measured parameters. It is also questionable as to if the data collection team could be mobilized in time to collect data	**The samples to be collected in the anchorage are not actually core samples. We are collecting surface grab samples of the bed sediments. If this is what is being referred to, then the bed sampling program could easily be extended to obtain additional samples at a minimal cost for the analysis of the samples.** **We could install horizontal ADCP (Hadcp) units at the diversion and get cross-sectional flow information as a time history. We could even make them real time. Those installations usually require two to three piles to be driven. Piles usually cost about 3k each plus the mobilization cost for a pile driving crew which is typically around 10K. For a one year deployment the instrument is about 15k to purchase and the data logger is about 10K with modem service for the year. This additional data would provide more definition as to the flow characteristics for the diversion through**

No.	OCPR	Corps' Response
	throughout the entire 2009 flood cycle. Irrespective of those issues, if this task were to proceed, OCPR would recommend that additional core sampling locations be added to the anchorage area. In addition, USGS flow meters should be installed in West Bay with accurate surveys that extend into the outfall area. These actual measured flow rates could then be used in models to predict sedimentation in the anchorage basin.	**out the entire hydrograph.**
9	Task 2 The outline for this task is extremely similar to the Scope of Services for the OCPR West Bay Shoaling Assessment that is currently nearing completion. As stated earlier, this data analysis could be the cornerstone of this CWPPRA Effects Evaluation effort. It has also been recommended that a good source of bathymetric data can be found in the Mitch Andrus' thesis concerning West Bay.	**The geomorphic assessment in the work plan is not a duplication of the BCG geomorphic assessment. The work plan effort (Task 2) is a large-scale/long term geomorphic assessment whereas the BCG effort is a local West Bay assessment using channel surveys. This analysis is limited spatially and temporally and is not considering long term changes in the river.**
10	Task 3 The work outlined in this task is once again a near replica of the 1-D modeling work that is currently being undertaken by Mr. Tony Thomas thru BCG in the OCPR West Bay Shoaling Assessment. Pg 13, Task 3: there have been statements made that the earlier models were "deficient", without a detailed account of the specific deficiencies. ERDC has a report that investigated the four earlier models and outlined the issues with them. This report should be incorporated as a source of information for the Work Plan and also made part of any future Work Plan discussions. It would be beneficial to see where the deficiencies arose and what any new proposed modeling efforts would incorporate to prevent those same issues from hampering the present effort. OCPR would recommend that any future modeling would consider both the pre-dredged and post-dredged anchorage area.	**Please see comment #2 above,** **The report that is referred to that compares three of the previous West Bay modeling efforts has been sent to Robert Routon with the State and can be utilized as a reference in the work plan.** **The previous (2000) West Bay modeling lacked a long term multi year analysis and the multidimensional modeling had issues with the grid resolution and boundary condition specifications. The new ADH model contains several features which will allow for mitigation of previous modeling limitations. Additional supporting discussion is included in the work plan under Task 4.**

No.	OCPR	Corps' Response
11	Task 4 OCPR would recommend that any future modeling would consider extending boundaries down to the Southwest Pass. However, OCPR has not concluded that a multi-dimensional modeling effort is necessary until a thorough analysis of existing data has been completed and the further Tasks can be reevaluated.	**Long term 1D modeling results are dependent upon estimates of the sediment diversion ratio. The proposed field data collection and multi-dimensional modeling efforts are required to quantify the sediment diversion ratio for a wide range of flows.** **The multidimensional model will include Southwest Pass, since it will include the entire bird's foot in order to extend the downstream boundary to the Gulf. However, the model will not be configured to answer questions in Southwest pass, since the current application is designed to answer questions in the vicinity of West bay only. At a later date, when other improvements have been added to the model (such as 3D, salt transport, fine sediment transport) the model can be used to answer questions at Southwest Pass.** **The addition of SW Pass to the 1D modeling effort will be sufficient to look at large scale shoaling trends in SW Pass downstream from the Diversion as they relate to the West Bay Diversion.**
12	Task 5 OCPR considers this to be extremely pertinent information and would like to see what has already been completed by Mr. Broussard at the NOD. Although some of this information may have been compiled by the OCPR West Bay Shoaling Assessment, an effort should be made to ensure that all Tasks benefit from this effort and any existing reports.	**Task 5 has not begun and was pending approval of the Work Plan. Since OCPR would like to see this effort begin we will start immediately.**
13	Task 6 OCPR considers that this task is specific to the performance of the West Bay Sediment Diversion, and is not necessary essential to address the core issues specified by the CWPPRA Task Force Decision.	**Efforts C-E are part of the project existing monitoring plan. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan.**
14	Task 7 Information pending.	**Malene Henville with MVN has completed this effort. This input will be included in the final work plan.**
15	Task 8 OCPR considers this Task to be critical and would again propose that a review of the OCPR West Bay Shoaling Assessment by all parties be included as a separate "pre-step"after which the remainder of the Work Plan can be reevaluated so as to minimize duplication.	**Please see comment #2 above.**

No.	NOAA	Corps' Response
1	As noted by more than one individual at the Diversion Summit, sediment transport modeling is not fully mature. ERDC should therefore consider presenting an uncertainty analysis with their sedimentation/sediment transport predictions (as well as the other predictions). This will assist stakeholders with understanding the results. For example, if in attempts to address Issue B, ERDC presents estimates along the lines that approximately 80% of the shoaling below the West Bay diversion is attributable to the project and 20% is related to larger-scale issues, we'll want to know if their estimates are +/- 50% or +/- 20%, for example.	**Concur. Study results will be assessed in terms of uncertainty as appropriate.**
2	The state is apparently embarked on an evaluation of their own, as described in the document "BCG West Bay Efforts.doc". At the February 27, 2009 meeting, there was discussion of the state's efforts and a suggestion that their work be incorporated in the USACE workplan in some way, perhaps as an appendix. All agreed that the two efforts should at least be coordinated to the extent that the Corps work does not duplicate work already done by the state. We agree and suggest at a minimum that the state's efforts be included as an appendix and that the state's report be attached to the COE report when it is completed.	**Concur, The BCG work will be evaluated and incorporated as appropriate.**

No.	NOAA	Corps' Response
3	Task 8, External Peer Review. In general, we find their proposals for peer review to be quite good--especially the inclusion of two modelers with national reputations outside of Louisiana. They suggested one means of identifying such folks. Another potential group to query is the Advisory Committee on Water Information's Subcommittee on Sedimentation (http://acwi.gov/sos/index.html). Mathias Collins of NOAA recently joined this group and would be happy to inquire of them whether or not they feel they have a current member who meets that profile. They may or may not.	**Based on the Task Force Motion we have already included two LCA Science and Technology members that are outside of Louisiana (John Wells and Joseph Fernando) in addition to the CWPPRA Academic Advisory Group. Please see their comments below.**
4	Regarding price: It is an expensive work plan, but it has significant field data collection/analysis and multi-dimensional modeling components. Moreover, there will be a considerable effort to collect and analyze historical data sets (e.g., Task 2). So, the price is probably warranted, especially considering the expert personnel being proposed. But the project management line is on the high side, which is not uncommon for the USACE. It would be easier to more fully evaluate the budget if it were itemized to the task level.	**Concur – We will itemize the project management components to the task level.**
5	Regarding timing: Two budgets were presented during the Technical Committee meeting. One was for a six month study, and the other higher figure was for a 12 month study. Given the need to have this effort completed by the January 2010 Task Force meeting, the COE should be concentrating on the six month study effort. If it becomes obvious that the fine sediment modeling effort is needed, hopefully the six month effort will feed in nicely into the more extended modeling of silts and clays...	**Concur. We are concentrating on the 6 month effort. However, as the data begins to be collected and analyzed, we will be in a better position to determine if the extended 12 month effort is required.**
6	Adaptive management: During the Technical Committee meeting, we asked whether the COE was evaluating alternative measures to limit deposition in the Pilottown Anchorage or to capture greater amounts of sediment in the	**Concur - If engineering analyses conducted during this study indicates that viable alternatives may exist, then appropriate study modifications will be recommended to the Technical Committee.**

No.	NOAA	Corps' Response
	diversion. The answer was "no". We believe it may be useful to have some engineers evaluate actions that could be taken to improve the project or to lessen the sediment deposition in the anchorage. Based on the presentation provided during the meeting, it appears that the angle of the diversion in relation to Southwest Pass is slowly changing to capture greater river flows. Such an evaluation may be necessary.	
7	Coordination - there needs to be a clear commitment to coordination with the navigation industry in the work plan. Especially, if the COE evaluates potential changes to the project under the previous "adaptive management" paragraph. There hopefully could be a more specific time line that would identify when specific work items are to be completed and when Task Force or Technical Committee input would be expected.	**Concur. A specific time line will be developed that identifies the completion dates of each task.**
8	p. 6, line 3: Are 3 verticals adequate as a minimum number for transects of this length?	**Three verticals are adequate for the diversions and may be adequate for the river channel. We have the capability to determine the sediment concentration in real time and can add more verticals as necessary.**
9	p. 10, line 6: Bedload transport will be estimated using repeated multi-beam bathymetric methods. Given the importance of bedload measurements to results, has the USACE considered using an additional technique for comparison (e.g., a FISP bedload sampler)? The work plan suggests doing so for the suspended sediments (P-61 and ADCP). The bedload estimates may benefit from similar duplication.	**It could, but there is no guarantee that the other method will be more "accurate" or that an inconsistent result is necessarily an indication that a particular method is wrong. The FISP samplers are local samplers, whereas the multi-beam method provides results averaged across the cross section.**
10	p. 11, line 18: The work plan states that "Data from subsequent surveys will be used to develop..." What subsequent surveys are being referred to? Outside of this work plan?	**Correction: "subsequent surveys" should read "sequential surveys", referring to using sequential data sets to determine channel geometry changes with time. Changes were made in document.**
11	p. 14, line 29: What is the time step for the 1D model simulations?	**In general, the time step in HEC-6 is variable (usually correlated to flow) and dependent on stability considerations in the sedimentation computations and**

No.	NOAA	Corps' Response
		spatial resolution. For example, computed bed change during a single time step should not be large enough to significantly influence the flow field. As a practical matter when modeling long reaches of large rivers, it is often convenient to set the time step to 1 day and use mean daily flows in the boundary condition histogram (stepped hydrograph) for low to moderate flows with shorter time steps employed during periods of intense sediment transport during periods of high flow.
12	p. 19, Task 7: "Information Pending." ?	**Malene Henville with MVN has completed this effort. This input will be included in the final work plan.**

No.	EPA	Corps' Response
1	One of the most important considerations is whether the specific questions being asked on this issue are in fact the right ones. In large part, we feel this is the case.	**Concur**
2	We would like to point out that the primary emphasis should be placed on Issues A and B. Although issues C, D and E are relevant and important to our overall understanding of diversion processes, one might argue they are not explicitly called for in the January 21 Task Force motion. We would not suggest removing these items. However, if for budget or timing reasons, any reductions in the scope are called for, we would suggest these reductions not be applied to Issues A or B.	**Concur** **Efforts C-E are part of the project existing monitoring process. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan.**
3	The Task Force motion indicates the draft and final work plan will be independently reviewed by a team of experts including the CWPPRA AAG and LCA S&T program. We would recommend including Harry Roberts (LSU) and John Wells (Virginia Institute of Marine Science) in this effort if possible.	**Harry Roberts - The motion specifically identifies the LCA S&T program and the CWPPRA AAG. We have requested time and cost estimates from these groups for their review.** **John Wells is on the LCA S&T review board.**
4	Page 2; Background; 4th paragraph; 1st sentence: This sentence currently reads, "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA." This sentence should be deleted as	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan".**

No.	EPA	Corps' Response
	it is premature since the purpose of this study is make a determination as to whether or not the CWPPRA project induces shoaling.	
5	On a related note, as you may know, the Baptiste Collette channel is being dredged to accommodate navigation, and is associated with the larger MRGO closure effort. This channel is upriver of Main Pass and the sediment load/dynamics at that point might be expected to be similar to that experienced at West Bay. Given the current uncertainty regarding River shoaling, and the near-term opportunity to gain additional information about this issue from activities taken at the B. Collette channel, the Corps may want to consider pre and post construction monitoring and analysis of changes, if any, in River bathymetry in the vicinity of that channel as well.	**Concur**

No.	NRCS	Corps' Response
1	Our main concern is the potential "open-endedness" of the project's cost to the CWPPRA Program and the uncertainty of the ecological benefits. We want to emphasize that we are trying to determine the impact on CWPPRA, not any other study or program. Of primary concern to us is that this work plan will give us these answers. The work plan must be structured to provide an updated and sound estimate of project costs and benefits so that a truly informed decision can be made by the CWPPRA Task Force	**Concur – a detailed cost estimate will be included in the work plan.**
2	Specifically this document needs to address: 1) How much (total and rate) shoaling occurred prior to the West Bay project? 2) How much (total and rate) shoaling has occurred since the project was completed?	**Concur**

No.	NRCS	Corps' Response
	3) What percent of shoaling is attributed specifically to the West Bay project? 4) What is the projected shoaling and cost associated with the project for the remainder of the project life?	
3	What is the plan at the end of the project life? Will another program take over the maintenance dredging, or is there a closure plan anticipated? If an agreement is in place with the shipping industry to dredge to remove shoaling impacts due to the project, does the agreement end with the project life? What are the legal ramifications of this?	**Since this question is not directly related to the work plan we will respond separately.**
4	What is the revised estimate of land building for this project over time (e.g., by 2010, 2015, 2020, etc.)?	**We will not know this until Task 6 in the work plan is completed and we incorporate Andrus (2007) and Alex Kolker's (Tulane) study.**
5	What is the revised estimate of project cost, by year, through the project life, including closure if such is anticipated?	**Since this question is not directly related to the work plan we will respond separately.**
6	What are the projections for the scouring effect at the location of the project? The project was originally built as a 20,000 cfs diversion and monitored to determine if the river would be redirected through the West Bay channel. It is our understanding that the scouring was an anticipated effect of the project. Will this work plan investigate the effects of the scouring that is occurring? Specifically, will the scouring increase and ultimately become a new cost to the project that needs to be addressed, and is there a potential that the scouring effect will result in this issue of a potential change in the course of the river? The work plan should re-evaluate the original projection that the project's capacity would increase from 20,000 cfs to 50,000 cfs. What is the revised schedule for this increase, and what is the revised projection of channel dynamics?	**An analysis was conducted and presented on February 27, 2009 that outlined a conveyance channel (cc) discharge analysis and a cc cross section "migration"/change analysis. These findings will be included in the final West bay report at the conclusion of the study effort.** **It was never anticipated that the conveyance channel discharge capacity would increase from 20,000 to 50,000 cfs on its own. Phase 2 of this project called for constructing the cc to carry 50,000 cfs at the 50% stage duration on the MS River, after a determination that the cc would not "capture" the thalweg of the MS River. This construction has not occurred to date and the focus of the work plan is not to evaluate if this should occur.**

No.	NRCS	Corps' Response
7	Are the Corps and OCPR in agreement that this work plan will address these questions? NRCS is concerned that the Corps and OCPR may be simultaneously performing independent evaluations of the West Bay Project, and that this may not be a "project team" effort. If there are two evaluations, will the results of the two evaluations be combined into a single consensus project team point of view before it is given to peer review? Will the Maritime Industry be included in the Peer Review?	**The Corps and the State agree that the focus of the work plan should be in line with the Task force motion approved on January 21, 2009.** **The Corps and the State are in coordination to avoid duplication of effort within the work plan. We are trying to avoid two identical evaluations and will work towards consensus.** **Maritime will have opportunities to review the work plan and to comment before it's finalized. However, Maritime will not be included in the official peer review of the Work Plan report and findings. As per the Jan. 21st Task Force motion, peer review will be conducted by the LCA S&T Program and the CWPPRA Academic Advisory Committee.**
8	NRCS would like to see the cost and timeline more clearly defined in the work plan. If the panel for Peer Review is still being finalized, then the total cost of this work plan is not final either. Please show this information.	**Concur – a detailed cost estimate will be included in the work plan.**
9	Also, please provide a complete listing of approved project funds, expenditures to date, and balances by CWPPRA budget category. From what category will this work plan be funded?	**Since this question is not directly related to the work plan we will respond separately.** **The work plan will be funded from the O&M Engineering category.**
10	NRCS offers a final question that may not be relative to the work plan, but is of interest to us. What is the proposed use of the material from the emergency dredging of the Pilot Town Anchorage? Will it be placed adjacent to the bank or in the receiving area of the project, or in some other location? We would like to see this reported in the next briefing of this project to the Technical Committee.	**We are currently in coordination with the State on the placement of 2009 PAA dredge material. The State would like to place the material adjacent to the bank while the Corps' position is to place the material in an "island" in the middle of West Bay to slow velocities, bifurcate flows and increase sediment deposition. We will report on the status at the next TC meeting on April 15, 2009.**

No.	LCA Science and Technology Program	Corps' Response
1	**Overarching Comment.** The draft work plan states on page 2, paragraph 4, that… *"The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA"*. This statement gives the impression that it is a foregone conclusion that there is an established cause-effect relationship between the diversion and shoaling. Yet, the primary purpose of the draft work plan, as identified in Issue A, is in fact to answer the very question *"Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel"?* It may well be that a cause-effect relationship exists (as noted above, based on conceptual models), but it does not appear to have been definitively established a priori for the West Bay diversion and thus should not be stated as fact early-on in the draft work plan. This is a seemingly minor point but, given the contentious nature of the shoaling problem, every element of the work plan must be viewed as objective and credible, and without preconceived outcomes.	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan".**
2	**Project Goals and Deliverables.** We commend the authors of the draft work plan for identifying the most pressing questions and articulating them in a clear fashion. Obviously, the first-order issue is resolving the impact of the diversion project on magnitude and rate of shoaling but perhaps equally important, which will also be addressed, is a determination of how the shoaling could vary with changes in riverine processes and forcing. The large-scale geomorphic analysis will ensure that other longterm and spatially-distant factors are considered as well. Whereas it is unlikely that all of the goals will be met because of time and other limitations, the chances for success in answering the most fundamental cause-effect questions are reasonably good provided 1) the time line is significantly extended (see #5), and 2) the key representatives from each task maintain	**Time Line – see response to Comment 5 below.** **Coordination – Concur. It is important that the principle investigators for each task keep in close contact and exchange information and findings. The location of the principle investigators at the Coastal & Hydraulics Laboratory should make this task easier. The CHL is developing working relationships with other investigators to share information, and where appropriate, execute specific sub-tasks. The proposed field data collection effort will be lead by the CHL with assistance from Meade Allison and Alex Kolker.**

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	very close communication throughout the study to share data and findings, tentative conclusions, shortcomings in design, and other information that may be relevant.	
3	**Location and Extent of Shoaling.** The draft work plan is framed around the shoaling problems in both the PAA and the federally maintained navigation channel. However, the location and extent of shoaling is not shown in any of the figures, nor are there measurements or even estimates of the amount of shoaling in the work plan itself. Based on dredging costs and the urgency of resolving the role of the diversion in creating shoaling, it (shoaling) is clearly quite considerable. But more background is needed here. We recognize that Task 2, the geomorphic analysis, includes an analysis of available dredge records to determine patterns of sedimentation. However, it is not possible to fully evaluate the proposed field data collection and analysis work, especially with regard to sampling design and location of stage survey measurements, without more information on the "problem". For example, what is the pattern of shoaling relative to the conveyance channel, and what are the navigation depths in these areas? Annotation of the region of shoaling and mile markers on the figures would be helpful, as would bathymetry and other morphologic features in this section of the river.	**Concur. We will identify the limits of shoaling and locate these limits on the figures in the proposal.**
4	Comparison of Modeling and Observations. The West Bay Diversion Project appears to have failed in meeting anticipated outcomes due to a combination of factors, including cost overruns. After a substantial capital outlay for the first phase, the channel enlargement for the second phase has not been initiated, SREDS have not been installed and no direct evidence for land building or emergent vegetation exists. There is a possibility of abandoning the project and closure of the conveyance channel in FY 12 without reaping any	**Land building could be developing subaerially and could become emergent at some point in the near future.** **Acknowledged. A post construction verification study might yield useful insights, however that effort would require an expansion of the scope and completion of the additional work may not be feasible within the allotted time. Post construction verification would be hindered by a lack of historical monitoring data, particularly the response of the system to multiple extreme events.** **One of the primary purposes of the previous multi-**

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	obvious benefits. For future reference, we recommend that the preconstruction numerical model predictions (e.g. CH3D-SED studies by Gesssler & Pourtaheri, 2000) be compared to post-construction observations to learn what went wrong in modeling, more specifically the shortcomings of the model physics and boundary conditions. ERDC and LSU plan to use the ADH and CH3D sediment transport models (the former containing improved sediment transport model physics and improvements) and it will be useful to evaluate previous predictions of CH3D for the design phase against the bulk (sparse) observations made after the diversion. Note that Gesssler & Pourtaheri (2000) predicted enhanced shoaling immediate downstream, but no comparisons exist between observed and predicted shoaling.	**dimensional model studies has been to estimate the sediment diversion ratio. The proposed field data collection and multi-dimensional modeling efforts will provide insight into the reliability of sediment diversion ratio estimates.**
5	**Time Frame for Work Plan.** There is a glaring problem with regard to the apparent time line for the project. It is inconceivable that this work can be completed within six months. The measurement program will cover at least one flood year, model runs are in need of measurements to specify improved boundary conditions, runs with slug conditions, rising and falling limbs etc., all demanding time as is the case with 2D/3D simulations. HECT-6T model is still being implemented for the lower Mississippi River, and incorporation of the fine sediment module will not be ready for some time. As it stands, even with multiple institutions participating, at a minimum this is a two year project. On the other hand, the modeling task can be accelerated by judicious use of past data to specify boundary conditions so some preliminary estimates can be made to estimate shoaling induced by the diversion (with on-off diversion conditions). The runs, however, need to be validated and boundary conditions need to be updated as data become available. Another concern is the mismatch of timeframes for the proposed	**The time line for this effort is extremely short. However, the data collection program has already been initiated through funds provided by the LCA S&T Office. The 1D model development plus the multi dimensional model development will begin as soon as funds are available. The incorporation of fine sediment into the regional HEC-6T model is scheduled for completion by the end of April 2009. Both the 1D and the multi dimensional models will be developed based on assumed input parameters. Once the data from the acquisition program becomes available, this data will be evaluated and appropriate changes to the models will be made at that time.**

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	diversion closure and realistic time required for a study of this magnitude. Even if closure occurs, the results of this comprehensive study will be an asset in guiding future diversion designs.	
6	**Model Assumptions**. The bulk sediment accretion we presented above is an estimate based on many (and even sometimes unjustifiable) assumptions such as no bed adjustment near the diversion and uniform sediment distribution in the channels. The bulk model does not give spatial and temporal distributions of sediment deposition. The proposal uses perhaps the best available tools in river sediment modeling, which includes 1D modeling for long term morphological evolution (HEC-6T) and 2D/3D simulations using ADH (2D version) and CH3D. The upstream boundary conditions for the former needs to be specified carefully and an analysis to show that the diversion (hydrodynamic) effects propagate upstream for a distance (4-5) times the width of the channel. The proposed measurement locations appear to be well positioned to meet this criterion and carefully thought out. Processes of multiple scales, from geomorphic response to localized sediment accretion, are included in the proposed integrated modeling system, which is expected to produce results based on best science. The fifty year time scale will allow capturing processes of a range of time scales. Long term1D model runs with and without diversion has not been done before, and the model results are expected to yield useful first order results on the effects of diversions.	**Concur.**
7	**Model Resolution**. The unstructured grids of ADH will allow dense resolution of the model for areas of interest, and will offer a refined way of capturing shoaling around the diversion. Previous work shows that the details of flow in the vicinity of the diversion (secondary flows, vortices and separated flow) may affect	**Concur. We intend to evaluate the horizontal resolution of the CH3D model by comparison of the depth-averaged velocity field with the higher resolution ADH model results. The process should also provide insight into the significance of 3D hydrodynamic effects in the vicinity of the diversion.**

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	shoaling and unstructured grids will provide capabilities to capture such effects. Since ADH is available only in 2D, the work plan proposes to compare ADH and CH3D outputs to delineate 3D effects, but there will be a problem with this procedure as one of the problems of CH3D is the difficulty of fine-scale 3D feature education, as it maintains a fine but limited resolution in all areas (c.f. previous modeling work). Perhaps some qualitative information of possible flow structures and their origins can be obtained from LSU physical model runs (Wilson et al., 2007), but some caution is sounded given the failure of physical models in capturing correct shoaling patterns. In some cases the physical model results are not even in qualitative agreement with numerical simulations. The 2D/3D modeling will be conducted in conjunction with LSU, which has extensive experience in ADH and West Bay diversion work. This sound partnership will ensure cross fertilization of the project.	
8	**Shoaling and Land-Building Issues**. There are some issues pertinent to shoaling that can not be addressed using the proposed modeling system. These include the effects of salt wedge intrusions on trapping sediments (because of the fine scale interfaces), episodic sediment transport events (Grams et al., 2006) originating from hydrodynamic instabilities and other threshold-dependent processes that cause sediment transport response to be non-linear (e.g. Schumm, 1977). We also question whether it will be possible to adequately simulate the actual processes of land-building in the West Bay receiving basin. Whereas total sediment deposition in the Bay and re-suspension and transport out of Bay are reasonable undertakings, the complexity of subsurface processes such as channel bifurcation and mid-channel shoal formation likely exceed current modeling capabilities. This may not be detrimental in answering the most fundamental	**It is assumed that the salinity stratification processes are not relevant this far upstream. However, they are relevant downstream of head of passes, and must be included for any future work there. The development of the delta, including bifurcation, etc may indeed exceed the current modeling capability. However, the model should be able to provide insight concerning the likelihood for some eventual subaerial land formation (i.e. will deposition be able to outpace relative seal level rise and wind wave re-suspension?). Further development of the modeling capabilities may be required to forecast the subsequent development of the delta, or the development can be modeled in conjunction with other analytic or empirical forecasts of channel bifurcation.**

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	questions at hand but will preclude the level of detail that may be ecologically desirable and that some stakeholders may insist on having in order to deem the project successful. Given the on-going dialog on climate change, time permitting, it will also be useful to investigate the effects of sea-level rise on shoaling as reduction of hydraulic gradient may lead to changes in sedimentation patterns.	
9	**Processes of Land-Building**. Related to #8 above, it is important to point out that deposition of subaqueous sediment in West Bay, while not yet fulfilling the goal of creating new land because none can actually be seen, is in fact providing a base upon which new subaerial land will almost certainly build. Studies of subdelta land building going back at least 40 years (Coleman et al., 1969; Wells and Coleman, 1987) have consistently shown that there is often a period of relatively slow infilling (e.g. Atchafalaya Bay) during which an organized channel pattern is established subaqueously, then followed by rapid new subaerial land growth. It is thus premature to conclude that the West Bay Diversion is a failure because after only 5 years there is no new land. A typical period of subaqueous infilling may be on the order of 10 years or more. The recommendation here is to invest sufficient resources in monitoring to be able to accurately track the progress with the highest resolution time step possible. This is important not only for West Bay but for application to other planned diversions.	**Concur.**
10	**Possibility of Conflicting Conclusions.** Numerous state-of-the-art techniques will be brought to bear on the problem of shoaling. Indeed, the last section of the work plan states that…*"The goal of this work plan is to provide a comprehensive modeling approach using all of the tools in a carefully designed way that overcomes all previous limitations"*. This approach is to be applauded. However, because of the diversity of tools, there is	**Concur. Since the geomorphic assessment results feed information to the models, the expectation is that the geomorphic assessment, 1D modeling, and multi dimensional modeling will provide complimentary results. However, if this is not the case, the input data as well as the results of all tasks will be reviewed to determine the reason for conflicting results. River engineering, fluvial geomorphology, and sedimentation theory as well as the technical team's experience and engineering judgment will be utilized to determine the most reasonable, most likely results. As noted in**

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	the possibility or even probability of conflicting results. What happens if results not are definitive or if conclusions from, say, the geomorphic analysis diverge from those in the models? Will results from the modeling carry the most weight? How will discrepancies be handled? On one hand, it can be argued that it is premature to be concerned about conflicting conclusions until it is clear that this is an issue; on the other, with such a compressed time line, there is need to at least recognize, and even make plans for, the possibility of an inclusive study.	**response to item 5, the proposed study may not yield "the answer". The proposed study should result in a more informed decision that incorporates both new knowledge gained from this effort and identifies the remaining uncertainty.**
11	**Peer Review of Final Report**. The draft work plan under Task 8 addresses external peer review by indicating that, in addition to the CWPPRA Academic Advisory Committee, modelers and scientists outside of Louisiana should provide reviews. There is also a recommendation that there be a *"close-in review"* of the work plan that includes assignment of *"…individual reviewers to participate with particular aspects of the work that they are well-trained in…"*. We concur with this proactive approach and recommend a further step to ensure maximum credibility at the end of the study: peer review of the final report and recommendations. This could be especially important in the case of inclusive or conflicting results that may require professional judgment.	**Concur. Peer review of final report and recommendations will be provided.**

No.	Environmental Defense Fund	Corps' Response
1	We concur with comments on the work plan provided by Darryl Clark of U.S. Fish and Wildlife Service. Inclusion of the CWPRA motion text and a summary of how each of the elements in the motion are addressed would help clarify the purpose and scope of the work plan. Ideally, the work plan should integrate the State's effort with BCG, or at least acknowledge and take advantage of the State's work to guide modeling efforts.	**Concur**

No.	Environmental Defense Fund	Corps' Response
2	It would be useful to have the study plan relate the eight Tasks described (pp. 5- top of 21) to the five issues (pg.4). The eight Tasks do not describe their utility in addressing each of the five issues. The "How Do The Tasks Address The Issues?" at pp. 21-25 purposes to do this, but it does not refer to any of the specific tasks in the discussion of each of the Issues.	**Pages 21-23 relate the main issues on page 3 back to each primary Task Description. Each Task will answer the questions outlined in the corresponding Issues Statement.**
3	The draft work plan is a large and comprehensive effort. The CWPRA motion on January 21 2009 includes a deadline of six months for a final report resulting from the work plan to be provided to the Task Force. A timeline for completion of the tasks in the draft work plan would provide important information, particularly in light of the statement on pg. 6 about river surveys taking a year. Perhaps an interim report could be completed within 6 months, and a draft final report within one year.	**That certainly is an option. We have already initiated the data acquisition with funding provided by the LCA S&T Office. We plan to initiate the development of the 1D and 2D models as soon as funds are available. Some input assumptions will be made in the development of these models. As the new data is collected, it will be evaluated and changes to the models can be made at that time. This method of development provides the best chance of having the work completed within the 6 month time frame.**
4	***Introduction*** ***Paragraph 1*** The introduction discusses how the "unprecedented knowledge and insight that will be gained from this effort" is crucial to planning future diversion projects. However, this study was specifically undertaken to address the motion from the January CWPRA meeting. Inclusion of the CWPRA motion text and a summary of how each of the elements in the motion are addressed would help clarify the purpose and scope of the work plan.	**Concur – Motion was added to the Work Plan**
5	***Introduction*** ***Paragraph 4*** It is unclear from this paragraph whether the West Bay project performance is part of the draft work plan, or part of a larger effort. The CWPRA motion does not include project performance evaluation.	**Efforts C-E are part of the project existing monitoring process. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan.**
6	***Background*** ***Paragraph 1***	**Concur – Changes Made in Work Plan**

No.	Environmental Defense Fund	Corps' Response
	River diversions are not only included in Louisiana's State Master Plan, but also in the Louisiana Coastal Protection and Restoration (LACPR) plan, the Louisiana Coastal Area Plan (LCA), Coast 2050, the Multiple Lines of Defense Strategy, and in the Water Resources Development Act (WRDA).	
7	***Background*** ***Paragraph 4*** Part of the purpose of the investigation is to determine how much of the shoaling is induced by the Diversion. Issue A addresses "Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel?" Consider changing the first sentence to "The West Bay Sediment Diversion Project may induce shoaling…"	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan".**
8	**<u>Current West Bay Issues</u>** The work plan clearly delineates the five issues addressed by the comprehensive program. ***Issue B:*** Suggestion to describe the long space scale changes being evaluated. Sea level rise and subsidence are two important changes to consider. Sea level rise has shown to cause the locus of sediment deposition to move upstream. ***Issue C:*** Are the sediment efficiency and carrying capacity of the conveyance channel already known from monitoring of West Bay? The West Bay Diversion Monitoring Plan (Carter, 2003) describes a monitoring plan to ascertain these values. ***Issue D:*** Some of this information is discussed in work by Andrus (2007) and Kolker (2008). Analysis of sediment retention in the receiving basin is interesting and important information. However, this	**Concur. The impacts of relative sea level rise and subsidence will be included in the long term simulation.** **The efficiency can only be known if the actual sediment mass flux though the diversion is known, together with an accurate estimate of the sediment retained. A well calibrated and validated model can provide insights on each of these parameters, as well as providing information on the most relevant physical processes impacting retention rates.** **Efforts C-E are part of the project existing monitoring process. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan. We will incorporate the Andrus (2007) and Kolker information as appropriate.**

No.	Environmental Defense Fund	Corps' Response
	topic is not included in the CWPRA Task Force motion. ***Issue E:*** The topics listed under Issue E do not appear to address the topics in the CWPRA Task Force motion.	
9	**Comprehensive, Systems Approach to Evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area** The USGS collects a large amount of data in the Mississippi River, but there is not a description of USGS's role in this study. Since USGS is well equipped to be involved with some of the data investigations, should they be included in this portion of the study?	**The plan includes a collaborated data collection effort to be conducted under the direction of ERDC, Meade Allison, and Alex Kolker. We believe that this collaboration is sufficient for all data collection requirements. All available historic USGS data will be used.**
10	**Task 1: Field Data Collection & Analysis** ***Paragraph 1*** Include sentence on how the data will increase usefulness of modeling efforts, or consider including sentence in subsequent paragraph.	**Concur.**
11	**Task 1: Field Data Collection & Analysis** ***Paragraph 2*** Under 1) consider revising "in adjacent navigational anchorages" to in the federally maintained navigation channel and the PAA. This will provide consistency with references to shoaling earlier in work plan. "Integrated surveys are needed ... 2) to determine sediment fluxes into the receiving basin (Barataria Bight). The latter is necessary to ascertain if the diversion is operating within designed flow limits. This input function is also vital to morphological modeling of the	**Concur – Changes made to work plan text after "(Barataria Bight)": The later is necessary to ascertain if the diversion is operating as designed and to quantify the fraction of the total Mississippi River sediment load being diverted. Quantification of the diverted sediment load will also be valuable to future efforts to describe and model land building in the receiving basin.**

No.	Environmental Defense Fund	Corps' Response
	evolving land building in the receiving basin." These sentences are unclear. How do sediment flux measurements ascertain flow values? Also, morphological modeling in the receiving basin does not clearly correspond to the topics included in the CWPRA Task Force motion. ***One-time Surveys*** The multibeam survey is designed to support, through incorporation as boundary conditions in numerical models, evaluation of water and sediment processes in the vicinity of the West Bay Diversion. The CPRA Task Force motion includes "an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion." In order to effectively evaluate downstream sediment removal, it would be important to expand bathymetric surveys downriver farther than the two miles below the diversion entrance channel as proposed. The following paragraphs explain a detailed data collection and analysis effort. However, the focus appears to be on the collection and analysis of new data, with very limited discussion of historical data analysis. As a first part of the effort, a thorough analysis of data already collected would provide much insight into the patterns of shoaling in the federally maintained navigation channel and the PAA, and incorporation of the State's work with BCG is suggested.	**The multi-beam surveys will provide detailed bathymetric data needed to accurately construct the multidimensional model computational grid in the vicinity of the diversion channel entrance. Other sources of survey data will be utilized for areas farther from the diversion where less detail is required. The multi-beam survey will also define the areas to measure the sediment flux and bed load data. There needs to be moving bed forms to measure the bed load so we have to chose the area where they are present and regular.** **Concur. The geomorphic assessment will utilize historic data to determine long-term trends and patterns in shoaling in the anchorage area. The results of the BCG analysis will be incorporated where appropriate and relevant to the Work Plan.**
12	**<u>TASK 2: Large-Scale/Longer-Term Geomorphic Analysis</u>** This task addresses many of the topics in the CWPRA Task Force motion, and results should be very informative regarding shoaling patterns, and perhaps also inform the necessity of further modeling work.	**Concur. It is fully anticipated that the results of the geomorphic assessment will support the proposed numerical modeling effort.**

No.	Environmental Defense Fund	Corps' Response
13	**<u>TASK 3: 1D Sedimentation and Modeling</u>** ***1D Model Input Requirement*** ***1. Channel Geometry*** What is the spatial extent of these channel geometry datasets? ***3. Sediment Data*** Suggest a more detailed description of the sediment data, how it will be vertically averaged for the 1-D model, and how data obtained under Task 1 might be incorporated. **ID Model Calibration** More detail on development of the typical hydrograph would be informative. **1D Model Limits** The domain of the model should extend downstream past Southwest Pass to determine any reductions in shoaling at this location due to the diversion. **1D Model Simulations** Since there is a 10-year flood cycle (such as we experienced in 2008), it would be interesting for the 50 year simulations to not only include typical hydrographs, but if possible also flood year hydrographs interspersed at relevant intervals.	**The comprehensive surveys of the Mississippi River within the New Orleans District extend from Black Hawk, Louisiana at River Mile 324 AHP (Above Head of Passes) through Southwest Pass to the end of East Jetty near River Mile -20.** **Vertical averaging would likely be accomplished by fitting observed values at several points in the water column to a Rouse type profile, and then integrating the resulting profile to get a depth averaged value.** **A typical hydrograph is one that can reasonably be expected to occur within the model simulation period based on historical observations and known changes within the basin that would alter the magnitude of historical flows. A typical hydrograph usually includes a wide range of flow including low water and high water years. The length of the typical hydrograph varies but should be representative of conditions expected to occur in the future. Typical hydrographs are usually run several times to create a long term hydrograph.** **The model will be extended to SW Pass to assess impacts in that reach.** **We would expect to have at a minimum, one low water year and one high water year within each 10 year period within the 50 year simulation**
14	**<u>Task 4 – 2D/3D Modeling</u>** ***Tasks 4 – Proposal 2*** It is unclear whether these data will require an additional collection effort or will be collected under Task 1. ***Calibration and verification of models using existing data and data collected in 2009*** Are dredging records and location information of these records adequate for calibration/validation of the models, or please discuss if further data are needed. **<u>Simulation Scenarios</u>** More details about the spring hydrograph,	**The data required for the multidimensional modeling effort will be collected under Task 1.** **For the purposes of addressing the issue at hand, namely, the shoaling rate in the Anchorage area, the primary data needed are: bathymetric data, river discharge data, downstream head data, suspended sediment and bedload sediment transport data, dredging data, and sediment bed grain size analysis data. All of these data can be taken from existing observations, dredging records, and data collected in Task 1.**

No.	Environmental Defense Fund	Corps' Response
	whether it will be a multi-year average spring hydrograph, or from a single flood year (such as 2008) would be informative.	**A multi-year average spring hydrograph would not be useful, because this would tend to blur the "shape" of the hydrograph. The purpose in running the hydrograph is to determine whether or not the diversion behaves differently under the dynamic condition for a rising and falling hydrograph, than it behaves under steady conditions. As such, the best approach is to select a "typical" spring hydrograph from the historical records, and apply that.**
15	**Task 7 – Current West Bay Conveyance Channel Discharge Capacity** Description of task and the agencies/organizations involved. **How Do The Tasks Address The Issues?** It would be helpful to refer to any of the specific tasks in the discussion of each of the Issues.	**This task has already been completed by the New Orleans District utilizing project monitoring data. The results were presented at the Feb. 27 Tech. Committee meeting and will be included in the final work plan study report.** **Pages 21-23 relate the main issues on page 3 back to each primary Task Description. Each Task will answer the questions outlined in the corresponding Issues Statement.**

No.	Gulf States Maritime Association	Corps' Response
1	The maritime industry would be interested to know why the sediment retention dikes (shreds) that were part of the original proposal were never installed. Notes from meetings as far back as 2000 show that these structures were to be included to act as "speed bumps" to slow the velocity of the water flowing through the Diversion, thereby encouraging the deposition of suspended riverine material. These structures were mentioned in the draft work plan, but we have been unable to determine why they were never installed. The West Bay Diversion's discharge is roughly 30,000 cubic feet of water per second. Without these "speed bumps," the flow through the Diversion is unimpeded and does not encourage deposition.	**The State opposed the construction of SREDS, after the CSA was signed, because of real estate issues and for other various reasons. At one point a shred "test section" was proposed by the Corps but opposed by the State.** **The State currently requests placement of the 2009 dredge material along the MS River bank instead of the middle of West Bay. We are working through the technical aspects of this with the State.**
2	We are also concerned with the following information noted at the bottom of page 4 of the draft work plan: "Further, while bed-load measurements have recently	**This statement is defining the reasons for the new data collection. The new data will assist in overcoming these previous limitations.**

No.	Gulf States Maritime Association	Corps' Response
	been made in the lower river using modern techniques (Nittrouer and Allison, 2008), none of these measurements have been made at monitoring stations like Belle Chasse, making estimation of the bed-load component of sediment transport at West Bay difficult." This is also troubling because, as mentioned in the draft work plan, many of the models available do not account for the impact of distributaries. Specific reference is given to Cubits Gap, Grand Pass, and Baptiste Collette. The documented shortcomings in the modeling reaffirm the maritime industry's concerns that were voiced prior to the Diversion's construction. These concerns remain, especially since the marsh creation ability of the West Bay Diversion is still unproven. This Diversion is experimental, and until it begins to create marsh, the proposed benefits must also take into account the negative impacts on maritime transportation; especially considering that the state's and the Corps' restoration plans heavily rely on the success of future diversion projects.	**The new models will include major distributaries at Cubits Gap (RM 3.2), Grand Pass (RM 10.4) and Baptiste Colette Bayou (RM 11.4) to overcome previous limitations.** **As part of this work plan, monitoring information will be utilized to determine how much accretion/erosion the diversion is causing in West Bay.** **We agree that there will be many lessons learned with West Bay that can be applied to future planned diversions.** **We are moving as quickly as possible to mobilize dredges in the Pilottown anchorage area. We will ensure that maritime is kept informed on the status.**
3	The draft work plan mentions that detailed historical hydrology, sedimentation, and channel morphology will be researched for the Lower Mississippi River, with an emphasis on the area near the PAA and the West Bay Diversion. The proposed starting point for this historical research is 1960. While those results are of interest, the time line must allow for impacts such as extremely elevated river stages (especially those high enough to trigger an opening of the Bonnet Carre Spillway), impacts of strong weather systems, and the impacts of deepening the federally authorized navigation channel in the late 1980s. The information should be reviewed in order to decipher any anomalies in the results.	**Concur. All factors which may have an influence on shoaling trends and patterns in the anchorage area will be evaluated, given that sufficient data is available.**
4	Coastal restoration is also of vital importance to the maritime industry. We strongly urge the use of beneficial dredged material that is not an	**Concur – The Corps strives to utilize dredge material beneficially by all means practicable.** **We agree that maritime should be at the table during**

No.	Gulf States Maritime Association	Corps' Response
	experimental concept. Through beneficial use, land can be created quickly while also serving to maintain channels in conditions that increase navigational safety. The maritime industry requests inclusion in all future discussions concerning restoration projects so that our expertise can be used to promote restoration while limiting the negative impact on vessel transits. The more we all cooperate and hold open discussions, the more likely we are to find solutions that will work across the board. These efforts must be accomplished in a way that does not hinder the state of Louisiana's largest economic generator, especially during the current financial situation.	**the planning of all coastal restoration projects that have the potential to effect navigation.**

No.	CWPPRA Academic Advisory Group	Corps' Response
1	General Observations • The personnel of the proposal are experienced and technically competent to perform the proposed tasks. • The field measurement component of this proposal is a great opportunity to understand the sediment dynamics in the vicinity of a diversion site. • Although we understand the desire of the Task Force to get a defendable technical answer towards the question of the level of induced shoaling in six months, it will not be possible to capture all the complexity and variability of the sedimentation processes over the annual river cycle in six months. In addition, this timeline does not allow for the extremely careful and rigorous level of analysis needed to understand this complex problem. • It is important to get a better understanding of the sediment dynamics in the river using a longer (2-3 year s) study period. Which could benefit predictions of annual dredging requirements for navigation and aid in the design of future diversions so that they maximize sediment removal from the river. The costs for this overall river study are not project costs for the West Bay Diversion.	**Concur.**
2	Background pg 3 par4 line1. replace " Project induces shoaling" with "Project may induce shoaling" Task 1. • There is a real need for this type of data from the lower river. This data collection effort will assist in calibration and validation of the hydrodynamic models. Increasing the duration of this effort to one year, will greatly improve the understanding of the sediment dynamics in the lower	**Sentence was modified to read "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA and the extent of this induced shoaling will be reevaluated upon approval and execution of this work plan."** **Concur - A long term measurement program is needed. However, even a limited dataset will be valuable to the proposed effort. The current data collection proposal includes 6 different data collection trips.**

No.	CWPPRA Academic Advisory Group	Corps' Response
	river. • Adding marker horizons or sediment dating techniques, can aid the understanding of the sedimentation rates in the outfall area. Elevation change may underestimate sedimentation due to the high rates of subsidence in this part of the coast.	**Concur**
3	Task 2. • Both Task 2 and 5 study the history of the river and should be combined.	**Concur**
4	Task 3. • These one dimensional models should provide a good ball park estimate of the impact of the diversion on accretion averaged over the river bed, but will not be specific relative to the PAA.	**Concur**
5	Task 4. • To the best of our knowledge, some of the tools proposed here for Task 4 are under development and have not been fully tested; especially the sediment module of ADH. Therefore, an extensive amount of field observations (spatially and temporally) is required to verify these tools and to ensure a high level of confidence in the results. In other words, these models depend heavily on data collected in Task 1 (although overlap between the two tasks can take place). These models are extremely complex and we question if it can be completed within the 6 month time frame. Calibrating and validating 2 and 3 D models of water and sediment is not a trivial task.	**Concur – The time line for this effort is extremely short. However, the data collection program has already been initiated through funds provided by the LCA S&T Office. The 1D model development plus the multi dimensional model development will begin as soon as funds are available. The incorporation of fine sediment into the regional HEC-6T model is scheduled for completion by the end of April 2009. Both the 1D and the multi dimensional models will be developed based on assumed input parameters. Once the data from the acquisition program becomes available, this data will be evaluated and appropriate changes to the models will be made at that time.**
6	Task 5. • Both Task 2 and 5 study the history of the river and should be combined.	**Concur – Changes will be made in the work plan**

No.	CWPPRA Academic Advisory Group	Corps' Response
7	Task 6. • Much of this work has been or will be done as part of the CWPPRA monitoring program. It does not seem right to repeat this. Fast tracking of the data analysis should be requested from the monitoring program. • Creating a sediment budget for the West Bay Diversion (sediment diverted, sediment retained, volume occupied by retained sediment) should be part of this task. Data necessary for this calculations should be available from the monitoring program and Task 1.	**Efforts C-E are part of the project existing monitoring process. These efforts will not deter from addressing the induced shoaling issue. They will be presented in the work plan so that all agencies have an opportunity to review the project performance to date. We will remove the cost for this effort from the work plan.** **Concur – Modifications will be made to the work plan**
8	Task 7. • Provide more detail. Needs to answer: "Which cross-section is controlling the maximum discharge capacity?"	**Concur - Malene Henville with MVN has completed this effort. This input will be included in the final work plan and this component will be added.**
9	Task 8. • Current members of the CWPPRA AAG (ULL: Visser and Hester; LSU: Sasser, Swenson, and Rouse; SLU: Shaffer) are very familiar with the CWPPRA Program. However as mentioned in the text most of us are ecologists, except for Mr. Swenson, who is a coastal hydrologist and Dr. Rouse, who is a physical oceanographer. Dr. Rouse has worked on deltaic processes. Sasser, Visser, and Shaffer have had research projects in the Atchafalaya Delta Complex. • The AAG Chairman, Dr. Visser recommends the following close-in reviewers for each Task (contracts of these AAG members need to be amended adding funds to their existing contracts: Task 1. Swenson Task 2 Swenson Task 3 Rouse Task 4 No appropriate reviewer on AAG, could potentially add a local hydrodynamic modeler to the AAG, but may be easier to assign a reviewer under contract with the S&T program. Task 5 Swenson	**Concur.**

No.	CWPPRA Academic Advisory Group	Corps' Response
	Task 6 Rouse and Sasser	

CWPPRA West Bay Diversion - Effects Evaluation
OCPR Comments on the Draft Work Plan

The draft CWPPRA West Bay Effects Evaluation Work Plan is well written and very thorough. OCPR appreciates the work that the Corps, ERDC, and others have contributed to its development. OCPR also appreciates and agrees with many of the comments that have been submitted on this Work Plan by the CWPPRA Technical Committee and others interested parties. The following comments are provided by OCPR to the Corps of Engineers in order to begin finalizing a Work Plan on river shoaling within the area of the CWPPRA West Bay Diversion Project as directed by the January 21st, 2009 Task Force Decision.

General Comments

The OCPR West Bay Shoaling Assessment, initiated in 2008 by OCPR and independent of CWPPRA, is expected to be completed within the next couple of weeks. As OCPR and many of the commenting CWPPRA partners have indicated, it is evident that much of the information, data, conceptual approaches, and subject matter proposed in the CWPPRA Draft Work Plan are either very similar or at the least overlapping with the soon-to-be completed OCPR Assessment. As such, OCPR would recommend - as other partner comments have affirmed - that it would be most efficient to include the OCPR Assessment efforts into the CWPPRA Work Plan.

OCPR would recommend that the most practical manner to accomplish this would be to insert a Task into the beginning of the CWPPRA Work Plan as a "pre-step" that allows the CWPPRA Technical Committee, the Academic Advisory Group, the LCA Science an Technology Program, and other independent third party review entities an opportunity to evaluate and review the OCPR Assessment. At the conclusion of this Task, the necessity of the remaining Tasks in the Work Plan would be reevaluated by these parties so as to eliminate any duplicity and to determine if any or all portions of the remaining Tasks are essential to satisfy the requirements outlined by the Task Force Decision. OCPR believes that this approach will allow the CWPPRA Effects Evaluation to fully realize benefits from the previous work conducted by the OCPR Assessment without delaying or hindering progress toward completion.

OCPR is concerned that the existing Draft Work Plan possibly places too much emphasis on new multi-dimensional modeling efforts that also require new data collection, both of which can be expensive and time-consuming. OCPR would propose, as some of the initial Tasks in the Draft Work Plan outline, that existing measured data from the Mississippi River and West Bay area be fully analyzed prior proceeding with further modeling. A perfect example that illustrates this point is a statement made by Dr. Ehab Meselhe at the recent Diversion Summit, "Models are an approximation of reality".

As per the 01/21/09 CWPPRA Task Force Decision, the core of the issue at hand is whether or not the West Bay Diversion is inducing sediment deposition within the navigation channel, access area, and anchorage area. OCPR agrees with the Task Force

Decision and direction that the issue is best addressed by analyzing the existing bathymetric data from the Mississippi River hydrographic survey books and channel condition surveys. A large amount of this data exists for both pre and post construction time frames. The changes in channel geometry and volume of sediment deposited or eroded from the area(s) in question are the parameters that the proposed modeling strives to reproduce. OCPR contends that a multi-dimensional numerical model is not necessary when an accurate, graphical representation of the channel geometry through time can be constructed from the existing data.

Because dense bathymetric data is readily available, as well as gage records of river stage and duration, flow data in the main channel and at major outlets, tropical storm history, and knowledge of anthropogenic influences (dredging/disposal, channel training structures, etc.), OCPR believes that an analysis of the empirical data should be the cornerstone of this investigation. The geometric analysis will reveal long and short term erosion/deposition trends. These trends can then be examined and explained in the context of natural and anthropogenic influences that are operating in the larger system of the bird foot delta.

OCPR agrees with USEPA's comments in that Issues A and B, as defined on page 3 of the current Draft Work Plan, are the heart of the "induced" shoaling issue. Issues C-E, while important issues - deserving of further study in order to increase our overall knowledge of sediment diversions - focus more on the performance of the sediment diversion and are not necessary to satisfy the Task Force Decision request to address the issue of "induced" shoaling in the Mississippi River near the West Bay Diversion.

Specific Comments

Background

The fourth paragraph, first sentence of the Draft Work Plan reads, "*The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA.*" It is OCPR's understanding of the Task Force Decision that the intended purpose of this Work Plan, as outlined under "Issues A" within the Draft Work Plan, should be to determine the validity and degree of accuracy of this very statement. As such, OCPR would request that this conclusion be removed from the work plan background.

Task 1

The stated goal of this data collection task is to serve as the primary foundation for increasing the usefulness of any additional modeling efforts. OCPR has not yet concluded that additional advanced modeling is required to answer the questions set forth in the Task Force Decision and therefore is unsure as to the necessity of this Task. In addition, OCPR has concerns that the data collection proposed would provide only a "snap shot" of conditions that exist in one flood year. This effort may not capture inter-annual variation of the measured parameters. It is also questionable as to if the data collection team could be mobilized in time to collect data throughout the entire 2009

flood cycle. Irrespective of those issues, if this task were to proceed, OCPR would recommend that additional core sampling locations be added to the anchorage area. In addition, USGS flow meters should be installed in West Bay with accurate surveys that extend into the outfall area. These actual measured flow rates could then be used in models to predict sedimentation in the anchorage basin.

Task 2

The outline for this task is extremely similar to the Scope of Services for the OCPR West Bay Shoaling Assessment that is currently nearing completion. As stated earlier, this data analysis could be the cornerstone of this CWPPRA Effects Evaluation effort. It has also been recommended that a good source of bathymetric data can be found in the e Mitch Andrus' thesis concerning West Bay.

Task 3

The work outlined in this task is once again a near replica of the 1-D modeling work that is currently being undertaken by Mr. Tony Thomas thru BCG in the OCPR West Bay Shoaling Assessment.

Pg 13, Task 3: there have been statements made that the earlier models were "deficient", without a detailed account of the specific deficiencies. ERDC has a report that investigated the four earlier models and outlined the issues with them. This report should be incorporated as a source of information for the Work Plan and also made part of any future Work Plan discussions. It would be beneficial to see where the deficiencies arose and what any new proposed modeling efforts would incorporate to prevent those same issues from hampering the present effort.

OCPR would recommend that any future modeling would consider both the pre-dredged and post-dredged anchorage area.

Task 4

OCPR would recommend that any future modeling would consider extending boundaries down to the Southwest Pass. However, OCPR has not concluded that a multi-dimensional modeling effort is necessary until a thorough analysis of existing data has been completed and the further Tasks can be reevaluated.

Task 5

OCPR considers this to be extremely pertinent information and would like to see what has already been completed by Mr. Broussard at the NOD. Although some of this information may have been compiled by the OCPR West Bay Shoaling Assessment, an effort should be made to ensure that all Tasks benefit from this effort and any existing reports.

Task 6

OCPR considers that this task is specific to the performance of the West Bay Sediment Diversion, and is not necessary essential to address the core issues specified by the CWPPRA Task Force Decision.

Task 7
Information pending.

Task 8
OCPR considers this Task to be critical and would again propose that a review of the OCPR West Bay Shoaling Assessment by all parties be included as a separate "pre-step" after which the remainder of the Work Plan can be reevaluated so as to minimize duplication.

The Scope of Services for the soon-to-be concluded OCPR West Bay Shoaling Assessment has been attached to these Draft Work Plan comments for your review.

SCOPE OF SERVICES
PROFESSIONAL ENGINEERING SERVICES

5. TASK 2.3 ASSESS SHOALING IMPLICATIONS OF WEST BAY DIVERSION ON PILOT TOWN ANCHORAGE.

TASK 2.3, will assess West Bay shoaling effects on the Pilot Town Anchorage, and will be managed by BCG. Mr. Tisdale will guide the data collection effort and prepare a history of the West Bay Diversion project that will be part of a technical report on this assessment. The report will summarize the findings and will present the data and model results, and will provide conclusions on the causes associated with the shoaling in the Pilot Town Anchorage. The following tasks will comprise the major effort. The Potamology analyses will require CAD and computer assistance by others, to provide plotting profiles and river cross-sections for comparative purposes and report presentations.

Subtask 2.3.1 Data Gathering. Gather pre-construction conditions in Mississippi River prior to initial dredging of the anchorage, such as hydrographic surveys, dredging records, flow hydrographs, etc., and any reports or studies that may address the feasibility of maintaining an anchorage above Head of Passes. From a review of the above data, develop an independent assessment of the viability of the anchorage as a sediment free improvement. This would establish conditions that prevailed prior to 2003. This would involve a data collection and Potamology analyses by Mr. Jim Tuttle, Mr. Tony Thomas, and Mr. Cecil Soileau. In a similar fashion gather historical data that would show shoaling trends in the period after completion of the anchorage (and West Bay Diversion), 2004, but prior to the high water operation of the West Bay diversion in 2008. The team would again review the data, particularly, condition surveys in the anchorage, to determine shoaling rates, locations where shoals occur during the seasonal flow hydrographs, and the need for maintenance dredging, if any.

Subtask 2.3.2 HEC – 6T Modeling. Sedimentation modeling by Mr. Tony Thomas, using a numerical sediment transport model of the lower Mississippi River that will concentrate on the reach between Venice and Head of Passes. Scenarios would be run in the numerical model for flow hydrographs for the period from prior to completion of the West Bay dredging through today. The early scenarios from the model would be compared to the observed conditions prior to construction of West Bay diversion, and results documented. The post West Bay model results would be held for comparison with the next step. Post West Bay field data, i.e., dredging records, condition surveys, flow measurements out of the diversion channel, etc., would be gathered to form a basis for comparison with the results of a modified numerical model that would include the West Bay diversion in those years after construction.

Subtask 2.3.3 A second comparison would be made from the pre- and the post results in Subtask 2.3.1 above, and the differences, if any, would be presented in a joint report, with conclusions regarding the extent of the influence West Bay may have had on the anchorage and general morphologic changes in the river. To complete this task, plots of channel thalweg changes would be carried out and volume calculations would be made to determine shoaling trends over time.

Subtask 2.3.4 The Potamology and modeling results would be presented in the report and would be presented to an independent technical review team, for comment and evaluation.

BCG West Bay Efforts

Data Collection

BCG has obtained Southwest Pass channel condition (bathymetry) survey data from the NOD for years 1992, and 1997-2008, in the immediate vicinity of the West Bay diversion project. Data from the 1972 Mississippi River Hydrographic Survey book were also included to provide a historic baseline. Other pertinent data, such as prior West Bay models and design reports, dredging records, historic and current discharge through all major outlets at/below Venice, suspended sediment concentrations, and river stage hydrographs were also obtained to facilitate the potamology, modeling and project history analysis.

Riverine Geomorphologic Analysis (Potamology)

The major depth contours (-50, -45, -40, -30) created from selected bathymetric survey data were compared on a yearly basis as difference plots, i.e. the contours from two consecutive years were plotted together on the same base map. This was done for all years in the data set. Analysis of these plots will establish pre-diversion conditions and sedimentation trends, and evaluate the impact of the West Bay project, as well as other natural processes (hurricanes, major floods and droughts) and anthropogenic activities (navigation channel improvements) on sediment deposition dynamics in this reach of the river, particularly the anchorage and access areas.

Numerical Modeling

Tony Thomas is running the HEC-6T 1-D sediment transport model under four conditions: Pre-project, Advanced maintenance of the anchorage and access area with out the diversion, Diversion with out advanced maintenance, and Combined diversion and advanced maintenance. The model is using 1980's bathymetry, but will provide relevant data. The model will use the constructed diversion flow (~20,000 cfs) as opposed to the higher, hypothetical value (50,000 cfs) used in previous models. BCG is also conducting a review of the previous models that were done during the design phase of the West Bay project to determine the accuracy and validity of the model results.

Project History

BCG is preparing a "time line" of the West Bay diversion project milestones, as well as major events in the Lower Mississippi River that bracket the project construction (dredging, channel improvements, channel degradation, etc.).

Final Report

A final report that synthesizes all of the existing information and the results of this effort is expected in mid-March. It will provide insight into the pre-diversion shoaling rates and patterns in the anchorage, access and navigation channel, and how, if at all, these have been altered by the West Bay project.

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March 11, 2009

TO: Tom Holden, Cherie Price, Melanie Goodman Corps of Engineers; Kirk Rhinehart, Robert Routon, OCPR; the CWPPRA Technical Committee, and Planning and Evaluation Subcommittee.

RE: Draft West Bay Diversion Work Plan Fish and Wildlife Service Comments

The draft West Bay Work Plan is well written and comprehensive. We appreciate the work the Corps, ERDC, OCPR, and others have contributed to its development. The following comments are provided to assist in the development of the final Work Plan.

General Comments - The Task Force Motion should be placed in the Work Plan Introduction (page 1) to give everyone an overview of the exact nature of the Task Force charge to the project sponsors (Corps and State). The Task Force at its January 21, 2009, meeting stated that the Work Plan should include, 1) an analysis of current and historic bathymetry and other data and a quantification of total historic and recent shoaling before and after West Bay construction, 2) estimates of the volume of shoaling resulting from the project, natural processes, and sediment removed from the river by the diversion resulting in less sediment moving downriver, and 3) provided that the final report be completed within 6 months.

The work plan should be revised to include a review of the data and findings Mitch Andrus' recent (2007) thesis, "Sediment Flux and Fate in the Mississippi River diversion at West Bay: Observation Study", in addition to the State's current effort with BCG to update river bathymetry and other historic studies. Those items being completed by the State through the BCG study should be described in the work plan, and if adequate, no additional CWPPRA effort needs to be made in those areas. If existing information (i.e., Andrus 2007), and the State BCG report are able to provide answers to many of the Task Force (TF) requests, then the work plan can be reduced considerably. We recommend that the study boundary limits be extended to SW Pass in order to provide data for modeling the effects of the WB diversion in possibly reducing sedimentation in that area. And finally, much of the "materials and methods" discussion concerning sampling devices could be relocated to an appendix.

Specific Comments

Page 1, First Paragraph, Last Sentence - Knowledge from this West Bay (WB) effort would benefit other future diversions, but the main purpose for this effort is to analyze those items specifically mentioned in the January TF motion above.

Page 1, Paragraph 2, Last Sentence - Add the following sentence, "The Technical Committee recommended funding $10.99 M of the $118.5 M request to fund the immediate dredging of the Pilot Town Anchorage Area (PAA)."

Page 1, Paragraph 3, First Sentence - The sentence should be revised to state that the Task Force approved $28.6 M for the West Bay project that includes $10.9 M for immediate PAA maintenance dredging with the remainder ($17.7 M) for PAA dredging and possible closure in 2012.

Page 1, Paragraph 4 - Insert the January 2009 Task Force motion (or a summary) as paragraph 4 or earlier.

Page 1, Last Paragraph, Sentence 2 - The existing WB CWPPRA monitoring program should be assessing project performance with no need for additional monitoring. Project performance is not specifically mentioned in the January 2009 Task Force request. The most effective monitoring activity is the measurement of accretion in the WB receiving area. The current State OCPR study to be completed by April 2009 includes receiving area bathymetric surveys. Keith O'Cain stated at the West Bay Work Plan meeting that the Corps is performing monthly cross sections of the WB channel and MR channel adjacent to the WB diversion. This information should be incorporated in the final report.

Page 1, Last Paragraph, Last Sentence - The Corps should incorporate data from Andrus (2007), the current State BCG study, and others.

Page 2, Background, First Paragraph - Revise the sentence to state that Mississippi River diversions are also in CWPPRA's Coast 2050 plan, the Louisiana Coastal Area Plan (LCA), and the LACPR plan.

Page 2, paragraph 2, Second to Last Sentence - Revise sentence to add, ". . . CWPPRA West Bay project Task Force approval was provided in 1991 as part of the first CWPPRA PPL list."

Page 2, Paragraph 3, Last Sentence - Add Andrus' 2007 thesis citation to the sentence.

Page 2, Paragraph 4, First Sentence - Revise sentence to, ". . . and the PAA the extent of this WB induced shoaling is currently unknown." The purpose of pre and post elevation surveys in the channel and PAA is to determine how much shoaling has actually been induced by the WB project. Models can project, but pre and post survey data can show us what is actually happening in the field. Even though surveys may indicate that the PAA shoaled after WB construction, this doesn't mean that the WB diversion caused a part or all of that shoaling. Four major hurricanes, and high river water events, have hit the LA coast since 2005 which could have contributed greatly to any shoaling.

Page 2, Paragraph 4, Sentence 6 -Revise to, "Above the cut, three 40-feet deep by 1,500 long. . ." Presently the sentence states this as "4-foot" deep berths.

Page 2, Last Paragraph, First Sentence - Revise sentence to, ". . . not specifically authorized to dredge the Pilot Town Anchorage Area except through CWPPRA." The Corps has authorization through CWPPRA.

Page 2, Last Paragraph, Last Sentence - There is a high probability that the WB diversion is reducing the amount of dredging needed in Southwest Pass thus saving Corps' maintenance dredging funds in that area.

Page 3, Prior to Current West Bay Issues - The Corps and OCPR should include the major elements of the January 21, 2009, Task Force motion either in the Background section above or in a new section entitled, "CWPPRA Task Force West Bay Tasks" either in the Introduction, after the Background

Section, or on page 4 in the Comprehensive Systems Approach.

"Mr. Graves made a motion to require the USACE and State of Louisiana, with participation from the CWPPRA Technical Committee and consultation with the maritime industry and other interested parties, to finalize a Work Plan on river shoaling in the area of the CWPPRA West Bay Diversion Project by February 28, 2009.

"The Work Plan shall include *(note: numbering and separation added)*;

1) an analysis of current and historic bathymetry and other relevant data on this region of the Mississippi River

2) and a quantification of total historic and recent shoaling that has occurred in the area before and after the construction of the project.

3) The report resulting from the Work Plan shall include estimates on the volume of shoaling resulting from the project, shoaling from natural processes, and an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion.

4) A final report resulting from the Work Plan shall be provided to the Task Force within six months.

5) The motion also requires that the draft and final Work Plan and report be independently reviewed by a team of experts within 30 days of completion of each document. The independent review team should consist of the CWPPRA Academic Advisory Group and the LCA Science and Technology Program. Dr. Watson seconded. The motion was approved by the Task Force." (January 21, 2009, CWPPRA Task Force Meeting)

Page 3, Current West Bay Issues, Issues B, Paragraph 2, Sentences 2 and 3 - These sentences seem to be a repeat of the same items in Issue A above, consider removing them or incorporating them into Issue A.

Page 3, Current West Bay Issues, Issues C, Paragraph 3, Last Sentence - The current carrying capacity of the conveyance channel is known. Those flow rates were reported by Amena Henville and Keith O'Cain at the Task Force meeting and the recent West Bay meeting.

Page 3, Current West Bay Issues, Issues D, Paragraph 4, Sentence 2 - Most of the questions in this section refer to information we need to determine the WB diversion's current success. Sentence 2 refers to the amounts and characteristics of sediment entering the WB area. The Task Force did not request a detailed analysis of WB sediment characteristics, but if that characterization could be done economically it would provide helpful information. The TF wanted the study to focus on the volume of WB receiving area sediment and to determine how much sediment would not travel to SW Pass to possibly be dredged there.

Page 3, Current West Bay Issues, Issues E, Last Paragraph - The questions listed here all refer to the main question, "Is the WB receiving area shallowing, and if so to what degree?" Mitch Andrus (2007) answered this question up to 2006 in his thesis, and the State BCG report should provide current data on this issue that should be incorporated in the WB report.

Page 4, Task 1, First Full Paragraph - Pre and post shoaling data in the PAA and WB receiving areas is

an important item in this task to determine if shoaling occurred in the PAA prior to WB implementation. OCPR through its contractor BCG is currently analyzing this data to be made available in a final report in April 2009. The Corps should integrate the State's efforts and thus reduce Work Plan tasks by eliminating those items being done by the State to minimize duplication and expense.

Pages 5 to 10, Survey Methods, First Paragraph - Pages 5 to 10 discusses very well but in detail the various parameters to be measured. We recommend that the survey methodology be listed and briefly described in the main report with the detailed methodology with photos placed in the appendix to make the plan more readable.

Page 5, No. 1 One-Time Surveys, Paragraph 3, First Sentence; Page 7 Figures 2 and 3 - We recommend that bathymetric and other surveys extend to Southwest Pass if economically feasible and not limited to +/- 2 miles of the WB diversion.

Page 10, Task 2, Last Paragraph, First Sentence - We recommend that the detailed geomorphic assessment be continued southward of Head of Passes into SW Pass in order to provide data for modeling the effects of the WB diversion on reducing sedimentation in that area.

Page 11, First Partial Paragraph, First Sentence - This section describes some of the Task Force's main issues it wanted investigated, namely the documentation of the lower MR historic trends in hydrology, sedimentation and channel geometry.

Page 11, No. 6., Events Timeline Analysis, Last Paragraph, First Sentence - Revise sentence to, ". . . as well as anthropogenic influences (i.e., hopper dredge disposal at Pass a Loutre and South Pass, and normal dredging activities). . ."

Page 12, No. 7, First Paragraph - We support gathering information to help answer one of the TF's main requests, "How much PAA shoaling is due to the WB diversion?"

Page 13, First Incomplete Paragraph, Last Sentence - We support the collection of sediment data to greatly improve 1D modeling in the West Bay area.

Page 13, No. 1, Channel Geometry, Second Paragraph - Current channel geometry in the WB vicinity to SW Pass should also be determined.

Page 13, No. 4 Flow and Sediment Data, Last Paragraph, Second Sentence - Andrus (2007) may have measured sediment loads passing through the diversion.

Page 14, Second Paragraph, 1D Model Limits, Sentence 5 - We recommend that the study boundary limits extend south of Head of Passes to the SW Pass jetties in order to determine possible diversion effects on sedimentation in SW Pass.

Page 14, Paragraph 3, 1D Model Simulations, Sentences 5 and 6 - HEC-6T modeling to predict deposition/sour trends with and without the WB diversion would be interesting, but before and after bathymetry would show the sedimentation present before and after the diversion. However, it would not provide information concerning what caused the shoaling; the WB diversion and/or other factors (i.e., hurricanes, river modifications, river stage).

Page 15, First Paragraph, Task 3 - Proposal 1, Sentence 4 - The reach should extend below Head of

Passes to SW Pass.

Page 15, Second Paragraph, Last Sentence - Drafts should also be reviewed by the CWPPRA Technical Committee, Academic Advisory Committee, and LCA S&T Program.

Page 17, Second-to-Last Paragraph, Task 4 - Proposal 2 - Proposal 2 deals with predicting fine sediments passing through the WB diversion using the ADH model. We do not know if this degree of modeling is necessary because this question may also be answered by measuring the composition of fine sediments that currently exist in the diversion outfall area.

Page 18, Task 5, Paragraph 4 - Summarizing the historic engineering activities that have been completed in the lower MR would be helpful in understanding the system and projecting other potential causes of PAA and MR channel shoaling.

Page 19, Paragraph 3, Approach, First Sentence - West Bay land/water analysis from 1956 to the present may have been completed according to Clint Padgett's WB Work Plan meeting presentation. Sentence 3 - The bathymetric survey comparison will be very valuable.

Page 20, First Paragraph, First Incomplete Sentence - We do not agree that modelers of national reputation from outside of Louisiana are necessarily needed to review this effort unless they are already a part of the LCA S&T Program. Sentence 3 - The "close-in review" is a good idea as long as it doesn't slow the data collection and draft report preparation.

Page 20, Paragraph 2, Address Issues A, First Sentence - This sentence re-states one of the main TF questions for this effort. The TF requested an estimate of shoaling from the WB project, natural processes and the estimate of sediment removed from the MR which could result in decreased shoaling downstream. The OCPR BCG study may provide answers to many of these issues and should be incorporated in the final report.

Page 20, Last Paragraph, Sentence 3 - Bathymetric data will show how much shoaling has occurred in the PAA but will not be able to determine what caused that shoaling.

Page 21, Paragraph 3, Sentences 1 to 3 - We do not agree that bathymetric data answers the question "why" and modeling answers the question "how much" concerning WB diversion shoaling. Data will tell us how much shoaling is occurring. Models can simulate, based on data, what may happen under different circumstances, but actual data can tell what is actually occurring or has occurred.

Page 21, Last Paragraph - Andrus (2007) may have collected some data on the characteristics of flow and sediment passing through the diversion.

Page 22, First Paragraph, Second-to-Last Sentence - We agree that measuring sediment concentrations over a wide range of flows would be valuable, but question whether we have the time in this study to do so.

Page 22, Address Issues D, Paragraph 2, First Sentence - Although we understand the value of gathering this information, the proof of WB sediment retention is in measuring accretion rates within the WB receiving area. The Task Force did not specifically request this information in their January 2009 West Bay motion, however, Andrus (2007) (page 107) discusses sediment retention in the WB receiving area and may provide information for this issue.

Page 22, Last Paragraph - The current ecological benefits of West Bay are related to the degree of accretion in the WB receiving area, the amount of subaerial marsh (land) produced by the diversion, and any submerged aquatic vegetation present currently but not present prior to the diversion. Accretion in the WB receiving areas is currently being measured by the OCPR BCG contract and has been proposed in the Work Plan. Water depths and accretion data will show if any submerged sediments have moved to the "photic zone" and thus has contributed to increased area productivity. We do not feel that measurements of epiphytic or bottom algae is warranted as part of this study. Proof of the WB project's ecological success will ultimately be the amount of marsh it restores.

Page 23, First Incomplete Paragraph, Sentences 1 to 3 - These questions have been and will be answered by Andrus (2007), the current State BCG study, and current project CWPPRA monitoring and these sources should be acknowledged in the Work Plan (WP) and report. Last Sentence - This question has also been answered in that "SHREDS" were originally planned to be incorporated into the project design to aid in trapping sediment in the WB receiving area. We are pleased that a dredged material "island" is planned to be placed to retain sediment in the WB receiving area as a result of beneficial use of the 2009 PAA maintenance dredging cycle.

Page 23, Paragraph 2, Sentence 2 - The WB receiving area OCPR BCG study bathymetric results should be incorporated in the WP and report. Last Sentence - The project sponsors in coordination with the CWPPRA Environmental Work Group can evaluate the current project benefits and compare those benefits to those estimated when the project was initially approved in 1992. However, the main benefits relate to the amount of marsh restored by the diversion. At present, the only marsh restored is that resulting from the PAA beneficial use events of 2003 and 2006.

Thank you for providing us the opportunity to comment on the draft West Bay Work Plan.

Darryl Clark

References

Andrus, T. Mitchell. 2007. Sediment Flux and Fate in the Mississippi River Diversion at West Bay: Observation Study. Department of Oceanography and Coastal Sciences, Louisiana State University. Baton Rouge, LA. 229 pp.

NOAA comments

NOAA has reviewed the work plan for the West Bay diversion provided for our review and comment. As requested, below are the comments of NOAA/NMFS (Mathias Collins, Cecelia Linder and myself) as they pertain to the document and the overall effort:

- Overall, we find the work plan to be quite comprehensive for addressing the questions at hand and we are especially glad to see the proposed Task 2. The work proposed under that task is often missing in modeling studies of river reach sediment dynamics.

- As noted by more than one individual at the Diversion Summit, sediment transport modeling is not fully mature. ERDC should therefore consider presenting an uncertainty analysis with their sedimentation/sediment transport predictions (as well as the other predictions). This will assist stakeholders with understanding the results. For example, if in attempts to address Issue B, ERDC presents estimates along the lines that approximately 80% of the shoaling below the West Bay diversion is attributable to the project and 20% is related to larger-scale issues, we'll want to know if their estimates are +/- 50% or +/- 20%, for example.

- The state is apparently embarked on an evaluation of their own, as described in the document "BCG West Bay Efforts.doc". At the February 27, 2009 meeting, there was discussion of the state's efforts and a suggestion that their work be incorporated in the USACE workplan in some way, perhaps as an appendix. All agreed that the two efforts should at least be coordinated to the extent that the Corps work does not duplicate work already done by the state. We agree and suggest at a minimum that the state's efforts be included as an appendix and that the state's report be attached to the COE report when it is completed.

- Task 8, External Peer Review. In general, we find their proposals for peer review to be quite good--especially the inclusion of two modelers with national reputations outside of Louisiana. They suggested one means of identifying such folks. Another potential group to query is the Advisory Committee on Water Information's Subcommittee on Sedimentation (http://acwi.gov/sos/index.html). Mathias Collins of NOAA recently joined this group and would be happy to inquire of them whether or not they feel they have a current member who meets that profile.
They may or may not.

- Regarding price: It is an expensive work plan, but it has significant field data collection/analysis and multi-dimensional modeling components. Moreover, there will be a considerable effort to collect and analyze historical data sets (e.g., Task 2). So, the price is probably warranted, especially considering the expert personnel being proposed. But the project management line is on the high side, which is not uncommon for the USACE. It would be easier to more fully evaluate the budget if it were itemized to the task level.

- Regarding timing: Two budgets were presented during the Technical Committee meeting. One was for a six month study, and the other higher figure was for a 12 month study. Given the need to have this effort completed by the January 2010 Task Force meeting, the COE should be concentrating on the six month study effort. If it becomes obvious that the fine sediment modeling effort is needed, hopefully the six month effort will feed in nicely into the more extended modeling of silts and clays...

- Adaptive management: During the Technical Committee meeting, we asked whether the COE was evaluating alternative measures to limit deposition in the Pilottown Anchorage or to capture greater amounts of sediment in the diversion. The answer was "no". We believe it may be useful to have some engineers evaluate actions that could be taken to improve the project or to lessen the sediment deposition in the anchorage. Based on the presentation provided during the meeting, it appears that the angle of the diversion in relation to Southwest Pass is slowly changing to capture greater river flows. Such an evaluation may be necessary.

-Coordination - there needs to be a clear commitment to coordination with the navigation industry in the work plan. Especially, if the COE evaluates potential changes to the project under the previous "adaptive management" paragraph. There hopefully could be a more specific time line that would identify when specific work items are to be completed and when Task Force or Technical Committee input would be expected.

Specific comments:

p. 6, line 3: Are 3 verticals adequate as a minimum number for transects of this length?

p. 10, line 6: Bedload transport will be estimated using repeated multi-beam bathymetric methods. Given the importance of bedload measurements to results, has the USACE considered using an additional technique for comparison (e.g., a FISP bedload sampler)? The work plan suggests doing so for the suspended sediments (P-61 and ADCP). The bedload estimates may benefit from similar duplication.

p. 11, line 18: The work plan states that "Data from subsequent surveys will be used to develop..." What subsequent surveys are being referred to? Outside of this work plan?

p. 14, line 29: What is the time step for the 1D model simulations?

p. 19, Task 7: "Information Pending." ?

EPA comments on the draft work plan for the West Bay Project review

Thank you for the opportunity to provide input.

One of the most important considerations is whether the specific questions being asked on this issue are in fact the right ones. In large part, we feel this is the case. We would like to point out that the primary emphasis should be placed on Issues A and B. Although issues C, D and E are relevant and important to our overall understanding of diversion processes, one might argue they are not explicitly called for in the January 21 Task Force motion. We would not suggest removing these items. However, if for budget or timing reasons, any reductions in the scope are called for, we would suggest these reductions not be applied to Issues A or B.

The Task Force motion indicates the draft and final work plan will be independently reviewed by a team of experts including the CWPPRA AAG and LCA S&T program. We would recommend including Harry Roberts (LSU) and John Wells (Virginia Institute of Marine Science) in this effort if possible.

Page 2; Background; 4th paragraph; 1st sentence: This sentence currently reads, "The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA." This sentence should be deleted as it is premature since the purpose of this study is make a determination as to whether or not the CWPPRA project induces shoaling.

On a related note, as you may know, the Baptiste Collette channel is being dredged to accommodate navigation, and is associated with the larger MRGO closure effort. This channel is upriver of Main Pass and the sediment load/dynamics at that point might be expected to be similar to that experienced at West Bay. Given the current uncertainty regarding River shoaling, and the near-term opportunity to gain additional information about this issue from activities taken at the B. Collette channel, the Corps may want to consider pre and post construction monitoring and analysis of changes, if any, in River bathymetry in the vicinity of that channel as well.

NRCS comments

NRCS has reviewed the work plan for the West Bay Diversion Project (MR-3) and offer the following comments.

Our main concern is the potential "open-endedness" of the project's cost to the CWPPRA Program and the uncertainty of the ecological benefits. We want to emphasize that we are trying to determine the impact on CWPPRA, not any other study or program. Of primary concern to us is that this work plan will give us these answers. The work plan must be structured to provide an updated and sound estimate of project costs and benefits so that a truly informed decision can be made by the CWPPRA Task Force.

Specifically this document needs to address:

1) How much (total and rate) shoaling occurred prior to the West Bay project?

2) How much (total and rate) shoaling has occurred since the project was completed?

3) What percent of shoaling is attributed specifically to the West Bay project?

4) What is the projected shoaling and cost associated with the project for the remainder of the project life?

5) What is the plan at the end of the project life? Will another program take over the maintenance dredging, or is there a closure plan anticipated? If an agreement is in place with the shipping industry to dredge to remove shoaling impacts due to the project, does the agreement end with the project life? What are the legal ramifications of this?

6) What is the revised estimate of land building for this project over time (e.g., by 2010, 2015, 2020, etc.)?

7) What is the revised estimate of project cost, by year, through the project life, including closure if such is anticipated?

8) What are the projections for the scouring effect at the location of the project? The project was originally built as a 20,000 cfs diversion and monitored to determine if the river would be redirected through the West Bay channel. It is our understanding that the scouring was an anticipated effect of the project. Will this work plan investigate the effects of the scouring that is occurring? Specifically, will the scouring increase and ultimately become a new cost to the project that needs to be addressed, and is there a potential that the scouring effect will result in this issue of a potential change in the course of the river? The work plan should re-evaluate the original projection that the project's capacity would increase from 20,000 cfs to 50,000 cfs. What is the revised schedule for this increase, and what is the revised projection of channel dynamics?

Are the Corps and OCPR in agreement that this work plan will address these questions? NRCS is concerned that the Corps and OCPR may be simultaneously performing independent evaluations of the West Bay Project, and that this may not be a "project team" effort. If there are two evaluations, will the results of the two evaluations be combined into a single consensus project team point of view before it is given to peer review? Will the Maritime Industry be included in the Peer Review?

NRCS would like to see the cost and timeline more clearly defined in the work plan. If the panel for Peer Review is still being finalized, then the total cost of this work plan is not final either. Please show this information.

Also, please provide a complete listing of approved project funds, expenditures to date, and balances by CWPPRA budget category. From what category will this work plan be funded?

NRCS offers a final question that may not be relative to the work plan, but is of interest to us. What is the proposed use of the material from the emergency dredging of the Pilot Town Anchorage? Will it be placed adjacent to the bank or in the receiving area of the project, or in some other location? We would like to see this reported in the next briefing of this project to the Technical Committee.

_____

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Review of "CWPPRA West Bay Draft Work Plan to Evaluate the West Bay Sediment Diversion Effects in the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area"

John T. Wells and Joseph Fernando
Members, Science Board, LCA Science and Technology Program
March 15, 2009

Background and Scope of Comments

The West Bay Sediment Diversion Project is intended to provide river water to restore and maintain approximately 10,000 acres of marshland by diverting Mississippi River water into West Bay over the project period (2003-2023). The project includes an interim stage of temporary diversion that delivers 20,000 cfs to the receiving basin (Barataria Bight) followed by an anticipated modification to accommodate 50,000 cfs. In the design stage, there was concern that the diversion may enhance shoaling in the main channel, in particular in the Pilottown Anchorage Area (PAA). Contingencies have been included in the budget to dredge this area to maintain a navigable channel over the 20-year project life. Over the past several years, however, the dredging cost has increased sharply, far outpacing the allotted budget. In a recent CWPPRA meeting state officials have requested a study to determine whether the diversion has significantly affected shoaling in PAA and, if so, what fraction of total shoaling is attributable to the diversion so that the dredging cost can be apportioned among vested parties.

It has been argued based on conceptual models that diversions may lead to increased sedimentation in river channels, which holds true for the West Bay diversion. Numerical modeling (Gessler & Pourtaheri, 2000) prior to the project as well as subsequent analysis of results (Miller, 2004) shows the possibility of increased shoaling downstream from RM 4.7 to RM 1.5, with little aggradations beyond up to RM 0 (Head of Passes). This suggests strong hydraulic adjustment near the vicinity of the diversion. A crude estimate can be made on the amount of shoaling based on the conceptual model of Letter et al. (2008), where the amount of shoaled material can be estimated as

$$\Delta D = Q_w (1-\beta) C_e \left[\left(\frac{1-\delta\beta}{1-\beta} \right) - (1-\beta)^{\alpha} \right],$$

where Q_w is the upstream flow rate, β the fraction of the river diverted, C_e the upstream equilibrium sediment concentration, δ the fraction of C_e in the diverted water and α a power law exponent that connects the equilibrium concentration to Q_w. Taking representative values from Andrus (2007): $\beta = 0.15$, $\alpha \approx 1$, $\delta \approx 1$, sediment density of 2700 kg/m^3 and sediment transport rate of 5000 kg/s, it is possible to estimate an annual accretion of sediments (assuming uniform rates) as $\Delta D \approx 3\text{x}10^6 \ m^3/yr$ or

$4x10^6 cubyds/yr$ (amounting to a sediment depth of 2-4 ft per year between RM 4.7 to RM 1.5). With regard to sediment redistribution in West Bay, installation of SREDS was recommended, the location and the types to be determined based on monitoring during the interim phase.

We offer the following comments on the draft work plan as members of the Science Board in response to a request from the Director of the LCA Science and Technology Program. In the paragraphs below, we have focused on the technical aspects of the work plan with particular emphasis on any issues that may diminish the likelihood of success. We have not commented on project cost or cost-effectiveness of the work relative to the benefits, nor have we offered recommendations on whether the project should be continued for its full life of 20 years.

Comments and Recommendations

1. Overarching Comment. The draft work plan states on page 2, paragraph 4, that… *"The West Bay Sediment Diversion Project induces shoaling in the federally maintained navigation channel and the PAA".* This statement gives the impression that it is a foregone conclusion that there is an established cause-effect relationship between the diversion and shoaling. Yet, the primary purpose of the draft work plan, as identified in Issue A, is in fact to answer the very question *"Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel"?* It may well be that a cause-effect relationship exists (as noted above, based on conceptual models), but it does not appear to have been definitively established a priori for the West Bay diversion and thus should not be stated as fact early-on in the draft work plan. This is a seemingly minor point but, given the contentious nature of the shoaling problem, every element of the work plan must be viewed as objective and credible, and without preconceived outcomes.

2. Project Goals and Deliverables. We commend the authors of the draft work plan for identifying the most pressing questions and articulating them in a clear fashion. Obviously, the first-order issue is resolving the impact of the diversion project on magnitude and rate of shoaling but perhaps equally important, which will also be addressed, is a determination of how the shoaling could vary with changes in riverine processes and forcing. The large-scale geomorphic analysis will ensure that other long-term and spatially-distant factors are considered as well. Whereas it is unlikely that all of the goals will be met because of time and other limitations, the chances for success in answering the most fundamental cause-effect questions are reasonably good provided 1) the time line is significantly extended (see #5), and 2) the key representatives from each task maintain very close communication throughout the study to share data and findings, tentative conclusions, shortcomings in design, and other information that may be relevant.

3. Location and Extent of Shoaling. The draft work plan is framed around the shoaling problems in both the PAA and the federally maintained navigation channel. However, the

location and extent of shoaling is not shown in any of the figures, nor are there measurements or even estimates of the amount of shoaling in the work plan itself. Based on dredging costs and the urgency of resolving the role of the diversion in creating shoaling, it (shoaling) is clearly quite considerable. But more background is needed here. We recognize that Task 2, the geomorphic analysis, includes an analysis of available dredge records to determine patterns of sedimentation. However, it is not possible to fully evaluate the proposed field data collection and analysis work, especially with regard to sampling design and location of stage survey measurements, without more information on the "problem". For example, what is the pattern of shoaling relative to the conveyance channel, and what are the navigation depths in these areas? Annotation of the region of shoaling and mile markers on the figures would be helpful, as would bathymetry and other morphologic features in this section of the river.

4. Comparison of Modeling and Observations. The West Bay Diversion Project appears to have failed in meeting anticipated outcomes due to a combination of factors, including cost overruns. After a substantial capital outlay for the first phase, the channel enlargement for the second phase has not been initiated, SREDS have not been installed and no direct evidence for land building or emergent vegetation exists. There is a possibility of abandoning the project and closure of the conveyance channel in FY 12 without reaping any obvious benefits. For future reference, we recommend that the pre-construction numerical model predictions (e.g. CH3D-SED studies by Gesssler & Pourtaheri, 2000) be compared to post-construction observations to learn what went wrong in modeling, more specifically the shortcomings of the model physics and boundary conditions. ERDC and LSU plan to use the ADH and CH3D sediment transport models (the former containing improved sediment transport model physics and improvements) and it will be useful to evaluate previous predictions of CH3D for the design phase against the bulk (sparse) observations made after the diversion. Note that Gesssler & Pourtaheri (2000) predicted enhanced shoaling immediate downstream, but no comparisons exist between observed and predicted shoaling.

5. Time Frame for Work Plan. There is a glaring problem with regard to the apparent time line for the project. It is inconceivable that this work can be completed within six months. The measurement program will cover at least one flood year, model runs are in need of measurements to specify improved boundary conditions, runs with slug conditions, rising and falling limbs etc., all demanding time as is the case with 2D/3D simulations. HECT-6T model is still being implemented for the lower Mississippi River, and incorporation of the fine sediment module will not be ready for some time. As it stands, even with multiple institutions participating, at a minimum this is a two year project. On the other hand, the modeling task can be accelerated by judicious use of past data to specify boundary conditions so some preliminary estimates can be made to estimate shoaling induced by the diversion (with on-off diversion conditions). The runs, however, need to be validated and boundary conditions need to be updated as data become available. Another concern is the mismatch of timeframes for the proposed diversion closure and realistic time required for a study of this magnitude. Even if closure occurs, the results of this comprehensive study will be an asset in guiding future diversion designs.

6. Model Assumptions. The bulk sediment accretion we presented above is an estimate based on many (and even sometimes unjustifiable) assumptions such as no bed adjustment near the diversion and uniform sediment distribution in the channels. The bulk model does not give spatial and temporal distributions of sediment deposition. The proposal uses perhaps the best available tools in river sediment modeling, which includes 1D modeling for long term morphological evolution (HEC-6T) and 2D/3D simulations using ADH (2D version) and CH3D. The upstream boundary conditions for the former needs to be specified carefully and an analysis to show that the diversion (hydrodynamic) effects propagate upstream for a distance (4-5) times the width of the channel. The proposed measurement locations appear to be well positioned to meet this criterion and carefully thought out. Processes of multiple scales, from geomorphic response to localized sediment accretion, are included in the proposed integrated modeling system, which is expected to produce results based on best science. The fifty year time scale will allow capturing processes of a range of time scales. Long term1D model runs with and without diversion has not been done before, and the model results are expected to yield useful first order results on the effects of diversions.

7. Model Resolution. The unstructured grids of ADH will allow dense resolution of the model for areas of interest, and will offer a refined way of capturing shoaling around the diversion. Previous work shows that the details of flow in the vicinity of the diversion (secondary flows, vortices and separated flow) may affect shoaling and unstructured grids will provide capabilities to capture such effects. Since ADH is available only in 2D, the work plan proposes to compare ADH and CH3D outputs to delineate 3D effects, but there will be a problem with this procedure as one of the problems of CH3D is the difficulty of fine-scale 3D feature education, as it maintains a fine but limited resolution in all areas (c.f. previous modeling work). Perhaps some qualitative information of possible flow structures and their origins can be obtained from LSU physical model runs (Wilson et al., 2007), but some caution is sounded given the failure of physical models in capturing correct shoaling patterns. In some cases the physical model results are not even in qualitative agreement with numerical simulations. The 2D/3D modeling will be conducted in conjunction with LSU, which has extensive experience in ADH and West Bay diversion work. This sound partnership will ensure cross fertilization of the project.

8. Shoaling and Land-Building Issues. There are some issues pertinent to shoaling that can not be addressed using the proposed modeling system. These include the effects of salt wedge intrusions on trapping sediments (because of the fine scale interfaces), episodic sediment transport events (Grams et al., 2006) originating from hydrodynamic instabilities and other threshold-dependent processes that cause sediment transport response to be non-linear (e.g. Schumm, 1977). We also question whether it will be possible to adequately simulate the actual processes of land-building in the West Bay receiving basin. Whereas total sediment deposition in the Bay and re-suspension and transport out of Bay are reasonable undertakings, the complexity of subsurface processes such as channel bifurcation and mid-channel shoal formation likely exceed current modeling capabilities. This may not be detrimental in answering the most fundamental questions at hand but will preclude the level of detail that may be ecologically desirable

and that some stakeholders may insist on having in order to deem the project successful. Given the on-going dialog on climate change, time permitting, it will also be useful to investigate the effects of sea-level rise on shoaling as reduction of hydraulic gradient may lead to changes in sedimentation patterns.

9. Processes of Land-Building. Related to #8 above, it is important to point out that deposition of subaqueous sediment in West Bay, while not yet fulfilling the goal of creating new land because none can actually be seen, is in fact providing a base upon which new subaerial land will almost certainly build. Studies of subdelta land building going back at least 40 years (Coleman et al., 1969; Wells and Coleman, 1987) have consistently shown that there is often a period of relatively slow infilling (e.g. Atchafalaya Bay) during which an organized channel pattern is established subaqueously, then followed by rapid new subaerial land growth. It is thus premature to conclude that the West Bay Diversion is a failure because after only 5 years there is no new land. A typical period of subaqueous infilling may be on the order of 10 years or more. The recommendation here is to invest sufficient resources in monitoring to be able to accurately track the progress with the highest resolution time step possible. This is important not only for West Bay but for application to other planned diversions.

10. Possibility of Conflicting Conclusions. Numerous state-of-the-art techniques will be brought to bear on the problem of shoaling. Indeed, the last section of the work plan states that…*"The goal of this work plan is to provide a comprehensive modeling approach using all of the tools in a carefully designed way that overcomes all previous limitations"*. This approach is to be applauded. However, because of the diversity of tools, there is the possibility or even probability of conflicting results. What happens if results not are definitive or if conclusions from, say, the geomorphic analysis diverge from those in the models? Will results from the modeling carry the most weight? How will discrepancies be handled? On one hand, it can be argued that it is premature to be concerned about conflicting conclusions until it is clear that this is an issue; on the other, with such a compressed time line, there is need to at least recognize, and even make plans for, the possibility of an inclusive study.

11. Peer Review of Final Report. The draft work plan under Task 8 addresses external peer review by indicating that, in addition to the CWPPRA Academic Advisory Committee, modelers and scientists outside of Louisiana should provide reviews. There is also a recommendation that there be a *"close-in review"* of the work plan that includes assignment of *"…individual reviewers to participate with particular aspects of the work that they are well-trained in…"*. We concur with this proactive approach and recommend a further step to ensure maximum credibility at the end of the study: peer review of the final report and recommendations. This could be especially important in the case of inclusive or conflicting results that may require professional judgment.

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March 13, 2009

Colonel Alvin B. Lee
Chairman, CWPPRA Program
Corps of Engineers, Department of the Army
P.O. Box 60267
New Orleans, LA 70160-0267

Mr. Garret Graves
Director, Governor's Office of
Coastal Activities
P.O. Box 94004
Baton Rouge, LA 70804-9004

Gentlemen:

RE: WEST BAY DIVERSION WORK PLAN COMMENTS FROM THE MARITIME INDUSTRY

During discussions at the January 21, 2009 Coastal Wetlands Planning, Protection Restoration Act Task Force Meeting, Mr. Garret Graves of the Governor's Office of Coastal Activities made a Motion that was passed by the Task Force. Mr. Graves' Motion is reprinted below in its entirety:

> *"Motion to require the Corps of Engineers and State of Louisiana, with participation from the CWPPRA Technical Committee and consultation with the maritime industry, and other interested parties to finalize a work plan on river shoaling in the area of the CWPPRA West Bay Diversion Project by February 28, 2009. Provided Further, that the work plan include an analysis of current and historic bathymetry and other relevant data on this region of the Mississippi River. Provided Further, that the work plan shall include a quantification of total historic and recent shoaling that has occurred in the area before and after the construction of the project. Provided Further, That the report resulting from the work plan shall include estimates on the volume of shoaling resulting from the project, shoaling from natural processes and an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion. Provided Further, that a final report resulting from the work plan be provided to the Task Force within six months. Provided Further, that the draft and final work plan and report be independently reviewed by a team of experts within 30 days of completion of each document. The independent review team should consist of the CWPPRA Academic Advisory Group and the LCA Science and Technology Program."*

I attended the above-referenced meeting and reiterated our concern that many of the restoration projects involving the Mississippi River are never discussed in advance with members of the maritime industry. An additional meeting, prompted by Mr. Graves' Motion's time line**,** was held on Friday, February 27, 2009, at the Corps' District New Orleans office. While in attendance at that meeting, and after the West Bay Diversion's Project Manager, Ms. Cherrie Price, made her presentation, she stated that a draft work plan had already been composed. To my knowledge, no one from the maritime industry was contacted prior to this meeting. Two members of the maritime industry who were present made comments on the docket, and it was stated again that Mr. Graves' Motion required consultation with the maritime industry. I have reviewed the history of the West Bay Diversion project, and I am filing these comments with the support of members of the maritime industry shown in the last paragraph of this letter.

Attached are several documents relating to the history of the maritime industry's position. The first attachment is a letter dated April 28, 1998, from Mr. Channing Hayden that is addressed to Ms. Rachel Sweeney (Louisiana Department of Natural Resources). The second attachment is a letter dated October 4, 2002, also from Mr. Hayden, that is addressed to Colonel Peter Rowan and Mr. Jack C. Caldwell (Secretary of the Louisiana Department of Natural Resources). The third attachment is a letter I composed dated March 6, 2008, that was addressed to Mr. Troy Constance (Chairman of the CWPPRA Technical Committee at that time).

Mr. Hayden's April 28, 1998 letter clearly details that he and, more specifically, our predecessor to this Association (the Steamship Association of Louisiana) was "designated to speak on behalf of industry and articulate the criteria on which the industry's support is based on...."

Mr. Hayden's 2002 letter states that the maritime industry expects the Pilottown Anchorage Area (PAA) to be dredged and maintained at historic depths. The following quote from this letter clearly expresses the maritime industry's position:

> "*Before the opening of the West Bay Sediment Diversion Project, the maritime industry would like assurance that the Corps and the Department of Natural Resources have put the necessary arrangements in place so that the funds flow to the Corps when needed and in the most efficient manner. Industry expects that any needed dredging of the Pilottown Anchorage will occur seamlessly with the normal maintenance dredging performed by the Corps in the Head of Passes/Cubits Gap area.*"

The 2002 letter stated the maritime industry's position by recommending that no future diversion projects be considered until the wetlands restoration impact of the West Bay Diversion was clearly understood. There are many reasons for the current skepticism of the maritime industry regarding the wetland restoration benefits of this experimental, uncontrolled diversion. The major tenets of this position are that five years after the opening of the West Bay Diversion, riverine sediments have not created any acres of marsh. The maritime industry also questions the placement of the diversion within a critical, federally authorized deep-draft anchorage and site location directly opposite to the major current flow in this reach of the Lower Mississippi River. Because of the stronger velocity, it appears that more sediment would be carried to the opposite side (east) of the channel from the Diversion. The negative impact on the PAA, and the lack of commitment by state and federal authorities to honor the maritime conditions documented in the original, signed agreement, has left the maritime industry skeptical of this Diversion's effectiveness. It is

important to note that the maritime industry was approached by the same agencies and asked to document acceptable conditions that would garner our support.

Many of the ideas in my 2008 letter, which were widely supported by the maritime industry, were updates to the maritime industry's original position regarding our support of the West Bay Diversion.

The maritime industry believes that any entity responsible for implementing changes to the navigation channel or deep-draft anchorages must also be responsible for correcting any negative impact. Because the agreement to dredge has not been adhered to, the maritime industry has experienced negative impacts, and navigational safety has been compromised due to shoaling in the PAA. The most obvious safety issue caused by the shoaling and the lack of the promised advanced maintenance dredging is that there are very few locations in which to anchor a deep-draft vessel. Any vessel caught in fog or having mechanical difficulties has to navigate miles above the PAA to reach the next anchorage. Also, shallow-draft vessels can no longer transit near the right descending bank or through unused anchorage spots. These vessels are forced to transit either closer to the deep-draft navigation channel or into this navigation channel. The third factor that contributes to the constriction of the navigation channel occurs because vessels that are able to anchor in the PAA must favor the eastern side of the anchorage. This places the vessels closer to the deep-draft navigation channel. The maritime industry is deeply concerned that, because the agreement to maintain the PAA is not being honored, the risk of an incident is extremely elevated. There have been several close calls, and it is only because of the professionalism of the state and federal pilots who operate on the Lower Mississippi River that a collision has not occurred.

The quote below is taken directly from the agreement that was signed by Colonel Rowan and Mr. Caldwell between the Corps and the Louisiana Department of Natural Resources. Emphasis has been added in the area of the quote that is critical to the maritime industry:

> *"Included as a Project feature is the maintenance of the outermost (eastern) 250-foot wide strip of the Pilottown Anchorage area and the entire width of the adjoining access area between the strip of Pilottown Anchorage and the Mississippi River navigation channel.* ***Advanced maintenance of the Pilottown Anchorage area shall be undertaken to account for the anticipated shoaling induced by the Project (Emphasis supplied)****. Below the conveyance channel, the anchorage and access areas shall be maintained at the depth existing at the time the Phase One interim conveyance channel is constructed. Above the cut, three 45-foot deep by 1,500 feet long anchorage berths shall be constructed and/or maintained..."*

Interestingly enough, the draft work plan references this quote, yet it omits the entire portion above the section in bold, which is critical to the maritime industry's position. There have been discussions, and currently there are additional studies being conducted, to determine how much of the shoaling in the PAA is attributable to the changes in hydrology caused by the Diversion. The section in bold was in the signed agreement, and it clearly states that before the Diversion was opened, the state and federal agencies knew that the Diversion would increase the amount of shoaling in the PAA. This question is specifically asked on page three of the draft work plan, under the "Current West Bay Issues" heading under "**Issues A**."

This is precisely the reason the maritime industry was requested to develop acceptable working parameters. The maritime industry is not only concerned that the signed agreement(s) has not been honored, but they are also concerned with the fact that the signing parties seem to be considering further changes the

terms of the agreement that would be detrimental to safe navigation. There are claims that, because of the amount of shoaling in the PAA, there is an attributable reduction in the amount of cubic yards being dredged below this reach of the River. However, there is no documentation to validate this claim, nor does it appear to be the case based on the amount of dredging that continues in the area of Cubits Gap and Southwest Pass. It should be noted that, since the Diversion was opened, the Corps has dedicated funds from its normal operational budget to dredge the navigation channel in this area to address shoaling induced by the Diversion. The additional dredging is not funded by the CWPPRA program.

Through discussions with veteran pilots, there is only one recollection of dredging in the PAA prior to construction of the West Bay Diversion. The Corps is well aware that twice within a two-year period since the opening of this project, the PAA was deficient and in desperate need of dredging. After months of requests from an industry stakeholder group, the first dredging cycle was conducted in 2006. The second dredging assignment is scheduled to be conducted in early summer 2009 during a low-water period.

The maritime industry would be interested to know why the sediment retention dikes (shreds) that were part of the original proposal were never installed. Notes from meetings as far back as 2000 show that these structures were to be included to act as "speed bumps" to slow the velocity of the water flowing through the Diversion, thereby encouraging the deposition of suspended riverine material. These structures were mentioned in the draft work plan, but we have been unable to determine why they were never installed. The West Bay Diversion's discharge is roughly 30,000 cubic feet of water per second. Without these "speed bumps," the flow through the Diversion is unimpeded and does not encourage deposition. We are also concerned with the following information noted at the bottom of page 4 of the draft work plan:

> "Further, while bed-load measurements have recently been made in the lower river using modern techniques (Nittrouer and Allison, 2008), none of these measurements have been made at monitoring stations like Belle Chasse, making estimation of the bed-load component of sediment transport at West Bay difficult."

This is also troubling because, as mentioned in the draft work plan, many of the models available do not account for the impact of distributaries. Specific reference is given to Cubits Gap, Grand Pass, and Baptiste Collette. The documented shortcomings in the modeling reaffirm the maritime industry's concerns that were voiced prior to the Diversion's construction. These concerns remain, especially since the marsh creation ability of the West Bay Diversion is still unproven. This Diversion is experimental, and until it begins to create marsh, the proposed benefits must also take into account the negative impacts on maritime transportation; especially considering that the state's and the Corps' restoration plans heavily rely on the success of future diversion projects.

The draft work plan mentions that detailed historical hydrology, sedimentation, and channel morphology will be researched for the Lower Mississippi River, with an emphasis on the area near the PAA and the West Bay Diversion. The proposed starting point for this historical research is 1960. While those results are of interest, the time line must allow for impacts such as extremely elevated river stages (especially those high enough to trigger an opening of the Bonnet Carre Spillway), impacts of strong weather systems, and the impacts of deepening the federally authorized navigation channel in the late 1980s. The information should be reviewed in order to decipher any anomalies in the results.

Coastal restoration is also of vital importance to the maritime industry. We strongly urge the use of beneficial dredged material that is not an experimental concept. Through beneficial use, land can be created quickly while also serving to maintain channels in conditions that increase navigational safety. The maritime industry requests inclusion in all future discussions concerning restoration projects so that our expertise can be used to promote restoration while limiting the negative impact on vessel transits. The more we all cooperate and hold open discussions, the more likely we are to find solutions that will work across the board. These efforts must be accomplished in a way that does not hinder the state of Louisiana's largest economic generator, especially during the current financial situation.

The conditions listed above have been approved by the following maritime entities: Associated Branch Pilots of the Port of New Orleans; Associated Federal Pilots and Docking Masters of Louisiana, LLC; Association of Ship Brokers and Agents; Crescent River Port Pilots' Association; International Freight Forwarders and Customs Brokers Association of New Orleans; Louisiana River Pilots Association; Lower Mississippi River Waterway Safety Advisory Committee; Lower Mississippi River Waterway Safety Advisory Committee's Safety at the Mouth Ad Hoc Committee; Maritime Navigation Safety Association; New Orleans-Baton Rouge Steamship Pilots Association; New Orleans Board of Trade, Limited; NSA Agencies, Inc.; Plaquemines Parish Council; Port of Greater Baton Rouge; Port of New Orleans; Port of Plaquemines Parish; Port of South Louisiana; Propeller Club of New Orleans; Valero St. Charles Refinery; and World Trade Center of New Orleans;

Very truly yours,

GULF STATES MARITIME ASSOCIATION

Sean M. Duffy

Sean M. Duffy, Sr.
President and CEO

Attachments

cc: Ms. Melanie Goodman, U.S. Army Corps of Engineers
Ms. Cherrie Price, U. S. Army Corps of Engineers
Ms. Nial Patel, Office of Governor Bobby Jindal

Comments on CWPRA West Bay Sediment Diversion Draft Work Plan

Thank you for the opportunity to submit comments on the CWPRA West Bay Sediment Diversion Draft Work Plan. We appreciate the work developing the plan, and commend the effort to improve estimates of sedimentation resulting from the diversion and sedimentation from other factors.

We concur with comments on the work plan provided by Darryl Clark of U.S. Fish and Wildlife Service. Inclusion of the CWPRA motion text and a summary of how each of the elements in the motion are addressed would help clarify the purpose and scope of the work plan. Ideally, the work plan should integrate the State's effort with BCG, or at least acknowledge and take advantage of the State's work to guide modeling efforts.

It would be useful to have the study plan relate the eight Tasks described (pp. 5- top of 21) to the five issues (pg.4). The eight Tasks do not describe their utility in addressing each of the five issues. The "How Do The Tasks Address The Issues?" at pp. 21-25 purposes to do this, but it does not refer to any of the specific tasks in the discussion of each of the Issues.

The draft work plan is a large and comprehensive effort. The CWPRA motion on January 21 2009 includes a deadline of six months for a final report resulting from the work plan to be provided to the Task Force. A timeline for completion of the tasks in the draft work plan would provide important information, particularly in light of the statement on pg. 6 about river surveys taking a year. Perhaps an interim report could be completed within 6 months, and a draft final report within one year.

Detailed Comments

Introduction

Paragraph 1

The introduction discusses how the "unprecedented knowledge and insight that will be gained from this effort" is crucial to planning future diversion projects. However, this study was specifically undertaken to address the motion from the January CWPRA meeting. Inclusion of the CWPRA motion text and a summary of how each of the elements in the motion are addressed would help clarify the purpose and scope of the work plan.

Paragraph 4

It is unclear from this paragraph whether the West Bay project performance is part of the draft work plan, or part of a larger effort. The CWPRA motion does not include project performance evaluation.

Background

Paragraph 1
River diversions are not only included in Louisiana's State Master Plan, but also in the Louisiana Coastal Protection and Restoration (LACPR) plan, the Louisiana Coastal Area Plan (LCA), Coast 2050, the Multiple Lines of Defense Strategy, and in the Water Resources Development Act (WRDA).

Paragraph 4
Part of the purpose of the investigation is to determine how much of the shoaling is induced by the Diversion. Issue A addresses "Is the diversion inducing shoaling in the Pilottown anchorage area and the Mississippi River Navigation Channel?" Consider changing the first sentence to "The West Bay Sediment Diversion Project may induce shoaling…"

Current West Bay Issues
The work plan clearly delineates the five issues addressed by the comprehensive program.

Issue B:
Suggestion to describe the long space scale changes being evaluated. Sea level rise and subsidence are two important changes to consider. Sea level rise has shown to cause the locus of sediment deposition to move upstream.

Issue C:
Are the sediment efficiency and carrying capacity of the conveyance channel already known from monitoring of West Bay? The West Bay Diversion Monitoring Plan (Carter, 2003) describes a monitoring plan to ascertain these values.

Issue D:
Some of this information is discussed in work by Andrus (2007) and Kolker (2008). Analysis of sediment retention in the receiving basin is interesting and important information. However, this topic is not included in the CWPRA Task Force motion.

Issue E:
The topics listed under Issue E do not appear to address the topics in the CWPRA Task Force motion.

Comprehensive, Systems Approach to Evaluate the West Bay Sediment Diversion Effects on the Lower Mississippi River in the Vicinity of the Diversion and the West Bay Receiving Area

The USGS collects a large amount of data in the Mississippi River, but there is not a description of USGS's role in this study. Since USGS is well equipped to be involved with some of the data investigations, should they be included in this portion of the study?

Task 1: Field Data Collection & Analysis

Paragraph 1
Include sentence on how the data will increase usefulness of modeling efforts, or consider including sentence in subsequent paragraph.

Paragraph 2
Under 1) consider revising "in adjacent navigational anchorages" to in the federally maintained navigation channel and the PAA. This will provide consistency with references to shoaling earlier in work plan.

"Integrated surveys are needed ... 2) to determine sediment fluxes into the receiving basin (Barataria Bight). The latter is necessary to ascertain if the diversion is operating within designed flow limits. This input function is also vital to morphological modeling of the evolving land building in the receiving basin." These sentences are unclear. How do sediment flux measurements ascertain flow values? Also, morphological modeling in the receiving basin does not clearly correspond to the topics included in the CWPRA Task Force motion.

One-time Surveys
The multibeam survey is designed to support, through incorporation as boundary conditions in numerical models, evaluation of water and sediment processes in the vicinity of the West Bay Diversion. The CPRA Task Force motion includes "an estimate of the volume of sediment that has been removed from the river resulting in a decrease in the dredging required in the vicinity of and down river from the West Bay diversion." In order to effectively evaluate downstream sediment removal, it would be important to expand bathymetric surveys downriver farther than the two miles below the diversion entrance channel as proposed.

The following paragraphs explain a detailed data collection and analysis effort. However, the focus appears to be on the collection and analysis of new data, with very limited discussion of historical data analysis. As a first part of the effort, a thorough analysis of data already collected would provide much insight into the patterns of shoaling in the federally maintained navigation channel and the PAA, and incorporation of the State's work with BCG is suggested.

TASK 2: Large-Scale/Longer-Term Geomorphic Analysis

This task addresses many of the topics in the CWPRA Task Force motion, and results should be very informative regarding shoaling patterns, and perhaps also inform the necessity of further modeling work.

TASK 3: 1D Sedimentation and Modeling

1D Model Input Requirement
1. Channel Geometry
What is the spatial extent of these channel geometry datasets?

3. Sediment Data
Suggest a more detailed description of the sediment data, how it will be vertically averaged for the 1-D model, and how data obtained under Task 1 might be incorporated.

ID Model Calibration
More detail on development of the typical hydrograph would be informative.

1D Model Limits
The domain of the model should extend downstream past Southwest Pass to determine any reductions in shoaling at this location due to the diversion.

1D Model Simulations
Since there is a 10-year flood cycle (such as we experienced in 2008), it would be interesting for the 50 year simulations to not only include typical hydrographs, but if possible also flood year hydrographs interspersed at relevant intervals.

Task 4 – 2D/3D Modeling

Tasks 4 – Proposal 2
It is unclear whether these data will require an additional collection effort or will be collected under Task 1.

Calibration and verification of models using existing data and data collected in 2009
Are dredging records and location information of these records adequate for calibration/validation of the models, or please discuss if further data are needed.

Simulation Scenarios
More details about the spring hydrograph, whether it will be a multi-year average spring hydrograph, or from a single flood year (such as 2008) would be informative.

Task 7 – Current West Bay Conveyance Channel Discharge Capacity
Description of task and the agencies/organizations involved.

How Do The Tasks Address The Issues?
It would be helpful to refer to any of the specific tasks in the discussion of each of the Issues.

References
Andrus, M.T. 2007. Sediment Flux and Fate in the Mississippi River Diversion at West Bay: Observation Study. Master's Thesis, Department of Oceanography and Coastal Sciences, Louisiana State University, (http://etd.lsu.edu/docs/available/etd-11122007-184535/)

Kolker, S.A., Allison, M.A., Butcher, K.A., Nyman, A.J., Rosenheim, B. 2008. *Sediment Dynamics of the Mississippi River Flood of the Spring of 2008:*

Implications for Coastal Restoration. Presented at Dynamics of the 2008 Lower Mississippi River Flood Conference, Tulane University, October 17 2008

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

PROJECT UPDATE AND REQUEST FOR PROJECT SCOPE CHANGE FOR PPL 11- RIVER REINTRODUCTION INTO MAUREPAS SWAMP (PO-29)

For Discussion:

The Environmental Protection Agency (EPA), in coordination with the State of Louisiana will provide a project update and request a change in project scope for the River Reintroduction into Maurepas Swamp project because the 30% Design revised cost estimate exceeds the original approved project cost estimate by more than 25%. The original approved estimated construction including a 25% contingency cost was $37,531,000. The revised 30% Design estimated construction including a 30% contingency cost is $151,725,000. EPA and the State are recommending continuing to work toward 95% Design, in collaboration with the Corps of Engineers and other CWPPRA partners, at which time the PO-29 project would be transferred to a different appropriation for construction funding.

CWPPRA Technical Committee
April 15, 2009
Motion Passed on the EPA and State Request for a Change in Scope on the
River Reintroduction into Maurepas Swamp Project
Agenda Item 7

EPA, State, and USACE develop an action plan, which would facilitate continuation of E&D for the Maurepas Project under CWPPRA or seamless transition for final design and construction under another program, e.g., LCA or State program. That action plan should be completed and submitted to the Technical Committee prior to the June 2009 Task Force meeting and also prior to the initiation of new engineering or design tasks.

Louisiana Department of Natural Resources

RIVER REINTRODUCTION INTO MAUREPAS SWAMP (PO-29)
Post-30% Design Project Briefing
CWPPRA Technical Committee Meeting
April 15, 2009

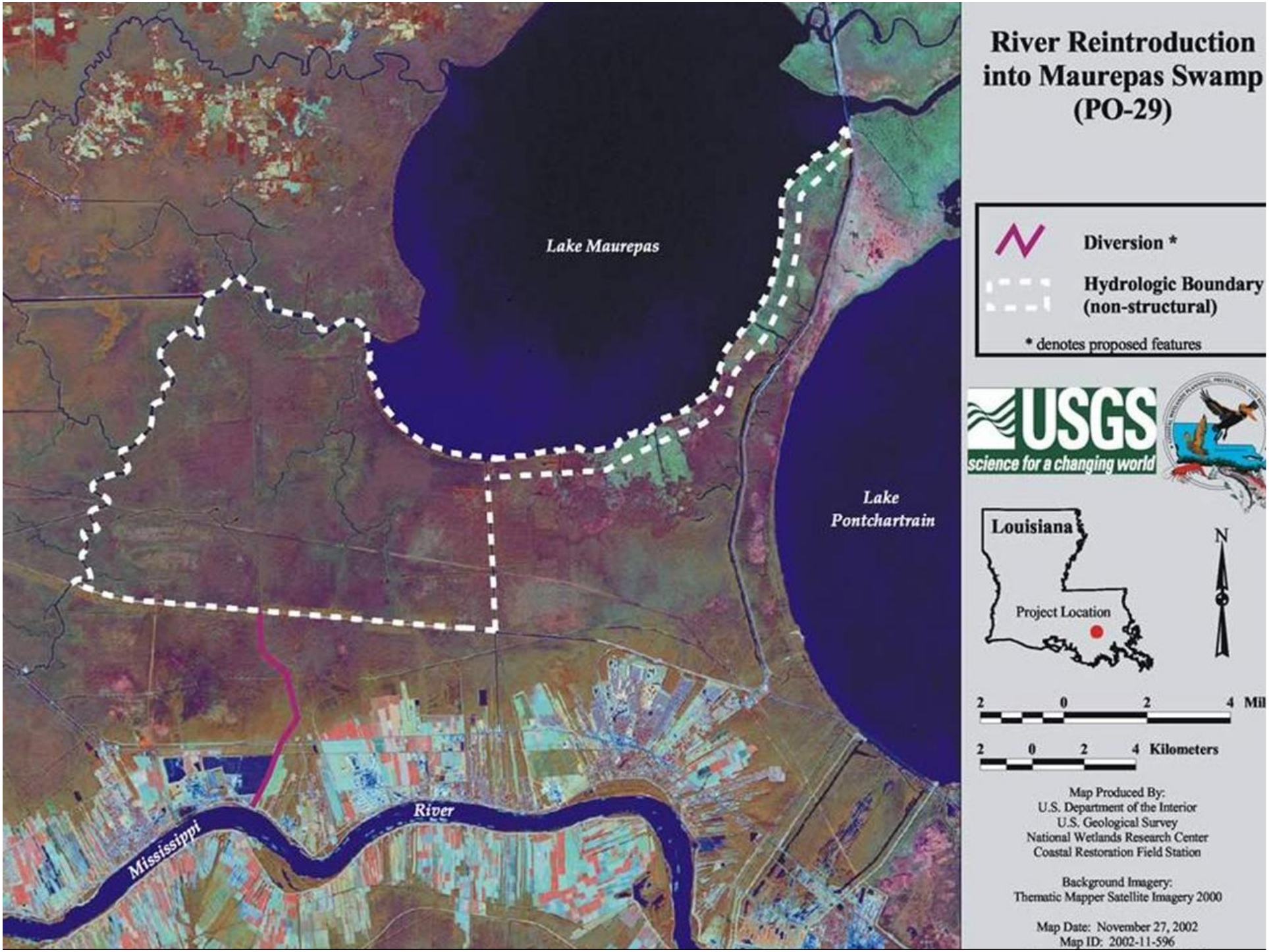
U.S. Environmental Protection Agency

Project Overview

- **Location**: Region 1, upper Pontchartrain Basin, St. John the Baptist, St. James, Ascension Parishes, Blind River mapping unit, south of Lake Maurepas

- **Problem**: Net accretion deficit and saltwater intrusion, in turn caused by leveeing of the River

- **Goal**: Restore and protect the health and productivity of the swamps south of Lake Maurepas by reintroducing sediment- and nutrient-laden water from the Mississippi River.



River Reintroduction into Maurepas Swamp (PO-29)

Diversion *

Hydrologic Boundary (non-structural)

* denotes proposed features

USGS science for a changing world

Louisiana

Project Location

N

2 0 2 4 Mil

2 0 2 4 Kilometers

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

Background Imagery:
Thematic Mapper Satellite Imagery 2000

Map Date: November 27, 2002
Map ID: 2002-11-596

CWPPRA "Complex Project"/ Phase 0 Study
Lee Wilson & Associates (2001)

- Multiple LA academic researchers on project team (Shaffer, Day, Kemp, Mashrique, Hester, and Lane)
- Alternative site evaluation
- Alternative flow (size) evaluation
- Preliminary proposed project features
- Hydraulic capacity of the receiving area
- Preliminary project cost estimate
- General project environmental benefits
- WVA (Wetland Value Assessment) Benefits
- Drainage issues
- Water quality issues

Project Features

- Diversion structure at the Mississippi River, using box culverts.
- Receiving (sedimentation) pond
- New channel from diversion structure to just north of Airline Highway at Hope Canal.
- Relocations and structures needed to cross River Road, railroads, pipelines, and Airline Hwy
- Improved channel along existing Hope Canal to I-10.
- Outfall management structures

Phase 1 Approval

- The CWPPRA Task Force, at their August 7, 2001 meeting, approved Phase 1 funding
- Estimated Construction + 25% Contingency= $37,531,000
- Project Benefit Area= 36,121 ac
- WVA Benefits= 8486 AAHUs
- Alternate Net Acres= 5903

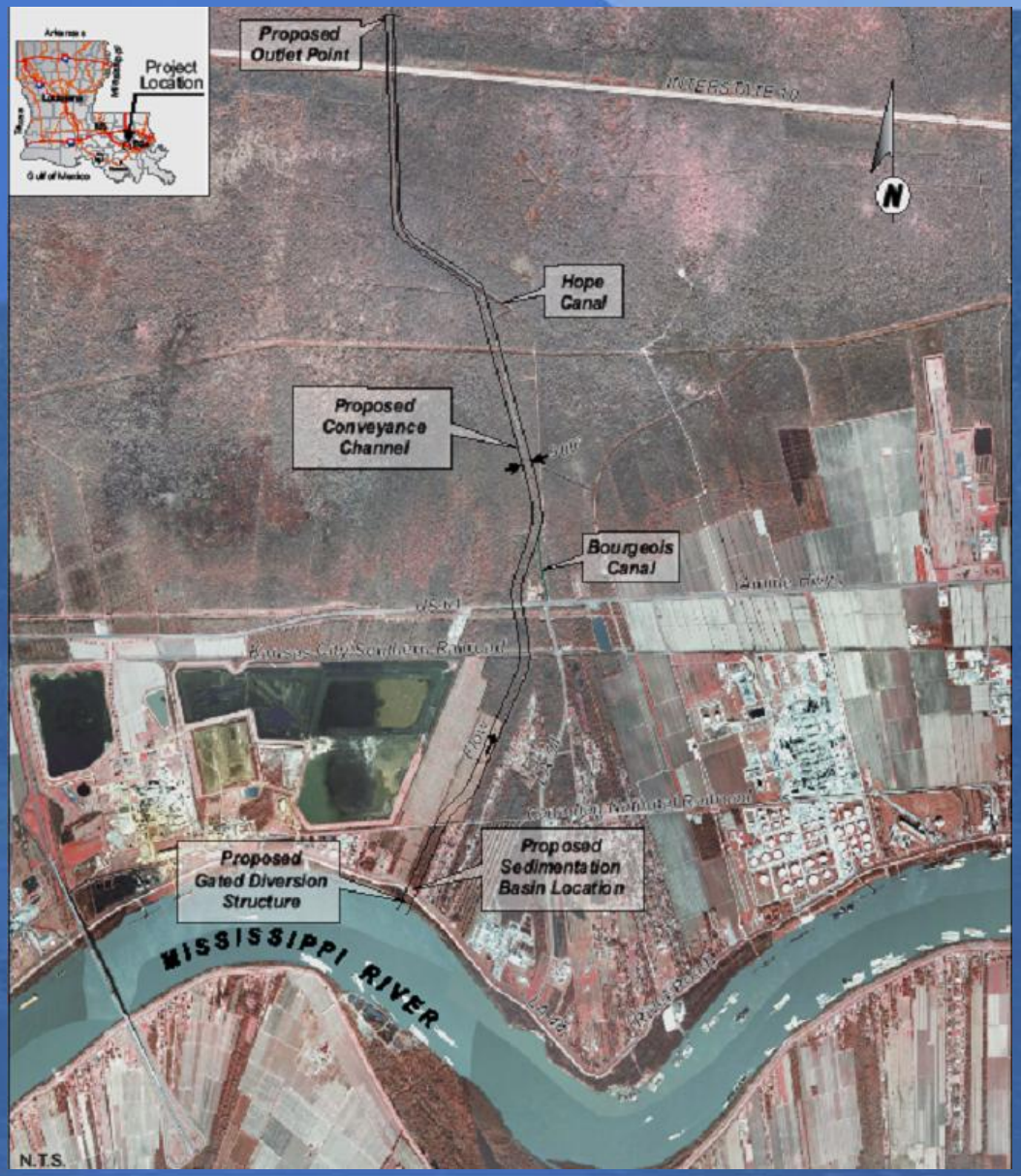
Task 1

- URS begins work on project
- Addressed Hydraulic Feasibility
- Collected initial Topographic, Bathymetric & Hydrographic data
- Results:
  - Outfall management strategy required
  - Flow pulsing recommended
    - Extend hydraulic retention time in swamp
    - Reduce short-circuiting
    - Enhance sediment deposition
  - Pump station required at Hope/Bourgeois Canals

Task 2

- Implemented recommendations:
  - Intake Structure
    - 2,000 cfs capacity
    - Flow control gates (enable pulsing)
  - Conveyance Channel
    - 5½ mile, levees, crossings, etc.
    - Culverts w/ control valves for side flow
  - Sedimentation Basin
    - Sized to remove 0.2 mm sand particle
    - Volume to store 6 months of sediment
  - Pump Station
    - Capacity of 250 cfs
    - Capable of conveying flow from Hope/Bourgeois Canals

Conveyance Channel



Cost Opinion

- Construction Cost at 30% Design
- Includes contingency, escalation, labor, etc.
- Total ~ $152 million.

Site Work……	$ 74,700,000
Intake Structure……....	$ 32,200,000
Infrastructure Crossings……..	$ 24,100,000
Pump Station …… …… …… ….	$ 10,900,000
Utilities Relocations…….	$ 7,800,000
Headworks Equipment …… ……	$ 1,900,000
Monitoring Equipment …… ……	$ 150,000

Cost Comparison Phase 0 vs 30%

- Phase 0 Cost Estimate
  - Construction + 25% Contingency= **$37,531,000**
- 30% Design Cost Estimate
  - Construction + 30% Contingency= **$152,000,000**

Schedule

- **August, 2010**
  - **Draft Environmental Information Document (NEPA)**
  - **95% Design**

- **EPA has received a letter of concurrence from the Local Sponsor (OCPR) to continue with the project.**
- **The Technical Committee and Planning and Evaluation Committee have received a letter from EPA informing them of the agreement to continue with the project.**

Why Should CWPPRA Continue the Project?

- The Maurepas Swamp is one of the largest remaining tracts of coastal cypress-tupelo swamp remaining in Louisiana
- The Maurepas Swamp has been highly degraded by man's activities, however, this degradation is reversible.
- Significant progress has been made over the life of this project
- Retain design team which is already in place
- Project continuity, maintain "institutional memory," momentum is substantial
- Transferring the project to another program/authority now, will likely result in delay

CPRA
Coastal Protection and
Restoration Authority of Louisiana

State of Louisiana

BOBBY JINDAL
GOVERNOR

March 31, 2009

Timothy Landers
U.S. Environmental Protection Agency, Region 6
Chief, Marine & Coastal Section (6WQ-EC)
Water Quality Protection Division
1445 Ross Avenue
Dallas, Texas 75202-2733

Re: 30% Design Review for River Reintroduction Into Maurepas Swamp, (PO-29)
Statement of Local Sponsor Concurrence

Dear Mr. Landers:

We are in receipt of your March 30, 2009 e-mail regarding the captioned project. In that e-mail you indicated that EPA has concluded the project is still viable and is recommending the advancement of the project to the 95 Percent level. Based on our review of the technical information compiled to date, the Ecological Review, the preliminary land ownership investigation, and the preliminary designs, we, as local sponsor, are in concurrence with proceeding to final design. However, please verify that the 30% design review comments received from the USACE can be assumed to be final. To date all we have received was an e-mail on January 8, 2009 from the USACE with comments labeled as "DRAFT".

In accordance with the CWPPRA Project Standard Operating Procedures manual, we request that you forward this letter of concurrence along with the revised project cost estimate to the Technical Committee and the Planning and Evaluation Subcommittee.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Christopher P. Knotts, P. E.
Chief, Engineering and Operations

CPK:BJM:dpg

cc: Chris Williams, Engineer Manager
Brad Miller, Project Manager
Russ Joffrion, Engineer Supervisor
Steve Meunier, Engineer Administrator
Kirk Rhinehart, Planning Administrator
Ken Teague, EPA Project Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR 08 2009

Mr. Thomas A. Holden
Deputy District Engineer
U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Holden:

The U.S. Environmental Protection Agency (EPA) and Louisiana Office of Coastal Protection and Restoration (OCPR) recently conducted the required 30% Design Review Conference for the River Reintroduction into Maurepas Swamp Project (PO-29), pursuant to Section 6(e)(2) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Standard Operating Procedures Manual (SOP). The meeting was held at the Louisiana Department of Natural Resources LaSalle Building in Baton Rouge on December 4, 2008, and included participants representing the sponsoring agencies and other Federal, State, and local partners. The agencies discussed all aspects of Phase I engineering and design efforts undertaken to date for the PO-29 project, including background on the Phase 0 feasibility-level analyses conducted previously.

In review, the River Reintroduction into Maurepas Swamp Project would reintroduce up to 2000 cfs of Mississippi River water, sediment and nutrients into the bald cypress-water tupelo swamps south of Lake Maurepas, via Hope Canal. This would begin to reverse the long-term degradation of the swamp, which is occurring largely due to the elimination of connectivity between the swamp and the Mississippi River, in turn due to the Mississippi River Levee.

Upon conclusion of the 30% Design Review Conference and review of comments received from CWPPRA partner agencies, EPA and OCPR have determined that the PO-29 project is feasible. However, we acknowledge there are substantial questions and issues that remain to be considered as the project moves towards final design, not the least of which is the question of ultimate construction authority and funding. Nonetheless, we believe that continuing project design via the existing authorized CWPPRA project, is the best means of moving this project forward in a timely fashion. We have a project design team in place, they have made good progress, and project momentum is high. Clearly though, in moving forward, much more collaboration with the U.S. Army Corps of Engineers and other agencies will be necessary. In summary, we remain committed to successful completion of Phase I engineering and design and are in agreement in recommending proceeding to final design (see enclosure).

Furthermore, we would like to take this opportunity to report out to the CWPPRA agencies, pursuant to Section 6(e)(3) of the CWPPRA SOP, that the current 30% Design-level cost estimate for the PO-29 project differs from the Phase 0 feasibility-level cost estimate by more than 25%. The original approved estimated construction + 25% contingency cost was $37,531,000. The revised 30% Design estimated construction + 30% contingency cost is $151,725,000. EPA and OCPR have worked to meet original project objectives and have attempted to keep estimated costs in check. It is important to note, however, that while the construction cost estimate has increased, the original project purpose in terms of reintroducing much-needed Mississippi River water, sediment and nutrients into the Maurepas Swamp remains unchanged.

EPA and OCPR will continue to closely evaluate measures to maximize project benefits and minimize costs as we proceed towards final design for the River Reintroduction into Maurepas Swamp Project. We will also increase our collaboration with the other CWPPRA partner agencies on this project, and especially the U.S. Army Corps of Engineers, as we proceed towards final design. If you have any questions regarding the PO-29 project, or would like to discuss these issues further, please do not hesitate to contact me at 214-665-6608, or Ken Teague of my staff at 214-665-6687.

Sincerely,

Tim Landers

Timothy Landers
Chief
Marine and Coastal Section

Enclosure

cc: Mr. Britt Paul, NRCS
Mr. Richard Hartman, NMFS
Mr. Kirk Rhinehart, OCPR
Mr. Darryl Clark, USFWS
Ms. Melanie Goodman, USACE
Mr. John Jurgensen, NRCS
Ms. Rachel Sweeney, NMFS
Ms. Kelley Templet, OCPR
Mr. Kevin Roy, USFWS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

STATUS OF UNCONTRUCTED PROJECTS

For Discussion/Decision:

Melanie Goodman will provide an overview of the status of unconstructed projects on PPL's 1-14. The P&E may recommend individual project actions for the Technical Committee to consider. Emphasis will be on projects that have been delayed due to project related issues.

PPL 1 through 14 Unconstructed Projects

Project Name	Project No.	Agency	PL	Authorized Date	Phase I Approval	Phase II Approval	Construct Start	Construct Complete	Current Approved Funded Budget	1st cost Unexpended	Monitoring Unexpended	O&M Unexpended	TOTAL Unexpended	TOTAL Unobligated	On Sched	Proj Issue Delays	Prog Issue Delays	Deauth/ Trans	> $50 M
Sabine Refuge Marsh Creation, Cycle 4	CS-28-4	COE	8	20-Jan-99									$0		X				
Sabine Refuge Marsh Creation, Cycle 5	CS-28-5	COE	8	20-Jan-99									$0		X				
Mississippi River Sediment Delivery System – Bayou Dupont	BA-39	EPA	12	16-Jan-03	16-Jan-03	13-Feb-08	1-Apr-09	4-Apr-10	$28,606,909	$27,437,395	$37,760	$294,039	$27,769,194	$4,113,557	X				
Whiskey Island Back Barrier Marsh Creation	TE-50	EPA	13	28-Jan-04	28-Jan-04	13-Feb-08	15-Apr-09	1-Jan-10	$30,138,096	$28,643,558		$138,084	$28,781,642	$4,404,501	X				
Bayou Sale Shoreline Protection	TV-20	NRCS	13	28-Jan-04	28-Jan-04	20-Jan-11	1-Oct-11	1-Sep-12	$2,254,912	$1,774,695			$1,774,695	$500,002	X				
East Marsh Island Marsh Creation	TV-21	EPA/NRCS	14	17-Feb-05	17-Feb-05	21-Jan-09	1-Oct-09	1-May-10	$22,611,689	$20,572,651	$27,307	$1,368,446	$21,968,404	$21,482,665	X				
Riverine Sand Mining/Scofiekd Island Restoration	BA-40	NMFS	14	17-Feb-05	17-Feb-05	20-Jan-10	1-Mar-11		$3,221,887	$2,213,499	$10,514		$2,224,013	$436,574	X				
South Shore of the Pen	BA-41	NRCS	14	17-Feb-05	17-Feb-05	13-Feb-08	1-Sep-09	1-Aug-10	$19,850,569	$16,821,508		$2,314,376	$19,135,884	$10,501,704	X				
White Ditch Resurrection	BS-12	NRCS	14	17-Feb-05	17-Feb-05	20-Jan-11	1-Oct-11	1-Sep-12	$1,595,677	$977,301			$977,301	$178,948	X				
Brown Lake Hydrologic Restoration	CS-09	NRCS	2	19-Oct-92			1-Jan-10	30-Aug-10	$4,002,363	$2,221,256	$432,226	$392,795	$3,046,277	$2,190,826		X			
West Pointe a la Hache Outfall Management	BA-04c	NRCS	3	01-Oct-93			1-May-10	1-Nov-10	$4,269,855	$2,077,770	$798,087	$829,138	$3,704,995	$3,664,162		X			
North Lake Boudreaux Basin Freshwater Intro and Hydro Mgt	TE-32a	FWS	6	24-Apr-97			1-Jun-10	30-Jun-12	$12,289,133	$7,092,044	$239,962	$3,245,424	$10,577,431	$9,972,331		X			
Penchant Basin Natural Resources Plan, Incr 1	TE-34	NRCS	6	24-Apr-97			1-Sep-09	1-Aug-10	$17,628,814	$13,011,134	$272,576	$1,855,804	$15,139,514	$1,920,828		X			
Little Pecan Bayou Hydrologic Restoration	ME-17	NRCS	9	11-Jan-00	11-Jan-00	20-Jan-10	1-Oct-10	1-Sep-11	$1,556,598	$598,542	$87,670		$686,212	$197,885		X			
Small FW Diversion to the NW Barataria Basin	BA-34	EPA	10	10-Jan-01	10-Jan-01	20-Jan-11	13-May-11	13-May-13	$2,362,925	$1,743,477	$4,109		$1,747,586	$228,238		X			
River Reintroduction into Maurepas Swamp	PO-29	EPA	11	16-Jan-02	07-Aug-01	20-Jan-11	31-Oct-11	30-Jun-14	$6,780,173	$1,871,372	$40,740		$1,912,112	$139,114		X			X
South Grand Chenier Hydrologic Restoration	ME-20	FWS	11	16-Jan-02	16-Jan-02	20-Jan-10	1-Jun-10	1-Jun-11	$2,358,420	$1,652,244	$42,596		$1,694,839	$1,117,475		X			
Barataria Barier Shoreline, Pelican Island to Chaland Pass (CU2)	BA-38	NMFS	11	16-Jan-02	16-Jan-02	28-Jan-04	1 Feb 08 (S)	1 Jun 08 (S)	$65,809,748	$44,324,027	$283,276	$242,633	$44,849,936	$5,128,744		X			X
Avoca Island Diversion and Land Building	TE-49	COE	12	16-Jan-03	16-Jan-03	20-Jan-10	15-Jul-10	15-Jun-11	$2,229,876	$579,901	$43,619		$623,520	$627,904		X			
South Lake Decade Freshwater Introduction	TE-39	NRCS	9	11-Jan-00	11-Jan-00	13-Feb-08	1-Oct-09	1-Dec-09	$3,710,627	$3,112,445	$42,140	$21,014	$3,175,599	$3,118,882		X	X		
Grand Lake Shoreline Protection, Tebo Point	ME-21a	COE	11	16-Jan-02	16-Jan-02	15-Feb-07	8-Jul-09		$4,381,643	$2,963,998	$14,559	$632,613	$3,611,170	$3,608,656		X	X		
Grand Lake Shoreline Protection, O&M Only [CIAP]	ME-21b	COE	11	16-Jan-02	16-Jan-02	15-Feb-07			$5,673,973			$5,673,973	$5,673,973	$5,673,973		X	X		
Fort Jackson Sediment Diversion		COE							$365,050	$3,498			$3,498	$3,498		X	X		X
Central and East Terrebonne Freshwater Delivery Project		FWS							$457,000	$34,787			$34,787	$144,514		X			
Freshwater Bayou Bank Stab - Belle Isle Canal to Lock	TV-11b	COE	9	11-Jan-00	11-Jan-00	20-Jan-10	1-Apr-10	30-Jun-11	$1,498,967	$283,517	$114,256		$397,773	$396,631			X		
Castille Pass Channel Sediment Delivery	AT-04	NMFS	9	11-Jan-00	11-Jan-00				$1,846,326	$181,097	$14,003		$195,100	$122,334			X		
Rockefeller Refuge Gulf Shoreline Stabilization	ME-18	NMFS	10	10-Jan-01	10-Jan-01				$2,408,478	$1,069,782	$11,390		$1,081,172	$191,063			X		X
GIWW Bank Rest of Critical Areas in Terrebonne	TE-43	NRCS	10	10-Jan-01	10-Jan-01	20-Jan-10	1-Oct-10	1-Sep-11	$1,735,983	$644,900	$8,634		$653,533	$580,185			X		
Delta Building Diversion North of Fort St. Philip	BS-10	COE	10	10-Jan-01	10-Jan-01	20-Jan-10	1-Dec-10		$1,444,000	$287,464	$13,125		$300,588	$296,581			X		
Ship Shoal: Whiskey West Flank Restoration	TE-47	EPA	11	16-Jan-02	16-Jan-02	20-Jan-10	1-May-10	1-Feb-11	$3,742,053	$1,733,251	$18,941		$1,752,191	$408,354			X		X
Lake Borgne and MRGO Shoreline Protection	PO-32	COE	12	16-Jan-03	16-Jan-03	20-Jan-10	30-Mar-10	30-Nov-10	$1,348,345	$235,651	$30,397		$266,048	$256,768			X		
Weeks Bay MC/SP/Commercial Canal/FW Redirection	TV-19	COE	9	11-Jan-00	11-Jan-00				$1,229,337	$659,549	$37,935		$697,484	$686,661				D	
Benneys Bay Diversion	MR-13	COE	10	10-Jan-01	10-Jan-01	20-Jan-10	1-Mar-10	1-Nov-11	$1,076,328	$75,856	$25,259		$101,115	$95,713			X	D	X
Mississippi River Sediment Trap	MR-12	COE	12	16-Jan-03	07-Aug-02	20-Jan-10	1-Aug-10	1-Mar-11	$1,880,376	$1,501,965	$23,620		$1,525,585	$1,519,072			X	D	X
Spanish Pass Diversion	MR-14	COE	13	28-Jan-04	28-Jan-04	20-Jan-10	1-Jun-11		$1,421,680	$1,114,504			$1,114,504	$1,115,090			X	D	

Projects On Schedule

Project Name	Agency	PPL	On Schedule	Milestones
Sabine Refuge Marsh Creation, Cycle 4	COE	8		Overall project was broken into five construction units. Task Force deferred construction funding approval for Cycles IV and V until construction of cycles II and III were completed. E&D 95% complete and environmental compliance complete. Plan to request construction approval for Cycle IV to meet Calcasieu Ship Channel FY 11 maintenance cycle in winter 2010.
Sabine Refuge Marsh Creation, Cycle 5	COE	8		Project was broken into five construction units. Task Force deferred construction funding approval for Cycles IV and V until construction of cycles II and III are complete. E&D 95% complete and environmental compliance complete. Plan to request construction approval for Cycle V to meet Calcasieu Ship Channel FY 13 maintenance dredging cycle.
Mississippi River Sediment Delivery System	EPA	12		Phase II authorized in Feb 08, construction schedule start April 09 complete Spring 2010
Whiskey Island Back Barrier Marsh Creation	EPA	13		Phase II authorized in Feb 08, construction schedule start April 09 complete January 2010.
Bayou Sale Shoreline Protection	NRCS	13		Pipeline coordination ongoing. NEPA process begun, final result will determine preferred alternative for shoreline protection.
East Marsh Island Marsh Creation	EPA/NRCS	14		Phase II authorized in Jan 09, construction schedule start Oct 09 complete 1 August 2010.
Riverine Sand Mining/Scofiekd Island Restoration	NMFS	14		
South Shore of the Pen	NRCS	14		
White Ditch Resurrection	NRCS	14		

Projects Delayed by Project Delivery Team Issues

Project Name	Agency	PPL	Project Issue Delays	Critical Milestone(s)	Current Phase
Brown Lake Hydrologic Restoration	NRCS	2		Project team is currently revising scope of project to remove structures. Change in Scope request is forthcoming to Tech Committee.	I
West Pointe a la Hache Outfall Management	NRCS	3		Project team received change in scope approval. Project is in final stage of planning and design. Scheduled to request construction approval at January 2010 Task Force meeting.	I
North Lake Boudreaux Freshwater Introduction	FWS	6		A revised WVA and cost estimate have been completed. A 30% design review meeting is scheduled for April 2009 and a 95% meeting in October 2009. Approval to proceed to construction is planned for January 2010. Construction is scheduled to begin in June 2010.	I
Penchant Basin Natural Resources Plan, Incr 1	NRCS	6		Project is in final stage of planning and design. Scheduled to advertise for construction in April 2009.	I
Little Pecan Bayou Hydrologic Restoration	NRCS	9		Pipeline coordination ongoing. Planning and design nearing 30% review. Scheduled to have 30% review meeting in August 2009. Anticipate Phase 2 Funding request at January 2010 Task Force meeting.	I
Small Freshwater Diversion to the Northwestern Barataria Basin	EPA	10		St. James parish was/is actively negotiating the purchase of large tracts of land with CIAP funds west of LA20 and adjacent to the project area, and more importantly, relatively large swaths of land in and around the proposed diversion channel alignment. St. James parish is extremely supportive of this CWPPRA project. The primary landowner for the benefit area, is now fully in support of the project and has given OCPR approval to continue Phase I studies on his property. Modelling has been rescoped and is being negotiated. No remaining issues, other than the fact the project was previously delayed by the prior landrights issue.	I
River Reintroduction into Maurepas Swamp	EPA	11		Feasibility phase complete. Actual engineering and design work underway and progressing. 30% Design Review held December 4, 2008. Responses to comments being formulated. Letter to Technical Committee forthcoming soon. NEPA work ongoing. OCPR to obtain landrights using state-only funds. Preparing to resume engineering and design work 30% to 95% Design.	I
South Grand Chenier Hydrologic Restoration	FWS	11		Surveys have been completed and the geotechnical analysis is scheduled to be completed by May 2009. A 30% design review meeting is scheduled for July 2009 and a 95% meeting is scheduled for August 2009. A Phase 2 request is planned for January 2010 with construction beginning in June 2010.	I
Barataria Barier Shoreline, Pelican Island to Chaland Pass (CU2)	NMFS	11		December 2008 suveys show signifincant erosion and need for additional fill material to meet design template. Current estimate in excess of project funds in hand. Sponsors discussing potential direction.	II
Avoca Island Diversion and Land Building	COE	12		Coordination between geotech elements at OCPR and MVN is ongoing at this time, with intent to go to 30% Design Review contingent upon OCPR's concurrence with revised project design. Also, the project scope change must get approved, and a signed Cost Share Agreement signed with OCPR.	I
South Lake Decade Freshwater Introduction	NRCS	9		Construction approved Feb 2008 for CU1. Awaiting decision on 3-way Cost Share Agreement.	
Grand Lake Shoreline Protection, O&M Only [CIAP]	COE	11		The following issues/question has to be resolved before moving forward with both the Tebo Point project and the O&M of the Grand Lake Project: 1)The current schedule puts the CWPPRA Tebo Point portion and the CIAP portion being built separately. It is highly unlikely that the CWPPRA Tebo Point portion will be under the approved $2.7 M amount, 3 yrs later, without constructing the two projects concurrently. 2) Over the last two yrs the USACE has requested that the State use the same CSA as the CWPPRA South White Lake Project. The State has denied the request. The CWPPRA SOP states that if a project does not go to construction in two yrs the Task Force could ask that the funds be returned to the program. The project will continue to be on hold until the CSA issue is resolved. 3)CWPPRA invested $6,300,000 in the first three yrs of O&M for both segments. The CWPPRA expected that CIAP would use the same P&S as CWPPRA, due to the fact that CWPPRA O&M $ were calculated using the CWPPRA P&S. The P&S under the CIAP project were changed from 37,000 lf to 22,000 lf of shoreline protection.	II
Grand Lake Shoreline Protection, Tebo Point	COE	11			II
Fort Jackson Sediment Diversion	COE	N/A		LDNR and Plaquemines Parish have indicated they are willing to move forward with the project by requesting Phase I approval to begin E&D. Will develop final fully funded cost estimate and revise WVA during PPL 18 Planning Cycle. Spring 09, Meet with LDNR to discuss if the project is in the State's Master Plan, and if it is still a viable and fundable project in the CWPPRA program. If LDNR approves: Work Group approves fully funded cost estimate and benefits developed during PPL 19 process. Dec. 2, 2009 Requested Phase I authorization to take project to 30% design.	Complex Project
Central and East Terrebonne Freshwater Delivery Project	FWS			Model runs of project alternatives have been completed. Costs and benefits of each alternative are being prepared and a preferred alternative will be selected during May 2009. Upon completion of those tasks, the project will be transferred to the LCA program rather than request Phase 1 funding approval.	Complex Project

Projects Delayed by Programmatic Issues (e.g., CSAs, Induced Shoaling, Funding Availability)

Project Name	Agency	PL	Issue Category	Critical Milestone(s)	Current Phase
South Lake Decade Freshwater Introduction	NRCS	9	Cost Share Agreement	Construction approved Feb 2008 for CU1. Awaiting decision on 3-way Cost Share Agreement.	II
Grand Lake Shoreline Protection, O&M Only [CIAP]	COE	11	Change in Scope/Cost Share Agreement	The following issues/question has to be resolved before moving forward with both the Tebo Point project and the O&M of the Grand Lake Project: 1)The current schedule puts the CWPPRA Tebo Point portion and the CIAP portion being built separately. It is highly unlikely that the CWPPRA Tebo Point portion will be under the approved $2.7 M amount, 3 yrs later, without constructing the two projects concurrently. 2) Over the last two yrs the USACE has requested that the State use the same CSA as the CWPPRA South White Lake Project. The State has denied the request. The CWPPRA SOP states that if a project does not go to construction in two yrs the Task Force could ask that the funds be returned to the program. The project will continue to be on hold until the CSA issue is resolved. 3)CWPPRA invested $6,300,000 in the first three yrs of O&M for both segments. The CWPPRA expected that CIAP would use the same P&S as CWPPRA, due to the fact that CWPPRA O&M $ were calculated using the CWPPRA P&S. The P&S under the CIAP project were changed from 37,000 lf to 22,000 lf of shoreline protection.	II
Grand Lake Shoreline Protection, Tebo Point	COE	11	Cost Share Agreement		II
Fort Jackson Sediment Diversion	COE	N/A	CWPPRA Program Funding Limitations	LDNR and Plaquemines Parish have indicated they are willing to move forward with the project by requesting Phase I approval to begin E&D. Will develop final fully funded cost estimate and revise WVA during PPL 18 Planning Cycle. Spring 09, Meet with LDNR to discuss if the project is in the State's Master Plan, and if it is still a viable and fundable project in the CWPPRA program. If LDNR approves: Work Group approves fully funded cost estimate and benefits developed during PPL 19 process. Dec. 2, 2009 Requested Phase I authorization to take project to 30% design.	Complex Project
Freshwater Bayou Bank Stab-Belle Isle Canal to Lock	COE	9	CWPPRA Program Funding Limitations	2007 WRDA Authorization for 16 ft channel depth and may not include shoreline stabilization. PDT will remove 1-mile segement covered under CIAP. Will seek construction authorization in January 10 from CWPPRA Task Force for the fourth time since Fall 2004.	I
Castille Pas Sediment Delivery	NMFS	9	Induced Shoaling	Phase I requirements complete. The NMFS and DNR are waiting for official response from the USACE on project permit application. NMFS and DNR have agreed to move to de-authorize the project, as perceived induced shoaling issues have not been resolved and all project design data is now out dated.	I
Rockefeller Refuge Gulf Shoreline Stabilization	NMFS	10	CWPPRA Program Funding Limitations	Prototype test sections will be conducted under CIAP. When analysis of monitoring complete in August 2010, will pursue full project implementation under CWPPRA based on results.	I
GIWW Bank Rest of Critical Areas in Terrebonne	NRCS	10	CWPPRA Program Funding Limitations		I
Delta Building Diversion North of Fort St. Philip	COE	10	Cost Share Agreement	DNR objected to the emergency closure plan and has indicated that they do not wish to move forward with completing design review requirements. The USACE's goal is to hold meetings this spring with LDNR to resolve the emergency closure plan issues. If the issues are resolved the USACE and LDNR will hold a 95 % design review in the fall of 2009. Upon successful completion of the design review, USACE and LADNR will request Phase II funding and construction approval.	I
Ship Shoal: Whiskey West Flank Restoration	EPA	11	CWPPRA Program Funding Limitations	Phase 1 E&D has been completed, but project has not been selected for Phase 2 construction funding for four consecutive years. Sponsors are considering all available options to move the project forward including re-scoping and/or possible alternative funding sources. EPA will be coordinating with OCPR in 2009 to determine next steps regarding this project. Should the sponsors determine re-scoping is in the project's best interest, we will fully coordinate with the Technical Committee and Task Force consistent with the CWPPRA SOP Manual.	I
Lake Borgne and MRGO Shoreline Protection	COE	12	Other Restoration Plans	MVN Operations Division constructed Lake Bornge reach using 3rd supplemental funds. Based on the MRGO Deauthorization Study, Chief's Report, DNR is expected to fund 100% of the O&M on this segment. With the closure of the MRGO channel, the portion along the north bank of the MRGO between Doullut's Canal and Lena Lagoon is being evaluated as a part of the MRGO Restoration Plan. The USACE recommends that this portion of the project be placed on hold until after MRGO Restoration Plan has been finalized. A determination will be made at that time on whether or not to request Phase II funding.	I
Benney's Bay Diversion	COE	10	Induced Shoaling/Site Location and Program Funding Limitations	The project is delayed from moving to the 95% Design due to disagreement about the overall project funding for Phase II associated with induced shoaling. USACE and LDNR previously agreed on design, anticipated benefits, and all other aspects of this project except budgetary responsibility for O&M. Diversions cause shoaling and traditionally CWPPRA paid for shoaling impacts and used the material beneficially. Because of uncertainty regarding the amount of shoaling, the State and USACE agreed to an initial O&M cost cap of $10 million. The original construction estimate for this project was $53.7 million. To remain within the initial $10 million O&M cost cap only one-third of a cycle of O&M would be funded. As such, there would not be sufficient funding for the traditional 20 years of CWPPRA funded O&M, which would include 10 cycles of O&M, or one dredging event every 2 years. As a result of cost associated with dredging the PTA for the West Bay project induced shoaling impacts, the state and the Corps are working to develop more comprehensive model of the lower river and to resolve larger policy and law issues associated with responsibilities for offsetting induced shoaling impacts.	I
Mississippi River Sediment Trap	COE	12	Induced Shoaling/Site Location and Program Funding Limitations	The Corps recommended site for the project has been criticized for being advantageous to O&M of the MR and other sites further upstream have been proposed by the public and other resource agencies. The project as proposed by the Corps would likely be beyond the normal funding range for CWPPRA Project construction. Bayou Dupont Sediment Delivery project will monitor the borrow area in the river to see how rapidly it refills. This may be considered as a demonstration for locating a sediment trap upstream in the vicinity of Empire. Project on hold until further and more clear direction on what to do.	I
Spanish Pass Diversion	COE	13	Cost Share Agreement	Benefits to be realized changed from 334 to 190 acres. A smaller diversion is proposed along with dedicated dredging/marsh creation to result in an equivelent amount of acreage as originally proposed. Need consensus with OCPR and Plaquemines Parish on future project design and a cost share agreement signed.	I

Projects Recommended for Deauthorization or Transfer to Other Program

Project Name	Agency	PL	Transfer or Deauthorize	Reason(s) for Potential De-authorization
Weeks Bay MC and SP/Commercial Canal/Freshwater Redirection	COE	9	Deauthorize	Extensive study of the area conducted under numerous authorities failed to find sufficient environmental benefits to justify the project. At the June 2007 meeting, the Task Force passed a motion to move the Weeks Bay project to a watch critical list, and stated that no additional funding would be spent on the project. The Task Force also required that a milestone list be developed by the Technical Committee for this project. As a milestone, the Task Force gave the local interest (Randy Moertel) until the spring of 2008 to test the effectiveness of HESCO baskets as shoreline protection. Since the last update, Randy Moertel met with the NRCS, NMFS, LSU Extension, local government reps and NGO's. They propose to come up with a final design recommendation expected to be consistent with CWPPRA guidelines for the existing Weeks Bay project without forcing them to re-nominate a project for this area in future PPLs. The local interests are still working out the details. This effort has not been coordinated with the Corps of Engineers, the project federal sponsor. The USACE only recently became aware of the direction that the local interests or the State wish to go. Randy will not be able to present their full plan at the April 15, 2009 Tech Committee meeting due to schedule interruptions caused by 2008 hurricanes.
Benney's Bay Diversion	COE	10		The project is delayed from moving to the 95% Design due to disagreement about the overall project funding for Phase II associated with induced shoaling. USACE and LDNR previously agreed on design, anticipated benefits, and all other aspects of this project except budgetary responsibility for O&M. Diversions cause shoaling and traditionally CWPPRA paid for shoaling impacts and used the material beneficially. Because of uncertainty regarding the amount of shoaling, the State and USACE agreed to an initial O&M cost cap of $10 million. The original construction estimate for this project was $53.7 million. To remain within the initial $10 million O&M cost cap only one-third of a cycle of O&M would be funded. As such, there would not be sufficient funding for the traditional 20 years of CWPPRA funded O&M, which would include 10 cycles of O&M, or one dredging even every 2 years. As a result of cost associated with dredging the PTA for the West Bay project induced shoaling impacts, the state and the Corps are working to develop more comprehensive model of the lower river and to resolve larger policy and law issues associated with responsibilities for offsetting induced shoaling impacts.
Mississippi River Sediment Trap	COE	12		The Corps recommended site for the project has been criticized for being advantageous to O&M of the MR and other sites further upstream have been proposed by the public and other resource agencies. The project as proposed by the Corps would likely be beyond the normal funding range for CWPPRA Project construction. Bayou Dupont Sediment Delivery project will monitor the borrow area in the river to see how rapidly it refills. This may be considered as a demonstration for locating a sediment trap upstream in the vicinity of Empire. Project on hold until further and more clear direction on what to do.
Spanish Pass Diversion	COE	13		Benefits to be realized changed from 334 to 190 acres. A smaller diversion is proposed along with dedicated dredging/marsh creation to result in an equivelent amount of acreage as originally proposed. Need consensus with OCPR and Plaquemines Parish on future project design and a cost share agreement signed.

Projects with Phase II Estimate > $50 Million

Project Name	Aency	PPL		Phase I Estimate	Phase II Estimate	Total Estimate*
Benneys Bay Diversion	COE	10		$1,076,328	$52,626,553	$53,702,881
Mississippi River Sediment Trap	COE	12		$1,880,376	$50,300,463	$52,180,839
Fort Jackson Sediment Diversion (Complex Project)	COE	N/A		$7,447,505	$55,100,000	$62,547,505
River Reintroduction into Maurepas Swamp	EPA	11		$6,780,307	178,127,000	$184,907,307
Ship Shoal: Whiskey West Flank Restoration	EPA	11		$3,742,053	$48,398,808	$52,140,861
Rockefeller Refuge - Gulf Shoreline Stabilization**	NMFS	10		$2,408,478	$93,580,222	$95,988,700
				$23,335,047	$478,133,046	$501,468,093

* Estimates shown are the amounts being carried on the "books" or on the factsheets provided and do not necessarily constitute a recent or accurate estimate of project costs.

** This project is not the "test section" project that has requested Phase II funds recently. It is the estimate carried on the books for the large-scale project that could be undertaken after test sections are built.

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): Sabine Refuge Marsh Creation, Cycle IV (CS-28-4)

2. PPL: 8

3. Federal Agency: U.S. Army Corps of Engineers

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $ 0

6. Expenditures: $ 0

7. Unexpended Funds: $ 0

8. Estimate of anticipated funding increases, including O&M: unknown

9. Potential changes to project benefits: none

10. Brief chronology of project development and issues affecting implementation:

(1999) Sabine Refuge Marsh Creation project approved
(2004) Additional funds and construction approval for Cycles II and III
(2009) Construction of Cycle 2 pipeline

11. Current status/remaining issues: This project was broken into five construction cycles. Cycle IV Engineering and Design 95% is complete along with Environmental Compliance. The CWPPRA Task Force has deferred construction funding approval for Cycles IV and V until construction of cycles II and III are complete.

12. Projected schedule: Request for construction approval for Cycle IV is planned to meet the Calcasieu River Ship Channel FY 11 maintenance dredging cycle. Funds will be requested at the December 2009 Technical Committee meeting.

13. Preparer: Scott Wandell (USACE) 504-862-1878

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): Sabine Refuge Marsh Creation, Cycle V (CS-28-5)

2. PPL: 8

3. Federal Agency: U.S. Army Corps of Engineers

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $ 0

6. Expenditures: $ 0

7. Unexpended Funds: $ 0

8. Estimate of anticipated funding increases, including O&M: unknown

9. Potential changes to project benefits: none

10. Brief chronology of project development and issues affecting implementation:

(1999) Sabine Refuge Marsh Creation project approved
(2004) Additional funds and construction approval for Cycles II and III
(2009) Construction of Cycle 2 pipeline

11. Current status/remaining issues: This project was broken into five construction cycles. Cycle V Engineering and Design 95% is complete along with Environmental Compliance. The CWPPRA Task Force has deferred construction funding approval for Cycles IV and V until construction of cycles II and III are complete.

12. Projected schedule: Request for construction approval for Cycle V is planned to meet the Calcasieu River Ship Channel FY 13 maintenance dredging cycle. Funds will be requested at the December 2008 Technical Committee Meeting.

13. Preparer: Fay V. Lachney (USACE) 504-862-2309

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): Mississippi River Sediment Delivery System – Bayou Dupont (BA-39)

2. PPL: 12

3. Federal Agency: EPA

4. Date of Construction Approval / Phase Two Approval: February 13, 2008

5. Approved Total Budget: $28,606,909

6. Expenditures: $837,715 (as of April 6, 2009 Source: Gay Browning)

7. Unexpended Funds: $27,769,194 (as of April 6, 2009 Source: Gay Browning)

8. Estimate of anticipated funding increases, including O&M: None anticipated at this time.

9. Potential changes to project benefits: Change in scope was made during project design. Changes were vetted with the work groups according to the CWPPRA SOP.

10. Brief chronology of project development and issues affecting implementation: Phase 1 approved on January 16, 2003 and was approved for Phase 2 on February 13, 2008. As with most projects, hurricanes Katrina, Rita, Gustav, and Ike caused slight delays in implementation.

11. Current status/remaining issues: The project has been advertised, bid and a Notice to Proceed has been issued. Construction is scheduled to start in April 2009.

12. Projected schedule:

- 30% Design Review: July 11, 2007
- 95% Design Review: November 7, 2007
- Design Completion: November 11, 2007
- Phase 2 Approval: February 13, 2008
- Construction Start: April 2009

13. Preparer: Tim Landers, (214)665-6608, landers.timothy@epa.gov
Brad Crawford, (214)665-7255, crawford.brad@epa.gov

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): Whiskey Island Back Barrier Marsh Creation (TE-50)

2. PPL: 13

3. Federal Agency: EPA

4. Date of Construction Approval / Phase Two Approval: February 13, 2008

5. Approved Total Budget: $30,138,096

6. Expenditures: $1,356,454 (as of April 6, 2009 Source: Gay Browning)

7. Unexpended Funds: $28,781,642 (as of April 6, 2009 Source: Gay Browning)

8. Estimate of anticipated funding increases, including O&M: None anticipated at this time.

9. Potential changes to project benefits: Added dune feature as compared to the Phase 0 concept. Change in scope vetted before the work groups according to CWPPRA SOP.

10. Brief chronology of project development and issues affecting implementation: Phase 1 approved on January 28, 2004 and was approved for Phase 2 on February 13, 2008. As with most projects, hurricanes Katrina, Rita, Gustav, and Ike caused slight delays in implementation.

11. Current status/remaining issues: The project has been advertised, bid and a Notice to Proceed was issued on February 12, 2009. Construction is scheduled to start in April 2009.

12. Projected schedule:

- 30% Design Review: August 28, 2007
- 95% Design Review: November 7, 2007
- Design Completion: November 7, 2007
- Phase 2 Approval: February 13, 2008
- Construction Start: April 2009

13. Preparer: Brad Crawford, (214)665-7255, crawford.brad@epa.gov

Status Review - Unconstructed CWPPRA Projects
17 Mar 2009

1. Project Name (and number): Bayou Sale Shoreline Protection (TV-20)

2. PPL: 13

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: December 2010 (projected)

5. Approved Total Budget: $ 2,254,912 (Phase I)

6. Expenditures: $480,217 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

7. Unexpended Funds: $1,774,695 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

8. Estimate of anticipated funding increases, including O&M: Not anticipated at this time.

9. Potential changes to project benefits: Material will not be available for marsh creation because access channels will not be dredged due to the high number of utilities identified by the magnetometer survey (i.e., pipelines, flow lines, and metallic debris). Approximately 123 acres of marsh will therefore not be created. Shoreline protection benefits remain as originally anticipated.

10. Brief chronology of project development and issues affecting implementation:
2003 - 2004 – Approved
2004 - 2005 – Project Plan of Work developed for USACE
2004 - 2006 – Magnetometer & Gradiometer Survey conducted
2007 - 2008 – Evaluate various shoreline protection alternatives.
2009 – present – NEPA and Engineering Evaluation being performed on shoreline protection alternatives.

11. Current status/remaining issues: A geotechnical investigation will begin soon. The results of the geotechnical investigation will be used to select appropriate engineering solution(s). There are many active pipelines, as well as abandoned flowlines and oil field debris, which must be addressed in the preliminary project design.

12. Projected schedule: Project construction anticipated in October 2011.

13. Preparer: Troy Mallach, NRCS, (337) 291-3064 (3/6/08)
Review/Concurrence (3/7/2008): Ismail Merhi, DNR, (225) 342-4127
Updated (3/17/09): John Jurgensen, NRCS, (318) 473-7694

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): East Marsh Island Marsh Creation (TV-21)

2. PPL: 14

3. Federal Agency: EPA/NRCS

4. Date of Construction Approval / Phase Two Approval: January 21, 2009

5. Approved Total Budget: $22,611,689

6. Expenditures: $643,285 (as of April 6, 2009 Source: Gay Browning)

7. Unexpended Funds: $21,968,404 (as of April 6, 2009 Source: Gay Browning)

8. Estimate of anticipated funding increases, including O&M: None anticipated at this time.

9. Potential changes to project benefits: None anticipated.

10. Brief chronology of project development and issues affecting implementation: Phase 1 approved on February 17, 2005 and was approved for Phase 2 on January 21, 2009. Project design and benefits changed somewhat from the Phase 0 project concept, mostly because of changes to the island caused by hurricanes Katrina and Rita. Changes were vetted by the work groups during project design.

11. Current status/remaining issues: Project is being transferred from EPA to NRCS for project construction. Project is scheduled to be advertised for bid in May 2009.

12. Projected schedule:

- 30% Design Review: August 26, 2008
- 95% Design Review: November 3, 2008
- Design Completion: December 2008
- Phase 2 Approval: January 21, 2009
- Construction Start: October 2009

13. Preparer: Brad Crawford, (214)665-7255, crawford.brad@epa.gov
John Jurgensen, (318)473-7694, john.jurgensen@la.usda.gov

Riverine Sand Mining/Scofiekd Island Restoration

South Shore of the Pen

White Ditch Resurrection

Status Review - Unconstructed CWPPRA Projects
17 Mar 09

1. Project Name: Brown Lake Hydrologic Restoration (CS-09)

2. PPL: 2 (1992)

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: 1997

5. Approved Total Budget: $4,002,363

6. Expenditures: $956,086 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

7. Unexpended Funds: Total Unexpended $3,046,277 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning).

8. Estimate of anticipated funding increases, including O&M: N/A at this time

9. Potential changes to project benefits: WVA was re-done as directed by P&E and Technical Committees. Results: 167 net acres after 20 years and 2 AAHUs.

10. Brief chronology of project development and issues affecting implementation:
1992 – Approved
1997 – Construction Approval
1997 - 2000 – Setbacks include magnetometer survey, COE Disposal Areas, Hydrology questions
2000 - 2002 -- Hydro Model demonstrated need to Address Crab Gully
2003 - 2006 – Issues include Crab Gully fix, Amoco sale, permit transfer
2007 - 2008 – Landrights were re-done with current owners; permit modified and extended; design surveys re-done; plans and specifications updated; WVA re-done.
2009 – Project features revised to remove hydrologic restoration structures and extend area of terracing.

11. Current Status/remaining issues: LDNR and NRCS project team will present Change in Scope request to the Technical Committee.

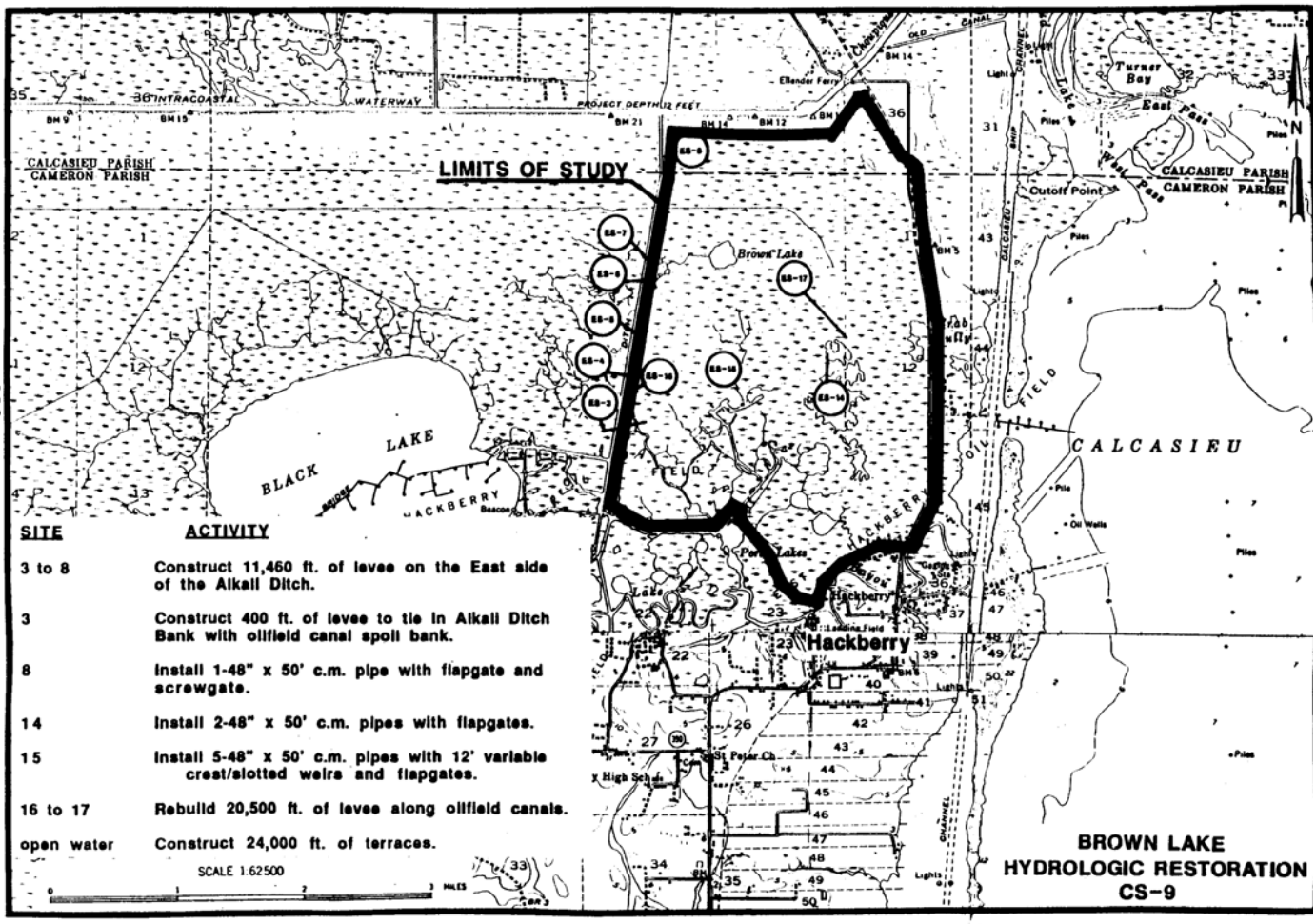
12. Projected schedule: Updated P&S will be completed by July 2009.

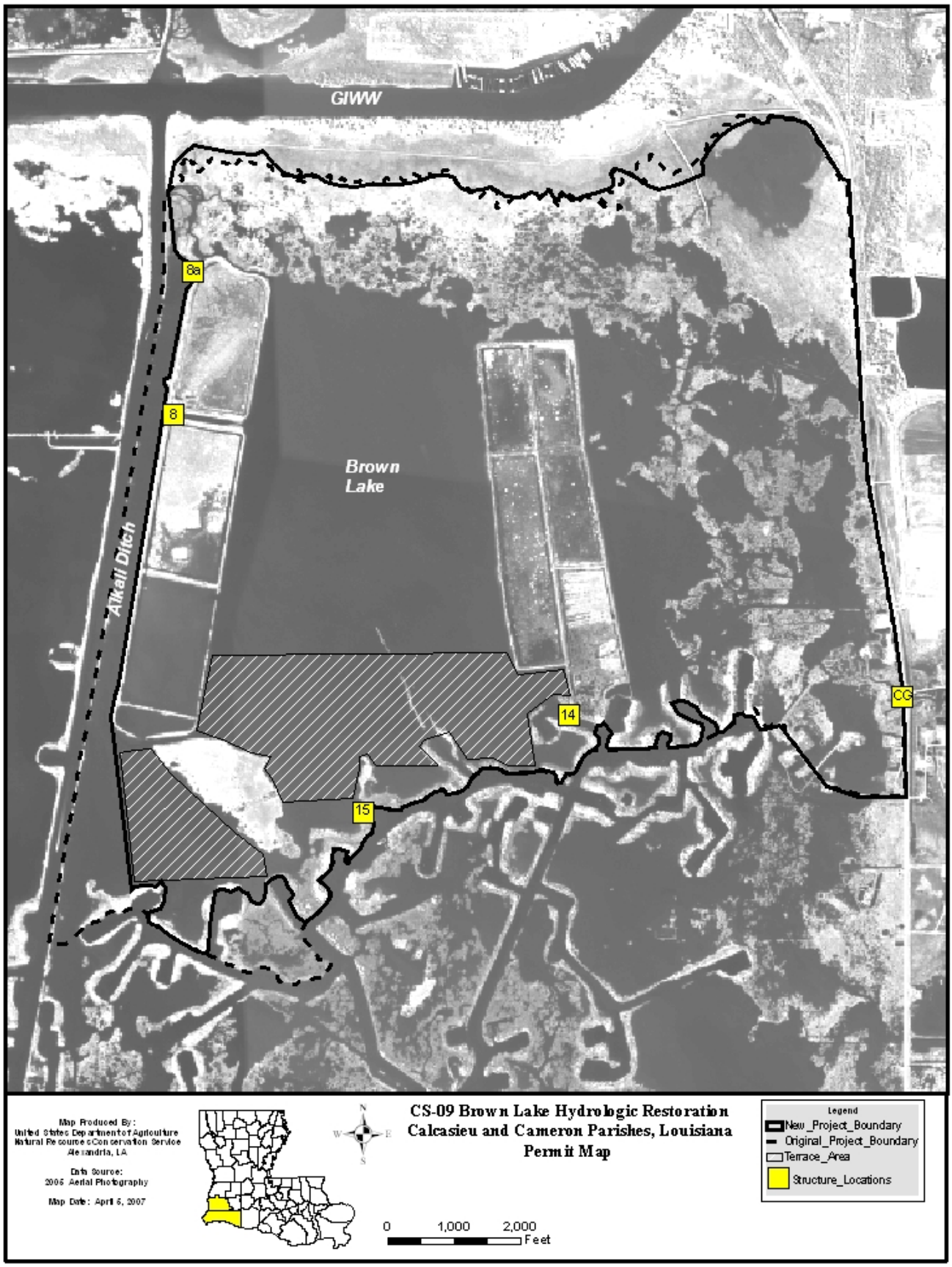
13. Preparer: Quin Kinler, NRCS, (225) 382-2047 (3/6/2008)
Review/Concurrence (3/6/2008): Darrell Pontiff, DNR, (337) 482-0683
Updated: John Jurgensen, NRCS,(318) 473-7694 (3/17/2009)

Brown Lake Hydrologic Restoration (CS-09)

Change in Project Scope

CWPPRA Technical Committee Meeting
April 15, 2009


LIMITS OF STUDY
CALCASIEU PARISH
CAMERON PARISH
BLACK LAKE
Brown Lake
Hackberry
CALCASIEU
Turner Bay
Cutoff Point
SITE
ACTIVITY
3 to 8
Construct 11,460 ft. of levee on the East side of the Alkali Ditch.
3
Construct 400 ft. of levee to tie in Alkali Ditch Bank with oilfield canal spoil bank.
8
Install 1-48" x 50' c.m. pipe with flapgate and screwgate.
14
Install 2-48" x 50' c.m. pipes with flapgates.
15
Install 5-48" x 50' c.m. pipes with 12' variable crest/slotted weirs and flapgates.
16 to 17
Rebuild 20,500 ft. of levee along oilfield canals.
open water
Construct 24,000 ft. of terraces.
SCALE 1:62500
BROWN LAKE
HYDROLOGIC RESTORATION
CS-9


GIWW
8a
8
Brown
Lake
Alkali Ditch
14
15
CG
Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA
Data Source:
2005 Aerial Photography
Map Date: April 6, 2007
CS-09 Brown Lake Hydrologic Restoration
Calcasieu and Cameron Parishes, Louisiana
Permit Map
Legend
New_Project_Boundary
Original_Project_Boundary
Terrace_Area
Structure_Locations
0
1,000
2,000
Feet


Legend
TO JOHN_dwg_Polyline
Terrace_Area
CS-09 Brown Lake
Cameron Parish, Louisiana
N
0 700 1,400 2,800 4,200 5,600
Feet

Brown Lake Hydrologic Restoration (CS-09)

Change in Project Scope

	Original Project	Current Project	Revised Project
Fully Funded Cost	$3.2 M	$4.0M	$4.0M
Net Acres	279	167	37
AAHUs	121	2	44

Status Review - Unconstructed CWPPRA Projects
17 March 2009

1. Project Name (and number): West Pointe a la Hache Outfall Management (BA-4c)

2. PPL: 3

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $4,269,295

6. Expenditures: $564,300 (20 Feb 09, source: Mitzi Gallipeau)

7. Unexpended Funds: $3,704,995 (20 Feb 09, source: Mitzi Gallipeau)

8. Estimate of anticipated funding increases, including O&M: N/A at this time

9. Potential changes to project benefits: Draft revised WVA under review at this time.

10. Brief chronology of project development and issues affecting implementation:

1993 – Approved
1993 - 2000 Various planning and engineering tasks; increased construction budget from $400K to about $2M; DNR concerned about benefits
2000 - 2004 -- Hydrodynamic Model predicted that siphon operation (more so than proposed outfall mgt) creates favorable conditions in project area. DNR and NRCS desire to pursue modifications to siphon to improve / extend ability to operate siphon.
2005 - 2006 -- DNR "working with" Plaquemines Parish Government to establish a cooperative agreement regarding siphon operation, so as to ensure long term operation prior to designing siphon improvements.
Jan 2007 – DNR/PPG siphon operations agreement executed
Oct 2007 – EnvWG approved the use of the original project boundary for the proposed scope change.
Feb 2008 – NRCS revised and DNR reviewed and concurred with submittal of draft WVA to EnvWG
April 2008 – Revised WVA and preliminary engineering cost estimates approved by EnvWG and EngrWG.
January 2009 – Scope Change approved by Task Force, revised design began.
Current – Plans and Specifications being developed for January 2010 Construction Approval Request.

11. Current status/remaining issues: OCPR and NRCS are preparing plans and specifications in anticipation of January 2010 Construction Approval Request.

12. Projected schedule: Project construction anticipated to begin October 2010.

13. Preparer: Cindy Steyer, NRCS, (225) 389-0334 (3/6/08)
Review/Concurrence (3/7/08): Ismail Merhi, DNR, (225) 342-4127
Updated: John Jurgensen, NRCS, (318) 473-7694 (3/17/09)

Status Review - Unconstructed CWPPRA Projects
April 2009

1. Project Name (and number): North Lake Boudreaux Basin Freshwater Introduction (TE-32a)

2. PPL: PPL6 pre-cash flow authorization

3. Federal Agency: USFWS

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: 100% Fully Funded estimate = $10,519,383

6. Expenditures: $1,117,402

7. Unexpended Funds: $9,401,981

8. Estimate of anticipated funding increases, including O&M: unknown

9. Potential changes to project benefits: Project features have not changed but the volume of introduced freshwater & area benefited has increased. The revised WVA, which utilized the recently developed Boustany Diversion Model, has yielded 415 acres protected and 1,110 AAHUs (originally, 603 acres protected & 422 AAHUs).

10. Brief chronology of project development and issues affecting implementation:

- May 2001 - Feasibility Study completed
- Mar 2002 – Conceptual Design Report completed
- Nov 2003 – Land use restrictions included in Landrights Agreements altered to make project acceptable to concerned landowners.
- Feb 2005 – Terrebonne Parish contracted by DNR to obtain landrights
- Jun 2005 – updated property appraisals received
- Jun 2007 – all landrights obtained for construction of project conveyance channel

11. Current status/remaining issues: Project currently in E&D.

12. Projected schedule and milestones:

Apr 2009 – 30% E&D
Sept 2009 – Request additional construction funding
Oct 2009 – 95% E&D
Jan 2010 - all NEPA work completed and permits acquired
Jan 2010 - request construction approval
Jun 2010 - start construction
Jun 2012 - completed construction

13. Preparer: Ronny Paille USFWS (337) 291-3117 Ronald_Paille@FWS.GOV

Status Review - Unconstructed CWPPRA Projects
18 Mar 2009

1. Project Name (and number): Penchant Basin Natural Resources Plan (TE-34)

2. PPL: 6

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $17,628,814

6. Expenditures: $2,489,300 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

7. Unexpended Funds: $15,139,514 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

8. Estimate of anticipated funding increases, including O&M: N/A at this time

9. Potential changes to project benefits: Revised WVA completed October 2007; 675 net acres after 20 years; 1047 AAHUs.

10. Brief chronology of project development and issues affecting implementation:
1996 - 1997– Approved
1997 - 2004 --Project Planning and Hydro Model
2004 - 2006 – Consideration of project alternatives and features
2007 - 2008 – Revised WVA, geotechnical investigation, design surveys, plans and specifications. Received Scope Change approval.

11. Current status/remaining issues: Plans and specifications being finalized.

12. Projected schedule: Advertise construction contract in May 2009.

13. Preparer: Quin Kinler, NRCS, (225) 382-2047 (3/4/08)
Review/Concurrence (3/4/2008): Ismail Merhi, DNR, (225) 342-4127
Updated (3/18/09): John Jurgensen, NRCS (318) 473-7694

Status Review - Unconstructed CWPPRA Projects
17 Mar 09

1. Project Name (and number): Little Pecan Bayou Hydrologic Restoration (ME-17)

2. PPL: 9

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $1,556,598

6. Expenditures: $846,034

7. Unexpended Funds: $710,564

8. Estimate of anticipated funding increases, including O&M: N/A at this time

9. Potential changes to project benefits: Terracing removed from project features because landowner refuses to have terraces on his/her property. Freshwater introduction south of HWY 82 is only project feature.

10. Brief chronology of project development and issues affecting implementation:

1999 – Approved
1999 - 2005 -- Planning / modeling
2006 - Delays due to landowner concerns
2007 – Surveying 70% complete.
2008 – Surveying completed after hurricane delays. Planning and Design began.

11. Current status/remaining issues: Design surveys are completed. Geotechnical Investigation underway. Anticipated date of 30% review is August 2009.

12. Projected schedule: Anticipate a Phase II funding request in January 2010.

13. Preparer: Jason Kroll, NRCS, (318) 473-7816 (3/6/08)
Updated (3/17/09): John Jurgensen, NRCS, (318) 473-7694

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): Mississippi River Reintroduction into Northwest Barataria Basin (BA-34)

2. PPL: 10

3. Federal Agency: EPA

4. Date of Construction Approval / Phase Two Approval: Anticipated January 2011

5. Approved Total Budget: $2,362,925

6. Expenditures: $615,339 (as of April 6, 2009 Source: Gay Browning)

7. Unexpended Funds: $1,747,586 (as of April 6, 2009 Source: Gay Browning)

8. Estimate of anticipated funding increases, including O&M: None anticipated at this time.

9. Potential changes to project benefits: Project benefits will likely need to be reevaluated based on improved knowledge of hydrology, revised diversion alignment, and possibly due to deletion of some secondary project features.

10. Brief chronology of project development and issues affecting implementation: Following award of Phase I funds, EPA negotiated a cost share agreement with LDNR and awarded engineering and design funds to LDNR. LDNR initiated some hydrology monitoring to support future hydrodynamic modeling. During this time the property was sold to a new landowner. LDNR expended much effort on landrights during this time. Also, during this time the landowner began logging the forest, and regulatory issues arose regarding that, as well as questions regarding implications for this restoration project. Previously, landowner willingness to allow the restoration work to proceed seemed to be dependent on the outcome of the pending mitigation bank proposal by the landowner. As a result, project engineering and design activities were on hold. EPA and LDNR met with the landowner and St. James parish in January 2008 to discuss commitment to the project. Subsequently, LDNR and EPA received letters from the parish and the landowner. Following that, the landowner indicated his agreement to allow OCPR to conduct the necessary Phase 1 studies on his property. The landowner now seems to be fully supportive of the effort. We subsequently re-scoped hydrodynamic modeling studies, and OCPR is currently negotiating the contract. Modeling results should be available in about a year or less. Once modeling results are available, we can: 1) confirm the project viability/feasibility; 2) if necessary, revise general project features and cost estimate; 3) begin engineering and design work.

11. Current status/remaining issues: St. James parish was/is actively negotiating the purchase of large tracts of land with CIAP funds west of LA20 and adjacent to the project area, and more importantly, relatively large swaths of land in and around the proposed diversion channel alignment. St. James parish is extremely supportive of this CWPPRA project. The primary landowner for the benefit area, is now fully in support of the project and has given OCPR approval to continue Phase I studies on his property. Modelling has been rescoped and is being negotiated. No remaining issues, other than the fact the project was previously delayed by the prior landrights issue.

12. Projected schedule:

- 30% Design Review: June 2010
- 95% Design Review: October 2010
- Design Completion: October 2010
- Phase 2 Approval: January 2011
- Construction Start: May 2011

13. Preparer: Kenneth Teague, EPA (214-665-6687; Teague.Kenneth@epa.gov) and Brad Miller, LDNR (225-342-4122; BradM@dnr.state.la.us)

Status Review - Unconstructed CWPPRA Projects
March 12, 2009

1. Project Name (and number): River Reintroduction into Maurepas Swamp (PO-29)

2. PPL: 11

3. Federal Agency: US Environmental Protection Agency

4. Date of Construction Approval / Phase Two Approval: Anticipated January 2011

5. Approved Total Budget: $6,780,173

6. Expenditures: $4,868,061 (as of April 6, 2009 Source: Gay Browning)

7. Unexpended Funds: $1,912,112 (as of April 6, 2009 Source: Gay Browning)

8. Estimate of anticipated funding increases, including O&M: $178,127,000 (total estimated revised 30% cost estimate, including OMRR&R, admin, landrights, etc). No anticipated CWPPRA funding increase to complete Phase I work.

9. Potential changes to project benefits: Unknown at this time.

10. Brief chronology of project development and issues affecting implementation: Immediately subsequent to Phase I funding, EPA ensured continuation of basic studies initiated during Phase 0, to validate conclusions from the brief Phase 0 studies, to ensure project momentum continued, and to ensure tech transfer from the Phase 0 team, to new project participants in Phase 1. At the same time, EPA and LDNR negotiated cost share agreement, and EPA awarded funds to LDNR for Phase 1 activities. LDNR then selected an engineering contractor, URS Corp. Efforts through 2006 focused on development and use of a high-resolution, 2D hydrodynamic model. The model was used to answer basic hydrologic questions with greater certainty than previous models giving EPA and LDNR confidence in moving forward with actual engineering and design, which began in 2007. Draft 30% Design work by URS was completed in summer, 2008, followed by review by EPA and OCPR, and subsequent revisions by URS. 30% Design Review was held December 4, 2008. Responses to comments are being formulated, and are nearly complete. Letter to Technical Committee will be forthcoming soon.

Meanwhile, various studies have been completed to support NEPA requirements, including fish and wildlife, water quality, HTRW, cultural resources, noise, etc. Work is ongoing to draft an Environmental Information Document (EID), which can be used later as the basis for an EIS or EA. Work is ongoing to synthesize and integrate information from various sources, including, but not limited to, reports generated specifically for this project, to meet the requirements of NEPA. We also continue, from time to time, to

conduct targeted outreach efforts on the project, which are also intended to contribute to the public involvement requirements of NEPA.

Finally, significant efforts on land rights are underway. However, land values in the area have increased greatly since we were first granted permission to acquire landrights in Phase 1 using existing funds. Sufficient funds don't exist in the project budget to acquire landrights in Phase 1. However, OCPR has signaled their intent to obtain landrights using "state-only" funds.

11. Current status/remaining issues: Feasibility phase complete. Actual engineering and design work underway and progressing. 30% Design Review held December 4, 2008. Responses to comments being formulated. Letter to Technical Committee forthcoming soon. NEPA work ongoing. OCPR to obtain landrights using state-only funds. Preparing to resume engineering and design work 30% to 95% Design.

12. Projected schedule:

- 30% Design Review: December 2008
- 95% Design Review: August 2010
- Design Completion: October 2010
- Phase 2 Approval: January 2011
- Construction Start: October 2011

13. Preparer: Kenneth Teague, EPA (214-665-6687; Teague.Kenneth@epa.gov) and Brad Miller, LDNR (225-342-4122; BradM@dnr.state.la.us)

Status Review - Unconstructed CWPPRA Projects
March 11, 2009

1. Project Name (and number): South Grand Chenier Hydrologic Restoration Project (ME-20)

2. PPL: 11 (2002)

3. Federal Agency: USFWS

4. Date of Construction Approval / Phase Two Approval: Phase I approval - January 16, 2002

5. Approved Total Budget: Approved for E & D for $2,358,420. Total fully funded estimate = $20,998,000.

6. Expenditures: $663,581; obligations = $1,240,945 (FWS, NRCS, DNR).

7. Unexpended Funds: $1,694,839 (unobligated = $453,894)

8. Estimate of anticipated funding increases, including O&M: Not known at this time. Construction costs of $12.8 M could increase from 18% to 25%, to from $15 to $16 M; total costs could increase $5 M to $26 M. The western benefit area (Area A) freshwater diversion site has been abandoned, thus reducing costs.

9. Potential changes to project benefits: Hydrodynamic modeling indicated that benefit Area A north of Hog Bayou and south of Hwy 82 near Lower Mud Lake would not receive significant project benefits and that feature has been removed. This reduces the freshwater introduction component by 126 cfs (50%), leaving 126 cfs to benefit eastern marshes in Areas B and C. The removal of Area A from project benefits reduces total project AAHUs by 9.7% (31.18 of 322.17 AAHUs) and project total net acres by 5.7% (25 ac/440 ac), while reducing original project costs.

10. Brief chronology of project development and issues affecting implementation:

1/ 2002 -	Phase I E & D Task Force approval
6/ 2002 -	Hydrodynamic Modeling contract awarded
9/ 2004 -	Model calibration and validation completed
4/ 2005 -	Final modeling report completed. (The model indicated that the project would flow freshwater from the Mermentau River to marshes south of Hwy 82 without impacts.).
9/ 2005 -	Hurricane Rita heavily impacted landowners.
3/ 2006 -	Modeling results and project features landowner meeting.
12/ 2006 -	Received key landowner approval to flow water across Hwy 82 at Grand Chenier to areas B and C.
4 to 8/ 2007 -	Landowner approval for surveying and geotechnical.
8/ 2007 -	Final key Miller-property landowner surveying approval received.

9/ 2007 - 4/2008	NRCS completed major project surveying by 9/2007; additional surveys completed by 4/ 2008
10/ 2007 - 5/ 2008 -	Wave analysis report to evaluate potential Gulf borrow areas completed.
5/ 2008	Cultural Resources Assessment Received from the State Historic Preservation Officer
6/ 2008 - 12/ 2008 -	Geotechnical sampling completed in marsh and Gulf borrow site.
6/2008 - 7/ 2008	Gulf Borrow Area Magnetometer Report completed
12/ 2008	Preliminary Design Drawings completed

Issues affecting implementation: The hydrodynamic modeling effort took almost 3 years (2002 to 2005). Hurricane Rita destroyed most homes and dislocated all area landowners. Landowner approval of fresh water flow routes across Hwy 82 was critical for project design. Delays were caused by landrights approvals for surveying and geotechnical. Project managers did not wish to begin design without assurance that landowners did not object to features necessary to flow water.

11. Current status/remaining issues:

The project is currently proceeding with geotechnical analysis, completion of preliminary designs, preparation of the Preliminary Design Report and items needed for the 30% Design Review. Surveying and most preliminary designs have been completed. 30% Design will be scheduled after the geotechnical analysis is completed, by late spring - early summer 2009. The originally proposed January 2009 construction approval date has changed to January 2010. The project is on tract for January 2010 construction approval and June 2010 construction start.

12. Projected schedule:

12/ 2008	Preliminary 30% Designs completed
10/ 2008 to 5/ 2009 -	Complete Self Weight Consolidation Test for marsh creation area (Corps ERDC); Structure Geotechnical analysis by Eustis Eng.
6/ 2009	Complete Preliminary Design Report and other 30% Review items
6/ 2009 - 7/ 2009	30 % Design Review Meeting
8/ 2009 -	95% Design Review Meeting; Revised WVA, Draft EA
10 - 11/ 2009 -	Phase II checklist items completed
12/ 2009 -	Request Technical Committee Phase II approval
1/ 2010 -	Task Force Phase II Construction Approval (anticipated)
6/ 2010 -	Begin Construction

13. Preparer: Darryl Clark, USFWS (337-291-3111)
dc 3-11-09

Status Review - Unconstructed CWPPRA Projects
March 2008

1. Project Name (and number): Barataria Barrier Shoreline (BA-38), Construction Unit 1 (Chaland) and CU2 (Pelican)

2. PPL: 11

3. Federal Agency: NOAA

4. Date of Construction Approval / Phase Two Approval: January 2004

5. Approved Total Budget: $66,494,510

6. Expenditures: $20,764,830 (estimated)

7. Unexpended Funds: $45,729,680 (estimated)

8. Estimate of anticipated funding increases, including O&M:
Estimated overall project increase of about $8M due to increased fill requirements and business climate adjustments.

9. Potential changes to project benefits:
Minor decrease in CU2 benefits.

10. Brief chronology of project development and issues affecting implementation:
CU1 delayed over one year due to oyster issues, and further delayed due to access issues caused by 2005 storm impacts. CU1 complete December 2006.
CU2 delayed since Phase 2 authorization due to oyster issues and landrights expirations.

11. Current status/remaining issues:
Oyster evaluations and clearance completed at which point it was discovered that landrights agreements (5 year term to initiate work) had expired. Updated landrights agreements recently completed. December 2008 suveys show signifincant erosion and need for additional fill material to meet design template. Current estimate in excess of project funds in hand. Sponsors discussing potential direction.

12. Projected schedule:
Pending.

13. Preparer:
Rachel Sweeney

Status Review - Unconstructed CWPPRA Projects
30 March 2009

1. Project Name (and number): Avoca Island Diversion and Land Building (TE-49)

2. PPL: 12

3. Federal Agency: COE

4. Date of Construction Approval / Phase Two Approval: TBD (anticipated 21 Jan 11)

5. Approved Total Budget: $2,229,876

6. Expenditures: $1,606,356

7. Unexpended Funds: $623,520

8. Estimate of anticipated funding increases, including O&M: Project scope change under consideration; this change expected to reduce costs and increase benefits.

9. Potential changes to project benefits: Proposed new design calls for construction of a small freshwater diversion using two culverts plus dedicated dredging to obtain material to create approximately 280 acres of wetlands.

10. Brief chronology of project development and issues affecting implementation:

- Phase 1 approved January '03
- Possible change in scope to include dedicated dredging/marsh creation feature
- Geotechnical requirements increased
- Alternative borrow sites needed investigating
- Decision to proceed to 30% Design Review awaits resolution of OCPR geotechnical concerns & concurrence on final plan design plus a signed Cost Share Agreement with OCPR

11. Current status/remaining issues: Coordination between geotech elements at OCPR and MVN is ongoing at this time, with intent to go to 30% Design Review contingent upon OCPR's concurrence with revised project design. Also, the project scope change must get approved, and a signed Cost Share Agreement signed with OCPR.

12. Projected schedule (provided cost share agreement resolved by June 2009):

- 2 Sep 09 - Announce 30% Design Review
- 7 Jan 10 - Submit 95% to LDNR
- 21 Jan 10 – Announce 95% Review

13. Preparer: Susan M. Hennington, USACE-MVN, (504) 862-2504

Status Review - Unconstructed CWPPRA Projects
17 Mar 2009

1. Project Name (and number): South Lake DeCade Freshwater Introduction (TE-39)

2. PPL: 9

3. Federal Agency: NRCS

4. Date of Construction Approval / Phase Two Approval: 13 Feb 2008 for Shoreline Protection Component (CU#1); pending for Freshwater Introduction Component (CU#2)

5. Approved Total Budget: $3,710,627

6. Expenditures: $535,028 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

7. Unexpended Funds: $3,175,599 (as of Feb 20, 2009 / Source: Mitzi Gallipeau / Gay Browning)

8. Estimate of anticipated funding increases, including O&M: N/A at this time

9. Potential changes to project benefits: Revised WVA completed 8/30/2005; 202 net acres after 20 years; 61 AAHUs.

10. Brief chronology of project development and issues affecting implementation:

1999 - 2000– Phase 1 Approval
2000 - 2002 - Hydro Data Collection, Project Planning, & Geotechnical Investigation
2002 - 2003 – Hydro Model, Design Surveys, E&D and Permitting
3/26/2003 – NRCS received Tech Committee approval to separate project into 2 construction units. DNR suspends work on CU #2.
2004 – 30% CU#1 Design Review, 95% Design Review, Phase 2 Approval Request (1st attempt)
2005 – CU#1 Phase 2 Approval Request (2nd attempt)
2006 – CU#1 Phase 2 Approval Request (3rd attempt)
2007 – CU#1 Phase 2 Approval Request (4th attempt)
2008 – CU#1 Phase 2 was approved at February 2008 Task Force meeting

11. Current status/remaining issues: Construction Approval received for Shoreline Protection component at Winter 2008 Task Force meeting. Corps/NRCS resolving dispute over issue with 3-party Cost Share Agreement. Project Team will meet in Fall 2009 to determine feasibility of Freshwater Introduction component (CU #2).

12. Projected schedule: Advertise construction contract in May 2009 for shoreline protection (CU #1). Freshwater Introduction component (CU #2) not scheduled pending Project Team decision.

13. Preparer: John Jurgensen, NRCS, (318) 473-7694 (3/6/08)
Loland Broussard, NRCS, (337) 291-3069 (3/6/08)
Review/Concurrence (4/1/2008): Ismail Merhi, DNR, (225) 342-4127
Updated: John Jurgensen¸ NRCS, (318) 473-7694 (3/17/09)

Status Review - Unconstructed CWPPRA Projects
3 April 2009

1. Project Name: Grand Lake Shoreline Protection (Tebo Point) (ME-21a)
Grand Lake Shoreline Protection O&M (ME-21b)

2. PPL: 11

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: Feb 2007

5. Approved Total Budget: Phase I (Grand Lake-ME-21) $1,049,030
Phase II (Grand Lake, Tebo Point): $2,700,000
Phase II Inc 1(Grand Lake and Tebo Point): 9,000,000

6. Expenditures: $278,557

7. Unexpended Funds: $770,473

8. Estimate of anticipated funding increases, including O&M: $1,160,604

9. Potential changes to project benefits: Length of Shoreline Protection would be reduced from 37,000 lf to 22,000 lf under CIAP

10. Brief chronology of project development and issues affecting implementation:

- At the February 2007 Task Force meeting the Task Force took the initiative to approve the Grand Lake Project in segments.
- 90% of the project would be constructed under CIAP
- The remaining segment of the project, Tebo Point, would be constructed under CWPPRA
- The Task Force also took the initiative to approve the first 3 yrs of O&M for both of these segments.
- Using the Grand Lake Cost with Tebo Point included the TF broke the project up into the following:

  $2,700,000 for the construction of Tebo Point
  $6,300,000 for the first three yr of O&M for both segments
  $9,000,000 total

11. Current status/remaining issues:

Due to CSA agreements and accounting procedures the projects should not have been broken up as above. The projects should have been broken up as the following and detailed cost estimate approved by the Eng WG should have been provided:

Funding for construction and the first 3 yrs of O&M for the CWPPRA Tebo Point segment.

Funding for the first 3 yrs of O&M for the CIAP Grand Lake Portion.

The original cost estimate used a rock price of $48.40/tn. A rock price of $70/tn, should have been used for the construction of the Tebo Point segment, when the TF broke up the project(smaller rock job = higher prices). We do not expect the rock price to be this high, since we are working with the CIAP program to construct both projects at the same time. But, we can not guarantee that we will get the same contractor on the project. The prudent assumption would be to use a rock price of $70/tn, which would be more in line with a small rock job.

Also the State will be conducting O&M on both segments and they have indicated that O&M projects in this portion of the state are around $60/tn. This was a big change since the O&M on the est. the TF used, was $48.40.

The PDT decided that while working out CSA issues and waiting for the CIAP project to be approved (MMS still needs to approve the individual grant application) we would resubmit the estimate to the Eng WG, and compare it to the Task Force approved estimate.

Based on the FF est. reviewed by the Eng WG the Tebo Point Project Construction (Phase II) should have been $2,655,665. The TF approved $2,700,000 for the Tebo Point Project Construction (Phase II). This would be $44,335 within the approved budget.

As noted above, the O&M for the CIAP portion should have been separated from the O&M of the Tebo Point Portion. Based on the FF est. reviewed by the Eng WG the Tebo Point Project O&M (Inc 1) should have been $1,343,096, and the Grand Lake Segment the total Inc 1 should have been $6,117,508.

If combined it would equal $7,460,604. $1,160,604 over the TF $6.3M approved amount.

12. Projected schedule:

The PDT decided instead of going back to the TF at this time for a funding increase for the O&M amount, it would be appropriate to wait until construction on the CIAP portion is complete. We may not need the additional $1.16 M if rock prices decrease or if we over estimated the rock quantities.

Since the initial meetings, progress on the Grand Lake Shoreline Protection (Tebo Point) has been delayed because of two reasons. First the CWPPRA portion has been on hold pending approval of the Cost Share Agreement, which is presently being negotiated between the State and the USACE. The second is that the CIAP grant has been delayed for the last 2 yrs. The PMT expected that the CSA issue would be resolved first.

As of February 2009 the State has indicated that they are moving forward with advertisement for bids on the CIAP portion. The CIAP PMT also indicated they reduced the original length from 37,000 lf to 22,000 lf due to increases in cost. The State indicated that if the bids come in lower, the estimate could be updated with new costs to determine how much of the dike they could afford to build with the CIAP grant.

The following issues/question has to be resolved before moving forward with both the Tebo Point project and the O&M of the Grand Lake Project:

- The current schedule puts the CWPPRA Tebo Point portion and the CIAP portion being built separately. It is highly unlikely that the CWPPRA Tebo Point portion will be under the approved $2.7 M amount, 3 yrs later, without constructing the two projects concurrently.

- Over the last two yrs the USACE has requested that the State use the same CSA as the CWPPRA South White Lake Project. The State has denied the request. The CWPPRA SOP states that if a project does not go to construction in two yrs the Task Force could ask that the funds be returned to the program. The project will continue to be on hold until the CSA issue is resolved.

- CWPPRA invested $6,300,000 in the first three yrs of O&M for both segments. The CWPPRA expected that CIAP would use the same P&S as CWPPRA, due to the fact that CWPPRA O&M $ were calculated using the CWPPRA P&S. The P&S under the CIAP project were changed from 37,000 lf to 22,000 lf of shoreline protection.

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
26 March 2009

1. Project Name: Fort Jackson Sediment Diversion (Complex Project)

2. PPL: Not Authorized

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: Phase 0: $411,750
Not approved: Phase I and II: $55.1 million (Preliminary estimate not approved by WG, Also, $47.5M removed from original est. due to new state oyster lease policy)

6. Expenditures: $408,252

7. Unexpended Funds: $3,498

8. Estimate of anticipated funding increases, including O&M: N/A

9. Potential changes to project benefits: Benefit will be updated based on current land losses and new benefit calculations.

10. Brief chronology of project development and issues affecting implementation:
- Complex project received Phase 0 funds in October 1999
- Complex study report completed in September 2003
- Phase I request approved by Technical Committee September 2003
- Phase I request to Task Force tabled by LDNR during advance conference call in November 2003 due to local concerns about the design of the structure.

11. Current Status/remaining issues:
- Project was placed on Technical Committee's "Watch/Critical" list in June 2007
- Currently LDNR and Plaquemines Parish indicate they were willing to move forward with the project by requesting Phase I funding/approval
- Project Team agreed to develop a new revised cost estimate, and benefits.
- Program administrator indicated that the project would have to compete with the yearly PPL projects for Phase I funding
- Final revised cost and benefit were not developed under PPL 18.

12. Projected schedule:
- Spring 09, Meet with LDNR to discuss if the project is in the State's Master Plan, and if it is still a viable and fundable project in the CWPPRA program. If LDNR approves:
  - Work Group approves fully funded cost estimate and benefits developed during PPL 19 process.
  - Dec. 2, 2009
    Requested Phase I authorization to take project to 30% design

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
April 2008

Project Name (and number): Central and East Terrebonne Freshwater Delivery Project

2. PPL: PPL9 complex project

3. Federal Agency: USFWS

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: $664,000

6. Expenditures: $ 255,510

7. Unexpended Funds: $ 408,490

8. Estimate of anticipated funding increases, including O&M: NA

9. Potential changes to project benefits: NA

10. Brief chronology of project development and issues affecting implementation:

- 2000 – execute contract for UNET modeling
- 2003 - UNET model and datum problems unresolved
- 2005 - convert modeling to TABS format
- Jun 2005 – additional bathymetry/topography surveys in receiving area completed
- Oct 2006 - Task Force approved obligation of remaining 190,000 in funding
- Feb 2007 - Additional bathymetry/topography surveys completed
- Jan 2008 - Hydro modeling defects identified and being corrected

11. Current status/remaining issues: Costs and benefits of each alternative are currently being prepared to facilitate selection of a preferred alternative.

12. Projected schedule and milestones: Estimated project costs and environmental benefits will be completed during May 2009. Upon completion of those tasks, the project will be transferred to the LCA program rather than seek Phase I funding through the CWPPRA program. Any unspent CWPPRA program funds will be de-obligated at that time.

13. Preparer: Ronny Paille USFWS (337) 291-3117
Ronald_Paille@FWS.GOV

Status Review - Unconstructed CWPPRA Projects
4 April 2009

1. Project Name: Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock (TV-11b)

2. PPL: 9

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $1,498,967

6. Expenditures: $719,491

7. Unexpended Funds: 399,445

8. Estimate of anticipated funding increases, including O&M: N/A

9. Potential changes to project benefits: None

10. Brief chronology of project development and issues affecting implementation:

- Project completed a 95% design review meeting in Jan. of 2004
- The PDT requested Phase II authorization, in the fall of 2004, 2006, and 2007
- In 2007 a 1-mile portion of CWPPRA was included in a CIAP proposed and approved project.
- 2007 WRDA authorized the deeping of the Freshwater Bayou Channel to 16 ft.

11. Current status/remaining issues:

The 2007 WRDA only authorized the deeping of the Freshwater Bayou Channel. It did not provide funding for the construction of the channel. The original feasibility study included a 24 ft depth channel with shoreline stabilization. The 2007 WRDA authorized channel was changed to a 16 ft depth. This size channel may or may not include a shoreline stabilization component

12. Projected schedule:

The PDT will remove the 1-mile portion of the CIAP project, and will again seek construction authorization from the CWPPRA Task Force at the January 2010 meeting.

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
March 2009

1. Project Name (and number): Castille Pass Sediment Delivery (AT-04)

2. PPL: 9 - Phase 1 was authorized in January 2000

3. Federal Agency: NMFS

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: Total Fully Funded Costs $31,084,397
Current funding - Phase 1 approved funding $1,846,326

6. Expenditures: $1,651,327.73 (March 13, 2009)

7. Unexpended Funds: $194,998.27 (March 13, 2009)

8. Estimate of anticipated funding increases, including O&M: NA

9. Potential changes to project benefits: NA

10. Brief chronology of project development and issues affecting implementation:

- 30% design review meeting held January 20, 2004
- LSU modeler met with USACE Hydraulics Section in early April 2004 to demonstrate model and answer questions.
- LSU modeler met with USACE Hydraulics Section on April 12, 2004 to answer additional questions
- LSU modeler met with USACE Hydraulics Section on May 6, 2004 to provide final run data.
- LSU provided shoaling data to DNR for USACE Operations Section on June 10, 2004
- DNR, LSU, NMFS met with USACE Operations Section in Baton Rouge to review shoaling data on July 30, 2004
- November 2004, USACE Regulatory Section asks more questions on perceived shoaling and CWPPRA's responsibility is to pay for any increased costs.
- October 2005, USACE expresses shoaling concerns again we provide model data again to USACE
- November 7, 2005 Permit submitted to CMD
- November 8, 2005 USACE (USACE Hydraulics Section) expresses concern over shoaling, data provided again.
- December 2005, USACE asks for clarification with regards to permit
- March 2006, DNR provides response.
- August 2006, DNR received Water Quality Certificate from DEQ
- October 2006, DNR initiates Permit meeting with USACE

- December 5, 2006, Permit meeting with USACE, reviewed concerns over project induced shoaling.
- January 2007 respond to USACE comments on December permit meeting.
- January 2007 to present-had numerous verbal communications with the USACE over project induced shoaling.

11. Current status/remaining issues: The project is fully designed. The NMFS and DNR are waiting for official response from the USACE on project permit application. NMFS and DNR have agreed to move to de-authorize the project, as perceived induced shoaling issues have not been resolved and all project design data is now out dated.

12. Projected schedule and milestones: The NMFS will initiate formal request of the CWPPRA Program to de-authorize the Castille Pass Sediment Delivery Project.

13. Preparer: John D. Foret, Ph.D., NOAA Fisheries Service, john.foret@noaa.gov

Status Review - Unconstructed CWPPRA Projects
March 2009

1. Project Name (and number): Rockefeller Refuge Gulf Shoreline Stabilization (ME-18)

2. PPL: 10 - Phase 1 was authorized in May 2001

3. Federal Agency: NMFS

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: Total Fully Funded Costs $95,988,700
Current funding - Phase 1 approved funding 2,424,113.49

6. Expenditures: $1,105,692.17 (March 13, 2009)

7. Unexpended Funds: $1,096,421.32 (March 13, 2009)

8. Estimate of anticipated funding increases, including O&M: NA

9. Potential changes to project benefits: NA

10. Brief chronology of project development and issues affecting implementation:

- October 2001 – Phase 1 Approval
- September 23, 2004– 30% E&D review. Over 80 alternatives were considered based on their ability to meet project goals and objectives.
- February 17, 2005 – The NMFS/DNR request of the Task Force a project change in scope to pursue the development of test sections was approved. Therefore, four final alternatives were selected for consideration in a prototype test program at the Refuge that would help predict their potential for success if installed for the full 9.2-mile project.
- September 20, 2005 - 95% E&D review of four design alternatives.
- December 7, 2005 – The NMFS/DNR sought Phase 2 funding for construction.
- December 5, 2006 - The NMFS/DNR sought Phase 2 funding for construction.
- November 29, 2007 – The Coastal Impact Assistance Program (CIAP) adopted the project for construction.

11. Current status/remaining issues: DNR (CIAP) has received construction bids. Bid tabs are under review, construction contract award is pending

12. Projected schedule and milestones: Assume that construction through CIAP starts May 2009 and takes five months to complete that puts us in October 2009 for construction completion, with a construction completion report due by December 2009. The CIAP monitoring is a one year effort, so data collection would end October 2010, estimating 2 months to complete the data analysis and write the report, so December 2010 for the completed project data from the monitoring effort. At which point, programmatic mechanisms could transition the project back to CWPPRA for evaluation of monitoring results, and eventual construction recommendations of the entire 9.2 mile Gulf shoreline.

13. Preparer: John D. Foret, Ph.D., NOAA Fisheries Service, john.foret@noaa.gov

GIWW Bank Rest of Critical Areas in Terrebonne

Status Review - Unconstructed CWPPRA Projects
March 26, 2009

1. Project Name: Delta Building Diversion North of Fort St. Phillip (BS-10)

2. PPL: 10

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $1,444,000

6. Expenditures: $1,143,412

7. Unexpended Funds: $300,588

8. Estimate of anticipated funding increases, including O&M: N/A

9. Potential changes to project benefits: None

10. Brief chronology of project development and issues affecting implementation:

- Project was scheduled for a 95% design review meeting in the fall of 2007
- In developing the O&M plan for the 95% design review, comments were receive from MVN OD on impacts from the diversion on navigation safety
- The MVN PDT does not anticipate that the project would adversely impact navigation. However, due to the lack of detailed modeling, the MVN PDT thought it would be prudent to include measures that could be taken in the event that unforeseen impacts did affect navigation. As such, the MVN PDT proposed an emergency closure plan in the draft O&M plan for the project.
- The emergency closure plan consisted of using the existing budgeted O&M funding available for normal O&M activities to close the structure.

11. Current status/remaining issues:

DNR objected to the emergency closure plan and has indicated that they do not wish to move forward with completing design review requirements for the project.

12. Projected schedule:

The USACE's goal is to hold meetings this spring with LDNR to resolve the emergency closure plan issues. If the issues are resolved the USACE and LDNR will hold a 95 % design review in the fall of 2009. Upon successful completion of the design review, USACE and LADNR will request Phase II funding and construction approval.

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
3/12/2009

1. Project Name: Ship Shoal: Whiskey West Flank Restoration (TE-47)

2. PPL: 11 (2002)

3. Federal Agency: US Environmental Protection Agency

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget (Phase 1): $3,742,053

6. Expenditures: $1,965,895

7. Unexpended Funds: $1,776,158

8. Estimate of anticipated funding increases, including O&M: None

9. Potential changes to project benefits: N/A – Phase 1 Completed.

10. Brief chronology of project development and issues affecting implementation:

- January 16, 2002, Phase 1 Approval
- November 8, 2004, 30% E&D Review
- September 28, 2005, 95% E&D Review
- 2006, 2007, 2008, 2009 Phase 2 approval requests

11. Current status/remaining issues:

Phase 1 E&D has been completed, but project has not been selected for Phase 2 construction funding for four consecutive years. Sponsors are considering all available options to move the project forward including re-scoping and/or seeking alternative funding sources. EPA will be coordinating with OCPR in 2009 to determine next steps regarding this project. Should the sponsors determine re-scoping is in the project's best interest, we will fully coordinate with the Technical Committee and Task Force consistent with the CWPPRA SOP Manual.

12. Projected schedule:

Continue to seek alternatives for construction including possible re-scope, alternate or cost sharing opportunities including stimulus dollars. Resurvey the island in the summer of 2009 to verify validity of plans and specifications.

13. Preparer: Brad Crawford, P.E., EPA Project Manager

Status Review - Unconstructed CWPPRA Projects
March 26, 2009

1. Project Name: Lake Borgne and MRGO Shoreline Protection (PO-32)

2. PPL: 12

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: N/A

5. Approved Total Budget: $1,348,345

6. Expenditures: $1,082,297

7. Unexpended Funds: $266,048

8. Estimate of anticipated funding increases, including O&M: N/A

9. Potential changes to project benefits: None

10. Brief chronology of project development and issues affecting implementation:

- Project completed a 95% design review meeting in the winter of 2004
- In the fall of 2006 the PDT requested Phase II authorization.
- As part of the emergency response to Hurricane Katrina, the USACE was given funds and authority (3rd Supplemental funding) to complete wetlands protection projects along the Mississippi River Gulf Outlet.
- A decision was made by MVN to build the CWPPRA Lake Borgne portion of the project using 3rd Supplemental emergency hurricane recovery funding.
- Construction on the breakwater reach along the Lake Borgne shoreline between Doullut's Canal and Jahncke's Ditch began in 2007.

11. Current status/remaining issues:

- Approximately 75% of the breakwater reach is constructed to date.
- The remaining work is scheduled to be completed by the summer of 2008
- Based on language from the Chiefs Report for the MRGO Deauthorization study, the expectation is that the state will pick up 100% of O&M on the Lake Borgne Doulluts Canal to Jahncke's Ditch portion of the CWPPRA project that is being constructed using the 3rd supplemental emergency funds.

    - Excerpt from Chiefs Report:
      "f. Operate, maintain, repair, replace and rehabilitate any measures undertaken or to be undertaken pursuant to the authorization provided under the heading "Operation and Maintenance" in Title I, Chapter 3 of Division B of Public Law 109-148, as modified by Section 2304 in Title

II, Chapter 3 of Public Law 109-234 (3rd Supplemental work) at no cost to the Federal Government in accordance with applicable Federal and State Laws and regulations and specific directions prescribed by the Federal Government."

12. Projected schedule:

With the closure of the MRGO channel, the portion along the north bank of the MRGO between Doullut's Canal and Lena Lagoon is being evaluated as a part of the MRGO Restoration Plan. The USACE recommends that this portion of the project be placed on hold until after MRGO Restoration Plan has been finalized. A determination will be made at that time on whether or not to request Phase II funding.

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
26 March 2009

1. Project Name (and number): Weeks Bay MC and SP/Commercial Canal/Freshwater Redirection (TV-19)

2. PPL: 9

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: $1,229,337.00

6. Expenditures: $531,853

7. Unexpended Funds: $697,484

8. Estimate of anticipated funding increases, including O&M: None

9. Potential changes to project benefits: Unknown

10. Brief chronology of project development and issues affecting implementation:

The original project proposed by the Natural Resources Conservation Service (NRCS) planned to reduce erosion rates along the northern shoreline of Vermilion/Weeks Bay and control salinities in the interior marshes in the vicinity of Vermilion/Weeks Bay. Protection and restoration efforts would involve an armored protection along the shoreline areas along the Weeks Bay side of the isthmus, with steel sheet piling. A low sill weir was planned across Commercial Canal near its junction with Vermilion Bay.

It was speculated that the weir, in conjunction with restoring the isthmus, would subdue interior tidal energies and divert Atchafalaya River water further west via the GIWW. The estimated fully funded cost of the project at the time of its inclusion on PPL9 was $15 million.

The Corps of Engineers assumed sponsorship of the project because of the ongoing Section 1135 project in the same area. Section 1135 authorizes the corps to investigate modifications to existing corps projects for the purpose of environmental restoration. In this case, the corps was investigating the environmental benefits of reestablishing the bank between the Gulf Intracoastal Waterway (GIWW) and Weeks Bay. The study was terminated for failure to find sufficient environmental benefits to justify the cost. Further, hydrologic investigations performed under the 1135 study showed that salinities in the CWPPRA project targeted wetlands area are not rising. In fact, investigations of the area revealed a slight freshening trend.

Subsequent hydrologic investigation performed for the CWPPRA project, reports that “of the total freshwater influx, over 90 percent of water flowing into the bay comes from the Lower Atchafalaya River and the Wax Lake Outlet, the remaining is from the GIWW and a series of smaller bayous and the Vermilion River. To the south of Weeks Bay, the Southwest Pass and a wide opening between East Cote Blanche and Atchafalaya Bay connect Vermilion Bay to the Gulf of Mexico.” Thus, closing a few openings would have little effect on salinities in the bay system. Furthermore, the report concludes, “Based on the indicated findings, salinity variations in the Weeks Bay area have fluctuated neither positively nor negatively”. Benefits for the proposed CWPPRA project had been calculated on the assumption of loss of freshwater marsh due to increasing saltwater intrusion in an area adjacent to the GIWW.

Recognizing the local interest in the project due to the perception of sediments and freshwater entering the bay from the GIWW, the project was revised to include only a retention structure and marsh creation through dedicated dredging. This would create approximately 211 acres of intermediate marsh, close a 750’ opening between the GIWW and the bay, and prevent erosion from occurring along the west side of the isthmus. The fully funded cost of this project was estimated at $31 million in 2004.

Extensive study of the area previously conducted under numerous authorities failed to find sufficient environmental benefits to justify the project as proposed under the CWPPRA program. Also because of project cost increases, the project as proposed is no longer a constructible, cost-effective project. The project ranked last in the prioritization of Breaux Act projects with a score of 30.2. The project has remained authorized because of continuing local interest. At the June 2007, meeting the Task Force passed a motion to move the Weeks Bay project to a watch critical list, and stated that no additional funding would be spent on the project. The Task Force also required that milestone list be developed by the Technical Committee for this project." As a milestone for this project the Task Force gave the local interest (Randy Moertel) until the spring of 2008, to test the effectiveness of HESCO baskets as shoreline protection. A report on the effectiveness of HESCO baskets was interrupted by the 2008 hurricanes. The project delivery team has also provided the local interest with all technical data collected under the CWPPRA program.

11. Current status/remaining issues: Randy Moertel met with the NRCS, NMFS, LSU Extension, Iberia Parish CZM, McIlhenny, Vermilion Parish CZM, J. Paul Rainey Audubon Refuge, and LDNR concerning this project. According to Randy, this group collectively decided to initiate a redesign and engineering of the project using proven restoration techniques addressed in the Value Engineering Study for the Weeks Bay project (TV-19). Iberia Parish and Vermilion Parish have dedicated $100,000 of their CIAP money for the development of a coastal protection and restoration project for this area. According to Randy Moertel, Greg Grandy (LDNR) indicated that using the CIAP monies for the development of a new design and engineering was within proper use of CIAP monies as proposed by the Parishes. However, there is no indication as to whether are not Minerals Management Service has determined if this would be a proper use of those funds. The local interest intend to use the Shaw Group (Iberia Parish CIAP

engineers) or some other engineering firm to engineer the project. They propose to come up with a final design recommendation that they expect would be consistent with CWPPRA guidelines for the existing Weeks Bay project without forcing them to re-nominate a project for this area in future PPLs. The local interests are still working out the details. The Local interests have not coordinated any of this effort with the Corps of Engineers, the project federal sponsor. We only recently became aware of the direction that the local interests or the State wish to go in with this project. Randy will not be able to present their full plan at the April 15, 2009 Tech Committee meeting due to their schedule being interrupted by 2008 hurricanes.

12. Projected schedule: Project is indefinitely on hold due to local sponsor petition to keep project on books until they come up with an alternative plan.

13. Preparer: Travis Creel / 504-862-1071

Status Review - Unconstructed CWPPRA Projects
24 March 2009

1. Project Name (and number): Benneys Bay Diversion (MR-13)

2. PPL: 10

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: NA

5. Approved Total Budget: $975,191 (Construction estimate $53.7 mil)

6. Expenditures: $819,134.69

7. Unexpended Funds: $156,056.31

8. Estimate of anticipated funding increases, including O&M: Unknown

9. Potential changes to project benefits: N/A

10. Brief chronology of project development and issues affecting implementation:

Phase I approved 10 Jan 01
Resolve project O&M responsibility (see below)
95% Design submitted to LDNR Oct '06

11. Current status/remaining issues:

The project continues to be delayed from moving to the 95% Design due to disagreement about the overall project funding for Phase II associated with project induced shoaling. USACE and LDNR previously agreed on design, anticipated benefits, and all other aspects of this project except budgetary responsibility for O&M. Diversions cause shoaling and traditionally CWPPRA paid for shoaling impacts and used the material beneficially. Because of uncertainty regarding the amount of shoaling, the State and USACE agreed to an initial O&M cost cap of $10 million. The original construction estimate for this project was $53.7 million. To remain within the initial $10 million O&M cost cap only one-third of a cycle of O&M would be funded. As such, there would not be sufficient funding for the traditional 20 years of CWPPRA funded O&M, which would include 10 cycles of O&M, or one dredging event every second year. As a result of cost associated with dredging the Pilottown Ancorage Area for the West Bay project induced shoaling impacts, the state and the Corps are working to develop more comprehensive model of the lower river and to resolve larger policy and law issues associated with responsibilities for offsetting induced shoaling impacts.

The cost of one dredging cycle or event was previously estimated at $29,077,261 or $11,539,591. Based on these earlier costs estimates, ten dredging events/cycles would cost about $290,772,610 or $115,395,910. However, in today's dollars, those costs could be more. The revised fully funded cost for the project, including construction, monitoring and 10 cycles of O&M was previously estimated to be $344,472,610 or $ 169,095,910. (Original cost + 10 dredging events) = ($53.7mill + 290,772,610 or 115,395,910) in today's dollars. No recent work has been conducted to update these estimates.

12. Projected schedule/Milestones: Will reactivate the project and reestablish milestones when programmatic induced shoaling issues are resolved.

13. Preparer: Melanie Goodman

Status Review - Unconstructed CWPPRA Projects
16 April 2008

1. Project Name (and number): Mississippi River Sediment Trap (MR-12)

2. PPL: 12

3. Federal Agency: USACE

4. Date of Construction Approval / Phase Two Approval: TBD

5. Approved Total Budget: $1,434,908 (Outdated construction estimate $52.2 million)

6. Expenditures: $136,548

7. Unexpended Funds: $1,298,360

8. Estimate of anticipated funding increases, including O&M: Cost of dredging expected to increase because of higher fuel and labor charges.

9. Potential changes to project benefits: None

10. Brief chronology of project development and issues affecting implementation:

- Phase I Approved August 2002
- The project work plan is at a standstill. Plan reformulation must be performed jointly by LA Dept. of Natural Resources and USACE. The Task Force recommended changing the project scope to move

11. Current status/remaining issues:

The specific location of a sediment trap remains under discussion. USACE has determined the most advantageous location to be at Head of Passes in the Mississippi River, where river sediment could be readily transported hydraulically and used beneficially with the least cost. Other commentors prefer the sediment trap to be located between river miles 1.5 and 5.5, which would require greater costs in resolving oyster leases, disposal right of ways, levee crossings, and navigation obstruction.

12. Projected schedule/Milestsones: 31 December 2008 Resolution of sediment trap location.

13. Preparer: Annette Chioma, USACE, 504-862-2283

Status Review - Unconstructed CWPPRA Projects
30 March 2009

1. Project Name (and number): Spanish Pass Diversion (MR-14)

2. PPL: 13

3. Federal Agency: COE

4. Date of Construction Approval / Phase Two Approval: TBD (anticipated 20 Jan 12)

5. Approved Total Budget: $1,421,680

6. Expenditures: $ 3,071.76

7. Unexpended Funds: $1,114,504

8. Estimate of anticipated funding increases, including O&M: TBD; project scope change under consideration.

9. Potential changes to project benefits: Original diversion proposal estimated 334 acres of marsh to be created; subsequent evaluations have determined that only 190 acres of marsh would be created. It is proposed that a smaller diversion be constructed, and a dedicated dredging/marsh creation component be added that results in equivalent marsh acreage creation as originally proposed.

10. Brief chronology of project development and issues affecting implementation:

- Phase 1 approved January '04
- Work plan developed & submitted to P&E Subcommittee prior to April 30, 2004
- Gages installed in November 2004
- Surveys and hydraulic modeling completed
- Dec 2006 Progress Report indicated that project as proposed would not attain originally anticipated wetland benefits
- Various alternatives to revise the project scope are being developed in conjunction with Plaquemines Parish officials (most recent meeting with Parish reps on Feb 28, 2008; last meeting that included OCPR was on May 1, 2007)
- Current Proposed Change in Scope includes smaller diversion (less than 7,000 cfs) and dedicated dredging/marsh creation component
- Plaquemines Parish in support of project implementation
- Need OCPR on-board with developing new scope and also resolution of cost share agreement issue

11. Current status/remaining issues: Need consensus with OCPR and Plaquemines Parish on future project design and a cost share agreement signed.

12. Projected schedule (provided cost share agreement resolved – resolution tentatively expected by June 2009):

- 30 Sep 2010 - Announce 30% Design Review
- 15 Dec 2010 - Submit 95% to LDNR
- 12 Jan 2011 – Announce 95% Review

13. Preparer: Susan M. Hennington, USACE-MVN, (504) 862-2504

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

FUNDING REQUEST FOR POST-HURRICANE OPERATIONS AND MAINTENANCE ON SABINE STRUCTURES PROJECT (CS-23)

For Report/Discussion:

The U.S. Fish and Wildlife Service (USFWS) and the Louisiana Office of Coastal Protection and Restoration (OCPR) request Technical Committee approval for an O&M budget increase in the amount of $1,213,114, including incremental funding in the amount of $1,031,840 to cover post hurricanes Rita and Ike repairs and modifications. The incremental funding would be used to repair a gate, replace an actuator, and other work, and modify existing 1-stemmed gates to 2-stemmed gates. Electrical repairs were completed using federal post Hurricane Rita supplemental funding provided for the Sabine National Wildlife Refuge. The remaining post-hurricane supplemental funding was insufficient to complete the project and was returned to the USFWS regional office to be used on other hurricane related projects. Thus, there are no remaining supplemental funds to complete the remaining O&M and modification work. Funds previously provided by the Federal Emergency Management Agency were expended by OCPR for designs.

January 2002

Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal and Hog Island Gully (CS-23)

Project Status

Approved Date: 1994
Project Area: 42,247 acres
Net Benefit After 20 Years: 953 acres
Project Type: Marsh Management
Cost: $4.6 million
Status: Completed Dec. 2001

Location

The project is located in the eastern portion of the Sabine National Wildlife Refuge. Just west of LA Hwy 27, it is approximately four miles southwest of Hackberry on the west bank of Calcasieu Lake in Cameron Parish, Louisiana.

Problems

The construction of the Calcasieu Ship Channel has led to saltwater intrusion, increased water fluctuations, and tidal scouring from the West Cove area of Calcasieu Lake, resulting in marsh loss in this area. The former fixed crest weirs with eight-foot "Tainter" gates in the center (at West Cove and Hog Island Gully) and flapgated culverts (at Headquarters Canal) were built in the 1970s and were inadequate to drain the project area of excess water. These flow restrictions have led to increased water levels in the marshes west of Hwy 27. The structures' openings were also inadequate for tidal flow into these marshes.

Restoration Strategy

This project was authorized to replace the water control structures on three major waterways that allow water to flow between Calcasieu Lake and the interior marshes west of Hwy 27. The new structures on Hog Island Gully, West Cove Canal, and Headquarters Canal will be operated to effectively discharge excess water, to increase the cross sectional area by 370 percent (thereby enhancing the movement of estuarine fish and shellfish), and to help curtail saltwater intrusion into the interior marshes.

This project should help maintain intermediate and brackish vegetation communities and increase submerged aquatic vegetation. Salinity, water level, and vegetation will be monitored.

Progress to Date

The Headquarters Canal structure was completed February 2000, the Hog Island Gully structure was completed in August 2000, and the West Cove structure will be completed by December 2001. Baseline monitoring of salinity, water level, and vegetation was initiated in 1998.

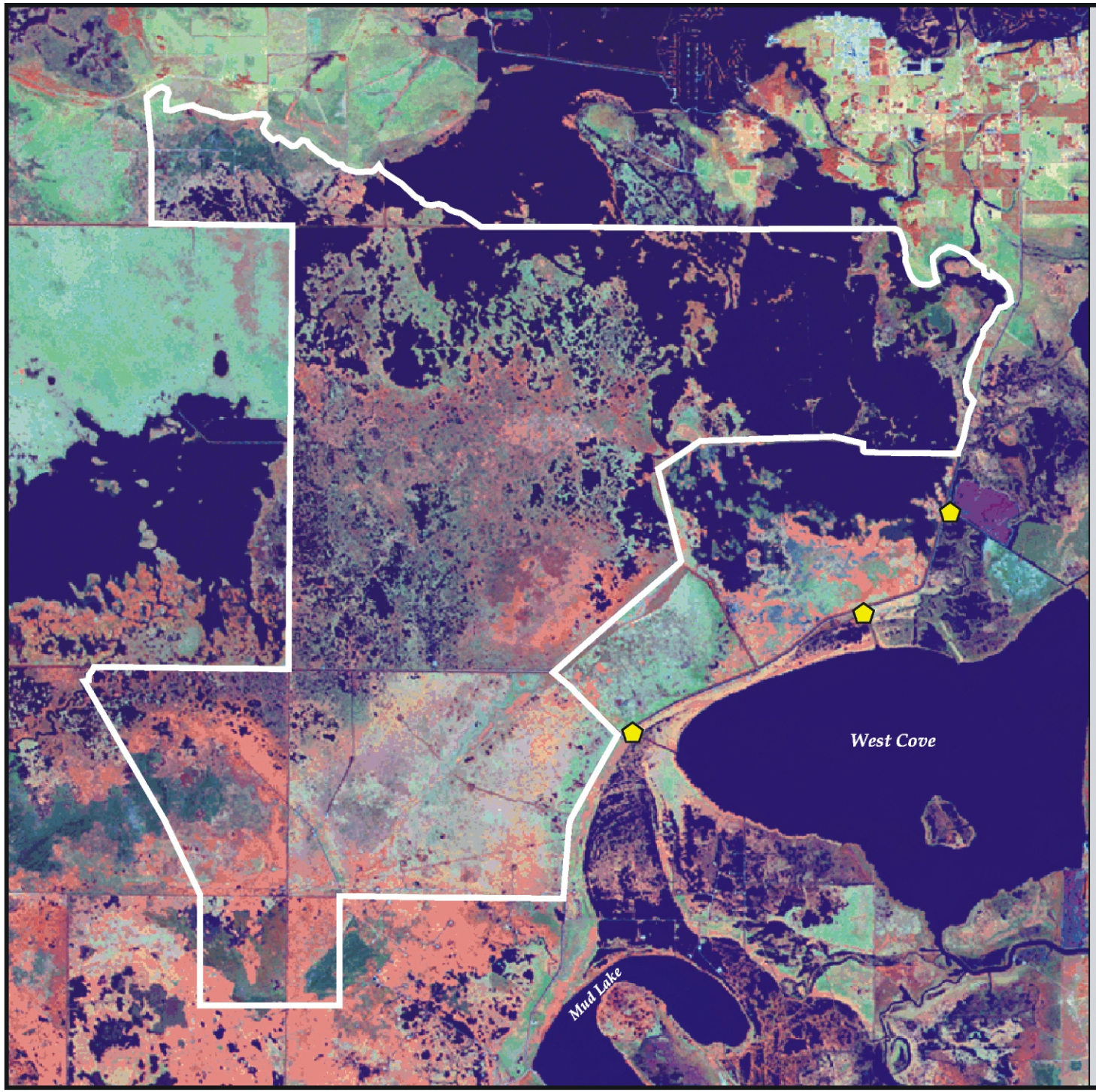
The Sabine National Wildlife Refuge's new Headquarters Canal water control structure (looking southwest) is comprised of three 5-ft diameter culverts with sluice and flap gates. The refuge headquarters buildings are in the background, and LA Hwy 27 is to the right.

Looking west at the Hog Island Gully water control structure on the Sabine National Wildlife Refuge. The structure has four large 7.5-ft wide by 8-ft deep bays and two smaller 3.5-ft wide by 8-ft deep bays with slide gates. LA Hwy 27 is in the background. The West Cove structure is similar, but with three bays instead of four.

For more project information, please contact:

Federal Sponsor:
U.S. Fish and Wildlife Service
Lafayette, LA
(337) 291-3100

Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308



Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal and Hog Island Gully (CS-23)

Water Control Structure

Project Boundary

N

1 0 1 Miles

1 0 1 2 Kilometers

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
Map Date: November 6, 2001
Map ID: 2002-04-126

Summary of Sabine Structures Replacement Project (CS-23) Effectiveness
From June 2005 to 2008
Monitoring and Operations Reports

Introduction

The Sabine Structures Project, constructed in 2003, replaced three large water control structures on the eastern portion of Sabine National Wildlife Refuge at Hog Island Gulley, Headquarters Canal, and West Cove Canal, with larger structures that increased the capacity over 370% with greater management control. Electrical problems due to improper 3-Phase electricity and physical gate problems caused the electric motors to overheat on the Hog Island Gully and West Cove structures after the initial installation (2001). The structures were partly operational from 2004 to October 2005 when they were damaged by Hurricane Rita. The structures have been operated in the partial open mode since H. Rita. Due to the inability to operate the structures correctly, salinity and water level spikes have occurred, although less frequently than during preconstruction.

It is difficult to measure project effectiveness because the structures have not been operational since construction completion (2003), except for 2004 and part of 2005. Data from 2004 to mid 2005 provide the best insight concerning project effectiveness as summarized below (Figure 1).

2004 Operation and Monitoring Report

Yearly mean salinities were lower within the project area when compared to the reference area (Figure 2). Water levels remained below the average marsh elevation of 1.41 ft (0.43 m) for the January 1-November 18, 2004 period (Figure 3).

2008 Operation and Monitoring Report

Salinity target level goals were set at 2 to 8 ppt during the growing season and 3 to 10 ppt during the non growing season. Salinities were significantly lower at northern stations within project compared to the northern reference area (Figure 4a). Salinities within the mid to southern project area were lower than the southern reference area from 1999 to 2002 (Figure 4b). Data from southern project recorders was lacking post 2002.

The percent of time stations were within the salinity target range during the growing season increased for stations in the NE project area (CS02-05 and C02-17) but decreased for western stations (CS23-02, CS23-03, and CS23-05) from 1996 (pre construction) to 2007 (Figure 5). The percent of time stations were within the salinity target range during the non-growing season decreased for all stations including post-construction to 2007 (Figure 5). Water levels relative to marsh elevation (flooding) varied seasonally and did not generally decrease post construction (Figures 6a and 6b).

CRMS Monitoring Results

Data collection using 10 CRMS *Wetlands* stations began in June 2006. Results from 2006 to 2008 indicated that salinities were higher closer to Calcasieu Lake and lower at the western stations closer to Sabine Lake. One reference area CRMS station had higher salinities than project CRMS stations. CRMS data indicated that more marsh flooding occurred within the project area compared to reference stations.

Project Effectiveness Conclusions

The Sabine Refuge Structure Replacement Project is in poor condition with all structures sustaining damage from Hurricanes Rita and Ike. The project has been non-operable since October 2005. Due to the inability to operate the structures correctly, salinity and water level spikes have occurred, although less frequently post-construction than pre-construction.

The project was effective in reducing salinities and moderating water levels within the Sabine Refuge project area during 2004 when the structures were operated prior to Hurricane Rita. Lowered salinities were recorded in the project area compared to controls and water levels were on average below marsh levels.

Once the structures become fully operational, their ability to halt saltwater inflows and reduce water level fluctuations within the project area and surrounding areas will become evident.

Engineering Conclusions and Recommendations

The Sabine Structure Replacement Project is in poor condition with all structures sustaining damage from Hurricanes Rita (2005) and Ike (2008). FEMA approved $144,185 for structure repairs for an estimated repair cost of $756,500 in 2007. Those funds were used for development of plans and specifications.

The USFWS using separate post-Rita Federal funding repaired the electrical system through the Tennessee Valley Authority (TVA). LDNR, though its E&D contractor, Lonnie Harper and Associates, prepared and delivered repair and modification plans and specifications to the TVA for contract bids in the summer of 2007. TVA was unsuccessful in receiving bids in two bid advertisements and the remaining USFWS funds were returned for use in other post hurricane damages. Jeff Davis Electrical restored true 3-Phase electrical service to the area eliminating the need for the rotary converters that hopefully will eliminate future structure electrical problems.

Recommended Repairs and Modifications

The following work is needed to repair and modify the structures to make them operable.

- Remove the ultra high molecular weight (UHMW) low-leakage gate seals.
- Machine actuator pedestal flanges to make them plumb with the gate connections.

- Install double stems to all gates and modify the structural steel of the upper platform to accommodate double stems.
- Adjust gates to operate smoothly.
- Remove all actuators (motors) at Hog Island Gully and West Cove Structures.
- Refurbish four of the actuators to reinstall on the 3-foot-wide gates and operate with a single stem.
- Install an articulated stem to the gate connection on the 3-foot-wide gates.
- Install larger actuators (motors) on the 7.5-foot-wide gates.
- Replace the actuators at the Headquarters Canal structure.
- Install articulated stems to gate connections on all double stem gates and lubricate all stems.

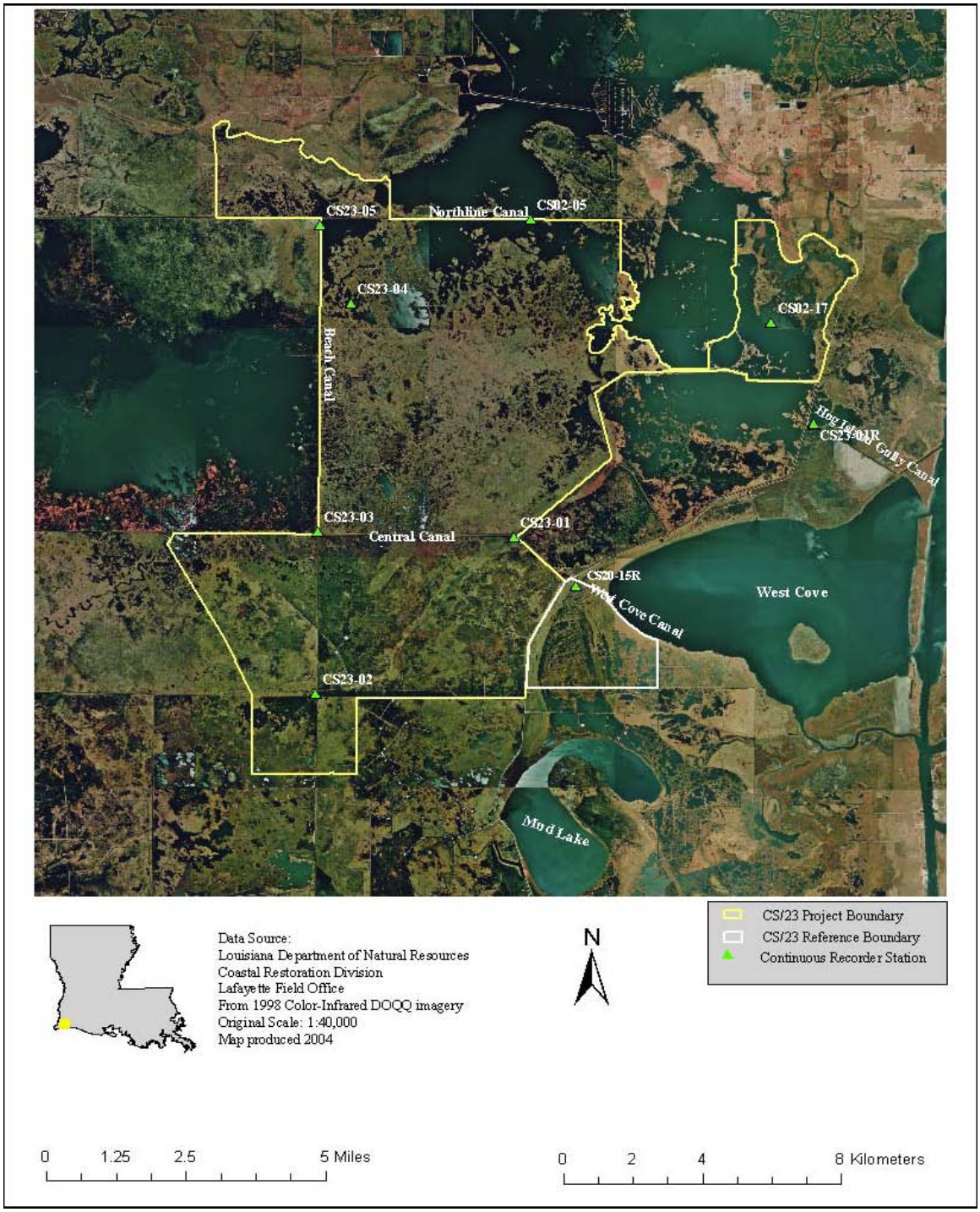


Figure 1: 1998 DOQQ imagery of continuous recorder monitoring stations in the Sabine Structure Replacement project and reference areas.

Project vs. Reference (47 weeks)

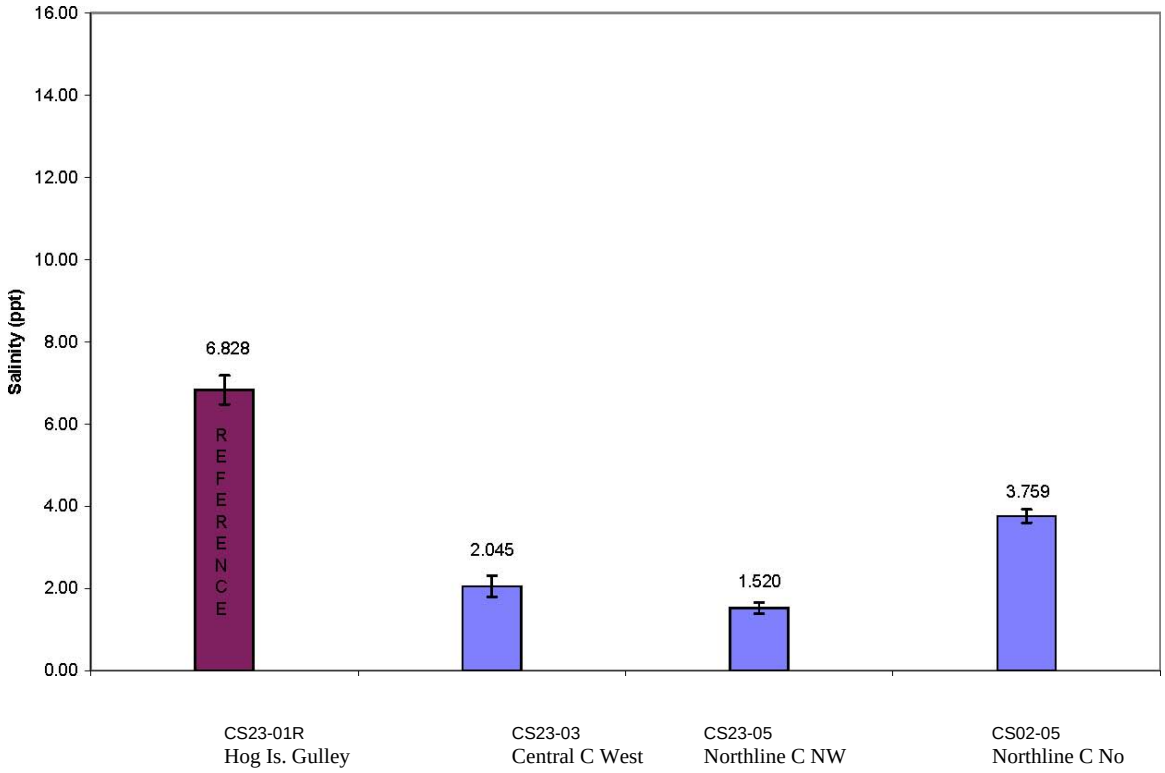


Figure 2: Yearly means derived from weekly means of salinity (ppt) at four continuous recorder stations located in the Sabine Structures Replacement (CS-23) project and reference areas for the period 01/01/04 – 11/16/04.

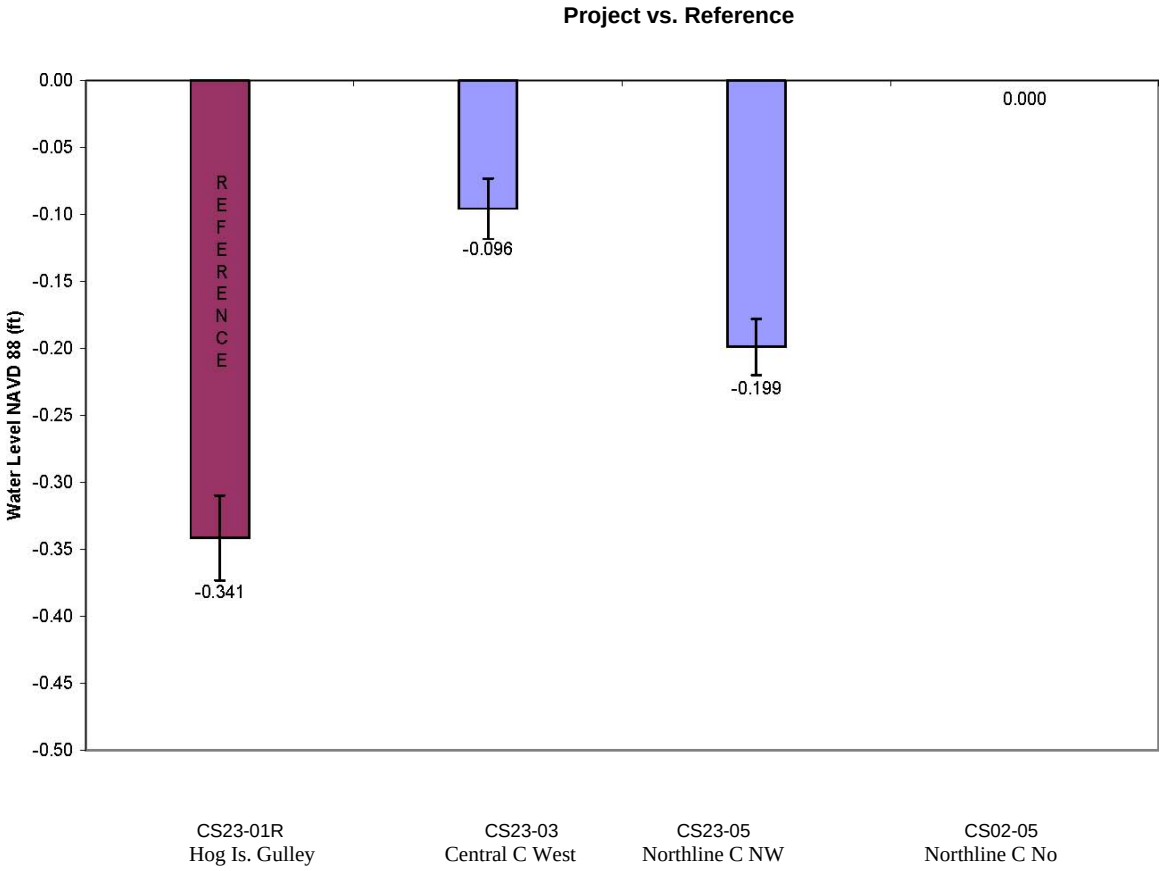


Figure 3. Yearly means derived from weekly means of water levels relative to marsh elevation (ft, NAVD 88) at four continuous recorder stations located in the Sabine Structure Replacement (CS-23) project and reference areas for the period 1/1/04 – 11/18/04.

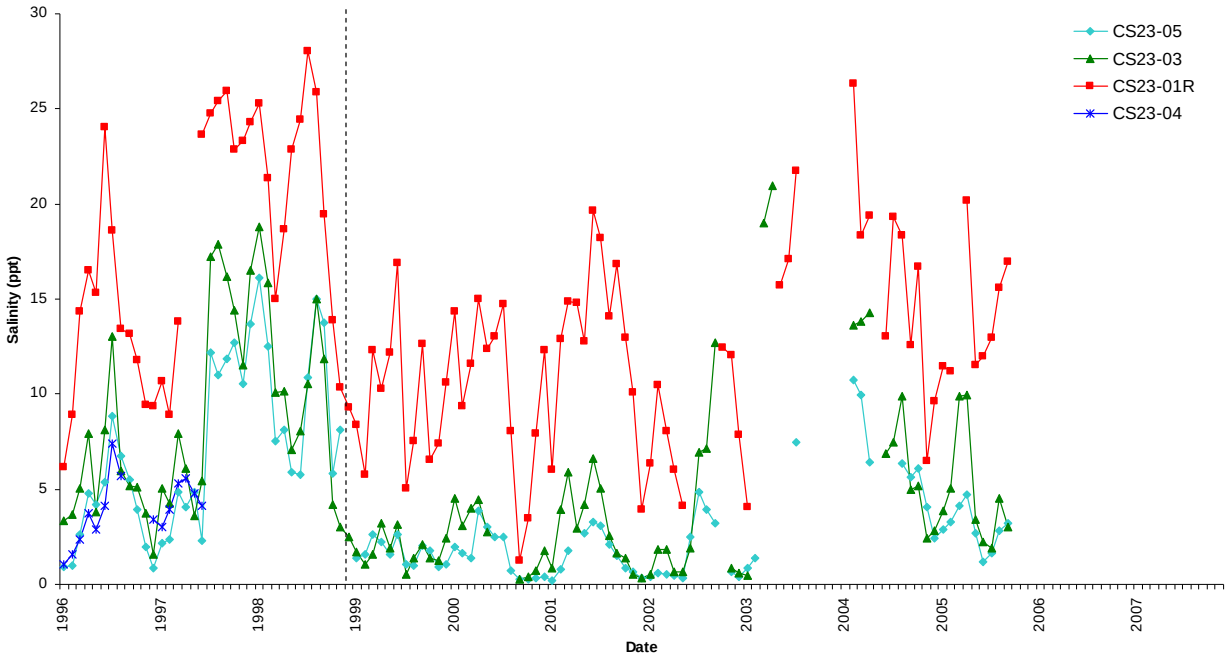


Figure 4a. Monthly mean salinity in the northern portion of CS-23. Vertical line represents project construction. Partially operational 2000 to 2003. Construction completed September 2003.

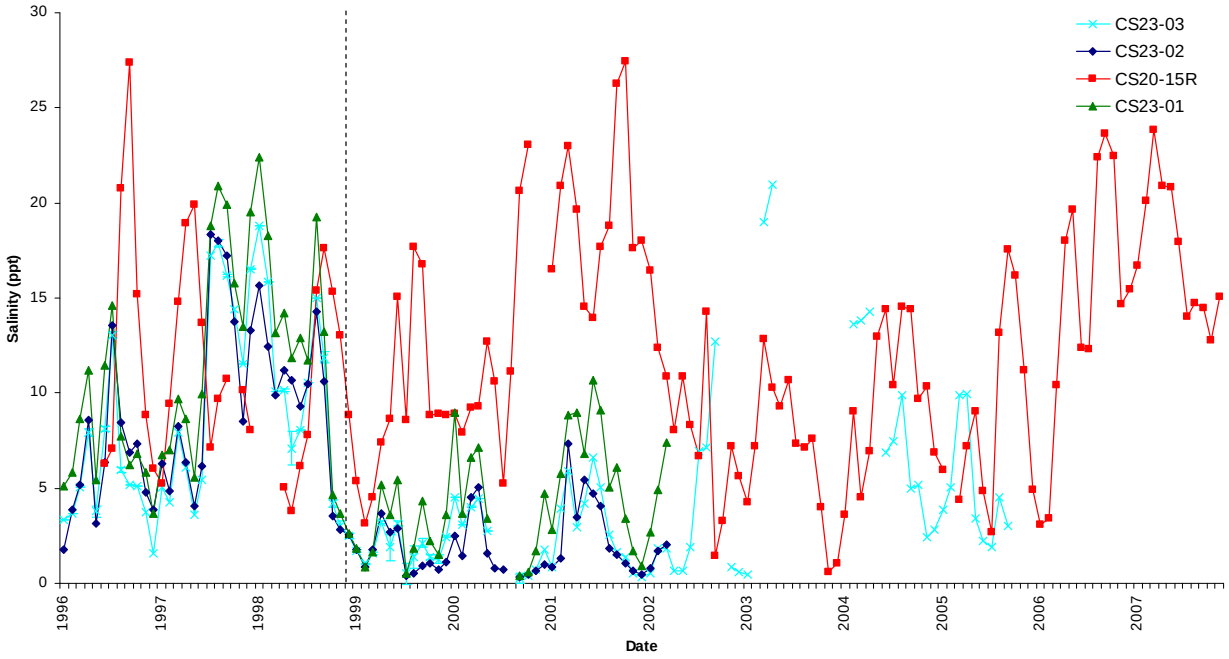


Figure 4b. Monthly mean salinity in the southern portion of CS-23. Vertical line represents project construction. Partially operational 2000 to 2003. Construction completed September 2003.

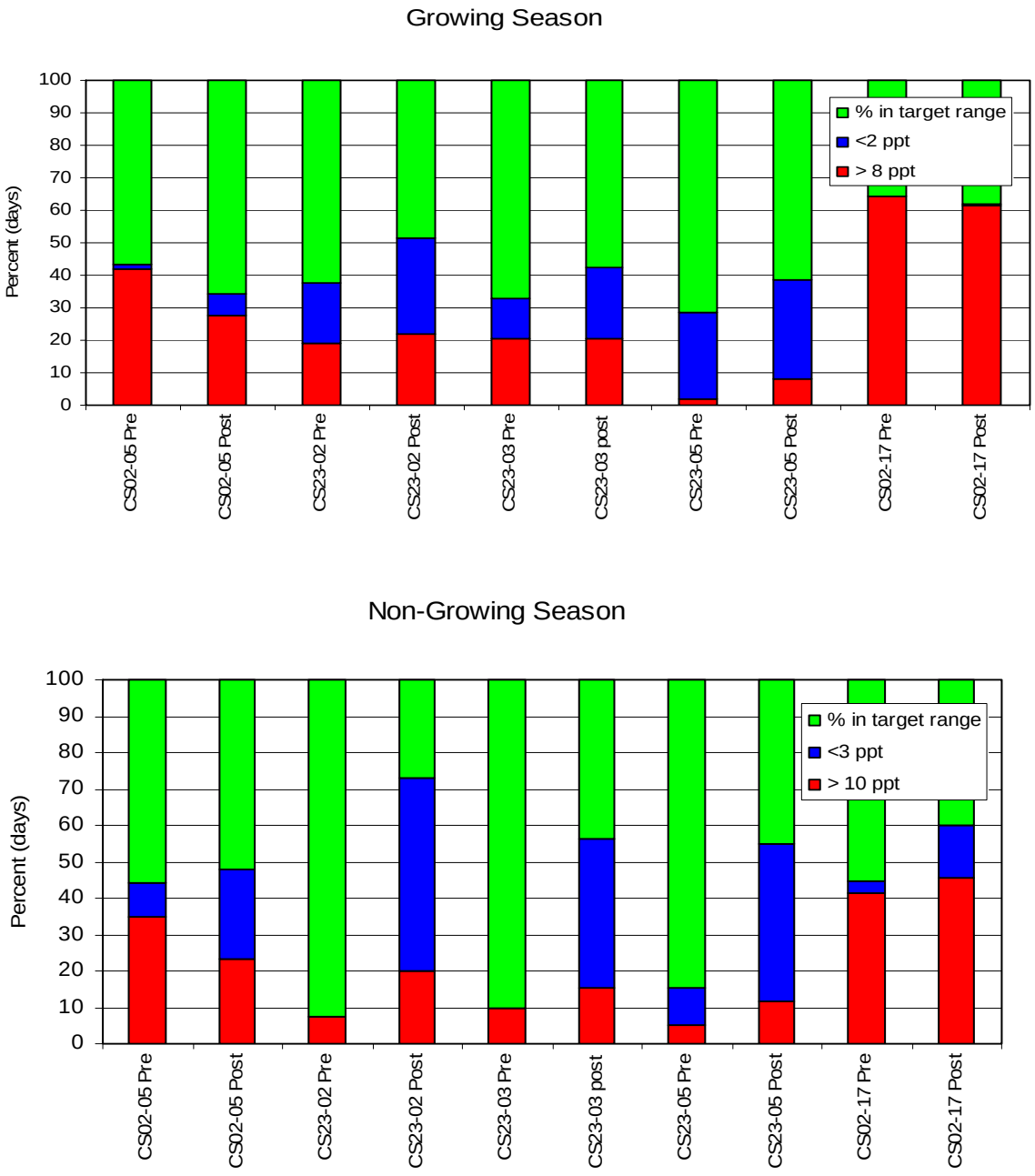


Figure 5. Frequency distribution of salinities that fall within the target ranges during the growing and non growing seasons in the project area from 1996 to 2007.

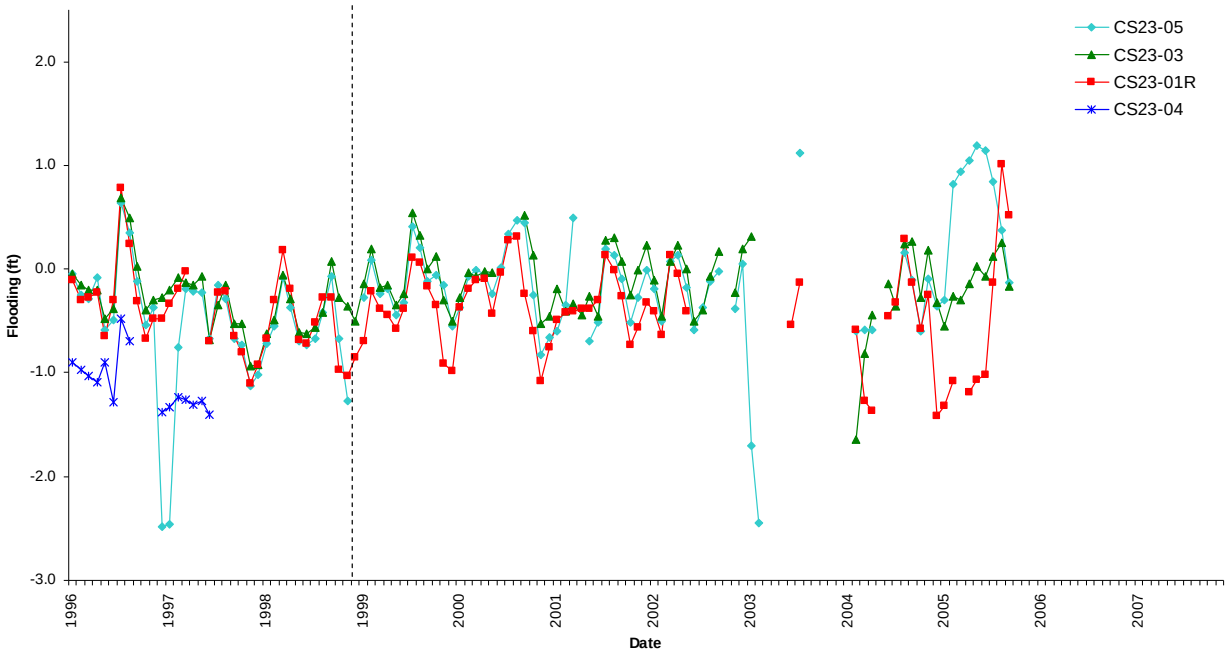


Figure 6a. Monthly mean flooding (water level relative to the marsh surface) in the northern portion of CS-23. Vertical line represents project construction.

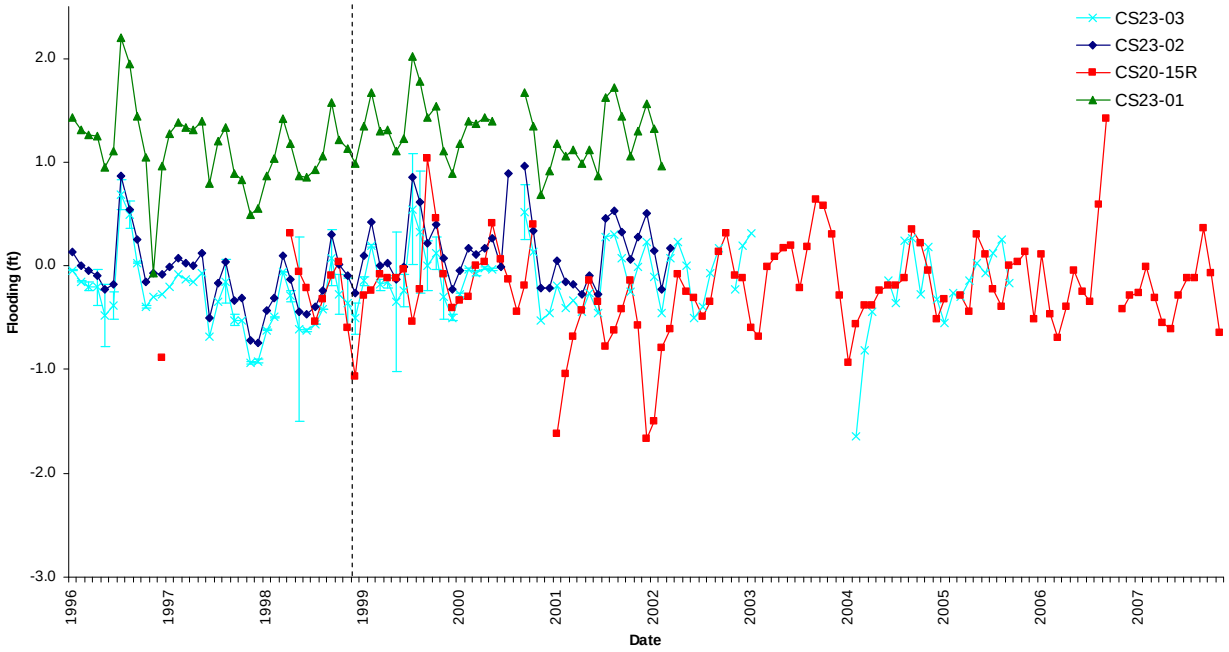


Figure 6b. Monthly mean flooding (water level relative to the marsh surface) in the southern portion of CS-23. Vertical line represents project construction.

Request for CWPPRA Project O&M Funding Increase
Project Costs and Benefits Reevaluation
Fact Sheet
April 2, 2009

Project Name: Sabine Structures Replacement Project (CS-23) (Hog Island, etc. Replacement)
PPL: 3
Federal Sponsor: USFWS
Construction Completion Date: September 2003
Projected Project Close-out Date: September 2023

Project Description: Replacement of the existing Sabine National Wildlife Refuge Hog Island Gully, West Cove, and Headquarters Canal adjustable water control structures with larger structures (increased capacity by 370%) with greater management control. The Hog Island Gully replacement structure consists of 4, 7.5 foot-wide by 8 foot-deep bays and 2, 3 foot-wide by 8 foot-deep bays with flapgates on 3 of the 4 large gates. The West Cove structure consists of 3, 7.5 foot-wide by 8 foot-deep large bays and 2, 3 foot-wide by 8 foot-deep bays with 2 of the large bays with flapgates. The Headquarters Canal structure consists of 3, 5 foot-diameter culverts with exterior (lakeside) flapgate/sluice gates on each.

Construction changes from the approved project: No changes, but numerous structure operation issues have occurred post construction.

Explain why O&M funding increase is needed: Repair and upgrading is currently needed due to damage received from Hurricanes Rita (2005) and Ike (2008) and to correct post construction structure operation problems. Hurricanes Rita and Ike overtopped the structures and damaged the electric motors, guard rails and other equipment. The structures have been operated in the partially open mode since October 2005 until repairs can be made. U. S. Fish and Wildlife Service post H. Rita supplemental funds were used to repair the electrical systems ($232,949), but the remaining funds were returned because the Tennessee Valley Authority (TVA) (the USFWS contract manager) was unsuccessful in receiving contract bids on two separate occasions.

Detail O&M work conducted to date: Electrical transformers and filters were added to the structures in December 2001 because the electrical service at the time was not the correct "3-Phase" electricity needed by structure actuators (motors). The structures continued to operate incorrectly in the automatic mode even with the filters. Rotary phase converters, installed in September 2003, eliminated motor reversal and other problems, at a cost of $20,000, for the Hog Island Gully and West Cove structures, but the structures continued to have operational problems. Those problems were caused by gates rubbing against the sides of bays caused by gate stems not able to pull gates up vertically. In June 2005, the following repairs were made; 1) installed the operating nut in gate 6A, Hog Island Gully, 2.) freed jammed gate 6b, Hog Island Gully, 3.) replaced operating nut in gate 3A, West Cove, and 4.) replaced the batteries in all Rotork Actuators and re-calibrated them for $13,216. In June 2006, the security fence and signage was replaced after H. Rita for $8,360. In 2008, the TVA, under FWS contract with post-Rita funds, installed true 3-Phase power from Jeff Davis Electric Co-op transformers at Highway 27 to the structures, relocated all controls to the top platform, removed the rotary phase converter, and wired the actuators using an on-off control switch for $232,949. Currently, one actuator each at Hog Island Gully, West Cove and Headquarters are inoperable. The State OCPR applied the $144,185 in post-Rita FEMA funding for structure repair and modification plans and specifications.

Detail and date of next O&M work to be completed per this O&M Request:

The following work is needed to repair and modify the structures to make them operable. Should the request be approved, the work can begin by July 2009 and end by June 2010.

- Remove the ultra high molecular weight (UHMW) low-leakage gate seals.
- Machine actuator pedestal flanges to make them plumb with the gate connections.
- Install double stems to all gates and modify the structural steel of the upper platform to accommodate dual stems.
- Adjust gates to operate smoothly.
- Remove all actuators (motors) at Hog Island Gully and West Cove Structures. Refurbish four of the actuators to reinstall on the 3-foot-wide gates. These gates will operate with a single stem. Install an articulated stem to the gate connection on the 3-foot-wide gates.
- Install larger actuators (motors) on the 7.5-foot-wide gates.
- Replace the actuators at the Headquarters Canal structure.
- Install articulated stems to gate connections on all double stem gates and lubricate all stems.

Detail of future O&M work to be completed: Anticipate need for moderate ($10,000 to $20,000) maintenance events every three years until 2023, plus annual operations and inspections and monitoring for operations.

Originally approved fully funded project cost estimate: $4,528,418

Originally approved O&M budget: $567,987; Current budget is $606,987 ($40,000 transferred from Monitoring).

Approved O&M Budget Increases: None

Total O&M obligations to date: $607,987

Remaining available O&M budget funds: $0.00.

Current Incremental Funding Request: $1,031,840

Revised fully funded cost estimate: $5,741,532

Total Project Life Budget Increase: $1,213,114

Requested Revised fully funded O&M estimate: $1,821,101

Percent total project cost increase of proposed revised budget over original budget plus net budget changes: 26.8% over the original fully funded project budget ($1,213,114/ $4,528,418).

Original net benefits based on WVA prepared when project was approved: 953 acres

Estimate of cumulative project wetland acres to date (from quantitative and/or qualitative analysis): 238 acres (= 25% of 20-year benefits).

Revised estimate of project benefits in net acres through 20 year project life based on the project with and without continued O&M (include description of method used to determine estimate):

Without continued O&M, it is anticipated that the structures would continue in their partially opened state with limited marsh benefits. With continued O&M, the anticipated benefits by year 20 are estimated at 100% of the total benefits, or 953 net acres.

Original and revised cost effectiveness (cost/net acre) as compared to original budget plus net changes and percent change:

Original CE = $4,752/acre ($4,528,418/ 953 ac)
Revised CE = $6,025/acre = 26.79 % decrease in cost effectiveness ($5,741,532 M/ 953 ac)

dc 4-2-09

CWPPRA Project O&M Budget Adjustment Template

Project Name: **Sabine Structures Replacement Project (CS-23)**
PPL: 1
Project Sponsors: **USFWS - OCPR**

Prepared By: FWS-OCPR
Date Prepared: **4/1/2009**
Date Revised:

	Corrent Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A, Insp, O&M	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed O&M, S&A & Insp
0	2004	$11,550	$0	$16,849	*2004	$6,176	$0	$276,985	2004	$6,176	$0	$276,985
-1	2005	$11,550	$0	$16,849	2005	$28,674	$0	$72	2005	$28,674	$0	$72
-2	2006	$11,550	$0	$16,849	2006	($19,230)	$0	$145,722	2006	($19,230)	$0	$145,722
-3	2007	$11,550	$0	$16,849	2007	$3,405	$0		2007	$3,405	$0	
-4	2008	$11,550	$0	$16,849	2008	$69,931	$0	$96,252	2008	$72,183	$0	$96,252
-5	2009	$11,550	$0	$56,854	2009	$0	$0	$0	2009	$1,008,888	$1,000	$4,000
-6	2010	$11,550	$0	$16,849	2010	$0	$0	$0	2010	$3,605	$1,000	$4,000
-7	2011	$11,550	$0	$16,849	2011	$0	$0	$0	2011	$3,713	$1,000	$4,634
-8	2012	$11,550	$0	$16,849	2012	$0	$0	$0	2012	$3,825	$1,000	$4,773
-9	2013	$11,550	$0	$16,849	2013	$0	$0	$0	2013	$13,939	$1,000	$4,916
-10	2014	$11,550	$0	$16,849	2014	$0	$0	$0	2014	$4,058	$1,000	$5,064
-11	2015	$11,550	$0	$16,849	2015	$0	$0	$0	2015	$4,180	$1,000	$5,216
-12	2016	$11,550	$0	$16,849	2016	$0	$0	$0	2016	$4,305	$1,000	$5,372
-13	2017	$11,550	$0	$16,849	2017	$0	$0	$0	2017	$19,434	$1,000	$5,533
-14	2018	$11,550	$0	$16,849	2018	$0	$0	$0	2018	$4,567	$1,000	$5,699
-15	2019	$11,550	$0	$16,849	2019	$0	$0	$0	2019	$4,704	$1,000	$5,870
-16	2020	$11,550	$0	$16,849	2020	$0	$0	$0	2020	$4,845	$1,000	$6,046
-17	2021	$11,550	$0	$16,849	2021	$0	$0	$0	2021	$24,991	$1,000	$6,228
-18	2022	$11,550	$0	$16,849	2022	$0	$0	$0	2022	$5,140	$1,000	$6,415
-19	2023	$11,550	$0	$16,849	2023	$0	$0	$0	2023	$5,295	$1,000	$6,607
	Total	$231,002	$0	$376,985		$88,956	$0	$519,031		$1,206,697	$15,000	$599,404

(Note: Obligations to date are derived from CWPPRA Cost Sharing Computations dated February 2009 in addition to updated charges by DNR & USFWS)
* Includes 1998 to 2004.

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
953	953

Approved O&M Budget vs Obligations to Date: Increment Years - 7 through -20

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	$231,002	$88,956	$142,046
Corps Admin	$0	$0	$0
Fed O&M S&A, Insp	$376,985	$519,031	($142,046)
Totals	$607,987	**$607,987**	$0

Approved Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved O&M	O&M Obligations to Date	Remaining Available O&M Budget
1993 App. Budget	**$567,987**		
2009 Funding Addition	**$40,000**		
Totals	**$607,987**	**$607,987**	**$0**

$40,000 transfer from Monitoring.

Total Approved Budget less Total Proposed Revised Budget

Funding Category	Current Total	Proposed Revised Total	Difference
State O&M & Insp.	$231,002	$1,206,697	($975,695)
Corps Admin	$0	$15,000	($15,000)
Fed O&M, S&A & Insp	$376,985	$599,404	($222,419)
Total	**$607,987**	**$1,821,101**	($1,213,114)

Current Request:

Current Increment Funding Request Year	Proposed Revised Estimate	Remaining Available O&M Budget	Current Funding Request Amount
Year - 5 - FY09	**$1,013,888**		
Year - 6 - FY10	**$8,605**		
Year - 7 - FY11	**$9,347**		
Totals	**$1,031,840**	**$0**	**$1,031,840**

Original Approved vs Proposed Revised Fully Funded Estimates:

Approved Fully Funded Baseline Estimate	Approved Net Budget Changes to E&D, Constr., O&M and Monitoring	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
$4,581,454	**($53,036)**	**$1,213,114**	**$5,741,532**
	$4,528,418		

Change in Total Cost and Cost Effectiveness:

As Compared To	Cost Estimate % Change	Cost Effectiveness	Revised Cost Effectiveness
Original Fully Funded Baseline Est.	**25.32%**	**$4,807**	**$6,025**
Approved Fully Funded Baseline Est. Plus Net Budget Changes	**26.79%**	**$4,752**	**$6,025**

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

SCOPE CHANGE REQUEST FOR LITTLE PECAN BAYOU HYDROLOGIC RESTORATION (ME-17)

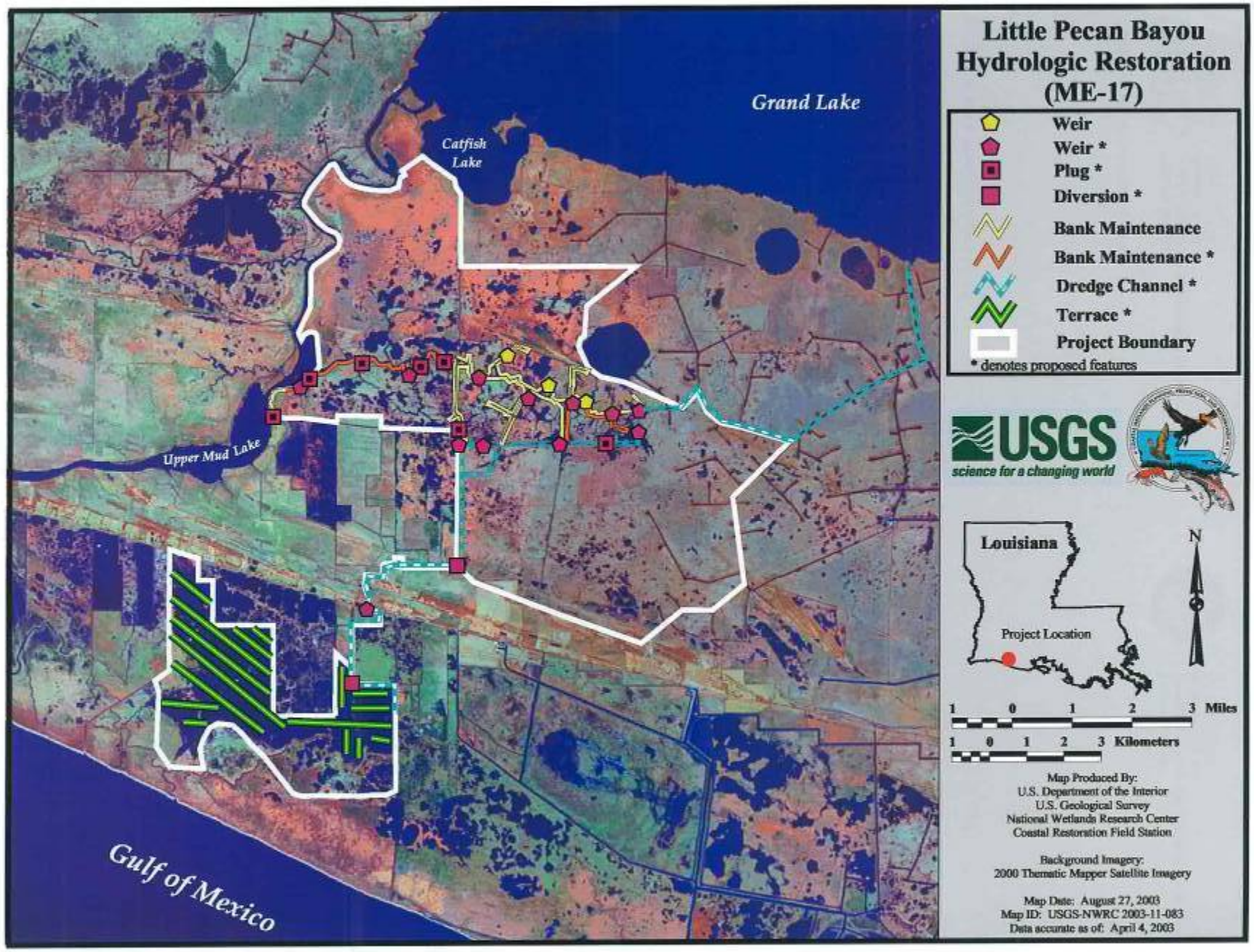
For Report/Decision:

Little Pecan Bayou Hydrologic Restoration (ME-17)

Change in Project Scope

CWPPRA Technical Committee Meeting
January 21, 2008

ORIGINAL PROJECT



REVISED PROJECT

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

PROPOSED REVISION OF THE ECOLOGICAL REVIEW CWPPRA STANDARD OPERATING PROCEDURE REQUIREMENT

For Discussion/Decision:

The USFWS and OCPR request Technical Committee approval to revise the CWPPRA Standard Operating Procedures (SOP) to remove the Ecological Review (ER) requirement for most projects, with the exception that the State and/or Federal project sponsors would have the option of conducting an ER for: complex projects; projects for which there is little precedent to indicate whether or not they would be effective; or other projects as deemed necessary. Currently, the SOP requires that a draft ER be submitted at the 30% Design Review meeting [CWPPRA SOP Section 6(e)], and a final ER be submitted with Phase II materials (Appendix C SOP). Environmental Assessments, which are required for all Federal projects to satisfy National Environmental Policy Act (NEPA) requirements, typically contain information provided in the ER. Eliminating the ER for most projects, with the exceptions outlined above, would save time and costs without altering the effectiveness of the ecological review conducted during project development through the NEPA process.

Proposed Revision of the Ecological Review CWPPRA Standard Operating Procedure Requirement

The U. S. Fish and Wildlife Service and State Office of Coastal Protection and Restoration (OCPR) request Technical Committee approval to revise the CWPPRA SOP Ecological Review requirement to remove the ER for most projects with the exception that the State or Federal project sponsors would have the option of conducting an ER for more complex projects or projects with little precedent indicating that they will be effective, or for other projects as deemed necessary. Currently the SOP requires a draft Ecological Review report be submitted at the 30% Design Review meeting [CWPPRA SOP Section 6(e)], and the final ER with submission of Phase II materials (Appendix C SOP). Environmental Assessments required for all Federal projects to satisfy National Environmental Policy Act (NEPA) requirements currently contain many of the items provided in the ER reports. Eliminating the ER reports for most projects, with the exceptions above, will save time and funding while not reducing project review effectiveness.

Proposed Revisions to the Current CWPPRA SOP Sections Referencing Ecological Reviews

". . .6 (e.) PRELIMINARY ENGINEERING AND DESIGN:

(1) Workplan Review: Federal and State Sponsors shall develop a plan of work for accomplishing Phase 1. This plan shall include, but not be limited to: a detailed task list, time line with specific milestones, and budget which breaks out specific tasks such as geo-technical evaluations, hydrological investigations, modeling, environmental compliance (cultural resources, NEPA, and HTRW), Ecological Review (considered if one or both sponsors determine one is necessary) (See Appendix B), surveying, and other items deemed necessary to justify the proposed project features. The plans shall be developed within 3 months following Phase 1 approval and shall be reviewed by the P&E Subcommittee.

(2) 30% Design Review: In order to resolve problems and anticipate cost growth at the earliest possible point, a 30% Design Review shall be performed upon completion of a Preliminary Design Report. The Preliminary Design Report shall include: 1) Recommended project features, 2) Engineering and Design surveys, 3) Engineering and Design Geotechnical Investigation (borings, testing results, and analysis), 4) Draft Modeling Report (if applicable), 5) Draft Ecological Review for cash flow-managed projects (if one or both project sponsors determine one is necessary for more complex projects, projects with little precedent for success, or other projects if necessary) (See Appendix B), 6) Land Ownership Investigation, . . ."

APPENDIX B
ECOLOGICAL REVIEW

Project Ecological Review **(revised 2/23/01) (proposed April 15, 2009, revision)**

Proposed April 15, 2009, Technical Committee Revision:

"The requirement to perform an Ecological Review is removed for most projects with the exception that the State or Federal project sponsors have the option of conducting an ER for more complex projects or projects with little precedent indicating that they will be effective, or for other projects as deemed necessary."

". . . The transition to a planning-phase/phase-one/phase-two approach was done to ensure a higher standard of project development and evaluation prior to the decision to commit construction dollars. It is essential that more complex proposed projects, or projects with little precedent for success ~~have been~~ are well designed and evaluated and

can demonstrate a high probability of successfully achieving the purpose as assigned by Congress in CWPPRA, i.e. "...significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of the coastal wetlands in the State of Louisiana…" While there exists clear guidance as to how planning efforts develop proposed projects prior to Phase One, there is little in the way of a clear rationale for how a proposed project's biotic benefits will be assessed during Phase One. The following approach will allow for a consistent, clear, and logical assessment, should a project sponsor choose to perform an ER. The goal, strategy and goal-strategy relationship should have been worked out prior to Phase One. They are listed again in this Phase One process in order to ensure that these vital links between planning and Phase One are stated in a consistent manner and readily available to those responsible for Phase One project E&D and evaluation. The Project Feature Evaluation and Assessment of Goal Attainability would be Phase One activities - these are being done to varying degrees already; however, not on a consistent, standardized basis.

Ecological Review . . ."

Proposed Revision to **APPENDIX C**
INFORMATION REQUIRED IN PHASE 2 AUTHORIZATION REQUESTS

". . . G. A written summary of the findings of the Ecological Review if completed (See Appendix B)."

Proposed Revision of the Ecological Review CWPPRA Standard Operating Procedure Requirement

The U. S. Fish and Wildlife Service and State Office of Coastal Protection and Restoration (OCPR) request Technical Committee approval to revise the CWPPRA SOP Ecological Review requirement to remove the ER for most projects with the exception that the State or Federal project sponsors would have the option of conducting an ER for more complex projects or projects with little precedent indicating that they will be effective, or for other projects as deemed necessary. Currently the SOP requires a draft Ecological Review report be submitted at the 30% Design Review meeting [CWPPRA SOP Section 6(e)], and the final ER with submission of Phase II materials (Appendix C SOP). Environmental Assessments required for all Federal projects to satisfy National Environmental Policy Act (NEPA) requirements currently contain many of the items provided in the ER reports. Eliminating the ER reports for most projects, with the exceptions above, will save time and funding while not reducing project review effectiveness.

Proposed Revisions to the Current CWPPRA SOP Sections Referencing Ecological Reviews

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APPENDIX B
ECOLOGICAL REVIEW

Project Ecological Review **(revised 2/23/01)**

The requirement to perform an Ecological Review is removed for most projects with the exception that the State or Federal project sponsors have the option of conducting an ER for more complex projects or projects with little precedent indicating that they will be effective, or for other projects as deemed necessary."

". . . The transition to a planning-phase/phase-one/phase-two approach was done to ensure a higher standard of project development and evaluation prior to the decision to commit construction dollars. It is essential that more complex proposed projects, or projects with little precedent for success are well designed and evaluated and can demonstrate a high probability of successfully achieving the purpose as assigned by Congress in CWPPRA, i.e. "...significantly contribute to the long-term restoration or

protection of the physical, chemical and biological integrity of the coastal wetlands in the State of Louisiana…" While there exists clear guidance as to how planning efforts develop proposed projects prior to Phase One, there is little in the way of a clear rationale for how a proposed project's biotic benefits will be assessed during Phase One. The following approach will allow for a consistent, clear, and logical assessment, should a project sponsor choose to perform an ER. The goal, strategy and goal-strategy relationship should have been worked out prior to Phase One. They are listed again in this Phase One process in order to ensure that these vital links between planning and Phase One are stated in a consistent manner and readily available to those responsible for Phase One project E&D and evaluation. The Project Feature Evaluation and Assessment of Goal Attainability would be Phase One activities - these are being done to varying degrees already; however, not on a consistent, standardized basis.

Ecological Review . . ."

APPENDIX C
INFORMATION REQUIRED IN PHASE 2 AUTHORIZATION REQUESTS

". . . G. A written summary of the findings of the Ecological Review <u>if completed</u> (See Appendix B)."

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

STATUS OF THE PPL 8 - SABINE REFUGE MARSH CREATION PROJECT, CYCLE 2 (CS-28-2)

For Report/Discussion:

Mrs. Fay Lachney will provide a status on the changes to the Plans and Specifications and results of the bid opening for the construction contract for the Sabine Refuge Marsh Creation Project, permanent pipeline feature.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

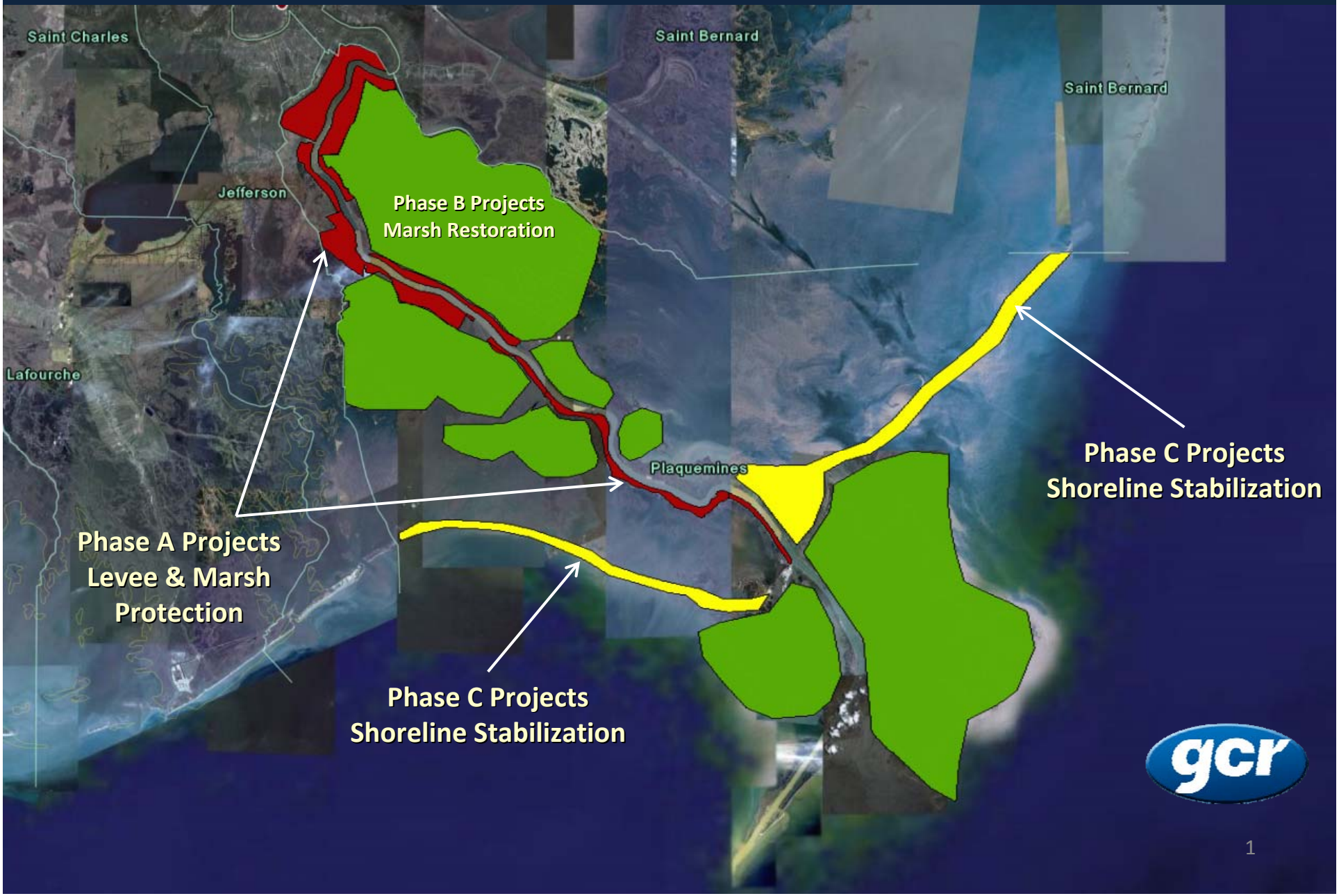
TECHNICAL COMMITTEE MEETING

April 15, 2009

PLAQUEMINES PARISH MASTER PLAN

For Report/Discussion:

Plaquemines Parish Coastal Restoration



Proposed Levee Improvements in Plaquemines Parish
As of November 7, 2008

FEMA Designation	Corps Designation		Design		Design Cost	Construction		Construction Cost	Authorized Height
			Begin	Complete		Begin	Completion		
Reach C	NOV-01			Mar - 2009		Oct - 2010	Jul - 2011		17.5'
Upper Reach A	NOV-05			Mar - 2009		Oct - 2010	Jul - 2011		
Reach A	NOV-06			May - 2009		Sept - 2010	Oct - 2012		13' - 15'
Reach B-1	NOV-07			Jun - 2009		Oct - 2010	Jan - 2012		15.5'
Reach B-2	NOV-08			Jun - 2009		Sept - 2010	Aug - 2011		15.5' - 16.5'
Non-Federal Levees									
Area 6 West	NF-04		Dec - 2009			Nov - 2010	May - 2012		12' (Overbuild to 14')
Area 5 West	NF-05			Sept - 2009		Nov - 2010	Apr - 2013		12' (Overbuild to 14')
Area 4 West	NF-06			Sept - 2009		Nov - 2010	Apr - 2013		12' (Overbuild to 14')

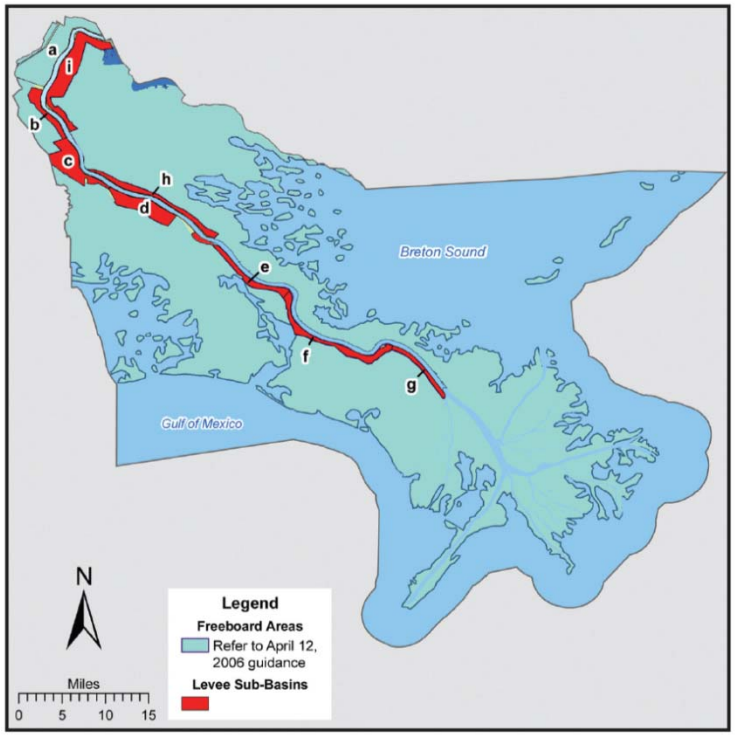


Figure 1. ABFE guidance and levee sub-basin locations for Plaquemines Parish.

Parish ABFE Levee Sub-Basin Identification Code	USACE Levee Polder Name	FEMA ABFE Based on USACE SWELs (in feet, NAVD88)
a	Belle Chasse	Refer to April 12, 2006 guidance
b	Plaquemines, Non-Federal, Area 6 West	8 feet
c	Plaquemines, Non-Federal, Area 5 West	9 feet
d	Plaquemines, Non-Federal, Area 4 West	10 feet
e	Plaquemines West Bank, Reach A	12 feet
f	Plaquemines West Bank, Reach B-1	11 feet
g	Plaquemines West Bank, Reach B-2	11 feet
h	Plaquemines East Bank, Reach C	16 feet
i	N/A (non-USACE levee polder on east bank)	18 feet

Table 1. Updated Parish ABFE levee sub-basin information with USACE levee polder names for inside levee-protected areas (ABFEs shown are recommended minimum building floor elevations and do not require addition of freeboard).

Plaquemines Parish Protection & Restoration Program
USACE Project Schedule

U.S. Army Corps of Engineers

Hurricane Storm Damage Risk Reduction System (HSDRRS) Projects in Plaquemines Parish

	2009				2010				2011				2012				2013				2014	2015	2016	2017	2018	2019	2020
	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec							
NOV-01 - Reach C - Design																											
NOV-01 - Reach C - Construction										$100M																	
NOV-05 - Upper Reach A - Design																											
NOV-05 - Upper Reach A - Construction										$20M																	
NOV-06 - Reach A - Design																											
NOV-06 - Reach A - Construction											$20M																
NOV-07 - Reach B-1 - Design																											
NOV-07 - Reach B-1 - Construction										$50M																	
NOV-08 - Reach B-2 - Design																											
NOV-08 - Reach B-2 - Construction										$20M																	
Non-Federal Levees																											
NF-04 - Area 6 West - Design																											
NF-04 - Area 6 West - Construction											$100M																
NF-05 - Area 5 West - Design																											
NF-05 - Area 5 West - Construction												$100M															
NF-06 - Area 4 West - Design																											
NF-06 - Area 4 West - Construction												$100M															

Total: $510 Million

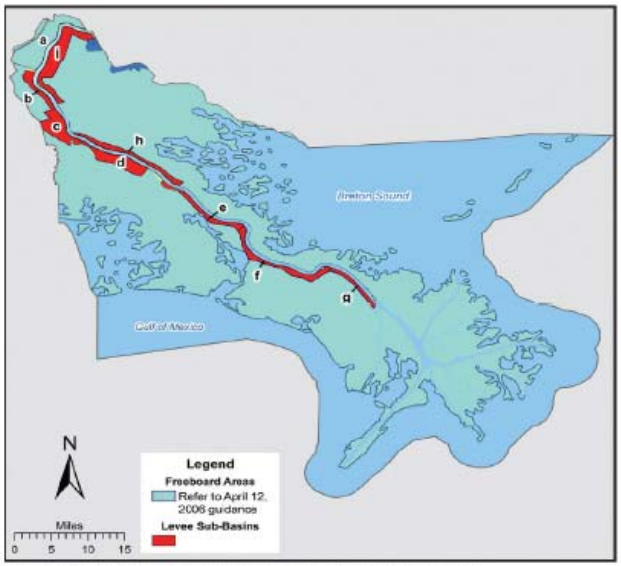


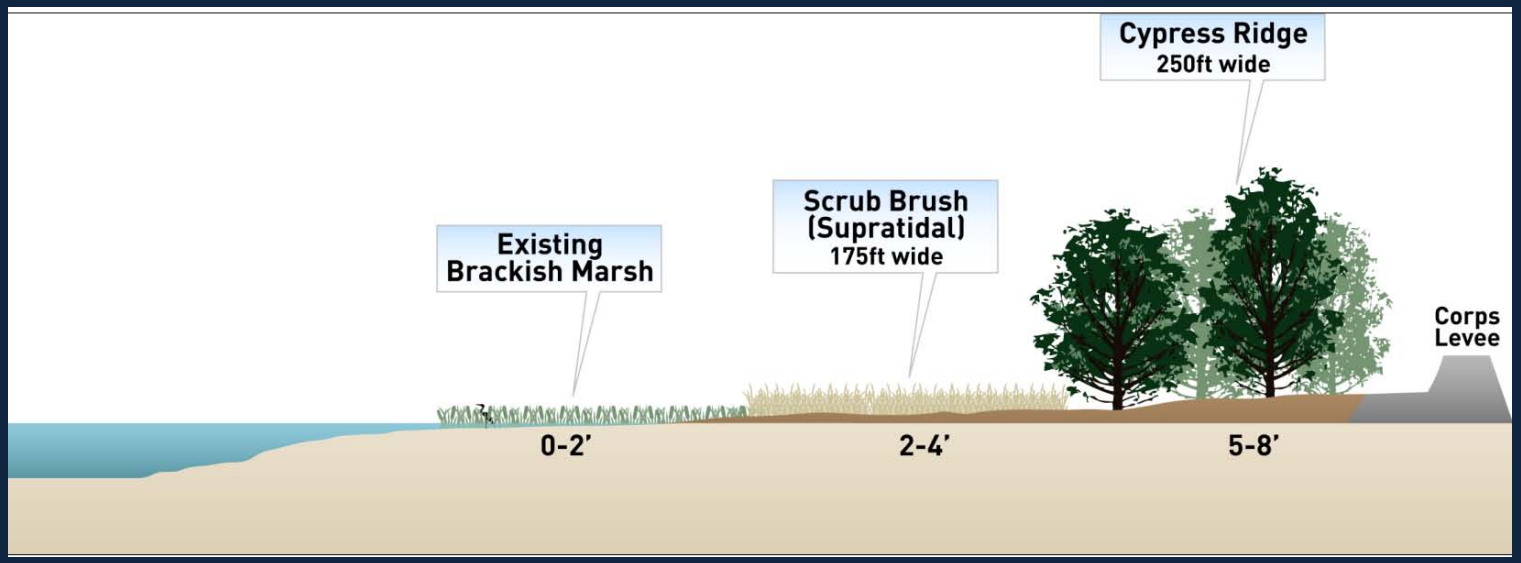
Figure 1. ABFE guidance and levee sub-basin locations for Plaquemines Parish.

Parish ABFE Levee Sub-Basin Identification Code	USACE Levee Polder Name	FEMA ABFE Based on USACE SWELs (in feet, NAVD88)
a	Belle Chasse	Refer to April 12, 2006 guidance
b	Plaquemines, Non-Federal, Area 6 West	8 feet
c	Plaquemines, Non-Federal, Area 5 West	9 feet
d	Plaquemines, Non-Federal, Area 4 West	10 feet
e	Plaquemines West Bank, Reach A	12 feet
f	Plaquemines West Bank, Reach B-1	11 feet
g	Plaquemines West Bank, Reach B-2	11 feet
h	Plaquemines East Bank, Reach C	16 feet
i	N/A (non-USACE levee polder on east bank)	18 feet

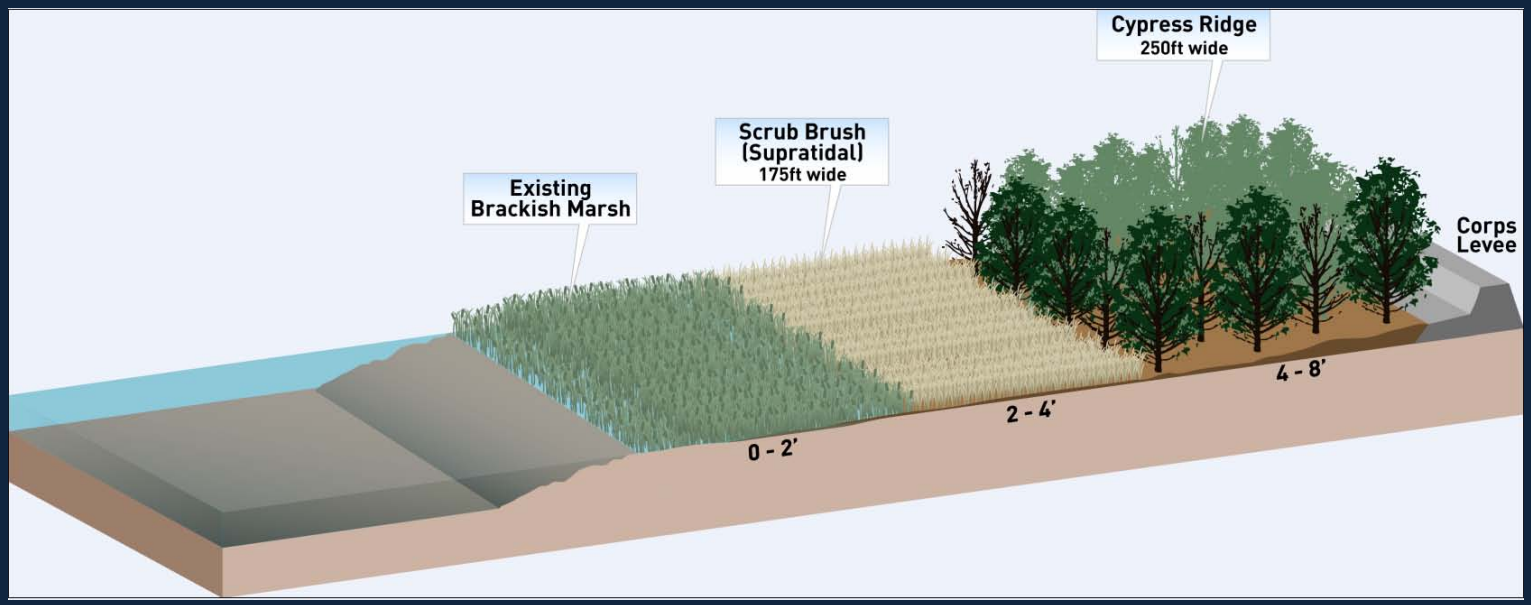
Table 1. Updated Parish ABFE levee sub-basin information with USACE levee polder names for inside levee-protected areas (ABFEs shown are recommended minimum building floor elevations and do not require addition of freeboard).

Plaquemines Parish Coastal Restoration
Proposed Wetland Vegetation Plan (Option B)

Cross-section



Oblique View



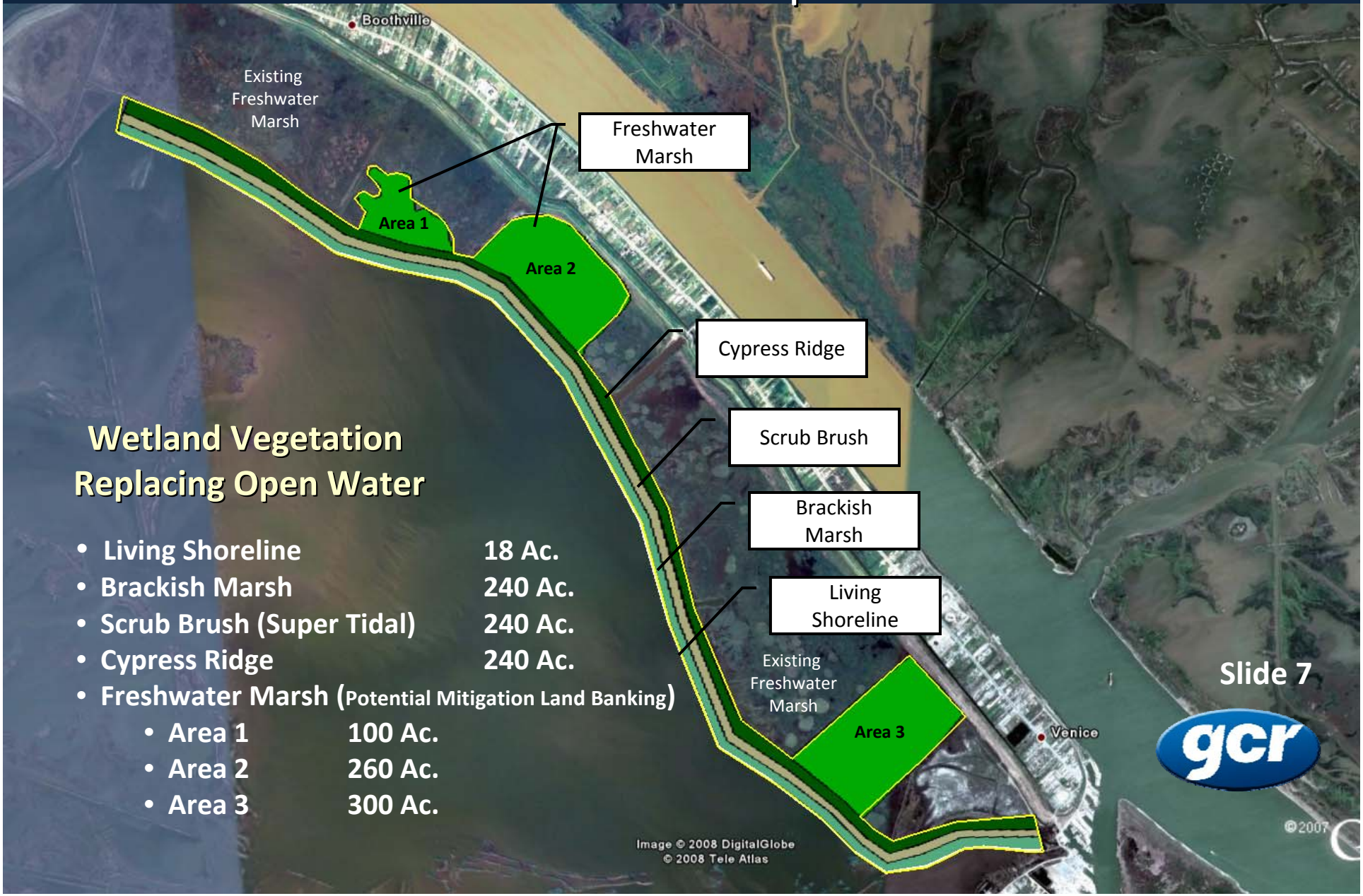
Plaquemines Parish Coastal Restoration
Reach B-2 - Option B

Option B
Brackish Marsh Stabilization

- Existing Brackish Marsh Impacted: 335 Ac.
- Brackish Marsh Enriched 158 Ac.
- Scrub Brush (Supratidal) Created 138 Ac.
- Cypress Ridge Created 197 Ac.
- Potential Brackish Marsh Created
  - Area 1 100 Ac.
  - Area 2 210 Ac.
  - Area 3 272 Ac.

Plaquemines Parish Coastal Restoration
Reach B-2 (Boothville to Venice)

Plaquemines Parish Coastal Restoration
Reach B-2 - Option A

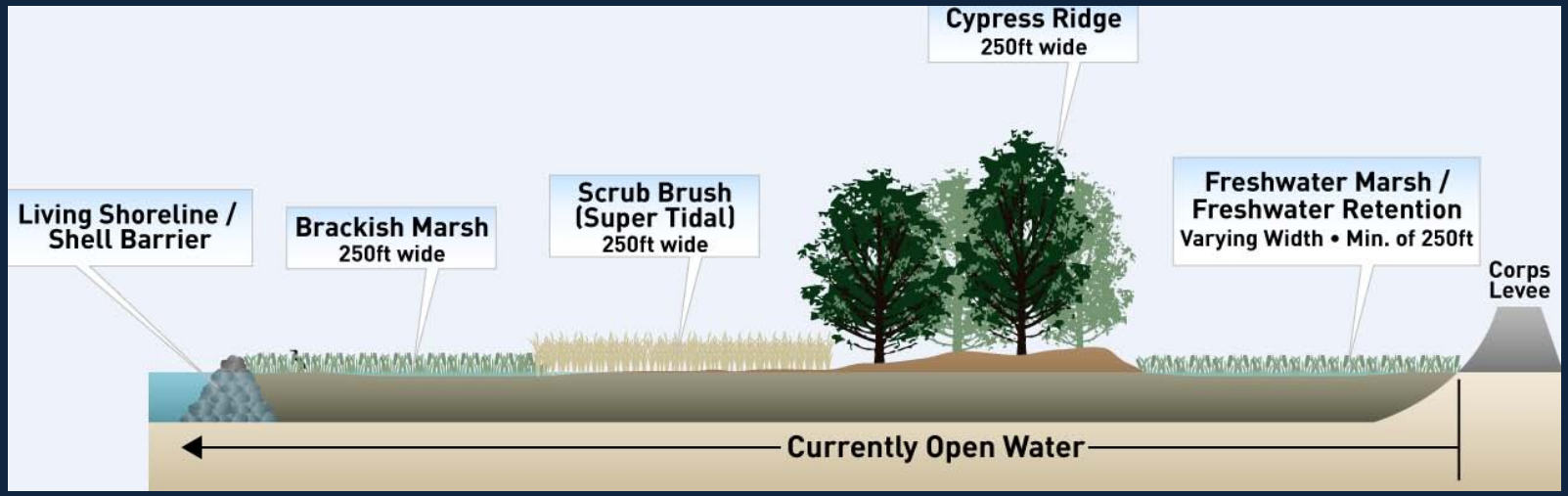


Wetland Vegetation Replacing Open Water

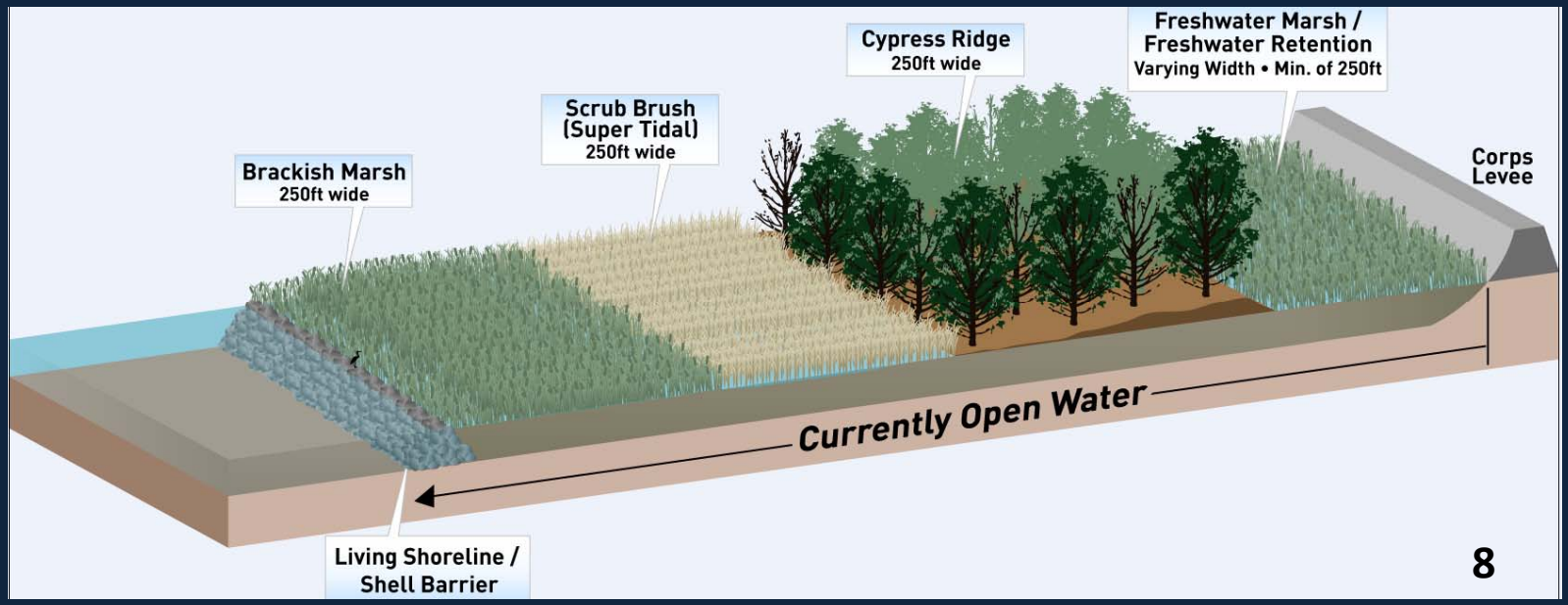
- Living Shoreline 18 Ac.
- Brackish Marsh 240 Ac.
- Scrub Brush (Super Tidal) 240 Ac.
- Cypress Ridge 240 Ac.
- Freshwater Marsh (Potential Mitigation Land Banking)
  - Area 1 100 Ac.
  - Area 2 260 Ac.
  - Area 3 300 Ac.

Plaquemines Parish Coastal Restoration
Proposed Wetland Vegetation Plan (Option A)

Cross-section



Oblique View



Plaquemines Parish Coastal Restoration
Options A & B Impact and Cost Comparison

Plaquemines Parish
Coastal Restoration Alternatives for Reach B-2

	Open Water Eliminated (Acres)	Brackish Marsh Impacted (Acres)	Brackish Marsh Marsh Created (Acres)	0 - 2 MSL Brackish Enriched (Acres)	2 - 5 MSL Scrub Brush Ridge Created (Acres)	5 - 8 MSL Cypress Ridge Created (Acres)	Construction Cost ($000)	Mitigation Cost ($000)
Option A Open Water Reduction	* 1,380	0	240	0	240	240	$ 230,000	$ -
Option B Brackish Marsh Stabilization	660	335	** 310	158	138	197	$ 27,000	$ 18,000

* This figure assumes the 582 Acres of open water within the new shoreline is eventually filled-in through Mitigation Land Bank; however, the cost is not in this project

** This figure assumes the in-filling of Areas 1 and 2 only

Plaquemines Parish Coastal Restoration
Option B Mitigation Calculations

Plaquemines Parish Coastal Restoration Project

Reach B-2

	2009				2010				2011				2012 - 2032		
	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan-Mar	Apr - Jun	Jul - Sep	Oct - Dec			
1 Secure Funding															
2 Louisiana CZM Permitting Process															
3 USACE Section 404 Permitting Process															
4 Preliminary Design															
5 Right-of-Way Acquisition															
6 Final Design - Plans & Specifications															
7 LADOTD Permitting for Crossings of LA 23															
8 Construction															

$4.5 Million → $45 Million → $14 Million - 20 Yr. Maintenance

★ Anticipated date for completion of the USACE Reach B-2 Levee

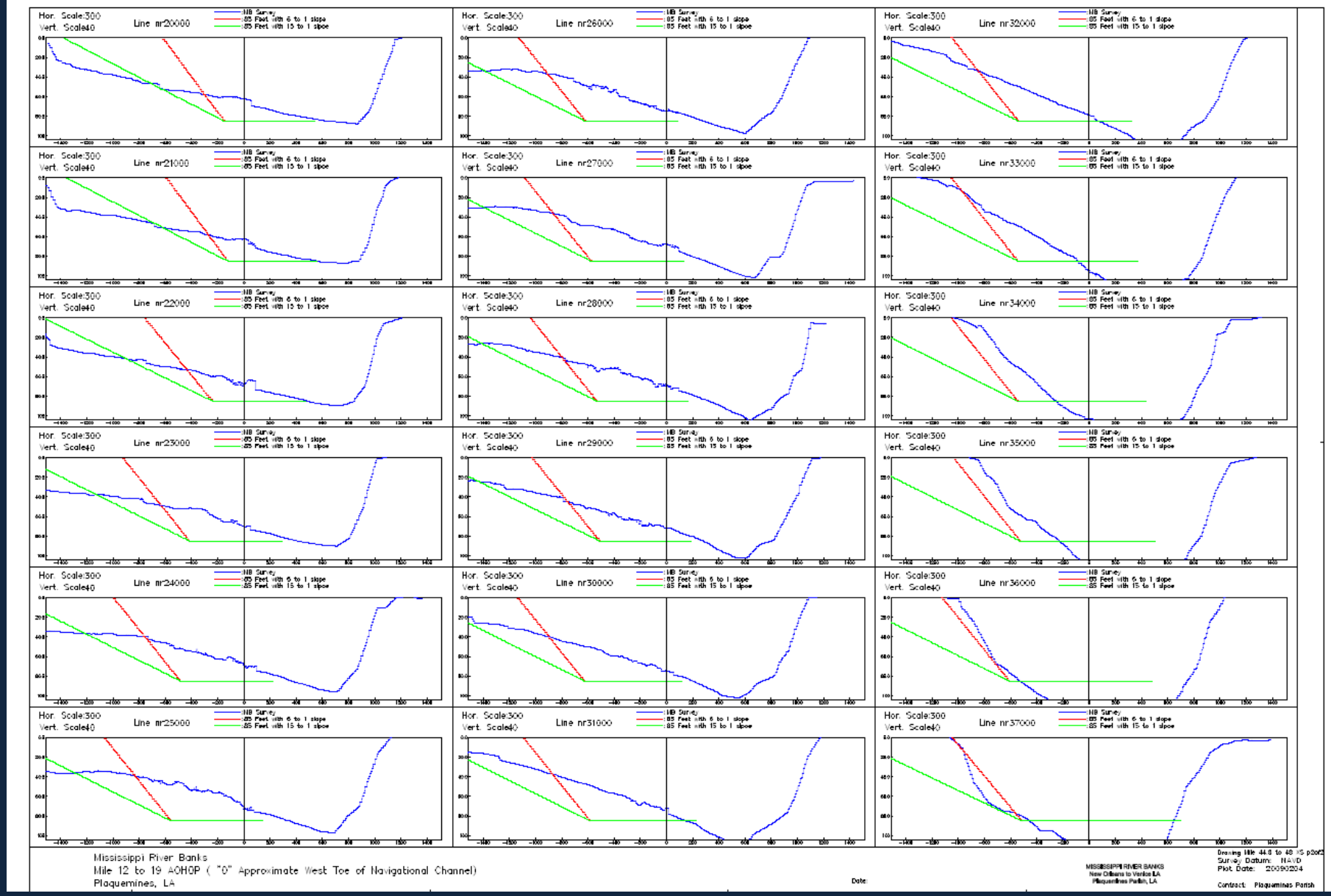
U.S. Army Corps of Engineers

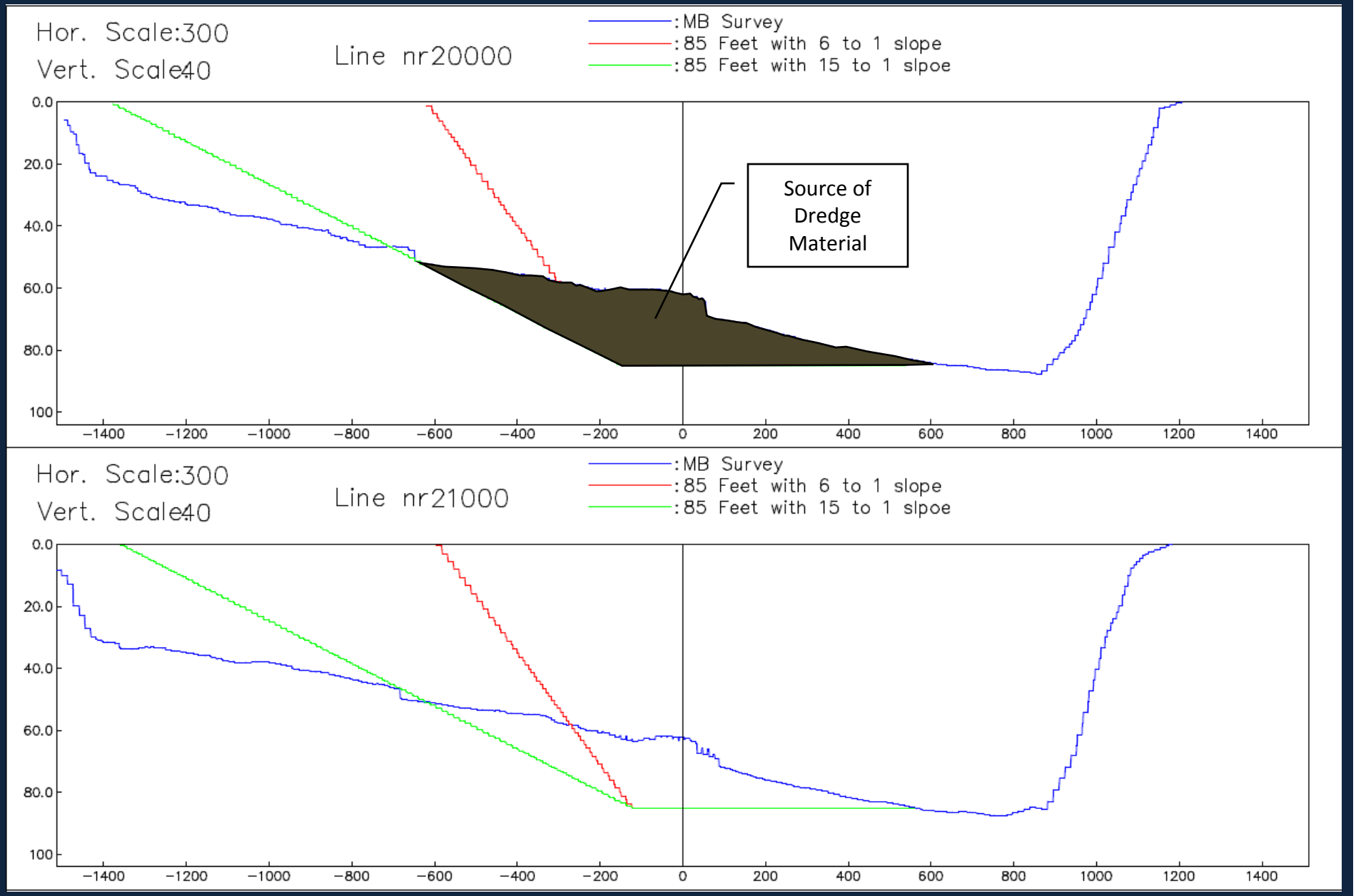
Hurricane Storm Damage Risk Reduction System (HSDRRS) Projects in Plaquemines Parish

	2009				2010				2011			
NOV-08 - Reach B-2 - Design												
NOV-08 - Reach B-2 - Construction												

Bathymetry of Mississippi River at Venice

Mississippi River Cross-sections

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Vert. Scale40
Line nr20000
:MB Survey
:85 Feet with 6 to 1 slope
:85 Feet with 15 to 1 slpoe
Source of Dredge Material
0.0
20.0
40.0
60.0
80.0
100
−1400
−1200
−1000
−800
−600
−400
−200
0
200
400
600
800
1000
1200
1400
Hor. Scale:300
Vert. Scale40
Line nr21000
:MB Survey
:85 Feet with 6 to 1 slope
:85 Feet with 15 to 1 slpoe
0.0
20.0
40.0
60.0
80.0
100
−1400
−1200
−1000
−800
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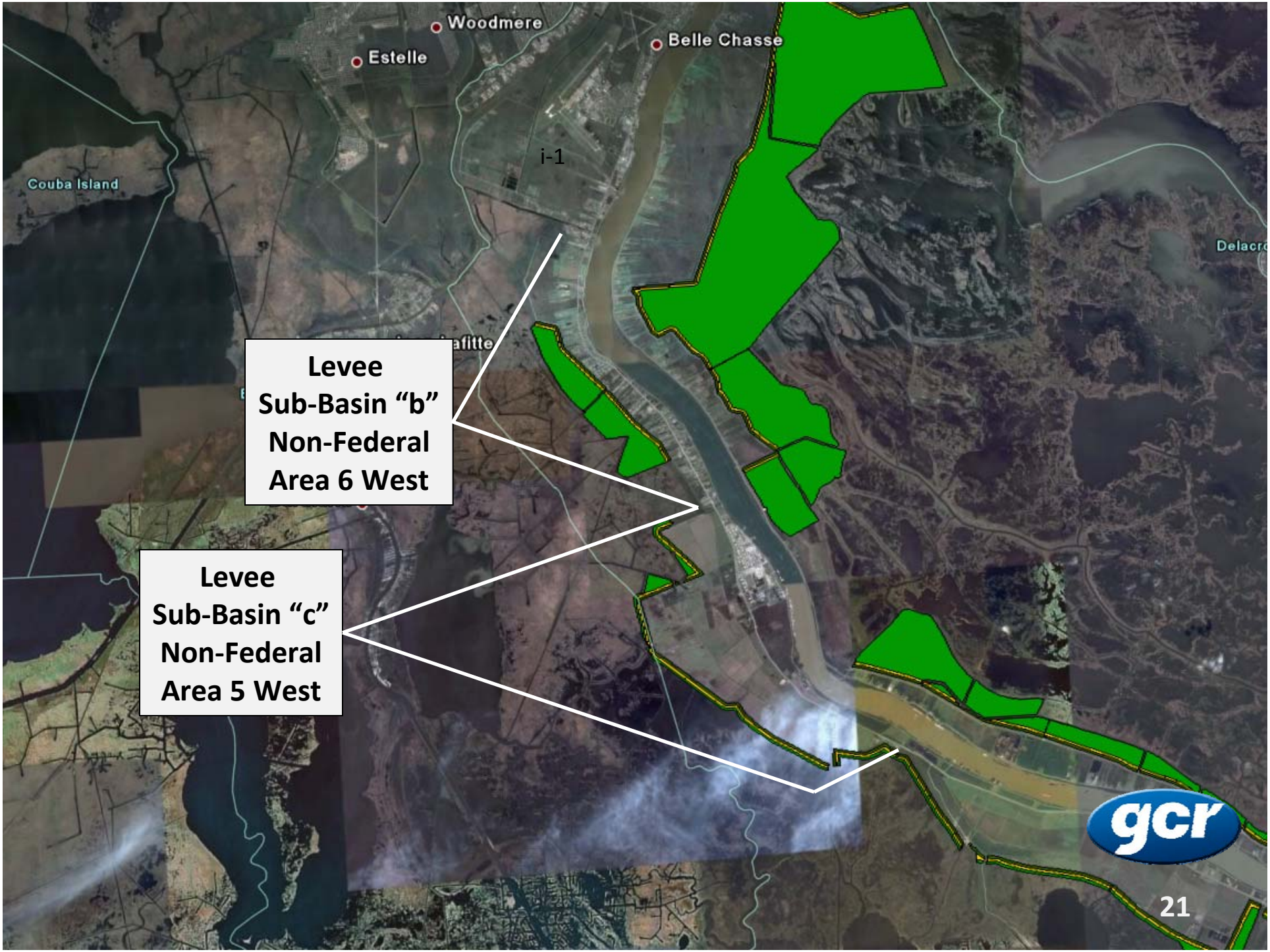
−200
0
200
400
600
800
1000
1200
1400

Immediate Objective

Gain all necessary permitting as soon as possible!


Woodmere
Estelle
Belle Chasse
i-1
Couba Island
Levee
Sub-Basin "b"
Non-Federal
Area 6 West
Levee
Sub-Basin "c"
Non-Federal
Area 5 West
gcr

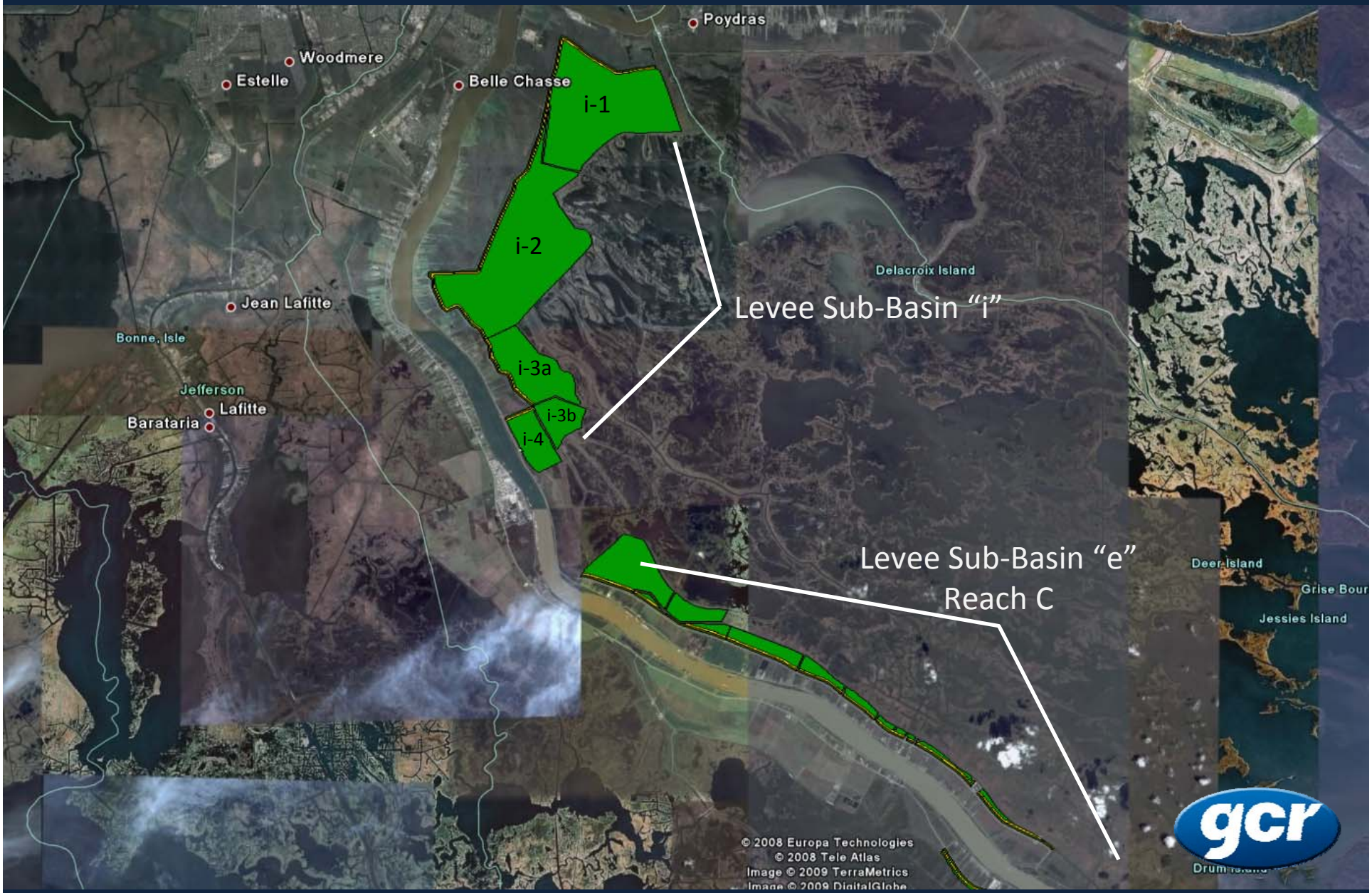

Poydras
Woodmere
Estelle
Belle Chasse
i-1
i-2
Delacroix Island
Levee Sub-Basin "i"
Jean Lafitte
Bonne, Isle
i-3a
Jefferson
Lafitte
Barataria
i-3b
i-4
Levee Sub-Basin "e"
Reach C
Deer Island
Grise Bour
Jessies Island
© 2008 Europa Technologies
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Image © 2009 TerraMetrics
Image © 2009 DigitalGlobe
gcr

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

ADDITIONAL AGENDA ITEMS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

REQUEST FOR PUBLIC COMMENTS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

ANNOUNCEMENT: DATE OF UPCOMING CWPPRA PROGRAM MEETING

The Task Force meeting will be held June 3, 2009 at 9:30 a.m. at the Estuarine Fisheries and Habitat Center, 646 Cajundome Blvd., Lafayette, Louisiana.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

ANNOUNCEMENT: SCHEDULED DATES OF FUTURE PROGRAM MEETINGS

		2009	
June 3, 2009	9:30 a.m.	Task Force	Lafayette
September 9, 2009	9:30 a.m.	Technical Committee	Baton Rouge
October 14, 2009	9:30 a.m.	Task Force	New Orleans
November 17, 2009	7:00 p.m.	PPL 19 Public Meeting	Abbeville
November 18, 2009	7:00 p.m.	PPL 19 Public Meeting	New Orleans
December 2, 2009	9:30 a.m.	Technical Committee	Baton Rouge

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

April 15, 2009

DECISION: ADJOURN